OECD Employment Outlook



OECD

2004

OECD Employment Outlook

2004

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 labour market trends and short-term forecasts, and examines key labour market developments. Reference statistics are also included.

The **OECD Employment Outlook** is the joint work of staff of the Directorate for Employment, Labour and Social Affairs, and has benefitted from contributions from national government delegates. It is published on the responsibility of the Secretary-General of the OECD.

This report is based on draft contributions from Pascal Marianna and Paul Swaim (Chapter 1), Glenda Quintini and Anne Saint-Martin (Chapter 2), Paul Swaim and Peter Tergeist (Chapter 3), Andrea Bassanini (Chapter 4), David Grubb (Chapter 5). Raymond Torres coordinated the report. The assessments of countries' labour market prospects do not necessarily correspond to those of the national authorities concerned.

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Publié en français sous le titre :

Perspectives de l'emploi de l'OCDE : 2004

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ISBN 92-64-10812-2
OECD Employment Outlook
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Editorial

Reassessing the OECD Jobs Strategy

The OECD Jobs Strategy has proven useful but a reassessment is needed ten years on

A decade ago, OECD countries adopted the Jobs Strategy as a blueprint for reforms to cut high and persistent unemployment. The Jobs Strategy shares many common features with the European Employment Strategy which was first launched in 1997. Since its inception, the OECD Jobs Strategy has played an influential role in the policy debate in member countries. And a Secretariat evaluation in 1999 suggested that those countries that had applied the Jobs Strategy the most had tended to perform relatively well in terms of improved labour market performance.

Still, much has taken place in OECD countries' labour market policies and outcomes since 1999. Therefore, OECD Employment and Labour Ministers concluded when they met in September 2003 in Paris, that it is timely to reassess the Jobs Strategy in the light of more recent experience and future challenges.

There remains unfinished business with unemployment…

For one thing, high unemployment has not disappeared. True, OECD unemployment is somewhat below its pre-1994 rates and the latest OECD projections (see Chapter 1) point to some reduction in unemployment rates over the next two years, supported by the continuation of strong growth in certain countries (notably the United States) and a recovery in most others (in particular Japan and, to a lesser extent, the European Union). But this would still leave unemployment rates in many countries higher than they were in the 1970s and 1980s.

… and to meet the challenges of ageing populations, more and better jobs are needed

At the same time, the challenges posed to future economic growth and living standards by ageing populations loom much larger now on policy agendas. Ministers concluded that the best way to meet these challenges is to create more and better jobs, particularly for people who are currently disadvantaged in the labour market and are disproportionately affected

by unemployment and labour market inactivity. There is much scope to do this. About 35% on average of the OECD population of working-age are not employed – the majority of them being statistically classified as "inactive", although they can, and often would like to, work. This figure masks important cross-country differences, with the non-employment rate being less than 30% in Australia, the Netherlands, New Zealand, the Nordic countries (except Finland), North America, Switzerland and the United Kingdom, but over 40% in Belgium, Central and Eastern Europe, Greece, Italy, Mexico and Turkey.

The Jobs Strategy was formulated at a time when cutting high and persistent unemployment was the main preoccupation in many countries. The reassessment will examine how the policy recommendations of the Jobs Strategy may need to be revised and/or extended to meet the objective of more and better jobs.

However, measures to improve employment must be reconciled with social goals. Governments should be careful about: job security,…

Pursuing more and better jobs, however central an objective, needs to be combined with other social objectives, in particular adequate social protection, a better reconciliation of work and family life, and equity outcomes in line with national preferences.

The reform of employment protection legislation (EPL) is an important case in point. Chapter 2 shows that less strict EPL may make it easier for employers to hire workers, thereby improving the job chances of groups which are subject to entry problems, such as youth and women. However, at the same time these reforms would make it easier for employers to fire, thereby heightening concerns about job insecurity among prime-age and older workers. Attention should also be devoted to the nature of proposed reforms of EPL. Chapter 2 shows that, in order to promote employment, some countries have eased provisions governing temporary jobs and other "non-regular" contracts over the past decade, while leaving the protection of permanent contracts practically unchanged. The result has been a rising incidence of "non-regular" forms of employment in some countries, in conditions which are not always freely chosen by the workers concerned. The question then arises as to the costs and benefits of reforms that focus exclusively on non-regular contracts *vis-à-vis* changes to the rules governing regular contracts, and how these costs and benefits are influenced by other labour and product market policies and institutions.

Altogether, some dismissal protection, combined with well-functioning unemployment benefit systems, effective re-employment services and product market competition, may help balance the need for more labour market dynamism with that for employment and income security. The nature of this policy mix, and how it should vary across countries, requires further scrutiny as part of the reassessment.

… the methods used to promote work incentives,…

Likewise, while some of the present Jobs Strategy recommendations unambiguously raise work incentives, they may at the same time pose a challenge to social protection. For instance, cutting welfare benefits or their duration will raise the return to work *vis-à-vis* continued benefit receipt. A significant tightening of the conditions of access to benefits

may help ensure that individuals who can work do not withdraw from the labour market. But care must also be taken that, as a result of such measures, hard-to-place individuals do not drop out of the benefit system entirely and fall into poverty.

From this point of view, the adoption of a so-called "mutual obligations" approach to welfare benefits may help meet both employment and social protection objectives. Through such an approach, welfare recipients are offered counselling, job-search support and other re-employment services. In turn, individuals must look actively for a job or take steps to improve their employability as the counterpart for continued benefit support. Much evidence has been collected on the design, implementation and effectiveness of such employment-oriented social policies in recent years. The reassessment will focus particular attention to how these activation measures can support re-employment effectively and the role of employment services in this respect, particularly for recipients of sickness, disability and lone-parent benefits – whose number has risen substantially in many member countries over the past decade.

At the same time, getting a job must yield tangible benefits to the person in question and her or his family. This is where so-called "making-work-pay" schemes (such as the provision of employment-conditional welfare benefits that top-up low earnings, or cuts in employer social security contributions targeted to low-paid workers) may also help recipients go back to work. Further exploring the reforms to tax-benefit systems that work and those that do not work, as well as their interaction with minimum wages, will also be a central issue in the reassessment.

… the effects of flexible employment on reconciling work and family life,…

One of the broad policy guidelines of the Jobs Strategy deals with the need to increase "working-time flexibility" and many OECD countries have witnessed a growing use of "non-standard" work schedules, including increased part-time employment, employment outside of standard working hours and variable work schedules.

To a considerable extent, this experience validates the hope that such measures can facilitate higher employment. For example, expanding options to work part-time can make it easier for parents with young children to combine working and parenting and for some older workers to extend their careers, while greater flexibility of working hours can help firms adjust to changing work loads. However, Chapter 1 makes it clear that other working-time arrangements tend to make it more, rather than less, difficult for workers to reconcile their work and family life. Thus, workers who are on the job evenings, nights or week ends, as well as those with unpredictable work schedules or particularly long hours, report significantly greater conflicts between their work hours and their family responsibilities. Further progress at raising employment rates, particularly among certain groups, needs to go hand-in-hand with initiatives to better reconcile work and family life. This is an issue which was underplayed in the original Jobs Strategy and it will receive greater attention in the reassessment.

… and the fallout of widening skill-based pay differentials – which reinforces the case for lifelong learning

There is much evidence to support the hypothesis that technical progress in OECD countries over the past two decades has exhibited a bias against unskilled labour in favour of skilled labour. This, in turn, highlights a potential trade-off between employment and equity objectives. The earnings of low-skilled workers may have to fall (relative to the earnings of high-skilled workers) in order to support labour demand for this group. Evidence in Chapter 3 confirms that, during the past two decades, earnings inequality has tended to widen, while employment developments have often been more favourable in those countries where earnings inequality has increased the most.

Lifelong learning may prove an effective way to improving employment prospects over the long-run, thus easing trade-offs between efficiency and equity objectives. Chapter 4 provides empirical evidence that, other things equal, workers who receive training have a greater chance of keeping their job than their non-trained counterparts. Even when they lose their job, workers who had received training prior to job loss enjoy relatively good re-employment chances. There is also evidence that training policies targeted on a particular demographic group do not entail major displacement effects *within* the group – in other words, there is a positive net employment effect for the group as a whole. Training may thus be beneficial to low-paid workers who are especially vulnerable to adverse shocks and often move from work to unemployment or inactivity, thus complicating the task of labour market policies. It may also improve the ability and willingness of older workers to extend their career.

This evidence, as well as that contained in last year's *Employment Outlook*, strengthens the argument for the lifelong learning pillar of the Jobs Strategy. However, this is also an area where more concrete policy proposals are needed. Thus, the role of different co-financing schemes and of policies to improve incentives to invest in the skills of low-educated and other under-represented groups will be further reviewed as part of the reassessment.

The issue of how to facilitate transitions from undeclared work to formal employment also needs to be addressed

In several OECD countries like central and eastern European countries, Mexico, Turkey as well as parts of Southern Europe, and in much of the non-OECD world, a significant proportion of workers have informal or undeclared jobs, and/or the income they get from work is undeclared in order to avoid paying taxes or social security contributions. This risks creating a low-productivity trap. It also erodes the tax base for funding public goods, thereby preventing the adoption of appropriate education and social protection systems, which are of central importance for social cohesion and growth. Undeclared work was not covered in the broad guidelines of the original Jobs Strategy and one of the challenges for the reassessment is to develop recommendations in this area.

As a first step, Chapter 5 provides a comprehensive policy analysis of how to facilitate transitions to formal employment. There is first a case for reforming certain regulations. In particular, tax and social security systems should be made more coherent, while burdensome regulations and administrative requirements falling on formal employment should be

reviewed. Better implementation of existing regulations is also needed, including through the establishment of well-functioning labour and tax inspectorates. Social protection and employment promotion schemes should reach the really needy, even when they are employed in the informal economy. At the same time, such schemes should be designed in ways that encourage integration into the formal economy. In general, the quality of government administration appears as a key factor in this area.

Finally, the joining up of policies, and alternative policy packages, should be assessed

The Jobs Strategy has sometimes been treated as a list of independent recommendations. However, experience suggests that *interactions* between policies and institutions may affect employment outcomes and the extent to which economies are resilient to adverse shocks. Thus, policies to stimulate labour market participation may be more effective if demand-side obstacles are also addressed, *e.g.* by having a supportive macroeconomic policy environment, by stimulating product-market competition, or by reducing overly-rigid employment regulations. To take one example, active labour market programmes probably will have greater success at promoting the re-employment of workers displaced by demand shifts (*e.g.* as a result of trade liberalisation), if product market regulations are reformed so as to foster vigorous competition.

Consideration of policy interactions and complementarities should examine why countries such as Denmark, the Netherlands, New Zealand and the United States achieve similarly high employment rates, despite their different policy settings and institutions. Indeed, one of the challenges of the reassessment will be to understand whether different reform "approaches" are possible.

The reassessment of the Jobs Strategy will be presented to OECD Ministers in two years time

In sum, in response to the mandate by Employment and Labour Ministers, OECD has undertaken to reassess the Jobs Strategy. Both this and next year's editions of the *Employment Outlook* will set out some of the evidence for this reassessment. Based on this evidence, the policy guidelines and detailed recommendations will be modified or extended. The main outcomes of the reassessment will be discussed by OECD Ministers in two years time. The challenge is to formulate a balanced reform agenda that helps countries adapt to structural change while also meeting employment and social objectives.



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June 2004

ISBN 92-64-10812-2
OECD Employment Outlook
© OECD 2004

Chapter 1

Recent Labour Market Developments and Prospects

Special Focus on: Clocking in (and out): Several Facets of Working Time

The amount of time devoted to paid work is at the nexus of several of the key economic and social challenges facing OECD governments. The potential contribution of working-time flexibility to lowering unemployment has been highlighted by the OECD Jobs Strategy, while recent analyses of the sources of economic growth have highlighted the importance of average hours worked. However, longer and flexible working hours may not be fully compatible policy goals, nor are they an unmixed blessing from the perspective of the well-being of workers and their families. How do working hours vary across OECD countries? What are the links between employment rates for women and other under-represented groups, the incidence of part-time work and total hours worked? Is work-life balance threatened by rising employment rates for parents and a "long-hours culture"?

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Introduction

The world economy appears to be moving into a broad and sustainable recovery, although some continental European countries have thus far been largely bypassed. Even in those countries where the recovery is already well underway, labour market conditions have been slow to register improvements. Section 1 of this chapter surveys recent economic developments and prospects, with particular emphasis on labour markets. The special focus section of the chapter then analyses trends in working time since 1970. Several facets of working time are considered from two distinct perspectives: *i*) how working time patterns interact with employment rates to influence total labour input and growth; and *ii*) how working hours affect the time use patterns and welfare of workers and their families.

1. Recent labour market developments and prospects

A. Economic outlook to the year 2005

In the OECD area as a whole, real GDP growth was 2.2% in 2003, up modestly from 1.7% in the previous year (Table 1.1). The global recovery is being led by the United States, as often in the past. Under the effect of the buoyancy of economic activity in Asia, and especially China, the recovery also got an early start in Australia, Japan, New Zealand and the United Kingdom, where it continued to gain momentum during 2003. By contrast, the largest euro area economies recorded anaemic growth, albeit less so in France than in Germany and Italy. However, the situation is quite diverse in continental Europe. The Netherlands, Portugal and Switzerland experienced negative growth in 2003, while all new members of the European Union – the Czech Republic, Hungary, Poland and the Slovak Republic – recorded significant growth.

The OECD's short-term projections indicate more rapid growth in the OECD area during 2004-05, averaging a little above 3%, as the recovery matures and broadens (Table 1.1). Growth will continue to strengthen in the United States, Japan and the United Kingdom in 2004, albeit for different reasons. While strong activity in industry, exports and personal spending explain the strength in the recovery in the United States and in Japan, growth in the United Kingdom is driven by buoyant retail sales and improving orders amid subdued industrial production. After having been largely bypassed by the global recovery in 2003, growth will become more robust in continental European economies during 2004 and 2005. Nonetheless, the gap in real GDP growth between Europe and the United States, which widened during 2003, is projected to remain at approximately the same level in 2005. The expansion is also projected to gain strength in Australia, Korea, and New Zealand, as a result of the regional buoyancy, while Turkey's recovery is expected to continue at a better than 5% annual growth rate.

B. Employment and unemployment

Employment growth remained sluggish in 2003, even in those OECD countries where output growth has been quite strong (Table 1.2). Indeed, one-half of all the OECD countries

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

Percentage change from previous period

	Share in total OECD GDP 2000	Average 1991-2001	2002	2003	Projections	
					2004	2005
North America						
Canada	3.3	3.3	3.3	1.7	2.8	3.3
Mexico	3.3	3.0	0.7	1.3	3.5	4.2
United States	36.4	3.3	2.2	3.1	4.7	3.7
Asia						
Japan	12.2	1.2	–0.3	2.7	3.0	2.8
Korea	2.9	5.4	6.9	3.1	5.6	5.9
Europe						
Denmark	0.6	2.4	1.0	0.4	1.9	2.6
Finland	0.5	2.7	2.3	1.9	2.5	3.7
Norway	0.6	3.6	1.4	0.3	3.1	2.7
Sweden	0.9	2.2	2.1	1.6	2.5	2.8
Greece	0.6	2.4	3.9	4.2	4.0	3.5
Italy	5.3	1.6	0.4	0.4	0.9	1.9
Portugal	0.6	2.5	0.5	–1.3	0.8	2.4
Spain	3.0	2.7	2.0	2.4	2.9	3.3
Czech Republic	0.5	1.0	2.0	2.9	3.1	3.4
Hungary	0.4	2.4	3.5	2.9	3.3	3.8
Poland	1.5	4.5	1.4	3.7	4.7	4.5
Slovak Republic	0.2	. .	4.4	4.2	4.3	4.8
Austria	0.8	2.1	1.4	0.7	1.5	2.4
Belgium	1.0	2.0	0.7	1.1	2.0	2.6
France	5.7	2.0	1.1	0.5	2.0	2.6
Germany[c]	7.6	2.0	0.2	–0.1	1.1	2.1
Iceland	0.0	2.9	–0.6	4.0	3.8	4.8
Ireland	0.4	7.7	6.9	1.4	3.4	4.6
Luxembourg	0.1	4.8	1.3	1.7	2.6	3.6
Netherlands	1.6	2.8	0.2	–0.7	0.9	2.1
Switzerland	0.8	1.2	0.2	–0.5	1.8	2.3
Turkey	1.7	2.7	7.9	5.8	5.2	5.2
United Kingdom	5.5	2.8	1.6	2.2	3.1	2.7
Oceania						
Australia	1.8	3.8	3.4	3.3	3.8	3.5
New Zealand	0.3	3.3	4.3	3.0	3.3	2.5
OECD Europe[d]	**39.9**	**2.3**	**1.4**	**1.2**	**2.2**	**2.7**
EU-15	**34.1**	**2.3**	**1.1**	**0.9**	**1.8**	**2.5**
EU-19[d]	**36.8**	**2.3**	**1.1**	**1.0**	**2.0**	**2.6**
Total OECD[d]	**100.0**	**2.7**	**1.7**	**2.2**	**3.4**	**3.2**

. . 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 (*www.oecd.org/dataoecd/29/23/25501352.pdf*).

b) Aggregates are computed on the basis of 2000 GDP weights expressed in 2000 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 1991-2001 exclude the Slovak Republic.

Source: *OECD Economic Outlook*, No. 75, June 2004.

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

Percentage change from previous period

	Employment						Labour force					
	Level 2002 (000s)	Average 1991-2001	2002	2003	Projections 2004	Projections 2005	Level 2002 (000s)	Average 1991-2001	2002	2003	Projections 2004	Projections 2005
North America												
Canada	15 412	1.6	2.2	2.2	1.7	1.5	16 687	1.3	2.7	2.2	1.3	1.3
Mexico	19 731	2.6	1.4	1.3	2.0	2.6	20 277	2.6	1.7	1.9	2.3	2.2
United States	136 487	1.5	–0.3	0.9	1.0	1.7	144 869	1.3	0.8	1.1	0.5	1.4
Asia												
Japan	63 304	0.1	–1.3	–0.2	0.0	0.3	66 890	0.4	–0.9	–0.3	–0.3	–0.1
Korea	22 169	1.5	2.8	–0.1	1.7	1.2	22 877	1.6	2.0	0.2	1.6	0.9
Europe												
Denmark	2 733	0.3	0.4	–1.0	0.0	0.4	2 864	–0.1	0.7	0.2	0.4	0.2
Finland	2 364	0.0	0.2	–0.3	0.0	1.4	2 600	0.2	0.1	–0.4	–0.2	0.7
Norway	2 286	1.3	0.4	–0.8	0.5	1.0	2 379	1.1	0.7	–0.1	0.4	0.8
Sweden	4 242	–0.4	0.1	–0.2	–0.4	0.9	4 418	–0.3	0.1	0.7	0.6	0.6
Greece	3 925	0.8	0.1	2.2	1.7	1.4	4 369	1.1	–0.3	1.4	0.9	0.9
Italy	21 613	0.1	1.5	1.0	0.5	1.3	23 776	0.2	0.9	0.6	0.3	1.2
Portugal	5 077	0.8	0.3	–0.9	0.3	1.4	5 349	0.8	1.3	0.5	0.5	0.9
Spain	16 258	2.0	2.0	2.7	2.8	2.8	18 340	1.9	3.0	2.6	2.3	2.0
Czech Republic	4 730	–0.5	1.0	–0.7	–0.5	0.0	5 104	–0.1	0.0	–0.1	0.0	0.0
Hungary	3 830	–1.5	0.1	1.3	1.1	1.3	4 068	–1.3	0.2	1.3	1.1	1.1
Poland	13 782	–1.5	–3.0	–1.2	0.7	1.1	17 213	–0.5	–0.9	–1.6	0.8	0.5
Slovak Republic	2 127	. .	0.2	1.8	1.0	1.3	2 614	. .	–0.7	0.3	0.0	0.0
Austria	4 066	0.3	–0.2	0.3	0.3	0.9	4 302	0.3	0.5	0.5	0.5	0.8
Belgium	4 186	0.7	–0.3	–0.4	0.3	1.0	4 517	0.8	0.4	0.4	0.5	0.7
France	24 644	0.8	0.5	–0.2	0.2	0.5	27 082	0.7	0.9	0.6	0.3	0.3
Germany[b]	38 671	0.4	–0.6	–1.1	–0.3	0.6	42 067	0.6	0.1	–0.4	–0.2	0.3
Iceland	157	1.5	–1.5	1.5	2.1	3.0	162	1.5	–0.4	1.6	1.8	2.7
Ireland	1 765	4.2	1.4	1.2	1.4	1.6	1 847	3.0	1.9	1.5	1.5	1.6
Luxembourg	191	1.4	1.7	1.0	0.7	1.0	197	1.5	2.1	1.9	1.3	1.2
Netherlands	7 141	2.0	1.1	–0.6	–0.9	1.2	7 311	1.6	1.4	0.6	0.7	1.3
Switzerland	4 180	0.3	0.6	–0.1	0.7	1.1	4 314	0.4	1.2	0.9	0.5	0.6
Turkey	21 854	1.1	–0.8	–2.6	0.8	1.4	24 318	1.1	1.4	–2.2	1.1	2.0
United Kingdom	27 865	0.6	0.7	0.9	0.8	0.7	29 384	0.3	0.8	0.7	0.6	0.7
Oceania												
Australia	9 369	1.7	2.0	2.4	1.8	1.7	10 001	1.4	1.5	1.9	1.6	1.5
New Zealand	1 877	2.2	2.9	2.4	1.8	1.1	1 980	1.7	2.8	1.8	1.8	1.3
OECD Europe[c]	**217 685**	**0.5**	**0.1**	**–0.1**	**0.5**	**1.1**	**238 595**	**0.6**	**0.7**	**0.1**	**0.6**	**0.9**
EU-15	**164 740**	**0.7**	**0.5**	**0.2**	**0.5**	**1.0**	**178 422**	**0.7**	**0.9**	**0.6**	**0.5**	**0.8**
EU-19[c]	**189 209**	**0.5**	**–0.9**	**0.1**	**0.5**	**1.0**	**207 422**	**0.6**	**–0.6**	**0.4**	**0.5**	**0.7**
Total OECD[c]	**486 034**	**0.9**	**0.1**	**0.3**	**0.8**	**1.3**	**522 175**	**0.9**	**0.7**	**0.5**	**0.6**	**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 1991-2001 exclude the Slovak Republic.

Source: *OECD Economic Outlook*, No. 75, June 2004.

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experienced negative employment growth in 2003, including Japan, Korea and Turkey, where real GDP growth ranged between 3% and 5%. Hiring also lagged in the United States, where there has been much concern about a "jobless recovery". Firms may have delayed their hiring decisions because they are still reaping the latent productivity gains stemming from the investment undertaken in the late 1990s or due to geopolitical worries, and uncertainties concerning the timeliness and robustness of recovery, but now appear posed to quicken hiring. In Europe, job losses in the recent downturn were smaller than in past cycles, and that helps to explain the weakness of job creation at the early stages of the recovery. By contrast, employment growth exceeded 2% in Australia, Canada, Greece, New Zealand and Spain. As the recovery broadens and deepens, employment performance should strengthen during 2004-05. By 2005, employment growth is expected to be positive in all OECD countries and to average 1%, very near the average level observed during the 1990s. The gap in employment growth between Europe and the United States is projected to narrow somewhat, but not to fully close. While employment in Europe is expected to grow at 1.1% in 2005, employment growth in the United States is projected at a higher 1.7%. Growth rates exceeding 2% are expected only in Iceland, Mexico and Spain. Labour force growth is also projected to quicken moderately in most countries, although it will remain negative in Japan.

In 2003, unemployment in the OECD area increased by 0.2 percentage point, representing 1.2 million persons, and attained 7.1% of the labour force, representing more than 37 million unemployed persons (Table 1.3). This probably represents the peak level for the current business cycle, since unemployment is projected to recede modestly during the next two years, falling to 6.7% in 2005 (still nearly 36 million people). Unemployment had already begun to fall in Australia, Japan, New Zealand and the United Kingdom during 2003, even as it continued to inch upwards in the United States and most continental European countries, notably France and Germany. The projected fall in the US unemployment rate, from 6% of the labour force in 2003 to 5.2% in 2005, is only partly explained by improving employment growth, since historically low labour force growth of the last several years is projected to continue. In Japan, unemployment rate is expected to fall below 5% in 2005, despite little net job creation, due to a shrinking labour force. In Europe, unemployment is expected to remain at high levels in 2005: over 14 million people in the EU-15 and over 18 million people in the EU-19. Unemployment rates will begin to fall only as employment growth strengthens in 2005. However, little or no progress in lowering unemployment is projected for many European countries during the next two years. Indeed, unemployment is projected to be higher in 2005 than in 2003 in the Czech Republic, Denmark, Luxembourg, the Netherlands, Sweden and Turkey, while it will fall by more than one-half of a percentage point only in Finland, Greece, the Slovak Republic, Spain and Switzerland. In non-European countries, outside Japan and the United States, unemployment is projected to decrease in 2004-05 in Australia, Canada, Korea and Mexico.

C. Compensation and labour costs

In 2003, the growth in nominal compensation per employee in the business sector accelerated moderately in the OECD-area, rising from 2.3% to 2.8% (Table 1.4). The OECD projections indicate that this mild acceleration will continue during the next two years, with compensation rising by 3.5% in 2005, which is still below that the 4.2% average growth rate during 1991-2001. In OECD Europe, nominal compensation growth is projected to plateau at its 2001 level, of approximately 3%. However, this average masks the fact that in about half of the European countries the pace of compensation growth will either slow

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

	Percentage of labour force					Millions				
	Average 1991-2001	2002	2003	Projections		Average 1991-2001	2002	2003	Projections	
				2004	2005				2004	2005
North America										
Canada	9.2	7.6	7.6	7.3	7.1	1.4	1.3	1.3	1.3	1.2
Mexico	3.5	2.7	3.3	3.5	3.1	0.6	0.5	0.7	0.7	0.7
United States	5.5	5.8	6.0	5.5	5.2	7.4	8.4	8.8	8.1	7.8
Asia										
Japan	3.5	5.4	5.3	5.0	4.6	2.3	3.6	3.5	3.3	3.0
Korea	3.5	3.1	3.4	3.3	3.0	0.7	0.7	0.8	0.8	0.7
Europe										
Denmark	6.4	4.6	5.6	6.0	5.8	0.2	0.1	0.2	0.2	0.2
Finland	12.3	9.1	9.1	8.9	8.3	0.3	0.2	0.2	0.2	0.2
Norway	4.5	3.9	4.5	4.4	4.2	0.1	0.1	0.1	0.1	0.1
Sweden	6.3	4.0	4.9	5.8	5.4	0.3	0.2	0.2	0.3	0.2
Greece	9.9	10.2	9.5	8.8	8.4	0.4	0.4	0.4	0.4	0.4
Italy	10.7	9.1	8.8	8.6	8.5	2.5	2.2	2.1	2.1	2.1
Portugal	5.4	5.1	6.4	6.6	6.1	0.3	0.3	0.3	0.4	0.3
Spain	14.7	11.4	11.3	10.9	10.2	2.3	2.1	2.1	2.1	2.0
Czech Republic	5.7	7.3	7.8	8.3	8.3	0.3	0.4	0.4	0.4	0.4
Hungary	8.5	5.9	5.9	5.9	5.7	0.4	0.2	0.2	0.2	0.2
Poland	13.3	19.9	19.6	19.7	19.2	2.3	3.4	3.3	3.4	3.3
Slovak Republic	. .	18.6	17.4	16.6	15.5	. .	0.5	0.5	0.4	0.4
Austria	5.2	5.5	5.7	5.9	5.8	0.2	0.2	0.2	0.3	0.3
Belgium	8.4	7.3	8.1	8.3	8.0	0.4	0.3	0.4	0.4	0.4
France	10.8	9.0	9.7	9.9	9.6	2.8	2.4	2.6	2.7	2.6
Germany	7.7	8.1	8.7	8.8	8.5	3.1	3.4	3.7	3.7	3.6
Iceland	3.5	3.3	3.3	3.1	2.8	0.0	0.0	0.0	0.0	0.0
Ireland	10.5	4.4	4.7	4.8	4.8	0.2	0.1	0.1	0.1	0.1
Luxembourg	2.6	3.0	3.8	4.3	4.5	0.0	0.0	0.0	0.0	0.0
Netherlands	5.1	2.3	3.5	5.0	5.1	0.3	0.2	0.3	0.4	0.4
Switzerland	3.2	3.1	4.0	3.8	3.4	0.1	0.1	0.2	0.2	0.2
Turkey	7.5	10.1	10.5	10.7	11.2	1.7	2.5	2.5	2.6	2.7
United Kingdom	7.8	5.2	5.0	4.8	4.8	2.2	1.5	1.5	1.4	1.4
Oceania										
Australia	8.4	6.3	5.9	5.7	5.5	0.8	0.6	0.6	0.6	0.6
New Zealand	7.5	5.2	4.7	4.7	4.9	0.1	0.1	0.1	0.1	0.1
OECD Europe[b, c]	**9.0**	**8.8**	**9.0**	**9.1**	**8.9**	**20.3**	**20.9**	**21.6**	**21.8**	**21.5**
EU-15[b]	**9.1**	**7.7**	**8.0**	**8.0**	**7.8**	**15.4**	**13.7**	**14.4**	**14.4**	**14.1**
EU-19[b, c]	**9.4**	**8.8**	**9.0**	**9.0**	**8.8**	**18.7**	**18.2**	**18.8**	**18.9**	**18.5**
Total OECD[b]	**6.9**	**6.9**	**7.1**	**6.9**	**6.7**	**33.7**	**36.1**	**37.3**	**36.7**	**35.7**

. . Data not available.
a) See note *a)* to Table 1.1.
b) Unemployment rate aggregates are computed using labour force weights.
c) Averages for 1991-2001 exclude the Slovak Republic.

Source: *OECD Economic Outlook*, No. 75, June 2004.

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

Percentage change from previous period

	Compensation per employee					Unit labour costs				
	Average 1991-2001	2002	2003	Projections		Average 1991-2001	2002	2003	Projections	
				2004	2005				2004	2005
North America										
Canada	3.0	2.7	1.5	2.5	3.6	1.1	1.3	1.8	1.1	1.5
Mexico	16.4	5.2	5.0	4.6	4.4	15.8	6.0	5.1	3.3	2.8
United States	3.8	2.1	3.0	4.3	4.8	1.9	–1.7	–0.4	0.2	2.7
Asia										
Japan	0.3	–2.2	–0.3	0.3	0.4	–0.8	–3.1	–3.6	–2.9	–2.1
Korea	7.8	10.5	8.9	6.1	7.1	3.4	5.9	5.2	1.9	2.1
Europe										
Denmark	3.4	1.8	3.9	3.5	3.4	0.8	1.0	2.1	2.1	0.9
Finland	3.3	1.3	3.5	3.6	3.9	0.1	–0.4	0.6	0.5	1.1
Norway	4.3	5.7	4.3	3.8	4.2	1.8	3.9	2.3	0.0	1.5
Sweden	4.9	2.2	2.0	2.8	4.0	1.8	–0.3	–0.6	–0.4	1.8
Greece	8.9	6.8	5.7	6.1	6.0	7.0	2.5	3.6	3.6	3.6
Italy	3.4	2.2	3.3	3.0	2.9	1.7	3.3	3.4	2.6	2.1
Portugal	6.9	3.8	3.1	2.2	2.5	4.8	3.4	3.8	1.7	1.6
Spain	4.8	4.2	4.8	4.3	4.2	3.4	3.6	3.9	3.5	2.9
Czech Republic	6.3	6.7	6.8	6.8	6.0	. .	5.8	2.5	2.7	2.3
Hungary	17.2	11.9	10.9	9.3	8.3	12.1	7.1	9.2	7.1	5.7
Poland	27.7	4.0	3.0	4.5	4.9	19.4	–1.1	–2.4	0.4	1.6
Slovak Republic	14.7	7.1	5.7	6.7	5.4	. .	2.4	2.6	3.6	1.7
Austria	3.0	2.4	1.9	1.9	2.3	0.8	0.6	1.4	0.6	0.7
Belgium	2.9	4.4	1.7	2.9	2.0	1.6	3.0	–0.1	1.0	0.3
France	1.8	2.5	2.6	2.8	2.9	0.5	1.8	1.6	0.8	0.7
Germany[c]	3.3	1.5	1.6	1.3	1.6	1.6	0.6	0.6	–0.1	0.0
Iceland	5.4	5.9	3.7	4.8	7.0	3.8	4.7	1.1	3.1	5.0
Ireland	4.2	4.3	3.9	4.0	4.9	0.5	–1.5	3.9	1.8	1.7
Luxembourg	3.5	2.7	2.2	2.5	3.0	2.3	4.9	1.9	1.3	1.4
Netherlands	3.2	4.7	3.7	2.3	0.1	1.9	4.7	4.0	–0.4	–1.1
Switzerland	2.4	2.0	1.7	1.3	1.4	1.4	2.3	2.2	0.0	–0.1
Turkey	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .
United Kingdom	4.5	2.8	4.3	5.2	4.7	2.5	1.9	2.8	2.6	2.4
Oceania										
Australia	3.5	3.9	3.2	3.9	3.8	1.1	2.4	2.3	1.7	2.0
New Zealand	1.6	2.7	3.2	3.9	3.5	0.7	1.2	1.9	2.2	1.9
OECD Europe[d]	**4.6**	**2.8**	**3.1**	**3.1**	**3.0**	**2.5**	**1.9**	**2.0**	**1.4**	**1.3**
EU-15	**3.6**	**2.7**	**3.1**	**3.1**	**3.0**	**1.9**	**2.0**	**2.2**	**1.4**	**1.3**
EU-19[d]	**4.8**	**2.9**	**3.2**	**3.3**	**3.2**	**2.6**	**2.0**	**2.1**	**1.5**	**1.3**
Total OECD less high-inflation countries[d, e]	**3.4**	**2.1**	**2.8**	**3.3**	**3.5**	**1.5**	**0.0**	**0.5**	**0.4**	**1.4**
Total OECD[d]	**4.2**	**2.3**	**2.8**	**3.3**	**3.5**	**2.3**	**0.2**	**0.6**	**0.5**	**1.5**

. . Data not available.

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

b) Aggregates are computed on the basis of 2000 GDP weights expressed in 2000 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) Countries shown. Unit labour costs averages for 1991-2000 exclude the Czech and Slovak Republics.

e) High inflation countries are defined as countries which had 10% or more inflation in terms of GDP deflator on average between 1991 and 2001 on the basis of historical data. Consequently, Hungary, Mexico, Poland and Turkey are excluded from the aggregate.

Source: *OECD Economic Outlook*, No. 75, June 2004.

down or speed up significantly. The projections indicate that the marked acceleration observed in the United Kingdom in 2003, will continue into 2004 before easing in 2005. Outside Europe, the projections indicate an acceleration of growth in compensation per employee in the United States and, to a lesser extent, Australia, Canada and New Zealand. In Japan, compensation per employee fell by 2.2% in 2002, but this decline slowed considerably in 2003 and modest positive growth is expected during 2004-05.

In the OECD area as a whole, the growth of unit labour costs in 2003 remained moderate at 0.6%, albeit slightly higher than in the previous year (Table 1.4). The increase should be similar in 2004, before accelerating to 1.5% in 2005 as labour markets tighten. The acceleration is stronger than average in the United States, from a decline of 1.7% in 2002 to an increase of 2.7% in 2005, due to a stronger than average recovery and a reduction in the very high rate of productivity gains achieved early in the recovery. Despite experiencing its strongest recovery in several decades, unit labour costs in Japan are projected to continue to fall through 2005. In OECD European as a whole, growth in unit labour costs is projected to decelerate in 2004, in reaction to continuing high economic slack, and to remain modest in 2005. However, the United Kingdom which will continue to record more rapid growth in unit labour costs, reflective of tighter labour market conditions, while unit labour costs are projected to fall in the Netherlands, where unemployment is rising. The growth of unit labour costs is projected to decelerate in Korea and Mexico.

2. Clocking in (and out): several facets of working time

A. Introduction

The amount of time that is devoted to paid work is at the nexus of several of the key economic and social challenges facing OECD governments.[1] One of these challenges is to raise employment rates in the context of population ageing. When OECD Labour Ministers met in Paris in September 2003 to discuss this challenge, they emphasised that increased working-time flexibility can make an important contribution to raising employment (OECD, 2003a). For example, expanding options to work part-time can make it easier for mothers with young children to combine working and parenting (Jaumotte, 2003; OECD, 2003b), while greater flexibility of working hours can help firms adjust to changing work loads. Indeed, the third policy guideline of the OECD Jobs Strategy (OECD, 1994) recommended that governments take measures with the aim of "increasing working-time flexibility".

The importance of working time for economic growth performance has received increased attention recently. The strong revival in the productivity performance of the United States since the mid-1990s has stimulated an outpouring of research on the determinants of growth across countries. This body of research has clearly established a remarkable fact: namely, that the sizeable US advantage in real GDP per capita, particularly as compared to the most advanced European economies, is largely due to differences in *total hours worked per capita*[2] (Blanchard, 2004; OECD, 2003c), rather than to higher output per hour worked. That the long-term decline in average annual working hours had stalled – and even reversed – since the mid-1980s in the United States and a few other OECD member countries, while it continued elsewhere in the OECD area – albeit often at a somewhat slower pace –, was already well known (see for example, OECD 1998a). However, it had not been appreciated that this divergence was becoming a major factor in determining relative growth performance. That realisation heightens the interest in understanding the factors influencing the evolution of per capita hours worked, including policies that could raise it.[3]

One complication for assessing policy choices is that longer and more flexible working hours may not be an unmixed blessing from the perspective of the well-being of workers and their families. The flip-side of the growth advantage associated with an increase in per capita hours of work is the "time crunch" faced by working parents and the possibility that a "long-hours" culture is undermining the work-life balance of workers exercising certain professions. Similarly, working hours flexibility may be detrimental to family life to the extent that it takes the form of non-standard work schedules dictated by the logic of just-in-time staffing for the "24/7" economy, rather than an increased choice for workers to select the work schedule that best reconciles their work with their family life (Presser, 2003).

The purpose of this special section is to improve the cross-country empirical basis for assessing a few of the facets of working time that have an important impact on total labour input, employment rates and work-life balance. It begins by adopting an economy-wide perspective which emphasises total hours worked as a factor input that results in output and income. Harmonised data on total hours worked per capita are presented and the cross-country evolution of labour utilisation since 1970 is documented. Attention then turns to decomposing total hours worked into its underlying components, including the respective contributions of average annual hours per worker and the employment rate, on the one hand, and between the hours of work supplied by different demographic groups (or full and part-time workers), on the other hand. The remainder of the section adopts the worker's perspective and analyses some of the key components of the work year and work week, as well as the incidence of non-standard work schedules. The section concludes with a discussion of working hours from a family perspective and some evidence concerning the impact of work schedules on family life.

B. The economy-wide perspective: the level and composition of total hours worked

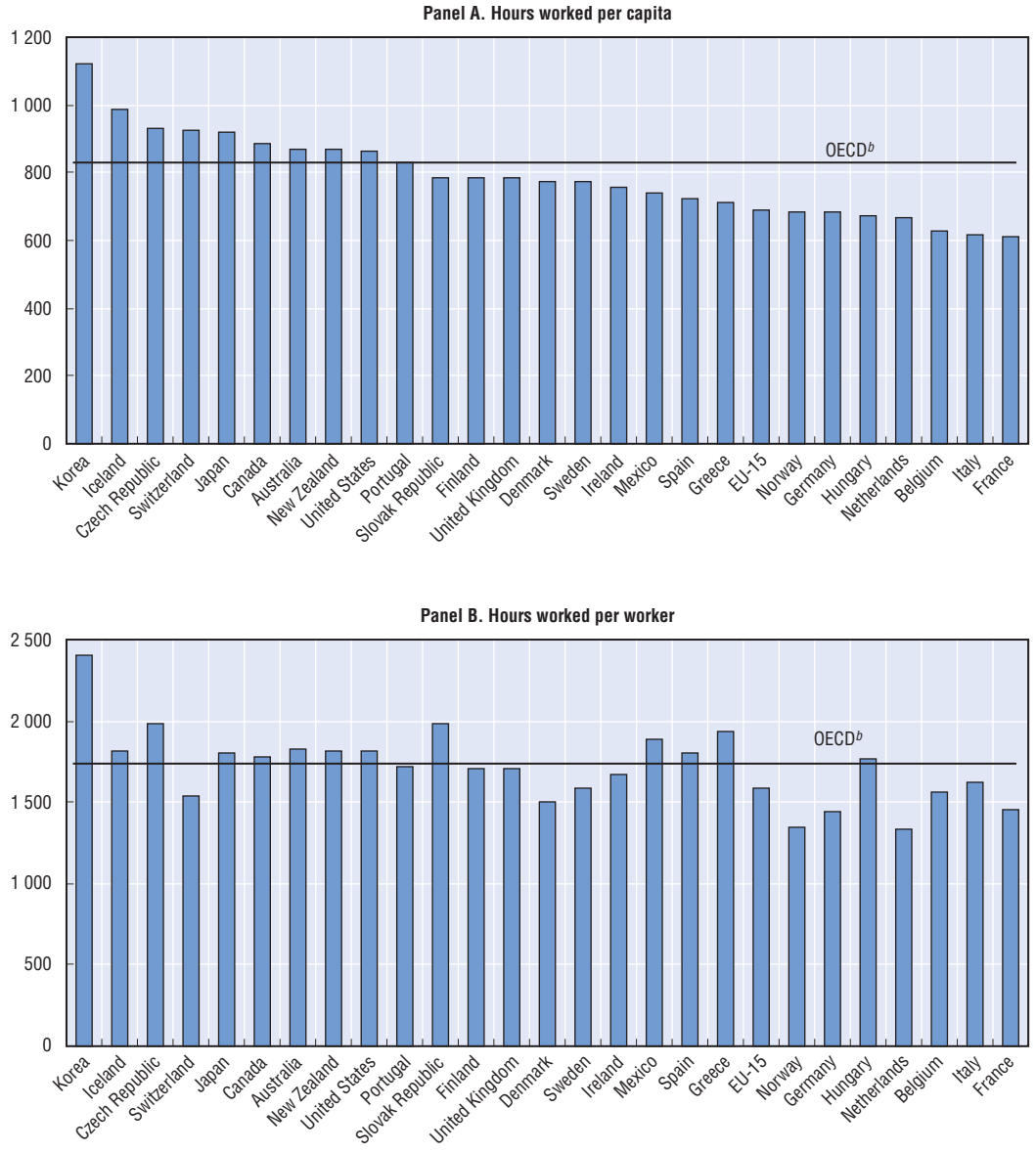
Living standards, so far as they are reflected in real GDP per capita, are influenced by developments in both hourly productivity and total hours worked per capita, sometimes referred to as total labour input or *labour utilisation*. The first purpose of this section is to document labour utilisation patterns, including how they differ between OECD member countries and how they have evolved over the course of the past few decades. The second purpose is to decompose the observed differences in labour utilisation into some of its underlying components, in order to examine its possible determinants.

This analysis makes use of estimates of per-capita hours based on consistent employment and hours per worker data, which have been compiled recently as a component of the OECD Productivity database (see Annex 1.A1). While some problems remain concerning the cross-country comparability of the hours worked estimates (see Annex 1.A1), the international comparisons of labour utilisation presented in this section are informative concerning within-country changes in hours worked over time and larger cross-country differences in hours worked. However, smaller level differences across countries should be treated with caution, since they may reflect in significant part the still imperfect harmonisation of annual working hours estimates.[4]

International comparisons of labour utilisation in 2002

In 2002, the number of hours worked per capita ranged from a low of 611 hours recorded in France to a high of 1 120 hours in Korea, a nearly 2:1 range (Chart 1.1, Panel A). Japan and Korea, Australia and New Zealand, Canada and the United States are among the

Chart 1.1. **Annual hours worked per capita and per worker, 2002**[a]



a) Countries ranked in descending order by hours per capita in both panels.
b) Population and employment-weighted OECD average of total hours per capita and hours per worker for the countries shown.

Source: OECD Annual Hours and Productivity databases.

countries near the top of the league table for hours per capita, while some large EU member States, including France, Germany and Italy, are near the bottom.

Hours per worker range from a low of 1 340 hours in the Netherlands to a high of 2 410 hours in Korea (Chart 1.1, Panel B), again, a nearly 2:1 range.[5] Country rankings change substantially between per-capita and per-worker measures of hours worked. For example, Greece, Mexico and Spain rank below the OECD average on a per-capita basis, but above the average on a per-worker basis, while the opposite is true for Switzerland. There is somewhat greater variation between EU-15 countries in hours per worker than in hours

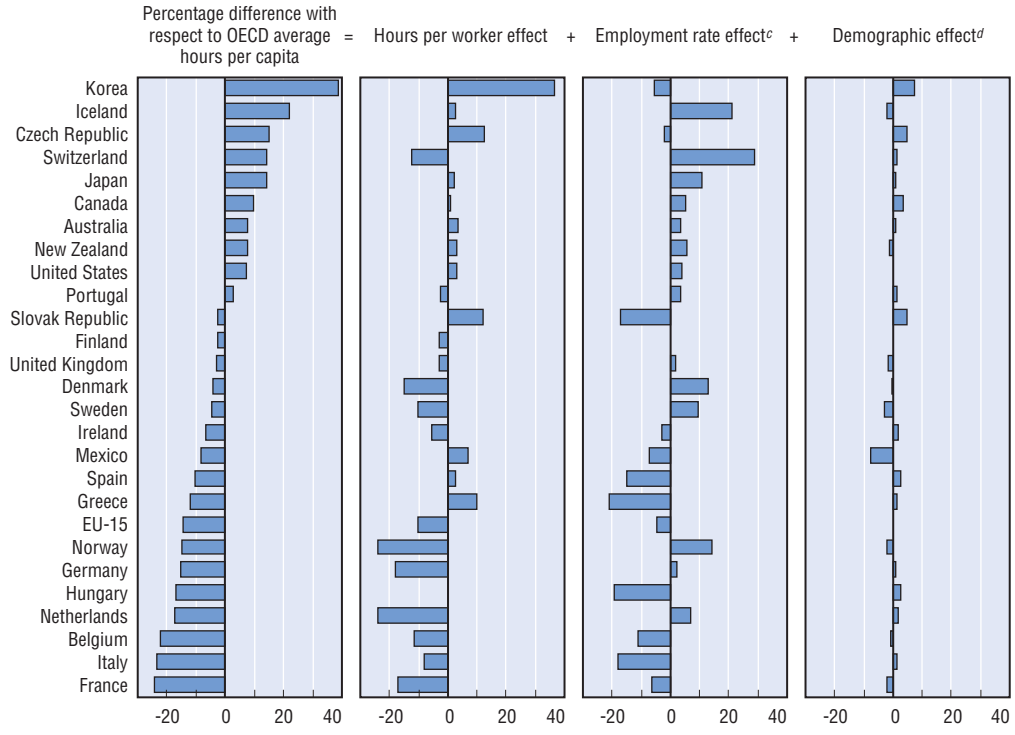
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per capita – Netherlands, Germany and France at the lower end, Finland, Portugal and United Kingdom in the middle, and Greece and Spain at the upper end of the spectrum.

Chart 1.2 decomposes country differences from the OECD average[6] in working hours per capita in 2002 into three components: the hours effect (*i.e.* the impact of deviations from the OECD-average hours per worker), the employment effect (*i.e.* the impact of deviations from the OECD-average employment-population ratio) and the demographic effect (*i.e.* the impact of deviations from the OECD-average for the share of working-age persons in the total population). It emerges that the hours per worker and employment effects explain almost all of the cross-country variation in hours per capita, while the age structure of the population has relatively little effect.[7] Moreover, OECD countries with below-average annual hours per worker also tend to have above-average employment rates, and *vice versa*. An obvious question that arises is whether this apparent trade-off reflects a demand-side constraint affecting the total hours of work available or, instead, differences in long-run labour supply behaviour across the extensive and intensive margins (see Box 1.1).

Chart 1.2. **Large differentials in hours per capita reflect differences in both hours per worker and the employment rate**

Percentage point difference in hours worked per capita with respect to the OECD average[a, b] 2002



a) OECD averages are calculated as the population-weighted average for the countries shown for hours per capita and the demographic effects, employment-weighted average for hours per worker and working age population (15-64 years)-weighted average for the employment rate effect.

b) Countries in descending order of the percentage difference from OECD average hours per capita.

c) Based on the ratio of employment to working-age population (15-64 years).

d) Based on the ratio of working-age population (15-64 years) to total population.

Source: Secretariat calculation based on the OECD Annual Hours and Productivity databases.

Box 1.1. **The two margins of labour supply**

The negative cross-country correlation between the employment-population ratio and average annual hours per worker probably does not reflect a demand-side trade-off, in which a more or less fixed volume of work must be shared across the adult population (the so-called, "lump of labour fallacy"). Rather, the response of labour supply to long-run improvements in productivity and living standards appears to differ along the intensive and extensive margins. As is shown in the chart below, higher real output per hour worked is associated with lower annual hours per worker (*i.e.* reduced labour supply along the intensive margin) but higher employment rates (*i.e.* increased labour supply along the extensive margin), although this latter association is neither very strong nor statistically significant. That annual hours worked should fall as productivity rises simply confirms that "leisure" (*i.e.* time not devoted to market work) is a normal good. There may be the appearance of a paradox in the finding that higher productivity appears to be associated with increased labour supply on the extensive margin (*i.e.* higher participation rates). This apparent paradox is not resolved here, but several possible resolutions can be mentioned. For example, this might reflect greater gains in labour productivity in paid employment than in other activities or a historical association between technological advance, on the one hand, and social developments encouraging higher employment rates for women, on the other, which is coincidental rather than causal. Whatever the explanation, over the OECD area as a whole, labour supply adjustment along the intensive margin appears to be stronger than that along the extensive margin, so that total labour utilisation falls as productivity rises.

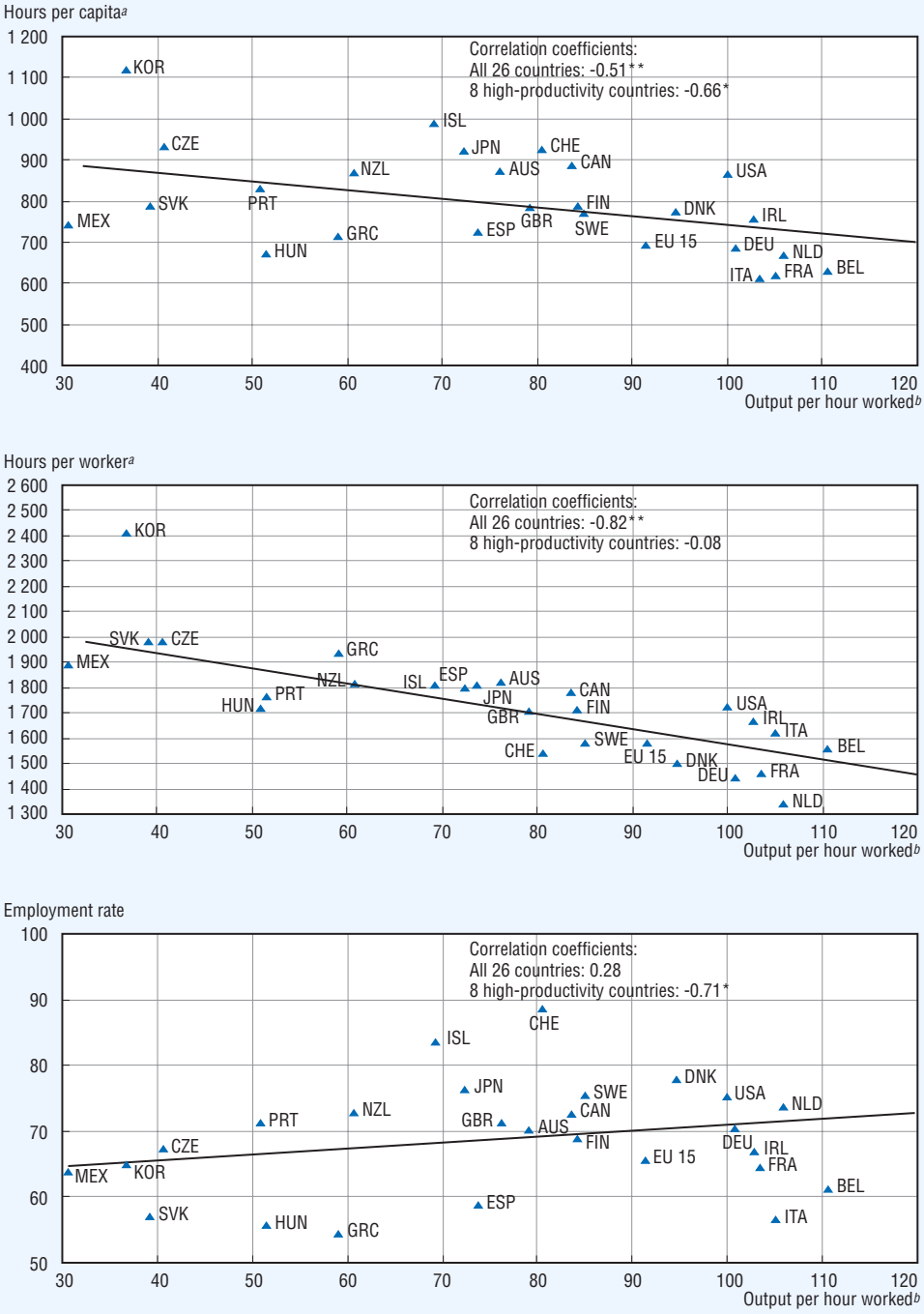
A strikingly different pattern emerges when attention is focussed on the eight countries with the highest productivity levels (*i.e.* the United States and the seven European Union countries in which productivity exceeds the EU-15 average). Whereas the correlation between productivity and hours per worker is –0.82 and highly statistically significant for all 26 countries included in the chart, it is essentially zero within the high productivity group. It is no surprise that the relatively small differences in measured productivity between these countries would have little explanatory power, since comparisons of productivity levels based on purchasing power parities are inherently somewhat imprecise. What can be concluded for these countries is that labour utilisation varies considerably among the OECD countries with the highest (and similar) productivity levels, indicating that many factors, in addition to productivity, also affect hours per worker. The same is true for employment rates and overall labour utilisation, which also differ markedly between these high-productivity countries. That labour utilisation differs substantially among countries at a similar level of economic development raises the questions of why there is so much variation and, in particular, whether this variation represents different societal preferences concerning the trade-off between higher incomes and more free time or differences in how well national labour markets facilitate participation in paid employment (Blanchard, 2004; Gordon, 2002).*

* See Bell and Freeman (2000), Prescott (2004), Schettkat (2003) and Schettkat and Freeman (2002) for different attempts to explain why Americans work more hours than do their counterparts in the richest European countries.

Box 1.1. **The two margins of labour supply** *(cont.)*

In high productivity countries, employment is higher, but hours per worker are lower

Output per hour worked and labour utilisation, 2002



**, * significant at 1% and 10% levels, respectively.

a) Data for Korea not used to fit OLS regression lines.

b) Index relative to the United States (100).

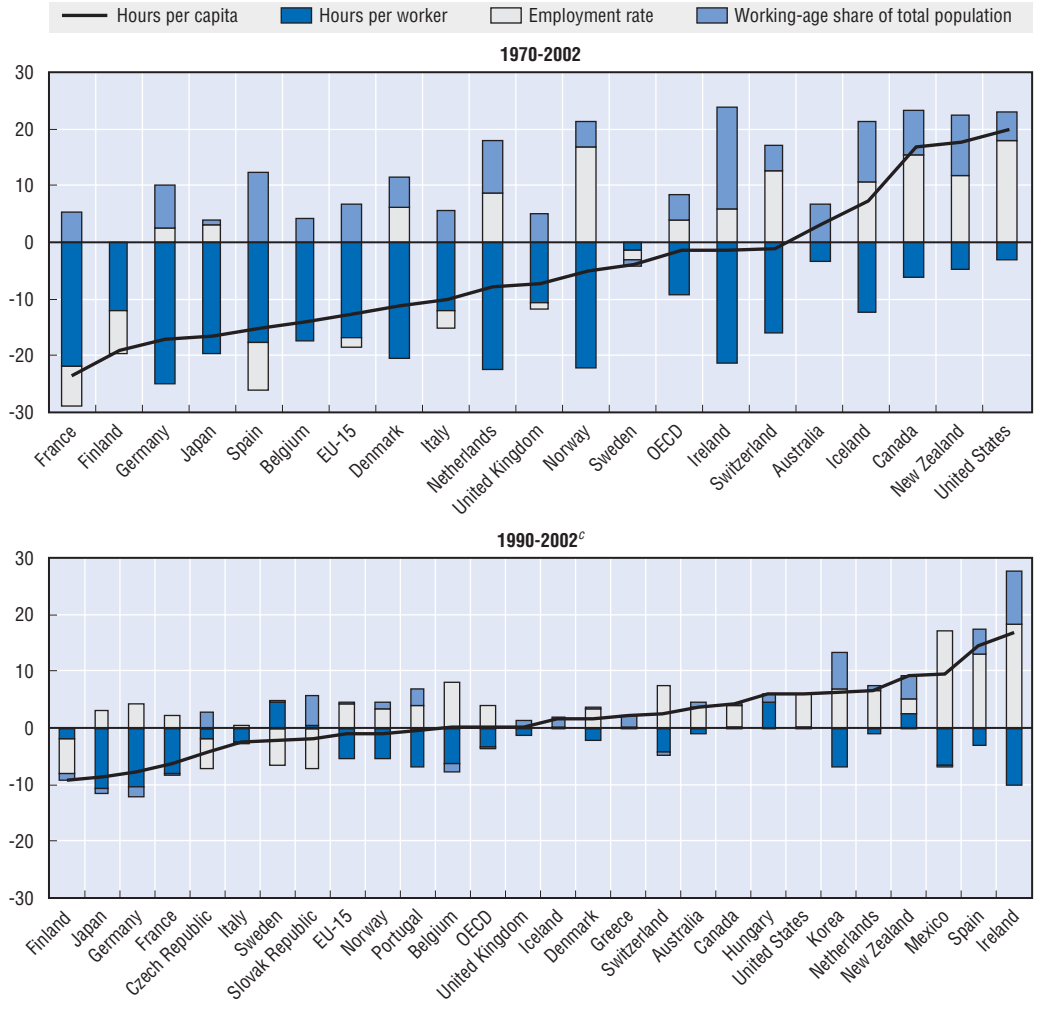
Source: Secretariat calculation based on the OECD Annual Hours and Productivity databases.

Trends in labour utilisation since 1970

On average across all OECD countries, hours per capita have declined by just 1% since 1970, but this small decrease masks the offsetting effects of a 10% drop in hours per worker, on the one hand, and increases of 4.4% in the employment rate and 4.4% in the share of population that is of working age, on the other (Chart 1.3). Over these three decades, hours per capita declined quite markedly in 15 out of 20 countries for which data are available. Most of the drop took place in the 1970s and 1980s, while, in the 1990s, a greater number of countries (*i.e.* 15 out of 26 countries) have recorded more or less pronounced rises in per capita hours.

Chart 1.3. **Decomposition of the trend growth in labour utilisation, 1970-2002: the contribution of hours per worker, the employment rate and the age structure of the population**[a, b]

Percentage change in each period



a) Growth decomposition for trended variables which were calculated using a Hodrick-Prescott filter with a smoothing parameter of 1 000.
b) Countries in ascending order by the trend growth in hours per capita during the period indicated.
c) Data for the Czech Republic, Hungary, Mexico and the Slovak Republic cover the period 1995 to 2002 only.

Source: OECD Annual Hours and Productivity databases.

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There are considerable cross-country differences in these trends. Over the entire period, hours per capita rose only in Australia, Canada, Iceland, New Zealand and the United States. Even in these five countries, hours per worker declined over this 32-year period, although all saw hours worked stabilise in the later part of the period. At the other end of the spectrum, the sizeable decline in hours per capita in France (–24%) is largely attributable to a marked decrease in hours per worker (–22%), which was reinforced by a modest fall in employment rates (–7%) and slightly offset by an increase in the share of working-age persons in the total population (5%). Interestingly, the pace of the decline in hours per capita slowed in France in the second half of the 1990s (–3.5%), due to rising employment rates partially compensating for the continuing fall in hours per worker associated with the phasing-in of the statutory 35-hour week.

The reversal of the long-term decline in hours per capita in the 1990s was widespread across OECD countries and regions, with only a few countries still recording significant falls. The drops in France, Germany and Japan are mostly attributable to a shortening of the length of the work year, but the drop in Finland to a fall in employment. Ireland and Spain recorded notable increases in labour utilisation (16.7% and 14.5%), mostly attributable to strong employment rate growth and a growth in the share of the working-age population in total population. The Netherlands and Korea also witnessed similar growth in labour utilisation, with strong employment rates compensating falling hours worked, albeit from very long hours in Korea, and favourable working-age population shares.

Demographic patterns in labour utilisation

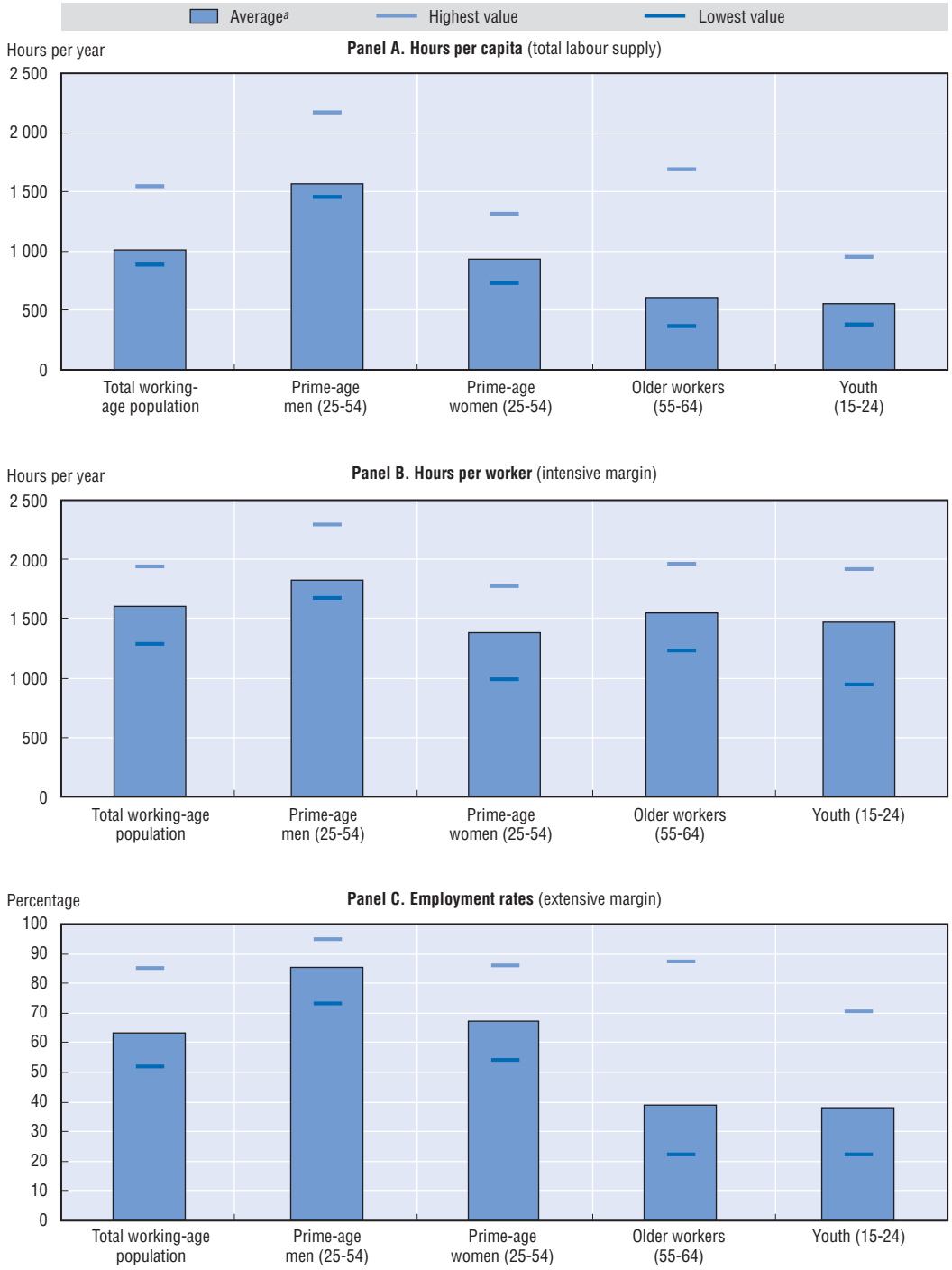
Under-represented groups in employment and their contribution to labour utilisation. Chart 1.4 presents OECD-average hours per capita, hours per worker and employment rates for different demographic groups, as well as minimum and maximum values. It is interesting to note that age and gender groups that are under-represented in employment (OECD, 2003b) also work fewer hours when employed, so that they are even more strongly under-represented in the labour market when representation is measured in terms of hours worked. Among the demographic groups considered, prime-age men record the highest number of hours per capita. The cross-country variance of employment rates is substantially higher for women, youths and older workers, than for prime-age men (who have relatively high employment rates in all OECD countries). However, this difference is less pronounced for comparisons based on labour utilisation, because total hours per capita tend to be relative low for under-represented groups even in countries where their employment rates approach those of prime-age men.[8]

Contributions of different demographic groups to trends in labour utilisation. What have been the contributions of changes in the work patterns of different demographic groups to changes over time in per capita hours? The shift-share analysis summarised in Chart 1.5 quantifies the contributions of within-group developments in hours per worker and employment rates[9] to explaining the overall changes that occurred in labour utilisation, while also isolating the effects of changes in the age and gender structure of the population.[10]

Chart 1.5 shows that increases in per capita hours – in the countries experiencing such an increase during 1990-2002 – were largely due rising per capita hours for women and prime-age persons.[11] Reduced per capita hours, where they occurred, were mainly due to declining per capita hours for men, youths and older workers.[12] In Denmark, greater per capita hours of older workers have contributed to the moderate rise in overall labour

Chart 1.4. **Groups under-represented in employment also work fewer hours when employed**

Extensive and intensive margins of labour supply, 2002



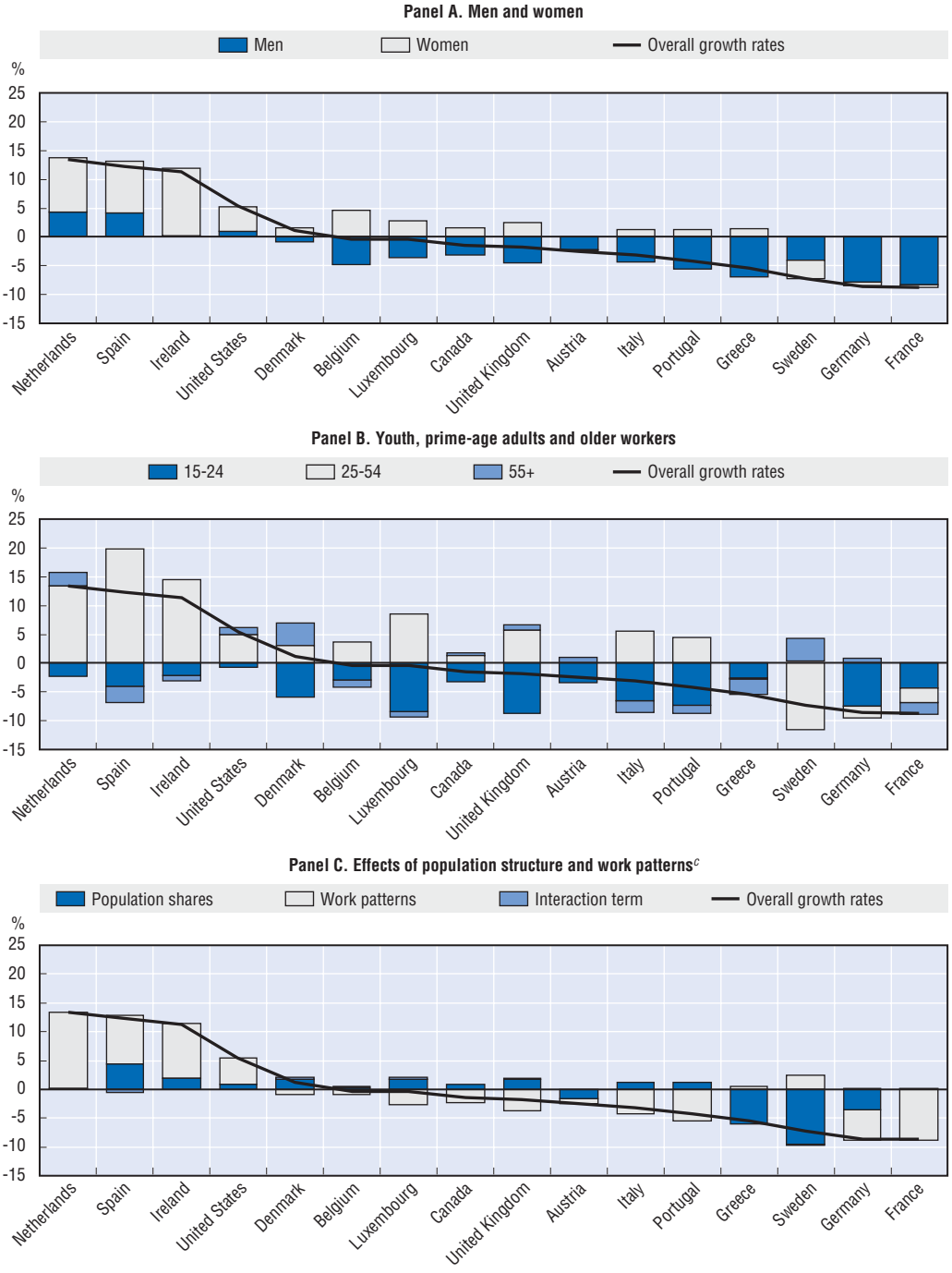
a) Averages calculated for Austria, Belgium, Canada, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, the Netherlands, Portugal, Spain, Sweden, the United Kingdom and the United States. Averages are calculated as population-weighted average for hours per capita and employment rates, and employment-weighted average for hours per worker.

Source: Secretariat estimates based on European Labour Force Survey results. Canadian and US values are from Heisz and LaRochelle-Côté (2003).

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Chart 1.5. **1990-2002 changes in annual hours reflect complex changes in work patterns**

Shift-share contributions of the indicated groups to the total change in annual hours worked per capita[a, b]



a) Average year-to-year change multiplied by 13 (length of period).
b) Countries ranked in descending order of changes in total hours per capita.
c) The population-shares effect corresponds to the impact of the changes in the gender and age composition of the population with unchanging work patterns (*i.e.* the between-group effect), while the work-patterns effect corresponds to the impact of changes in gender and age-specific employment rates and hours per worker (*i.e.* the within group effect).

Source: Secretariat estimates based on European Labour Force Survey results. Canadian and US values are from Heisz and LaRochelle-Côté (2003).

utilisation, while, in Sweden, it has cushioned somewhat what would have been a more severe decline in per capita hours worked. Panel C shows that, in many countries, changes in work patterns (*i.e.* within-group effects) are responsible for most of the observed changes in overall labour utilisation, although changes in the share of the working-age persons in the total population were important in a few countries.

The fact that increased hours spent in paid work by women has been the most dynamic component of labour utilisation in recent decades provides a reminder that these trends in hours worked have implications for work-life balance and the well-being of workers and their families, in addition to their implications for economic growth. The next section analyses working hours from the worker's perspective in order to shed some light on those concerns.

C. The worker's perspective: work schedules and working-time arrangements within families

The time devoted to paid employment – and how those hours are scheduled – also have direct implications for the well-being of workers and their families. Most fundamentally, work competes with other activities, including family and community life. Accordingly, this section considers working time from the perspective of workers. It begins by dissecting the average work year of dependent employees into components related to both average weekly hours worked and the number of weeks worked during the year. It also quantifies the impact on average annual hours worked of the growing number of (predominantly female) workers in part-time jobs in many counties. Attention then turns to the diversity of the work week in terms of the number of hours worked and at what times those hours of work are performed. Finally, working time is examined from the perspective of families and work-life balance.

The work year

The average work year. What does a typical work year look like? In particular, how does it result from factors affecting weekly hours worked and the number of weeks actually worked during a year? From a worker's perspective, average annual hours actually[13] worked per person in employment is a comprehensive measure, which accounts for various factors likely to cause the work week to vary over the year – such as paid leave and public holidays and paid and unpaid overtime. Such factors are not captured, by definition, by standard measures of work weeks, such as usual weekly hours worked and, even less so, by statutory working-time concepts, such as normal, legal, or contractual work hours.[14] Therefore, international comparisons of working hours are normally undertaken on the length of the work year rather than of the work week. Comparison of standard work weeks is still useful to explore other dimensions of working time, such as working-time arrangements.

Table 1.5 decomposes annual working time in 2002 into: *i)* the average hours worked per week (Column b); and *ii)* the number of weeks actually worked (Column f). Data are for European countries only and are based on labour force survey evidence where standard hours refer to usual weekly hours of work which, in the absence of an internationally agreed definition, has been defined as the hours worked on the main job during a typical week.[15] The analysis is limited to hours worked by dependent or paid employees because data on the work patterns of the self-employed are less available and less reliable. Furthermore, much of the regulatory structure relating to working time (*e.g.* regulations concerning overtime and paid holidays) does not apply to the self-employed.

Table 1.5. **The anatomy of a typical work year for dependent employees, 2002**

Decomposition of average annual hours actually worked by full-year equivalent workers into its components

	Annual hours of work[a]	Average weekly hours on all jobs	Usual weekly hours of work on the main job	Extra hours on main job = Overtime + variable hours (*e.g.* flexible hours) + others	Hours on additional jobs	Annual weeks worked	Holidays and vacation weeks	Full-week absences due to non holiday reasons	Part-week absences due to non holiday reasons	Absences due to sickness and maternity[b]
	(a) = **(b)*(f)**	**(b)** = (c) + (d) + (e)	(c)	(d)	(e)	**(f)** = 52 – [(g) + (h) + (i) + (j)]	(g)	(h)	(i)	(j)
	Hours	Weekly hours worked				Weeks worked/not worked				
Austria	1 497	38.4	36.6	1.4	0.4	39.0	7.2	2.9	0.4	2.6
Belgium	1 451	36.3	35.7	0.3	0.3	40.0	7.1	2.4	0.5	2.1
Czech Republic	1 692	41.3	40.4	0.7	0.3	41.0	6.2	2.3	0.3	2.2
Denmark	1 410	36.3	34.8	0.8	0.7	38.9	7.4	2.8	1.1	1.8
Spain	1 639	38.8	38.6	0.1	0.2	42.2	7.0	1.3	0.4	1.2
Finland	1 491	38.8	36.9	1.4	0.4	38.5	7.0	2.8	1.6	2.1
France	1 467	36.2	35.2	0.8	0.3	40.5	7.0	2.2	0.5	1.9
Germany	1 480	36.5	35.2	1.1	0.2	40.6	7.8	1.9	0.3	1.4
Greece	1 816	40.7	40.2	0.1	0.4	44.6	6.7	0.2	0.2	0.2
Hungary	1 798	40.9	40.3	0.4	0.2	43.9	6.3	0.9	0.1	0.8
Iceland	1 714	43.2	39.9	1.7	1.7	39.6	6.1	2.8	1.6	1.9
Ireland	1 585	36.3	35.8	0.2	0.3	43.7	5.7	1.4	0.2	1.0
Italy	1 533	37.4	37.2	0.1	0.1	41.0	7.9	1.8	0.3	1.0
Luxembourg	1 582	37.9	37.3	0.5	0.1	41.7	7.5	1.4	0.2	1.2
Netherlands	1 223	31.8	30.1	1.3	0.4	38.4	7.5	2.9	1.0	2.2
Norway	1 339	37.3	34.8	1.8	0.7	36.0	6.5	4.8	1.1	3.6
Poland	1 817	41.8	40.2	0.3	1.3	43.4	6.2	1.2	0.3	0.9
Portugal	1 688	40.4	39.3	0.3	0.8	41.8	7.3	1.5	0.2	1.2
Slovak Republic	1 761	41.8	41.4	0.3	0.1	42.2	6.9	1.4	0.1	1.4
Sweden	1 349	38.1	36.0	1.4	0.7	35.4	6.8	4.2	1.8	3.8
Switzerland	1 586	37.5	34.3	2.7	0.5	42.3	6.0	1.7	0.9	1.1
United Kingdom	1 546	38.2	37.2	0.7	0.4	40.5	6.5	1.8	1.6	1.6

a) See Annex 1.A1 for a succinct explanation of the method used by the OECD Secretariat to estimate annual actual hours worked per person in employment for Belgium, Denmark, Greece, Ireland, Italy, the Netherlands and Portugal. The same method is applied to estimate annual working hours per employee for all European countries shown in this table.

b) These weeks are already included in columns h and i, but are included a second time in order to correct for an assumed 50% under-reporting (see Annex 1.A1).

Source: Secretariat estimates based on European Labour Force Surveys results and EIRO (2002).

Table 1.5 displays some large variations of usual weekly hours worked on the main job in 2002 (Column c), ranging from 30 hours in the Netherlands to 41 hours in Slovak Republic. These large variations reflect differences in both the share of workers in part-time jobs and the average lengths of full and part-time work schedules (see below). The cross-country distribution of average weekly hours actually worked looks very similar (Column b) since overtime hours (above those already reported in usual weekly hours) and hours on second jobs are relatively small parts of the total work week. However, overtime hours (paid and unpaid) captured by labour force surveys exceed 2.5 hours per week in Switzerland, where usual weekly hours of work are low. Extra hours due to overtime or second jobs also exceed two hours weekly in Iceland, Norway and Sweden.

Column f reports the number of weeks actually worked in 2002, which varies from 35 in Sweden to more than 44 in Greece, where the number of weeks of absences for non-holiday reasons are much lower than in other countries. Not surprisingly, holidays and paid leave represent the core reasons for not working and the differences in paid leave make up for most of the differences in annual working time. Absences due to sickness and maternity represent the second most important reason for not working; such absences are particularly marked in Norway and Sweden (of which maternity and parental leave represent one-third and the rest is attributable to sickness).

Among the European countries considered in Table 1.5, cross-country differences in annual actual hours worked per employee are largely explained by cross-country variation in average weekly hours, and the number of days of paid leave and public holidays per year. Norway and Sweden are exceptions, since sickness and maternity absences significantly shorten the length of the work year in those two countries.

The impact of part-time employment. How has the diffusion of part-time work affected the average work year? Table 1.6, Panel A reports the results of a shift-share analysis of the contribution of changes in the full-time and part-time work years and in their respective employment shares to the change in the average work year between 1990 and 2002 (see OECD, 2004, for a gender-disaggregated version of this analysis). The unweighted average for the countries shown indicates a 2% reduction in employee annual working hours between 1990 and 2002, which can be attributed largely to a rise in the share of employees in part-time jobs. However, a drop in average working hours for full-time employees also contributed to the decline.

The average pattern masks large cross-country differences. In France, employees recorded a significant fall in working hours, which is largely due to a significant reduction in hours worked by full-time employees (–4.2%), although the increased incidence of part-time employment among women was also a significant factor (–3.2%). Most of the drop occurred in the late 90s following the introduction of the 35-hour week. In Portugal, a similar decline in annual working hours (4.6%) is largely explained by a significant reduction in hours worked by full-timers (probably resulting from a shift to a five-day work week). In most other countries, declines in annual hours worked are largely attributable to rising shares in part-time jobs, in particular in the Netherlands (–8.9%) and Ireland (–5.5%). However, declines in hours worked by female workers have been driven both by an increasing share in part-time jobs and a reduction in working hours in full-time jobs, while reduced working hours of male workers have generally been due to a reduction in hours worked by full-timers.

Table 1.6. **Contribution of part-time employment to recent changes in average annual or weekly hours of employees,[a] 1990-2002**

Average percentage change from year-to-year of annual or weekly hours of employees multiplied by the length of the period

	Overall change (%)	Percentage change attributable to:		
		Change in hours of full-timers	Change in hours of part-timers	Change in share of part-timers
	Panel A. Average actual hours worked per year per employee[b]			
Austria[c]	–1.6	1.8	–0.3	–3.0
Belgium	–7.8	–3.4	0.0	–4.0
Denmark	2.1	0.3	–0.1	1.8
Finland[c]	–2.6	–0.1	–0.9	–0.9
France	–6.1	–4.2	0.4	–2.3
Germany	–6.0	–1.3	–1.1	–3.8
Greece	3.0	3.2	0.1	–0.3
Hungary[c]	1.2	1.1	0.1	–0.2
Ireland	–7.6	–2.1	0.1	–5.5
Italy	–3.0	–1.3	0.2	–2.0
Luxembourg	–4.8	–1.7	–0.6	–2.3
Netherlands	–8.9	0.3	–0.1	–8.9
Norway[c]	1.0	–2.1	0.2	2.9
Portugal	–4.6	–4.0	0.2	–0.8
Slovak Republic[c]	4.5	4.4	–0.2	0.3
Spain	–2.7	–0.5	0.1	–2.2
Sweden[c]	–0.6	–3.2	–0.3	2.8
Switzerland[c]	–3.2	0.2	0.4	–3.9
United Kingdom	–1.5	–0.1	0.7	–1.8
Unweighted average of above countries	–2.1	–0.5	–0.1	–1.5
	Panel B. Usual weekly hours worked per employee			
Australia[d]	–6.0	0.7	0.4	–7.2
Korea	–5.2	–2.9	–0.2	–2.2
Mexico[e]	–0.7	–2.4	0.0	1.8
New Zealand[f]	0.3	1.7	0.5	–1.9
Poland[g]	–1.4	–0.8	0.0	–0.5
Switzerland[h]	–4.0	–0.9	0.0	–3.0
United States	0.2	–0.3	0.1	0.5

a) The following formula is used to decompose the total change in hours:
$H - h = (pr)(HP - hp) + (1 - pr)(HF - hf) - (PR - pr)(hf - hp) + (PR - pr)[(HP - hp) - (HF - hf)]$;
where $H = (1 - PR)(HF) + (PR)(HP)$ and $h = (1 - pr)(hf) + (pr)(hp)$
h and H are the overall average hours of work in the first and second years, respectively, hp and hf are the average hours of part-time and full-time workers, in the first year, and pr is the proportion of part-time workers, in the first year, etc. The last term, not shown in the table, is the interaction term, which is generally very small. For annual working hours (Panel A), full-time and part-time work are according to national definitions. And for usual weekly hours (Panel B), full-time and part-time work are demarcated according to a common 30-hour threshold based definition.

b) See Table 1.5 footnote *a)* for the method of calculation of annual working hours per employee for all European countries shown in Panel A.

c) Data for these countries cover the period 1995 to 2002.

d) Covers period 1993-2002.

e) Covers period 1995-2002.

f) Covers period 1991-2002.

g) Covers period 1998-2002.

h) Covers period 1996-2002.

Source: Secretariat estimates based on the European Labour Force Survey (Panel A) and the OECD Usual Weekly Hours of Work database (Panel B).

Table 1.6, Panel B presents an analogous shift-share analysis for a number of other OECD countries, for which only usual weekly hours worked are available for full-time and part-time employees. In Australia and Switzerland, employee hours have recorded significant falls, largely due to a significant rise in the shares of part-time employees, which have reduced, in particular, male employees' average working hours. In Korea, employee hours declined substantially, albeit from high weekly work schedules, due both to an increase in the share of part-time employees and a drop in weekly hours worked by full-timers. On the other hand, in New Zealand and United States, employee weekly hours worked remained unchanged over the past decade.

In sum, this sub-section has highlighted the following trends:

- Large cross-country variations in annual actual hours worked per employee are mainly explained by differences in the levels of usual weekly hours worked, differences in the number of days of paid leave and public holidays, and in a few countries by the number of weeks of absences due to sickness.
- Declines in hours worked per worker during the past decade are explained by combined reductions in hours worked by full-time employees, both males and females, and a rise in the share of employees working in part-time jobs, mainly female workers.

The work week

Usual weekly hours. Is the distribution of weekly hours worked evolving in ways that suggest that the standard work week is continuing to shrink or that there is an increasing diversification or polarisation of work patterns? In order to answer these questions, some descriptive statistics based on the distribution of usual working time, as reported in labour force surveys, are examined. This is followed by some data regarding the number of workers working unsociable hours (*e.g.* evening and night work, weekend work and shift-work).

Table 1.7 reports the weekly work schedule that is the most frequent among male employees in each country shown, the share of employees reporting those hours and changes to modal hours over the past 15 years (see OECD, 2004, for female workers). The 40-hour work week (and 39-hour work week in France) was the norm in many countries until recently. But this has changed in some countries. Most notably, in France, the 35-hour work week is now the norm for 42% of employees, while the previous norm of 39-hour work week has become the secondary mode for 14% of employees, with greater variability in work schedules for the remainder of employees. Similar legislated reduction in modal hours took place in Japan, between 1988 and 1993, where the most frequent work schedules are now in the 35-42 hour band instead of 43-48 hour band, as was the case 15 years ago. Where the 40-hour work week remains the norm, there has been no uniform trend in the share of employees working modal hours. In some countries (*i.e.* Australia, Germany, Netherlands and New Zealand) the share has fallen, suggesting an increased diversification of work schedules, whereas in others (*i.e.* Czech Republic, Portugal), it has increased.

Chart 1.6 presents standard deviations of usual weekly hours of work of employees on their main job in 22 European countries. The diversity of weekly work hours varies across these countries, with standard deviations in 2002 ranging from a low 5 hours in Slovak Republic to a high 15 hours in Iceland. Dispersion is greater for women than for men in two-thirds of these countries, with the average female standard deviation being 10.5 hours as compared to 8.9 hours for men. The variability of hours worked increased or

Table 1.7. **Usual weekly hours of work most frequently reported: male employees in their main job, 1985-2002**

Hours and percentage working those hours[a]

		1985		1990		1995		2000		2002	
		Peak	%	Peak	%	Peak	%	Peak	%	Peak	%
Australia[b, c, d, e]	Major peak	40	*22*	40	*20*	40	*18*	40	*18*	40	*18*
	Minor peak	. .	. .	. .	. .	. .	. .	35-38	*16*	35-38	*17*
Austria	Major peak	. .	. .	. .	. .	40	*51*	40	*51*	40	*49*
	Minor peak	. .	. .	. .	. .	38	*25*	38	*23*	38	*25*
Belgium	Major peak	38	*46*	38	*55*	38	*52*	38	*40*	38	*41*
	Minor peak	40	*27*	40	*21*	40	*24*	40	*26*	40	*24*
Canada	Major peak	40	*55*	40	*54*	40	*50*	40	*53*	40	*51*
	Minor peak	35-38	*16*	35-38	*14*	35-38	*14*	35-38	*17*	35-38	*18*
Czech Republic[f]	Major peak	. .	. .	. .	. .	40	*30*	43	*35*	40	*61*
	Minor peak	. .	. .	. .	. .	43	*30*	40	*33*	38	*14*
Denmark	Major peak	40	*77*	38	*56*	37	*63*	37	*51*	37	*53*
	Minor peak	50	*3*	37	*12*	40	*6*	45	*8*	45	*7*
Finland	Major peak	. .	. .	. .	. .	40	*39*	40	*43*	40	*44*
	Minor peak	. .	. .	. .	. .	38	*34*	38	*26*	38	*24*
France	Major peak	39	*43*	39	*47*	39	*49*	39	*36*	35	*42*
	Minor peak	40	*13*	40	*12*	40	*9*	35	*19*	39	*14*
Germany	Major peak	40	*72*	38	*34*	40	*31*	40	*38*	40	*37*
	Minor peak	38	*12*	40	*26*	38	*30*	38	*19*	38	*19*
Greece	Major peak	40	*49*	40	*51*	40	*52*	40	*54*	40	*55*
	Minor peak	38	*10*	38	*13*	38	*12*	48	*13*	48	*14*
Hungary[g]	Major peak	. .	. .	. .	. .	40	*71*	40	*74*	40	*80*
	Minor peak	. .	. .	. .	. .	50	*6*	42	*6*	50	*4*
Iceland	Major peak	. .	. .	. .	. .	40	*21*	40	*17*	40	*20*
	Minor peak	. .	. .	. .	. .	50	*19*	50	*16*	50	*16*
Ireland	Major peak	40	*64*	40	*53*	40	*31*	39	*34*	39	*39*
	Minor peak	35	*6*	35	*6*	39	*23*	40	*30*	40	*27*
Italy	Major peak	40	*58*	40	*53*	40	*51*	40	*49*	40	*50*
	Minor peak	36	*15*	36	*19*	36	*18*	36	*17*	36	*18*
Japan[b]	Major peak	43-48	*28*	49-59	*25*	35-42	*26*	35-42	*27*	35-42	*27*
	Minor peak	49-59	*25*	60+	*24*	. .	. .	43-48	*23*	49-59	*20*
Luxembourg	Major peak	40	*93*	40	*91*	40	*87*	40	*87*	40	*88*
	Minor peak	50	*1*	50	*1*	50	*2*	50	*2*	37	*2*
Mexico	Major peak	. .	. .	. .	. .	45-49	*33*	45-49	*40*	45-49	*44*
	Minor peak	. .	. .	. .	. .	60+	*18*	60+	*15*	40	*14*
Netherlands	Major peak	40	*59*	38	*39*	40	*53*	40	*41*	40	*40*
	Minor peak	38	*14*	40	*32*	38	*23*	38	*17*	38	*17*
New Zealand[h]	Major peak	. .	. .	40	*46*	40	*41*	40	*37*	40	*37*
	Minor peak	. .	. .	45-49	*12*	45-49	*14*	45-49	*15*	45-49	*14*
Norway	Major peak	. .	. .	. .	. .	37	*63*	38	*69*	38	*69*
	Minor peak	. .	. .	. .	. .	40	*5*	40	*6*	40	*6*
Poland[e]	Major peak	. .	. .	. .	. .	. .	. .	40	*51*	40	*51*
	Minor peak	. .	. .	. .	. .	. .	. .	42	*18*	42	*14*
Portugal[i]	Major peak	45	*48*	45	*43*	40	*31*	40	*64*	40	*64*
	Minor peak	40	*21*	40	*26*	45	*14*	35	*11*	35	*11*
Slovak Republic	Major peak	. .	. .	. .	. .	. .	. .	42	*50*	40	*45*
	Minor peak	. .	. .	. .	. .	. .	. .	40	*34*	42	*39*
Spain[j]	Major peak	40	*71*	40	*76*	40	*71*	40	*70*	40	*70*
	Minor peak	42	*5*	38	*3*	38	*5*	38	*6*	38	*5*
Sweden	Major peak	. .	. .	. .	. .	40	*71*	40	*69*	40	*69*
	Minor peak	. .	. .	. .	. .	38	*5*	38	*5*	38	*6*

Table 1.7. **Usual weekly hours of work most frequently reported: male employees in their main job, 1985-2002** *(cont.)*

Hours and percentage working those hours[a]

		1985		1990		1995		2000		2002	
		Peak	%	Peak	%	Peak	%	Peak	%	Peak	%
Switzerland[g]	Major peak	. .	. .	. .	. .	42	*39*	42	*37*	42	*39*
	Minor peak	. .	. .	. .	. .	40	*17*	40	*18*	40	*19*
United Kingdom	Major peak	40	*15*	40	*12*	40	*12*	40	*13*	40	*14*
	Minor peak	39	*8*	39	*7*	38	*7*	38	*8*	38	*8*
United States	Major peak	40	*62*	40	*60*	40	*60*	40	*62*	40	*63*
	Minor peak	. .	. .	50-54	*9*	50-54	*10*	50-54	*10*	50-54	*9*

. . Data not available.

a) For example, for Australia in 1985, the data show that the most commonly reported level of weekly hours was 40 and that 22% of male employees reported working that number of hours.

b) Data refer to actual hours for all jobs.

c) 1976 instead of 1975.

d) 1994 instead of 1995.

e) 2001 instead of 2000.

f) 1997 instead of 1995.

g) 1996 instead of 1995.

h) 1991 instead of 1990.

i) 1986 instead of 1985.

j) 1987 instead of 1985.

Source: Data supplied by Eurostat. Data for non-European countries are from the OECD Usual Weekly Hours of Work database.

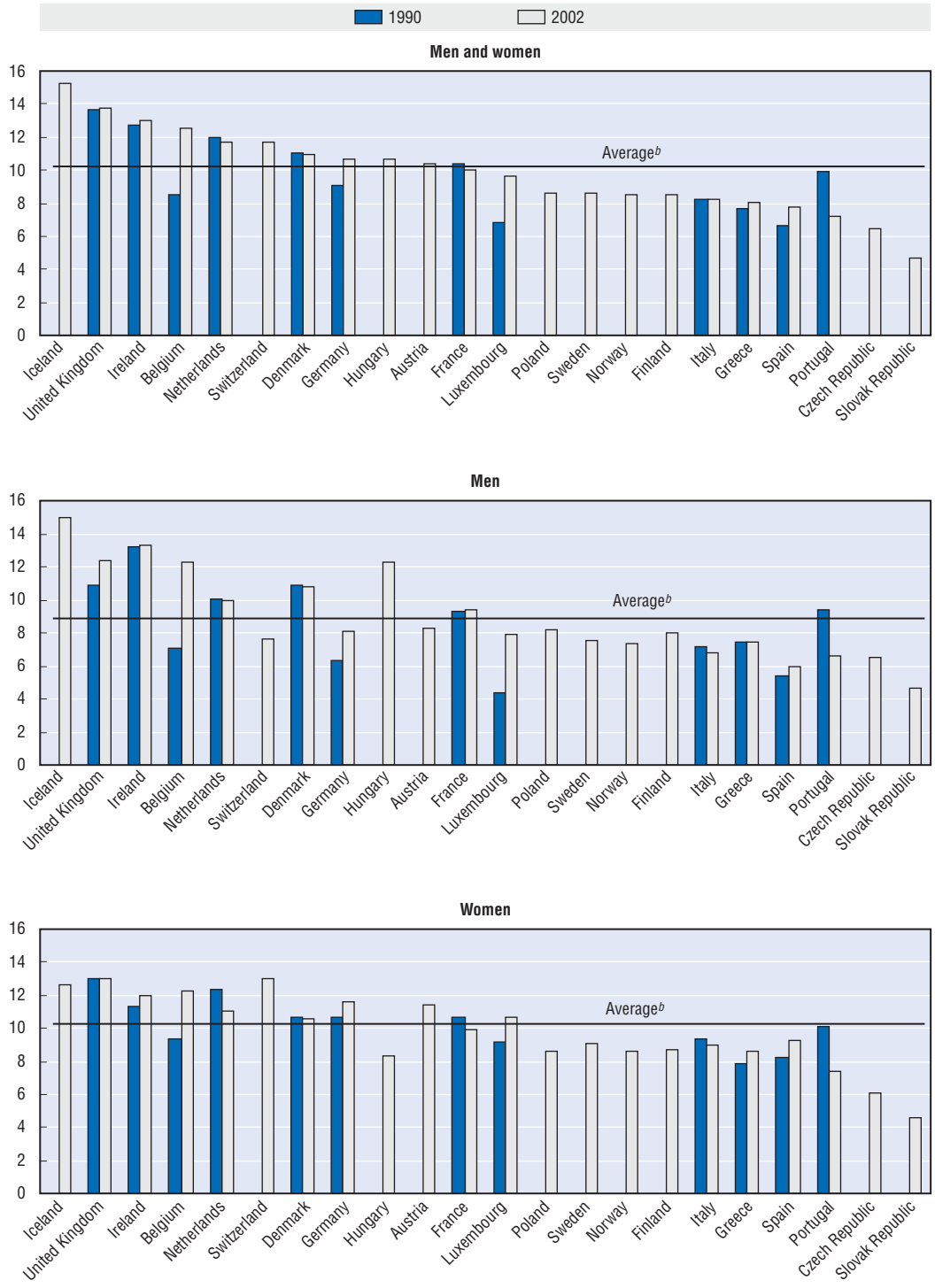
was stable in most countries between 1990 and 2002 for which data are available, except in Portugal where the variability of work hours decreased (largely due to a reduced incidence of long hours, as is discussed below). The increase in dispersion affected men more strongly than women and is suggestive of an overall trend toward greater diversification of weekly work schedules. Higher dispersion of usual weekly hours is also associated with higher employment-population ratios (cross-country correlation coefficient of 0.44 in 2002), which suggests that increasing the diversity in the work schedules available may encourage higher labour force participation.[16]

Lastly, the share of male employees and female employees working short hours (less than 20 per week) or long hours (more than 45 hours per week) are plotted in Chart 1.7. On average, around 20% of male workers work long hours in the countries covered and the situation is quite stable since 1990. Meanwhile, in over two-thirds of the countries, significant shares of female employees work short work weeks (20% or more). Short-hours working is on the rise in quite a few countries, especially in Austria, Germany, Ireland, Italy and the Netherlands.

Non-standard and variable work hours. Non-standard work hours refer to work schedules that involve being at work at times outside of the standard daily work schedule (*e.g.* evening, night and shift work) or week-end work. These working-time arrangements offer increased flexibility to employers to match staffing with production requirements. When freely chosen, they also offer workers greater flexibility to reconcile time spent at work with other activities. However, "unsocial" work hours can also be a potential source of conflict between job requirements and family life (Presser, 2003). Table 1.8 reports the share of employees working five different (but not mutually exclusive) types of non-standard hours on a regular basis[17] in 2002: evening and night work,[18] Saturday and Sunday work, and shift-work. On

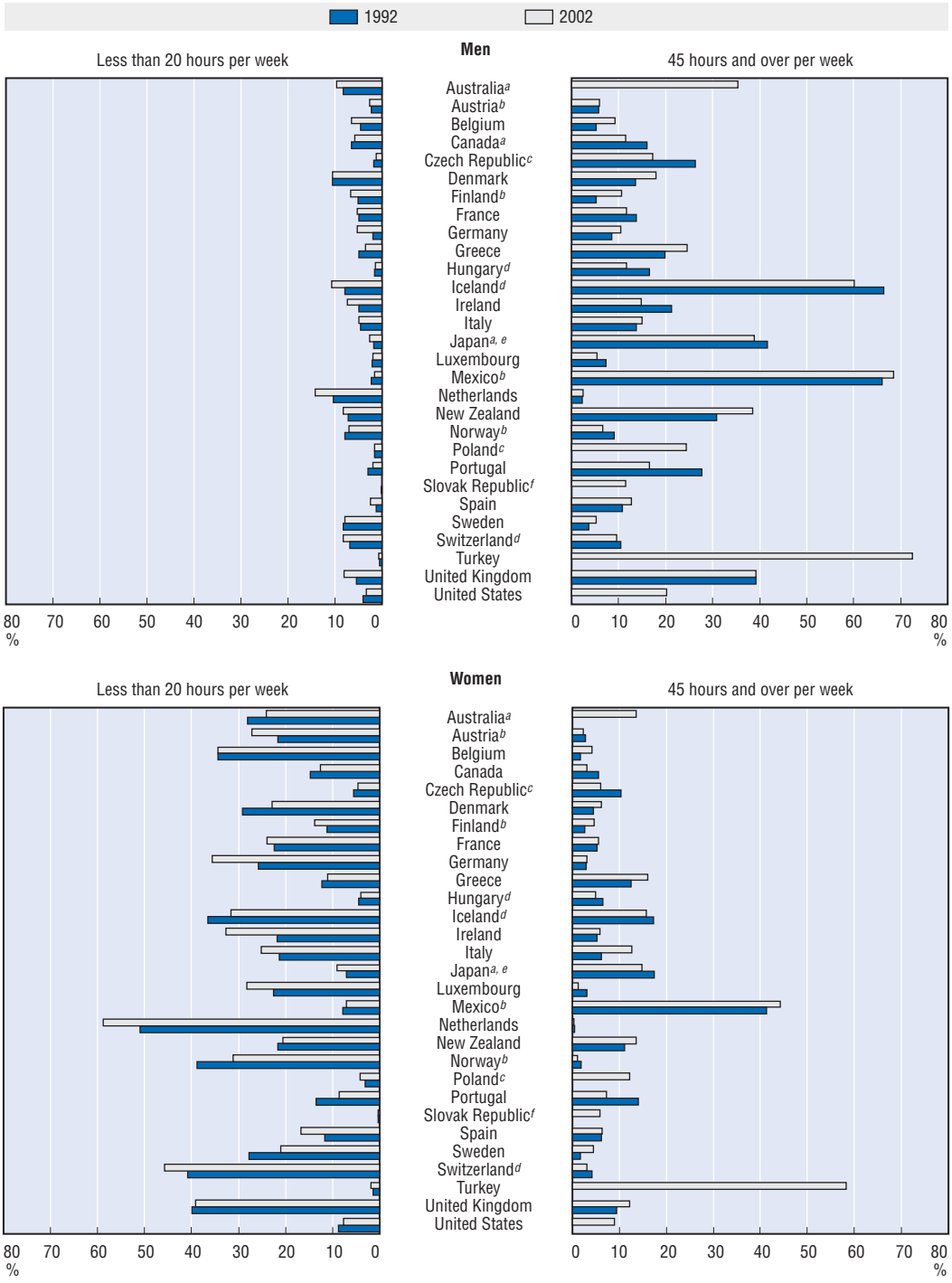
Chart 1.6. **Usual weekly hours vary considerably for both men and women**

Standard deviation of usual weekly hours of employees on their main job,[a] 1990 and 2002



a) Countries in descending order by standard deviation for all employees in 2002, in all panels.
b) Employment-weighted average of standard deviations in 2002 for the countries shown.
Source: Secretariat estimates based on European Labour Force Survey results.

Chart 1.7. **Proportion of employees working short and long usual hours, 1992 and 2002**



a) Data are actual hours worked.
b) Data refer to 1995 instead of 1992.
c) Data refer to 1997 instead of 1992.
d) Data refer to 1996 instead of 1992.
e) Data refer to < 15 hours and 49+ hours.
f) Data refer to 1994 instead of 1992.

Source: OECD Usual Weekly Hours of Work database.

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Table 1.8. **Incidence of evening, weekend and shift work, 2002**

	Evening work	Night work	Saturday work	Sunday work	Shift work
Austria	13.3	9.1	19.9	10.4	18.0
Belgium	10.2	3.9	12.0	6.2	9.6
Czech Republic	7.5	4.1	5.6	4.4	26.4
Denmark	20.9	6.9	19.7	14.7	5.0
Finland	22.4	9.4	19.4	13.8	24.4
France	10.4	5.2	20.9	7.5	9.6
Germany[a]	16.4	6.9	18.8	9.4	11.8
Greece	14.4	4.3	25.1	7.5	18.6
Hungary	11.9	7.4	12.0	12.0	22.1
Iceland	15.7	5.4	17.7	13.6	24.4
Ireland	8.4	5.7	17.7	9.6	16.3
Italy	11.4	5.7	29.5	6.8	21.8
Luxembourg	7.7	3.4	14.7	6.5	10.9
Netherlands[b]	15.8	2.2	23.4	13.6	8.5
Norway	14.0	4.7	18.3	10.5	23.5
Poland	10.0	5.8	13.3	6.2	36.8
Portugal	0.0	8.5	18.3	8.7	17.8
Slovak Republic	16.1	12.6	19.8	15.9	31.2
Spain[c]	0.0	4.4	28.8	11.9	7.4
Sweden	21.4	7.8	18.0	16.5	24.1
Switzerland	10.7	1.9	17.8	7.6	13.4
United Kingdom	27.4	11.8	20.7	11.6	18.0
Unweighted average[d]	14.3	6.2	18.7	10.2	18.2

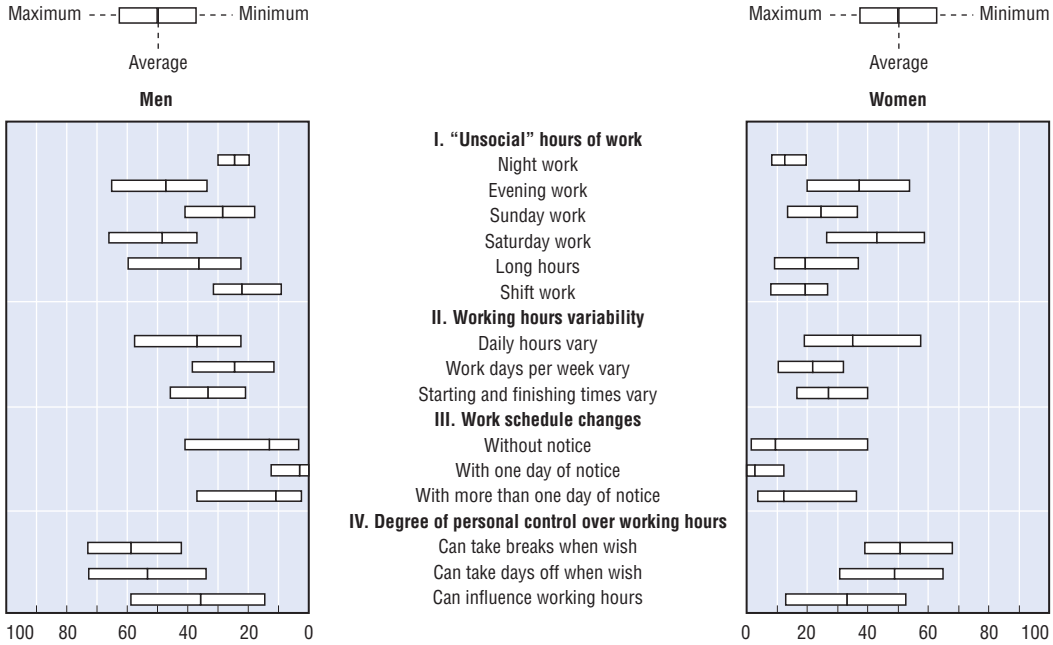
a) Data are for 1997.
b) Data are for 1999.
c) Data are for 1998.
d) For above countries only.
Source: European Labour Force Survey.

average for the 22 European countries shown, around 1 out of 5 employees report working on Saturdays or shift-work, while 14% regularly work in the evening, 1 out of 10 employees work on Sundays and 6% report working during the night. Most of these working-time arrangements, but particularly night and shift work, are more common among male employees, but gender differences are generally quite small and women work somewhat more frequently on Saturdays (see OECD, 2004, for a gender-disaggregated version of Table 1.8). The incidence of non-standard hours varies quite sharply across the countries shown due, in part, to differences in national regulations affecting working hours. The incidences of non-standard work hours also vary between sectors and occupations, with more shift-work in manufacturing, and more Saturday and Sunday work in service sectors and occupations (OECD, 1998a).

Another important aspect of working time is its variability and whether this variability is predictable or is at the discretion of the worker. Chart 1.8 presents some information on these aspects of working time from the European Survey of Working Conditions (ESWC) conducted by the European Foundation for the Improvement of Living and Working Conditions.[19] On average for the 19 countries analysed, large minorities of both men and women report that their scheduled working times change at least once a month. Approximately one-third of all workers report that the number of hours worked per day varies and approximately a quarter that the days they work during a week vary. A little over a quarter of both men and women report that their work schedule changes at least once a

Chart 1.8. **The incidence of different working-time arrangements in Europe, 2000/2001**

Percentage share of employees with the indicated working-time arrangement on their main job[a]



a) Minimum, maximum and (unweighted) average values for Austria, Belgium, the Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Luxembourg, the Netherlands, Poland, Portugal, the Slovak Republic, Spain, Sweden and the United Kingdom.

Source: Secretariat estimates based on microdata from the Third European Working Conditions Survey 2000/2001 and the Survey of Working Conditions in the Candidate Countries as provided by the European Foundation for the Improvement of Living and Working Conditions.

month and only about half of this group receives more than 1 day of advance notice of the change.[20] Finally, approximately 50-60% of all workers report some personal control of when they take breaks or schedule days off, but only about one-third say that they have personal control over their working hours.

Working-time arrangements within families

This subsection presents recent labour force survey evidence regarding usual weekly work patterns of persons of working age (15-64 years) depending on their family situation – living alone or with a partner – and the presence or not of children. Half of all workers live in couple families with children and this group may require particular policy attention. Therefore, couple families with children under 15 are further examined. Finally, a multivariate analysis based on the European Survey of Working Conditions (ESWC) gauges possible conflicts between work and family life.

Different patterns of family labour supply. Table 1.9, Panel A shows the average distribution of hours worked by male and female workers of working age by family type in 2002 for 11 European Union member states. A quick look at employment shares by family type reveals that over 80% of workers live in couple families – with (49%) or without (35%) a child – while 14% of workers are singles and 2% of workers are lone parents. Turning to hours worked by gender and family type, the most frequent hours worked are in the 35-40 weekly hour range corresponding to a standard, full-time work week. However, female workers are also quite

Table 1.9. **Weekly work patterns of employed persons by family situation[a, b] and of couple families, averages for selected European countries**

Panel A. Weekly work schedule of workers by family situation, 2002

Family types	Age of the youngest child	Sex	Usual weekly hours worked on the main job						Employment shares
			< 30 hours	30-34	35-40	41-44	45+	Hours vary	
1 person, 0 child		Female	17.2	6.0	59.0	3.7	12.0	2.1	5.7
		Male	7.2	2.7	60.6	4.5	22.3	2.7	8.0
2 persons, 0 child		Female	27.3	7.8	49.3	3.1	10.6	1.9	16.3
		Male	4.9	2.2	59.7	4.6	25.4	3.1	19.0
1 person, 1+ children	Under 6 years	Female	36.9	9.3	45.1	2.1	5.2	1.4	0.4
		Male	9.8	1.2	54.6	8.1	25.3	1.0	0.0
	6 to 14 years	Female	30.2	11.0	47.4	2.3	7.1	2.0	0.7
		Male	10.3	5.6	57.5	5.2	17.9	3.5	0.1
	15+ years	Female	21.8	7.8	56.2	1.8	9.6	2.7	0.5
		Male	6.5	2.7	59.4	3.9	23.7	3.6	0.1
2 persons, 1+ children	Under 6 years	Female	37.9	8.3	44.4	1.7	6.0	1.7	4.4
		Male	3.1	2.2	62.0	4.3	25.2	3.2	6.8
	6 to 14 years	Female	44.5	9.2	35.5	1.8	7.2	1.9	8.8
		Male	2.9	1.9	60.2	4.2	27.4	3.4	12.3
	15+ years	Female	33.0	8.9	44.3	2.0	9.6	2.2	7.3
		Male	3.2	1.8	62.1	3.0	26.1	3.8	9.7
All workers			16.2	4.8	54.4	3.5	18.4	2.7	100.0

Panel B. Work situation of couple families with a child under 15, 1985-2002[c]

Work status	Couple families by presence of:							
	Child aged 0-6				Child aged 6-14			
	1985	1990	1995	2002	1985	1990	1995	2002
Two full-timers	23	26	28	32	24	26	28	29
One full-timer and one part-timer	14	18	19	23	18	20	22	27
One full-timer with partner not employed	53	48	42	35	48	44	38	34
Part-timers and workless couples	9	9	11	9	10	9	11	10
All couples with a child	100	100	100	100	100	100	100	100

Panel C. Combined weekly hours of couple families with at least one worker and a child under 15[c]

Family types	Age of the youngest child	Year	Usual weekly hours worked on the main job					
			< 39 hours	40-59	60-79	80+	Hours vary	All hours
2 persons, 0 children		2002	15	21	24	20	20	100
		1995	16	21	23	19	21	100
		1990	15	22	20	18	26	100
		1985	12	25	18	19	25	100
2 persons, 1+ children	Under 6 years	2002	14	32	29	18	8	100
		1995	17	33	25	17	8	100
		1990	18	36	23	15	8	100
		1985	16	43	21	14	7	100
	6 to 14 years	2002	13	31	26	16	14	100
		1995	15	32	24	17	12	100
		1990	16	35	22	17	11	100
		1985	14	39	21	15	11	100

a) Family types are based on the reference person in the household unit of the survey and his or her spouse. Children are those related to the reference person and/or spouse either by blood or adoption. As a result, other members of the households are excluded from the analysis. The analysis is also restricted to persons of working age (Panel A) or members of couple families in which the reference person is of working age (Panels B and C).

b) Calculated as weighted averages for the following 11 EU countries: Austria, Belgium, France, Germany, Greece, Italy, Luxembourg, the Netherlands, Portugal, Spain and the United Kingdom. Employment weights are used in Panel A, couple-family weights in Panel B and employed-couple-family weights in Panel C.

c) Figures for 1985 do not include Portugal and Spain, as ELFS data are available only since 1987. However, a sensitivity analysis for 1987 indicates that this exclusion probably has little impact on the figures presented.

Source: Special tabulation provided by Eurostat based on the European Labour Force Survey results.

likely to work less than 30 hours, while their male counterparts are more often working 45 or more hours. Single mothers with at least one young child under 6 and mothers in couple families with a child under 15 years are particularly likely to work part time. Moreover, living with a partner, increases the percentage of women with short work weeks. Conversely, there is relatively little difference in the proportions of males working 45 hours and over irrespective of their marital or family status.

The "male breadwinner" model has become less the norm, as can been seen from trends in the employment status of couple of families with young children (Table 1.9, Panel B). This confirms the findings of Chapter 4 of the 2001 edition of the *Employment Outlook* (OECD, 2001b) that, over the past two decades, the average share of couple families with a child under 6 (or under 15) containing a sole male full-time earner has fallen from more than 50% in 1985 to only around 1 family in 3 in 2002. Meanwhile, the share of dual-earner families composed of a full-timer and a part-timer or two full-timers rose steadily from respectively 14% and 23% in 1985 to 23% and 32% in 2002. Thus, families in which both parents of young children work have gradually become more prevalent, representing more than half of couple families with young children in 2002.

The transformation in work activities of couple families with young children, with more women in part-time or full-time jobs, is further confirmed by a rise in the length of work weeks of dual-earner couples (Table 1.9, Panel C). It is also noteworthy that childless couples are more frequently reporting variable work schedules, such as flexible hours, than couples with young children who tend to report more predictable work schedules.

This descriptive analysis highlights, not surprisingly, that work patterns of workers continue to be influenced by their family circumstances, but a growing share of working mothers with young children are working both full and part-time jobs. As a consequence, sole-earner couple families are no longer the norm, in particular for families with young children. As a result, the volume of hours worked in couple families with young children has increased over time. Bringing more mothers into work is likely to challenge work and family life balance and therefore calls for policy attention to address issues related to child care, parental leave provisions and career-breaks. Equally important are issues pertaining to work schedules and other aspects of working life such as travel to work, which are examined in the next section.[21]

Working hours and work-life balance. One of the key questions related to working time and well being is whether long or non-standard working hours make it more difficult to reconcile work with family life. Table 1.10 provides some evidence on this point for 19 European countries in 2000/2001. The values reported in this table refer to estimated increases in the percentage of workers reporting a conflict between their working hours and their "family or social commitments".[22] The basic model includes a number of control variables for demographic groups and job characteristics as well as for total weekly working hours.

Increased conflict between work hours and family life is very significantly associated with the presence of children in the household, being younger and working in a high-intensity or long-hours job or being self-employed. The three augmented models in Column (2) – (4) add different combinations of dummy variables indicating fifteen different types of working schedules. These variables tend to be highly statistically significant and are estimated to have quite a large impact on the incidence of work-family life conflict. Conflict is more frequent for workers working other than standard hours (*i.e.* evenings,

Table 1.10. **Multivariate estimates of the impact of work schedules on the conflict between work hours and family life in Europe, 2000/2001**

Estimated percentage-point increase in the probability of work-life conflict from ordered logit models[a]

	Basic model (1)	"Unsocial" hours (2)	Irregular work schedules (3)	Full model (4)
I. Control variables				
Gender and family type interaction				
Reference person: Childless single man				
Man with partner and children	6.8***	6.0***	6.5***	5.8***
Single man with children	3.8	5.7**	3.7	4.0
Woman with partner and children	6.1***	8.3***	6.8***	8.1***
Single woman with children	7.2***	9.3***	6.7***	8.2***
Childless man with partner	1.6	1.6	1.8	1.6
Childless woman with partner	0.3	2.9**	0.5	2.2
Childless single woman	1.3	2.7**	0.8	2.1
Age group				
Reference person: 35-44 years				
15-24 years	4.6***	2.3*	2.1	1.0
25-34 years	1.9**	1.1	1.1	0.6
45-54 years	–2.9***	–2.1**	–3.9***	–3.0***
55-64 years	–5.0***	–3.8***	–6.0***	–4.9***
Employment status				
Reference person: employee				
Self-employed	6.2***	2.1*	9.4***	7.5***
Job intensity				
Reference person: medium intensity job				
Low intensity job	–7.9***	–6.2***	–5.9***	–5.3***
High intensity job	7.1***	6.8***	5.7***	5.5***
II. Total hours of work				
Weekly hours of work/10	10.5***	8.2***	11.0***	8.8***
Commuting time (hours per day)	5.5***	6.4***	4.9***	6.1***
III. "Unsocial" hours of work				
Night work	–	10.2***	–	9.9***
Evening work	–	12.9***	–	11.5***
Sunday work	–	4.5***	–	2.5**
Saturday work	–	10.4***	–	8.2***
Long hours[b]	–	4.8***	–	3.6***
Shift work	–	6.9***	–	7.0***
IV. Irregularity of working time				
Working hours variability				
Daily hours vary	–	–	7.5***	5.7***
Work days per week vary	–	–	13.3***	5.5***
Starting and finishing times vary	–	–	7.9***	6.1***
Change in work schedule and notification				
Schedule changes without notice	–	–	14.0***	9.8***
Schedule changes with one day of notice	–	–	9.5***	4.8*
Schedule changes with more than one day of notice	–	–	10.0***	1.6
Degree of personal control over working hours				
Can take breaks when wish	–	–	–4.7***	–3.3***
Can take days off when wish	–	–	–7.3***	–7.1***
Can influence working hours	–	–	–7.5***	–6.6***
Number of observations	21 314	21 053	17 774	17 713
Log likelihood[c]	–22 208.8***	–20 930.0***	–17 857.2***	–17 339.3***

***, **, * denote statistical significance at the 1%, 5% and 10% levels, respectively (two-tailed test).

a) The ordered logit models were estimated using maximum likelihood for a pooled sample of 19 European countries: Austria, Belgium, the Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Luxembourg, the Netherlands, Poland, Portugal, the Slovak Republic, Spain, Sweden and the United Kingdom. The specifications include country fixed effects, in addition to the regressors listed above. The reference person is a childless single man, who is between the ages of 35 and 44, and a dependent employee in a medium intensity job, with weekly work hours and commuting time set at the sample mean values. Working hours are regular and limited to standard working hours on week days. The dependent variable is a 4-level index of the degree of conflict between working hours and family life, with 0 corresponding to no conflict (working hours fitting "very well" with "family and social commitments") and 3 to a high level of conflict (working hours fitting "not at all" with "family and social commitments"). The values reported in the table are the increase in the probability of work-life conflict corresponding to a unit increase in that regressor.

b) Long hours corresponds to working more than 10 hours a day at least once a month.

c) Indicators of statistical significance refer to the Chi-square test for the joint significance of all the regressors.

Source: Secretariat estimates based on microdata from the Third European Working Conditions Survey 2000/2001 and the Survey of Working Conditions in the Candidate Countries as provided by the European Foundation for the Improvement of Living and Working Conditions.

nights or weekends) or whose work schedules are variable or unpredictable.[23] However, significantly less conflict is reported by workers who have some control over their working time, for example, when they take breaks or have some flexibility in scheduling days off.[24]

Conclusions

This chapter has analysed several facets of working time from two distinct perspectives: *i)* an economy-wide perspective that focuses on total hours worked as a factor input and tends to stress how higher total hours translate into higher production and income; and *ii)* a worker's perspective that emphasises the complexity and diversity of working-time arrangements and the opportunity cost of time spent in paid employment. Discussions of policies to improve economic growth performance have tended to adopt the first of these perspectives, whereas discussions of employment policy and labour market regulations typically emphasise the latter. Nonetheless, the two perspectives are highly complementary and juxtaposing them generates important insights that can contribute to the assessment of policy choices.

The main empirical findings include:

- International comparisons of hours worked encounter difficult conceptual and practical difficulties, due to differences in national statistical sources and methods. The partially harmonised estimates presented here indicate that there are very large differences across OECD countries in total hours worked per capita. In 2002, labour utilisation ranged from 600 annual hours in France to 1 100 hours in Korea. Broad regional patterns are present, in which total hours per capita are above-average in Japan, Korea and non-EU English-speaking countries. Hours are also relatively high in the formerly centrally planned economies, as well as in Iceland and Switzerland. By contrast, labour utilisation tends to be well below the OECD-wide average in many of the EU countries. International differences in hours per worker and aggregate employment rates contributed about equally to this cross-country dispersion.
- Hours per capita and hours per worker developed very differently in most OECD countries during 1970-2000. In some countries, a strongly rising employment rate overwhelmed the historic tendency for hours per worker to decline, resulting in a strong trend increase in hours per capita (*e.g.* Ireland and Spain). A similar pattern holds in several English-speaking countries, including the United States, where the rise in the employment rate has been somewhat slower recently, but the trend decrease in hours per worker also stopped. At the other extreme are countries where the trend decline in hours per worker has dominated any increase in the employment rate, resulting in a strong downward trend in hours per capita during the past three decades (*e.g.* France and Japan). In most countries in which labour utilisation rose since 1970, an increase in the employment rate of prime-age women was largely responsible. In countries where labour utilisation fell, declines in the employment rates and/or average hours worked by prime-age men were the main factors reducing hours worked per capita.
- OECD countries in which workers tend to work fewer hours tend to have above-average employment rates. The negative association between employment and hours per worker probably does not reflect a trade-off in which a fixed volume of work can be spread more or less evenly across the adult population. Rather, the response of labour supply to long-run improvements in productivity and living standards appears to differ between the intensive and extensive margins: higher real output per hour worked being associated

with lower annual hours per worker but higher employment rates. However, these associations are not "tight", indicating that many factors besides productivity affect employment rates and annual hours per worker. In particular, comparisons among the eight OECD countries with the highest (and more or less equal) hourly productivity reveal substantial differences in both employment rates and average hours per worker – labour utilisation being higher in the United States than in high-productivity European countries, often substantially so.

- A number of different factors underlie cross-country differences in the length of the average work year, with differences in both the average work week and the number of weeks worked per year playing important roles. Within OECD Europe, the average work week varies from a low of 32 hours in the Netherlands, where the incidence of part-time jobs is particularly high, to a high of 42 hours in Poland and the Slovak Republic. Annual weeks worked vary from a low of 35 weeks in Sweden, where absences due to sickness and maternity leave are highest, to a high of 45 weeks in Greece.
- In countries where data are available, the tendency for average annual hours per worker to decline during 1990-2002 was largely due to a rising incidence of part-time jobs, with reductions in annual hours for full-time workers playing a smaller but still significant role.
- The dispersion of usual weekly hours across the workforce has tended to increase since 1990, but the 40-hour work week is still the most common work schedule in the large majority of OECD member countries.
- The volume of hours worked in couple families with young children has increased significantly since 1985, due to increasing employment among mothers. The paid work hours of employed mothers are strongly influenced by their family circumstances, with mothers of young children being particularly likely to work part-time.
- A considerable share of all workers report being on the job outside of normal working hours, for example, working evenings, nights or weekends. Such work schedules are associated strongly with self-reported conflict between work hours and family life. The same pattern holds for long working hours, long commutes and irregular or unpredictable working hours. By contrast, workers having a say in their working hours report less conflict between their work schedules and family life.

Taken together, these empirical findings suggest two broad lessons for policy. A first general insight is the overlap between the growth agenda (OECD, 2003c) and the employment agenda associated with overcoming high unemployment and expanding employment rates in response to population ageing (OECD, 2003b). In both cases, a key precondition for success is expanding the share of the working-age population that participates in paid employment. Each perspective also emphasises aspects of policy choices that the other tends to downplay. When discussing the benefits of increasing total hours worked from the growth perspective, there is a tendency to neglect the crucial importance of the extensive margin of labour supply (*i.e.* raising employment rates) and, perhaps even more so, to overlook the positive contribution that part-time work schedules can make to expanding labour force participation and total labour utilisation, even if it lowers average annual hours per worker. By contrast, most discussions of policies to increase employment rates (*e.g.* as a means to maintain high living standards as populations age) adopt a head-count approach to labour input, which takes no account of the typically lower hours contributed by members of under-represented groups when they are drawn into the labour force.

A second general insight is the importance of combining policies to increase employment and hours worked with measures to reduce the opportunity cost of time spent at work, for example by better reconciling work schedules with other life activities. Flexibility in work schedules is an important element of such reconciliation, but it is evident that the types of working-hours flexibility that reduce work-family life conflicts overlap only in part with the types of flexibility sought by employers. A final insight is that working-time patterns have diverged since 1970 among the highest-productivity OECD countries. It is important to understand better the institutional and cultural factors underlying this divergence, including whether new policy interventions would be desirable to influence the evolution of working-time arrangements.

Notes

1. This section analyses only hours of paid work, but will henceforth refer to "hours of work" for convenience. It should be emphasised that the comparisons of hours worked presented here take no account of unpaid work nor of paid work in the informal economy to the extent that it is not reflected in labour force surveys and the other data sources used here (see Chapter 5).
2. Total hours worked per capita is measured by aggregate hours worked in the economy divided by the population size. It corresponds to total labour input in production theory and is sometimes referred to as "labour utilisation".
3. Gordon (2002) provides a longer-run perspective on this question. Comparing 12 western European countries with the United States, he estimates that GDP per capita in Europe was only 56% of that in the United States in 1950 and that lower labour productivity accounted for all of the European gap in income. The productivity gap closed dramatically during the following four decades and by 2000 was down to 5%. Nonetheless, the gap in output per capita was still 23% due to a much steeper decline in per capita hours worked in Europe than in the United States, a divergence that began in around 1970.
4. For example, hours worked are reported on a per job basis, rather than on a per worker basis, in Canada, France, Germany, Japan, Sweden, Switzerland and the United States and a conversion to a per worker basis is made only in the case of the United States (see Annex 1.A1). Country standings in terms of hours per worker are likely to be affected by this difference, especially in the case of countries with sizeable shares of multiple job holders. However, this difference has no effect on the estimates of aggregate hours per capita. Also, the hours per worker data for Korea are for wage and salary workers reported in the monthly labour survey covering establishments of 30 or more workers.
5. Since the employment estimate used is average employment during the year, rather than all persons employed at any point during the year, consistency requires that annual hours per worker be calculated on the basis of full-year-equivalent workers (see Annex 1.A1).
6. OECD-wide averages of hours per capita (likewise for hours per worker and employment rates) are obtained using population weights (and employment and working-age population weights, respectively).
7. Except in Korea (where the positive demographic effect is 7 percentage points, exactly offsetting the negative employment rate effect, while very high hours per worker lead to OECD-high labour utilisation) and Mexico (where a 8 percentage-point demographic effect is created by a higher-than-average non-working age dependency rate, nearly offsetting a 9 percentage-point hours-per-worker effect, so that a below- average employment rate results in below-average labour utilisation).
8. These demographic patterns also help to explain the negative cross-country correlation between employment rates and average hours per worker that was discussed above. In countries where the overall employment rate is higher, a larger share of the workforce is composed of members of under-represented groups who tend to work fewer hours than do prime-age men.
9. In this shift-share analysis, employment rates refer to employment divided by the population aged 15 years or more, as in Heisz and LaRochelle-Côté (2003).
10. The analysis is limited to 14 European countries, for which 1990-2002 data are available from the European Labour Force Survey, and Canada and the United States, for which the results are taken from Heisz and LaRochelle-Côté (2003). The calculations for the latter two countries are not fully comparable to those for the European countries. A first difference is that annual hours for Canada

and the United States refer to *usual* hours worked on the main job, rather than *actual* hours worked on all jobs, the concept favoured in this chapter. A second difference is that the employment concept used is the number of "persons in employment at anytime over the (previous) year", rather than average employment during the year. As a consequence of these two differences, the estimates of per capita hours for Canada and the United States underlying Chart 1.5 differ somewhat from those used in Charts 1.1 to 1.3. For example, the data for the United States in Chart 1.5 indicate that annual hours per worker rose 5.4% between 1989 and 2002, while Panel B of Chart 1.3 indicates essentially no change over the same period. This difference probably reflects the impact of part year work on the hours measure used in Chart 1.5. Rones *et al.* (1997) show that annual usual hours worked for persons ever employed during the year have tended to increase in the United States, as part-year work has become less common. Despite these non-comparabilities, the results for Canada and the United States should still be qualitatively informative concerning the demographic decomposition of the growth of per capita hours worked.

11. These two groups largely overlap. Typically, rising employment rates accounted for most or all of the increase in per capita hours for these groups, often more than offsetting a modest reduction in hours per worker. See OECD (2004) for more detailed results.

12. Sweden is somewhat of an exception in that declining per capita hours for women and prime-age persons made a significant contribution to the overall decline in labour utilisation, which probably reflects the employment difficulties created by adverse macroeconomic shocks in the early 1990s.

13. According to the 1962 ILO resolution on hours of work statistics, hours actually worked includes: normal hours of work (*i.e.* legal hours, contractual hours), the number of hours in excess of which any time worked is remunerated at overtime rates, time spent for the preparation of the workplace, short rest periods at the workplace, minus hours paid but not worked due to annual leave, public holidays, sick leave, maternity leave, etc., meal breaks, and travel time to work. However, to bring the ILO definition in accordance with the 1993 Standardised National Accounts definition, actual hours worked should also include unpaid overtime hours (see *www.ilo.org/public/english/bureau/stat/download/res/hours.pdf*).

14. Also, the growing diversification of work schedules, as explored later in the chapter, reflects measures – legislated or agreed upon through collective bargaining between social partners – to increase flexibility in labour utilisation and work hours to meet production needs, in addition to a growing individualisation of work contracts in a number of OECD countries. Consequently, "weekly hours worked" does not necessarily correspond to standard hours worked during a typical week but rather to average weekly hours over a number of weeks – otherwise known as the "averaging period" – beyond which workers are entitled to overtime premium.

15. It includes, in addition to normal hours of work (*i.e.* legal or contractual hours of work), any overtime work – whether paid or unpaid – performed on a regular basis and excludes main meal breaks. It is considered as "the modal value of the workers' hours actually worked per week over a long period".

16. Surprisingly, the association between greater dispersion of working hours and higher employment rates was considerably stronger in 1990 (0.69) than 12 years later. Nonetheless, there was a weak positive correlation (0.24) between the 1990-2002 changes in the standard deviation of usual weekly hours and the employment-population ratio.

17. According to the 2001 European Labour Force Survey coding instructions, these are formal work arrangements with employers that are taking place on a regular or usual basis, that is, more than half of the days or weeks over the past four weeks including the survey reference week (see *www.eu-datashop.de/download/EN/spezial/lfs/methoden.pdf*).

18. According to ELFS instructions, evening work normally starts after the usual daily work schedule and lasts until usual sleeping time, whereas night work refers to hours worked during usual sleeping time.

19. Chart 1.8 also presents incidence of non-standard work hours, such as those reported in Table 1.8. The incidences from the ESWC are substantially higher, due at least in part to the fact that they refer to working non-standard hours at least once a month, rather than on a regular basis.

20. The share of workers experiencing changes in their work schedules is the sum of the three groups shown (*i.e.* those without notice of the change, with one day of notice and with more than one day of notice) or 25% for women and 27% for men.

21. See Chenu and Robinson (2002) and Hamermesh (2002) for more detailed analyses of the working-time arrangements of families, and Gornick and Meyers (2003) and OECD (2002) for discussions of policies for reconciling work and family life.

22. These effects were estimated by applying an ordered logit model to micro data for over 20 000 workers in the most recent European Survey of Working Conditions (ESWC).

23. Note that the reference person for interpreting these effects works an unchanging schedule during normal business hours and an average-length work week.

24. Often, workers may not be able to choose the mix of scheduling characteristics that best suit their family lives. Using 1997 data for the Unites States, Golden (2001) concludes that workers desiring to exercise some discretion over the starting and stopping times of their work day frequently must also accept long, non-standard or unpredictably hours.

ANNEX 1.A1

Data Sources, Definitions and Cross-country Comparability for the Analysis of Working Time from the Economy-wide Perspective

The aggregate hours and employment data used in this chapter for the analysis of working time from an economy-wide perspective are taken from the newly released OECD Productivity database, which can be found on the OECD website at: *www.oecd.org/statistics/productivity*.[1] This annex provides an overview of the data sources and definitions underlying these data, devoting particular attention to the issue of the cross-country comparability of average annual hours worked per person in employment (for a more detailed discussion of these issues see Ahmad *et al.*, 2003; OECD, 2003d).

According to the 1993 System of National Accounts (United Nations, 2004), total hours *actually* worked is the preferred aggregate measure of labour input for productivity analysis, as it reflects the volume of work engaged per year in both self-employment and employee jobs for the production of goods and services by resident units of production. From a measurement point of view, aggregate hours *actually* worked per year in the total economy is calculated as the product of the average employment level over the course of a year and average annual hours per full-year equivalent worker. The annual hours per worker estimates used in the calculation of total hours worked are, themselves, typically derived from estimates of the length of a typical work week (averaging over all full- and part-time workers) and the average number of weeks actually worked during the year by full-year equivalent workers.

In general, the international comparability of the employment data is thought to be quite good, since it is generally possible to obtain estimates which are consistent with ILO guidelines on employment statistics. By contrast, there has been less international harmonisation of hours worked statistics, which are characterised by a considerable variety of sources and methods. The remainder of this annex discusses the measurement methods used and the principal difficulties that arise as concerns potential non-comparabilities across OECD member countries.

Sources and methods used to estimate average annual hours per worker

The productivity database makes use of the estimates of average hours actually worked per year per person in employment which have been collected by the OECD and published annually as Table F of the Statistical Annex to the OECD *Employment Outlook* for some years. These data are currently available for 24 OECD countries in OECD Annual Hours database.[2] In the majority of the cases, national statistical authorities produce these

estimates and supply them to the OECD Secretariat. However, the Secretariat calculates these estimates for seven European countries (Belgium, Denmark, Greece, Ireland, Italy, the Netherlands and Portugal) using data from the European Labour Force Survey.

To develop their estimates of average annual hours worked, countries use the best available data sources for different categories of workers, industries and components of variation from usual or normal working time (*e.g.* public holidays, annual leave, overtime, absences from work due to illness and to maternity). Since multiple sources of data are combined in often complex ways, it is difficult to assess the cross-country comparability of the resulting estimates. Examples of different national and international approaches include:

- In Japan and the United States, hours per worker are estimated directly from establishment surveys for, respectively, regular and production/non-supervisory workers in employee jobs in the private sector. These estimates are then combined with data for other workers from labour force surveys and other sources, in order to produce an estimate of average annual hours for the total work force.
- In France, Germany, Norway and Switzerland, the measurement of annual working time relies on a "component method". This approach begins with a direct estimate of standard working hours which, depending on the source used, may be hours offered (from an establishment survey), contractual hours (from an administrative survey) or normal hours (from a labour force survey). Various adjustments are then made to account for differences between standard hours and hours actually worked, including subtractions for absences and additions for overtime. Information from a number of sources is combined. For example, vacation time can be derived from either establishment-survey data on paid leave or the number of days of statutory leave entitlements. Similarly, hours lost due to sickness are estimated on the basis of social security registers and/or health surveys.
- Estimates for Australia, Canada, Czech Republic, Finland, Iceland, Mexico, New Zealand, Slovak Republic, Spain, Sweden and the United Kingdom rely mainly on labour force survey results. Annual working hours are derived using a direct method annualising actual weekly hours worked, which cover all weeks of the year in the case of continuous surveys. But, for labour force surveys with fixed monthly reference weeks, this method results in averaging hours worked during 12 weeks in the year and, therefore, necessitates adjustments for special events, such as public holidays falling outside the reference week (*i.e.* Canada and Finland).
- As was mentioned above, the OECD Secretariat estimates annual working time for Belgium, Denmark, Greece, Ireland, Italy, the Netherlands and Portugal. A variant of the component method is used for this purpose, which relies principally on data from the Spring European Labour Force Survey.[3] However, results based on a single quarter are unlikely to estimate accurately the number of days not worked due to annual leave, the largest single reason for absences from work. Therefore, annual leave entitlements and the number of public holidays are taken from the EIRO (2002).[4] In addition, hours not worked due to sickness and maternity leave, the second most important reason for absences, are corrected to account for an estimated 50% under-reporting in labour force surveys compared to absences reported in health surveys and social security registers (see below). Several other reasons for absences are also taken into account, such as: bad weather, slack work for technical and economic reasons, labour dispute, education and training, illness, temporary disability, maternity and parental leave, special leave for personal and family reasons and other reasons. Furthermore, irregular overtime hours and hours worked in second or more jobs

are included in the estimate of the average number of hours worked per week, which are mainly based on usual weekly hours worked in the main job.[5]

The international comparability of working-time estimates

How comparable are the hours per worker estimates which are available for OECD countries? It is not easy to come to an overall conclusion given the complexity of the differences in data sources and methods, but it is clear that small differences between countries should be treated with caution since they could reflect differences in measurement methods rather than true differences in hours worked.

One illustration of the complexity of assessing cross-country comparability is that OECD governments periodically revise their measurement methodologies in order to better meet their national goals in collecting these statistics. For example, Germany recently revised its annual working time series to better account for workers with very low hours of work. This change achieved more complete coverage of workers (*i.e.* so as to better conform to National Accounts output measures and improve productivity measurement), while resulting in an apparent decrease in average hours per worker. Similarly, France recently revised downwards its published series of hours worked in order to achieve historical continuity with a change in hours worked concepts that followed the introduction of 35-hour week in 1999: short periods of rest at the workplace (or work breaks) no longer being counted as hours worked. This change resulted in a decrease in estimated working time over the period 1990 to 1999 compared to the previous series of around 40 hours per year. Whereas the German revision arguably moved that country closer to international guidelines, the French revision departs from ILO recommendations (while arguably providing more meaningful historical comparisons within France). A third example of this on-going process of revisions is that the Office of Productivity and Technology of the US Bureau of Labor Statistics undertook studies to improve the estimation of hours worked of worker categories not covered by the establishment survey, which is the main source for annual hours worked measures. However, it does not appear that this methodological refinement is likely to much affect aggregate hours worked estimates.[6]

One source of non-comparability between countries is easily remedied. Depending on the country, annual working-time measures are reported on either a per job basis or a per worker basis. To harmonise these measures on a per worker basis, annual hours worked per job are converted to a per worker basis by the OECD Secretariat, using the share of multiple job holders in total employment, which is available in labour force surveys (albeit, no further distinction being possible between second and more jobs).[7]

Other sources of non-comparability are impossible to resolve and their effects are difficult to assess with precision. Differences in the extent to which OECD member countries rely upon establishment surveys versus labour force surveys to construct their average hours estimates represent a potentially important source of non-comparabilities. It is often argued that enterprise surveys provide more accurate information on hours worked than do the household interview responses recorded in labour force surveys. For example, labour force survey-based respondents are suspected of over-reporting hours worked (*e.g.* as compared to work hours reported in time-use surveys, in particular for those working long hours, like managers and professionals). However, several recent studies suggest that the average bias is small (Jacobs, 1998; Williams, 2004). Furthermore, establish surveys may have their own biases. For example, employer survey-based estimates tend not account for unpaid overtime hours and are sometimes suspected of under-reporting hours worked (Eldridge *et al.*, 2003).

Whatever the relative merits of establishment versus household surveys for collecting hours worked data, annual hours worked measures rely mainly on labour force survey results for a substantial number of OECD countries. Indeed, in a majority of countries labour force surveys are the only source available to derive annual hours of work measures. This source has the advantage of covering all workers,[8] whereas establishment surveys often exclude significant parts of the work force (which then have to be added by making use of additional data sources). Since the reporting of actual hours worked in labour force surveys is often believed to be less accurate than those recorded by employers for the same workers, it is important that the quality of data on annual hours actually worked receive a proper assessment. In particular, the various working-time components should be confronted with information from external sources – such as, time-use surveys, health surveys, establishment surveys, social security registers, and other sources – in order to assess the reliability of data from labour force surveys.

So far, some results of data confrontation undertaken for a limited number of countries (OECD, 1998b) highlighted the following results:

- "Standard" hours of work from establishment-based surveys and labour force surveys differ by 1 to 3% for the four countries (France, Germany, Netherlands and Switzerland) included in the analysis, with labour force surveys yielding the higher estimates.
- Monthly labour force survey estimates of hours not worked due to holidays, even when adjusted for the irregular occurrence of holidays during the reference week, seem to be downward biased (Canada).
- Estimates of hours lost due to illness, work accidents and maternity leave from labour force surveys appear to be underestimated by about 45% to 60% compared to administrative sources (in France, Germany and Switzerland). These seem to be associated largely with a serious underreporting of part-week absences.
- Labour force surveys seem also to underestimate overtime work (*e.g.* Germany). However, this is not entirely certain, because some regularly occurring overtime may be included in usual hours of work in labour force surveys.
- A second study (OECD, 1999) examined the effect of so-called "unpaid overtime" worked by managers and professionals, *i.e.* the additional hours they worked over and above those worked by full-timers in other occupations, on the estimates of annual working time from labour force surveys relative to those from administrative or establishment survey sources. The impact of this "unpaid overtime" recorded in labour force surveys varied by country, from no measurable effect to as much as 40 hours per year, depending on the country.
- Finally, in the aggregate, empirical results from two countries (Germany and United States) suggest that labour force survey estimates yield figures for annual hours of work that are only slightly higher than those from establishment surveys. This is due in part to the fact that biases in estimates of the components of working time tend to cancel out to a considerable extent.

This partial evidence suggests that the different sources and methods used probably do not generate spurious cross-country differences that are large, but also that the accuracy and comparability of labour force survey based estimates are likely to be enhanced when they are adjusted for the systematic underestimation of absences by main reasons (*i.e.* public holidays, paid annual leave, and sickness and maternity leave). As a result, OECD Secretariat estimates of annual working time for certain European countries

based on the Spring ELFS are adjusted. First, by doubling hours lost due to sickness absence and maternity leave reported in labour force surveys. Second, holidays and annual leave entitlements are taken from external sources assuming that all workers are entitled to annual leave and take all days off over the year. Since the evidence suggests that the additional unpaid overtime captured by labour force surveys, as compared to other data sources, is quite small or even negligible, no attempt has been made to correct for this possible source of differences.

Notes

1. This database is regularly updated as national statistical offices provide new or revised data to the Secretariat. The hours-worked data used in this chapter correspond to those available on 30 April 2004.
2. The OECD Productivity database also makes use of annual hours of work per employee for Hungary and Korea, since annual hours data are not available for all employed persons. Per capita hours worked in these countries are estimated on the assumption that average hours for the self-employed equal those for dependent employees.
3. Chagny *et al.* (2002) review the international comparability of national estimates of annual working time and support the idea of producing annual working hours estimates for European countries by using a component method applied to ELFS results and external sources, as appropriate.
4. The annual leave entitlements used are those recorded in collective agreements and collected by the European Industrial Relation Observatory for 2002 (see EIRO, 2002). The methodology used assumes that annual paid leave entitlements apply to all wage and salary workers (and the self-employed) and that all vacation days are taken.
5. Since the OECD Productivity database contains only estimates of average annual hours for all workers, without any disaggregation, this same method is used for all of the European countries included in the chapter's decomposition analyses of annual working time between different demographic groups (*cf.* Charts 1.4 and 1.5) and full- and part-time workers (*cf.* Table 1.5), and among the various components of the work year (*cf.* Table 1.6).
6. In the United States, official estimates of annual hours worked are mainly based on estimates of weekly paid hours worked by employees recorded in the Current Employment Statistics (CES), a monthly employer survey of non-farm establishments. Hours paid are later converted into hours worked using the Hours at Work Survey until year 2000 and since then the National Compensation Survey program. However, the survey covers only production workers in goods-producing industries (*i.e.* manufacturing) and non-supervisory workers in services-producing industries. The Current Population Survey, a monthly household survey, and other sources are used to derive hours worked by workers not covered by CES, apart from non-production workers and supervisory workers in good and services-producing industries. For the latter two categories of employees, official estimates of annual hours worked assume that the average weekly hours of work of non-production and supervisory workers are the same as those of production and non-supervisory workers. A recent study tested this assumption and built a CPS-adjusted series of average weekly hours worked for non-production and supervisory workers to derive a new total hours worked series for the non-farm business sector. Official estimates and the new hour series show similar trends, but the latter series is expected to replace current series, since it is based on survey evidence rather than assumptions (Eldridge *et al.*, 2003).
7. For example, the estimates of annual hours of work for the United States, which are prepared by the Office of Productivity and Technology of the US Bureau of Labor Statistics, are reported on a per job basis and are later converted by the OECD Secretariat to a per worker basis by multiplying the job-based annual hours of work by (1 + CPS-based share of multiple jobholders in total employment).
8. Apart from the typically small numbers of workers excluded from the scope of the surveys due to *e.g.* geographical, institutional, collective households and age exclusions.

Bibliography

Ahmad, N., F. Lequiller, P. Marianna, P. Pilat, P. Schreyer and A. Wölfl (2003), "Comparing Labour Productivity Growth in the OECD Area: the role of measurement", Statistics Directorate Working Paper, No. 2003/5, OECD, Paris.

Bell, L. and R.B. Freeman (2000), "The Incentive for Working Hard: Explaining Hours Worked Differences in the US and Germany", NBER Working Paper, No. 8051.

Blanchard, O. (2004), "The Economic Future of Europe", *Journal of Economic Perspectives*, forthcoming.

Chagny, O. and M. Bruyere (2002), "Comparaisons internationales de durée et de productivité – une tentative de construction d'un indicateur synthétique de durée du travail", *Document d'études n° 60*, Direction de l'animation de la recherche, des études et des statistiques (DARES), September, Paris.

Chenu, A. and J.P. Robinson (2002), "Synchronicity in the Work Schedules of Working Couples", *Monthly Labor Review*, April, pp. 55-63.

EIRO (2002), "Working Time Developments – 2002", Report prepared by C. Mark, SPIRE Associates (see *www.eiro.eurofound.ie/2003/03/update/tn0303103u.html*).

Eldridge, L.P., M.E. Manser and P.F. Otto (2003), "Alternative Hours Data and their Impact on Productivity Change", July, Office of Productivity and Technology, Bureau of Labor Statistics, US Department of Labor, Paper presented at the Paris Group meeting, 4-5 September 2003.

European Commission (1997), *Council Directive 97/81/EC*, Brussels.

Golden, L. (2001), "Flexible Work Schedules: what are we trading off to get them?", *Monthly Labor Review*, March, pp. 50-67.

Gordon, R.J. (2002), "Two Centuries of Economic Growth: Europe Chasing the American Frontier", paper prepared for the Economic History Workshop, Northwestern University, 17 October.

Gornick, J.C. and M.K. Meyers (2003), *Families That Work: Policies for Reconciling Parenthood and Employment*, Russell Sage Foundation, New York.

Hamermesh, D. (2002), "Timing, Togetherness and Time Windfalls", *Journal of Population Economics*, November, pp. 601-623.

Heisz, A. and S. LaRochelle-Côté (2003), "Working Hours in Canada and the United States", Statistics Canada, 11F0019MIE No. 209.

Jacobs, J.A. (1998), "Measuring Time at Work: are self-reports accurate", *Monthly Labor Review*, December, pp. 42-53.

Jaumotte, F. (2003), "Female Labour Force Participations: past trends and main determinants in OECD countries", OECD Economics Department Working Paper, No. 376, OECD, Paris.

OECD (1994), *The OECD Jobs Study: Facts, Analysis, Strategy*, Paris.

OECD (1998a), *Employment Outlook*, Paris.

OECD (1998b), "Annual Hours of Work: Definitional and Comparability Issues", Note by the Secretariat, DEELSA/ELSA/WP7(98)2, Paris.

OECD (1999), "Hours of Work – Comparability and Polarisation Issues", Note by the Secretariat, DEELSA/ELSA/WP7(99)8, Paris.

OECD (2001a), *The New Economy Beyond the Hype: The OECD Growth Project*, Paris.

OECD (2001b), *Employment Outlook*, Paris.

OECD (2002), *Babies and Bosses: Reconciling Work and Family Life, Volume 1 – Australia, Denmark and the Netherlands*, Paris.

OECD (2003a), *Communiqué of OECD Labour Ministers*, Paris.

OECD (2003b), *Employment Outlook*, Paris.

OECD (2003c), *The Sources of Economic Growth in OECD Countries*, Paris.

OECD (2003d), "Measuring Hours Worked in OECD Countries", Note by the Secretariat, DSTI/EAS/IND/SWP(2003)10, 3 November, Paris.

OECD (2004), "Sources of Changes in Per Capita Hours Worked in OECD Countries, 1990-2002", Background Material for Chapter 1 of OECD *Employment Outlook 2004*, Paris (*www.oecd.org/els/employmentoutlook*).

Prescott, E.C. (2004), "Why Do Americans Work So Much More Than Europeans?", NBER Working Paper, No. 10316.

Presser, H.B. (2003), *Working in a 24/7 Economy: Challenges for American Families*, Russell Sage Foundation: New York.

Rones, P.L., R.E. Ilg and J.M. Gardner (1997), "Trends in Hours of Work since the Mid-1970s", *Monthly Labor Review*, April, pp. 3-31.

Schettkat, R. (2003), "Differences in US-German Time Allocation: Why Do Americans Work Longer Hours than Germans?", IZA Discussion Paper, No. 697.

Schettkat, R and R.B. Freeman (2002), "Marketization of Production and the US-Europe Employment Gap", NBER Working Paper, No. 8797.

United Nations (2004), "About the System of National Accounts 1993", ST/ESA/STAT/SER.F/2REV.4 with amendments of 1 May 2001, *http://unstats.un.org/unsd/sna1993/introduction.asp*.

Williams, R.D. (2004), "Investigating Hours Worked Measurements", *Labour Market Trends*, February, pp. 71-79.

ISBN 92-64-10812-2
OECD Employment Outlook
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Chapter 2

Employment Protection Regulation and Labour Market Performance

There has been heated policy debate on the costs and benefits of regulations governing dismissals and other features of employment protection. The key issue is how to keep a balance between the need for firms to adapt to ever-changing market conditions on the one hand, and workers' employment security on the other. Do employment protection regulations have an impact on firms' hiring and firing decisions and is this impact different across demographic groups? Do such regulations explain the high incidence of temporary work recorded in certain countries? How to instil labour market dynamism while also protecting workers against job and income loss?

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Introduction

As with most labour market regulations, employment protection legislation (EPL) was first introduced with the aim of enhancing workers' welfare and improving employment conditions. However, the same provisions that protect employees translate into a cost for employers and thus could have a negative impact on hiring. The literature on EPL highlights positive and negative effects on labour market performance. Among the former, it highlights the benefits of long-term employee-employer contracts including greater willingness to invest in on-the-job training. Among the latter, is the concern that workers hired on regular contracts may enjoy a high degree of employment security to the detriment of other workers hired on temporary contracts. In addition, employment protection may diminish firms' ability to cope with a rapidly changing environment driven by globalisation, technological change and the derived organisational innovation. The effects of EPL on labour market performance are a controversial subject, both in theory and in applied research.

Most available studies have looked at employment protection as an additional labour cost for firms, and have studied the effects of this cost on employment and joblessness, but two important and related aspects have often been left aside: *i*) the rationale for the existence of employment protection; and *ii*) its welfare consequences. Some recent studies have sought to address these issues by considering employment protection not just as an exogenous cost for employers, but as a comprehensive policy instrument, able to resolve certain market imperfections, with potential positive welfare implications. Policy recommendations have also evolved towards a more balanced view of the dilemma opposing the need for flexibility expressed by firms to the importance of protecting workers against labour market risks. For instance, the European Commission has recently recommended to EU member states "to review and, where appropriate, reform overly restrictive elements of employment legislation" while "taking account of the need for both flexibility and security" (European Commission, 2003a). The ILO has set similar objectives with the aim of promoting employment stability while maintaining a sufficient level of labour market flexibility.

Within the context of the OECD Jobs Strategy re-assessment, it is important to review the issue of employment protection in the light of these recent developments. This chapter starts by presenting a picture of current employment protection regulations in OECD countries. The second section studies the effects of EPL on labour market performance, trying to identify the socio-demographic groups that seem to benefit from it and those who, by contrast, appear to be penalised. The third part looks at the economic rationale for employment protection, and discusses its role as one of the instruments available to governments to protect workers against labour market risks, along with unemployment benefit systems and active labour market policies.

Main findings

- *Over the past 15 years, a process of convergence across OECD countries has taken place as regards EPL.* This process has been driven largely by an easing of regulation in the countries where EPL was relatively strict at the end of the 1980s. In most cases, these reforms consisted in easing the recourse to temporary forms of employment while leaving existing provisions for regular or permanent contracts practically unaltered. Despite this convergence, the *relative* position of countries across the overall spectrum of EPL strictness, as defined and measured by the OECD, has not changed much since the late 1980s. The overall strictness of EPL continues to vary widely between countries and the regulation of temporary employment remains a key element in explaining cross-countries differences.
- *Employment protection regulation fulfils its stated purpose, namely protecting existing jobs.* Indeed evidence presented in this chapter suggests that EPL tends to limit firms' ability to fire workers. *At the same time, EPL would reduce the re-employment chances of unemployed workers* – thereby exerting upward pressure on long-term unemployment. Indeed, in deciding whether to hire a worker, employers will take into account the likelihood that firing costs will be incurred in the future. In sum, EPL leads to two opposite effects on labour market dynamics: it reduces inflows into unemployment, while also making it more difficult for jobseekers to enter employment (*i.e.* lower outflows from unemployment).
- *The net impact of EPL on aggregate unemployment is therefore ambiguous* a priori*, and can only be resolved by empirical investigation.* However, the numerous empirical studies of this issue lead to conflicting results, and moreover their robustness has been questioned. On the other hand, it is possible to detect a link between EPL and employment rates for specific groups. Some studies, as well as the analysis presented in this chapter, suggest the possibility of a negative link between strict EPL and the employment rates of youth and prime-age women, while there may be positive links to the employment rates of other groups. This is consistent with the above findings of the effects of EPL on labour market dynamics. Indeed youth and prime-age women are more likely to be subject to entry problems in the labour market than is the case with other groups, and they are therefore likely to be disproportionately affected by the effects of EPL on firms' hiring decisions.
- *Differences in the strictness of EPL for regular and temporary jobs may be an important element in explaining the rise in the incidence of temporary work for youth and the low skilled* (this is less the case for other groups, notably prime-age men). This means that facilitating the use of temporary work arrangements, while not changing EPL on regular employment, may aggravate labour market duality. It may also affect career progression and productivity of workers trapped in temporary forms of employment, which are typically characterised by weak job attachments and limited opportunities for upgrading human capital.
- *Any overall assessment of EPL has to weigh costs against benefits.* EPL may foster long-term employment relationships, thus promoting workers' effort, co-operation and willingness to be trained, which is positive for aggregate employment and economic efficiency. In addition, by promoting firms' social responsibility in the face of adjustment to unfavourable economic circumstances, a *reasonable* degree of employment protection could be welfare-improving, *i.e.* it can help balance concern for workers' job security with the need for labour market adjustment and dynamism. Thus, some recent studies suggest that an optimal policy would combine some EPL with effective re-employment services and active labour market policies aiming at counteracting the negative effects of EPL on firms' hiring decisions.

- *The precise balance between the different policy planks* (EPL, unemployment benefits and active labour market policies) *depends on country circumstances and institutions*. For instance, in Denmark, employment services seem to be rather effective in "activating" benefit recipients while EPL is moderate in this country – the so-called "flexicurity" approach. Such a policy mix has helped guarantee sufficient dynamism in the labour market, while ensuring adequate employment security among workers. In the United States, experience-rating, which links employers' social security contributions to the layoff history of the firm, was introduced to prevent firms from taking advantage of temporary layoffs in response to cyclical downturns in labour demand. Some evaluation studies of the system in the United States lend support to this policy initiative, in terms of lower unemployment as well as greater job stability, in that experience-rating seems to have reduced the cyclicality of employment. More generally, further analysis of the policy interactions involved is clearly called for as part of the reassessment of the OECD Jobs Strategy.

1. Employment protection regulation in OECD countries

Since the seminal paper by Lazear was published in 1990, empirical studies on the effects of EPL on labour market outcomes have proliferated. In order to facilitate this task, constructing a good measure of these regulations has become of crucial importance. The OECD tackled the task in 1999, updating the work done by Grubb and Wells (1993) and extending it to include more dimensions of employment regulation, notably the regulation of collective dismissals. Despite some limitations, the OECD indicator still represents an improvement over the simple measure of severance pay used in the first papers of this literature.[1] Besides, it has been shown to be consistent with several proposed alternative measures ranging from employers' surveys that ask managers to rank the "flexibility of the enterprise to adjust job security to economic reality" to measures of broader-based indices of economic freedom (Addison and Teixeira, 2003).

A. Looking into the black box

Employment protection regulation, a set of rules governing the hiring and firing process, can be provided through both labour legislation and collective bargaining agreements. In addition, it is important to distinguish these rules from *practice*, which brings in the enforcement dimension. Therefore, when discussing the extent of employment protection, judicial practices and court interpretations of legislative and contractual rules have to be taken into account as well. The measure of employment protection developed in this chapter is mainly based on legislative provisions, but it also incorporates some aspects of contractual provisions and judicial practices. Nevertheless, given that collective agreements and courts' decisions often refer to a wide range of rules set on a case-by-case basis, their role is likely to be somewhat understated in the information presented here.

The three main components of the indicator

The indicator of employment protection in this chapter follows the approach developed in Chapter 2 of the 1999 edition of the OECD *Employment Outlook*, thereby allowing comparisons over time. It refers to the protection of *regular employment* and the regulation of *temporary work* and is intended to measure the *strictness* of EPL. More precisely, since most of the literature on employment protection emphasises the analogy of EPL to an

employer-borne tax on employment adjustment, the overall intent is to reflect the cost implications of various regulatory provisions for employers (*i.e.* stricter is interpreted as more costly). The overall summary measure of EPL strictness relies on three main components related to protection of regular workers against (individual) dismissal, specific requirements for collective dismissals and regulation of temporary forms of employment:[2]

- In order to assess job protection of workers with regular contracts, three main areas are considered: *i)* difficulty of dismissal, that is legislative provisions setting conditions under which a dismissal is "justified" or "fair"; *ii)* procedural inconveniences that the employer may face when starting the dismissal process; *iii)* and notice and severance pay provisions. Regular employment contracts do not generally specify any duration for the employment relationship. Part of the role of the EPL is thus to define "just causes" or "serious reasons" for the termination of an employment relationship and the sanctions applicable to the employer in case of non-respect of this principle of just cause termination. In other words, these provisions set conditions under which it is possible for an employer to dismiss an employee. Procedural inconveniences can be seen as a complement to these provisions. Indeed, they may give the opportunity to the employee to challenge the layoff decision at an early stage of the process. These procedures may also involve a third party (such as a works' council or the competent labour authority), usually not empowered to stop the process but that can nevertheless help to avoid the dismissal. When the dismissal is certain, notice and severance pay provisions are then the final costs for the employer.
- Considering that collective dismissals may have a social cost, additional provisions have been introduced in almost all OECD countries to minimise this cost. The related component of the EPL index presented in this chapter only refers to *additional* delays and procedures required which go *beyond* those applicable for individual dismissal, and does not reflect the overall strictness of regulation applicable to collective dismissals. Indeed, whatever the number of additional requirements, collective dismissals are *de facto* strongly regulated when the regulation of individual dismissals is itself relatively strict.
- Finally, provisions regarding fixed-term contracts and temporary work agencies are also considered. This component of the EPL index is intended to measure the restrictions on the use of temporary employment by firms, with respect to the type of work for which these contracts are allowed and their duration.

Protection of regular contracts against (individual) dismissal constitutes the core component of the overall summary index of EPL strictness presented in this chapter. Indeed, although temporary forms of employment have grown in many OECD countries over the past two decades, regular contracts are still the most common employment arrangement (OECD, 2002a, Chapter 3). Temporary work is sometimes regarded as a way to circumvent rules governing regular contracts. For the component related to collective dismissals, the story is quite different: by construction, it includes only regulation applicable in addition to that applied in cases of individual dismissals and cannot therefore be considered as a stand-alone component of EPL.

Limits of the indicator: the role of contractual provisions and judicial practices

Some potentially important aspects of employment protection are difficult to take into account in the EPL indicator. This is, for instance, the case for trial or probationary periods, which are often not legally required although permitted by law. The length of the trial

period is important because, during this period, regular contracts are not fully covered by employment protection provisions and usually unfair dismissal claims cannot be made during probation. Legislative provisions may set a maximum duration but, in practice, the length of the trial period is provided in either individual employment contracts or collective agreements. Probationary periods exist in most OECD countries and in many cases, the corresponding EPL index refers to these contractual provisions.

To take another example, in some countries, notice periods and/or severance pay are not legally regulated. Instead, they can be provided by collective agreements and individual contractual clauses. Moreover, even in the large number of countries where there are legal requirements, the latter can be extended by contractual provisions (Box 2.1). However, in countries for which data are available, the coverage of such additional provisions is very low compared with legal provisions that usually relate to all workers with regular contracts. Moreover, in many cases there is simply no detailed information available on such contractual practices. As a consequence, the summary measures of EPL strictness developed in this chapter often rely on minimal requirements set by legislative provisions.

For regular contracts, employment protection regulations set rules under which an employee can be dismissed, and the employer can be sanctioned in case of non-respect of these rules. However, these provisions are subject to court interpretations and this may constitute a major (but often hidden) source of variation in EPL strictness both across countries and over time. Recent studies suggest that jurisprudence may be affected by the underlying labour market conditions; for instance, there is some evidence that judge's decisions may tend to be particularly unfavourable to employers when unemployment is high (Ichino *et al.*, 2003; Bertola *et al.*, 1999). Moreover, compensation for unfair dismissal set by courts can deviate widely from the minima set out in legislation, since judges may account in their final decision for damages corresponding to past and expected future financial losses and psychological damage. The related measures of EPL strictness (namely the two first-level indices, "compensation following unfair dismissal" and "extent of reinstatement") reflect to some extent these judicial practices, provided that information was available at the time of writing.

Although court decisions are potentially important to evaluate how binding employment protection regulations are in practice, preliminary statistics on case numbers and conciliation practices suggest that they may play mainly a *threatening role*. Indeed, few cases seem to be brought before the courts each year (Table 2.1).[3] In appeals to the court, workers are not in a particularly favourable situation, despite often benefiting from the assistance of trade unions. In several countries, the judicial procedure may be very long, from six months to more than one year, while the percentage of cases won by workers is often around 50%, adding uncertainty on both the side of the employee and the employer concerning the outcome of any case. The uncertainty over the court ruling and the length of the procedure may be an incentive to reach a bilateral agreement, through mediation and conciliation. In this respect, the most striking fact revealed by Table 2.1 is probably that, in countries where data are available, most labour disputes are resolved by conciliation even before appealing to the court, or an agreement is reached during the court hearing and the dispute is withdrawn before the court ruling. This observation is however difficult to generalise, since the countries in question (Australia, Ireland, Italy, New Zealand, the United Kingdom, and the United States) tend to promote mediation as the primary problem-solving mechanism with adequate institutional or administrative support.

Box 2.1. **The role of contractual provisions: some preliminary evidence**

Contractual provisions are likely to play a key role in countries with low levels of statutory employment protection, in particular with regard to severance pay provisions. In Japan, for instance, although there are no statutory requirements for severance pay, private arrangements provide for it in most cases. According to enterprise surveys, average redundancy pay may reach almost three months after 20 years tenure.* Since this practice is both widespread and well-documented, it has been possible to include it in the related measure of EPL strictness. However, the Japanese case is an exception since in most other countries it is difficult to account for similar individual or collective agreements.

As in Japan, there are no legal provisions for severance pay in New Zealand or in the United States and severance pay is usually governed by the terms of collective bargaining agreements or company policy manuals. However, the share of employees that are covered by such contractual provisions is not sufficient for them to be included in the related EPL index. In the United States, only 20% of all private sector workers were covered by severance pay plans in 2000 (according the US Department of Labor's National Compensation Survey). In New Zealand, almost 90% of all employees covered by collective agreements in the private sector benefit from contractual provisions governing redundancy pay or notice. But the collective bargaining coverage is quite low (about 13% of all private sector workers in 2003, according to Harbridge *et al*., 2003).

Moreover, even in countries where collective bargaining coverage is high, the role of collective agreements in setting severance pay provisions, in lieu of legislative rules, is not necessarily as important as one might expect. For instance, in Germany, where the collective bargaining coverage rate is about 70% and there are no legislative provisions on severance pay, only special collective agreements providing redundancy pay for older workers with long tenure exist. Such special protection agreements have been in place for about 40 years and protect about 35% of all employees covered by collective agreements.

Finally, it is noteworthy that even in the presence of legislative provisions, collective agreements may include more generous severance payments. For instance, in Australia, approximately 24% of all current private sector agreements contain redundancy provisions that are above the standard established by law. All in all, it is estimated that around 20% of all private sector employees (covered by federal awards) would have access to these above-standard redundancy provisions.

Moreover, individual contracts or collective agreements may also include employment protection provisions that go beyond the issue of severance pay. In Germany, special collective agreements may restrict grounds under which firms can dismiss older workers with long tenure. In fact, this kind of additional employment protection is more widespread than contractual provisions for severance pay since it relates to about 46% of all employees covered by collective agreements (against 35% for severance pay provisions).

* This figure refers to the difference in severance pay between lay-offs and voluntary quits. Indeed, severance pay (retirement allowance) is provided to employees in both cases but is somewhat higher in the event of lay-off.

Finally, the Dutch system deserves specific consideration. In the Netherlands, courts intervene at an early stage of the dismissal process and shape employment protection for regular workers more directly. In fact, Dutch dismissal law is governed by a "dual system" where an employer can dismiss a worker either by requesting prior permission from a public administrative body – the Centre for Work and Income (CWI) – or, since the 1970s, by

Table 2.1. **Preliminary evidence on court cases in selected OECD countries**

	Competent body	Assistance	Burden of proof	Number of cases brought before the competent bodies (per cent of layoffs)[a]	Percentage of cases won by workers	Length of the procedure
Australia	Australian Industrial Relations Commission.	Workers can obtain assistance in their applications and in the appeals process from the relevant trade union of which they are a member or from a nominated agent.	Employee.	7 700 (1.1) per year (average 1997-2002).	90% of all claims were resolved by conciliation and only 4.7% by formal arbitration. 57% of all formal arbitrations were resolved in favour of the employee.	Usually 6-7 months.
Finland	Labour court and ordinary court.	In labour courts, trade unions and employers organisations are involved in the process as a judge. Trade unions also assist workers and they are plaintiffs in a case.	Employer.	17 (5.1) in 2002 – labour courts.	30% of all cases heard by courts.	Usually 6-8 months.
France	Labour court.	Trade unions may provide legal assistance and advice to the employee. They may also represent the employee in court.	Employer and employee.	92 000 (25.3) in 2001.	75% of all heard cases (average for all types of dispute).	About 1 year (average for all types of dispute).
Germany	Labour court.	Trade unions may represent the employee in court.	Employer.	265 000 (22.6) cases closed by labour courts, per year (average 1999-2002).	Not available.	3-4 months on average.
Ireland	Rights Commissioner Service (RCS).[b] Employment Appeals Tribunal (EAT).	The employee may appear and be heard in person or may be represented by a representative of a trade union.	Employer.	RCS: 650 (3.5) per year. EAT: 1 000 (4.8) per year (averages 2000-02).	RCS: up to 2/3 of cases may be resolved in favour of the employee. EAT: 17% of all cases disposed (including cases withdrawn prior or during hearing); 53% of all heard cases; almost 70% of all cases disposed are withdrawn prior or during hearing.	RCS: approximately 2-3 months from submitting claim to receiving a written decision. EAT: 5-6 months on average.[c]
Italy	Provincial labour office.[d] Labour court.	Trade unions are entitled to represent employees and may assist employees during the conciliation process.	Employer (mostly).	3 864 (1.6) cases brought before labour courts in 2001.	55% of all cases heard by courts. A majority of cases were settled by the parties themselves, without being brought before courts.	About 2 years (average duration of lawsuits).
New Zealand	Mediation Services[e] (MS). Employment Relations Authority (ERA). Employment court.	Mediation services are available to assist employers, employees and unions in resolving any employment relationship problem, quickly and effectively. Employees may always be represented by their union.	Employer, while employee has to supply prima facie evidence.	First half of 2003: MS: 3 600 (5.8) requests completed; ERA: 1 500 (2.0) applications received.	ERA: in 2002 last quarter, about 50% of claims, for which a determination was issued, were resolved in favour of the employee.	ERA (averages for all application types): mediation applications usually completed in 6 weeks; determinations issued within 8 months of the application being made (usually 2-3 months after the date of the first hearing).
Norway	Ordinary court.	Trade unions may provide legal assistance to their members.	Employer and employee.	170 (n.a.) per year (average over a 12-year calculation period).	51% of all cases brought before courts in 2003.	Not available.

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Table 2.1. **Preliminary evidence on court cases in selected OECD countries** *(cont.)*

	Competent body	Assistance	Burden of proof	Number of cases brought before the competent bodies (per cent of layoffs)[a]	Percentage of cases won by workers	Length of the procedure
United Kingdom	Advisory Conciliation and Arbitration Service (ACAS). Employment tribunals (ET).	Both applicants and respondents are allowed to be represented at Tribunals.	Employer (mostly).	42 000 (7.1) per year, including ACAS and ET cases. (average 2001-2003). In 2002/2003, 3 800 (0.8) cases were brought before ET.	In 2002/03: 46% of all cases were settled through the ACAS; 27% were withdrawn; 22% went to an ET hearing and 44% of them were resolved in favour of the employee.	In 2002/03, 86% of Employment Tribunal decisions were issued within 4 weeks of the final hearing.
United States	Equal Employment Opportunity Commission (EEOC). Federal Mediation and Conciliation Service (FMCS). Private Arbitration. National Labour Relations Board (NLRB). Federal tribunals.	Discrimination cases brought to Federal court via the EEOC are assisted by the Office of General Commissioner. EEOC, FMCS, and Private arbitration systems (in private sector collective agreements) provide mechanisms for the parties to reach an agreement without going to court. (EEOC heard 80 000 discrimination cases in 2002 and only 364 went to a federal court).	Employer, while employee has to supply prima facie evidence.	NLRD heard 4 708 (0.03) cases of unfair dismissal related to union activity in 2002. Federal Courts heard 217 (0.0) cases of unfair dismissal related to discrimination (put forward by EEOC).	19.45% of cases heard by NLRD. 83% of cases heard by the Federal court.	Average of 3 years for decisions to be issued by NLRB. Average of 182 days to process an EEOC complaint.

a) These percentages have to be interpreted as proxies only as the numerator (number of cases brought before a court) and the denominator (number of layoffs) are not measured for the same year. In particular, data on layoffs comes from Chapter 5 of this document (EU, average rate 1994-2000), Farber 2003 (US, 1998-2001), Borland *et al*. 1999 (Australia, 1997), Herzog 1996 (New Zealand, 1985-1994). No data was found for Norway.

b) Ireland: The Rights Commissioners operate as a service of the Labour Relations Commission. While Rights Commissioners are appointed by the Minister for Enterprise, Trade and Employment, they are independent in their investigative functions. Rights Commissioners' investigations are mainly carried out in private and the Rights Commissioners issue recommendations or decisions which may be appealed by either side to the Employment Appeals Tribunal.

c) Ireland: EAT: 3-4 months on average up to the date of hearing. An unfair dismissal case can take a significant number of hearing days before it is completed. Once finalised, the Secretary drafts the decision and forwards it to the Chairman for approval and signature. In general, EAT secretaries aim to draft/issue a determination within 6/8 weeks from the date of a determination in the matter.

d) Italy: The worker may bring suit before the labour courts but an attempt at conciliation must first be made before the Provincial Labour Office. In any event the parties may also try to settle the dispute through trade union sponsored procedures or through informal arbitral proceedings. Only a small number of labour disputes actually end up in the courts and even then the parties are obliged to make one last attempt at conciliation before the court itself proceeds with the case.

e) New Zealand: The Employment Relations Act promotes mediation as the primary problem-solving mechanism. The aim of mediation is for the parties to achieve a settlement that is mutually acceptable to them, or alternatively, the parties can agree for the Mediator to make a binding decision on the issue in question. If the parties are unable to resolve an employment relationship problem in mediation, they may take the problem to the Employment Relations Authority. The Authority is an investigative body that operates in an informal way, looking into the facts and making a decision based on the merits of the case, not on the legal technicalities. When an application comes before the Authority, the Authority is required to consider whether the parties should be directed to use mediation, if they have not already attempted to do so. If mediation is unsuccessful, the parties will then return to the Authority. Anyone who is unhappy with the Authority's determination can appeal to the Employment Court for a full judicial hearing.

Source: OECD Secretariat on the basis of direct submissions from national authorities.

requesting a Civil Court to dissolve an employment contract (see also EIRO Observer, 2003). Use of the court method increased greatly in the 1990s and, in 2003, the CWI treated 85 881 requests for approval of dismissals, of which 84% were approved, while Civil Courts received 78 491 requests for dissolution of the employment contract. These two ways of ending an employment relationship are rather different. Civil Courts usually dissolve the employment contract but require relatively high severance pay for the employee. In addition, there is no appeal possible against the decision of the Civil Court to dissolve the employment contract. On the other hand, no severance pay is required if the procedure is conducted via the CWI but the outcome is more uncertain and, after the CWI has approved the dismissal and the notice period has passed, the dismissed employee can still ask court compensation for unfair dismissal and reinstatement. These differences could explain why, in practice, large companies prefer the dismissal procedure via Civil Court despite its higher monetary cost. Conversely, small businesses often prefer the CWI-procedure for providing a preventive judgment on whether the wanted dismissal is fair or not. By doing so, small businesses protect themselves against the risk of having to pay high compensation in case of unfair dismissal.

For temporary employment, there is uncertainty concerning the extent to which regulatory provisions may be enforced in practice. Temporary workers have even less chances of bringing their case to court than their regular counterparts since they probably do not benefit from the same union support in presenting their case. And in a majority of countries, there is no impartial body with the task of randomly visiting and auditing workplaces in order to verify that regulations governing the use of fixed-term contracts and temporary work are respected. Resources are generally directed towards the investigation of cases arising from denouncement by a firm's (ex)employee. Besides, even in countries where there is an active labour inspectorate, it mainly aims at verifying the existence of written contracts, working conditions and salaries, in line with the equal treatment principle. This could result, *de facto*, in a high degree of freedom for employers regarding the respect of the rules that set the type of work for which temporary employment is allowed, at least for the first contract. Case law may, however, play a more relevant role in the case of successive fixed-term contracts: in many countries, successive fixed-term contracts without objective reasons run the risk of a court declaring the contract null and void. The related measure of EPL strictness takes this issue into account in assessing to what extent the number of renewals is actually restricted.

B. Strictness of employment protection regulation in OCDE countries

Summary measures of employment protection regulation are now available for a large number of OECD countries at three points in time, namely the late 1980s, the late 1990s and the year 2003. Since specific requirements for collective dismissals were taken into account as from the late 1990s only, the analysis is based on two overall summary indicators. The first one (version 1) allows changes over time to be studied as from the late 1980s, with the drawback of excluding regulations on collective dismissals. The second one (version 2) provides a broader measure of EPL by including specific requirements for collective dismissals, but gives a limited picture of changes over time.

The current situation: regulation on temporary employment still makes the difference in cross-country comparisons

The overall strictness of employment protection continues to vary widely between countries (Chart 2.1, Panel A). In this respect, specific requirements for collective dismissals do not play a major role. Indeed, taking account of these specific requirements in the overall measure of EPL strictness does not affect cross-country comparisons much (Chart 2.1, Panel C). Conversely, regulation of temporary employment appears to be a key element behind cross-countries differences. France, Greece, Spain, Mexico and Turkey offer, for instance, the strictest employment protection among OECD countries, while not having particularly stringent provisions for regular contracts (Chart 2.1, Panel A). Overall, in cross-country comparisons, there is more dispersion in the strictness of regulation for temporary work than for regular contracts (Chart 2.1, Panel B).[4]

However some complementarities between different components of employment protection regulation remain:

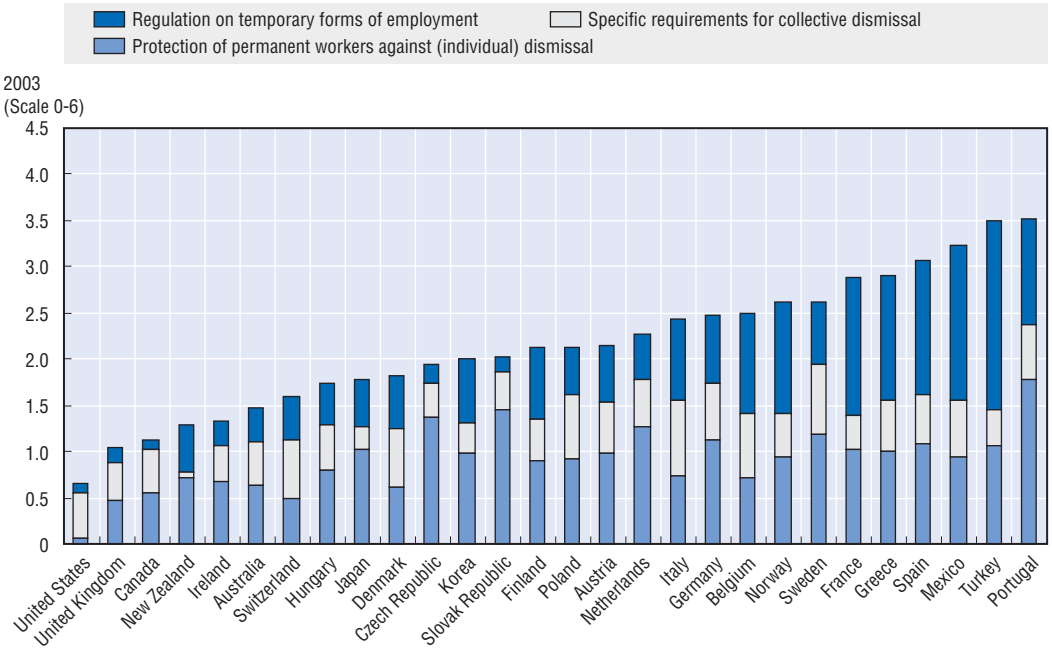
- Despite some notable exceptions, strict regulation for temporary contracts tends to go hand-in-hand with strict regulation for permanent contracts (Chart 2.1, Panel B). Otherwise, employers may have an incentive to substitute regular contracts with temporary work and fixed-term contracts.
- The various provisions that contribute to the strictness of dismissal regulation for permanent contracts appear to be complementary to each other. Stricter rules for notice and severance pay, heavier procedural inconveniences and stronger difficulties of dismissal are all positively correlated to each other (Annex Table 2.A2.5). Effective enforcement of strict rules for notice and severance pay may indeed require closer monitoring of employers' behaviour (which implies more procedures and sanctions). If this was not the case, employers would have an incentive to cheat on the reason for dismissal (for example, invoke fault of the employee) to avoid the monetary costs of layoff.
- The restrictions on the use of fixed-term contracts and those on the recourse to temporary work agency contracts are also highly positively correlated (Annex Table 2.A2.5). This can be easily explained by the fact that, for employers, these two types of contracts are at least partly substitutable. Similarly, for both temporary work agency and fixed-term contracts, restrictions on the types of work for which these contracts are allowed tend to go hand in hand with a shorter permitted duration. The rationale for this is simple: imposing rules that limit the use of these contracts to seasonal or occasional activities is coherent with requiring them to be of relatively short duration.

Changes over time: between convergence and relative inertia

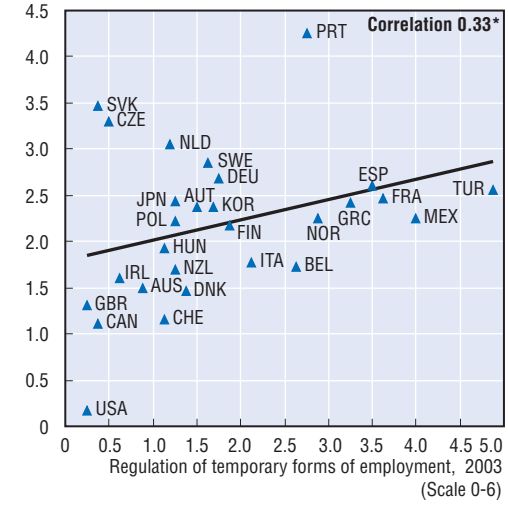
When looking at changes over time in the overall summary indicators, two striking facts emerge.[5] First, over the past 15 years, there has been some convergence in the strictness of EPL between OECD countries, with most of the changes occurring in the 1990s. This is mostly the result of a relaxation of the rules governing EPL in the countries where legislation was particularly strict, *i.e.* the trend has been towards an easing of regulations in high-EPL countries (Chart 2.2, Panels A and B).[6] Second, despite some convergence, the *relative* position of countries across the overall spectrum of EPL strictness has not changed much since the late 1980s (Chart 2.2, Panel A). The United States, the United Kingdom and Canada remain the least regulated countries while stricter employment protection is still a feature of southern European countries.[7] France, and on the opposite side, Italy, are the main exceptions to this general picture. Indeed, Italy had one of the most regulated labour markets

Chart 2.1. **The overall summary index and its three main components**

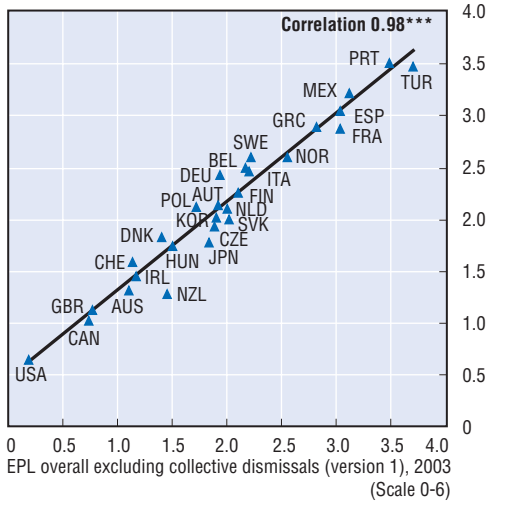
Panel A. Overall strictness of EPL in 2003 (version 2)[a]



Panel B. Protection of permanent workers against individual dismissal and regulation on temporary forms of employment



Panel C. Overall EPL strictness: version 1 versus version 2

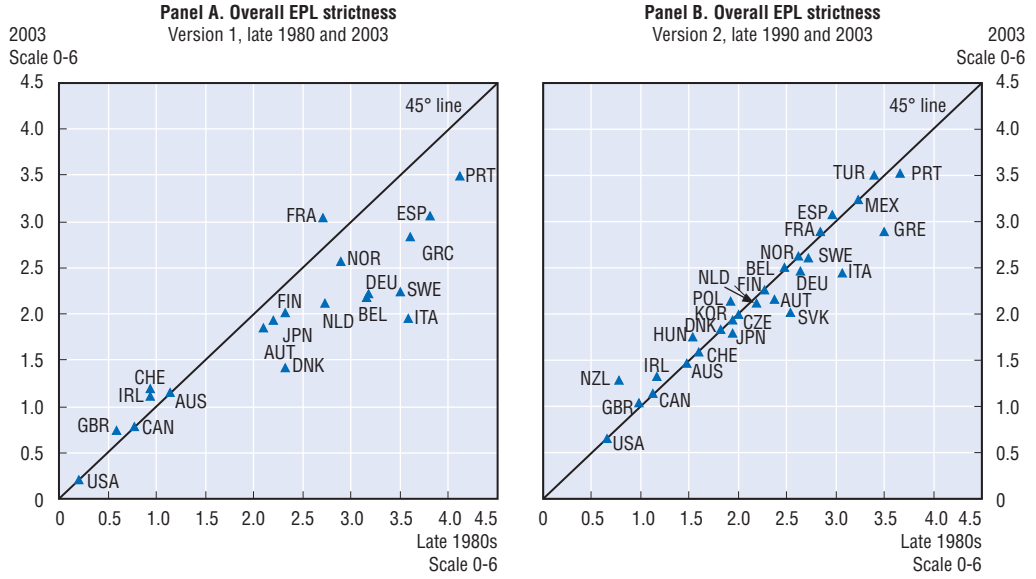


, **, * means statistically significant at 1%, 5% and 10% levels, respectively. Panel B: without Czech Republic, Portugal, Slovak Republic, Pearson correlation coefficient = 0.568.

a) Countries are ranked from left to right in ascending order of the overall summary index.

Source: See Annex Table 2.A2.4.

Chart 2.2. **Changes over time: some convergence but relative inertia in country rankings**



Note: Countries below the 45° line are those where EPL has been eased. Countries above the 45° line have made EPL more stringent.

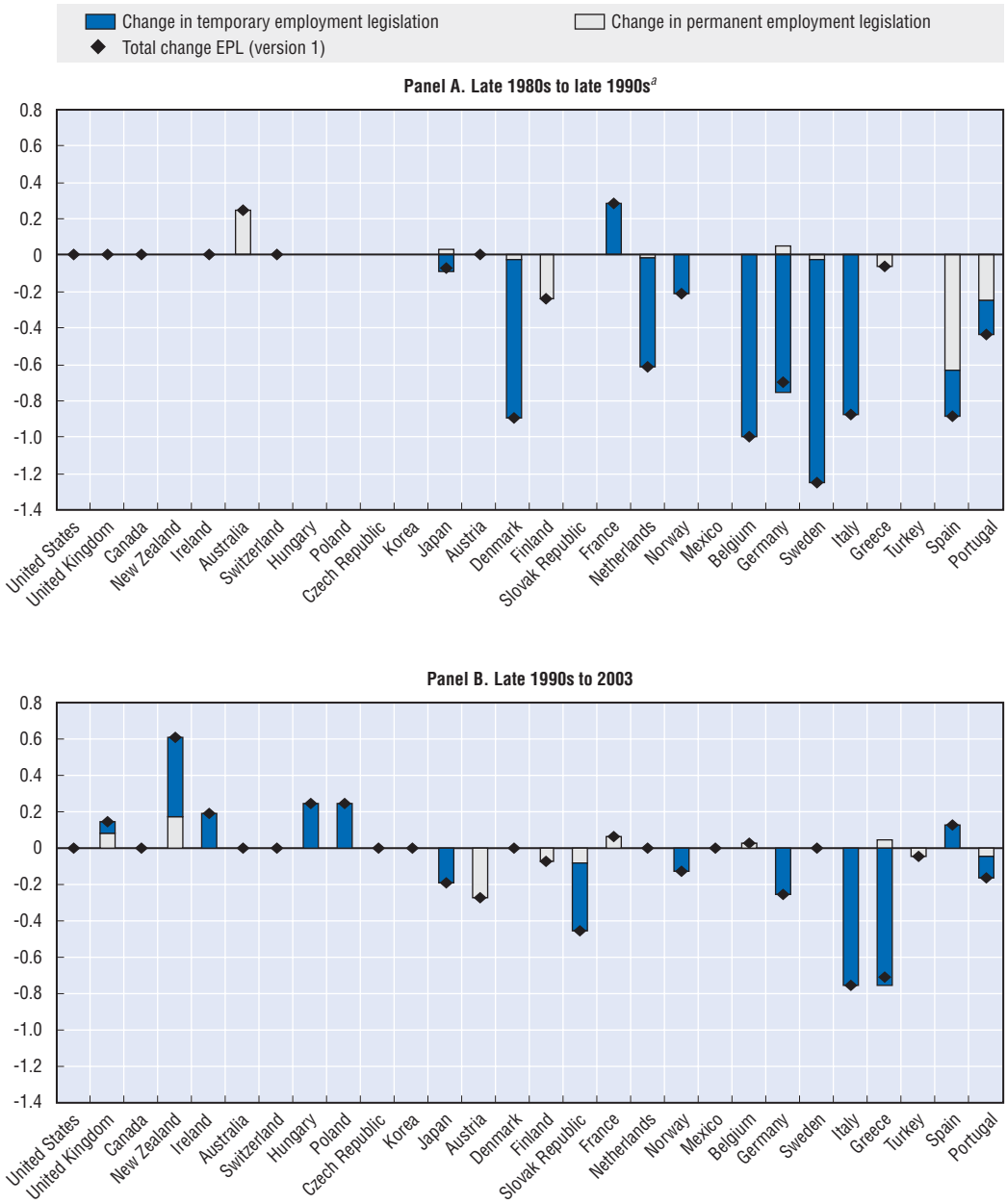
Source: See Annex Table 2.A2.4.

in the late 1980s and is today closer to the middle of the spectrum, while France has moved in the opposite direction.

Chart 2.3 provides a closer look at changes over time in overall employment protection regulation by disentangling changes related to the provisions for regular contracts from changes related to the regulation of temporary contracts. In addition, countries are ranked by increasing degrees of overall EPL strictness in the late 1980s (or late 1990s when the latter data are not available). The convergence process across countries appears even more clearly. Three main points deserve to be underlined:

- Changes that occurred between the late 1980s and the late 1990s were concentrated on deregulation in the countries ranking higher for overall regulation (Chart 2.3, Panel A).
- Reform initiatives since the late 1990s are more mixed. A small number of countries at the bottom of the EPL ranking have increased regulation, whereas some others with more stringent regulation have continued their process of deregulation (Chart 2.3, Panel B).
- In most cases, changes in overall EPL strictness were driven by changes in the regulation of *temporary employment* (see also Annex Table 2.A2.5). The most prevalent path of reform consisted in facilitating the use of fixed-term contracts and/or recourse to workers hired from temporary work agencies. In the 1990s, almost two thirds of countries where changes in overall EPL strictness occurred, had eased regulation of temporary employment. Over recent years, half of the reforms have followed the same path, while a small number of low-regulated countries have added restrictions on the use of temporary employment. Overall, few countries have undertaken significant reforms to the regulation of permanent employment. With the exceptions of Austria and New Zealand (see Box 2.2), these reforms mainly consisted in relaxing procedural requirements and/or reducing difficulties of dismissal.

Chart 2.3. **Deregulation of temporary work as the most prevalent path of EPL reforms**



Note: Countries are ranked from left to right in ascending order of the overall EPL in the late 1980s (late 1990s when 1980s data are not available).

a) Data for the late 1980s are not available for the Czech Republic, Hungary, Korea, Mexico, New Zealand, Poland, the Slovak Republic and Turkey.

Source: See Annex Table 2.A2.4.

In sum, changes in overall EPL strictness since the 1980s have been driven by *partial* reforms. Indeed, reforms have affected either the regulation of temporary employment, or the regulation of permanent employment, but rarely both. In particular, many countries have chosen to enhance workforce flexibility by easing the use of temporary employment while keeping the existing provisions intact for regular or permanent workers (see also

Box 2.2. **EPL reforms in Austria and New Zealand**

Over recent years, several countries have reformed their employment protection legislation, but in most cases, this has been done without reversing the general philosophy of the regulatory provisions already in force. Indeed, these alterations mainly consisted in relaxing or tightening some of the existing regulations. By contrast, the reforms undertaken in Austria and New Zealand have been of a more fundamental nature.

Austria has recently transformed its severance pay legislation into a system of individual savings accounts. Severance pay entitlements were previously based on the *length* of the employment relationship between *one worker* and *one firm*. Legislation stipulated that severance pay had to be paid to private sector employees in the event of termination of the employment contract by the employer, as long as the employee had worked for the employer at least for the previous three years. The payment started with one month's wage per year of tenure exceeding three years, and reached a maximum of one year of pay for workers with 25 years of seniority of more.

Since 2003, employers have to contribute 1.5377% of the payroll to an individual account (managed by a fund that invests the balance in private capital markets), from the first day of employment until contract termination. In the case of dismissal by the employer, an employee with at least three years of job tenure can choose between receiving his/her severance payment from the account at once, or saving the entitlements towards a future pension. The amount will not be paid out if the employee quits or job tenure is shorter than three years. The entitlement, however, remains and the balance is carried over to the next employer. Indeed, the new separation allowance is saved and cumulated by the employee over his/her *entire working life*. From the employer's standpoint, this new system suppresses the specific monetary cost of a dismissal, while it tends to increase labour costs in general. From the employee's standpoint, it reduces the cost of job mobility, in that workers do not lose anymore all of their entitlement to severance payments when taking a new job. In the new system, entitlement starts on the first day of employment and does not depend on the way the employment contract is terminated.

In New Zealand, the Employment Relations Act (ERA), which came into force in 2000, has marked a significant departure from the previous legislation in that it promotes collective bargaining as a positive basis for employment relationships (Forster and McAndrew, 2003). The ERA requires to bargain in "*good faith*" on the basis of a Code of Good Faith. It also requires mediation as a first step in the event of disputes (see Table 2.1). The principle of good faith means that before employers can dismiss an employee, they must give trade-unions and/or the employee in question explicit, reasonable notification of the reasons as well as reasonable notice. But the ERA does not state clearly what *reasonable* means. In addition, all employment agreements must set out, in plain language, the procedure for resolving employment relationship problems, which may include a notification procedure.

By and large, the ERA has set some regulatory provisions for dismissals, while also specifying that heavier procedures have to be set by individual employment agreements or collective bargaining. In that sense, it has tended to increase procedural inconveniences for dismissal. The ERA has also tended to limit the use of fixed-term contracts, by requiring *genuine* reasons based on reasonable grounds to employ a worker under such a contract. Here again, it does not state explicitly what *genuine* reasons based on *reasonable* grounds are. Instead, the ERA provides that excluding or limiting the rights of employees under the Act, or establishing the suitability of the employee for a permanent contract, are not genuine reasons for using a fixed-term contract.

OECD, 1999, Chapter 2). Only four countries have undertaken comprehensive reforms governing both permanent and temporary work: Portugal, Spain, the Slovak Republic and New Zealand. The first three countries have relaxed the regulation of both temporary and permanent employment while New Zealand has moved in the opposite direction.

2. Links between EPL, labour market dynamics and labour market outcomes for different groups

Employment protection regulations are thought by many to be a key factor in generating labour market rigidity. As a result, these regulations are often cited as one cause for the large cross-country differences in labour market performance, notably between the United States and Europe. A rich theoretical and empirical literature has developed over the past decade with the objective of producing results that could support or disprove these views. OECD itself has addressed this issue several times in the past. Despite this, there remain significant differences in the literature on the effects of EPL on labour market outcomes. While some economists argue that worrying about strict labour market regulations may be time wasted (Nickell and Layard, 1999), many others stress that stringent EPL is likely to damage labour market performance (see for example, Heckman and Pagès, 2000).

A. Safer jobs but longer spells

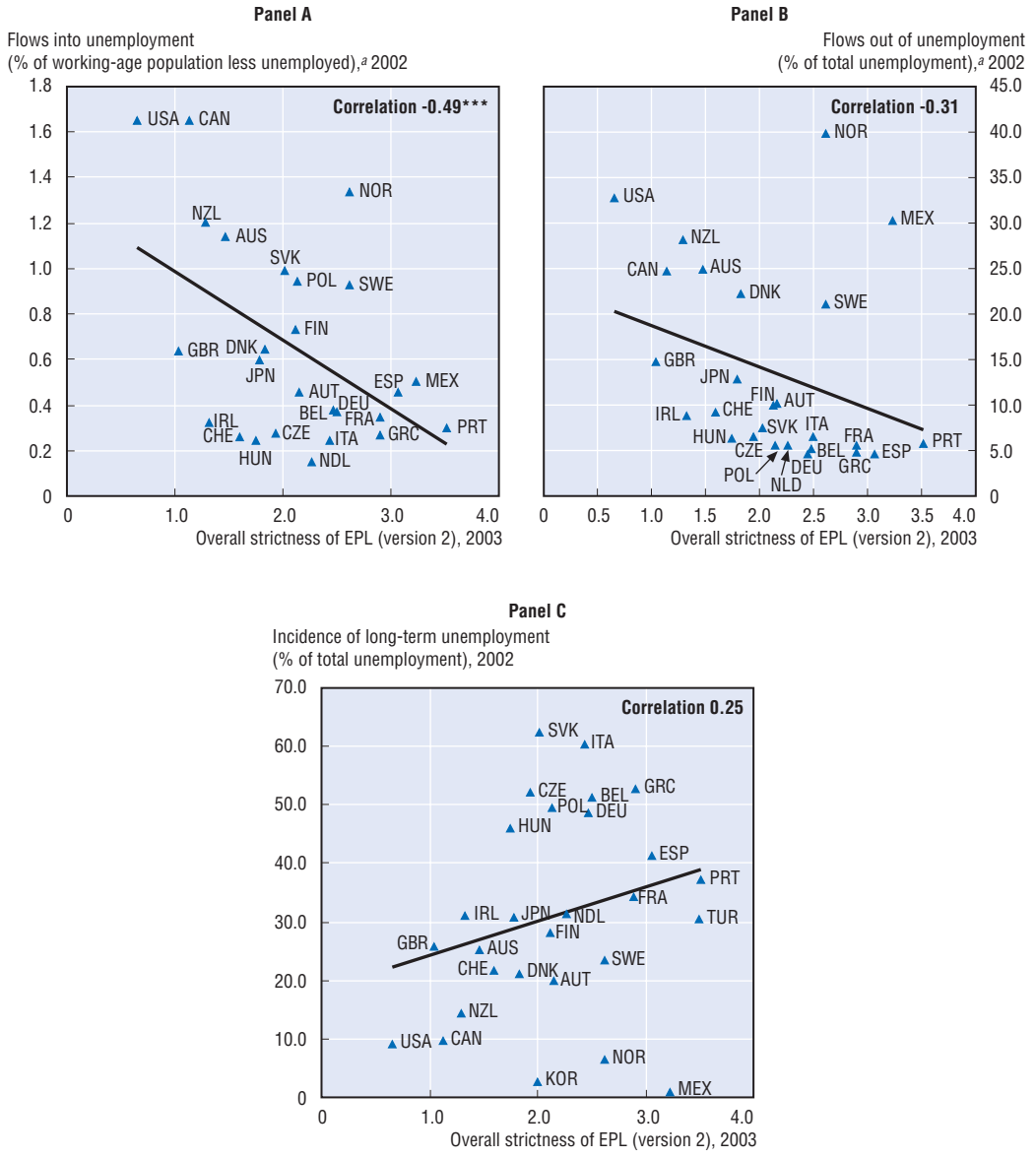
Dismissal legislation and provisions regulating the use of fixed-term contracts and temporary work agencies can all be described as restrictions placed on the ability of the employer to adjust the workforce and to control labour costs. As such, theoretical analyses predict that higher employment protection reduces firings during economic downturns, but may also decrease hiring rates in periods of rising demand (for a recent survey, see Young, 2003). Indeed, in deciding whether to hire new workers, the firm will take into account the likelihood that firing costs will be incurred in the future. Assuming that wages cannot be fully adjusted to compensate for the fact that firms may have to incur firing costs,[8] hiring decisions will be affected. As a consequence, employment protection will tend to reduce employment fluctuations over the cycle while increasing both job stability and the length of unemployment spells.

Although the finding that EPL tends to depress firing and hiring rates is a robust one in the theoretical literature, empirical cross-country work on this relationship is limited, mostly hampered by the availability of comparable data for layoffs and new hires. In addition, the emerging picture is not always as clear cut as in theoretical predictions.[9]

However, some recent studies have demonstrated that, once data comparability issues are dealt with, the empirical validity of theoretical research on the effect of EPL is confirmed. For instance, Blanchard and Portugal (2001) find that controlling for firm size and taking quarterly rather than annual job flows is important when comparing Portugal and the United States. Indeed, their correction allows them to show that quarterly rates of job creation and destruction are significantly lower in Portugal (where EPL is rather strict) than in the US (where EPL is the lowest among OECD countries). Another study that improves on data quality has recently been carried out by the European Central Bank (Gomez-Salvador *et al.*, 2004). Using comparable data on job creation and destruction for EU countries, the authors show that firm and sectoral characteristics are important determinants of job flows and, once these are accounted for, EPL is found to significantly reduce job creation while its effect on job destruction is not statistically significant.

Likewise, there is empirical evidence that strict employment protection reduces flows into and out of unemployment (OECD, 1999, Chapter 2).[10] Chart 2.4 examines the bivariate associations between EPL and some variables measuring flows in and out of unemployment and the incidence of long-term unemployment. These charts provide some indication that EPL may slow down labour market adjustment. Stricter EPL is associated with a lower unemployment inflow rate, while the relationship between EPL and outflows from unemployment is negative, in line with the theory, but the correlation is not statistically

Chart 2.4. **Simple correlations between EPL, labour market dynamics, and the incidence of long term unemployment**



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

a) The unemployment inflow rate is defined as persons unemployed for less than one month as a percentage of the source population (the working age population less the unemployed) and the outflow rate as the percentage of the unemployed moving to employment or out of the labour force in an average month.

Source and definition: See Annex Tables 2.A2.4 and 2.A3.1.

significant (Chart 2.4, Panel B). For instance, Nordic countries tend to have relatively high outflow rates despite a moderate to high level of EPL. This may be related to their heavy reliance on active labour market policies that are likely to reduce the possible negative effect of EPL on outflows to employment.[11]

In fact, EPL is only one of a large set of policy instruments and institutional variables that affect the functioning of the labour market. Some, like active labour market policies, could limit any negative effects of EPL on hiring rates. Others, like a passive administration of unemployment benefits, may reduce unemployed individuals' incentives to look for a job. Not taking account of the institutional and policy environment in which EPL operates may bias the estimated relationship between EPL and labour market outcomes. Therefore, the next step is to see whether the simple bivariate associations presented in Chart 2.4 are robust to the inclusion of these additional factors and to the introduction of a measure of EPL that varies over time (see Box 2.3 for methodological issues).

Box 2.3. **Methodological issues**

To estimate the links between EPL and labour market performance, several techniques can be used. The choice of one method over the others depends largely on the type of data that is available and on its variation over time and across countries. With regard to EPL, it is worth noting that most of the variability in the index comes from differences *across* countries, rather than changes in EPL through time. Indeed, although the analysis uses a longer annual time series for EPL, by their own nature, institutional changes do not happen frequently.

While estimating the model with ordinary least squares (OLS) would fully account for cross-country variations, this would leave some information unused as *successive* observations for each country would be treated as *independent*. OLS estimates can be corrected for this in two ways: by assuming that the differences across countries can be entirely explained by a constant country effect (Fixed Effects) or by treating country-specific constant terms as randomly distributed across cross-sectional units (Random Effects). As pointed out by Heckman and Pagès (2000), fixed-effects estimates (FE) are likely to be imprecise because they only use the time-series variation within countries. In other words, FE estimates have the drawback of leaving unused a large part of the information included in the sample, namely the cross-country variation in EPL strictness. Instead, random effects (RE) or pooled OLS estimations, that use both the cross-section and time-series variation included in the sample, are likely to produce estimates that explain a larger share of data variability. However, OLS and RE estimates will be biased if variables included as controls are correlated with country-specific error terms.

Since RE estimates offer a good compromise in exploiting the full potential of the dataset (*i.e.* cross-section and time-series variation), they are chosen as a baseline for the empirical results presented in this section. The results obtained using pooled OLS and FE are also reported, to check whether these different methodologies yield similar point estimates (as underlined above, each methodology has advantages and drawbacks). In addition, the following statistical tests are presented to support the choice of RE estimates as the baseline: *i*) a test for the presence of unobservable country-specific effects (F-test) to check that panel-data models are indeed preferable to OLS; *ii*) a test for the presence of random country-specific effects (Breush and Pagan LM test); *iii*) a test that the random country-specific effects are uncorrelated with the other regressors (Hausman's test).

The analysis uses *annual* data from 1985 to 2002 for 19 OECD countries, and a *time-varying* measure of employment protection. For each country, starting from the values of the EPL index (version 1) in the late 1980s, the late 1990s and the year 2003, the index was recalculated each year when a new legislation was introduced and applied thereafter until a new change intervened (see Annex 2.A2 for the construction of the EPL time-series). Finally, institutional and policy variables other than EPL include: indices of collective bargaining coverage and corporatism in the wage bargaining process, unemployment benefit replacement rates, the expenditure on active labour market policies per unemployed person, the tax-wedge.[12]

Table 2.2 shows that EPL tends to reduce the inflow rate into unemployment as well the rate of exit from unemployment. In addition, EPL is found to increase long-term unemployment. The results also confirm that the effect of active labour market policies facilitate outflows from unemployment and reduce long-term unemployment. The generosity of unemployment benefits increases the incidence of long-term unemployment and the same seems to be true for employment taxes.

Table 2.2. **EPL reduces labour market dynamics**[a]

Random effects, GLS

	Flows into unemployment[b]		Flows out of unemployment[b]		Incidence of long-term unemployment	
EPL	–0.165***	*(0.05)*	–5.030***	*(1.07)*	3.271***	*(1.26)*
Centralisation/co-ordination index	–0.015	*(0.04)*	0.003	*(0.94)*	–0.904	*(1.10)*
Bargaining coverage	0.001	*(0.00)*	–0.053	*(0.06)*	0.105	*(0.08)*
ALMP[c]			0.761**	*(0.31)*	–1.327***	*(0.43)*
Tax wedge	0.002	*(0.01)*	–0.143	*(0.14)*	0.980***	*(0.15)*
Unemployment benefits					0.187**	*(0.09)*
Output gap	–0.037***	*(0.01)*	1.064***	*(0.14)*	–0.574***	*(0.16)*
F-test[d]	36.4***		41.8***		59.8***	
B-P LM test[d]	892.3***		838.8***		1 117.0***	
Hausman test[d]	10.6*		5.6		0.9	
Coefficients on EPL estimated using other methods						
Fixed effects	–0.092*	*(0.05)*	–3.106**	*(1.27)*	1.763	*(1.53)*
Pooled OLS	–0.390***	*(0.03)*	–6.558***	*(0.76)*	5.992***	*(1.04)*
No. of observations	295		276		270	
No. of countries[e]	19		19		19	

***, **, * means statistically significant at 1%, 5% and 10% levels, respectively. All regressions include a constant term; standard errors in italics.

a) As the explanatory variables are not able to fully account for the rapid increase in Finnish and Swedish unemployment rates in the early 1990s (13 and 7.4 percentage points between 1990 and 1993 for Finland and Sweden respectively), data for Finland and Sweden in 1991 and 1992 are not included in the regression. Germany is only included for the post-unification period (1991 onwards). The sign and significance of the coefficients do not change when the output gap is replaced wih time dummies, in the RE specification.

b) The unemployment inflow variable is defined as persons unemployed for less than one month as a percentage of the source population (the working-age population less the unemployed) and the unemployment outflow variable as the percentage of the unemployed moving to employment or out of the labour force in an average month.

c) ALMP is instrumented on its average over the entire estimation period in the RE specification.

d) F-test of the hypothesis of absence of country-specific effects. Breush and Pagan LM test for random effects, distributed as a $\chi^2_{(1)}$. Hausman (1978) specification test, distributed as a χ^2.

e) Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Italy, Japan, Netherlands, New Zealand, Norway, Portugal, Spain, Sweden, Switzerland, United Kingdom and United States.

Source and definition: See Annex Table 2.A3.1.

B. Who pays for safer jobs?

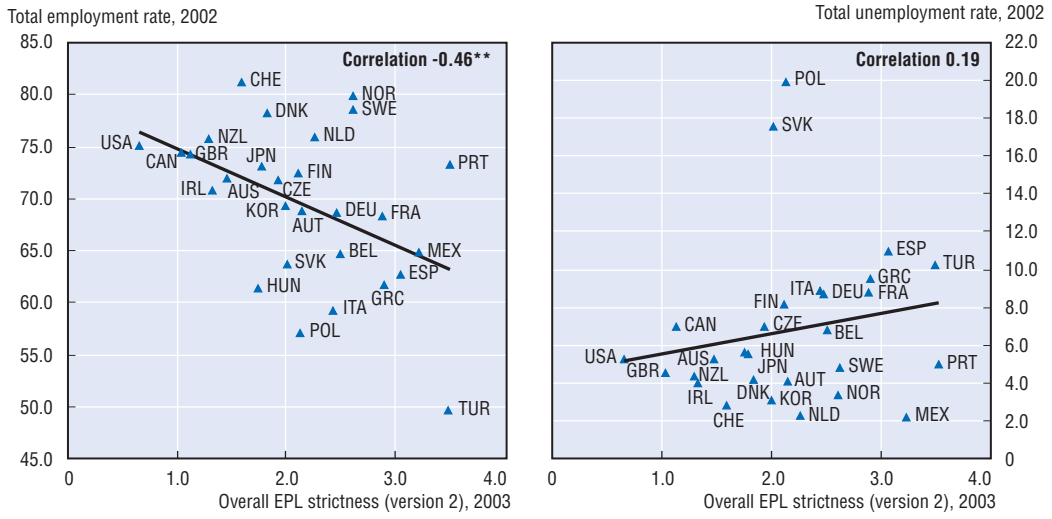
The impact of EPL on overall employment and unemployment *rates* is ambiguous as it depends on whether the effect of employment protection on layoffs is offset by the reduction in hiring rates. However, a more stagnant labour market may prevent the reallocation of resources from declining industries to growing industrial sectors and may have negative implications for economic performance, and ultimately for labour market outcomes (Hopenhayn and Rogerson, 1993). In particular, stringent EPL may be an impediment to the adoption of new technologies and innovation where innovation-driven labour adjustments have to be accommodated through worker turnover (OECD, 2003b).

It is worth noting that EPL may have broader implications for employment relationships than simply governing labour market flows. For instance, it may strengthen the position of protected workers (so called "insiders") in wage bargaining. EPL may thus have negative impacts on employment by raising labour costs indirectly through its effect on bargaining power. Bentolila and Dolado (1994) suggest that this effect could be reinforced by the existence of temporary forms of employment if permanent workers dominate unions and set wages for all workers. Insofar as employment adjustment is likely to fall disproportionately on temporary workers, the bargaining power of insiders under permanent contracts tends to increase with the incidence of temporary work. The consequence would be a widespread rise in wages, damaging labour market performance.[13]

On the other hand, other potential implications of EPL may go in the opposite direction. For instance, by promoting workers' effort and cooperation through stable employment relationships, redundancy payments may increase aggregate employment (Fella, 2004). Employment security may also enhance productivity by encouraging investment in human capital, since longer-lasting employment will increase the expected returns to training. In this regard, Belot *et al.* (2002) suggest that in the absence of employment protection, workers would under-invest in firm-specific human capital because they could be fired on the spot, even after having made an effort to upgrade their skills and borne the corresponding cost. Therefore, introducing layoff costs would encourage employees to invest in firm-specific human capital, which in turn could partly compensate for the depressive effect that these costs might have on job creation. If not too high, firing costs may thus reduce unemployment (and improve economic efficiency). However, insofar as it may be in the individuals' private interest to introduce layoff costs into employment contracts, care should be taken in justifying why government legislation is called for.[14]

Overall, theoretical analysis does not provide clear-cut answers as to the effect of employment protection on overall unemployment and employment. It is thus not surprising that economists have turned increasingly to empirical analyses to try to resolve the question. At first glance, simple cross-country correlations are still partly inconclusive (see Chart 2.5), pointing to a negative relationship between EPL and employment rates, while no clear association can be detected between EPL and unemployment rates. Naturally, it is not possible to draw policy conclusions on the basis of such bivariate associations and several studies have been carried out in search for clearer conclusions from multivariate analysis. There too, however, researchers are not unanimous. In fact, while the bulk of the studies reviewed in Table 2.3 suggest that EPL reduces overall employment rates, there is less consensus about its effect on unemployment. However, as pointed out by Baker *et al.* (2004), both the significance and the magnitude of the estimated effects of EPL on employment and unemployment vary widely across studies.

Chart 2.5. **EPL and labour market performance: simple cross-country correlations**



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

Source and definition: See Annex Tables 2.A2.4 and 2.A3.1.

Employment protection is found to have some impact on unemployment in a few studies. For instance, when accounting for potential *interactions* between EPL and other institutions, these studies suggest that stringent employment protection would tend to increase structural unemployment rates in countries with large union coverage and/or intermediate levels of bargaining coordination. This result is consistent with the idea that EPL may damage labour market performance by increasing labour costs indirectly through its effect on the bargaining power of core workers. However, other studies do not find such an effect or show that it is not robust to small changes in the data, estimation methods or equation specification (Baker *et al.*, 2003, 2004).

Some studies investigate the possible interaction between EPL and economic shocks. In this regard, Blanchard and Wolfers (2000) provide an explanation of unemployment shifts which depends on long-run changes in total factor productivity growth, labour demand and the real interest rate, with a bigger impact of these long-run shifts in countries with "rigid" institutional settings. In other words, employment protection may affect unemployment primarily by magnifying the impact of exogenous shocks. In the same spirit, Nickell *et al.* (2001, 2003) attempt to explain actual unemployment by both institutional factors (that impact on equilibrium unemployment) and *temporary* shocks[15] (which cause unemployment to deviate from equilibrium unemployment). They conclude that changes in unemployment across OECD countries are mainly explained by shifts in labour market institutions, while interactions between institutions and shocks appear to make no significant additional contribution to explaining unemployment in the long run. Employment protection is found to have an impact on unemployment, mainly raising unemployment persistence.[16]

By and large, while evidence of the role played by EPL on aggregate employment and unemployment rates remains mixed in both theoretical and empirical studies, the idea that EPL may not affect the employment opportunities of various demographic groups in the same way collects more consensus. While EPL is generally shown to have little or no effects on the employment rates of prime-age men, several studies suggest that stringent employment protection tends to decrease the employment rates of both youth and women (see Table 2.3).

Table 2.3. **A summary of empirical findings**

	Dependent variable	Data frequency	Variation in institutional variables	Cyclical controls shock variables, and institutional controls	Results	Remarks	Estimation methodology
Baker *et al.* (2004)	Unemployment.	Five-year averages.	Time varying institutions.	Change in inflation. EPL, UB replacement rates, UB duration index, union density, union coverage, coordination index, tax wedges.	EPL is found to have no effect on unemployment rates, except for the sub-period 1980-99 when EPL is found to reduce unemployment.	The authors use several different specifications to illustrate the lack of robustness of panel data estimates found in the literature. Some specifications include interactions between UB duration and replacement rates, union density and wage bargaining coordination, tax wedge and coordination.	Random effects and fixed effects.
Belot and van Ours (2000)	Structural unemployment.	Annual.	Time-varying institutions.	Change in inflation. EPL, UB replacement rates, union density, union coverage, coordination index, tax rates.	EPL is found to have no effect on structural unemployment at mean value of union density and coverage, and bargaining coordination. EPL raises structural unemployment when union coverage is higher than average.	The paper includes interactions between institutions. This has a sound theoretical foundation as policy complementarities are likely to play an important role in shaping labour market performance. A drawback of the model is that it is static so that the within-country persistence of unemployment is excluded.	Fixed effects.
Bertola *et al.* (2002)	Unemployment.	Five-year averages.	Constant and time-varying institutions.	TFP growth; labour demand shocks; real interest rate. Plus: share of youth (15-24) in the population. EPL, ALMP, UB replacement rates, UB duration index, union density, union coverage, coordination index, tax wedge.	Constant EPL is found to significantly increase the effect of shocks on unemployment. This is no longer the case when EPL is allowed to change over time.	The authors find that institutional changes raise unemployment slightly more than shocks and demographics do. The interaction between institutions (time-varying or constant) and shocks remains important in explaining the divergence in unemployment rates across countries.	Fixed effects.
Blanchard and Wolfers (2000)	Unemployment.	Five-year averages.	Constant institutions.	TFP growth; labour demand shocks; real interest rate shocks. EPL, ALMP, UB replacement rates, UB duration index, union density, union coverage, coordination index, tax rates.	EPL reinforces the negative effect of shocks on unemployment in the long run.	The paper focuses on explaining long-run shifts in unemployment with the interaction between constant institutional variables and long-run changes in the level of TFP growth, labour demand and the real interest rate.	Fixed effects.
Elmeskov *et al.* (1998)	Structural unemployment.	Annual.	Time-varying institutions.	Output gap. EPL, ALMP, UB replacement rate, union density, coordination index, corporatism index, tax wedge, minimum wages.	EPL is found to increase structural unemployment, with its effect reinforced at intermediate levels of wage bargaining coordination.	The result on EPL is consistent with the idea that when insiders have strong bargaining power, they may more easily resist attempts by employers to lower wages as a result of higher dismissal costs, even if this works to the detriment of outsiders.	Random effects.

Table 2.3. **A summary of empirical findings** *(cont.)*

	Dependent variable	Data frequency	Variation in Institutional variables	Cyclical controls shock variables, and institutional controls	Results	Remarks	Estimation methodology
Heckman and Pagès (2000)	Employment and unemployment (by gender and age) and incidence of long-term unemployment.	Annual.	Time-varying institutions (two periods only).	GDP level, GDP growth. Plus: female participation rates and proportion of the population aged 15-24. Job security index (based on notice periods and severance pay), minimum wages, union centralisation.	EPL is found to have a negative and significant effect on overall employment rates. The effect of EPL on prime-age men employment is smaller than the overall effect, while the effect on youth employment is larger than the overall effect. The effect of EPL on unemployment is not significant in most specifications. No effect is found on long-term unemployment.	The authors use a sample of OECD and Latin American countries and their own measure of EPL. They use RE, FE and OLS and only employment results for men and youth are found robust across methods. The effect of EPL on prime-age women employment vary widely across estimation procedures. Effects on unemployment are nearly always positive and stronger for OECD countries.	Random effects, fixed effects, pooled OLS.
Nickell (1997)	Unemployment, long-term unemployment, employment to population ratio (overall and for prime-age men).	Five-year averages.	Some time-varying institutions (constant EPL).	Change in inflation; dummy for second period. EPL, ALMP, UB replacement rates, UB duration index, union density, union coverage, coordination index, tax wedge.	EPL is found to have no significant effect on total unemployment but it is shown to significantly increase long-term unemployment; EPL is also found to reduce employment to population ratios and participation rates. No effect is found on employment rates of men aged 25 to 54.	The paper uses five-year averages of the data, including averages of some time-varying institutions, in order to smooth out cyclical factors. The result on employment rates is driven by the effect of EPL on the labour market position of under-represented groups.	Random effects.
Nickell *et al.* (2001, 2003)	Structural unemployment and the employment rate (in another paper).	Annual.	Time-varying institutions.	Time dummies, money supply shock, change in TFP growth, labour demand shock, real import price shocks, real interest rates. EPL, UB replacement rates, UB duration index, union density, coordination index, tax wedge, owner occupation rate.	EPL is found to have an impact on structural unemployment, mainly operating via its impact on raising unemployment persistence (captured by the interaction of the EPL variable with lagged unemployment). A twin working paper applies the same structure to the employment rate and finds a non-significant effect of EPL.	The paper estimates a dynamic model with actual unemployment explained by institutional factors that impact on equilibrium unemployment and shocks that cause unemployment to deviate temporarily from equilibrium unemployment. Shifts in labour market institutions are found to explain about 55% of the change in unemployment, while interactions between constant institutions and shocks appear to make no significant additional contribution.	Fixed effects + lagged dependent variable.

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Table 2.3. **A summary of empirical findings** *(cont.)*

	Dependent variable	Data frequency	Variation in Institutional variables	Cyclical controls shock variables, and institutional controls	Results	Remarks	Estimation methodology
OECD (1999, Chapter 2)	Unemployment and employment rates (in log and by gender, age and skill).	Six-year averages.	Time-varying institutions.	Output gap. EPL, ALMP, UB replacement rates, UB duration index, union density, union coverage, coordination index, centralisation index, tax wedge.	In most cases, the impact of EPL on both unemployment and employment rates is found to be negative but not statistically significant. Negative and statistically significant effect are found on prime-age men unemployment only. Positive but not statistically significant effect are found on prime prime-age men employment and youth unemployment.	The chapter uses two-period (1985-90 and 1992-97) panel regressions to estimate the effect of EPL on various labour market outcomes. EPL is found to decrease unemployment inflow and outflow rates and to raise mean employment duration. EPL is also found to increase the share of self-employment. All of these effects are statistically significant.	Random effects.
OECD (2002a, Chapter 5)	Employment rate.	Annual.	Time-varying institutions.	Output gap. EPL, UB replacement rates, union density, product market regulation index.	EPL is found to decrease overall employment rates.	The negative and statistically significant effect of EPL is mostly found in countries with intermediary levels of bargaining corporatism.	Fixed effects.
Scarpetta (1996)	Structural unemployment.	Annual.	Time-varying institutions.	Output gap. EPL, ALMP, UB replacement rates, union density, coordination index, corporatism index, tax wedge.	EPL is found to raise structural unemployment and non-employment, with stronger effects for youth and long-term unemployment.	The paper estimates a dynamic model – as well as a static one – and shows that EPL reduces the adjustment speed of unemployment presumably by raising real wage rigidity.	Random effects + lagged dependent variable.

ALMP: active labour market policies; EPL: employment protection legislation; FE: fixed effects; OLS: ordinary least squares; RE: random effects; TFP: Total productivity factor; UB: Unemployment benefit.

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Indeed, there are reasons to think that youth, as new entrants into the labour market, and women with intermittent participation spells, will primarily be affected by any reduced hiring caused by EPL, while being less in a position to benefit from reduced firings than other groups. As a consequence, employment protection would damage their employment opportunities. On the other hand, those already in the core labour market, mainly prime-age men, will primarily benefit from any greater job stability induced by EPL. The results presented in Table 2.4 are partly consistent with this view (see Box 2.4 for estimation details). While the results for youth vary in significance, EPL is found to significantly reduce the employment opportunities of prime-age women, probably because they are more likely than men to move between employment and inactivity, in particular when seeking to balance the competing demands of work and family life (OECD, 2002a, Chapter 2). On the other hand, EPL does not appear to play a significant role for employment of prime-age men.

In addition, the mixed results on older workers suggest that the reduction in hiring rates might be compensated by a decrease in firings resulting from EPL. The cost of firing someone with a long tenure is very high and employers tend to retain these workers. On the other hand, the estimated effects of EPL on hiring decisions may not have much effect on older-workers, many of whom are close to retirement age.

Table 2.4. **The employment effects of EPL vary across population groups**[a]

Coefficient on EPL

	Dependent variable: employment rate									
	Prime-age men		Prime-age women		Youth		Older		Low skilled	
Random effects[b]	0.107	*(0.29)*	–1.381**	*(0.60)*	–2.062***	*(0.68)*	–0.296	*(0.54)*	–0.051	*(0.58)*
Fixed effects	0.543	*(0.36)*	–1.498**	*(0.65)*	–0.339	*(0.81)*	–0.066	*(0.54)*	1.183*	*(0.64)*
Pooled OLS	0.662***	*(0.20)*	–3.039***	*(1.11)*	–3.769***	*(0.45)*	4.119***	*(0.63)*	1.955***	*(0.57)*
F-test[c]	45.6***		233.5***		57.3***		208.4***		72.4***	
B-P LM test[c]	838.8***		113.5***		518.4***		308.4***		623.7***	
Hausman test[c]	8.4		0.1		57.0***		52.0***		23.7***	
No. of observations	286		142		278		193		224	
No. of countries[d]	19		16		19		18		19	

***, **, * means statistically significant at 1%, 5% and 10% levels, respectively. Three sets of estimations are shown, corresponding to three different methodologies, namely random effects, fixed effects and pooled OLS (see Box 2.3 for the explanation of these methodologies). All regressions include: output gap, tax wedge, high coordination dummy, low-coordination dummy, expenditure on ALMP per unemployed, unemployment benefits replacement rates. Prime-age women regressions include, in addition: relative tax rate of the second earner, child benefits, public spending on child care and days of paid leave. Youth and Low skilled regressions include, in addition: minimum wages as per cent of average wages. Older workers regressions include, in addition: average retirement age, implicit tax rate on continued work. Detailed results are available on request. Standard errors in italics.

a) As the explanatory variables are not able to fully account for the rapid increase in Finnish and Swedish employment rates in the early 1990s (13 and 10 percentage points between 1990 and 1993 for Finland and Sweden respectively), data for Finland and Sweden in 1991 and 1992 are not included in the regression. Germany is only included for the post-unification period (1991 onwards). Employment regressions for women and youth include a trend to account for the strong rise in female participation and the tendency of youth to stay longer in school and delay entry to the labour market.

b) ALMP is instrumented on its average over the entire estimation period. The sign and significance of the coefficient on EPL for women and youth do not change when the output gap is replaced wih time dummies. The effect of EPL on employment rates of older workers and the low skilled becomes positive and significant when the output gap is replace with time dummies.

c) F-test of the hypothesis of absence of country-specific effects. Breush and Pagan LM test for random effects, distributed as a $\chi^2_{(1)}$. Hausman (1978) specification test, distributed as a χ^2.

d) Australia, Austria, Belgium, Canada, Denmark (not for older), Finland, France, Germany, Italy (not for women), Japan (not for women), Netherlands, New Zealand, Norway, Portugal, Spain, Sweden, Switzerland (not for women), United Kingdom and United States.

Source: See Annex Table 2.A3.1.

Box 2.4. **EPL and employment performance of selected socio-demographic groups: equation specifications and their limitations**

The specifications used in Table 2.4 differ from those in the previous tables as they include, where appropriate, some additional group-specific variables. These are introduced to account for factors specific to demographic and skill groups that may be crucial determinants of participation decisions and, as a result, of employment rates. For prime-age women, the specification includes the relative tax rate of a second earner, the increase in household disposable income from child benefits for two children, total public expenditure on childcare, and the total number of weeks of paid maternity, parental and childcare leave. For youth and the low skilled, a variable capturing the size of the minimum wage relative to average wages is included. Finally, for older workers some additional controls are used to account for differences in retirement age across countries, and implicit marginal tax rates on continued work (see Duval, 2003; and Jaumotte, 2003 for details on the construction of these variables).

Needless to say, the analysis suffers from several limitations. Besides methodological issues mentioned in Box 2.3, a number of important controls are left out (mainly because an up-to-date time-series of these variables is not yet available). For example, several aspects of product market regulation have been shown to have an effect on labour market outcomes – primarily on employment levels and industry wage premia – but are left out (see Nicoletti and Scarpetta, 2002). Moreover, the baseline specification does not include any interactions between institutions and economic shocks, or between various types of institutions.

For these reasons, the estimation results presented in this section should be considered with caution. In particular, the sign of the estimated coefficients is certainly more reliable than their size (insofar as these coefficients are statistically significant). More tests for the robustness of the results should be carried out before drawing policy conclusions. A more comprehensive study of the links between labour market performance and institutional settings (including EPL) will be carried out as part of the re-assessment of the OECD Jobs Strategy.

For the low-skilled, evidence is also mixed, with some specifications pointing to a positive effect of EPL on employment rates. As the low skilled tend to be employed in low-productivity jobs, they are more likely to be negatively affected by adverse economic developments that reduce labour demand. For this reason, employment protection regulations may play a particularly important role for unskilled workers with permanent or regular contracts, by limiting layoffs in periods of weak economic growth. On the hiring side, OECD (2002a, Chapter 3) shows a strong over-representation of low skilled workers in temporary employment. If employers tend to hire low-skilled workers by way of temporary contracts, particularly where EPL is strict, this may support the employment opportunities for those unskilled workers outside the "core" labour market. This is likely to be reflected in less stable employment histories for unskilled workers.[17]

C. Temporary or regular contracts: who is most protected?

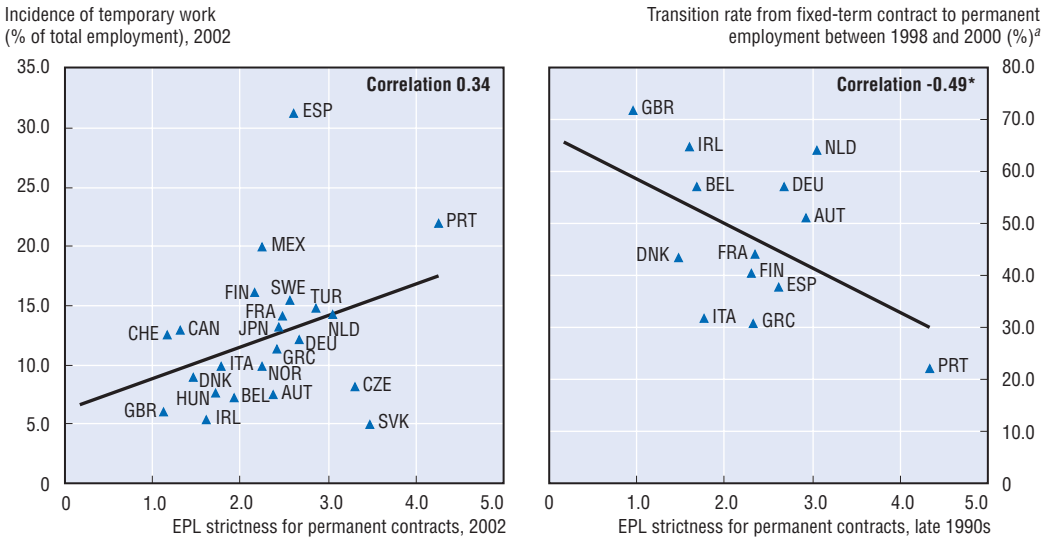
Since the mid-1980s, many countries have eased the use of temporary forms of employment. This may have contributed to the expansion of temporary employment by giving employers the opportunity to circumvent strict rules imposed on permanent contracts.[18] In addition, such partial reforms may reinforce labour market duality. In fact, their main effect may be to produce high turnover in temporary jobs, with many workers

going through several unemployment spells before obtaining a regular job (see Blanchard and Landier, 2002; Cahuc and Postel-Vinay, 2002). The existence of high firing costs for permanent contracts may indeed constitute an incentive for employers to use temporary contracts in sequence rather than converting them to regular contracts. In such circumstances, easing the use of temporary forms of employment would foster both hiring and job separation, the latter effect being strengthened when firing costs for permanent contracts are large. As a result, the implication for overall unemployment is unclear. In this regard, the Spanish experience has been investigated in many empirical studies, providing some support to the view that partial reforms may lead to a segmented/dual labour market while having neutral or limited effects on overall unemployment (see Dolado *et al.*, 2002).

By and large, provided that temporary forms of employment are permitted by law, the extent to which they will be used by employers, as well as the extent to which they could constitute a bridge towards regular employment, would largely depend on the regulation in force for permanent contracts. Chart 2.6 indeed suggests that stricter rules applicable to regular contracts may tend to increase the incidence of temporary work and to limit the extent to which temporary contracts will be converted into permanent ones. In this regard the presence of heavy procedural inconveniences linked to layoffs of regular workers is likely to constitute the main determinant of the choice of fixed-term contracts over permanent ones, as severance pay is in general rather limited for workers with short tenure (see Annex Table 2.A2.1). Along these lines, Autor (2000) suggests that, in the United States, the decline of the "employment at will" doctrine could explain as much as 20% of the growth of temporary help employment between 1973 and 1995.

That said, when considering the relationship between EPL and temporary employment *over time*, changes in the regulation of temporary contracts are likely to play a primary role as provisions for regular contracts have remained mostly unchanged.[19] In this regard, the

Chart 2.6. **Strictness of employment protection and the incidence of temporary work**



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

a) Share of workers aged 25 to 64 years with a fixed term contract in 1998 who have a permanent contract in 2000.

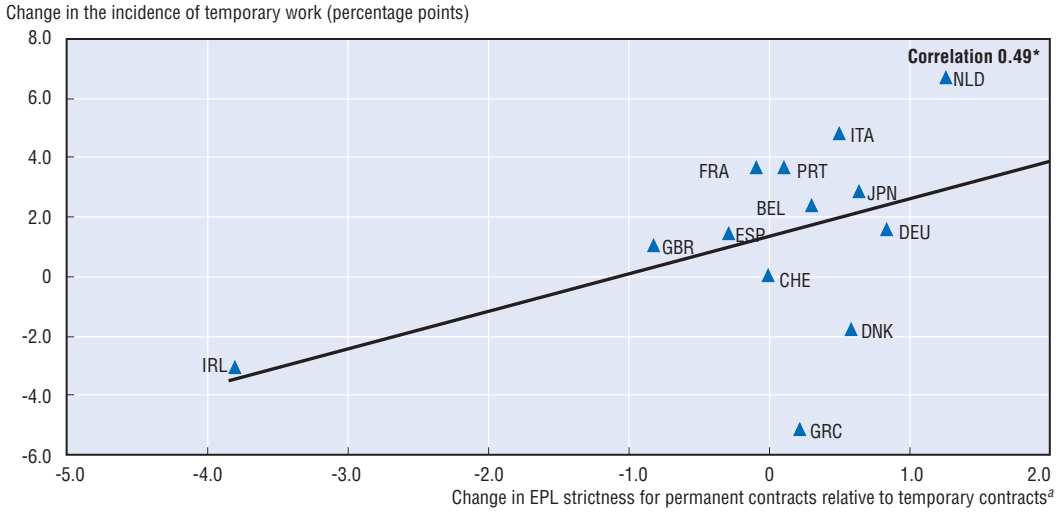
Source and definition: See Annex Tables 2.A2.4 and 2.A3.1; for transition rate, European Community Household Panel, Eurostat, waves 5 and 7.

relative difference in employment protection between regular and temporary contracts could constitute a good measure of the incentive for employers to hire on temporary contracts.[20] Indeed, this measure allows to account for the fact that easing the regulation of temporary contracts would increase the incentive to hire on temporary contracts to a larger extent when permanent contracts are more regulated.[21]

Overall, Chart 2.7 as well as the regression results presented in Table 2.5 tend to confirm that, over the 1990s, the incidence of temporary employment has grown faster in countries where the rules governing the use of temporary contracts have been significantly eased compared with the regulation of permanent contracts. Not many studies have been carried out that look at temporary employment in relation to EPL for OECD countries as a whole. One of the few, Nunziata and Staffolani (2002), finds evidence that firms tend to hire through permanent contracts when legislation on temporary work agencies is stricter. On the other hand, the authors find a limited impact of regulations governing fixed-term contracts on the type of contract used by firms.

In addition, relative differences in EPL between regular and temporary contracts may have specific impacts across groups. As Table 2.5 shows, the larger the relative differences in employment protection between regular and temporary contracts, the higher the incidence of temporary work for youth and the low skilled. On the other hand, this does not seem to be true for prime-age men, women and older workers (*i.e.* the estimated coefficients are insignificant). This result is all the more important as loose regulation on temporary work tends to weaken job attachment, with detrimental effects on training and human capital formation, which is especially important for the employability of youth, and low-skilled workers.

Chart 2.7. **EPL reforms and changes in the incidence of temporary work between 1990 and 2003**



***, **, * means statistically significant at 1%, 5% and 10% levels, respectively. Without Ireland, Pearson correlation coefficient = 0.30.

a) Difference between 2003 and 1990 in the ratio (EPLR-EPLT)/EPLT where EPLR refers to the EPL index for permanent contracts and EPLT is the EPL index for temporary contracts.

Source: See Annex Tables 2.A2.4 and 2.A3.1.

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Table 2.5. **Deregulation of temporary work has contributed to labour market duality**[a]

Impact of the relative difference between EPL for regular and temporary contracts on the incidence of temporary work

	Prime-age men		Prime-age women		Youth		Older		Low skilled		Total	
Random effects	0.718	*(0.87)*	0.531	*(0.94)*	7.196***	*(2.32)*	0.296	*(0.62)*	3.341***	*(0.95)*	1.640*	*(0.87)*
Fixed effects	0.951	*(0.93)*	0.748	*(1.00)*	9.261***	*(2.45)*	0.517	*(0.75)*	3.497***	*(0.98)*	2.444**	*(0.97)*
Pooled OLS	–0.764	*(0.77)*	–0.119	*(0.84)*	–4.957**	*(1.97)*	0.101	*(0.39)*	–3.293***	*(1.18)*	–0.361	*(0.70)*
F-test[b]	97.77***		103.77***		91.39***		31.68***		149.45***		96.95***	
B-P LM test[b]	772.86***		749.77***		645.03***		464.93***		472.51***		893.38***	
Hausman test[b]	3.87		57.01***		8.37		4.57		5.52		6.47	
No. of observations	168		168		168		168		122		190	
No. of countries[c]	14		14		14		14		14		16	

***, **, * means statistically significant at 1%, 5% and 10% levels, respectively. The relative difference is the ratio (EPLR-EPLT)/EPLT where EPLR refers to the EPL index for permanent contracts and EPLT is the EPL index for temporary contracts. Three sets of estimations are shown, corresponding to three different methodologies, namely random effects, fixed effects and pooled OLS (see Box 2.3 for the explanation of these methodologies). All regressions include: output gap, tax wedge, high coordination dummy, low-coordination dummy, expenditure on ALMP per unemployed and a constant term. Detailed results are available on request. Standard errors in italics.

a) As the explanatory variables are not able to fully account for the rapid increase in Finnish and Swedish employment rates in the early 1990s (13 and 10 percentage points between 1990 and 1993 for Finland and Sweden respectively), data for Finland and Sweden in 1991 and 1992 are not included in the regression. Germany is only included for the post-unification period (1991 onwards).

b) F-test of the hypothesis of absence of country-specific effects. Breush and Pagan LM test for random effects, distributed as a $\chi^2_{(1)}$. Hausman (1978) specification test, distributed as a χ^2.

c) Austria, Belgium, Canada (total only), Denmark, Finland, France, Germany, Italy, Japan (total only), Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, United Kingdom.

Source and definition: See Annex Table 2.A3.1.

3. Making the most of EPL: preliminary considerations

Employment protection regulation seems to fulfil its stated purpose, namely protecting existing jobs. However, as regards overall labour market outcomes, the rationale for pursuing this objective is not fully obvious. Indeed, although it cushions job destruction, employment protection also restrains job creation, and overall, its effect on employment is ambiguous. Turning to the literature, most analyses of employment protection have been conducted within a framework that does not justify its existence. Exogenous costs of dismissal are introduced into equilibrium models of the labour market where the consequences of those costs on employment are derived. As noted by Pissarides (2001): "In such a framework it is hard to see any beneficial effects of employment protection, beyond the obvious one of making jobs last longer." In this regard, studies that have addressed the question of why EPL exists in the first place usually show that to find an economic justification of EPL, it should be considered within a broader framework that also includes a welfare analysis. In addition, EPL interacts with other policy tools, such as unemployment insurance systems and active labour market policies, which may also contribute to greater security for those who participate in the labour market. Care should thus be devoted to analysing the contribution of EPL with regard to these alternative or complementary policy tools.

A. Why does employment protection exist?

The literature suggests two main economic justifications for the existence of employment protection. The first primarily invokes insurance arguments, showing that employment protection can be welfare-improving by insuring the workers' income against labour market

uncertainty. The second sees employment protection as a means of encouraging firms' social responsibility when they have to adjust their labour force in response to an unfavourable economic situation, which can also be welfare-improving.

According to some studies, employment protection provisions can be justified on the grounds that workers are risk-averse and that they do not have the possibility to privately insure themselves against labour market uncertainty (Pissarides, 2001; Bertola, 2004). These provisions make it possible to smooth income fluctuations due to the possible occurrence of unemployment spells. In this type of framework, both employees and firms may find it beneficial to explicitly introduce into the employment contract provisions that protect workers against the loss of income in the event of dismissal. Assuming that, contrary to the employees, firms are risk-neutral and have perfect access to capital markets, it is optimal for both workers and employers to introduce severance pay into the employment contract (Pissarides, 2001). In such a setting, employers act as bankers and/or insurance companies, while employees trade lower wages for the severance pay that they get in the event of layoff. An optimal degree of employment protection is thus shown to exist, which is different from zero and is set through *private agreements*. In this respect, it is important to note that employment protection does not cause employment relationships to last longer; it primarily makes it possible to smooth workers' income across job and unemployment spells. Notwithstanding severance pay provisions, jobs are destroyed when productivity shocks occur that are sufficiently negative to make job continuation unprofitable. Hence, one loses an important aspect of employment protection, which is increased job stability.[22]

While severance pay can serve to smooth workers' *income* in the face of labour market risks, notice periods have more comprehensive insurance properties (Pissarides, 2001). When jobs are threatened by a negative productivity shock and become unprofitable, the existence of a notice period *de facto* extends their duration.[23] Obviously, notice periods are costly for the employer. In principle, in order for this cost not to affect the hiring behaviour of firms, employees have to accept lower wages. If dismissed workers are entitled to unemployment benefits, there will be an optimal relation between the level of these benefits and the length of the notice period (indeed, the longer the notice period, the lower the wages). In that sense, unemployment insurance and employment protection appear to be substitutable, and the optimal length of the notice period decreases when the unemployment benefits become more generous.

Overall, regardless of the form that it takes (severance pay or notice period), it always seems the case that employees and firms have an incentive to establish some degree of employment protection. The crucial condition for this result to hold is that employees partly pay for the benefits that they receive (in the form of insurance against labour market risk) by accepting lower wages. Workers are willing to do so only if the insurance part of their contract is actually enforceable. In the absence of legal requirements, employers could renege on their engagements and not provide the contractual severance pay at the time of layoff (Pissarides, 2001). The government would thus intervene to guarantee the workers' rights *vis-à-vis* employers. If this enforcement role can justify government intervention, it may also set limits to it. In particular, procedural requirements, such as consultation and authorisation procedures, that are not explicitly targeted at contractual enforcement, should be excluded. While these requirements may avoid some layoffs, their final outcome is often difficult to predict.

It is, however, important to note that the justification of employment protection as a way of insuring workers income against labour market risk mainly relies on arguments that are of a *contractual* nature. Employees as well as employers would have a *private* interest in introducing some form of employment protection into employment contracts. Fundamentally, in this kind of analysis, the government only plays a role of safeguard of private contractual arrangements. A stronger case for government intervention in this area is found in recent studies that show that employment protection could also be socially beneficial by affecting individual decisions that would otherwise be socially inefficient.

The central argument here is that the social value of a job may be higher than its private value. This may reflect a variety of microeconomic distortions and, in particular, the fact that the government uses payroll or income taxes to finance unemployment benefits as well as public goods. A job may thus become unproductive for an employer, while still generating some resources for society. Therefore, without government intervention, there would be too many layoffs compared to what would be socially and economically desirable. In such a setting, the primary purpose of EPL is to give firms the right incentives to internalise the social cost of layoffs in order to enhance economic efficiency. Dismissal costs do not play any direct insurance role and the task of guaranteeing a minimal income in the event of job loss is left to the unemployment insurance (UI) system. Dismissal costs possibly play an indirect insurance role, though, if they partly contribute to the funding of the UI system. In this sense, the layoff tax would tend to increase with the generosity of the unemployment benefits, since the more generous the UI benefits, the larger the fiscal distortions that dismissal costs may correct.

Employment protection may thus have positive effects on welfare, provided that the depressive effects that it tends to have on job creation can be neutralised in one way or another. One possibility suggested in the literature is that the government subsidises hiring while taxing layoffs (Cahuc and Jolivet, 2003; Blanchard and Tirole, 2004). In this respect, the firing tax should take the form of a transfer from the firm to the government and thus contribute to the funding of the hiring subsidy. On the other hand, if job stability induced by the firing tax gives workers the right incentives to invest in firm-specific human capital, the resulting productivity gains could compensate for the depressive effect that the firing cost may have on job creation without requiring any additional government intervention (Belot *et al*., 2002). Here, the optimal design of the firing tax would correspond to a transfer from the firm to the worker since it would give workers an additional incentive to invest in training.

B. Guaranteeing employment and income security: the role of EPL vis-à-vis *other policies*

As seen in the previous section, some analysts attribute to EPL mainly an insurance role against *income risk* with severance payments and/or notice periods guaranteeing a smoother income stream in case of job loss. In this respect, the role of EPL has to be considered together with unemployment insurance (UI) which pursues a similar goal of guaranteeing income security to the unemployed.

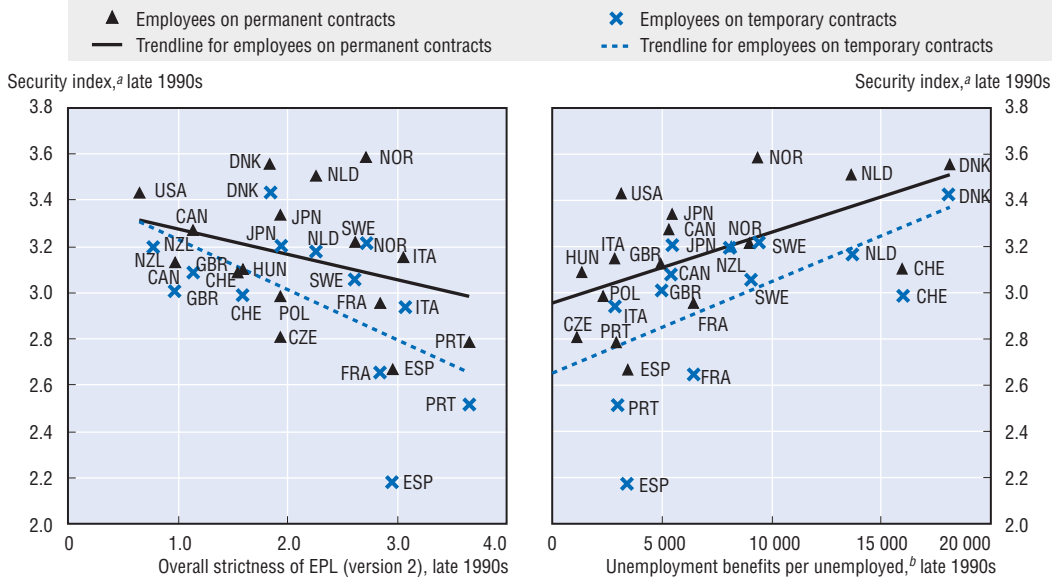
Income security: employment protection vs. unemployment insurance

Although UI benefits and EPL are to a certain extent substitutes, there are important differences in the way they protect individuals against labour market risks.[24] In fact, relying on severance payments may fail to provide adequate income security. At the aggregate level, EPL fails to cover all individuals facing income risk and lacks any redistribution patterns between individuals. Indeed, as an insurance against loss of income due to unemployment

spells, severance payments have the major drawback of not covering those who exit from employment as a result of the end of fixed-term contracts. In addition, the entitlement to severance payments does not consider individual characteristics that are bound to play a key role in determining the degree of income protection needed. Payments may not be sufficient for individuals who are at risk of long-term unemployment, while individuals with more secure labour market status, such as high-educated workers, may be overcompensated. In this respect, a centralised body – such as an unemployment benefit system – may be more efficient in taking individual situations into account as well as assisting and monitoring job search. Finally, another feature of severance payments is that entitlement is closely linked to the *length* of the employment relationship between a worker and a firm. Since workers lose most of their entitlement to severance payments when taking a new job, such schemes of income protection may reduce voluntary workers' job-to-job mobility.

The view that EPL may be less effective than UI in insuring against income risk is supported by Chart 2.8. It emerges that generous unemployment benefits are correlated positively with workers' perceptions of employment security while stricter EPL is correlated negatively with them. As expected, temporary workers fell less secure than their permanent counterparts. Strikingly, not only does more stringent EPL make temporary workers feel less secure but, it seems to have a similar effect on the very workers that it is meant to protect. This could, however, simply mean that stricter EPL is found in countries where workers, on average, tend to be feel more insecure about their jobs (*i.e.* country specificities would explain EPL differences). But it is noteworthy that the above results still hold when using a more

Chart 2.8. **Unemployment benefits re-assure workers while EPL makes them worry**



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

Note: Pearson correlation coefficient for the EPL is –0.35 for permanent contracts, –0.57** for temporary contracts. For the unemployment benefits per unemployed, it is 0.58** for permanent contracts and 0.59** for temporary contrats.

a) Average answer, by country, to the following question from ISSP "Do you worry about the possibilities of losing your job?" – Scale from 1 (I worry a great deal) to 4 (I don't worry at all).

b) Expenditure on unemployment compensation divided by LFS unemployment .

Source: Data on security index taken from the International Social Survey Programme 1997 (ISSP); OECD database on Labour Market Programmes; OECD database on Labour Force Statistics.

sophisticated measure of workers' feelings of employment security allowing for observed and unobserved individual heterogeneity (Clark and Postel-Vinay, 2004).

EPL may, however, play some additional role with respect to UI. Notably, it partly puts on employers the responsibility of financing the costs resulting from their layoff decision (and its impact in term of expenditure on unemployment benefits), which may have some benefits in terms of economic efficiency (see Section 3.A). Along this line, the system of Experience Rating (ER) was introduced in the United States to prevent firms from taking advantage of the system of temporary layoffs. Indeed, employers could fire employees temporarily and recall them later on, therefore being implicitly subsidised by the UI system during temporary decreases in workload. In response to that, the current experience-rated system of UI involves more directly employers' social responsibility by asking them to finance the costs resulting from their layoff decision, *i.e.* unemployment benefits paid to displaced workers. Broadly speaking, ER consists in linking employers' social security contributions to the layoff history of the firm and using the amount collected to cover, at least in part, the cost of UI for the laid-off workers (see Box 2.5).

Many studies have been devoted to understanding the consequences that ER may have on unemployment and welfare. Feldstein (1976) was one of the first to offer a theoretical analysis of ER. Accordingly, ER would have a positive effect of shifting workers from high-turnover firms to employers who offer more stable jobs, thus reducing frictional unemployment.[25] Generally, empirical research gives support to the analysis of Feldstein. All studies suggest that UI systems, which are not fully experience-rated, may account for an important share of temporary and permanent layoffs. Topel (1983) estimates that such systems account for more than a quarter of temporary layoffs and other studies put this proportion to between 20 and 30%. For permanent layoffs, the figure is generally smaller and varies between 5 and 20% (see Card and Levine, 1994). Anderson and Meyer (1993, 1994, 2000) shed light on the effect of experience-rating in a broad variety of cases in the United States. The paper by Anderson and Meyer (2000) is of particular interest because the authors provide a detailed analysis of the 1984 Washington State legislation switch from a payroll tax system to an ER system, a natural experiment that provides good evidence of the effects of ER compared to a payroll tax system. The study's results suggest that the change from a payroll system to total ER could lead to a reduction in UI applications by 10 to 30%. The authors also argue that, at the same time, the number of rejections of UI applications would rise from 51 to 66%, mostly due to a higher number of employers challenging dismissal claims.

Although the United States is the only country to have made ER a general feature regulating dismissals and UI financing, other OECD countries have introduced, in addition to "standard" EPL, experience-rated systems for older workers or disabled persons. Firms thus contribute more directly to the social cost of their layoffs, especially when dismissal decisions affect individuals that may experience strong difficulties in finding a new job. In Finland, for instance, disability pensions and unemployment pensions paid to workers over 60 years of age are experience-rated in companies with more than 50 employees (OECD, 2004a). The degree of experience-rating increases with firm size and larger firms (with 800 and more employees) may pay up to 80% of the costs caused by their use of implicit forms of early retirement to adjust their workforce. In order to limit the depressive effect that such a system may have on the recruitment of older workers, employment contracts that have lasted for less than three years and started after the age of 50 incur no experience-rating. Similarly, in France, when dismissing workers over the age of 50 that had been hired

Box 2.5. **The system of Experience Rating in the United States**

The United States is the only OECD country that makes widespread use of a tax on layoffs used to finance UI payments to dismissed workers. Employers' social security contributions are partially "experience rated", *i.e.* they are calculated partly on the basis of the layoff activity of the firm: a firm's tax rate is determined by individual States based on the UI benefits paid to employees it has recently laid off. There is considerable variation across States in terms of how tax rates are precisely assessed. Each year the UI funds in *each* State fix a set of contribution rates based on the situation of their accounts. As a result, rates of employers' contributions vary widely across States, both in terms of the minimum and maximum contribution rates and within these two boundaries. In fact, the only federal rule concerns the maximum contribution rate, which has to be at least equal to 5.4%.

To determine what contribution rate should apply to *each* firm, the vast majority of States follow either a "benefit ratio" approach or a "reserve ratio" method (see Fougère and Margolis, 2000). Under the "benefit ratio" system, firms pay taxes in proportion to the ratio of: 1) benefits charged to their account (paid to its laid-off employees); to 2) taxable wages, both averaged over the preceding three to five years. Under the "reserve ratio" system, firms pay taxes that are a function of the ratio of: 1) their reserves, that is past taxes less benefit payments accumulated over the entire history of the firm; to 2) their taxable payroll averaged over the preceding three years. Each approach yields a measure of how much a firm's laid-off employees have drawn on the UI system over the previous three years. As this amount increases, the firm's tax rate rises.

Over the long life of this system, the contribution rate seems to have followed the economic cycle with some lag. This lag originates from the fact that UI funds fix their set of rates on the basis of the state of their accounts of the previous years. At the beginning of a recession, disbursements from UI funds increase while contribution rates remain unchanged. This continues until the UI funds balances worsen and a new, stricter set of contribution rates is introduced. When the balance of UI funds becomes negative, the government provides a loan. Reimbursing this loan may require contribution rates to remain high for a certain period after the end of the recession.

In all states, experience rating is only partial in that taxes charged to a firm do not rise on a dollar-for-dollar basis with benefits drawn by that firm's laid-off workers. The lack of complete experience rating occurs for three reasons. First, a firm's decision to lay off employees has no impact on its tax payments when it is either already at the maximum tax rate or below the minimum rate. Second, for firms that are between these two extremes, tax rate increases due to a change in the reserve/benefit ratio are typically insufficient to meet the full cost of the benefits resulting from layoffs. Third, in certain states, some UI benefits are not charged to the firm: for example, those paid to short-tenure employees, students who have returned to school, or individuals whose employers have gone bankrupt. In fact, in 2002, employers covered only partially the expense caused by their layoff behaviour, with the remaining implicitly funded by general taxation. Employers coverage varies considerably across States, ranging from 72% in New Hampshire to 14% in Georgia, and does not seem to depend much on the system used to calculate contribution rates.*

* *Source*: *www.workforcesecurity.doleta.gov/dmstree/uipl/uipl2k3/uipl_2603a1.htm.*

before the age of 45, firms have to pay a special contribution to the unemployment insurance system (the so-called "Delalande" contribution). According to recent empirical studies, this measure would have almost no impact on firings of older workers while its effects on hiring are difficult to evaluate given the existence of various schemes, such as hiring subsidies targeted on older workers (Behaghel *et al.*, 2004; Bommier *et al.*, 2003).

A word of caution is necessary when considering a broader application of ER in countries outside the United States. First, as already noted, ER was introduced in the United States to prevent firms from using the UI system as a subsidy to temporary layoffs. As Feldstein (1976) noted, ER may be a relevant instrument in an environment where temporary layoffs are rather frequent, as is the case in the manufacturing sector in the United States. However, temporary layoffs are less frequent in most European countries and it is not clear that the effects of ER would be similar to those observed in the United States.

Second, the existence of a "dual" labour market, characterised by a high incidence of temporary employment coexisting with relatively well-protected permanent jobs, makes the introduction of ER problematic in certain OECD countries. In such a setting, the introduction of ER would indeed require that termination of temporary contracts be treated in the same manner as termination of permanent employment relationships (as suggested by Blanchard and Tirole, 2003). In practice, this seems difficult to implement since it would imply that it is possible to determine whether a separation is caused by a voluntary departure of a temporary employee (quit) or a refusal of the employer to extend the temporary contract (layoff). To avoid this problem, it is conceivable to exempt temporary contracts from the ER system. However, this could have perverse effects. In particular, ER would create an incentive for employers to hire under temporary contracts – and firms that hire mainly through regular contracts would implicitly subsidise firms that use temporary contracts more intensively.[26]

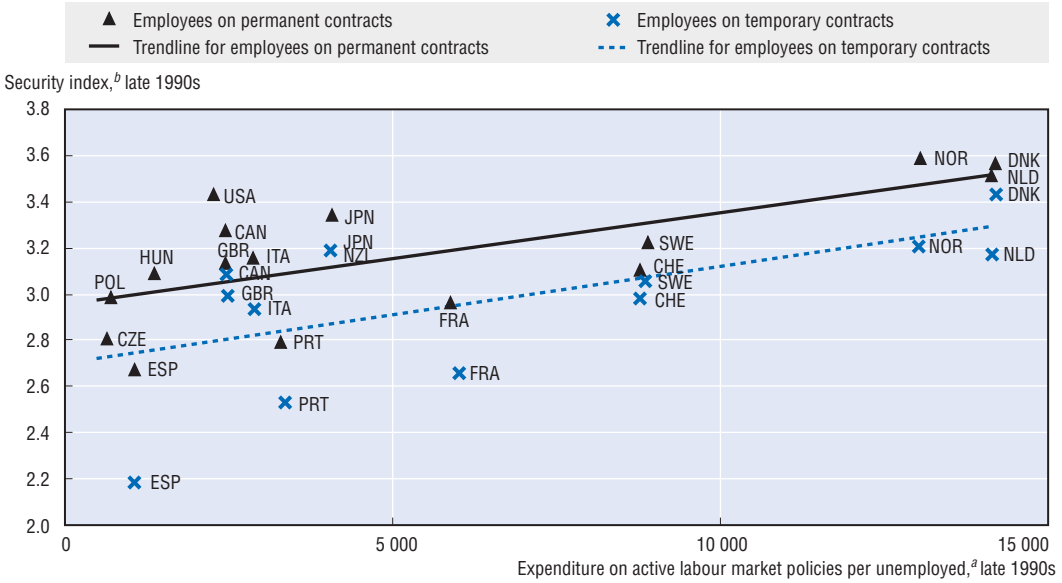
In theory, ER appears to offer some positive improvements on the simple co-existence of UI and EPL. However, more research is needed before one can argue that ER – created to suit the characteristics of the United States labour market – can be successfully applied in countries that have different labour market features.

Employment security: employment protection vs. active labour market policies

Employment security covers two aspects: the continuity of the employment relationship – *i.e.* job security – and, in case of job loss, the possibility of finding another job rapidly – *i.e.* employability. EPL mainly reinforces the former by imposing layoff costs on employers. Active labour market policies (ALMP) facilitate transitions from unemployment to employment in several ways, including: job-placement services, labour market programmes such as job-search assistance, vocational training for the unemployed, hiring subsidies and job-creation schemes. In addition, since ALMP aim at helping those with weaker attachment to employment to find a job, they may play an important role in enhancing the employability aspect of employment security. Chart 2.9 shows that higher expenditure on ALMP tends to increase workers' perceptions of employment security.

At first glance, ALMP and EPL may therefore be seen as complementary policy tools. However, one could also argue that the job security provided by EPL can partly compensate for the lack of employability policies. Conversely, greater emphasis on ALMP could substitute for weaker job protection. In addition, since EPL tends to limit hiring while ALMP are designed to facilitate the transition from unemployment to work, EPL is likely to reduce the potential effectiveness of ALMP. Overall, no clear relationship between these two policy tools stands out.

Chart 2.9. **Active labour market policies raise perceptions of employment security**



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

Note: Pearson correlation coefficient is 0.69*** for permanent contracts, 0.58** for temporary contracts.

a) Expenditure on active labour market policies divided by LFS unemployment.

b) Average answer, by country, to the following question from ISSP "Do you worry about the possibilities of losing your job?" – Scale from 1 (I worry a great deal) to 4 (I don't worry at all).

Source: Data on security index taken from the International Social Survey Programme 1997 (ISSP); OECD database on Labour Market Programmes; OECD database on Labour Force Statistics.

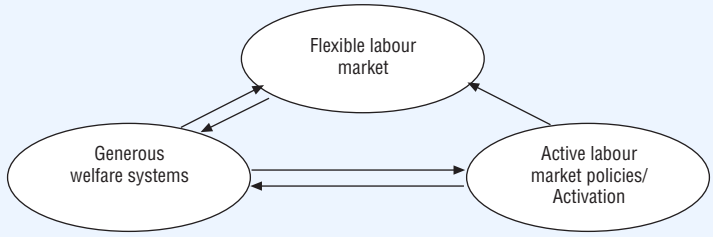
Once again, the coexistence of EPL and ALMP can be analysed along the lines of the arguments developed in the previous sections. As in the case of UI systems, ALMP may entail an implicit tax on low-turnover employers, since all firms contribute to ALMP funding while high-turnover employers create the need for them. The presence of EPL may introduce some degree of responsibility for employers, while its negative impact on hiring rates could be offset by ALMP. In this regard, Denmark is a good example of a country that has chosen to combine a high level of expenditure on ALMP, particularly on activation policies for the unemployed,[27] with a *moderately strict* EPL, the so-called "Flexicurity" approach (see Box 2.6).

Partly due to the relatively liberal regime of EPL found in Denmark, the mobility of workers between jobs and the rates of both job creation and job destruction are relatively high: a recent study found that, on average, the level of worker turnover is about 30% (Bingley *et al.*, 1999).[28] The same study shows that jobs created in new or growing firms (job creation) and jobs destroyed by shrinking or closing firms (job destruction) sum to around 12% of total employment. Finally, Denmark is at the low end of the international scale in terms of average job tenure, along with countries such as the United Kingdom and the United States (OECD, 2001, Chapter 3). One might expect to see such a high level of job mobility and low level of employment protection reflected in a widespread perception of insecurity among Danish employees. In fact, this is not the case, and the measure of security presented in this chapter puts security in Denmark at a considerably higher level than for other countries for which data are available. There are, therefore, no clear indications that Danish workers are reacting to the high level of flexibility with a strong feeling of insecurity.

Box 2.6. **The Danish *flexicurity* approach**

Denmark provides an interesting combination of high labour market dynamism and relatively high social protection – the so-called *flexicurity* approach. Underlying the success of the Danish model is the combination of *flexibility* (a high degree of job mobility thanks to low EPL), *social security* (a generous system of unemployment benefits) and *active labour market programmes*. The Danish model of *flexicurity* thus points to a third way between the flexibility often attributed to deregulated Anglo-Saxon countries and strict job protection characterising southern European countries. The chart presented below describes the Danish model in the form of the so-called golden triangle. The arrows indicate flows of persons between different positions within work, welfare and active labour market programmes (adapted from Arbejdsministeriet, 1999, Figure 1.6). Thus, the two arrows linking the flexible labour market and the generous welfare system indicate that large numbers of workers are affected by unemployment every year, but that most of them return to employment after a short spell of unemployment. Those who do not quickly go back to employment are assisted by active labour market programmes, before re-entering employment.

The "Golden Triangle" of flexicurity



The vast majority of unemployed persons who are members of a UI fund receive UI calculated at the rate of 90% of their previous income from the first day of unemployment and for a maximum of four years, including periods of activation. For low-income groups, this and other income-related benefits, combined with the effects of the rather high level of income tax, result in high net income replacement rates (OECD, 2002b). For an average worker, for example, the net replacement rate varies between 63% and 78%, depending on the family situation. For low-income groups, the net replacement rate is higher, varying between 89% for a single individual to 96% for a lone parent with two children. The potential disincentives deriving from these high income replacement rates are addressed by requiring the unemployed to be actively seeking jobs and by offering mandatory full-time activation programmes. Activation is therefore seen as fulfilling both a qualification and a motivational purpose.

The 1994 labour market reform introduced the obligation to participate in activation programmes after 12 months of unemployment for adults and six months of unemployment for young unemployed persons under the age of 25. After the passive period during which the unemployed only receives UI, the activation period still lasts for three years and may include: private job training, public job training, training in job search and targeted education with support from employment services. If full-time activation during this period does not result in the unemployed person obtaining an ordinary job, she/he loses entitlement to receive unemployment benefit, but may still be eligible for means-tested social assistance. The reform "More people into employment" that came into force in 2003 ended the distinction between

Box 2.6. **The Danish *flexicurity* approach** *(cont.)*

passive and active periods. Unemployment benefits are still available for 4 years, but activation can start from the first day of unemployment. The focus is on job-seeking and placement activities instead of general activation measures, with faster and more direct paths towards employment trough individual action plans and strengthened contacts with the public employment service (see also European Commission, 2003b; OECD, 2003c).

Overall, the Danish model of "flexicurity" has proved to be rather effective in guaranteeing sufficient dynamism in the labour market, while keeping unemployment low and facilitating transitions to employment. It is worth noting that this model rests on more than just the combination of moderately-low EPL with strong emphasis on ALMP: in addition, generous unemployment benefits play a key role in ensuring adequate income security and low unemployment cost for job losers, matched by activation in order to ensure that the unemployed are looking for work actively. However, as Madsen (2002) points out, the Danish "flexicurity" system is the result of a long series of reforms, started in 1994, and has required considerable fine-tuning to reach its present successful format. Initially, the full-time activation period, including training and re-qualification, only started after 4 years of passive measures during which the unemployed person simply received benefits. Since then, the Danish system has undergone a series of further reforms involving manly the shortening of the passive period and the introduction of special provisions for young unskilled unemployed persons. Furthermore, the system in its present format is costly: government expenditure on labour market programmes (on both active and passive measures) totals 5% of Danish GDP.

Conclusions

Based on the findings of this chapter, several observations are in order with respect to the OECD Jobs Strategy recommendations on EPL. The Jobs Strategy advocated reforms in two directions, namely a review of the regulations on permanent or regular contracts, together with wider possibilities to use temporary contracts. Several OECD countries have tended to act on the latter, *i.e.* they have eased the use of temporary forms of employment, while leaving existing regulations on permanent contracts practically unaltered. This chapter has stressed that such partial reforms may aggravate labour market dualities. While a temporary job may be a first step towards a more permanent and stable job, this is not always the case. Certain workers are trapped in situations where they move between temporary work and unemployment, with little chances of getting a permanent job (see also OECD, 2002a, Chapter 3). Moreover, workers on temporary jobs have limited opportunities to upgrade their human capital and build a career. Thus, easing the use of temporary contracts is difficult to reconcile with another recommendation of the Jobs Strategy, namely "improve the incentives for enterprises and workers to invest in continued learning". This is important since, as Chapter 5 of this publication shows, adult training increases the probability of being active and reduces the risk of unemployment.

As to the reform of regulations on permanent contracts *per se*, the findings from this chapter suggest a need for a balanced approach. The Jobs Strategy already suggested that any measures in this area should take into account the financial repercussions on the unemployment insurance system. This is why it was recommended that "employers pay some of the cost of lay-offs through: a requirement that they pay the first months of [unemployment

insurance] benefit; enforcement of severance pay requirements; or experience-rating of insurance contributions". EPL should thus give firms the right incentives to internalise the *social* cost of their dismissal decisions, and needs to be reconciled with the basic recommendation of less strict EPL. More generally, this chapter highlights the need for ensuring greater coherence between several different policy guidelines of the Jobs Strategy in so far as EPL is concerned.

Indeed, there are several dimensions to the concept of labour market security: stability in employment, the opportunity to find a new job quickly after a spell of unemployment or inactivity, and finally income security for those who participate in the labour market. EPL seems to contribute to the first of these dimensions, namely the stability of employment relationships. Indeed, it tends to reduce the risk of job loss. The flip side is that job protection also has an adverse effect on exit rates from unemployment, thus prolonging the average unemployment spell. As such, it contributes to a certain form of labour market insecurity. Moreover, implementing severance payment schemes is only a very partial solution to the problem of affording a minimum income for the unemployed. EPL has to be considered relative to the generosity of UI benefits and the degree of monitoring of active job search by the unemployed.

Insuring workers against labour market risk should thus rely on more than one instrument, which makes it difficult to analyse the specific role of EPL, taken in isolation. EPL should be considered as one possible component of a comprehensive strategy, which would also include well-designed unemployment insurance benefits and effective activation policies. This chapter suggests that a number of considerations should be taken into account concerning this issue. It argues that a combination of some employment protection provisions, aimed at avoiding those dismissals that would be socially ineffective, with ALMPs and effective re-employment services aimed at enhancing hiring prospects, could contribute to a better functioning of the labour market. Some countries appear to have successfully reduced unemployment rates and maintained high employment to population ratios through the combined use of these instruments. Others seem to have equally enhanced labour market performance by reducing both EPL and unemployment benefits, with little recourse to ALMP. As part of the Jobs Strategy reassessment, further work will be carried out to shed light on the interactions between these policy planks, and how different combinations of policy might achieve similar employment outcomes.

Notes

1. The limitations of the OECD indicator are inherent to most synthetic indices and have been largely highlighted in the literature (Addison and Teixeira, 2003): the fact that its construction obviously suffers from problems of subjectivity, the difficulty of attributing scores on the basis of legal provisions that may be applied differently in practice, and the choice of the weighting scheme used to calculate the summary indicator from the various sub-components.
2. Each of these three components reflects itself several aspects of the regulation in force, which are described in Annex 2.A1 together with methods for scoring and aggregation. In addition, full descriptions of country regulations for each item can be found at: *www.oecd.org/els/employmentoutlook*.
3. There is, however, a wide cross-country variation in the proportion of lay-offs brought before the competent body each year. This is partly due to a lack of comparability of the data in question since countries may report either the total number of cases brought before courts, or the number of cases heard by courts, or the number of cases resolved by courts.

4. While the EPL index for temporary contracts varies between 0.3 and 5.0 across countries, the range for the EPL index for regular contracts is much narrower, 1.0 to 3.5 (Chart 2.1, Panel B, when excluding outliers, namely, Portugal and the United States).

5. While this chapter has focused mainly on updating the OECD indicator of EPL strictness in order to add a new wave of data for 2003, the 1999 index presented here does not correspond exactly to the one published by OECD at the end of the 1990s (OECD, 1999, Chapter 2). In fact, amendments have been made where new or more precise information had become available to help assess the extent of EPL strictness. The detailed description of the most significant changes can be found in Annex 2.A2.

6. This is particularly clear when looking at Chart 2.2, Panel A: apart from some English-speaking countries and Switzerland, all countries are clearly below the 45° line (France being the outlier).

7. Indeed, the correlation between overall EPL strictness in the late 1980s and in 2003 is high and significant (Pearson correlation coefficient stands at 0.91 and is statistically significant at 1% level).

8. The effect of employment protection on the hiring decisions of firms could be undone by wage adjustments (Layard *et al*., 1991). If workers value employment protection provisions, and market imperfections guarantee that these opportunities for arbitrage have not yet been exhausted, wages would adjust accordingly and the effect of employment protection would disappear (as the workers supply curve would shift down at the same time as the labour demand curve).

9. Some studies have been carried out that look at the effect of strict EPL using data on job creation (employment increases in expanding firms) and destruction (employment decreases in contracting firms). Using this type of data, OECD (1999, Chapter 2) and Nickell and Nunziata (2000) find no evidence of a strong effect on job turnover (the sum of job creation and destruction).

10. Flows into and out of unemployment measure something different from job destruction and job creation. Inflows may include individuals coming from outside the labour force, and outflows may also capture discouragement effects with individuals leaving unemployment for inactivity. This means that the estimated effect of EPL on flows out of unemployment is likely to be lower than the impact of EPL on hiring decisions as EPL will reduce the number of new hires but presumably increase the number of discouraged individuals who leave the labour force.

11. The interaction of these series with flows in and out of inactivity makes it difficult to study inflows and outflows by demographic and skill groups, especially for youths, married women with children and older workers.

12. Chapter 1 of the 2003 edition of the OECD *Employment Outlook* (OECD, 2003a) includes a discussion of how these factors are likely to affect equilibrium unemployment. The data on wage-bargaining coverage and corporatism are presented in Chapter 3 of this *Employment Outlook*.

13. However, if firms can pay lower wages for temporary workers, this may partly offset high increases for core workers' wages as the incidence of temporary employment grows.

14. The reason most commonly invoked is that privately-efficient contracts involve the payment of firing costs which are borne by firms only, and are only partly compensated for (from the *firm's* viewpoint) by the increased productivity resulting from the extra investment in specific human capital. Implementation of a privately-efficient contract therefore involves *ex ante* transfers from the worker to the firm (in order to compensate the latter for the *ex post* firing cost), which is arguably unrealistic, particularly if workers have an imperfect access to credit markets.

15. For example, while Blanchard and Wolfers use TFP growth as an explanatory variable, Nickell *et al*. (2001, 2003) use the *change* in total factor productivity growth as they concentrate on shocks that cause unemployment to deviate only temporarily from its equilibrium rate.

16. See Baker *et al*. (2003, 2004) for critiques of the EPL effects reported in the Blanchard and Wolfers, and Nickell *et al*. papers.

17. Another explanation has also been put forward that suggests that EPL may be endogenous to employment rates of low-skilled workers. Boeri *et al*. (2003) show that a high proportion of low-skilled in employment is likely to bias political decisions towards provision of employment security via high levels of EPL. This result follows from the strong assumption that low-skilled workers tend to give more weight to the effect of EPL on their firing probabilities than to the reduction in hiring that EPL may entail, and therefore are more favourable to stringent EPL. The authors find some support for their hypothesis in the distribution of EPL and the share of low-skilled workers in European countries.

18. Of course, other factors besides EPL may be responsible for the rise in the incidence of temporary employment. For example, there is some evidence that temporary jobs have grown in response to protracted recessions which may have increased employers' demand for flexible labour (Holmlund

and Storrie, 2002). On the other hand, the high share of agricultural employment in some OECD countries – notably Greece, Mexico, and Turkey – could explain part of the cross-country differences in the use of temporary contracts.

19. However, it remains important to account for the fact that easing the use of temporary contracts may have different implications for the incidence of temporary forms of employment depending on the strictness of the regulation applicable to permanent contracts.

20. This measure is defined as the ratio (EPLR-EPLT)/EPLT, where EPLR and EPLT represent the strictness of the regulation for regular and temporary contracts, respectively.

21. Conversely, a tightening of the regulation of regular contracts will increase both this ratio and the incentive to hire on temporary contracts – the effects being larger in cases where temporary contracts are less regulated.

22. It is worth noting that in some countries, reforms of severance pay legislation fit, to some extent, this vision of employment protection. Indeed, the latter may underlie, at least in part, the idea of transforming severance pay into a system of individual unemployment savings accounts. Several Latin American countries have replaced their traditional system of severance payments with individual accounts. A recent study on the Colombian reform shows that it has shifted a significant part of the cost of severance pay contributions onto workers through lower wages (Kugler, 2002). Among OECD countries, only Austria has reformed its severance pay legislation along this line (see Box 2.2). Overall, these reforms correspond to a move from an allowance which is due at the time of dismissal to a regular payment made by the employer and/or the employee into an individual savings account. This tends to reduce job protection provisions, while still permitting income smoothing for the employee.

23. Assuming that employees have the possibility of beginning to search for a new job during their notice period, the latter reduces unemployment incidence. The time spent in unemployment will be shorter and employees will be paid, at least in part, during their job-search period.

24. While Boeri *et al*. (2003) have pointed out that, across continental European countries, the strictness of EPL tends to decrease with the generosity of the unemployment benefits system, such a relationship does not stand out for the OECD as a whole. Indeed, a number of other countries such as Australia, Canada, The United Kingdom and the United States, tend to combine liberal regimes of EPL with lower-than-average expenditure on unemployment benefits.

25. See Baily (1977) and Brechling (1977) for more evidence along these lines.

26. The extent to which ER may be circumvented by firms' use of temporary contracts is not a major issue in the United States – where the employment "at will" principle makes distinctions between temporary and permanent contracts almost irrelevant.

27. Activation measures account for 60 to 70% of all ALMP expenditure, depending on whether public employment services and administration costs are included or not.

28. This means that, in a given year, roughly 30% of all employees are not in the same establishment as the year before (new hires) and separations (quits and layoffs) are approximately at the same level.

ANNEX 2.A1

Calculation of Summary Indicators of EPL Strictness

For each country, employment protection legislation is described along 18 basic items, which can be classified in three main areas: *i)* employment protection of regular workers against individual dismissal; *ii)* specific requirements for collective dismissals; and *iii)* regulation of temporary forms of employment. Starting from these 18 basic pieces of information, a four-step procedure has been developed for constructing cardinal summary indicators of EPL strictness that allow meaningful comparisons to be made, both across countries and between different years (for a detailed description of this procedure, see OECD, 1999, Chapter 2, Annex 2.B).

The 18 first-digit inputs were initially expressed either in units of time (*e.g.* delays before notice can start, or months of notice and severance pay), as a number (*e.g.* maximum number of successive fixed-term contracts allowed), or as a score on an ordinal scale specific to each item (0 to 2, 3, 4 or simply yes/no). The first step of the procedure was therefore to score all of these first-level measures of EPL in comparable units. They were thus converted into cardinal scores that were normalized to range from 0 to 6, with higher scores representing stricter regulation (see Table 2.A1.1). The three remaining steps consisted in forming successive weighted averages, thus constructing three sets of summary indicators that correspond to successively more aggregated measures of EPL strictness (see Table 2.A1.2).

The last step of the procedure involved computing, for each country, an overall summary indicator based on the three subcomponents: strictness of regulation for regular contracts, temporary contracts and collective dismissals. The summary measure for collective dismissals was attributed just 40% of the weight assigned to regular and temporary contracts. The rational for this is that the collective dismissals indicator only reflects *additional* employment protection trigged by the collective nature of the dismissal. In most countries, these additional requirements are quite modest.

Moreover, summary measures for collective dismissals are only available since the late 1990s. An alternative overall index, so-called version 1, has been thus calculated as an unweighted average of the summary measures for regular and temporary contracts only. While more restrictive than the previous one (so-called version 2), this alternative measure of the overall EPL strictness allows comparisons over a longer period of time (from the late 1980s to 2003 compared with the late 1990s to 2003).

Table 2.A1.1. **First step of the procedure: the 18 basis measures of EPL strictness**

Panel A. Individual dismissals of workers with regular contracts

	Original unit and short description		Assignment of numerical strictness scores						
			Assigned scores						
			0	1	2	3	4	5	6
Item 1 Notification procedures	**Scale 0-3** 0 when an oral statement is enough; 1 when a written statement of the reasons for dismissal must be supplied to the employee; 2 when a third party (such as works council or the competent labour authority) must be notified; 3 when the employer cannot proceed to dismissal without authorisation from a third party.		Scale (0 – 3) × 2						
Item 2 Delay involved before notice can start	**Days** Estimated time includes, where relevant, the following assumptions: 6 days are counted in case of required warning procedure, 1 day when dismissal can be notified orally or the notice can be directly handed to the employee, 2 days when a letter needs to be sent by mail and 3 days when this must be a registered letter.		≤2	< 10	< 18	< 26	< 35	< 45	≥ 45
Item 3 Length of the notice period at	9 months tenure	**Months**	0	≤0.4	≤0.8	≤1.2	< 1.6	< 2	≥ 2
	4 years tenure	**Months**	0	≤0.75	≤1.25	< 2	< 2.5	< 3.5	≥ 3.5
	20 years tenure	**Months**	< 1	≤2.75	< 5	< 7	< 9	< 11	≥ 11
Item 4 Severance pay at	9 months tenure	**Months pay**	0	≤0.5	≤1	≤1.75	≤2.5	< 3	≥ 3
	4 years tenure	**Months pay**	0	≤0.5	≤1	≤2	≤3	< 4	≥ 4
	20 years tenure	**Months pay**	0	≤3	≤6	≤10	≤12	≤18	> 18
Item 5 Definition of justified or unfair dismissal	**Scale 0-3** 0 when worker capability or redundancy of the job are adequate and sufficient ground for dismissal; 1 when social considerations, age or job tenure must when possible influence the choice of which worker(s) to dismiss; 2 when a transfer and/or a retraining to adapt the worker to different work must be attempted prior to dismissal; 3 when worker capability cannot be a ground for dismissal.		Scale (0 – 3) × 2						
Item 6 Length of trial period	**Months** Period within which, regular contracts are not fully covered by employment protection provisions and unfair dismissal claims can usually not be made.		≥ 24	> 12	> 9	> 5	> 2.5	≥ 1.5	< 1.5
Item 7 Compensation following unfair dismissal	**Months pay**		≤3	≤8	≤12	≤18	≤24	≤30	> 30
Item 8 Possibility of reinstatement following unfair dismissal	**Scale 0-3** The extend of reinstatement is based upon whether, after finding of unfair dismissal, the employee has the option of reinstatement into his/her previous job, even if this is against the wishes of the employer.		Scale (0 – 3) × 2						

Table 2.A1.1. **First step of the procedure: the 18 basis measures of EPL strictness** *(cont.)*

Panel B. Temporary employment

Original unit and short description		Assignment of numerical strictness scores						
		Assigned scores						
		0	1	2	3	4	5	6
Item 9 Valid cases for use of fixed-term contracts (FTC)	**Scale 0-4** 0 fixed-term contracts are permitted only for "objective" or "material situation", *i.e.* to perform a task which itself is of fixed duration; 1 if specific exemptions apply to situations of employer need (*e.g.* launching a new activity) or employee need (*e.g.* workers in search of their first job); 2 when exemption exist on both the employer and employee sides; 3 when there are no restrictions on the use of fixed-term contracts.	6 – scale (0 – 3) × 2						
Item 10 Maximum number of successive FTC	**Number**	No limit	≥ 5	≥ 4	≥ 3	≥ 2	≥ 1.5	< 1.5
Item 11 Maximum cumulated duration of successive FTC	**Months**	No limit	≥ 36	≥ 30	≥ 24	≥ 18	≥ 12	< 12
Item 12 Types of work for which temporary work agency (TWA) employment is legal	**Scale 0-4** 0 when TWA employment is illegal; 1-3 1 to 3 depending upon the degree of restrictions; 4 when no restrictions apply.	6 – Scale (0 – 4) × 6/4						
Item 13 Restrictions on number of renewals	**Yes/no**	–	–	No	–	Yes	–	–
Item 14 Maximum cumulated duration of TWA contracts	**Months**	No limit	≥ 36	≥ 24	≥ 18	≥ 12	> 6	≤6

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Table 2.A1.1. **First step of the procedure: the 18 basis measures of EPL strictness** *(cont.)*

Panel C. Collective dismissals

Original unit and short description		Assignment of numerical strictness scores						
		Assigned scores						
		0	1	2	3	4	5	6
Item 15 Definition of collective dismissal	**Scale 0-4** 0 if there is no additional regulations for collective dismissals; 1 if specific regulations apply from 50 dismissals upward; 2 if specific regulations apply from 20 dismissals onward; 3 if specific regulations apply at 10 dismissals; 4 if specific regulations start to apply at below 10 dismissals;	Scale (0 0150 4) × 6/4						
Item 16 Additional notification requirements	**Scale 0-2** There can be notification requirements to *works councils* (or employee representatives), and to *government authorities* such as public employment offices. Countries are scored according to whether there are additional notification requirements on top of those requirements applying to individual redundancy dismissal. 0 no additional requirements; 1 when one more actor needs to be notified; 2 when two more actors need to be notified.	Scale (0 – 2) × 3						
Item 17 Additional delays involved before notice can start	**Days**	0	< 25	< 30	< 50	< 70	< 90	≥ 90
Item 18 Other special costs to employers	**Scale 0-2** This refers to whether there are additional *severance pay* requirements and whether *social compensation plans* (detailing measures of reemployment, retraining, outplacement, etc.) are obligatory or common practice 0 no additional requirements; 1 one additional requirement; 2 if both requirements apply.	Scale (0 – 2) × 3						

– Not applicable.

Table 2.A1.2. **EPL summary indicators at four successive levels of aggregation**

And weighting scheme

Level 4 Scale 0-6	**Level 3** Scale 0-6	**Level 2** Scale 0-6	**Level 1** Scale 0-6		
Overall summary indicator	Regular contracts (version 2: **5/12**) (version 1: 1/2)	Procedural inconveniences **(1/3)**	1. Notification procedures		(1/2)
			2. Delay to start a notice		(1/2)
		Notice and severance pay for no-fault individual dismissals **(1/3)**	3. Notice period after	9 months	(1/7)
				4 years	(1/7)
				20 years	(1/7)
			4. Severance pay after	9 months	(4/21)
				4 years	(4/21)
				20 years	(4/21)
		Difficulty of dismissal **(1/3)**	5. Definition of unfair dismissal		(1/4)
			6. Trial period		(1/4)
			7. Compensation		(1/4)
			8. Reinstatement		(1/4)
	Temporary contracts (version 2: 5/12) (version 1: 1/2)	Fixed term contracts **(1/2)**	9. Valid cases for use of fixed-term contracts		(1/2)
			10. Maximum number of successive contracts		(1/4)
			11. Maximum cumulated duration		(1/4)
		Temporary work agency employment **(1/2)**	12. Types of work for which is legal		(1/2)
			13. Restrictions on number of renewals		(1/4)
			14. Maximum cumulated duration		(1/4)
	Collective dismissals (version 2: **2/12**) (version 1: 0)		15. Definition of collective dismissal		(1/4)
			16. Additional notification requirements		(1/4)
			17. Additional delays involved		(1/4)
			18. Other special costs to employers		(1/4)

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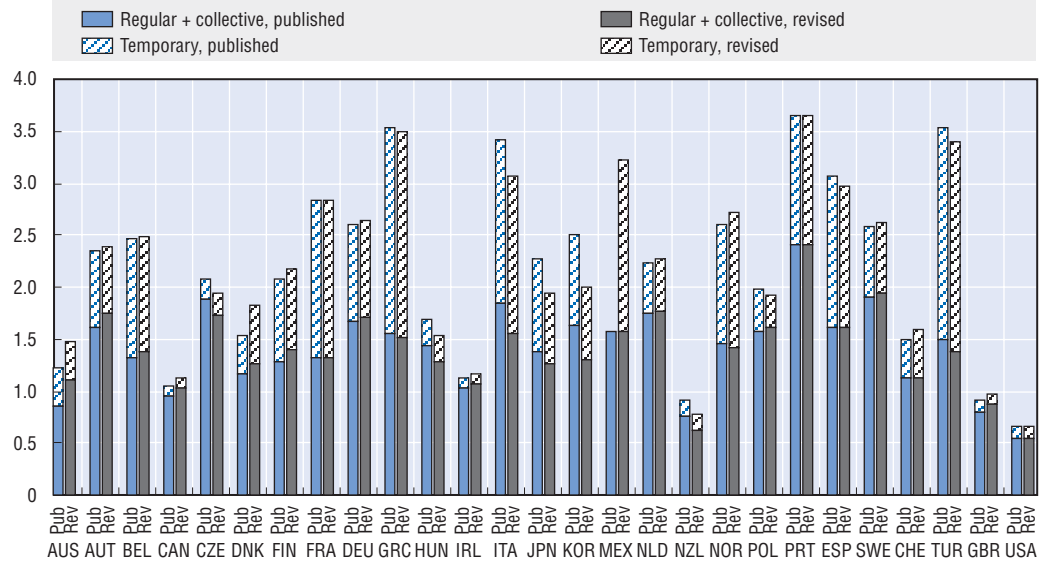
ANNEX 2.A2

Employment Protection Legislation Indices

Updated EPL indicators and amendments made, for some countries, to past values (late 1980s and late 1990s)

The following tables and Chart 2.A2.1 contain the values and scores used to calculate the updated indicators of EPL (2003); they document the amendments made, for some countries, to past values of EPL indicators (late 1980s and late 1990s), with respective explanations; they present the reform dates used to construct the EPL time series used in Section 2 of the chapter. Detailed descriptions of country practices relating to the employment protection items presented in Table 2.A2.1 to Table 2.A2.5 can be found at *www.oecd.org/els/employmentoutlook*.

Chart 2.A2.1. **EPL levels for the end of 1990s (version 2), published and revised**



Source: OECD.

Detailed description of significant amendments to the 1999 EPL index:*

- **Australia:** Notification procedures and delay before notice can start were reviewed. In fact, since the Workplace Relations Act (1996) employees can apply to the Australian Industrial Relations Commission (AIRC) for relief in respect to termination of employment on the ground that the termination was harsh, unjust or unreasonable. The Act also set out factors that the AIRC must have regard to when determining whether a termination is unfair, notably whether the worker has been warned of his unsatisfactory behaviour, whether he was given time to respond, whether there was a valid reason for dismissal. This implicitly lengthened the time before notice period can start by introducing the need for discussion with the employee in cases of individual dismissals for fault. The new provisions also implicitly introduced the need to justify dismissals for redundancy and personal reasons.
- **Austria:** new information has become available that confirms that reinstatement is a right of the employee. If the competent court rules in favour of the employee, the dismissal is retroactively annulled and the employment relationship is resumed. Also, the question on the existence of restrictions for the renewal of TWA contracts was misunderstood and, in fact, no restrictions exist in Austria.
- **Czech Republic:** new information available – notably the English translation of the Czech Labour Code, as amended in 2000 – has been integrated in the EPL indices relating to individual and collective dismissals of regular workers.
- **Denmark:** the question on trial periods was misunderstood in 1999 and has been corrected accordingly. The maximum cumulated duration of fixed-term contracts has also been amended to account for the fact that court rulings suggest that 2-3 years temporary employment entail notification procedures (Danish Confederation of Trade Unions finding).
- **Hungary:** the number of days before notice can start has been amended in line with the values attributed to other countries following similar procedures (advance discussion – 6 days – then letter sent by mail or handed directly to employee – 1 day).
- **Italy:** Trattamento di Fine Rapporto is no longer treated as severance pay, which is now set to zero. The payment is due to every worker who leaves a firm (voluntary and involuntary) and, as a result, cannot be considered as a layoff cost for the employer. Compensation for unfair dismissal has been amended accordingly.
- **Japan:** new information has become available that confirms that reinstatement is a right of the employee. If the court finds that the employer abused of its right to terminate the employment relationship, the dismissal is declared null and void and the employee has the right to return to his job and collect lost wages. Additionally, the court treatment of fixed-term contracts renewal has become clearer and has been amended in line with suggestions from the Japanese authorities: after repeated renewals the employee becomes entitled to expect renewal of his contract and the employer must have just cause to refuse renewal.

* The smallest changes in Chart 2.A2.1 are not documented here. They do not reflect changes in views or law interpretation but rather result from an attempt to use uniform guidelines across the three waves of data in those components that have a more subjective nature.

- **Korea:** new information has clarified that what was called "severance" pay is in fact a payment made to every worker who leaves the firm (voluntarily or involuntarily) and severance pay has therefore been set to zero. In addition, in order to account for relatively permissive judicial practices, delays before notice periods can start have been reduced from 60 days required by law to 40 days (in case of dismissal for managerial reasons) and the number of successive fixed-term contracts has been increased to "5 or more".
- **Netherlands:** The evolution of the Dutch dismissal system between the late 1980s and the late 1990s has been accounted for in the two sub-components measuring procedural inconveniencies and severance pay. As these cancel each other out, no change is visible in Chart 2.A2.1. Dutch dismissal law is governed by a "dual system" (see EIRO Observer, 5'03, 2003 and Annex Table 2.A2.1). On the one hand, an employer can dismiss a worker without severance payments, provided that the employer has received prior permission from a public administrative body – the Centre for Work and Income (CWI) – to do so. On the other hand, since the 1970s, an employer can request a sub-district court to dissolve an employment contract under the provisions of the Civil Code (referring to "compelling grounds" or "changed circumstances"). The court checks the request's validity and, if the contract is dissolved, the court usually imposes compensation to be paid by the employer. Use of the court method increased greatly in the 1990s and, in 2002, about 50% of the requests for dissolution were submitted to the courts, while this proportion was less than 10% in the late 1980s. Hence, employers seem to have naturally shifted towards a more expensive procedure, at least in terms of severance payments. Accounting for this in the EPL index requires some adjustment: the more frequent use of courts is recognized in calculations of average severance pay (with a 50% weight). With regard to procedural inconveniences, dismissal procedures via Court are simpler and shorter (no notice period) than termination procedures via PES, and this is reflected in procedural inconveniences (with a 50% weight).
- **Mexico:** new information has become available that allowed the construction of the component relating to Temporary Work Agencies and the calculation of a summary indicator of EPL for temporary work and EPL overall.

Finally, in all cases, the values of EPL indices in the late 1980s have been adjusted to the amendments made to the indicators in the late 1990s.

Table 2.A2.1. **Indicators of the strictness of employment protection for regular employment**

Panel A. Values of the indicators

	Regular procedural inconveniences						Difficulty of dismissal											
	Procedures			Delay to start of notice			Definition of unfair dismissal			Trial period before eligibility arises			Unfair dismissal compensation at 20 years of tenure			Extent of reinstatement		
	Scale 0 to 3			Days			Scale 0 to 3			Months						Scale 0 to 3		
	Late 1980s	Late 1990s	2003	Late 1980s	Late 1990s	2003	Late 1980s	Late 1990s	2003	Late 1980s	Late 1990s	2003	Late 1980s	Late 1990s	2003	Late 1980s	Late 1990s	2003
Australia	0.5	1	1	1	4	4	0	0	0	. .	3	3	. .	6	6	1.5	1.5	1.5
Austria	2	2	2	9	9	9	1	1	1	1	1	1	15	15	6	3	3	3
Belgium	0.5	0.5	0.5	7	7	7	0	0	0	3.3	3.3	3.3	12.5	13	14	0	0	0
Canada	1	1	1	1	1	1	0	0	0	3	3	3	. .	. .	. .	1	1	1
Czech Republic	. .	2	2	. .	19	19	. .	2	2	. .	3	3	. .	8	8	. .	3	3
Denmark	1	1	1	1	1	1	0	0	0	10.5	10.5	10.5	9	9	9	1	1	1
Finland	1.75	1.75	1.75	56	11	11	0	2	2	4	4	4	14	14	14	0	0	0
France	1.5	1.5	1.5	14	14	14	2	2	2	1.5	1.5	1.5	15	15	16	0	0	0
Germany	2.5	2.5	2.5	15	15	15	2	2	2	6	6	6	18	18	18	1.5	1.5	1.5
Greece	2	2	2	1	1	1	0.5	0.5	0.5	2	3	2	12	12	12	2	2	2
Hungary	. .	1	1	. .	7	7	. .	0	0	. .	3	3	. .	10	10	. .	2	2
Ireland	1.5	1.5	1.5	4.5	4.5	4.5	0	0	0	12	12	12	24	24	24	1	1	1
Italy	1.5	1.5	1.5	1	1	1	0	0	0	0.8	0.8	0.8	15	15	15	2	2	2
Japan	1.5	1.5	1.5	3	3	3	1	1	1	. .	3	3	10	10	9	3	3	3
Korea	. .	1.75	1.75	. .	20	20	. .	1	1	. .	. .	. .	. .	6	6	. .	3	3
Mexico	. .	1	1	. .	1	1	. .	3	3	. .	. .	. .	. .	16	16	. .	1	1
Netherlands	3	2	2	38	31	31	1.5	1.5	1.5	2	2	2	6	18	18	1	1	1
New Zealand	0.8	0.8	1.5	7	7	7	. .	0	0	. .	2	0	. .	. .	. .	. .	1	1
Norway	1	1	1	17	17	17	2.5	2.5	2.5	3	3	3	12	12	12	2	2	2
Poland	. .	2	2	. .	13	13	. .	0	0	. .	1.8	1.8	. .	3	3	. .	2	2
Portugal	2.5	2	2	21	21	20	3	2	2	1	2	3	20	20	20	3	2.5	2
Slovak Republic	. .	2	2	. .	50	50	. .	0	0	. .	1	3	. .	7	10	. .	3	2.5
Spain	2.25	2	2	40	1	1	2	2	2	1.7	2.5	2.5	35	22	22	0	0	0
Sweden	2	2	2	14	14	14	2	2	2	3	3	3	32	32	32	1	1	1
Switzerland	0.5	0.5	0.5	1	1	1	0	0	0	2	2	2	6	6	6	0	0	0
Turkey	2	2	2	1	1	1	. .	0	0	. .	2	3	. .	26	26	. .	0	0
United Kingdom	1	1	1	2	2	2	0	0	0	24	24	12	8	8	8	1	1	1
United States	0	0	0	1	1	1	0	0	0	. .	. .	. .	. .	. .	. .	0.5	0.5	0.5

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Table 2.A2.1. **Indicators of the strictness of employment protection for regular employment** *(cont.)*

Panel A. Values of the indicators

	Notice and severance pay for no-fault individual dismissals by tenure categories																	
	Notice period after									Severance pay after								
	9 months			4 years			20 years			9 months			4 years			20 years		
	Months																	
	Late 1980s	Late 1990s	2003	Late 1980s	Late 1990s	2003	Late 1980s	Late 1990s	2003	Late 1980s	Late 1990s	2003	Late 1980s	Late 1990s	2003	Late 1980s	Late 1990s	2003
Australia	0.2	0.2	0.2	0.7	0.7	0.7	1.2	1.2	1.2	0	0	0	1	1	1	1	1	1
Austria	1	1	1	1.2	1.2	1.2	2.5	2.5	2.5	0	0	0	2	2	0	9	9	0
Belgium	2	2	2.1	2.7	2.7	2.8	10	10	11	0	0	0	0	0	0	0	0	0
Canada	0.24	0.24	0.24	0.8	0.8	0.8	1.9	1.9	1.9	0	0	0	0.42	0.42	0.42	2.1	2.1	2.1
Czech Republic	. .	2.5	2.5	. .	2.5	2.5	. .	2.5	2.5	. .	1	1	. .	1	1	. .	1	1
Denmark	1.6	1.8	1.8	2.8	3	3	5	4.25	4.25	0	0	0	0	0	0	1.5	1.5	1.5
Finland	2	1	0.5	2	2	1	6	6	6	0	0	0	0	0	0	0	0	0
France	1	1	1	2	2	2	2	2	2	0	0	0	0.4	0.4	0.6	2.7	2.7	4
Germany	1	1	1	1	1	1	4.5	7	7	0	0	0	0	0	0	0	0	0
Greece	0.6	0.5	0.5	1.7	1.5	1.5	9	8	8	0.3	0.3	0.3	0.9	1	1	4.6	5.75	5.9
Hungary	. .	1	1	. .	1.2	1.2	. .	3	3	. .	0	0	. .	1	1	. .	5	5
Ireland	0.2	0.3	0.3	0.5	0.5	0.5	2	2	2	0	0	0	0.18	0.18	0.42	0.74	0.74	1.89
Italy	0.3	0.3	0.3	1.1	1.1	1.1	2.2	2.2	2.2	0	0	0	0	0	0	0	0	0
Japan	1	1	1	1	1	1	1	1	1	0	0	0.4	1.5	1.5	1.4	4	4	2.9
Korea	. .	1	1	. .	1	1	. .	1	1	. .	0	0	. .	0	0	. .	0	0
Mexico	. .	0	0	. .	0	0	. .	0	0	. .	3	3	. .	3	3	. .	3	3
Netherlands	0.6	0.5	0.5	1	0.5	0.5	5.3	1.5	1.5	0	0	0	0	3	3	0	9	9
New Zealand	. .	0.5	0.7	. .	0.5	0.7	. .	0.5	0.7	. .	0	0	. .	0	0	. .	0	0
Norway	1	1	1	1	1	1	3	3	3	0	0	0	0	0	0	0	0	0
Poland	. .	1	1	. .	3	3	. .	3	3	. .	0	0	. .	0	0	. .	0	0
Portugal	2	2	2	2	2	2	2	2	2	3	3	3	4	4	4	20	20	20
Slovak Republic	. .	2.5	2	. .	2.5	2	. .	2.5	3	. .	1	1	. .	1	1	. .	1	1
Spain	1	1	1	3	1	1	3	1	1	0.5	0.5	0.5	2.6	2.6	2.6	12	12	12
Sweden	1	1	1	4	3	3	6	6	6	0	0	0	0	0	0	0	0	0
Switzerland	1	1	1	2	2	2	3	3	3	0	0	0	0	0	0	2.5	2.5	2.5
Turkey	. .	1	1	. .	2	2	. .	2	2	. .	0	0	. .	4	4	. .	20	20
United Kingdom	0.24	0.24	0.24	0.9	0.9	0.9	2.8	2.8	2.8	0	0	0	0.5	0.5	0.5	2.4	2.4	2.4
United States	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Table 2.A2.1. **Indicators of the strictness of employment protection for regular employment** *(cont.)*

Panel B. Summary scores by main area

	Regular procedural inconveniences			Notice and severance pay for no-fault individual dismissals			Difficulty of dismissal			Overall strictness of protection against dismissals		
	Late 1980s	Late 1990s	2003	Late 1980s	Late 1990s	2003	Late 1980s	Late 1990s	2003	Late 1980s	Late 1990s	2003
Australia	0.5	1.5	1.5	1.0	1.0	1.0	1.5	2.0	2.0	1.0	1.5	1.5
Austria	2.5	2.5	2.5	2.0	2.0	0.9	4.3	4.3	3.8	2.9	2.9	2.4
Belgium	1.0	1.0	1.0	2.3	2.3	2.4	1.8	1.8	1.8	1.7	1.7	1.7
Canada	1.0	1.0	1.0	1.0	1.0	1.0	2.0	2.0	2.0	1.3	1.3	1.3
Czech Republic	. .	3.5	3.5	. .	2.7	2.7	. .	3.8	3.8	. .	3.3	3.3
Denmark	1.0	1.0	1.0	2.0	1.9	1.9	1.5	1.5	1.5	1.5	1.5	1.5
Finland	4.8	2.8	2.8	1.9	1.4	1.0	1.8	2.8	2.8	2.8	2.3	2.2
France	2.5	2.5	2.5	1.5	1.5	1.9	3.0	3.0	3.0	2.3	2.3	2.5
Germany	3.5	3.5	3.5	1.0	1.3	1.3	3.3	3.3	3.3	2.6	2.7	2.7
Greece	2.0	2.0	2.0	2.4	2.2	2.2	3.0	2.8	3.0	2.5	2.3	2.4
Hungary	. .	1.5	1.5	. .	1.8	1.8	. .	2.5	2.5	. .	1.9	1.9
Ireland	2.0	2.0	2.0	0.8	0.8	0.8	2.0	2.0	2.0	1.6	1.6	1.6
Italy	1.5	1.5	1.5	0.6	0.6	0.6	3.3	3.3	3.3	1.8	1.8	1.8
Japan	2.0	2.0	2.0	1.8	1.8	1.8	3.3	3.5	3.5	2.4	2.4	2.4
Korea	. .	3.3	3.3	. .	0.9	0.9	. .	3.0	3.0	. .	2.4	2.4
Mexico	. .	1.0	1.0	. .	2.1	2.1	. .	3.7	3.7	. .	2.3	2.3
Netherlands	5.5	4.0	4.0	1.0	1.9	1.9	2.8	3.3	3.3	3.1	3.1	3.1
New Zealand	1.3	1.3	2.0	. .	0.4	0.4	. .	2.3	2.7	. .	1.4	1.7
Norway	2.0	2.0	2.0	1.0	1.0	1.0	3.8	3.8	3.8	2.3	2.3	2.3
Poland	. .	3.0	3.0	. .	1.4	1.4	. .	2.3	2.3	. .	2.2	2.2
Portugal	4.0	3.5	3.5	5.0	5.0	5.0	5.5	4.5	4.0	4.8	4.3	4.2
Slovak Republic	. .	5.0	5.0	. .	2.7	2.7	. .	3.3	2.8	. .	3.6	3.5
Spain	4.8	2.0	2.0	3.1	2.6	2.6	3.8	3.3	3.3	3.9	2.6	2.6
Sweden	3.0	3.0	3.0	1.7	1.6	1.6	4.0	4.0	4.0	2.9	2.9	2.9
Switzerland	0.5	0.5	0.5	1.5	1.5	1.5	1.5	1.5	1.5	1.2	1.2	1.2
Turkey	2.0	2.0	2.0	. .	3.4	3.4	. .	2.5	2.3	. .	2.6	2.6
United Kingdom	1.0	1.0	1.0	1.1	1.1	1.1	0.8	0.8	1.3	0.9	0.9	1.1
United States	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.5	0.5	0.2	0.2	0.2

. . Data not available.

Source: Late 1980s and late 1990s: See *OECD Employment Outlook*, 1999, Chapter 2; 2003: See OECD (2004b) for a detailed description of employment protection regulation and Annex 2.A1 for scoring methodology.

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Table 2.A2.2. **Regulation of temporary employment**

Panel A. Values of the indicators

	Fixed-term contracts								
	Valid cases other than the usual *objective reasons*			Maximum number of successive contracts			Maximum cumulated duration		
	Scale 0 to 3			Number			Months		
	Late 1980s	Late 1990s	2003	Late 1980s	Late 1990s	2003	Late 1980s	Late 1990s	2003
Australia	3	3	3	1.5	1.5	1.5	No limit	No limit	No limit
Austria	2.5	2.5	2.5	1.5	1.5	1.5	No limit	No limit	No limit
Belgium	0	2.5	2.5	1	4	4	24	30	30
Canada	3	3	3	No limit	No limit	No limit	No limit	No limit	No limit
Czech Republic	. .	2.5	2.5	. .	No limit	No limit	. .	No limit	No limit
Denmark	2.5	2.5	2.5	1.5	1.5	1.5	30	30	30
Finland	1	1	1	1.5	1.5	1.5	No limit	No limit	No limit
France	1	1	1	3	2	2	24	18	18
Germany	2	2.5	2.5	1	4	4	18	24	24
Greece	0	0	0	2.5	2.5	3	No limit	No limit	24
Hungary	. .	2.5	2.5	. .	No limit	2.5	. .	60	60
Ireland	3	3	2.5	No limit	No limit	No limit	No limit	No limit	48
Italy	0.5	1	2	1.5	2	1	9	18	No limit
Japan	2.5	2.5	2.5	No limit	No limit	No limit	No limit	No limit	No limit
Korea	. .	2.5	2.5	. .	5	5	. .	No limit	No limit
Mexico	. .	0.5	0.5	. .	No limit	No limit	. .	No limit	No limit
Netherlands	3	3	3	1	3	3	No limit	No limit	No limit
New Zealand	. .	3	2	. .	5	4	. .	No limit	No limit
Norway	1	1	1	1.5	1.5	1.5	No limit	No limit	No limit
Poland	. .	3	3	. .	2	No limit	. .	No limit	No limit
Portugal	2	2	2	3	3	4	30	30	48
Slovak Republic	. .	2.5	3	. .	2	No limit	. .	44	60
Spain	2	2	1.5	6	3	3	24	24	24
Sweden	2	2.5	2.5	2	No limit	No limit	. .	12	12
Switzerland	3	3	3	1.5	1.5	1.5	No limit	No limit	No limit
Turkey	0	0	0	. .	1.5	1.5	. .	No limit	No limit
United Kingdom	3	3	3	No limit	No limit	No limit	No limit	No limit	48
United States	3	3	3	No limit	No limit	No limit	No limit	No limit	No limit

Table 2.A2.2. **Regulation of temporary employment** *(cont.)*

Panel A. Values of the indicators

	Temporary work agencies (TWAs)								
	Types of work for which TWA employment is legal			Restrictions on number of renewals			Maximum cumulated duration of temporary work contracts		
	Scale 0 to 4			Yes/no			Months		
	Late 1980s	Late 1990s	2003	Late 1980s	Late 1990s	2003	Late 1980s	Late 1990s	2003
Australia	4	4	4	No	No	No	No limit	No limit	No limit
Austria	3	3	3	No	No	No	No limit	No limit	No limit
Belgium	2	2	2	Yes	Yes	Yes	2	9	11
Canada	4	4	4	No	No	No	No limit	No limit	No limit
Czech Republic	0	4	4	n.a.	No	No	0	No limit	No limit
Denmark	2	4	4	Yes	No	No	3	No limit	No limit
Finland	4	4	4	. .	No	No	. .	No limit	No limit
France	2.5	2	2	Yes	Yes	Yes	24	18	18
Germany	2	3	3	Yes	Yes	Yes	6	12	No limit
Greece	0	0	4	n.a.	n.a.	Yes	0	0	16
Hungary	0	4	4	n.a.	No	No	0	No limit	No limit
Ireland	4	4	4	No	No	No	No limit	No limit	No limit
Italy	0	1	3	n.a.	Yes	Yes	0	No limit	No limit
Japan	1.5	2	3	Yes	Yes	Yes	36	36	36
Korea	. .	2.5	2.5	. .	Yes	Yes	. .	24	24
Mexico	. .	0	0	. .	n.a.	n.a.	. .	6	6
Netherlands	3	3.5	3.5	Yes	Yes	Yes	6	42	36
New Zealand	. .	4	4	. .	No	Yes	. .	No limit	No limit
Norway	1.5	2	2	Yes	Yes	Yes	. .	24	No limit
Poland	0	4	2	n.a.	No	No	0	No limit	24
Portugal	1	2	2	Yes	Yes	Yes	9	9	9
Slovak Republic	. .	4	4	. .	No	No	. .	No limit	No limit
Spain	0	2	2	n.a.	Yes	Yes	0	6	6
Sweden	0	4	4	n.a.	No	No	0	12	12
Switzerland	4	4	4	Yes	Yes	Yes	No limit	No limit	No limit
Turkey	0	0	0	n.a.	n.a.	n.a.	0	0	0
United Kingdom	4	4	4	No	No	No	No limit	No limit	No limit
United States	4	4	4	No	No	No	No limit	No limit	No limit

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Table 2.A2.2. **Regulation of temporary employment** *(cont.)*

Panel B. Summary scores by main area

	Fixed-term contracts			Temporary work agencies (TWAs)			Overall strictness of regulation		
	Late 1980s	Late 1990s	2003	Late 1980s	Late 1990s	2003	Late 1980s	Late 1990s	2003
Australia	1.3	1.3	1.3	0.5	0.5	0.5	0.9	0.9	0.9
Austria	1.8	1.8	1.8	1.3	1.3	1.3	1.5	1.5	1.5
Belgium	5.3	1.5	1.5	4.0	3.8	3.8	4.6	2.6	2.6
Canada	0.0	0.0	0.0	0.5	0.5	0.5	0.3	0.3	0.3
Czech Republic	. .	0.5	0.5	5.5	0.5	0.5	. .	0.5	0.5
Denmark	2.3	2.3	2.3	4.0	0.5	0.5	3.1	1.4	1.4
Finland	3.3	3.3	3.3	0.5	0.5	0.5	1.9	1.9	1.9
France	3.5	4.0	4.0	2.6	3.3	3.3	3.1	3.6	3.6
Germany	3.5	1.8	1.8	4.0	2.8	1.8	3.8	2.3	1.8
Greece	4.0	4.0	4.5	5.5	5.5	2.0	4.8	4.8	3.3
Hungary	. .	0.8	1.8	5.5	0.5	0.5	. .	0.6	1.1
Ireland	0.0	0.0	0.8	0.5	0.5	0.5	0.3	0.3	0.6
Italy	5.3	4.0	2.5	5.5	3.3	1.8	5.4	3.6	2.1
Japan	0.5	0.5	0.5	3.1	2.8	2.0	1.8	1.6	1.3
Korea	. .	0.8	0.8	. .	2.6	2.6	. .	1.7	1.7
Mexico	. .	2.5	2.5	. .	5.5	5.5	. .	4.0	4.0
Netherlands	1.5	0.8	0.8	3.3	1.6	1.6	2.4	1.2	1.2
New Zealand	. .	0.3	1.5	. .	0.5	1.0	. .	0.4	1.3
Norway	3.3	3.3	3.3	3.8	3.0	2.5	3.5	3.1	2.9
Poland	. .	1.0	0.0	5.5	0.5	2.5	. .	0.8	1.3
Portugal	2.3	2.3	1.8	4.5	3.8	3.8	3.4	3.0	2.8
Slovak Republic	. .	1.8	0.3	. .	0.5	0.5	. .	1.1	0.4
Spain	2.0	2.5	3.0	5.5	4.0	4.0	3.8	3.3	3.5
Sweden	2.7	1.8	1.8	5.5	1.5	1.5	4.1	1.6	1.6
Switzerland	1.3	1.3	1.3	1.0	1.0	1.0	1.1	1.1	1.1
Turkey	. .	4.3	4.3	5.5	5.5	5.5	. .	4.9	4.9
United Kingdom	0.0	0.0	0.3	0.5	0.5	0.5	0.3	0.3	0.4
United States	0.0	0.0	0.0	0.5	0.5	0.5	0.3	0.3	0.3

. . Data not available.
n.a. Not applicable.

Source: Late 1980s and late 1990s: See *OECD Employment Outlook*, 1999, Chapter 2; 2003: See OECD (2004b) for a detailed description of employment protection regulation and Annex 2.A1 for scoring methodology.

Table 2.A2.3. **Regulation of collective dismissal**

Requirements over and above those applying to individual dismissals

	Definition of collective dismissal		Additional notification requirements		Additional delays involved (in days)		Other special costs to employers		Overall strictness of collective dismissals	
	Late 1990s	2003	Late 1990s	2003	Late 1990s	2003	Late 1990s	2003	Late 1990s	2003
Australia	3	3	2	2	5	5	0	0	2.9	2.9
Austria	4	4	1	1	21	21	1	1	3.3	3.3
Belgium	3	3	2	2	38	38	1	1	4.1	4.1
Canada	1	1	2	2	69	69	0	0	2.9	2.9
Czech Republic	3	3	1	1	8	8	0	0	2.1	2.1
Denmark	3	3	2	2	29	29	1	1	3.9	3.9
Finland	3	3	1	1	32	32	0	0	2.6	2.6
France	3	3	0	0	20	20	1	1	2.1	2.1
Germany	4	4	1	1	28	31	1	1	3.5	3.8
Greece	4	4	1	1	19	19	1	1	3.3	3.3
Hungary	3	3	2	2	23	23	0	0	2.9	2.9
Ireland	3	3	1	1	29	29	0	0	2.4	2.4
Italy	4	4	1.5	1.5	44	44	2	2	4.9	4.9
Japan	2	2	1	1	0	0	0	0	1.5	1.5
Korea	3	3	1	1	0	0	0	0	1.9	1.9
Mexico	4	4	2	2	0	0	1	1	3.8	3.8
Netherlands	2	2	1	1	30	30	1	1	3.0	3.0
New Zealand	0	0	0.5	0.5	0	0	0	0	0.4	0.4
Norway	3	3	2	2	13	13	0	0	2.9	2.9
Poland	3	3	1	1	32	32	2	2	4.1	4.1
Portugal	4	4	0.5	0.5	62	62	1	1	3.6	3.6
Slovak Republic	2	2	1	1	55	24	1	1	3.3	2.5
Spain	3	3	1	1	29	29	1	1	3.1	3.1
Sweden	4	4	2	2	113	113	0	0	4.5	4.5
Switzerland	3	3	2	2	29	29	1	1	3.9	3.9
Turkey	3	3	0	0	29	29	0	1	1.6	2.4
United Kingdom	2	2	1.5	1.5	57	57	0	0	2.9	2.9
United States	1	1	2	2	59	59	0	0	2.9	2.9

Source: Late 1980s and late 1990s: See *OECD Employment Outlook* (1999, Chapter 2); 2003: See OECD (2004b) for a detailed description of employment protection regulation and Annex 2.A1 for scoring methodology.

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Table 2.A2.4. **Summary indicators of the strictness of employment protection legislation**

	Regular employment			Temporary employment			Collective dismissals		Overall EPL				
									Version 1			Version 2	
	Late 1980s	Late 1990s	2003	Late 1980s	Late 1990s	2003	Late 1990s	2003	Late 1980s	Late 1990s	2003	Late 1990s	2003
Australia	1.0	1.5	1.5	0.9	0.9	0.9	2.9	2.9	0.9	1.2	1.2	1.5	1.5
Austria	2.9	2.9	2.4	1.5	1.5	1.5	3.3	3.3	2.2	2.2	1.9	2.4	2.2
Belgium	1.7	1.7	1.7	4.6	2.6	2.6	4.1	4.1	3.2	2.2	2.2	2.5	2.5
Canada	1.3	1.3	1.3	0.3	0.3	0.3	2.9	2.9	0.8	0.8	0.8	1.1	1.1
Czech Republic	. .	3.3	3.3	. .	0.5	0.5	2.1	2.1	. .	1.9	1.9	1.9	1.9
Denmark	1.5	1.5	1.5	3.1	1.4	1.4	3.9	3.9	2.3	1.4	1.4	1.8	1.8
Finland	2.8	2.3	2.2	1.9	1.9	1.9	2.6	2.6	2.3	2.1	2.0	2.2	2.1
France	2.3	2.3	2.5	3.1	3.6	3.6	2.1	2.1	2.7	3.0	3.0	2.8	2.9
Germany	2.6	2.7	2.7	3.8	2.3	1.8	3.5	3.8	3.2	2.5	2.2	2.6	2.5
Greece	2.5	2.3	2.4	4.8	4.8	3.3	3.3	3.3	3.6	3.5	2.8	3.5	2.9
Hungary	. .	1.9	1.9	. .	0.6	1.1	2.9	2.9	. .	1.3	1.5	1.5	1.7
Ireland	1.6	1.6	1.6	0.3	0.3	0.6	2.4	2.4	0.9	0.9	1.1	1.2	1.3
Italy	1.8	1.8	1.8	5.4	3.6	2.1	4.9	4.9	3.6	2.7	1.9	3.1	2.4
Japan	2.4	2.4	2.4	1.8	1.6	1.3	1.5	1.5	2.1	2.0	1.8	1.9	1.8
Korea	. .	2.4	2.4	. .	1.7	1.7	1.9	1.9	. .	2.0	2.0	2.0	2.0
Mexico	. .	2.3	2.3	. .	4.0	4.0	3.8	3.8	. .	3.1	3.1	3.2	3.2
Netherlands	3.1	3.1	3.1	2.4	1.2	1.2	3.0	3.0	2.7	2.1	2.1	2.3	2.3
New Zealand	. .	1.4	1.7	. .	0.4	1.3	0.4	0.4	. .	0.9	1.5	0.8	1.3
Norway	2.3	2.3	2.3	3.5	3.1	2.9	2.9	2.9	2.9	2.7	2.6	2.7	2.6
Poland	. .	2.2	2.2	. .	0.8	1.3	4.1	4.1	. .	1.5	1.7	1.9	2.1
Portugal	4.8	4.3	4.3	3.4	3.0	2.8	3.6	3.6	4.1	3.7	3.5	3.7	3.5
Slovak Republic	. .	3.6	3.5	. .	1.1	0.4	3.3	2.5	. .	2.4	1.9	2.5	2.0
Spain	3.9	2.6	2.6	3.8	3.3	3.5	3.1	3.1	3.8	2.9	3.1	3.0	3.1
Sweden	2.9	2.9	2.9	4.1	1.6	1.6	4.5	4.5	3.5	2.2	2.2	2.6	2.6
Switzerland	1.2	1.2	1.2	1.1	1.1	1.1	3.9	3.9	1.1	1.1	1.1	1.6	1.6
Turkey	. .	2.6	2.6	. .	4.9	4.9	1.6	2.4	. .	3.8	3.7	3.4	3.5
United Kingdom	0.9	0.9	1.1	0.3	0.3	0.4	2.9	2.9	0.6	0.6	0.7	1.0	1.1
United States	0.2	0.2	0.2	0.3	0.3	0.3	2.9	2.9	0.2	0.2	0.2	0.7	0.7

. . Data not available.

Source: Late 1980s and late 1990s: See *OECD Employment Outlook* (1999, Chapter 2); 2003: See OECD (2004b) for a detailed description of employment protection regulation and Annex 2.A1 for scoring methodology.

Table 2.A2.5. **Regulatory provisions are often complementary to each other**

Correlation coefficients

Protection of regular employment against individual dismissal			Regulation on temporary forms of employment	
	Notice and severance pay	Difficulty of dismissal		Temporary work agencies (TWA)
Notification procedure	0.37**	0.61***	Fixed-term contracts (FTC)	0.55***
Notice and severance pay[a]		0.40**		
				Max. duration allowed[c]
			Valid cases for use of FTC or TWA[b]	0.68***

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

a) Average of the scores for the three lengths of service considered.

b) Average of the scores given to the description of valid cases for use of fixed-term contracts (item 9) and the type of work for which temporary work agency employment is legal (item 12).

c) Average of scores measuring the number and the duration of fixed-term contracts and temporary work agency employment (items 10, 12, 13, 14).

Source: See Annex Tables 2.A2.1and 2.A2.2.

A time series of EPL changes: construction details

The table below gives the years when new legislation was introduced in each country. At each of these break points the value of the EPL index is recalculated and applied thereafter until a new change intervenes to obtain the time-series used in this chapter.

Table 2.A2.6. **EPL time series: breaking points**[a, b]

Version 1 of the EPL indicator

		Reform description	EPL overall	EPL regular contracts	EPL temp. contracts
Australia	1996	Workplace Relations Act 1996 set out factors that Australian Industrial Relations Commission must have regard to when determining whether a termination is unfair	+	+	=
	2004	The scale for employers with 15 or more employers has also increased in March 2004 (the small business exemption to severance pay has been removed, now requiring employers with less than 15 employees to pay).	+	+	=
Austria	2003	Employees Income Provision Act eliminated severance paid and integrated into individual savings accounts accessible during unemployment spells	–	–	=
Belgium	1997	Restrictions on TWA were reduced and FTC were made renewable	–	=	–
	2000	Tightening of rule concerning notice period and compensation in case of unjustified dismissal for blue-collar workers	=	=	=
	2002	The maximum total duration of TWA was lengthened for contracts justified by temporary increase in work-load (Dec. 2001)	=	=	=
Canada		No changes			
Czech Republic		No changes			
Denmark	1995	Since the mid-1990s the role of TWA has been recognized by social partners and their scope increased	–	=	–
Finland	1991	The delay before notice can start was shortened from 2 months (as set in the Act on the Dismissal Procedure) to 1-2 weeks (as set in the Act of Employment Contracts)	–	–	=
	1996	Notice period was halved for workers with tenure less than 1 year	–	–	=
	2001	The new employment contract act came into force reducing notice periods further	–	–	=
France	1986	Prior administrative authorization for dismissals for economic reasons was abolished	–	–	=
	1990	The list limiting the circumstances in which the use of FTC and TWA is permissible is restored and the maximum total duration of FTC and TWA was reduced	+	=	+
	2001	Severance pay entitlements were increased	=	+	=
Germany	1985	FTC were allowed without specifying an objective reason			
	1993	Notice period for blue collar workers was extended and aligned with that of white-collar workers	=	+	=
	1994	TWA legislation was loosened	–	=	–
	1996	The renewal period for FTC and TWA and admissible frequency of renewals were increased	–	=	–
	2002	Maximum total duration of TWA was brought to 24 months	–	=	–
	2004	The limit on the maximum total duration of TWA was lifted. (from 1 Jan. 2004)	–	=	–
Greece	1990	Notice period or severance pay entitlements were reduced (law 1989 amending law 3198/55 of 1955)	–	–	=
	2003	National General Collective Labour Agreement (2002-2003) changes dismissal rules and raises slightly entitlements to severance pay	–	–	=
	2003	PD 81/2003 changes FTC and TWA	–	=	–
Hungary	2003	The amended labour code introduced stricter regulations on renewal of fixed term contracts	+	=	+
Ireland	2003	The Protection of Employees act tightened regulation on valid cases for FTC and limited their maximum overall duration to 4 years	+	=	+
	2003	The Redundancy Payments Bill (dismissal laws) raised severance pay entitlements	=	=	=
Italy	1987	Fixed term contracts use was widened through collective agreements specifying target groups and employment shares	=	=	=
	1997	Treu package on FTC widened the number of valid cases for the use of FTC	–	=	–
	1998	TWA were permitted	–	=	–
	2000	Reform of TWA 2000 extended the use of TWA and removed the restrictions concerning unskilled workers	–	=	–
	2001	Legislative Decree no. 368/2001 expanded valid cases for the use of FTC	–	=	–
	2003	Reform of TWA 2003 (Law no. 30/2003) extended further the use of TWA	–	=	–

Table 2.A2.6. **EPL time series: breaking points**[a, b] *(cont.)*

Version 1 of the EPL indicator

		Reform description	EPL overall	EPL regular contracts	EPL temp. contracts
Japan	1985	TWA were permitted for 13 occupations only			
	1996	The use of TWA was extended to 26 occupations	–	=	–
	1999	The use of TWA was extended to all occupations with some exclusions	–	=	–
Korea	1998	TWA were liberalized	–	=	–
	1998	Dismissals for managerial reasons are allowed (*i.e.* redundancy and economic restructuring). Whereas this new law may be used for dismissing a single person for urgent business needs, it was mainly introduced with collective dismissals in mind	–	–	=
Mexico		No changes			
Netherlands	1999	The flexibility and security law increased the maximum possible number of FCT and lengthened the maximum total duration of contracts with TWA	–	=	–
	2001	The EU directive on fixed-term work came into effect reducing the maximum total duration of TWA contracts	=	=	=
New Zealand	2000	Employment relations act tightened the legislation on individual and collective dismissals	+	+	=
	2000	Employment relations act also tightened the legislation on FTC and TWA	+	=	+
Norway	1995	TWA legislation was eased	–	=	–
	2000	TWA legislation was further eased	–	=	–
Poland	2002	The new labour code lifted some restrictions in the use of FTC (from 2 renewals permitted to unlimited – until accession)	–	=	–
	2003	A new law tightened regulations on temporary work agencies limiting the cases when TWA contracts are allowed and reducing their maximum total duration	+	=	+
Portugal	1989	Firing restrictions were eased (dismissals for individual redundancy were authorised)			
	1991	Firing restrictions were eased further (dismissals for unsuitability were authorised)	–	–	=
	1996	A strategic social plan between social partners was agreed to widen the use of FTC and TWA	–	=	–
	2004	New Labour Code came into force in December 2003	–	=	–
Slovak Republic	2003	A new Labour code was approved that relaxed regulations on dismissal of regular contract employees and collective dismissals	–	–	=
	2003	The new Labour code also increased valid cases for FTC, raised the number of possible renewals and the maximum overall duration of FTC	–	=	–
Spain	1984	Restrictions for FTC were substantially relaxed			
	1994	Procedural requirements for dismissals for economic reasons were relaxed, notice periods shortened	–	–	=
	1994	Rules governing renewals of FTC were tightened and temporary work agencies permitted	–	=	–
	1997	Maximum compensation for unfair dismissal was reduced and some changes were made to the definition of fair dismissal	–	–	=
	2001	Law 12/2001 tightened the rules governing valid cases for the use of FTC	+	=	+
Sweden	1993	TWA were permitted	–	=	–
	1997	FTC were made possible without objective reason	–	=	–
Switzerland		No changes			
Turkey		No changes			
Great Britain	1985	The period of service to claim unfair dismissal increased to 2 years			
	2000	Trial period was halved	+	+	=
	2002	Maximum total duration of FTC was reduced to 4 years (from unlimited)	=	=	+
United States		No changes			

a) Index starts in 1985 for all countries except Hungary, Korea, Mexico, New Zealand, Poland, Turkey (1990), and the Czech Republic and the Slovak Republic (1993).

b) The equal sign does not mean that the change has not been accounted for but indicates that the change in a sub-item was not large enough to be visible in the overall score (total, regular or temporary work EPL).

ANNEX 2.A3

Data Description

Table 2.A3.1. **Variables description**

Variable name	Description	Source	Countries	Years
	Control variables			
Wage bargaining centralisation/ coordination	Degree of centralisation/ coordination in wage bargaining.	OECD (2004), *Employment Outlook*, Chapter 3.	OECD.	1970-2002 (constant after 2000).
Wage bargaining coverage	Degree of coverage of wage bargaining agreements.	OECD (2004), *Employment Outlook*, Chapter 3.	OECD except ISL, LUX.	1970-2002 (constant after 2000).
Tax wedge	Ratio between employers' and employees' contributions, plus personal income tax, and average gross earnings.	OECD (2004), *Taxing wages*.	OECD.	1985-2002 except (starting year): CZE (93), HUN (91), POL (90).
Active labour market policies	Expenditure on active labour market programmes per unemployed person ('000) (constant US$ PPP for GDP).	OECD database on Labour Market Programmes.	OECD less ISL, TUR.	1985-2002 except (starting year): CZE, HUN (92), ITA (98), JPN (87), KOR, MEX (90), POL (93), PRT (86), SVK (94).
Unemployment benefits replacement rates	Gross replacement rates averaged across 2 earnings levels, 3 family types, and 3 unemployment duration categories.	OECD (2004), *Benefits and wages* (annual publication).	OECD less CZE, HUN, ISL, KOR, LUX, MEX, POL, SVK, TUR.	1985-2002 odd years only (even years interpolated) 2002 equal to 2001.
Output gap	Percentage difference between actual and long-run trend output.	OECD (2003), Economics Department Analytical Database.	OECD less CZE, HUN, KOR, LUX, MEX, POL, SVK, TUR.	1985-2002.
Relative tax rate of the second earner	Ratio of tax rate of second earner to tax rate of single individual.	OECD (2003), Economics Department working paper No. 376.	OECD less ISL, LUX.	1981-2001 except (starting year) AUT, BEL, CZE, GRC, HUN, IRL, JPN, MEX, NZL, POL, PRT, CHE, TUR (95), KOR (96), SVK (00).
Child benefits	Increase in household disposable income from child benefits for two children.	OECD (2003), Economics Department working paper No. 376.	OECD less ISL, LUX.	1981-2001 except (starting year) AUT, BEL, CZE, GCR, HUN, IRL, JPN, MEX, NZL, POL, PRT, CHE, TUR (95), KOR (96), SVK (00).
Public spending on childcare	Public childcare spending per child (formal day-care and pre-primary school).	OECD (2003), Economics Department working paper No. 376.	OECD less ISL, LUX, GCR, HUN, JPN, POL.	1985-1999 except (starting year) IRL (87), NLD (98), AUT (90), CHE (91), CAN, DEU, KOR, MEX (93), FRA (95), TUR (96), CZE (97), FIN (98).
Paid leave	Total number of weeks of paid maternity, parental, and childcare leave.	OECD (2003), Economics Department working paper No. 376.	OECD less ISL, LUX, KOR, CHE.	1981-1999 except (starting year) AUT (88), CZE, HUN, MEX, POL, SVK, TUR, (95).

Table 2.A3.1. **Variables description** *(cont.)*

Variable name	Description	Source	Countries	Years
		Control variables		
Minimum wage	Minimum wage as a percentage of average wage (0 where no minimum age exists).	OECD minimum wages database.	OECD less SVK.	1981-2002 except (start-end year) HUN (91-02), POL (91-99), TUR (81-98).
Average retirement age	Average of retirement age of men and women.	OECD (2003), Economics Department working paper No. 370.	OECD less ISL, LUX, CZE, DNK, GCR, HUN, MEX, POL, SVK, TUR.	1967-1999 except (starting date) NZL (84), KOR (87), CHE (89), BEL (95), AUT (99), JPN (93).
Implicit tax rate on continued work	Implicit marginal tax rate on continued work (average of rate at 55 and rate at 60 with weights 0.8 and 0.2 respectively).	OECD (2003), Economics Department working paper No. 370.	OECD less ISL, LUX, CZE, DNK, GCR, HUN, KOR, MEX, POL, SVK, TUR.	1967-1999 except (starting year) CHE (89), BEL (95), AUT (99), JPN (93).
		Outcome variable		
Employment rate	Ratio of employment to population.	OECD database on Labour Force Statistics.	OECD.	1985-2002 except (starting year): CHE , MEX (91), CZE (93), HUN,POL (92), KOR (89), NZL (86), TUR (88), SVK (94).[a]
Employment rate of low skilled[b]	Ratio of employment to population for low educated.	OECD database on Labour Force Statistics.	OECD (less LUX, ISL).	1989-2002 except CAN, DEU, ESP, FRA, IRL, KOR, TUR (91), DNK, NZL (92), CZE, GRC, SVK (94), MEX, POL (95), HUN (96), JPN (97), TUR (91).
Unemployment rate	Ratio of unemployment to labour force.	OECD database on Labour Force Statistics.	OECD.	1985-2002 except (starting year): CHE , MEX (91), CZE (93), HUN,POL (92), KOR (89), NZL (86), TUR (88), SVK (94).
Incidence of long-term unemployment	Incidence of long term unemployment (1 year or longer).	OECD database on Labour Force Statistics.	OECD.	1985-2002 except (starting year): AUT, SVK (94), CZE (93), FIN (95), HUN, POL (92), NOR, TUR (88), CHE, KOR (91), MEX (96), NZL, PRT (86).
Incidence of temporary work	Share of employees with a temporary contract.	OECD database on temporary workers.	AUT, BEL, CAN, DNK, FIN, FRA, DEU, ITA, JPN, NLD, NOR, PRT, ESP, SWE, CHE, GBR.	1985-2002[c] except (starting year): AUT, FIN, NOR, SWE (95), CZE, POL (97), ESP, PRT (86), HUN, CHE (96), SVK (98).
Unemployment inflow rate	Number of people unemployed for less than a month divided by total population less unemployment.	OECD database on unemployment by duration.	OECD less KOR, TUR.	1985-2002 except (starting year): AUT, SVK (94), CZE (93), HUN, POL (92), MEX (95), NZL, PRT (86), POL (92), CHE (91).
Unemployment outflow rate	Difference between the average monthly level of inflows and the monthly average change in unemployment over one year, divided by total unemployment.	OECD database on unemployment by duration.	OECD less KOR, TUR.	1985-2002 except (starting year): AUT, SVK (95), CZE (94), HUN, POL (93), MEX (96), NZL, PRT (87), POL (93), CHE (92).

a) Data for Switzerland are missing for young workers before 1999.
b) Low skilled group includes those with educational attainment corresponding to less than upper secondary degree.
c) For low-educated workers, data are from 1992 only at the earliest, 1993 for France and 1996 for the Netherlands and Norway.

Bibliography

Addison, J.T. and P. Teixeira (2003), "The Economics of Employment Protection", *Journal of Labor Research*, Vol. 24, Issue 1, pp. 85-129.

Anderson, P. and B. Meyer (1993), "Unemployment Insurance in the United States: layoff incentives and cross subsidies", *Journal of Labor Economics*, Vol. 11, pp. 70-95.

Anderson, P. and B. Meyer (1994), "The Effects of Unemployment Insurance Taxes and Benefits on Layoffs Using Firm and Individual Data", NBER Working Paper, No. 4960.

Anderson, P. and B. Meyer (2000), "The Effects of Unemployment Insurance Payroll Taxes on Wages, Employment, Claims and Denials", *Journal of Public Economics*, Vol. 78, pp. 81-106.

Arbejdsministeriet (1999), *Arbejdsmarkedsreformerne – ét statusbillede*, København.

Autor, D. (2000), "Outsourcing at Will: Unjust Dismissal Doctrine and the Growth of Temporary Help Firms", NBER Working Paper, No. 7557.

Baily, M. (1977), "On the Theory of Layoffs and Unemployment", *Econometrica*, Vol. 45, pp. 1043-1063.

Baker, D., A. Glyn, D. Howell and J. Schmitt (2003), "Unemployment and Labour Market Institutions: the failure of the empirical case for deregulation", paper prepared for the ILO, Geneva.

Baker, D., A. Glyn, D. Howell and J. Schmitt (2004), "Labour Market Institutions and Unemployment: a critical assessment of cross-country evidence", forthcoming in D. Howell (ed.), *Fighting Unemployment: the limits of free market orthodoxy*, Oxford University Press, Oxford.

Behaghel, L., B. Crépon and B. Sédillot (2004), "Contribution Delalande et transitions sur le marché du travail", mimeo, CREST-INSEE, Paris, *www.crest.fr/seminaires/recherche/20032004/delalande.pdf*.

Belot, M. and J. van Ours (2000), "Does the Recent Success of Some OECD Countries in Lowering their Unemployment Rates Lie in the Clever Design of their Labour Market Reforms", IZA Discussion Paper, No. 147, April.

Belot, M., J. Boone and J. van Ours (2002), "Welfare Effects of Employment Protection", CEPR Discussion Paper, No. 3396.

Bentolila, S. and J. Dolado (1994), "Spanish Labour Markets", *Economic Policy*, April, pp. 53-99.

Bertola, G. (2004), "A Pure Theory of Job Security and Labor Income Risk", *Review of Economic Studies*, Vol. 71, pp. 43-61.

Bertola, G., F. Blau and L. Kahn (2002), "Comparative Analysis of Labour Market Outcomes: Lessons for the US from International long-run evidence", in A. Krueger and R. Solow (eds.), *The Roaring Nineties: Can Full Employment Be Sustained?*, Russell Sage and Century Foundations, pp. 159-218.

Bertola, G., T. Boeri and S. Cazes (1999), "Employment Protection and Labour Market Adjustment in OECD Countries: Evolving institutions and variable enforcement", Employment and Training Paper, No. 48, ILO, Geneva.

Bingley, P., T. Eriksson, A. Werwatz and N. Westergard-Nielsen (1999), "Beyond 'Manucentrism': some fresh facts about job and worker flows", Centre for Labour Market and Social Research, Working Paper, No. 99-09, Aarhus.

Blanchard, O. and A. Landier (2002), "The Perverse Effect of Partial Labour Market Reform: Fixed-Term Contracts in France", *Economic Journal*, Vol. 112, No. 480, pp. F214-244.

Blanchard, O. and P. Portugal (2001), "What Hides Behind an Unemployment Rate. Comparing Portuguese and US unemployment", *American Economic Review*, Vol. 91-1, pp. 187-207.

Blanchard, O. and J. Tirole (2003), "Contours of Employment Protection Reform", mimeo, Massachusetts Institute of Technology, Department of Economics.

Blanchard, O. and J. Tirole (2004), "The Optimal Design of Unemployment Insurance and Employment Protection: a first pass", Massachusetts Institute of Technology, Department of Economics, Working Paper, No. 04-15.

Blanchard, O. and J. Wolfers (2000), "The Role of Shocks and Institutions in the Rise of European Unemployment: The Aggregate Evidence", *Economic Journal*, Vol. 110, No. 462, pp. C1-33.

Boeri, T., J.I. Conde-Ruiz and V. Galasso (2003), "Protecting Against Labour Market Risk: Employment Protection or Unemployment Benefits?", IZA Discussion Paper, No. 834.

Bommier, A., T. Magnac and M. Roger (2003), "Le marché du travail à l'approche de la retraite", forthcoming in *Revue Française d'Économie*.

Borland, J., P. Gregg, G. Knight and J. Wadsworth (1999), "They Get Knocked Down. Do they get up again? Displaced workers in Britain and Australia", Canadian International Labour Network Conference "Labour Market Institutions and Labour Market Outcomes: International Perspectives", McMaster University, Canada.

Brechling, F. (1977), "The Incentive Effects of the US Unemployment Insurance Tax", *Research in Labor Economics*.

Cahuc, P. and G. Jolivet (2003), "Do We Need More Stringent Employment Protection Legislations?", mimeo, Université Paris 1, Paris.

Cahuc, P. and F. Postel-Vinay (2002), "Temporary Jobs, Employment Protection and Labour Market Performance", *Labour Economics*, Vol. 9, No. 1, pp. 63-91.

Card, D. and P. Levine (1994), "Unemployment Insurance Taxes and the Cyclical and Seasonal Properties of Unemployment", *Journal of Public Economics*, Vol. 53, pp. 1-29.

Clark, A. and F. Postel-Vinay (2004), "Job Security and Job Protection", Paper prepared for the 2004 International Seminar on Macroeconomics, Reykjavik, Iceland.

Dolado, J.J., C. Garcia and J.F. Jimeno (2002), "Drawing Lessons from the Boom of Temporary Jobs in Spain", *Economic Journal*, Vol. 112, No. 480, pp. F270-295.

Duval, R. (2003), "The Retirement Effects of Old-age Pension and Early Retirement Schemes in OECD Countries", OECD Economics Department Working Paper, No. 370, OECD, Paris.

EIRO Observer (2003), "Netherlands – Social partners oppose changes to dismissals laws", European Foundation for the Improvement of Living and Working Conditions, update 5'03.

Elmeskov, J., J.P. Martin and S. Scarpetta (1998), "Key Lessons for Labour Market Reforms: Evidence from OECD Countries' Experience", *Swedish Economic Policy Review*, Vol. 5, pp. 205-252.

European Commission (2003a), "2003 Adopted Employment Guidelines", *http://europa.eu.int/eur-lex/pri/en/oj/dat/2003/l_197/l_19720030805en00130021.pdf*.

European Commission (2003b),
"2003 NAP – The Government: Denmark's national action plan for employment 2003", *http://europa.eu.int/comm/employment_social/employment_strategy/nap_2003/nap_da_en.pdf*.

Farber, H.S. (2003), "Job Loss in the United States", NBER Working Paper, No. 9707.

Feldstein, M. (1976), "Temporary Layoffs in the Theory of Unemployment", *Journal of Political Economy*, Vol. 84, pp. 937-957.

Fella, G. (2004), "Efficiency Wage and Efficient Redundancy pay", *European Economic Review*, Vol. 44, pp. 1473-1490.

Foster, B. and I. Mc Andrew (2003), Introduction to the Conference Collection: "Growth and Innovation Through Good Faith Collective Bargaining: An Introduction", *New Zealand Journal of Industrial Relations*, Vol. 28.

Fougere, D. and D. Margolis (2000), "Moduler les cotisations employeurs à l'assurance chômage : les expériences de bonus-malus aux Etats-Unis", *Revue Française d'Économie*.

Gomez-Salvador, R., J. Messina and G. Vallanti (2004), "Gross Job Flows and Institutions in Europe", forthcoming in *Labour Economics*.

Grubb, D. and W. Wells (1993), "Employment Regulation and Patterns of Work in EC Countries", *OECD Economic Studies*, No. 21, OECD, Paris, Winter, pp. 7-58.

Harbridge, R., R. May and G. Thickett (2003), "The Current State of Play: collective bargaining and union membership under the Employment Relations Act 2000", *New Zealand Journal of Industrial Relations*, Vol. 28, pp. 140-149.

Heckman, J. and C. Pages (2000), "The Cost of Job Security Regulation: evidence from Latin American labour markets", NBER Working Paper, No. 7773.

Herzog, H.W. (1996), "Job-loss and Labour Market Outcomes under Rapid Structural Adjustment: the Case for New Zealand", *Labour Market Bulletin*, Vol. 1, pp. 19-44.

Holmlund, B. and D. Storrie (2002), "Temporary Work in Turbulent Times: The Swedish Experience", *Economic Journal*, Vol. 112, No. 480, pp. F189-213.

Hopenhayn, H. and R. Rogerson (1993), "Job Turnover and Policy Evaluation: A General Equilibrium Analysis", *Journal of Political Economy*, Vol. 101, pp. 915-938.

Ichino, A., M. Polo and E. Rettore (2003), "Are Judges Biased by Labour Market Conditions", *European Economic Review*, Vol. 47(5), pp. 913-944.

Jaumotte, F. (2003), "Female Labour Force Participation: past trends and main determinants in OECD countries", OECD Economics Department Working Paper, No. 376, OECD, Paris.

Kugler, A. (2002), "From Severance Pay to Self-Insurance: Effects of Severance Payments Savings Accounts in Colombia", IZA Discussion Paper, No. 434.

Layard, R., S. Nickell and R. Jackman (1991), *Unemployment: Macroeconomic Performance and the Labour Market*, Oxford University Press, Oxford.

Lazear, E.P. (1990), "Job Security Provisions and Employment", *The Quarterly Journal of Economics*, August, pp. 699-726.

Madsen, P. (2002), "The Danish model of *flexicurity* – A paradise with some snakes", European Foundation for the Improvement of Living and Working Conditions, Dublin.

Nickell, S. (1997), "Unemployment and Labour Market Rigidities: Europe versus North America", *Journal of Economic Perspectives*, Vol. 11, No. 3, Summer, pp. 55-74.

Nickell, S. and R. Layard (1999), "Labor Market Institutions and Economic Performance", in O. Ashenfelter and D. Card (eds.), *Handbook of Labor Economics*, Vol. 3, Amsterdam, Netherlands, pp. 3029-3084.

Nickell, S. and L. Nunziata (2000), "Employment Patterns in OECD Countries", CEP, LSE Discussion Paper, No. 448.

Nickell, S., L. Nunziata and W. Ochel (2003), "Unemployment in the OECD since the 1960s: What do we know?", mimeo, Bank of England.

Nickell, S., L. Nunziata, W. Ochel and G. Quintini (2001), "The Beveridge Curve, Unemployment and Wages in the OECD", CEP Discussion Paper, No. 502.

Nicoletti, G. and S. Scarpetta (2002), "Interactions between Product and Labour Market Regulations: Do They Affect Employment? Evidence from OECD Countries", mimeo, OECD, Paris.

Nunziata, L. and S. Staffolani (2002), "The Employment Effects of Short Term Contracts Regulations in Europe", mimeo, Nuffield College, Oxford.

OECD (1999), *Employment Outlook*, Paris.

OECD (2001), *Employment Outlook*, Paris.

OECD (2002a), *Employment Outlook*, Paris.

OECD (2002b), *Benefits and Wages – OECD Indictors 2002,* Paris.

OECD (2003a), *Employment Outlook*, Paris.

OECD (2003b), *The Sources of Economic Growth*, Paris.

OECD (2003c), *OECD Economic Surveys: Denmark*, Vol. 2003, No. 10, Paris.

OECD (2004a), *Ageing and Employment Policies – Finland*, Paris.

OECD (2004b), "Detailed Description of Current Employment Protection Legislation", Background Material for Chapter 2 of *OECD Employment Outlook 2004*, Paris (*www.oecd.org/els/employmentoutlook*).

Pissarides, C. (2001), "Employment Protection", *Labour Economics*, Vol. 8, pp. 131-159.

Scarpetta, S. (1996), "Assessing the Role of Labour Market Policies and Institutional Settings on Unemployment: A Cross-Country Study", OECD *Economic Studies*, No. 26, 1996/1, OECD, Paris.

Topel, R. (1983), "On layoffs and unemployment insurance", *American Economic Review*, Vol. 73, pp. 541-559.

Young, D. (2003), "Employment Protection Legislation: its economic impact and the case for reform", European Commission Directorate-General for Economic and Financial Affairs, Economic Paper, No. 186.

ISBN 92-64-10812-2
OECD Employment Outlook
© OECD 2004

Chapter 3

Wage-setting Institutions and Outcomes

The OECD Jobs Strategy recommends policies to increase wage flexibility, including moves to decentralise wage bargaining. However, this is one of the policy areas where member governments have shown the greatest reluctance to implement the reforms proposed and disagreements among researchers have been most pronounced. Have wage-setting institutions become more supportive of high employment rates and broadly-shared prosperity? To what extent is the trend towards lower union density and more decentralised collective bargaining a factor behind wage moderation and greater earnings inequality recorded in some OECD countries? Does insufficient wage differentiation limit the employment prospects of youths, women or less educated workers?

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Introduction

Workers and economists agree on the importance of wages. Whereas most workers would emphasise the importance of their pay for their family's income, most economists would add that wages also function as price signals in a market economy, thereby affecting allocative efficiency in production. Both groups would agree, however, that the performance of the labour market – and the overall economy – is intimately linked to the good functioning of wage-setting institutions. Unfortunately, the complexity of the links between these institutions and the wage structures that they generate, on the one hand, and the resulting impacts on allocative efficiency and the distribution of income, on the other, make it difficult to identify the policy choices best suited to achieve good labour market performance. Furthermore, these policy choices tend to raise the difficult issue of trade-offs between efficiency and equity goals. Wage-setting institutions may also be embedded in bi- or tripartite systems of consultation and co-determination which have important social and economic functions beyond their influence on wage setting. Despite these complexities, policy choices must be made and they should be informed, as much as is possible, by historical experience and economic research. In that spirit, the OECD Jobs Strategy – which was formulated in light of the evidence that was available approximately a decade ago – recommends policies to increase wage flexibility and lower non-wage labour costs (OECD, 1994a).

The purpose of this chapter is to reassess some of the evidence underlying the Jobs Strategy recommendations concerning wage setting, albeit without providing a comprehensive reassessment of those recommendations. Emphasis is placed upon updating and extending the OECD's indicators of the organisation of collective bargaining, in light of the recent evolution of bargaining practices and advances in internationally comparative research (see, notably, Ebbinghaus and Visser, 2000; Golden *et al.* 2002; Iversen, 1998, 1999; Kenworthy, 2001a, b, 2003; Ochel, 2000a, b; Traxler *et al.* 2001). These indicators are then used to provide a *preliminary* reassessment of how wage bargaining institutions affect the overall wage level, the structure of relative wages and various non-wage outcomes. A key reason that this reassessment should be considered preliminary and incomplete is that interactions between collective bargaining and other policies affecting wages (*e.g.* tax and transfer policies that affect non-wage labour costs or the social benefits available to the unemployed, and statutory minimum wages) receive only cursory attention. Nor does the chapter provide a comprehensive analysis of the economic impact of unions, despite its emphasis on collective bargaining. For example, the "voice" role of unions (and allied institutions such as works councils) in representing workers' interests encompasses a broad range of concerns, in addition to wage bargaining, which are not considered here (Addison and Belfield, 2003).

The chapter is organised as follows. Section 1 sets the stage by surveying the most pertinent developments in policy making, the research literature and wage outcomes – including trends in average wages and wage differentials, and how both have co-varied with employment. On the basis of this survey, it is argued that a key question that must be

answered, in order to better assess the relative advantages and disadvantages of different national systems for determining wages, is whether certain organisational forms of collective bargaining undermine employment performance by tending to result in either: *i)* an average wage level that is too high relative to productivity; or *ii)* a compressed wage structure which does not adequately reflect differences in productivity between workers and regions. Section 2 then develops a detailed comparative analysis of the organisation of collective bargaining in OECD countries and how these systems have evolved since 1970. This section updates the OECD indicators for union density, collective bargaining coverage, and the centralisation and co-ordination of bargaining (OECD, 1994c, 1997a) and discusses closely related developments, including the use of administrative extension and opt-out clauses, experience with tripartite agreements/social compacts and bargaining "governability". Finally, Section 3 uses the updated indicators to re-examine the impact of these wage-setting institutions on the functioning of the labour market, as reflected in both wage and non-wage outcomes. A wide selection of performance measures is considered in this largely descriptive analysis, which provides a check on the robustness of past research findings, while identifying the most promising avenues for further study.

Main findings

- *The evolution of aggregate wages suggests a trend towards wage moderation in the majority of OECD member countries since the end of the 1970s,* as reflected in a deceleration of nominal wage inflation and declines in the wage share of total income generated in the business sector. However, it is unclear whether there has been a correspondingly broad trend towards reduced upward pressure on the level of real wages relative to productivity, at an *unchanged* rate of unemployment, which theoretical arguments identify as the most relevant measure of wage restraint.
- *The evolution of earnings inequality and wage differentials since 1970 has varied considerably across OECD countries,* but an overall tendency for wage dispersion to increase can be detected, particularly in countries where wages are more responsive to market forces. Employment and unemployment developments – in particular, the relative employment of youths and older persons of working age – tended to be less favourable in countries in which earnings inequality increased more slowly since 1970 (or fell), than in countries where the earnings inequality rose more rapidly. Furthermore, the apparent trade-off between a strong employment performance and a more equal distribution of earnings appears to have worsened, consistent with relative labour demand having shifted towards high-skilled workers.
- *There has been a steady decline of trade union density in most OECD countries over the past few decades.* Only four out of 20 countries, for which full data are available, increased their density since 1970: Belgium, Denmark, Finland and Sweden, *i.e.* the countries of the "Ghent" system, where unemployment benefit, as a rule, is administered by union-affiliated institutions. By contrast, density fell by over half in two countries (Portugal and New Zealand) and by over one-third in another seven countries.
- *In comparison with trade union density, there has been more stability in the extent of bargaining coverage for the OECD area as a whole.* In large part, this is due to there having been relatively little change in the extent to which employers apply the terms of contracts negotiated with unions to their non-union workforce, whether voluntarily or in response to administrative extension mechanisms. As concerns both union density and bargaining coverage, OECD countries have become more diverse in recent decades.

- *The level where collective contracts are negotiated and formally set is one of the more obvious dimensions of bargaining structures*. The classification of countries on this indicator is complicated by the fact that in a number of countries bargaining may occur at multiple levels. The classification into five categories used in this chapter takes into account multi-level bargaining, while keeping the usual three-way classification by firm-, sectoral and national level. Importantly, when comparing the 1970s with the 1990s, not a single OECD country moved towards centralisation, whereas a considerable number moved toward greater decentralisation – which could theoretically result in greater inter-firm wage differentiation.
- *Conceptually different from the level where wages are formally set is the degree of co-ordination of bargaining*. This chapter distinguishes five levels of co-ordination. A substantial number of countries are given a higher score on the co-ordination than on the centralisation dimension, because of pattern bargaining modelled on pilot agreements, different forms of peak-level co-ordination, or government intervention in tripartite agreements or social compacts.
- *High union density and bargaining coverage, and the centralisation/co-ordination of wage bargaining tend to go hand-in-hand with lower overall wage inequality*. There is also some, albeit weaker, evidence that these facets of collective bargaining are positively associated with the relative wages of youths, older workers and women. On the other hand, the chapter does not find much evidence that employment of these groups is adversely affected.
- *No robust associations are evident between the indicators of wage bargaining developed in this chapter and either the growth rate of aggregate real wages or non-wage outcomes, including unemployment rates*. This is consistent with the results obtained using the previous version of the OECD indicators of the organisation of collective bargaining. This "negative finding" does not preclude that more sophisticated analyses might find such effects, for example, by identifying interaction effects between the organisation of wage bargaining and other policies (*e.g.* employment protection) or ways in which different forms of wage bargaining affect the dynamics of labour market adjustment to shocks. However, it could be an indication that quite different institutional arrangements are capable of obtaining similar levels of macroeconomic performance.

1. Setting the stage

A. The policy context

Did wage-setting institutions that leave too little scope for the operation of market forces bear a part of the responsibility for the deterioration of employment performance observed in many OECD countries following the first oil shock? This point of view was reflected in the OECD Jobs Strategy, as formulated in 1994, although insufficient wage flexibility was only one of a number of factors that were singled out as having caused the upward trend in unemployment rates. Consistent with this diagnosis, one of the ten broad policy guidelines of the Jobs Strategy recommended that governments enact reforms to restrain overall labour costs and allow relative wages to better reflect individual differences in productivity and local labour market conditions (see Box 3.1). With some differences in nuance, the European Commission, in its Economic Policy Guidelines, has also advocated reforms to enhance aggregate and relative wage flexibility (European Commission, 2003a). Similarly, a number of OECD countries have introduced reforms intended to render wages and labour costs more

Box 3.1. **Wage setting in the original OECD Jobs Study**

The original 1994 OECD Jobs Study recommended as one of its broad policy guidelines that policy makers make wage and labour costs more flexible by removing restrictions that prevent wages from reflecting local conditions and individual skill levels and/or reducing non-wage labour costs (OECD, 1994a). More particularly, the detailed recommendations underlying this guideline included to:

- Reassess the role of statutory minimum wages and either switch to different kinds of redistributive instruments or minimise their adverse employment effects by ensuring sufficient differentiation in minimum levels and/or indexing them to prices instead of average earnings.
- Refocus collective bargaining at sectoral level to framework agreements, in order to give firms more leeway to adjust wages to local conditions.
- Introduce opening clauses for local bargaining parties to re-negotiate sectoral agreements.
- Phase out administrative extension which was considered to rigidify wage-setting arrangements.
- Reduce non-wage labour costs that lead to increased unemployment unless they are offset by wage concessions; particularly in Europe, this should be done by reducing taxes on labour and/or shifting away from these towards other types of taxes.
- Reduce direct taxes and social security contributions on low-wage workers, in order to shift labour demand towards them.

The analytical study on "wage adjustments" underlying the recommendations presented a wealth of descriptive and analytical material on price adjustments in the labour market and the impact of industrial relations institutions (OECD, 1994b). In particular, it advocated market-clearing by appropriate wage adjustments to external shocks and warned against too much compression of the wage distribution as this led to the demand for low-skilled labour drying up. As to institutional behaviour, the study leaned towards the Calmfors/Driffill hypothesis about the perverse effects of sectoral bargaining (Calmfors and Driffill, 1988), but was also sceptical about the supposed advantages of centralised bargaining and tripartite agreements or social compacts.

flexible. For example, the 1991 Employment Contracts Act in New Zealand and a series of workplace reform acts in Australia (1988, 1993, 1996) decentralised wage bargaining in the pursuit of greater wage flexibility. Taking a somewhat different approach, national governments in a number of European countries have supported social pacts intended to encourage moderation in wage setting (Fajertag and Pochet, 2000) or introduced payroll tax exonerations for employers of low-wage or disadvantaged workers (OECD, 2003a).

The OECD's assessment of the Jobs Strategy, five years after it was endorsed by member governments, concluded that reforms to wage-setting institutions was one of the policy areas in which member governments had shown the greatest reluctance to implement the OECD's policy recommendations (OECD, 1999).[1] Concerns for equity and social cohesion appear to have been an important explanation for this reluctance (OECD, 1997b). Equity concerns merit attention. Across OECD countries, higher wage dispersion is associated with a higher incidence of low-paid employment and greater persistence in low pay (OECD, 1996, 2003a). Furthermore, there is a strong association between low-paid

employment and poverty incidence in the working-age population, although the link between joblessness and poverty is even stronger (OECD, 2001a). A second possible barrier to enacting these reforms may be that national industrial relations structures and practices are deeply embedded in the economic and social fabric and not easily changed.[2] A final possible explanation for a reluctance to implement reforms intended to increase wage flexibility may be doubts concerning the efficacy of these measures for expanding employment (Howell, 2004; Teulings and Hartog, 1998).

How strong is the case supporting reforms to enhance aggregate and relative wage flexibility? Economic theory provides strong grounds for believing that wage-setting institutions that attempt to set aggregate wages[3] at a level that is too high relative to productivity will raise equilibrium unemployment.[4] The theoretical framework proposed in the seminal work of Layard *et al.* (1991) relates equilibrium unemployment to structural characteristics of the labour market, which can be summarised by the interplay of two curves: *i)* a wage curve representing the extent to which the wage-setting institutions generate upward pressures on wages and render them more or less sensitive to market conditions; and *ii)* a U-V or "Beveridge" curve representing the efficiency with which unemployed workers are matched to vacant posts. Among the wide range of policies and institutions that have the potential to shift the wage curve upwards and generate high unemployment are collective bargaining arrangements that lead to high wage settlements and minimum wages that are high relative to the average wage (Nickell *et al.*, 2003). Since 1991, a vast theoretical and empirical literature has applied this basic framework in an attempt to explain international differences in aggregate labour market performance, as well as changes over time in performance within countries.[5] Although this theoretical framework commands broad acceptance among researchers, opinions differ concerning which institutional configurations are most likely to result in excessive upward pressure on the aggregate wage and how important of a role excessive wage demands have played in undermining employment performance.

The verdict with respect to wage differentials and employment performance is similarly complex. There is broad agreement that relative wages provide important price "signals" to workers and employers concerning how to make allocative choices, such as how much time to devote to paid employment, which workers are best suited to perform which tasks (and in which firms), and whether potential investments in training should be pursued. It follows that inappropriately-set wages can result in inefficiencies. For example, the Jobs Study recommendations reflect a concern that union involvement in wage setting and/or public regulations have compressed wage differentials in the lower part of the earnings distribution to the point where significant numbers of low-skilled workers are excluded from employment. A difficulty in assessing whether these concerns are well founded is that economists disagree concerning whether the relative wage structure that would emerge from a competitive "spot" market provides the appropriate benchmark. Among the possible reasons for caution in adopting this benchmark are: *i)* employers may exercise monopsony power (Manning, 2003, 2004); *ii)* wages may have important effects on productivity, for example due to their impact on employee moral, turnover and effort (Akerlof and Yellen, 1986); *iii)* compression of skill differentials may facilitate employer investment in general skills in the context of incomplete contracts and credit market imperfections (Acemoglu and Pischke, 1998; Bassanini and Brunello, 2003); and *iv)* wage compression and wage stabilisation may provide important insurance functions (Agell, 1999; Bertola and Koeniger, 2004).[6] Although the potential importance of these (and other)

departures from the assumptions of the competitive model has been demonstrated in theory, there is no consensus concerning the empirical import of these lines of reasoning and, hence, their salience for guiding policy choices.

The next two sub-sections survey first, recent research findings concerning the impact of the organisation of collective bargaining on macroeconomic performance and second, the evolution of wages in OECD countries since 1970. This material provides additional context for the chapter's core empirical analysis which then follows in Sections 2 and 3.

B. How does the organisation of collective bargaining affect wages and employment?

Collective bargaining and aggregate outcomes

A large body of empirical research characterises national systems of collective bargaining in terms of one or more indicators and investigates the associations between those indicators and macroeconomic performance. The World Bank recently sponsored a survey of this research literature which synthesises the findings from over 1 000 primary and secondary studies (Aidt and Tzannatos, 2002). Among the findings that emerge from this review are the following: *i)* higher union density and bargaining coverage appear to be associated with a number of negative effects that are predicted by monopoly models of unions (*e.g.* real wages, inflation and unemployment tend to be higher and employment lower), with the evidence for such effects being stronger for coverage than for density; however, *ii)* estimates of the magnitude of these effects differ greatly across studies and co-ordinated bargaining appears to neutralise many of them; furthermore, *iii)* a considerable number of studies have found evidence that co-ordinated bargaining was associated with superior macroeconomic performance in the 1970s and 1980s, although this appears not to have been the case during the 1990s; suggesting that *iv)* the impact of co-ordination (and the organisation of collective bargaining in general) is contingent upon a number of other factors, probably including the broader economic environment and interactions of bargaining institutions with each other, as well as with other economic and political institutions (*e.g.* the degree of independence exercised by monetary authorities – see Iversen, 1998, 1999).

The overall fragility of the evidence linking collective bargaining to macroeconomic performance suggest that great caution should be exercised when attempting to draw guidance for making policy choices from this research, as the authors of the World Bank study emphasise (Aidt and Tzannatos, 2002). Flanagan (1999) also highlights the non-robustness of the econometric evidence and argues that future research should focus on identifying the most important interaction effects underlying the contingent nature of the impact of wage bargaining on macroeconomic outcomes. Unfortunately, such attempts have had only limited success to date, which probably reflects the complexity of collective bargaining institutions and their interactions with the broader economic and political environment. A second promising research direction is to improve the measurement of collective bargaining institutions. Indeed, this has been a very active area of research recently and a number of important studies have enriched the descriptive information available for assessing international differences in the extent and organisation of collective bargaining (see, notably, Ebbinghaus and Visser, 2000; Golden *et al.*, 2002; Iversen, 1998, 1999; Kenworthy, 2001a, b, 2003; Ochel, 2000a, b; Traxler *et al.*, 2001) since the OECD last updated its indicators of the organisation of collective bargaining (OECD, 1997a). However, there does appear to have been comparable progress in clarifying conceptual issues concerning how best to characterise the effective degree of centralisation/co-ordination in bargaining and there has been a proliferation of different indicators of centralisation, co-ordination and corporatism.[7]

The well known study of Calmfors and Driffill (1988) and the considerable literature it has stimulated exemplifies the strengths of this area of research, but also some of its limitations. Since this study, it has been widely accepted that there need not be a monotonic relationship between increasing departures from an idealised competitive market and decreasing responsiveness of wages to supply and demand factors. Specifically, Calmfors and Driffill argued that centralised collective bargaining facilitates the responsiveness of the aggregate wage demands to macroeconomic conditions, especially as compared to bargaining at the industry or sectoral level, since union bargainers are more aware of the macro-level effects of wage settlements. Following more conventional reasoning, they also argued that decentralised bargaining could produce good employment performance, since unions would exercise relatively little monopoly power. This reasoning implies a "hump-shaped" relationship between the degree of centralisation and unemployment, with both decentralised and centralised systems outperforming intermediate systems. Some subsequent studies have reported evidence in support of the "hump-shaped" hypothesis (*e.g.* Elemeskov *et al.*, 1998), but most other studies have not found such a relationship (Aidt and Tzannatos, 2002; OECD, 1997a). Soskice (1990) challenged Calmfors and Driffill's focus on the centralisation of collective bargaining to the exclusion of co-ordination mechanisms. He argued that a co-ordinated system of sectoral bargaining may be as effective as a centralised bargaining system at adapting to aggregate economic conditions, a point later argued in detail for the Dutch case by Teulings and Hartog (1998) and broadly adopted in the recent research literature. In sum, more than a decade of research has failed to provide decisive evidence either for or against the Calmfors and Driffill hypothesis, illustrating the difficulties researchers have encountered in obtaining robust results or even in agreeing how best to characterise the effective degree of co-ordination in bargaining.

Collective bargaining, wage differentiation and relative employment rates

The evidence is quite strong that unions reduce wage inequality and that this compression effect is strongest in countries where union membership and bargaining coverage are high, and bargaining is centralised and/or co-ordinated (Aidt and Tzannatos, 2002; Blau and Kahn, 1999, 2002; OECD, 1997a). More "corporatist" wage-bargaining systems also appear to reduce the responsiveness of industry and firm-level wages to sectoral price and productivity developments (Holmlund and Zetterberg, 1991; Teulings and Hartog, 1998), and result in smaller wage premia for union workers (Blanchflower and Bryson, 2002; Hartog *et al.*, 2000). The higher skill premia and greater responsiveness of wages to local conditions, which are observed in national labour markets characterised by decentralised wage bargaining, suggest that the price mechanism is playing a more active role in guiding factor inputs to their highest value uses in these countries. However, some analysts have argued that this pattern reflects, instead, a greater scope for local rent-seeking when bargaining is decentralised, which does not contribute to allocative efficiency (Teulings, 1998).

The evidence is mixed concerning whether the wage compression associated with union involvement in wage setting affects the relative employment rates of workforce groups whose members tend to be over-represented in low-paid jobs, such as youths, women and less-skilled workers. Some of the strongest evidence supporting concerns that centralised wage setting systems reduce wage differentials to the point where low-skilled workers are pushed out of the labour market comes from case studies of historical episodes in Norway (Kahn, 1998) and Sweden (Edin and Topel, 1997), during which unions aggressively

compressed wage differentials, particularly at the bottom of the earnings distribution. In both countries, low-education and low-skilled workers experienced sharp reductions in employment, especially in the private sector, as wage floors were pushed up. In Sweden, employment also contracted sharply in low-wage industries (Davis and Henrekson, 2000). Regressions based on panel data for OECD countries have also provided some evidence in support of the hypothesis that higher union density and centralisation/co-ordination have been associated with lower relative employment for low-skilled workers (Kahn, 2000; Bertola *et al.*, 2002b). However, these studies relied on indirect evidence (*i.e.* regressed employment outcomes directly on measures of collective bargaining), without verifying that relative wages were, in fact, compressed in a way that would explain the apparent link between the organisation of wage bargaining and employment outcomes.[8]

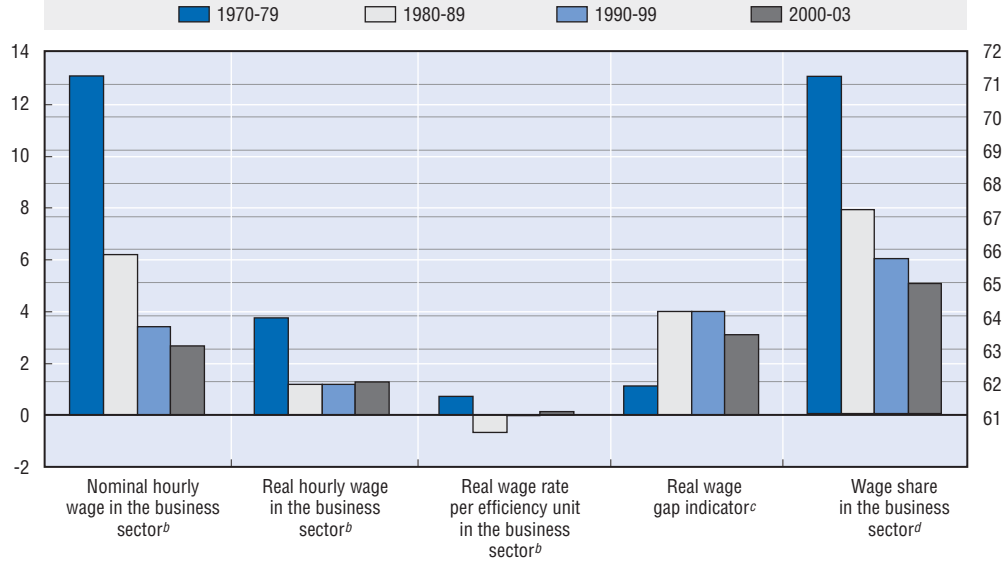
C. How have wages evolved and what were the implications for employment?

Aggregate wages and employment

The rate of increase in nominal compensation has progressively slowed since the mid-1970s, with the sharpest deceleration coming between the 1970s and the 1980s (Chart 3.1).[9] Nominal compensation per hour worked in the business sector rose at an average annual rate of 13% during 1970-79, but slowed steadily to a little under 3% during 2000-03.[10] Much of this deceleration reflected the successful disinflation policies implemented in many OECD countries, following a general worsening of inflationary pressures late in the 1960s and during the first half of the 1970s.[11] However, the rate of increase in real wages also slowed, both absolutely and – what is of greatest salience for this chapter's analysis – relative to productivity

Chart 3.1. **Recent trends in aggregate earnings suggest considerable wage restraint**

Employment-weighted averages for selected OECD countries,[a] 1970-2003



a) Averages for Australia, Austria (wage share only), Belgium, Canada, Denmark, Finland (nominal hourly wage, real hourly wage and wage share only), France, Germany, Greece (wage share only), Iceland, Ireland, Italy, Japan, the Netherlands, Spain, Sweden, the United Kingdom and the United States.
b) Percentage annual growth rate (left-side scale).
c) Value of index normalised to zero in 1970 (left-side scale).
d) Percentage share of total business sector income (right-side scale).

Source: OECD (2004a).

Box 3.2. **Measuring excess real wage pressure**

In assessing whether real wage growth is excessive, it is desirable to take account of productivity growth and the level of unemployment:

The rate of *productivity growth* determines how rapidly real wages can rise without undermining employment performance. A commonly used yardstick for aggregate wage pressure is provided by the "distributive margin formula", which identifies wage pressure with the excess of real wage growth compared to the growth rate of labour productivity (see *e.g.* European Commission, 2003b). There are many equivalent versions of this intuitive rule of thumb (*e.g.* whether the wage share rises or the growth rate of unit labour costs exceeds price inflation). However, all such criteria are vulnerable to the critique that changes in the aggregate real wage affect capital intensity and hence labour productivity, particularly as the time horizon considered is extended. Blanchard (1997) argues that a better indicator of whether the aggregate wage is rising more rapidly than is justified by productivity gains is provided by changes over time in the real wage per "efficiency unit" of labour (*i.e.* total compensation costs divided by hours worked "augmented" to account for the impact of technological progress on human productivity). Changes in the real wage rate per efficiency unit provide a conceptually appealing criterion for assessing real wage pressures, but its implementation raises both theoretical and empirical difficulties related to the construction of an appropriate index of productivity. Consequently, this chapter uses both the distributive margin and wage per efficiency unit criteria to assess how the productivity-adjusted aggregate wage has evolved since 1970.

A large body of empirical work has confirmed the theoretical prediction that the bargained wage tends to be lower the higher the *unemployment rate* (*cf.* the wage curve, see Blanchflower and Oswald, 1994; and Nickell *et al.*, 2003). It follows that the prevailing rate of unemployment should be taken into account when assessing whether excessive wage demands are undermining employment performance. In particular, *ex post* real wage growth low enough to be consistent with productivity gains would not imply that wage bargaining is functioning well, if a high rate of unemployment were required to achieve this "restraint". A rigorous treatment of this issue is complex and beyond the scope of this chapter (see, *e.g.* Desplatz *et al.*, 2003; and Estavão and Nargis, 2002, for the case of France). However, the simple "real wage gap indicator" recently utilised by the European Commission (2002) provides a useful first-pass assessment. This indicator combines the productivity adjustment advocated by Blanchard (1997) with an approximate adjustment for the moderating effect of unemployment on wage setting and is defined as the sum of the logarithm of real wage rate per efficiency unit of labour and the unemployment rate. The (implicit) coefficient of 1.0 that is applied to the unemployment rate is based on the assumptions that the elasticity of the wage curve with respect to the unemployment rate is –0.1, which is consistent with much of the empirical literature (Blanchflower and Oswald, 1994), and that the unemployment rate equals 10%, which is more or less accurate depending on the country and year considered. Although somewhat *ad hoc*, this index provides a useful check whether conclusions concerning trends in the level of wage pressure (or wage restraint) are altered after taking account of changes in the unemployment rate.

growth (see Box 3.2 for a discussion of measurement issues related to assessing whether real wage growth is excessive). Growth in real hourly compensation slowed from 4% during 1970-79 to just over 1% annually since 1990. Most suggestive of increasing wage restraint, the wage share in the business sector has trended downward since the early 1980s[12] and the growth rate

of the real wage per efficiency unit of labour was actually negative during the 1980s and has been approximately zero since. However, a simple real wage gap indicator suggests that wage pressure may not have slackened beyond what would have been expected given the generally higher unemployment rates in more recent decades. In sum, the period since the end of the 1970s appears to have been characterised by an overall trend toward wage moderation in the OECD area, by most measures, but it is unclear whether this represents a structural change in wage setting that has reduced upward wage pressure at a given level of unemployment.

There were important differences of timing and magnitude of these wage trends across different OECD countries (see OECD, 2004a). For example, the wage share in the business sector fell steadily in Ireland and the United States throughout the entire period considered (indeed, steeply in Ireland), while growth in the real wage per efficiency unit was moderate (indeed, often negative).[13] Signs of wage restraint emerged later in most other countries, often after having seen an increase in the wage share during the 1970s or early 1980s. This pattern held for Belgium, France, Germany, Greece, Italy and the Netherlands, within the EU, as for Australia, Canada and Japan. Of these countries, the Netherlands experienced a notably sharp decline in the real wage per efficiency unit during the first half of the 1980s (a period marked by the Wassenaar agreement of 1982, which initiated a series of national social compacts to restrain wage growth).[14] Upward pressures on wages and labour costs fell sharply in the 1990s in Finland, New Zealand and Norway. Trends in the degree of wage restraint are less clear in other countries, including Spain and the United Kingdom.[15]

It is not immediately evident whether these cross-country differences in the degree and timing of real wage restraint, as measured here, translated into differences in employment performance. Some of the countries experiencing strong employment performance in recent years also exhibited a high degree of apparent wage restraint (most notably, Ireland and the United States), but other countries with strong employment performance do not appear to fit this pattern (notably Spain). Juxtaposing historical data for aggregate wages and unemployment more systematically can help to clarify whether they have co-varied in a manner that is consistent with there having been a trade-off between high wages and low unemployment.[16] No such trade-off is evident when real aggregate wages and unemployment data are plotted against each other for a panel of OECD member countries (chart not shown). However, this is no surprise. The real wage consistent with a given level of unemployment would be expected to be influenced by both country-specific factors (*e.g.* levels of frictional unemployment and productivity), and period-specific factors (*e.g.* general technological progress and oil price shocks). If these influences can be purged from the data, there is a better chance that the wage-unemployment trade-off will become evident, provided that these data points can be interpreted as tracing movements along a downward-sloping aggregate labour demand curve, which is by no means guaranteed.[17]

Table 3.1 investigates this possibility, presenting correlation coefficients between the residual real aggregate wage and the residual unemployment rate, where "residual" refers to the fact that country and period effects have been purged from both of these variables.[18] A positive correlation between the aggregate wage and unemployment now emerges, but the correlation coefficient is rather small (0.20) and only marginally statistically significant (10%). In other words, this simple exercise provides only weak evidence that unemployment rose more since 1970 in countries where the real aggregate wage rose more, consistent with there being a trade-off between more rapid wage growth and lower unemployment.[19] The second

Table 3.1. **Correlations between wage and employment measures suggest possible trade-offs**

Five-year-averaged data for 1970-2000 in selected OECD countries, after removing period and country effects[a]

Wage measures	Employment measures				
	Aggregate		Relative employment rates[b]		
	Unemployment	Employment-population ratio	Young men (under 25 years)	Older men (55-64 years)	Prime-age women (25-54 years)
Log real hourly wage in the business sector (PPPs)	0.20*	–0.42***	–0.48***	–0.03	–0.23**
Log efficiency wage[c] in the business sector (PPPs)	0.12	–0.17	–0.12	–0.01	–0.60***
Earnings dispersion[d]	–0.44***	0.45***	0.57***	0.44***	0.25*

***, **, * denote statistical significance at the 1%, 5% and 10% levels, respectively.

a) Data values are averaged for the five-year periods 1970-74 to 1990-94 and the six-year period 1995-2000 for the following countries: Australia, Belgium, Canada, Finland, France, Germany, Ireland, Italy, Japan, the Netherlands, New Zealand, Sweden, Switzerland, the United Kingdom and the United States. Each variable was first regressed on a full set of period and country dummy variables using OLS (ordinary least squares). This table reports bivariate correlation coefficients between the residuals from these equations.

b) The logarithm of the ratio of the employment-population ratios for the indicated group and prime-age men.

c) Logarithm of the real wage rate per efficiency unit of labour input (see Box 3.2).

d) The logarithm of the 90-10 percentile ratio for the gross earnings of full-time men for the correlations with the aggregate unemployment and employment rates; the logarithm of the 50-10 percentile ratio for the gross earnings of full-time men for the correlations with relative employment rates.

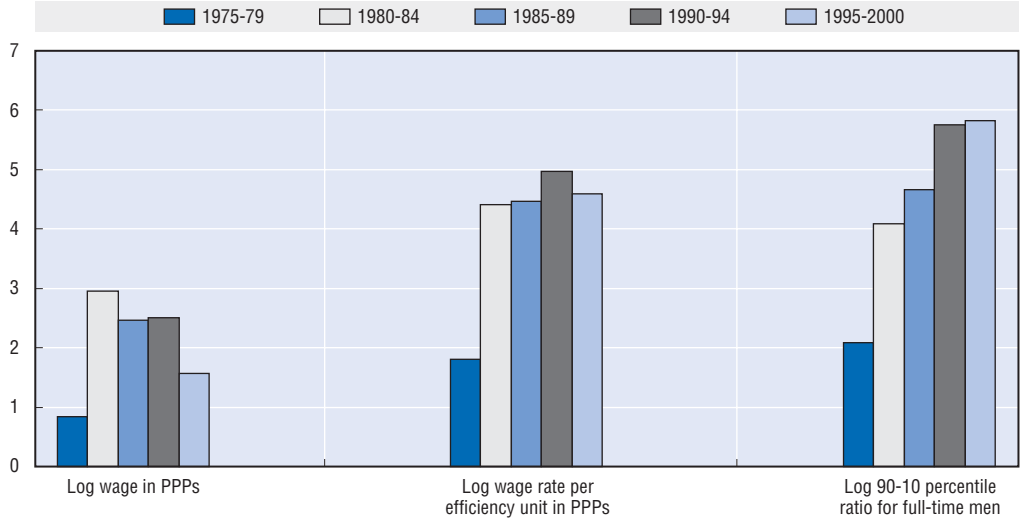
Source: OECD Economic Outlook database (total compensation per employee in the business sector); OECD Productivity database (average hours per worker); *OECD Labour Force Statistics* (employment and unemployment measures); OECD Earnings database (earnings dispersion); *OECD Main Economic Indicators* (PPPs).

column of Table 3.1 reports the correlation coefficient between the employment-population ratio and the aggregate wage. Stronger evidence for a dynamic trade-off between the aggregate wage and employment performance now emerges, namely, a highly statistically significant correlation of –.42, implying that countries experiencing above-average wage growth tended to experience below-average growth in the employment-population ratio. The second table row reports the analogous correlation coefficients calculated using an estimate of the real aggregate wage per efficiency unit of labour, instead of wages per hour worked. Again, the signs of the correlation coefficients are consistent with there having been a trade-off between aggregate wages and employment, but the correlations are smaller in absolute value and statistically insignificant.[20]

Assuming provisionally that these correlations reflect an aggregate trade-off between wages and unemployment, it is interesting to explore whether the broad deterioration in unemployment performance between 1970 and the mid-1990s reflected movements along a stable trade-off line or a worsening of the trade-off, noting that both types of movements have their counterparts in different explanations which have been offered for the recent evolution of macroeconomic performance in OECD countries.[21] Chart 3.2 presents estimates of the shift in the wage-unemployment regression line after the 1970-74 period which provide suggestive evidence that a worsening trade-off contributed to the upward trend in unemployment.[22] Whether the hourly wage or the wage in efficiency units is used, it appears that the adverse shift in the trade-off – representing a 3 to 5 percentage-point increase in the unemployment rate at a given level of aggregate real wage pressure – occurred at the beginning of the 1980s, with the shift being somewhat larger for the wage in efficiency units. The results based on the hourly wage suggest that approximately one-half of the adverse shift has reversed since 1985, whereas the results based on the wage per efficiency unit indicate no such improvement.

Chart 3.2. **Shifts in the apparent "trade-off" between wages and unemployment, 1970-2000**

Estimated increase in unemployment at a given wage outcome between 1970-74 and the period indicated[a]



a) Changes estimated as the coefficients of period dummies in an OLS regression of the unemployment rate on the indicated wage measure and a full set of period dummies. Prior to fitting the regression, both the unemployment and wage variables are converted to deviations from country mean values (see text for details). Data are five-year averages for the periods indicated.

Source: OECD Economic Outlook database for all variables except that average hours per worker are from the OECD Productivity database and 2002 PPPs are from the *OECD Main Economic Indicators*.

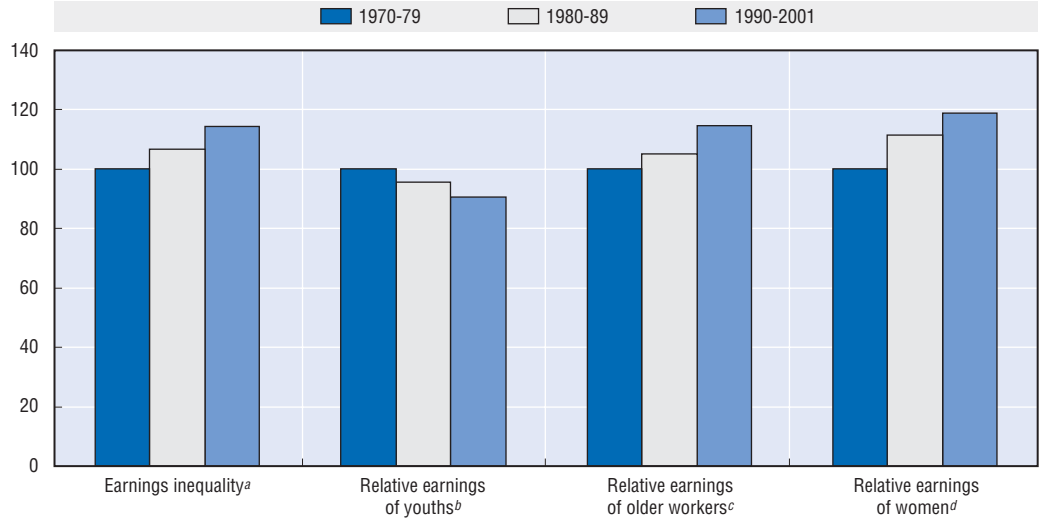
Wage differentials and employment

Chart 3.3 provides an overview of the recent evolution of earnings differentials in OECD countries. Earnings inequality – as measured by the 90-10 percentile ratio of earnings for male full-time workers – has tended to increase since the 1970s, rising on average about 15% in the 20 countries for which data are available. During this same period, the earnings of youths relative to prime-aged workers fell, suggestive of a trend increase in the wage differential for labour market experience. Consistent with this interpretation, the relative wage of older workers rose. The relative wage of women also rose, a development that tended to dampen the overall rise in earnings inequality and which might be due to continuing gains in the human capital attributes – including the accumulation of labour market experience – of women relative to their male counterparts, as well as to the impact of equal pay legislation (OECD, 2002).[23]

National experiences with respect to recent trends in earnings inequality have been quite diverse (Table 3.2). As has been widely noted, earnings inequality has increased substantially during the past two decades in the United Kingdom and the United States, beginning from an already high level in the latter case. However, the rise in inequality stopped or even slightly reversed in the late 1990s in both countries. Wage dispersion also trended upwards in Australia, Italy, the Netherlands, New Zealand and Sweden. More recently, earnings inequality has risen sharply in several Central European countries, probably a reflection of the continuing transition from the compressed wage structures of the central planning era to a market-driven wage structure. In contrast, wage inequality remained roughly stable, and often quite low, in many EU countries and Japan, and fell quite sharply in Korea (OECD, 2000a).

Chart 3.3. **An overall trend toward rising wage dispersion, but also gains for women**

Employment-weighted averages for selected OECD countries, 1970-79 = 100



a) 90-10 percentile ratio for full-time men, using data for Australia, Belgium, Canada, the Czech Republic, Finland, France, Germany, Hungary, Ireland, Italy, Japan, Korea, Netherlands, New Zealand, Poland, Portugal, Sweden, Switzerland, the United Kingdom and the United States.

b) Full-time earnings of men aged 15-24 years relative to men aged 25-54 years, using data for Australia, Canada, the Czech Republic, Finland, Germany, Hungary, Italy, Japan, Korea, the Netherlands, Norway, Sweden, the United Kingdom and the United States.

c) Full-time earnings of men aged 55-64 years relative to men aged 25-54 years, using data for Australia, Canada, the Czech Republic, Finland, Germany, Hungary, Italy, Japan, the Netherlands, Sweden, the United Kingdom and the United States.

d) Full-time earnings of women aged 25-54 years relative to men aged 25-54 years, using data for Australia, Canada, the Czech Republic, Finland, Germany, Hungary, Italy, Japan, Korea, the Netherlands, Norway, Sweden, Switzerland, the United Kingdom and the United States.

Source: OECD Earnings database.

Due to the uncertainty concerning the appropriate benchmark, a direct assessment of whether the relative wage structure observed in a particular country is too compressed is inherently difficult.[24] However, the bottom row of Table 3.1 shows there has been quite a strong negative correlation between the unemployment residuals and the residuals for the log 90-10 percentile ratio for the earnings of full-time men, and an equally strong positive correlation between employment and this measure of wage dispersion. In other words, countries in which earnings inequality grew less than average (or fell) tended to experience a relative increase in unemployment and a relative decrease in employment. This pattern is consistent with the existence of a trade-off between wage compression and aggregate employment performance.

As was the case for the estimated trade-off between the aggregate wage and unemployment, it appears that the trade-off between earnings dispersion and unemployment has worsened since 1970-74 (Chart 3.2). Furthermore, there is no sign that this adverse shift has reversed in more recent years. An increase in the unemployment rate associated with unchanging wage differentials is consistent with the large body of research showing that the relative demand for low-skilled workers has fallen, creating market pressures for earnings inequality to rise (Katz and Autor, 1999). As was famously conjectured by Krugman (1994), rising unemployment in the more regulated European labour markets and rising earnings equality in the less regulated US labour market may be

Table 3.2. **Trends in earnings dispersion,[a] 1980-2001**

	Annual average					10-year change
	1980-84	1985-89	1990-94	1995-99	2000-01	1985-89 to 1995-99
Australia	2.88	2.83	2.82	2.94	3.07	0.11
Austria	3.45	3.49	3.56	. .	. .	. .
Belgium	. .	2.40	2.28	. .	. .	. .
Canada	. .	. .	. .	3.65	3.71	. .
Czech Republic	. .	. .	. .	2.86	. .	. .
Denmark	2.17	2.18	2.16	. .	. .	. .
Finland	2.49	2.50	2.39	2.36	2.41	–0.14
France	3.18	3.19	3.21	3.07	. .	–0.12
Germany	2.88	2.86	2.79	2.87	. .	0.01
Hungary	. .	2.83	3.55	4.15	4.92	1.32
Ireland	. .	. .	4.06	3.97	. .	. .
Italy	. .	2.29	2.35	2.40	. .	0.12
Japan	3.08	3.15	3.07	2.99	. .	–0.15
Korea	4.59	4.25	3.75	3.77	. .	–0.48
Netherlands	2.47	2.55	2.60	2.85	. .	0.30
New Zealand	2.89	2.90	3.06	3.28	. .	0.38
Norway	. .	. .	. .	1.96	2.03	. .
Poland	2.59	2.65	3.03	3.50	. .	0.85
Portugal	. .	3.56	3.76	. .	. .	. .
Sweden	2.01	2.09	2.11	2.23	2.30	0.14
Switzerland	. .	. .	2.71	2.69	. .	. .
United Kingdom	3.09	3.30	3.39	3.45	3.40	0.15
United States	3.91	4.23	4.39	4.59	4.64	0.36

. . Data not available.

a) 90-10 percentile ratios for the gross earnings of full-time employees.

Source: OECD Earnings database.

two sides of the same coin: as relative demand moved against less skilled workers, the unemployment price of continued wage compression in (much of) Europe mounted, as did the inequality price of a strong employment performance in the United States.[25]

The final three columns of Table 3.1 provide an additional look at possible trade-offs between wage compression and employment performance, focussing on the relative employment rates of three population groups, whose members tend to be under-represented in employment: youths (defined as persons aged 15 to 24), older working-age persons (defined as persons aged 55-64) and women.[26] Youths and women often have relatively low levels of labour market experience and plausibly might be among the workforce groups most affected by any adverse consequences of wage compression for employment (Bertola *et al.*, 2002b). The residual relative employment rates for all three groups are significantly and positively correlated with residual wage dispersion, with the association being strongest for youths and weakest for women.[27] It also appears that employment of youths and women has grown less (or fallen more) in countries where aggregate wages rose most rapidly.

This descriptive analysis of recent wage trends tends to reinforce concerns that the OECD countries where wage-setting has tended to mute market pressures for a widening of wage differentials have paid a penalty in weaker employment performance. However, it

must be emphasised that the preceding argument has been illustrative, rather than rigorous. Among the reasons for caution are that:

- More rigorous attempts to verify Krugman's conjecture that a "unified theory" can account for the divergence of US and European labour market trends during the 1990s have been inconclusive (Blank, 1997). Indeed, it appears that the majority of international studies using micro data to test whether the relative employment performance of low-skilled workers was worse in countries where the wage premium for skill was more rigid have not verified this thesis (*e.g.* Card *et al.*, 1999; Freeman and Schettkat, 2000; Krueger and Pischke, 1997; Nickell and Bell, 1995).[28] However, Puhani (2003) finds some support for wage compression in Europe having increasingly excluded low-skilled workers from employment in a recent comparison of Germany and the United States. However, his comparison of the evolution of relative wages and employment in Germany and the United Kingdom conforms less well to this hypothesis.
- Allowing downward flexibility for the wages of low skilled workers could do very little to increase employment should labour supply elasticity be high for this workforce segment. In many OECD countries, the interaction of the tax system and income-tested benefits is such that the net income returns to working become very low (or even vanish) once wages fall below a certain level (Carone *et al.*, 2004). In such a context, the main impact of downward wage flexibility may be to worsen inactivity, unemployment and low-pay traps, and the most effective way to bring more low skill workers into employment might be targeted subsidies or tax exonerations for employers of these workers (OECD, 2003a).[29]

D. Open questions

The argument up to now provides some theoretical and empirical support for the Jobs Study diagnosis that excessive aggregate wage growth and wage compression have been significant factors behind rising unemployment and unsatisfactory employment performance more generally, with the evidence appearing to be strongest for concerns that wage compression in the bottom half of the wage distribution has created barriers to employment for workforce groups whose members tend to be concentrated in low paying jobs. However, considerable uncertainty attends this diagnosis. A second source of uncertainty is that the impact of public policy on wage setting tends to be indirect (*e.g.* those resulting from policies that affect the organisation of collective bargaining or non-wage labour costs), since governments set wages directly only to a limited degree. Thus, an assessment of the continuing pertinence of the Jobs Study recommendations on wage setting must also consider whether the changes that are advocated in wage-setting institutions and practices (*e.g.* the decentralisation of collective bargaining), would have the desired effects on wages and employment. A related question is the extent to which national collective bargaining systems have already moved in the direction that was recommended. The quite broad trends toward aggregate wage restraint and rising wage dispersion, which was documented above, suggests that this may be the case or, alternatively, that quite different institutional set-ups have ultimately responded in qualitatively similar ways to the changing economic environment. The following two sections attempt to shed some light on these questions.

2. Wage-setting institutions: the structure of collective bargaining

A. Introduction

The evolution of wages needs to be seen against the background of the institutional set-up of the labour market, and the labour and industrial relations system in particular. Wage-setting institutions differ widely in the OECD area, and have been scrutinised by an increasing number of researchers in recent years as to their labour market and wider macroeconomic impacts (for recent studies, see Blanchard and Wolfers, 2000; Nickell *et al.*, 2003; Traxler *et al.*, 2001). Among the characteristics of wage-setting institutions analysed below are trade union density, coverage by collective agreements (sometimes also called *union coverage*), the centralisation and co-ordination of wage bargaining, and a number of labour law features that influence the market power of the players in the area.[30] This analysis follows in the footsteps of previous OECD work published in the 1994 and 1997 editions of the *Employment Outlook*.

Most OECD countries regulate their labour relations by means of one or several laws that determine the underlying conditions for employee representation, trade union formation, collective bargaining and industrial conflict, among others. Importantly, legislation typically exempts the "two sides of industry" from the prohibition of restrictive business practices and anti-competitive behaviour that governs product markets. Typically, these features reflect a concern for stable employment relationships, social peace and to some extent a concern to correct asymmetries in bargaining strength between workers and employers.

As pointed out, *inter alia*, in OECD (1994b), legislation influences potential market power of trade unions and employers by setting and modifying statutory provisions that may tip a precarious balance in favour of one or the other side. Among the relevant elements of regulation highlighted below are union recognition and union security provisions, and the administrative extension of collective contracts.

While most OECD countries have been characterised by relative legislative stability on these issues since the 1950s and 1960s, fundamental overhauls of respective labour law since 1980 have occurred in the United Kingdom, New Zealand and Australia. Much of the changes in all three countries have concerned union recognition and union security. In addition, reforms in the latter two countries abolished (New Zealand) or substantially transformed (Australia) their compulsory arbitration systems, leading to a shift of collective bargaining to the enterprise level.

Concerning trade union recognition procedures, the United Kingdom removed statutory requirements for recognition in the early 1980s, which is usually considered a major factor in the decline of both union density and bargaining coverage since then (Disney *et al.*, 1995). In New Zealand, the 1991 Employment Contracts Act (ECA) removed the employer's "duty to bargain" with trade unions and gave equal weight to non-union bargaining agents, a step that was emulated by Australia in 1996 (Harbridge and Moulder, 1993; OECD, 2001b). However, both the United Kingdom and New Zealand partially reversed their stance under incoming Labour governments in the late 1990s. New Zealand, in its 2000 Employment Relations Act (ERA), (re)introduced a requirement for employers to bargain "in good faith", and restored to unions their monopoly in collective bargaining (Harbridge *et al.*, 2003; OECD, 2000b). The United Kingdom reintroduced union recognition procedures in the 1999 Employment Relations Act (ERA), whereby a union can be granted recognition as bargaining agent by the Conciliation and Arbitration Committee upon request, with or without a ballot (Wood and Moore, 2003).[31]

Concerning union security provisions, labour law has been important to the extent that it allows or encourages closed-shop arrangements, historically characteristic of Anglo-Saxon countries. Here again, the United Kingdom, New Zealand and Australia have withdrawn legislative support for such arrangements since the 1980s, as the United States and Ireland had already done in previous decades. Pre-entry closed shops or "union shops" were never a relevant feature of labour relations in continental Europe. However, they have remained prominent in Mexico, while in Korea, still today almost one-third of enterprise unions and half of all union members fall under "union shop" arrangements, whereby a new employee has to join the local union within a certain period of time after hiring (OECD, 1997c; OECD, 2000a).[32]

B. Trade union density and collective bargaining coverage

This section presents patterns in two key wage-setting institutions, trade union density and the coverage of workers by collective bargaining provisions. There is no doubt that both the extent of union membership and of bargaining coverage can be heavily influenced by the regulatory features noted above – together with, *inter alia*, the decline of manufacturing and shift towards services, the size and growth of the public sector, the spread of flexible contracts and extent of unemployment.[33] One other important institutional determinant of union membership is the so-called Ghent system, whereby unemployment benefit, as a rule, is administered by union-affiliated institutions (as in Belgium, Denmark, Finland and Sweden). Similarly, an important determinant of bargaining coverage is the practice (or not) of administrative extension of collective agreements (see Section C below).

Table 3.3 documents the evolution of trade union density and bargaining coverage rates in the OECD area since 1970. It also shows the extent to which the two indicators have historically differed – and continue to differ – in member countries. Chart 3.4 illustrates these differences in a nutshell for 2000, showing that the two values are at similar levels in only half a dozen OECD countries – mainly those where bargaining occurs predominantly in firms or establishments – and that the coverage rate often surpasses union density by a factor of 3 to 1, or even up to 9 to 1 (in the case of France, with 10% union density and over 90% bargaining coverage). Japan is the only country where union density is below the coverage rate, as Japanese unions have an important number of members outside of bargaining units.

Turning in more detail to the data presented on *trade union density*, Table 3.3 shows a steady decline of the weighted OECD average since 1970, and of the un-weighted average since 1980, as well as a steady increase in the coefficient of variation between OECD countries' density rates. Notably, these data refer (wherever possible) to "net" membership and tend not to include non-active members (see Annex 3.A1). Only four out of 20 countries, for which full data are available, increased density since 1970: Belgium, Denmark, Finland and Sweden, *i.e.* the four countries of the "Ghent system" outlined above. Another Nordic country where density increased in recent decades is Iceland, while union density increased in Spain, but stayed at rather low levels. In Finland, Iceland and Sweden, over three out of four salaried workers are unionised today, while the figure is one in eight or less in France, Korea and the United States.

In 14 out of 24 countries for which data from 1980 onwards are available, density fell by at least one-quarter since then. Some even steeper declines are evident from the table: density more than halved in Portugal and New Zealand (where the 1991 Employment Contracts Act represented the end of a century of state protection of trade union organisation), while it fell by over one-third in seven countries (Australia, France, Ireland,

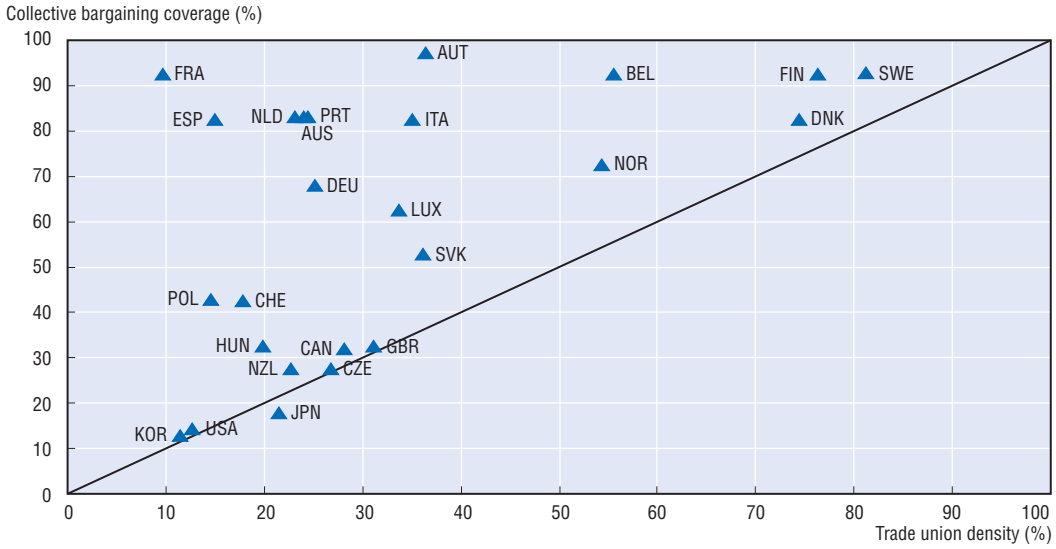
Table 3.3. **Trade union density and collective bargaining coverage in OECD countries, 1970-2000**

	Trade union density (TUD)								Collective bargaining coverage[a] (CBC)					
	1970[b]		1980[c]		1990[d]		2000[e]		1980		1990		2000	
	%	Ranking	%	Ranking	%	Ranking	%	Ranking	%	Ranking	%	Ranking	%	Ranking
Australia	44	10	48	14	40	15	25	18	80+	7	80+	5	80+	6
Austria	63	2	57	9	47	12	37	8	95+	1	95+	1	95+	1
Belgium	41	11	54	10	54	8	56	5	90+	2	90+	2	90+	2
Canada	32	16	35	18	33	18	28	14	37	17	38	17	32	20
Czech Republic	. .	. .	. .	. .	46	13	27	15	. .	. .	. .	. .	25+	21
Denmark	60	3	79	2	75	3	74	4	70+	9	70+	9	80+	6
Finland	51	7	69	4	72	4	76	3	90+	2	90+	2	90+	2
France	22	19	18	22	10	30	10	30	80+	7	90+	2	90+	2
Germany	32	15	35	17	31	22	25	17	80+	4	80+	5	68	13
Greece	. .	. .	39	15	32	20	27	16	. .	. .	. .	. .	. .	. .
Hungary	. .	. .	. .	. .	63	5	20	23	. .	. .	. .	. .	30+	18
Iceland	. .	. .	75	3	88	1	84	1	. .	. .	. .	. .	. .	. .
Ireland	53	6	57	8	51	9	38	7	. .	. .	. .	. .	. .	. .
Italy	37	12	50	13	39	17	35	10	80+	4	80+	5	80+	6
Japan	35	14	31	19	25	25	22	22	25+	18	20+	18	15+	23
Korea	13	20	15	23	17	27	11	29	15+	20	20+	18	10+	25
Luxembourg	47	8	52	11	50	11	34	11	. .	. .	. .	. .	60+	14
Mexico	. .	. .	. .	. .	43	14	18	24	. .	. .	. .	. .	. .	. .
Netherlands	37	13	35	16	25	24	23	20	70+	9	70+	9	80+	6
New Zealand	56	5	69	5	51	10	23	21	60+	14	60+	14	25+	21
Norway	57	4	58	7	59	6	54	6	70+	9	70+	9	70+	12
Poland	. .	. .	. .	. .	33	19	15	27	. .	. .	. .	. .	40+	16
Portugal	. .	. .	61	6	32	21	24	19	70+	9	70+	9	80+	6
Slovak Republic	. .	. .	. .	. .	57	7	36	9	. .	. .	. .	. .	50+	15
Spain	. .	. .	7	24	11	29	15	26	60+	14	70+	9	80+	6
Sweden	68	1	80	1	80	2	79	2	80+	4	80+	5	90+	2
Switzerland	29	17	31	20	24	26	18	25	50+	16	50+	15	40+	16
Turkey	. .	. .	. .	. .	27	23	33	12	. .	. .	. .	. .	. .	. .
United Kingdom	45	9	51	12	39	16	31	13	70+	9	40+	16	30+	18
United States	27	18	22	21	15	28	13	28	26	19	18	20	14	24
OECD unweighted average[f]	**42**	**–**	**47 (47)**	**–**	**42 (42)**	**–**	**34 (36)**	**–**	**67**	**–**	**66 (66)**	**–**	**60 (64)**	**–**
Coefficient of variation[f]	**34**	**–**	**43 (40)**	**–**	**48 (48)**	**–**	**62 (61)**	**–**	**35**	**–**	**38 (38)**	**–**	**48 (47)**	**–**
OECD weighted average[f]	**34**	**–**	**32 (33)**	**–**	**27 (26)**	**–**	**21 (21)**	**–**	**45**	**–**	**38 (44)**	**–**	**35 (39)**	**–**

. . Data not available.
a) Figures with a + sign represent lower-bound estimates. For the purposes of calculating rankings and averages, the indicated value was increased by 2.5 percentage points.
b) 1971 for New Zealand.
c) 1981 for Luxembourg and Spain, 1982 for Australia and Portugal, 1983 for Iceland and 1984 for Canada.
d) 1987 for Luxembourg, 1991 for Mexico, 1993 for Iceland and 1995 for the Czech Republic, Hungary, Poland and the Slovak Republic.
e) 1997 for Mexico and Portugal, 1998 for Greece and Spain, 2001 for the Czech Republic, Hungary, Luxembourg, Poland and Switzerland and 2002 for the Slovak Republic.
f) Figures in parenthesis correspond to averages calculated for the unchanging samples of countries for which data are reported in the initial year (1970 for TUD and 1980 for CBC).
Source: See Annex 3.A1.

Chart 3.4. **Union density and coverage, 2000**

Percentage of wage and salary earners



Source: See Annex 3.A1.

the Netherlands, Switzerland, the United Kingdom and the United States). In absolute numbers, density fell by 46 percentage points in New Zealand, by 37 points in Portugal and by 23 points in Australia. In most countries where rates have fallen, membership levels fell as well, despite expanding employment. Finally, the data presented allow the generalisation that density rates in European countries are, as a rule, above those from OECD countries in North America, Oceania and Asia (although, importantly, this is not the case today in the formerly socialist central and eastern European OECD countries, where membership had previously been quasi-compulsory).

While union density represents one measure of potential union bargaining clout, *collective bargaining coverage* measures the real extent to which salaried workers are subject to union-negotiated terms and conditions of employment. It is thus a complementary indicator of union presence (as are, for example, union representation in works councils or in consultative tripartite committees – see Visser, 2003). The bargaining coverage data presented in Table 3.3 can be summarised as follows. First, in contrast to previous listings of coverage rates in the *Employment Outlook* editions of 1994 and 1997, it was decided to show only approximate rates (more precisely, lower-bound estimates followed by a + sign) for those countries where either available sources differ or somewhat uncertain estimates and adjustments need to be made to the data. Point estimates are provided for Canada, Germany and the United States, countries for which survey data are available from nationally representative samples.[34]

Next, the data allow at least four major generalisations: *i)* in comparison with union density, there is much more stability in the extent of coverage. Since 1980, of 20 countries where full data are available, coverage was stable in six, rose in another six and declined in eight; *ii)* the average level of bargaining coverage is almost twice as high as the average density level (60 vs. 34%); *iii)* in continental Europe, most countries are characterised by stable or increasing coverage rates, and generally at least two out of three workers tend to be covered by bargained wage setting, the exceptions being Switzerland and the central

and eastern European OECD countries; and *iv)* where important declines in coverage occurred since 1980, they occurred in countries with predominantly company-level bargaining, where they were usually quite low to begin with.

On average, there was a 3 percentage-point fall in the un-weighted coverage level (from 67 to 64%), and a 6 percentage-point fall in the weighted value (from 45 to 39%). The largest percentage decreases occurred in New Zealand and the United Kingdom (by over half), followed by the United States and Japan. Korea currently ranks lowest on this indicator, followed by the United States and Japan. In all of these countries, coverage has declined alongside the fall in union density. By contrast, the country that ranks lowest on union density (France) has increased coverage levels after the introduction of legislation promoting collective bargaining (the 1982 Auroux laws) and is now among the countries with the highest coverage rates of 90% and above, together with Austria, Belgium, Finland and Sweden. Also, the large rise in the coefficient of variation is mainly explained by the declining countries, since the group with coverage between 80 and 95% has remained rather stable over time. In other words, there has been a tendency for bargaining coverage rates to diverge between low- and high-coverage countries.[35]

C. The importance of extension mechanisms

Furthermore, legal regulations and institutional practices explain again to a large extent the relative stability of, particularly European, coverage rates, and the sometimes extremely large differences between density and coverage. Union coverage should not be considered a natural extension of union membership – as noted above, only in half a dozen OECD countries with predominantly company bargaining do the two go closely together. By contrast, in sectoral bargaining systems employer behaviour combined with administrative governance of collective contracts may be more of a determinant of coverage rates than union membership. First, an important factor is the share of employers belonging to the particular employer association(s) signatory to a collective agreement, and therefore bound by it. Next, it has become common practice for the large majority of employers to apply the terms and conditions of collective contracts to their total workforce, whether unionised or not.

This, mostly "voluntary", extension of agreements by employers (in some countries, such as Belgium, the Netherlands, Poland and Spain, it is legally required) to their non-unionised workforce seems, in most cases, to explain the bulk of the variance between union density and union coverage. Voluntary extension was in fact already called for in ILO Recommendation 91 of 1951, and most employers in OECD economies seem to accept this easily, not the least since they realise that if they were to limit the application of an agreement to union members, they would be discriminating between their employees or might even be indirectly promoting unionisation (Bamber and Sheldon, 2004).

However, in a number of countries an important additional explanatory variable is the legal or administrative extension of agreements. Extension makes a collective agreement generally binding within an industrial sector, covering all employers who are not members of its signatory parties. In several countries, "enlargement" beyond an agreement's initial domain is also possible. Details on OECD countries' administrative extension practices can be found in Table 3.4. Out of 25 countries where information was available, ten are characterised by the absence or relative irrelevance of administrative extension mechanisms. In two countries, a kind of functional equivalent to administrative extension is important. In Austria, high coverage is ensured by the obligatory membership of companies in the Economic Chamber, and there is little room for additional extension orders, although these are legally possible. In

Table 3.4. **Extension and enlargement of collective agreements**

Canada (outside of Quebec) Denmark Ireland New Zealand Norway Sweden United Kingdom United States	No (or negligeable) practice of administrative extension or enlargement of private-sector wage agreements. In Denmark, extension refers mainly to the transposition of EU directives. In Ireland, extensions of minimum wage provisions by Joint Labour Committees have become rare after the adoption of the Minimum Wage Act in 2000. In Norway, provisions that aim to give foreign employees equal wages and working conditions have been little used. In the UK, all existing extension provisions were abolished during the early 1980s. This group of countries contains both countries with firm-level bargaining and low coverage (*e.g.* United States, New Zealand), and countries with relatively centralised bargaining and high coverage and union density (*e.g.* Norway, Sweden).
Japan Korea	Administrative extensions over a particular locality are legally possible, where a majority of the workforce falls under the same agreement. However, due to enterprise bargaining, this is extremely rare. By contrast, the law provides for employers to extend agreements over a whole firm or workplace where half (Korea) or two-thirds (Japan) of the workforce is covered by an agreement due to their membership in a signatory trade union.
Australia (New Zealand)	Extension is (in the case of New Zealand was up to 1991) linked to arbitration. Federal or State awards can (could) be made binding on all employers in an industry, beyond the initial parties to a particular dispute.
Austria	Extension orders can be issued by the Federal Arbitration Board on application of one or both of the bargaining parties. In practice, the provision is of little importance because of obligatory membership of the large majority of employers in the Austrian Economic Chamber, which guarantees a bargaining coverage of beyond 95%.
Belgium	The Labour Code guarantees the extension of collective agreements to all employees at a firm that has concluded an agreement. Multi-employer agreements may be extended by the Ministry of Labour to cover unaffiliated employers in a particular sector, once requested to do so by one of the signatory parties. This is usually done by means of Royal Decree.
Finland	Collective agreements are considered as automatically binding for all firms and workers in their domain if they are considered representative or "generally valid". Representativity is determined by a special government body whose decision can be appealed in the Labour Court.
France	Since 1936, collective agreements can be extended at the discretion of the Ministry of Labour, usually – but not necessarily – upon a request of one or more of the bargaining parties addressed to the National Commission on Collective Bargaining. The Ministry's executive order can take the form of an "extension" to the initial domain of the agreement, or an "enlargement" beyond its domain, *i.e.* to other industries or geographic areas.
Germany	The Ministry of Economics and Labour can declare an agreement generally binding if: *i)* one of the parties to the agreement files for extension; *ii)* a special bipartite "bargaining committee" approves the application; *iii)* and 50% or more of the workforce in the agreement's domain are already covered. Since 1998, the Ministry can extend minimum wage provisions in the construction industry on its own discretion.
Greece	An agreement can be extended by the Ministry of Labour at its own discretion, provided that over 50% of employees in a sector or occupation are already covered by it.
Hungary	The Minister of Employment and Labour may extend collective agreements to a whole sector upon application by the contracting parties and after consultation with the appropriate sub-committee in the National Interest Reconciliation Council. The applicants must give proof of their representativity in the given sector.
Italy	The Constitution (Art. 39) declares collective agreements signed by trade unions generally binding on all employee categories covered by the agreement. On this basis, the minimum wage level set by collective bargaining in a particular sector is often taken as a reference by courts when determining whether specific wages conform to constitutional requirements.
Netherlands	Since 1937, the Minister of Social Affairs and Employment may extend collective agreements to a whole sector upon application by one or more of the contracting parties. Extension is usually granted when the applicants give proof of the representativity of the agreement in the given sector.
Poland	The Labour Code guarantees the extension of collective agreements to all employees at a firm that has concluded an agreement. Multi-employer agreements may be extended by the Ministry of Economics and Labour to cover unaffiliated employers in a particular sector, if such extension is considered "a vital social interest".
Portugal	The Minister of Labour, usually at his own initiative, can broaden the scope of application of a collective agreement by means of extension throughout the respective economic sector or geographical area, or enlargement to different geographical areas. All interested parties must be given an opportunity to object to the extension.
Slovak Republic	The Ministry of Labour, upon application of the bargaining parties and recommendation by a special tripartite "agreement extension" committee, can extend collective agreements by decree to employers with similar business activities and economic and social conditions.
Spain	Extension throughout the agreement's domain is automatic if signed by the majority of the representatives of each party. Special extension by the Ministry of Labour upon request by an employer or trade union association in cases where no appropriate bargaining parties exist.
Switzerland	Federal or cantonal authorities can declare an agreement legally binding provided that all parties to an agreement request such extension. As a general rule, recourse to extension requires that an agreement already covers 50% of employees within its scope.

Source: EIRO (2002); European Commission (2003); Blanpain (2004).

Italy, it is a clause in the Constitution which guarantees the binding character of collective contracts – a clause that seems to be relevant in legal practice, where wage rates in firms that are not bound by collective agreements are being challenged in court.

This leaves 13 further OECD countries with legal or administrative extension mechanisms. In Australia, extension has been a (now diminishing) feature of the arbitration system where wage rulings by the federal and state industrial relations commission can be applied throughout an industry (see Box 3.4).[36] The rest of the countries are in Continental Europe, and it is interesting to see that the central and eastern European EU accession countries have adopted similar legislation to their western counterparts, even if extension can be hypothesised to have comparatively less impact due to the predominantly company-level bargaining in these countries (particularly in the Czech Republic, Hungary and Poland). In a few countries, Ministries may act upon their own initiative (France, Portugal, since recently also Germany), but in most cases extension will be granted upon the application of one or both bargaining parties. At this occasion, the applicants will usually need to give proof of the representativeness of the contracts that they have concluded. While in Finland, among other countries, there have been recent debates about an appropriate definition of such "representativeness", Germany, Greece and Switzerland simply require that an agreement covers 50% or more of employees working in the particular sector.

Figures about the numerical impact, *i.e.* numbers or shares of workers *additionally* covered through extension, are usually hard to come by. Survey data from the Australian Bureau of Statistics show that 21% of Australian employees (25% in the private sector) are exclusively covered by arbitration awards – a large decline from the two-thirds covered this way before the most recent wave of industrial relations reform and its focus on agreement-making outside the arbitration system (ABS, 2002; OECD, 2001b). In Europe, reasonably reliable data are available only from Finland, Germany, the Netherlands and Switzerland. According to these data, at the beginning of the decade the shares of workers additionally covered through administrative extension were about 23% in Switzerland (OFS, 2002); 19% in Finland (submission by the Finnish authorities); 7% in the Netherlands (van het Kaar, 2002) and about 1% in Germany (BMWA, 2004). These figures are not very different from those reported in the 1994 *Employment Outlook* for the early 1990s (although somewhat higher in Switzerland and lower in the Netherlands and Germany).[37]

To quote one recent study of extension mechanisms in Europe, there is "a high stability of extension provisions… the continuity is striking" (EIRO, 2002). Only the United Kingdom (in 1980) and New Zealand (in 1990) effectively abolished their extension arrangements; when there were changes in other countries, they were rather minor (*e.g.* definition of representativeness) or procedural. This stability is somewhat surprising in view of growing employer hostility to extension in some countries (Finland and Germany, in particular) and of arguments by economists (including the 1994 *OECD Jobs Study*) to the effect that administrative extensions are a potent device to stifle competition in labour and product markets.[38]

D. Centralisation and co-ordination

Apart from trade union density and coverage, bargaining centralisation and co-ordination have played an important role over the past decade or two in studies on the relationship between wage-setting characteristics on the one hand, and economic and labour market performance measures, on the other. To take one example, Nickell and Layard (1999) have calculated that, as the extent of union coverage increases from below

one-quarter to over 70%, unemployment more than doubles; however, increases in bargaining co-ordination tend to offset this impact. The theoretical debate between "monotonic" and "hump-shaped" or "U-shaped" hypotheses has been summarised many times in the literature and briefly outlined in Section 1 (see, for example, Cameron, 1984; Tarantelli, 1986; Calmfors and Driffill, 1988; Soskice, 1990; and Calmfors, 1993). Concerning the centralisation dimension, Aidt and Tzannatos (2002) have recently tried to structure the debate by summarising its economic costs and benefits on a number of indicators, such as competition, wage compression, strike propensity and hold-up problems. Other researchers have argued that the degree of co-ordination of wage bargaining across the economy is at least as important for characterising bargaining or labour relations systems as is centralisation (for summaries of the debate, see, *inter alia*, OECD, 1997a; Flanagan, 1999; Wallerstein and Western, 2000; and Traxler *et al.*, 2001).

Following the model used in the 1997 *Employment Outlook*, both the centralisation and co-ordination indicators are included in Table 3.5, presented for five-year intervals (and one six-year interval) between 1970 and 2000. A supplementary indicator of vertical co-ordination, which presents a measure of the extent to which collective contracts are effectively followed at lower levels, is bargaining governability (see Box 3.3). Regression analysis further below is based on a composite index using both the centralisation and co-ordination indicators. A previous analysis based on the same type of composite index in the 1997 *Employment Outlook* had, in most respects, not found statistically significant relationships with measures of economic or labour market performance. One exception to this was a fairly robust relationship with cross-country differences in earnings inequality, in the sense that the highest degree of earnings inequality was found in the group of the more decentralised/unco-ordinated countries.

The construction of the centralisation and co-ordination indicators has profited from other work scoring or ranking wage-setting arrangements which have appeared after the 1997 *Employment Outlook*. These are, in particular, the centralisation scores of Golden *et al.* (2002), Iversen (1999) and Traxler *et al.* (2001), the co-ordination scores of Kenworthy (2001a); and both the centralisation and co-ordination scores of Ochel (2000b). These studies have greatly improved on the descriptive information available for scoring countries in a more rigorous and transparent manner, and have also extended the historical reach of the indicators, so that comparative work can take better account of major changes in individual countries' bargaining modes. Nevertheless, as pointed out by Kenworthy (2001b), uncertainties and disagreements in the evaluation of country practices persist: a graphical comparison by Kenworthy of the country classifications by the various authors cited above demonstrates sometimes important variations.[39]

The level where collective contracts are negotiated and formally set is one of the more obvious dimensions of bargaining structures. Three levels are usually distinguished: first, firms and workers may negotiate over terms and conditions of employment at the level of the individual enterprise or establishment. Canada, Japan, Korea and the United States have historically bargained at this level; the United Kingdom, New Zealand and some central and eastern European countries have joined this group more recently. At the other extreme, national unions and employer associations engage in inter-industry bargaining at national level, covering the entire economy or most parts of it – a feature historically characteristic of the Nordic countries, but also, from a different angle, of the arbitration system in Australia.[40] Most continental European countries have traditionally favoured "intermediate" forms of wage negotiation, mainly at branch or sectoral level.

Table 3.5. **Wage-setting institutions in OECD countries, 1970-2000**[a, b]

	Centralisation[c]						Co-ordination[d]					
	1970-74	1975-79	1980-84	1985-89	1990-94	1995-2000	1970-74	1975-79	1980-84	1985-89	1990-94	1995-2000
Australia	4	4	4	4	2	2	4	4	(4.5)	4	2	2
Austria	3	3	3	3	3	3	5	5	(4.5)	4	4	4
Belgium	4	(3.5)	3	3	3	3	4	(3.5)	(4)	(4)	(4)	(4.5)
Canada	1	1	1	1	1	1	1	(3)	1	1	1	1
Czech Republic	. .	. .	. .	. .	1	1	. .	. .	. .	. .	1	1
Denmark	5	5	3	3	3	2	5	5	3	(4)	3	(4)
Finland	5	5	(4)	5	5	5	5	5	(4)	5	5	5
France	2	2	2	2	2	2	2	2	2	2	2	2
Germany	3	3	3	3	3	3	4	4	4	4	4	4
Hungary	. .	. .	. .	. .	1	1	. .	. .	. .	. .	1	1
Ireland	4	4	1	(2.5)	4	4	4	4	1	(2.5)	4	4
Italy	2	2	(3.5)	2	2	2	2	2	(3.5)	2	(3)	4
Japan	1	1	1	1	1	1	4	4	4	4	4	4
Korea	1	1	1	1	1	1	1	1	1	1	1	1
Netherlands	3	3	3	3	3	3	3	(4)	(4.5)	4	4	4
New Zealand	3	3	3	3	1	1	4	4	4	4	1	1
Norway	(4.5)	(4.5)	(3.5)	(4.5)	(4.5)	(4.5)	(4.5)	(4.5	(3.5)	(4.5)	(4.5)	(4.5)
Poland	. .	. .	. .	. .	1	1	. .	. .	. .	. .	1	1
Portugal	5	4	3	3	4	4	5	4	3	3	4	4
Slovak Republic	. .	. .	. .	. .	2	2	. .	. .	. .	. .	2	2
Spain	5	4	4	(3.5)	3	3	5	4	4	(3.5)	3	3
Sweden	5	5	(4.5)	3	3	3	4	4	(3.5)	3	3	3
Switzerland	3	3	3	3	2	2	4	4	4	4	4	4
United Kingdom	2	2	1	1	1	1	(3)	4	1	1	1	1
United States	1	1	1	1	1	1	1	1	1	1	1	1

. . Data not available.

a) Figures in brackets are period averages in cases where at least two years differ from the period's modal value.

b) No scores for 1970-89 were attributed to the central and eastern European OECD countries (formerly "central command" economies).

c) Centralisation:
1 = Company and plant level predominant.
2 = Combination of industry and company/plant level, with an important share of employees covered by company bargains.
3 = Industry-level predominant.
4 = Predominantly industrial bargaining, but also recurrent central-level agreements.
5 = Central-level agreements of overriding importance.

d) Co-ordination:
1 = Fragmented company/plant bargaining, little or no co-ordination by upper-level associations.
2 = Fragmented industry and company-level bargaining, with little or no pattern-setting.
3 = Industry-level bargaining with irregular pattern-setting and moderate co-ordination among major bargaining actors.
4 = *a)* informal co-ordination of industry and firm-level bargaining by (multiple) peak associations;
b) co-ordinated bargaining by peak confederations, including government-sponsored negotiations (tripartite agreements, social pacts), or government imposition of wage schedules;
c) regular pattern-setting coupled with high union concentration and/or bargaining co-ordination by large firms;
d) government wage arbitration.
5 = *a)* informal co-ordination of industry-level bargaining by an encompassing union confederation;
b) co-ordinated bargaining by peak confederations or government imposition of a wage schedule/freeze, with a peace obligation.

Source: Secretariat assessments based on national and comparative industrial relations research literature, including the recent classifications and scores of wage-setting arrangements by authors cited in the text.

The classification of countries by bargaining level is complicated by the fact that in many countries bargaining occurs at *multiple* levels. In a number of countries, such as Belgium, it is extremely difficult to localise for every single year or period "the" predominant bargaining level. Ideally, this level would need to be determined by taking into account what

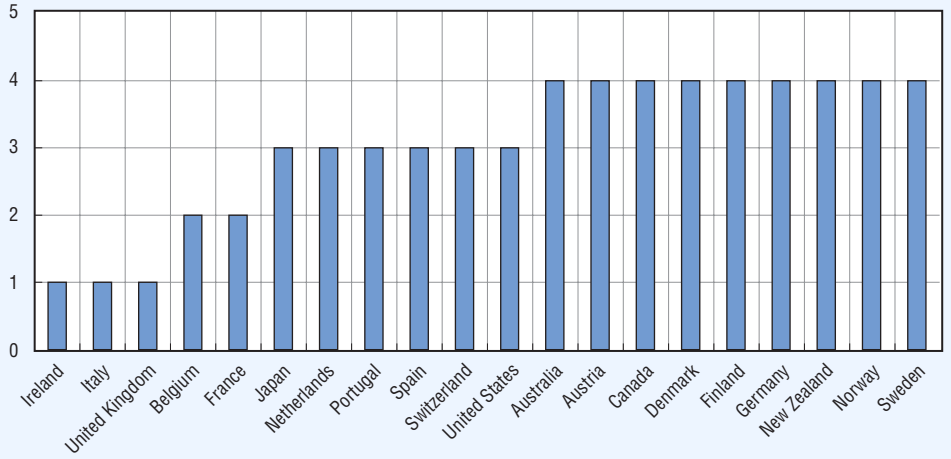
Box 3.3. **Bargaining governability: a supplementary indicator of co-ordination**

The dimension of bargaining governability in the chart below is mainly based on information in Traxler *et al.* (2001) and scored on a scale from 1 to 4. This dimension addresses the governance capacity of the bargaining system, *i.e.* the ability of the employer and trade union associations to control the behaviour of their constituency or "rank and file". Arguably centralisation and co-ordination bring about their often presumed beneficial effects only when backed by high bargaining governability, which could counteract the "potential fragility" of upper-level co-ordination noted by Nickell and Layard (1999). For example, increasing centralisation of bargaining may have countervailing effects in the sense that the rank and file (employees and employers) may have a higher propensity to defect from the results of distant decision-making processes. Both centralisation and horizontal co-ordination can be hypothesised as producing contrasting performance effects, depending on their capacity for vertical co-ordination and control (Traxler, 2003).

Government regulation can help strengthen this vertical control dimension by attributing legal enforceability to collective contracts (which it does not do in Italy, Ireland and the United Kingdom). Of similar importance is whether a peace obligation prohibits industrial action as long as a collective agreement is in force, which is rarely the case in Belgium and France, partly on the grounds that a peace obligation would interfere with the right to strike. Nevertheless, nine out of 20 countries ranked on this indicator are characterised by "high bargaining governability", *i.e.* by both legal enforceability and an automatic peace obligation during the validity of an agreement.

For future work on a centralisation/co-ordination indicator, it might be important to include this indicator of vertical co-ordination in an enlarged composite index. This would require research into its variance over time, although it can probably be safely assumed that most OECD countries have not changed their corresponding practices in recent decades.

Bargaining governability[a] in OECD countries, 2000



a) Bargaining governability:
4 = when collective agreements are legally enforceable and there is an automatic peace obligation during validity of the agreement.
3 = when collective agreements are legally enforceable and there are widespread (but optional) peace obligation clauses in agreements.
2 = where there is legal enforceability, but no effective tradition or practice of peace obligation clauses.
1 = where neither of the above conditions are effectively present.

Source: Traxler *et al.* (2001) and submissions by national authorities.

Box 3.4. **Reform of wage setting in Australia**

Australia is exceptional among OECD member countries in that most workers are covered by awards set through a quasi-judicial system of conciliation and arbitration operating through industrial tribunals. In the past, the arbitration system has allowed for widespread "extension" of terms and condition of employment to all firms in an industry, beyond the employers originally signatory to an award.

However, institutional wage-setting arrangements have changed markedly over the past two decades, with a downward shift in the level where real wages are actually determined and the gradual superposition of enterprise bargaining over a scaled-back federal and state arbitration system. Reform was initially set in motion under a series of Accords between the trade unions and the Labour government after 1983. The emphasis subsequently shifted from centralised incomes policy arrangements towards decentralisation of wage-setting and the encouragement of enterprise bargaining focused on productivity. This process was enhanced under the Workplace Relations Act (WRA) adopted in 1996.

While, in today's mixed system, arbitration still provides a framework for enterprise-level negotiations, and "safety-net awards" continue to restrict employer discretion at the bottom of the wage scale, less than a quarter of current employees still have their actual pay determined by awards; in 1990, this share was over two-thirds. Accompanying the scaling back of the arbitration system was a substantial decrease in trade union membership and density (previously "protected" by arbitration and legislative arrangements) and an increase in wage dispersion (to a level higher than most EU countries, but less than, for example, Canada, the United Kingdom and the United States) (see Table 3.3). Evidence from certain industries, in particular low-productivity workplaces, also points to beneficial effects of workplace reforms on labour productivity growth, which improved considerably *vis-à-vis* previous sluggish performance in the 1970s and 1980s.

The OECD has welcomed the move away from highly centralised wage setting via arbitration. However, it has proposed a further tilting of the balance in favour of bargaining and restricting tribunal powers. Although awards have become less prescriptive, enterprises are still bound by arbitration decisions from multiple (federal and state) jurisdictions. The OECD has also proposed to reflect whether the current "minimum safety-net" approach – where minima are not only set for low-paid workers, but there is a whole ladder of minima, including for higher-paid employees – should not be replaced by a minimum wage which would, *inter alia*, have the effect of protecting those 15% of employees currently covered neither by awards nor collective contracts.

Source: ABS (2002); OECD (2001b); Wooden (2000).

shares of employees are subject to wage bargaining at what level, and even more importantly, at which level most of the change in wage rates is being determined. For example, a moderate wage increase negotiated at sectoral level may be largely surpassed by subsequent wage bargaining at local levels (so-called "wage drift"). As pointed out by Traxler *et al.* (2001), in these cases the company or establishment level would need to be considered more important to wage fixing. However, information on these bargaining dimensions is patchy.[41] The classification in Table 3.5 has taken into account the possibility of multiple-level negotiations by allowing for five, instead of three categories.[42]

Box 3.5. **Germany: co-ordinated decentralisation or model change?**

Although the branch is still the predominant level of agreement-making in Germany, there is a trend towards more flexibility in the collective bargaining landscape. There is increasing political pressure towards shifting the locus of bargaining to lower levels, and a number of observers have started asking whether an "erosion" of the German model is already underway.

Results from establishment surveys by the research institute of the German public employment service (IAB) show that bargaining coverage in 2002 was at 71% in western and 56% in eastern Germany (altogether 68%) – a significant decline, estimated at 15 percentage points or more, when compared with western Germany during the 1980s. At the same time, the number of company agreements has increased considerably from low levels, so that currently 8% of employees (12% in the eastern *Länder*) are covered at that level.

The current debate is whether the existing instruments provided in sectoral contracts are sufficient to accommodate the needs of individual enterprises. One answer is given by those firms that prefer to switch to company agreements. Another answer, particularly in eastern Germany, is given by firms exiting the branch agreements by leaving, or not joining, employer associations. However, the bargaining parties at branch level have reacted to this trend, and to changing economic circumstances, by allowing a wider use of so-called "opening" or "opt-out" clauses in recent years. Such opt-out clauses allow firms to deviate from branch agreements to the disadvantage of employees under certain conditions – according to German legislation, normally deviations are only allowed *in favour* of employees (favourability principle).

According to recent surveys of firms with 20 or more employees that have works councils, between one-fifth and one-third have made use of opt-out clauses. These have been applied mainly with respect to working-hour regulation – *e.g.* hours averaging periods, "time banks" or extension of maximum weekly hours for certain categories of employees – but in recent years an increasing proportion (about 16% in the most recent survey) is dealing with remuneration issues as well – *e.g.* two-tier wage regimes with reduced wages for job starters or cuts in holiday bonuses. A variant of opening clauses are the so-called "company employment pacts" where pay cuts are exchanged for employment guarantees.

In many cases, the use of opening clauses requires the consent of both bargaining parties at sectoral level, and there have been some well-publicised cases where consent was denied. This has led to calls by some commentators to replace this approach by a statutory opt-out clause which would abandon completely the favourability principle. The Federal Chancellor Schröder, in a major policy statement in 2003 around his reform Agenda 2010, has issued a warning to the bargaining parties that if more generous use of opt-out clauses was not forthcoming voluntarily, the government might make use of such statutory modifications.

Abandoning the favourability principle and allowing actors at company level, such as works councils, to generally reopen and deviate from branch agreements, would revolutionise the German bargaining arena – although it needs to be added that such legislation would no doubt be challenged on the basis of constitutional law. Such decentralisation would make competition more intense and wage determination more flexible, but it would also undermine the typical German co-ordination mode of pattern bargaining which has historically served as a guarantee of social peace. Further, whether company wage bargaining in the German context of still relatively strong trade unions would result in wage moderation, is open to debate: so far, empirical studies comparing

Box 3.5. **Germany: co-ordinated decentralisation or model change?** *(cont.)*

wage settlements in company agreements with those in branch agreements have not shown this result. Finally, a number of German employers are uncomfortable with the idea to be suddenly confronted with local actors endowed with the authority to negotiate wages relying on the strike weapon as *ultima ratio* – in contrast to the current peace obligation once a branch-level contract is in place.

Source: Bosch (2003); OECD (2003c); Kohaut and Schnabel (2003); Bispinck and Schulten (2003).

The table also gives an impression of how countries have moved between the 1970s and 1990s on the centralisation dimension. Importantly, no country has moved in the direction of centralisation between these two decades, while several countries became more decentralised, by one, two or more levels. For example, New Zealand, Switzerland, Australia and Denmark joined the relatively decentralised group of countries, while the gravity centre in Belgium, Spain and Sweden moved from relatively centralised to intermediate. Countries that are judged to have maintained a relatively high degree of centralisation in bargaining are Ireland, Portugal, Norway and Finland. Of these, Ireland decentralised in the 1980s, but centralised again at the end of the decade, as a new pattern of national-level tripartite agreements set in that included general limits on wage increases.

One particular feature of decentralisation in countries characterised by sectoral bargaining is the use of "opening" or "opt-out" clauses which allow firms under certain circumstances to negotiate with their workforce a payment level underneath the wage floor set at branch level. Such opt-out clauses have become more prominent in recent years, *inter alia*, in Germany, the Netherlands and, to some extent, Spain (see Box 3.5 on Germany). However, reliable information on the spread of these "opt-outs" is rare, and they do not seem to carry enough weight overall to warrant a reclassification of these countries, at least within the present, five-level classification scheme. Particularly in Spain, agreements at higher level to encourage the use of opening clauses have difficulties being implemented at company level (OECD, 2003b).[43]

Conceptually different from the level where wages are formally set is the degree of co-ordination of bargaining. This degree is determined by the extent to which pay negotiations are co-ordinated across the economy and are thus able to take into account any consequences of settlements on the full economy. A high degree of co-ordination is not guaranteed by centralisation, for example when several rival unions bargain at peak level, or when peak-level contracts are undermined by conflictual behaviour at lower levels. Neither is centralisation a necessary precondition for co-ordination, since the latter can be achieved through the presence of co-ordinating institutions which assist bargainers at lower levels to act in concert.[44]

Table 3.5 distinguishes five levels of co-ordination. The two upper levels (4 and 5) integrate various possible features of economy-wide co-ordination, such as pattern-setting by key industries, as well as different forms of government involvement in wage setting, *inter alia* through tripartite agreements or wage schedules. Decentralised countries are usually characterised by fragmented bargaining with little or no co-ordination, with the important exception of Japan, where wage-setting is highly co-ordinated (particularly on the employers' side) in the so-called annual spring offensive or *Shunto*. Germany, where

Box 3.6. **Centralised bargaining and social compacts: the example of Ireland**

Table 3.5 classifies central agreement-making as particularly important in Finland, Ireland, Norway and Portugal, among others. In most of these cases, the government is a partner in tripartite agreements or social compacts. Often, national governments commit themselves in these agreements to some action – for example, on taxes or social welfare – in exchange for issuing wage guidelines or pressing for wage moderation in the framework of inflation targets. Some governments pursue a policy of continuous involvement in tripartite agreements, (for example 3-year agreements in Ireland and, since recently, annual agreements in Spain), while others have joined such accords more sporadically, for example in response to economic shocks. In some cases, governments do not actually sign such agreements, but may influence national pay accords with the threat of imposing a pay freeze.

In Ireland, the series of tripartite national wage agreements since 1987 is held by many commentators to have been an important factor in the remarkable growth of the economy during the 1990s, with the highest GDP and employment growth rates among OECD countries. Up to the 1980s, Ireland had been plagued by poor industrial relations and high strike rates. After several attempts to conclude social compacts in the 1970s which failed to yield good inflation outcomes, the first half of the 1980s was characterised by a period of "free-for-all" decentralised bargaining. This period ended in 1987 with the *Programme for National Recovery* that imposed wage guidelines on the parties to collective bargaining; this has been followed by five further tripartite agreements up to 2003, each lasting for periods of three to four years. As argued by several authors, the agreements represented a joint effort to maintain competitiveness and improve employment prospects by ensuring that the rapid growth of labour productivity since the late 1980s was not translated into too high growth of real wages. Crucial to the moderation of nominal wage claims were government commitments to respond to wage restraint with cuts in taxes and improved social benefits.

As in all such wage compacts that are not completely binding on lower levels, there have been some defections from the wage rates or guidelines agreed at upper levels, especially as the economy approached full employment in the late 1990s and into the 21st century. The latest agreement concluded in 2003 (*Sustaining Progress*) has responded to such defections by including measures to ensure compliance, with an enhanced role given to a new tripartite implementation body and to the Labour Courts. Importantly, the agreement contains an opt-out clause (the "inability-to-pay" provision) whereby employers in financial difficulties can negotiate with local employee representatives to pay wage rates below the national bargain. Where local agreements cannot be reached, cases can be referred to the Labour Relations Commission and ultimately to the Labour Court for a binding decision. In the first year of the agreement, over 60 "inability to pay" cases were notified to the Labour Relations Commission.

Sources: Glyn (2004); Honohan and Walsh (2002); EIRR (2003); EIRO (2003).

negotiations are usually at the combined regional and sectoral levels, is characterised by pilot agreements in one key industry, usually the metal sector, which serve as a pattern for other bargaining agents. Belgium, Denmark, Italy and the Netherlands are among other countries that tend to get higher scores on the co-ordination than the centralisation dimension, because of different forms of peak-level co-ordination of sectoral bargaining or government intervention in tripartite agreements or social pacts.

3. Wage-setting institutions and economic performance

A. A first look

This section uses the updated bargaining indicators just presented to re-assess whether different characteristics of national collective bargaining systems appear to have had a systematic effect on macroeconomic performance in OECD countries since 1970. The bargaining characteristics examined here are a subset of the indicators presented in the previous section, namely, union density, collective bargaining coverage and centralisation/co-ordination (*i.e.* the average of the centralisation and co-ordination indicators presented in Table 3.5, which will be referred to as "CC" in the sequel).[45] It must be emphasised, however, that this analysis represents only a "first pass" assessment. In particular, the simple associations between the indicators of the organisation of collective bargaining and economic performance examined here may not provide reliable estimates of the causal impact of different organisational forms of wage bargaining, because only limited attempts are made to control for other institutions and policies that affect performance.[46] The intent here is to help orient future investigation by providing an initial indication of which types of wage and non-wage effects appear likely to have been the most important, as well as to assess whether the updated indicators are sufficiently different from their precursors to call into question any of the main results reported in OECD (1997a).

What might we expect to find? As was discussed in Section 1, economic theory suggests that increases in union density and bargaining coverage enhance union bargaining power and hence tend to increase upward pressure on aggregate wages and – to the extent that unions pursue an egalitarian agenda – compress earnings differentials. The effect of increases in centralisation/co-ordination on wage outcomes is more difficult to predict, since the potential enhancement of union bargaining power may be accompanied by greater internalisation of the full costs implied by high wage demands. Economic theory also implies that any increase in overall wage demands or compression of wage differentials that result from union involvement in wage setting are likely to adversely affect employment, although the literature review is Section 1 suggests that these impacts may be contingent on a large number of factors and hence difficult to isolate.

In Table 3.6, four common measures of macroeconomic performance (unemployment, employment, inflation and real earnings growth), are juxtaposed with the CC indicator. In the spirit of Calmfors and Driffill (1988) and many subsequent studies, OECD countries are classified into low, intermediate or high groups according to their CC scores, with this classification being made separately for three periods: the 1970s, the 1980s and 1990-2002. Comparing average unemployment rates across the three CC levels suggests that this facet of wage bargaining has not been a predominant determinant of unemployment performance. Unemployment was substantially lower for the intermediate CC countries in the 1970s, than for countries with higher or lower CC, precisely the reverse of the hump-shaped relationship proposed in Calmfors and Driffill (1988). By contrast, the high CC countries performed best according to this criterion during the 1980s and there has been next to no relation between unemployment rates and CC since 1990.[47]

The relationship between the degree of bargaining centralisation/co-ordination and the employment rate also shows considerable instability over time: intermediate CC countries being the best performers during the 1970s, but the worst thereafter (Table 3.6).[48] There is slightly more consistency over time for the final two performance measures: price inflation is lowest for the intermediate CC countries in all three periods, while real

Table 3.6. **The degree of bargaining centralisation/co-ordination (CC) and macroeconomic performance since 1970**[a, b]

	1970-79				1980-89				1990-2002			
	Unemployment rate	Employment rate	Inflation rate	Real earnings growth	Unemployment rate	Employment rate	Inflation rate	Real earnings growth	Unemployment rate	Employment rate	Inflation rate	Real earnings growth
High CC												
Average[c]	4.2	63.3	12.2	4.3	6.0	67.9	7.2	1.3	7.4	66.7	3.9	2.3
Minimum	1.8	55.2	6.4	1.9	2.8	64.4	6.0	0.3	4.6	56.8	2.0	0.6
Maximum	8.2	75.5	16.1	5.8	7.4	74.5	7.6	3.8	11.4	75.0	5.5	3.1
Intermediate CC												
Average[c]	2.0	65.7	8.5	4.2	6.5	62.1	4.9	1.7	7.1	64.7	1.5	1.2
Minimum	1.7	54.8	5.1	1.7	2.6	49.1	1.9	–0.6	3.2	52.4	–0.2	0.1
Maximum	3.2	66.9	13.9	6.1	17.7	80.4	17.3	2.3	17.9	77.7	4.2	1.9
Low CC												
Average[c]	5.7	62.8	9.6	2.5	7.9	66.6	5.1	1.3	7.2	68.4	3.9	1.6
Minimum	3.5	52.0	7.0	1.3	4.0	50.7	4.3	0.5	3.5	54.8	1.6	–0.1
Maximum	7.8	64.8	21.1	4.7	15.7	68.8	7.5	6.5	15.1	72.5	20.5	5.0

. . Data not available.

a) The centralisation/co-ordination (CC) indicator is an average of the centralisation and co-ordination scores presented in Table 3.5. High CC corresponds to an indicator value of at least 4 and low CC to an indicator value of at most 2.

b) Average values for the periods indicated.

c) Employment-weighted average.

Source: OECD Labour Force Statistics database (unemployment rate and employment rate), OECD Economic Outlook database (inflation rate and real compensation per worker in the business sector), and OECD Productivity database (average hours per worker).

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earnings growth tends to be relatively low for the low CC countries. Nonetheless, the overall impression that emerges from these comparisons is that partitioning countries according to centralisation/co-ordination, on its own, is not very informative for predicting aggregate economic performance. This impression is reinforced by the observation that there is a lot of variation in aggregate outcomes within each of the three CC groupings in all three periods. A closely related implication is that little support emerges for intermediate CC countries generally having the worst performance, consistent with Aidt and Tzannatos' assessment (2002) of prior research.

B. Wage-setting institutions and wage outcomes

The most direct impact of wage-setting institutions should be on wage outcomes and Table 3.7 provides a first look – in the form of bivariate correlation coefficients – at the associations between union density, bargaining coverage, and centralisation/

Table 3.7. **Correlation coefficients between collective bargaining and wage outcomes, 1975-2000**[a]

	1975-79	1980-84	1985-89	1990-94	1995-2000
			Panel A. Trade union density		
Real hourly earnings growth[b]	–0.09	–0.59***	0.20	0.09	0.36*
Efficiency wage growth[b, c]	–0.13	–0.20	0.48**	–0.50**	0.01
Wage share[b]	–0.01	–0.23	0.11	–0.14	0.00
Earnings inequality	–0.87***	–0.78***	–0.60**	–0.44*	–0.31
Relative earnings of youths	0.77	0.80**	0.76**	0.83**	0.78***
Relative earnings of older workers	0.44	0.44	0.21	0.19	0.04
Relative earnings of women	0.72	0.60	0.39	0.31	0.43
			Panel B. Collective bargaining coverage		
Real hourly earnings growth[b]	–	–0.31	–0.17	–0.18	0.08
Efficiency wage growth[b, c]	–	0.04	–0.09	–0.19	0.00
Wage share[b]	–	–0.23	–0.22	–0.30	–0.27
Earnings inequality	–	–0.58*	–0.69***	–0.51**	–0.60**
Relative earnings of youths	–	0.67	0.79**	0.94***	0.68**
Relative earnings of older workers	–	0.46	0.33	0.22	0.32
Relative earnings of women	–	0.75*	0.73**	0.66*	0.76***
			Panel C. Centralisation/co-ordination		
Real hourly earnings growth[b]	0.13	–0.32	–0.05	0.03	0.24
Efficiency wage growth[b, c]	0.05	0.06	0.08	–0.23	–0.38
Wage share[b]	–0.14	–0.37	–0.23	0.19	0.02
Earnings inequality	–0.83**	–0.77***	–0.67***	–0.40*	–0.51**
Relative earnings of youths	0.69	0.48	0.30	0.48	0.30
Relative earnings of older workers	0.20	0.36	0.35	0.08	0.36
Relative earnings of women	0.74	0.57	0.25	–0.24	0.39

***, **, * denote statistical significance at the 1%, 5% and 10% levels, respectively.

a) Calculations use five-year average values for the measures of collective bargaining and wage outcomes.

b) Total compensation in the business sector.

c) Growth rate of the real wage rate per efficiency unit which is estimated by real hourly compensation growth in excess of total factor productivity growth (*i.e.* the Solow residual divided by the wage share).

Source: OECD Economic Outlook database except hours per worker from OECD Productivity database; earnings inequality and relative earnings measure from the OECD Earnings database.

co-ordination, on the one hand, and the average level of compensation and the structure of relative wages, on the other. The three measures of the aggregate wage include the rate of growth of real earnings and two measures of the extent to which wage growth tends to outrun productivity gains: growth of the real wage per efficiency unit (defined as the excess of real wage growth over the growth in total factor productivity) and the wage share. Four measures of relative wages are examined: an index of overall earnings inequality (the 90-10 percentile ratio for male full-time earnings), and relative wage indices for three groups potentially at the margins of the workforce (*i.e.* youths, older workers and women).[49] Correlations are calculated for the five five-year periods indicated, where the data values used are period means (*i.e.* five-year average values).

There does not appear to be any robust bivariate relationships between the three indicators for the organisation of collective bargaining and the three measures of the overall level of earnings. Several of the correlation coefficients between union density and growth rates for both real hourly earnings and the real wage per efficiency unit are quite large and statistically significant, but in every case these correlations evolve in an unstable way between the different periods shown. For example, higher union density is strongly positively correlated with the growth rate of the real wage per efficiency unit of labour during 1985-89 and then strongly negatively correlated during 1990-94.[50] Bargaining coverage is always negatively correlated with the wage share, but this correlation is generally not statistically significant and has the opposite sign to that suggested by economic theory.

There is consistent evidence in Table 3.7 that overall earnings dispersion is lower where union membership is higher and collective bargaining more encompassing and/or more centralised/co-ordinated.[51] This finding accords with a considerable number of earlier studies (Blau and Kahn, 1999; OECD, 1997a) and can be considered to be quite well established. There is also some, albeit weaker, evidence that collective bargaining tends to increase the relative wages of youths and women. The evidence for such an effect is strongest for higher union membership and bargaining coverage resulting in higher relative wages for workers under the age of 25 years. All of the correlations between coverage and the relative wage of women are quite large (0.66 or higher) and statistically significant at the 10% level or better.

The OLS panel regressions reported in Table 3.8 provide a description of the multivariate associations between the three characteristics of wage bargaining and wage outcomes.[52] Three different specifications are estimated for each of the seven wage outcomes, which are treated here as dependent variables. Model 1 regresses wage outcomes on union density, bargaining coverage and centralisation/co-ordination, as well as period effects. Due to limitations in the availability of historical data for the coverage variable, this model is estimated using data for 1980-2000 (*i.e.* averages for the four 5-year sub-periods). Models 2 and 3 drop the coverage variable, which allows the historical series to be extended backwards to 1970, modestly increasing the still small sample sizes. Since there are now up to six periods of data for each country, fixed country effects are added to Model 3, meaning that only within-country variation in density and centralisation/co-ordination are reflected in the estimated coefficients.

Overall, the regression results are quite similar to those obtained from the bivariate correlations. There is no evidence that overall earnings are systematically related to density, coverage or centralisation/co-ordination.[53] Collective bargaining, especially higher union density, is associated with lower overall earnings inequality and higher relative wages

Table 3.8. **Descriptive regressions relating characteristics of the collective bargaining system to wage outcomes, 1970-2000**

	Real hourly earnings growth[a]	Efficiency wage growth[a, b]	Wage share[a]	Earnings inequality	Relative earnings of youths	Relative earnings of older workers	Relative earnings of women
				Model 1			
Trade union density	–0.0069	–0.0061	–0.0002	–0.0088**	0.0018***	–0.0007	–0.0004
	(0.0091)	*(0.0079)*	*(0.0004)*	*(0.0039)*	*(0.0004)*	*(0.0009)*	*(0.0006)*
Collective bargaining coverage	–0.0105	–0.0041	–0.0007	–0.0052	0.0012***	0.0003	0.0027***
	(0.0095)	*(0.0085)*	*(0.0004)*	*(0.0033)*	*(0.0004)*	*(0.0008)*	*(0.0005)*
Centralisation/co-ordination	0.1661	–0.0349	0.0030	–0.1747**	–0.0120*	0.0324*	–0.0178*
	(0.1968)	*(0.1749)*	*(0.0083)*	*(0.0759)*	*(0.007)*	*(0.0161)*	*(0.0098)*
Period dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country dummies	No	No	No	No	No	No	No
Number of observations	75	66	80	55	35	33	37
R-squared	0.12	0.09	0.16	0.51	0.77	0.35	0.62
F-Statistic	1.61	0.96	2.35**	8.49***	15.44***	2.37*	8.08***
				Model 2			
Trade union density	0.0011	–0.0099	–0.0006	–0.0096**	0.0027***	–0.0001	0.0013*
	(0.0097)	*(0.0091)*	*(0.0004)*	*(0.0041)*	*(0.0004)*	*(0.0008)*	*(0.0006)*
Centralisation/co-ordination	–0.0376	–0.0831	–0.0023	–0.2040***	–0.0058	0.0228*	0.0092
	(0.1619)	*(0.1560)*	*(0.0059)*	*(0.0644)*	*(0.0067)*	*(0.0125)*	*(0.0101)*
Period dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country dummies	No	No	No	No	No	No	No
Number of observations	112	97	121	70	44	42	46
R-squared	0.37	0.25	0.21	0.40	0.62	0.40	0.43
F-Statistic	8.71***	4.20***	4.41***	5.89***	8.49***	3.28***	4.03***
				Model 3			
Trade union density	–0.0016	0.0138	0.0011	–0.0143**	0.0024**	–0.0008	–0.0012
	(0.0274)	*(0.0268)*	*(0.0006)*	*(0.0066)*	*(0.001)*	*(0.0015)*	*(0.0009)*
Centralisation/co-ordination	–0.2523	–0.1790	–0.0096	–0.0014	–0.0020	0.0349***	0.0174**
	(0.2626)	*(0.2360)*	*(0.006)*	*(0.0651)*	*(0.0079)*	*(0.0121)*	*(0.0068)*
Period dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Number of observations	112	97	121	70	44	42	46
R-squared	0.35	0.19	0.08	0.29	0.59	0.34	0.10
F-Statistic	13.29***	5.22***	10.3***	3.6***	6.13***	6.65***	10.69***

***, **, * denote statistical significance at the 1%, 5% and 10% levels, respectively.
( ) corresponds to standard error.
a) Total compensation in the business sector.
b) Growth of the real wage rate per efficiency unit which is estimated by real hourly compensation growth in excess of total factor productivity growth (*i.e.* the Solow residual divided by the wage share).
Source: See Table 3.7.

for youths. Adding fixed effects to the model suggests that the countries in which centralisation/co-ordination fell during the past three decades also experienced relative increases in the earnings of older workers and women, while the countries where density fell experienced increases in overall wage dispersion and a relative decline in youth wages.[54]

C. *Wage-setting institutions and non-wage outcomes*

Tables 3.9 and 3.10 present an analysis for seven non-wage outcomes that is parallel to that just discussed for wage outcomes. Whether considering bivariate correlations or the descriptive regressions based on panel data, very little evidence emerges for a systematic impact of these three facets of the organisation of collective bargaining on any of these outcomes. Where large and statistically significant associations are observed, they typically are not robust, either over time or across the different regression models, and are often discordant with theoretical predictions or past studies. However, the absence of robust associations between indicators of the organisation of collective bargaining and non-wage outcomes accords with the results obtained using the previous version of the OECD indicators (OECD, 1997a) and the overall literature (Aidt and Tzannatos, 2002; Flanagan, 1999).

The bivariate correlations provide some evidence that an increase in union density is associated with a higher overall employment-population ratio and higher relative employment for women, neither of which is consistent with theoretical predictions that increased union bargaining power tends to reduce employment, particularly for workforce

Table 3.9. **Correlation coefficients between collective bargaining and non-wage outcomes, 1975-2000**[a]

	1975-79	1980-84	1985-89	1990-94	1995-2000
			Panel A. Trade union density		
Unemployment rate	–0.08	–0.21	–0.35	–0.09	0.00
Employment rate	0.32	0.51**	0.56***	0.41**	0.31*
Inflation (GDP deflator)	0.09	0.30	0.05	–0.10	–0.07
Growth in real GDP per hour worked[b]	–0.15	–0.44**	–0.16	–0.05	0.19
Relative employment of youths	0.32	0.42*	0.42*	0.13	0.07
Relative employment of older workers	0.09	–0.11	–0.01	0.10	–0.01
Relative employment of women	0.30	0.51**	0.56***	0.54***	0.51***
			Panel B. Collective bargaining coverage		
Unemployment rate	–	0.13	0.24	0.42*	0.45*
Employment rate	–	–0.02	–0.12	–0.31	–0.34
Inflation (GDP deflator)	–	0.19	0.07	–0.07	0.21
Growth in real GDP per hour worked[b]	–	–0.28	–0.24	–0.01	–0.15
Relative employment of youths	–	0.07	0.02	–0.19	–0.16
Relative employment of older workers	–	–0.63***	–0.66***	–0.65***	–0.68***
Relative employment of women	–	0.13	0.08	0.12	0.16
			Panel C. Centralisation/co-ordination		
Unemployment rate	–0.30	–0.18	–0.10	0.00	0.04
Employment rate	0.25	0.06	0.14	0.00	0.03
Inflation (GDP deflator)	–0.15	0.05	0.00	–0.41**	–0.30
Growth in real GDP per hour worked[b]	0.10	–0.29	–0.21	0.07	0.11
Relative employment of youths	0.27	–0.06	0.14	–0.04	–0.01
Relative employment of older workers	0.27	–0.38	–0.22	0.06	–0.06
Relative employment of women	0.20	0.08	0.20	–0.05	0.00

***, **, * denote statistical significance at the 1%, 5% and 10% levels, respectively.

a) Calculations use five-year average values for the measures of collective bargaining and non-wage outcomes.

b) In the business sector.

Source: OECD Economic Outlook database except hours per worker from OECD Productivity database; and relative employment rates from the *OECD Labour Force Statistics*.

Table 3.10. **Descriptive regressions relating characteristics of the collective bargaining system to non-wage outcomes, 1970-2000**

	Unemployment rate	Employment rate	Inflation (GDP deflator)	Growth in real GDP per hour worked[a]	Relative employment of youths	Relative employment of older workers	Relative employment of women
				Model 1			
Trade union density	–0.0611***	0.2611***	0.0124	–0.0053	0.0028***	0.0018***	0.0052***
	(0.0212)	*(0.0384)*	*(0.0183)*	*(0.0083)*	*(0.0009)*	*(0.0006)*	*(0.0007)*
Collective bargaining coverage	0.1073***	–0.1820***	0.0082	–0.0088	–0.0012	–0.0052***	–0.0009
	(0.022)	*(0.0398)*	*(0.0185)*	*(0.0087)*	*(0.0009)*	*(0.0006)*	*(0.0007)*
Centralisation/co-ordination	–1.0079**	0.3403	–0.0721	0.0829	–0.0132	0.0284**	–0.0190
	(0.4633)	*(0.8378)*	*(0.3956)*	*(0.1794)*	*(0.0195)*	*(0.0132)*	*(0.0142)*
Period dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country dummies	No	No	No	No	No	No	No
Number of observations	74	74	80	75	74	74	74
R-squared	0.29	0.47	0.41	0.06	0.14	0.56	0.56
F-Statistic	4.52***	9.76***	8.35***	0.76	1.87*	14.42***	14.5***
				Model 2			
Trade union density	–0.0195	0.1583***	0.0527***	–0.0046	0.0019***	–0.0001	0.0042***
	(0.0206)	*(0.0412)*	*(0.0198)*	*(0.0073)*	*(0.0007)*	*(0.0008)*	*(0.0007)*
Centralisation/co-ordination	0.0529	–0.6771	–0.9492***	–0.0017	–0.0125	–0.0073	–0.0149
	(0.3382)	*(0.6767)*	*(0.3231)*	*(0.1214)*	*(0.0118)*	*(0.0125)*	*(0.0117)*
Period dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country dummies	No	No	No	No	No	No	No
Number of observations	105	105	125	114	105	105	105
R-squared	0.20	0.15	0.44	0.14	0.11	0.16	0.48
F-Statistic	3.51	2.46**	12.89***	2.52**	1.68	2.62**	12.93***
				Model 3			
Trade union density	0.0570	–0.0359	0.1160***	–0.0069	0.0009	–0.0009	–0.0017**
	(0.037)	*(0.0552)*	*(0.0383)*	*(0.0162)*	*(0.0011)*	*(0.0008)*	*(0.0008)*
Centralisation/co-ordination	–0.5050	0.4164	0.2912	–0.1815	0.0001	–0.0129	0.0065
	(0.3844)	*(0.5728)*	*(0.4018)*	*(0.155)*	*(0.0111)*	*(0.0088)*	*(0.0081)*
Period dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country dummies	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Number of observations	105	105	125	114	105	105	105
R-squared	0.11	0.01	0.30	0.12	0.08	0.14	0.13
F-Statistic	9.05***	1.65	37.34***	6.99***	5.03***	20.31***	65.52***

***, **, * denote statistical significance at the 1%, 5% and 10% levels, respectively.
( ) corresponds to standard error.
a) In the business sector.
Source: See Table 3.9.

groups other than prime-age men (Bertola *et al.*, 2002b). On the other hand, the negative correlation between bargaining coverage and the relative employment rate of older workers is consistent with this theory. The regression results confirm the three associations visible in the correlations, although the coefficient for union density is not statistically significant in the Model 3 estimates for either total employment or the relative employment of women, meaning that these associations do not appear to be present in the within-country variation. The estimation results for Model 1 confirm that higher bargaining coverage is associated with lower relative employment for older workers.[55]

Finally, the regression results provide some evidence that higher density has been associated with higher inflation rates (but not in Model 1, *i.e.* when bargaining coverage is included among the regressors) and higher youth relative employment (but only in Model 1, *i.e.* when bargaining coverage is included among the regressors). Both the non-robustness of many of the estimated effects across regression models and the fact that many of the statistically significant effects have the opposite sign from that predicted by the usual theoretical models suggest extreme caution in treating any of these estimates as being even qualitatively informative regarding the causal impact of these facets of collective bargaining on non-wage outcomes.

Finally, Table 3.11 reports regression estimates for the impact of the three indicators of collective bargaining on the relative employment rates of four workforce groups when controlling for a range of other institutional and policy variables likely to affect employment patterns.[56] The groups considered are the three already considered above (*i.e.* youths, older working-age persons and women) plus the low skilled, defined as persons

Table 3.11. **Collective bargaining and the relative employment of youths, older persons of working age, women and the low skilled**

Random effects, GLS (generalised least squares) coefficients for annual data, 1985-2002[a]

	Relative employment of youths[b]		Relative employment of older workers[b]		Relative employment of women[b]		Relative employment of low-skilled workers[b]	
Union density	0.004***	*0.001*	0.001	*0.001*	0.004***	*0.001*	0.001	*0.001*
Bargaining coverage	–0.002*	*0.001*	–0.003***	*0.001*	0.002***	*0.001*	0.002***	*0.001*
Centralisation/co-ordination index	–0.063***	*0.016*	0.008	*0.011*	–0.025***	*0.008*	–0.027	*0.017*
F-test[c]	99.7***		85.8***		195.7***		65.4***	
B-P LM test[d]	683.0***		364.8***		178.9***		532.2***	
Hausman test[e]	2 652.0***		13.3		9.3		25.1***	
Simulated effect of a 1-standard deviation increase in the 3 collective bargaining variables[f]	–0.043		–0.055		0.118		0.027	
No. of observations	276		184		135		211	
No. of countries	19		18		15		19	
No. of control variables[g]	7		7		10		7	

***, **, * means statistically significant at 10%, 5% and 1% levels, respectively. All regressions include a constant term; standard errors in italics.

a) As the explanatory variables are not able to fully account for the rapid increase in Finnish and Swedish unemployment rates in the early 1990s (13 and 7.4 percentage points between 1990 and 1993 for Finland and Sweden respectively), data for Finland and Sweden in 1991 and 1992 are not included in the regression. Germany is only included for the post-unification period (1991 onwards). The sign and significance of the coefficients do not change when the output gap is replaced with time dummies, in the RE specification.

b) The relative employment rate of the indicated group is measured as the logarithm of the ratio of the employment-population ratio for that group to the employment-population ratio of prime-age men.

c) F-test for the joint significance of country fixed effects.

d) Breusch and Pagan LM test for the joint significance of the random country-specific effects (i.e. that their variance is strictly positive). The statistic is distributed as a $Chi^2(1)$.

e) Hausman (1978) specification test, distributed as a $Chi^2(k)$, where k is the number of regressors.

f) Difference in log-points between the fitted relative employment rates at the data means and after increasing union density, bargaining coverage and centralisation/coordination index by one-standard deviation.

g) In addition to the three collective bargaining variables, all models contain control variables for EPL (employment protection legislation), ALMP (active labour market policies), the tax wedge, unemployment benefits and the output gap. The regressions for youths and low-skilled workers also contain a linear trend and the minimum wage (relative to the median wage). The regression for older workers also contains the standard retirement age and the implicit tax rate on delayed retirement. The regression for women also contains a linear trend, the relative tax rate on second earners, paid parental leave entitlement and indices for child benefits and public spending on child care.

Source and definitions: See Annex Table 2.A2.1 of Chapter 2.

not having completed upper secondary schooling. The regression results for union density, bargaining coverage and CC are qualitatively similar to those previously obtained in terms of the signs and statistical significance of the estimated coefficients.[57] Since the three collective bargaining variables might be thought of as jointly defining the bargaining context (and sometimes have off-setting effects on employment), Table 3.11 also presents the simulated effect on the relative employment of the different groups of simultaneous, one-standard-deviation increases in all three collective bargaining variables. Such a change is predicted to decrease employment for older and younger men relative to prime-age men – consistent with insufficient wage differentiation having a disproportionately adverse effect on groups other than prime-age men (Bertola *et al.*, 2002b; Blau and Kahn, 1999). By contrast, increased (and increasingly centralised/co-ordinated) union involvement in wage setting is predicted to increase relative employment for less-skilled workers and, especially, women.[58]

Conclusions

This chapter's analysis is too limited in scope for it to provide direct guidance to making policy choices, including whether the guidelines related to wage setting in the OECD Jobs Strategy should be revised. Nonetheless, it contributes several essential building blocks to the more comprehensive analysis that will be required in order to reach such conclusions:

- The material surveyed in Section 1 confirms the plausibility of the Jobs Strategy diagnosis that excessively high aggregate wages and/or wage compression have been impediments to realising satisfactory employment performance in a considerable number of OECD countries during the past three decades. However, this evidence is somewhat fragile overall and highlights the complexity of wage-setting institutions in OECD countries and their implications for economic performance. The organisation of collective bargaining is an important part of the institutional environment affecting the functioning of the labour market and the updated indicators of the organisation of collective bargaining presented in this chapter should make an important contribution to the knowledge base that will be required for the comprehensive analysis of the institutional and policy determinants of good labour market performance that will be undertaken by the OECD Secretariat over the coming year.
- A satisfactory explanation of the determinants of recent labour market performance will need to take into account the sometimes substantial changes in wage-setting institutions (*e.g.* the significant declines in the share of the workforce whose conditions of employment are set by collective bargaining which have occurred in a number of OECD countries), as well as the complex dynamics between changes in these institutions and changes in performance. In this regard, several promising avenues for additional research can be identified. In particular, the impact of the organisation of collective bargaining on labour market performance appears to be contingent upon other institutional or policy factors and these interactions need to be clarified in order to provide robust policy advice. Another aspect that requires further analysis concerns the way in which the different aspects of bargaining – particularly the different aspects of centralisation and co-ordination – interact with each other to affect bargaining outcomes. For example, the use made in this chapter's analysis of a simple average of the centralisation and co-ordination indicators is *ad hoc* rather than grounded in a precise theoretical argument concerning the mechanisms involved.

- It is unclear how much emphasis should be placed on ranking organisational structures of collective bargaining in terms of their implications for macroeconomic performance. That structural orientation has informed a rich body of research, as exemplified by the influential study of Calmfors and Driffill (1988) and the literature it stimulated. However, the great difficulty encountered by researchers attempting to identify robust associations between differences in bargaining organisation and differences in macroeconomic performance suggest that quite different organisational forms may be capable of similar performance. For example, wage flexibility coupled with in-work benefits for low wage workers may be approximately equivalent to a more compressed wage structure combined with fiscal incentives to employers of low-skilled workers.
- The chapter's analysis confirms one robust relationship between the organisation of collective bargaining and labour market outcomes, namely, that overall earnings dispersion tends to fall as union density and bargaining coverage and centralisation/co-ordination increase. It follows that equity effects need to be considered carefully when assessing policy guidelines related to wage-setting institutions.

Notes

1. This evaluation came to the conclusion that, for example, in the area of minimum wages "reforms have largely not been implemented" (OECD, 1999). In other areas, the number of countries that took satisfactory action in the eyes of the Secretariat was very small, and the number of countries that took at least some, but limited action along the lines of the recommendations was not very encouraging, either: they were five out of ten where country-specific recommendations had been issued concerning "decentralisation of bargaining"; one out of eight concerning "wider wage distribution"; one out of six concerning "extension of agreements"; and three out of six in the "use of opt-out clauses".
2. Reluctance to introduce greater decentralisation in wage bargaining may reflect the broader roles that collective bargaining and unions play in economic and social life, and which could be disrupted by such changes. The opposition of beneficiaries of the status quo ("insiders") to efficiency enhancing reforms may also be a factor (Saint-Paul, 2004).
3. Many of the theoretical arguments made in this and the following sections should be understood as applying to total labour costs, including non-wage labour costs, even though the term "wage" is used for expositional convenience.
4. The equilibrium unemployment rate, which is sometimes referred to as the structural rate of unemployment or the non accelerating inflation rate of unemployment (NAIRU), refers to the unemployment rate that is consistent with stable inflation and a balance-of-payments equilibrium.
5. See Blau and Kahn (1999) and Nickell and Layard (1999) for excellent, but somewhat dated, surveys of this literature. Less exhaustive, but more recent surveys are provided by Blau and Kahn (2002), Nickell *et al.* (2003) and, more critically, Baker *et al.* (2004).
6. Bertola and Koeniger show that financial market imperfections can rationalize institutional interference with laissez-faire labour market outcomes, including competitive wage structures. They emphasise, however, that improving the efficiency of credit markets is the first-best policy response, albeit a solution that may be difficult and slow to implement. By contrast, Agell argues that the benefits of certain labour market "rigidities" are more or less inherent to the incompleteness of employment contracts and the social norms that impinge upon implementing certain forms of wage flexibility.
7. Kenworthy (2001b) provides a useful assessment of 15 such measures, showing that they embody different – but often only implicit – assumptions about the process of wage bargaining and that standard regression estimates of the impact of centralisation/coordination on macroeconomic performance is quite sensitive to the choice of indicator. In their review of past studies, Aidt and Tzannatos (2002) differentiate between six basic types of measures of bargaining coordination.
8. The limited availability of comparable cross-country/time-series data on relative wages means that it often is not possible to incorporate the intervening role of wages in such studies.

9. The "wage" data reported in this section are estimates of the total labour costs to employers (including employers' mandatory social security contributions and the costs of providing fringe benefits). These data are primarily drawn from the OECD Economic Outlook (EO) database and represent a partial harmonisation of NIPA (National Income and Product Account) and other macroeconomic data from OECD countries (see OECD, 2004b). The primary underlying source for the EO data are the national income and product accounts of the member governments. Since there are substantial differences between OECD countries in average hours worked (see Chapter 1), data on average annual hours worked per employed person from the OECD Productivity database are used to convert the estimates of compensation per worker, which are available in the EO database, to an hourly basis. It should be understood that cross-country comparisons of compensation levels are affected by some differences of coverage and definition. Comparisons of within-country changes in compensation over time, including growth rates, should be less affected by these discrepancies.

10. All of the averages shown in Chart 3.1 refer to the sub-set of OECD countries for which data are available for the entire period considered.

11. Data for the 1960s are not shown in Chart 3.1, because they generally are not available for the measures displayed. However, the OECD unit labour costs series extends back to the 1960s for a sub-set of countries. The rate of increase of unit labour costs accelerated sharply between 1965-69 and 1970-74 in all twelve countries for which this comparison can be made (OECD, 2004a).

12. Note, however, that factors other than wage restraint can cause the wage share to fall, such as a change in the sectoral composition of employment towards industries with a lower wage share (de Serres *et al.*, 2002). Typically, wage shares calculated from NIPA (National Income and Product Account) are affected by the share of self-employment in total employment, because all self-employment income is assimilated to capital income. That is not the case for the wage shares reported here. The NIPA data have been adjusted to attribute a portion of the income accruing to self employment to labour compensation.

13. For the latter, Blanchard's (1997) proposed estimator is adopted: the growth rate of the real wage per efficiency unit of labour is estimated as the difference between the growth rate of real compensation per hour worked and the Solow residual estimate of total factor productivity (TFP) growth in labour-augmenting form (*i.e.* the Solow residual divided by the labour share of total income in the business sector). This approach is only strictly appropriate under the maintained hypotheses of Harrod-neutral technological progress and factor prices that reflect marginal cost. Harrod-neutral technological progress provides a natural benchmark for such an analysis since it is a necessary condition for balanced growth.

14. In many countries, the growth rate of the real wage per efficiency unit is quite erratic (OECD, 2004a). This suggests that TFP growth over five-year intervals (or, at least, its estimate based on the Solow residual) provides a rather noisy benchmark for the sustainable rate of real wage growth.

15. Korea provides a notable example of real wage flexibility in response to changing macroeconomic conditions: real compensation per employee fell quite sharply in 1998, in response to the financial crisis that struck in 1997 (OECD, 2000a). However, this probably was not indicative of a longer-term trend towards increased wage restraint, since wages resumed growing as the economy quickly recovered.

16. Detailed national case studies provide a complementary methodology for investigating this question. Several recent studies have concluded that aggregate wage restraint – sometimes, as proxied by reductions in union density and bargaining coverage, or increases in bargaining co-ordination – played an important role in explaining the sharp improvements in employment performance observed during the 1990s in Ireland, the Netherlands and the United Kingdom, while the slower emergence of wage moderation in France has delayed and limited employment gains (Blanchard and Philippon, 2003; Nickell and van Ours, 2000; and Visser and Hemerijck, 1997).

17. If the economy could be thought of as moving along a negatively sloped aggregate labour demand curve, as wage bargaining changed the level of the aggregate wage, then a straightforward trade-off between wages and employment would be implied. However, the theories of equilibrium unemployment described above emphasise that the unemployment rate tends to adjust so as reconcile wage demands with employers' willingness to pay. That is, the equilibrium wage and unemployment levels are both endogenous variables and they need not be positively correlated across long-run equilibriums. Nonetheless, such a trade-off might be observed, at least for some considerable period of time. For example, some models of "real wage resistance" and "medium-run" macro-dynamics imply that an increase in real wages relative to productivity may provide a useful indication that upward pressure on wages has increased and is in the process of undermining employment performance, even though rising unemployment eventually tends to halt or even reverse the initial increase in productivity-adjusted wages (Blanchard, 1997; Blanchard and Philippon, 2003; Caballero and Hammour, 1998a,b; Grubb *et al.*, 1982; Nickell *et al.*, 2003).

18. The procedure – adopted from Bertola *et al.* 2002a) – is as follows. First, a cross-country panel of data on real aggregate wages and unemployment is assembled, where the data are average values for five five-year periods (1970-74 through 1990-94) and one six-year period (1995-2000). Second, both the log aggregate wage and the unemployment rate are regressed on a full set of dummy variables for countries and periods. The correlation coefficients between the residuals from these regressions are reported in the first entry of the first column of Table 3.1.

19. When the individual data points are charted, certain countries to conform well to the interpretation of shifting along a negatively sloped labour demand curve. For example, the United States begins with large positive residuals for both wages and unemployment in 1970-74 and then moves progressively downwards and to the left, ending up with a large negative unemployment residual and a modestly negative wage residual in 1995-2000. However, other countries conform less well, or not at all. For example, the wage residuals for Japan rose during most of the period while the unemployment residual tended to fall.

20. Also suggestive that a trade-off has been operative towards the end of this period, the correlation coefficient between the 1991-2002 change in the OECD estimate of the NAIRU for 22 (20) countries and the contemporaneous change in the wage share (the real wage rate per efficiency unit) in the business sector was 0.49 (0.58) and statistically significant at the 5% (1%) level.

21. A shift along a stable trade-off line could have been due to increased upward pressure on wages as unions attempted to capture a larger share of the quasi-rents associated with fixed investments (as hypothesised by Caballero and Hammour, 1998a, b), whereas a shift in the trade-off line could have occurred due to increased competition in international capital markets having raised the equilibrium unemployment rate associated with any given level of wage pressure (as analysed by Blanchard and Philippon, 2003).

22. Following Bertola *et al.* (2002a), the values shown in Chart 3.2 are the changes, between 1970-74 and the period indicated, in the estimated coefficients on period dummies in an OLS regression of unemployment net of country effects on the log aggregate wage net of country effects.

23. These relative earnings gains apply to women who are employed full time and, hence, do not necessarily imply gender convergence in weekly or monthly pay for all workers.

24. In certain cases, direct inspection of the data is highly suggestive of such a link. For example, the persistence of very high unemployment in Southern Italy is almost certainly due, to an important degree, to the fact that wage-setting institutions prevent the wage differential between the North and the South from being nearly as large as is the productivity differential (Bertola and Garibaldi, 2003).

25. More precisely, the level of *earnings* inequality necessary to achieve a strong employment performance is argued to have increased. It is unclear whether *income* inequality would be higher or lower under a high earnings inequality/high employment policy as compared to a low earnings inequality/low employment policy.

26. The relative employment rate for these groups is defined as the ratio of each group's employment-population ratio to the employment-population ratio of prime-aged men, who serve as the reference group. The relative employment rates for youths and older working-age persons are calculated using employment data for men, whereas the relative employment rate by gender is calculated using employment data for prime-aged persons. Analysing relative employment rates by demographic groups has the advantage that this indicator automatically controls for many country-specific factors that affect employment (Blau and Kahn, 1999).

27. The 50-10 percentile ratio for full-time men is used as the indicator of wage dispersion when calculating these correlations, since the employment prospects of low-skilled workers appear to be most affected by wage compression in the lower half of the earnings distribution (Bertola *et al.*, 2002b; Blau and Kahn, 2002).

28. Acemoglu (2002) argues that such a relationship need not hold, because greater wage compression in Europe appears to have stimulated greater investment in technologies increasing the productivity of less-skilled workers, implying less strongly skill-biased technical change than in the United States.

29. Such measures break the link between downwardly rigid wages and downward rigidity of unit labour costs. They have been used with some success in Belgium, France and the Netherlands (OECD, 2003a). Flexible wages topped-up by in-work benefits represents an alternative strategy for raising the incomes of low-skilled workers relative to the unit labour costs born by employers (*cf.* the United Kingdom and the United States). However, both types of measures represent a potentially large drain on the public purse, which must be taken into account when assessing policy choices.

30. The latter three of these four indicators imply collective action by both trade unions and employers; however, no separate measure of "employer density" or employers' product market power was included in this analysis. The organisation rate of employers is notoriously difficult to assess. See EIRO (2004) for some rough recent estimates.

31. The government proposal "Fairness at Work" aimed to guarantee union representation "where the majority of the relevant workforce wants it" (Department of Trade and Industry, 1998).

32. In Canada, while closed shops are prohibited, non-unionised workers may be obliged to pay fees to the union for its bargaining service ("agency shop"). Swiss workers pay similar contributions to a joint bargaining fund.

33. On the relative importance of institutions for union decline, in comparison with other factors, see also Checchi and Lucifora (2002); Visser (2003); and Wallerstein and Western (2000).

34. The main reason for showing approximate figures is that various researchers in recent years have tried to determine coverage rates, particularly in Europe, but tend to come to slightly different results (see for example Ochel, 2000a; Traxler *et al*., 2001; EIRO, 2002; and European Commission, 2003b). Where possible, coverage rates are adjusted for those employees in OECD countries that do not have the right to engage in collective bargaining (such as many civil servants, or sometimes supervisory personnel). Coverage rates for 1960 and 1970 presented by Ochel (2000a) and Nickell *et al*. (2003) are not used here, as there seemed to be too few reliable entries. See also Annex 3.A1 for definitions and methods used to arrive at the coverage rates shown in the table.

35. As is easily seen in Chart 3.4, OECD countries in 2002 were clustered at coverage rates above 70% (12 countries) or below 35% (eight countries), with just five countries in the range 35-70%.

36. Due to Australia's unique industrial relations system, comparability of its "extension" arrangements with those of European countries is limited. Arguably, the extension of individual arbitrated changes to awards toward other employers in the industry has become much less important under today's system of minimum safety-net awards (see OECD, 2001b).

37. The Spanish Ministry of Labour has also estimated for the OECD the share of workers covered through extension at below 1%. Unfortunately, no such data are available from Belgium, France and Portugal, which are usually classified as "high-extension" countries – Traxler *et al*. (2001) estimate their respective shares at over 25%. In France, in 2002 553 sectoral agreements were extended by the Labour Ministry, roughly two-thirds of all agreements signed (the government surveys the number of extended agreements, but not the number of workers additionally covered). More than half of these dealt with wage rates, the remainder primarily with working-time reduction and vocational training (Ministère des Affaires Sociales, 2002). By contrast, in Germany only 0.8% of all wage agreements valid at 31/12/03 had been extended (BMWA, 2004).

38. The original OECD Jobs Study had argued that when unions can count on their wage rates to be imposed on non-union workers, "… an important restraint on wage demands, namely the need to avoid pricing their members out of work, is removed. Moreover, incumbent firms may be more willing to yield to high wage demands if they are sheltered from competition from firms engaging lower-wage workers". It also stressed the indirect effect of extension arrangements on bargaining coverage and bargaining centralisation, since the very existence of such provisions is likely to encourage membership in employer associations and thus, by definition, employee coverage (OECD, 1994b, p. 16).

39. This is partly, but not entirely, due to the fact that Kenworthy's comparisons of and correlations between indices mix individual authors' centralisation and co-ordination scores.

40. This is no longer true today of Sweden, where sectoral bargaining is now predominant, and Australia, which has moved towards enterprise bargaining, with only a "safety-net" guaranteed at national level.

41. For example, Schnabel (2003), based on an establishment survey, estimates that in 2000 effective wages in German companies bound by collective agreements were 11% above contractual wages. See also the discussion of wage drift in France, Germany, Italy and Spain in Yakubovich (2002).

42. The most elaborate classification of bargaining centralisation so far is based on 12 levels (Traxler *et al*., 2001). Previous OECD analyses (1994c, 1997a) had proceeded from the usual three-level classification, but had already tried to take into account multi-level bargaining by adding fractional values.

43. In France, a recent change in legislation allowed more "opt-outs" on non-wage issues, while keeping the "favourability" principle whereby lower level agreements cannot undercut sectoral wage rates.

44. Soskice (1990) made the point in his critique of Calmfors and Driffill that countries like Japan and Switzerland are less centralised, but at the same time highly co-ordinated.

45. As was mentioned in Section 1 above, there is no consensus among researchers about which aspects of bargaining centralisation and co-ordination most influence macroeconomic performance. All of the analysis presented in this section that uses the composite CC indicator was also conducted using instead the centralisation and co-ordination indicators, both individually and jointly. These alternate results are very similar to those presented here, particularly, those based on the co-ordination indicator. The governability indicator introduced in Box 3.3 was also analysed in a manner analogous to that used here for density, coverage and CC. No economically meaningful associations emerged between this indicator and any of the performance indicators (perhaps, due to the absence of any historic variation in this index) and these results are not presented.

46. The regression results reported in Table 3.11 are the only exception. A comprehensive analysis of the combined impact of policy and institutional variables on labour market performance is currently being prepared as part of a multi-year re-assessment of the OECD Jobs Strategy.

47. This finding is not an artefact of how the sample of countries is being partitioned into the low, intermediate and high groupings, although any such grouping is inherently somewhat arbitrary.

48. This is one of many instances in which certain national institutional configurations show above-average performance in one period, but below-average performance in another. These reversals of ranking have motivated the widespread adoption of the "shocks and institutions" framework by internationally comparative analyses of the institutional determinants of aggregate performance (Belot and van Ours, 2000; Blanchard and Wolfers, 2000).

49. In order to isolate, as much as is possible, the effect of age, wages for youths and older workers are calculated for men aged 15-24 and 55-64, respectively, relative to those for prime-aged men (25-54). For analogous reasons, the relative wage for women is calculated for prime-aged workers. The same approach is taken to calculating relative employment rates by age and gender in the next sub-section.

50. That greater union influence in wage setting should have been associated first with greater wage pressure and later with wage restraint is qualitatively consistent with a number of accounts of labour market developments since 1970. For example, it is argued that unions initially resisted pressures to moderate real wage growth in response to the slowing of productivity growth, and/or increased competition in capital markets, but eventually moderated their wage demands as they came to understand the cost in lost employment of maintaining an aggressive bargaining position on wages (Blanchard and Philippon, 2003). However, the timing implied by the coefficients in Table 3.7 does not concord well with these accounts, since union density is negatively correlated with upward wage pressures during 1975-79 and 1980-84, precisely when real wage resistance is often supposed to have been most pronounced.

51. The correlation coefficient between union density and earnings dispersion is not statistically significant for the period 1995-2000, but this appears to be a consequence of the fact that up-to-date data on earnings dispersion are not available for a third of the sample. (The correlation coefficient for 1999-94 is based on 27 countries, that for 1995-2000 on 18.)

52. Since these regressions do not include controls for other factors affecting the wage structure (*e.g.* trends in aggregate labour supply or the relative supply of different skill groups), omitted variable bias may be a serious problem. Consequently, the estimated coefficients may not provide reliable estimates of the causal impact of collective bargaining on wage outcomes. Multicollinearity is also moderately high between the three indicators of the organisation of collective bargaining (correlation coefficients ranging from 0.49 to 0.68), making it more difficult to isolate the distinct association of each characteristic of wage bargaining with the outcome variables.

53. Results are similar for regression models in which the CC indicator is replaced by dummy variables for intermediate and high CC. In particular, they provide no support for Calmfors and Driffill's hypothesis that intermediate bargaining leads to the worst outcomes (results not shown).

54. More precisely, the wage changes mentioned are relative to the average trend in all countries, rather than to no change.

55. The Model 1 results also indicate a curious pattern in which higher coverage has adverse impacts on overall unemployment and the employment-population ratio, but the opposite is true for union density. Multicollinearity between union density and bargaining coverage may account for this rather curious result.

56. These more structural estimates use the same independent variables and model specification as was introduced for the analysis of the employment effects of EPL in Chapter 2 (see Table 2.4 and the accompanying text). The motivation for confining the more structural modelling to investigating the impact of collective bargaining on relative employment rates for selected workforce groups is

threefold: i) the specification developed in Chapter 2 is especially well suited for such an application; ii) there is quite a strong theoretical presumption that adverse employment impacts will be concentrated on low wage workers; and iii) relative employment effects may be easier to isolate than absolute effects because many cross-country differences in the determinants of employment are effectively controlled for in the construction of the dependent variable (see Bertola *et al*., 2002b, on the last two points).

57. These are random effects models and in the case of youths and the low skilled the Hausman specification test indicates that misspecification bias may be a problem. However, fixed-effects estimates are very similar.

58. The estimated coefficients of many of the additional model regressors (*i.e.* control variables) are statistically significant and imply substantial effects on the relative employment of these workforce groups. In particular, the coefficients for the tax wedge on labour earnings and the level of the minimum wage relative to the median wage – both of which can be considered as components of the wage-setting institutions broadly conceived – indicate significant and negative effects on the relative employment of youths and low-skilled workers.

ANNEX 3.A1

Sources of Data on Trade Union Density and Collective Bargaining Coverage

General

Trade union density rates (TUD) are based on surveys, wherever possible. Where such data were not available, union membership in European Union countries, Norway and Switzerland was calculated using administrative data adjusted for non-active and self-employed members by Prof. Jelle Visser, University of Amsterdam, along the model used in Ebbinghaus and Visser (2000) and divided by the corresponding total number of wage and salary earners taken from OECD *Labour Force Statistics*.

Collective bargaining coverage rates (CBC) were taken or estimated from several sources: where possible from labour force surveys, but also from EIRO (2002), European Commission (2003b) and direct submissions by OECD governments. Wherever possible, coverage rates were adjusted for employees (particularly in the public sector) who do not have the right to bargain.

For more detailed information on the sources of coverage rates in the 1980s and 1990s, see the 1994 and 1997 editions of the *OECD Employment Outlook*.

Australia

TUD: Data from 1976 onwards are based on labour force statistics in ABS, *Employee Earnings, Benefits and Trade Union Membership* and ABS, *Trade Union Members, Australia* (ABS Cat. No. 6310.0 and 6325.0, respectively). The figure for 1970 is from administrative data reported in ABS, *Trade Union Statistics* (ABS Cat. No. 6323.0).

CBC: ABS, *Employee Earnings and Hours, Australia* (ABS Cat. No. 6306.0), March 2001, and previous submissions by the Australian government.

Austria

TUD: Adjusted administrative data series.

CBC: EIRO (2002) and previous submissions by the Austrian government.

Belgium

TUD: Adjusted administrative data series.

CBC: EIRO (2002) and previous submissions by the Belgian government.

Canada

TUD: Data were supplied by Statistics Canada, on the basis of the *Labour Force Survey* (from 1984 onwards) and previous administrative series.

CBC: Data supplied by Statistics Canada.

Czech Republic

TUD: Estimated administrative data based on *Representativity Survey of Unions and Employers Associations* conducted by the Institut des Sciences du Travail of the Catholic University of Louvain on behalf of the European Commission; and ILO (1997).

CBC: European Commission (2003b).

Denmark

TUD: Adjusted administrative data series.

CBC: EIRO (2002). (On this basis, previous estimates contained in the 1997 *Employment Outlook* were revised upwards.)

Finland

TUD: Adjusted administrative data series.

CBC: submissions by the Finnish authorities.

France

TUD: Adjusted administrative data series.

CBC: EIRO (2002) and previous estimates based on data supplied by the French authorities.

Germany

TUD: Adjusted administrative data series.

CBC: Annual establishment survey by the research institute of the German public employment service (IAB). (On this basis, previous estimates contained in the 1997 *Employment Outlook* were revised downwards.)

Greece

TUD: Adjusted and estimated administrative data series.

Hungary

TUD: Estimated administrative data based on *Representativity Survey of Unions and Employers Associations* conducted by the Institut des Sciences du Travail of the Catholic University of Louvain on behalf of the European Commission; and ILO (1997).

CBC: EIRO (2002).

Iceland

TUD: Labour Force Survey (from 1993 onwards) and adjusted administrative data series based on *Statistical Yearbook*.

Ireland

TUD: Adjusted administrative data series.

Italy

TUD: Adjusted administrative data series.

CBC: EIRO (2002). See also the 1997 *Employment Outlook*.

Japan

TUD: Data series from *Japanese Yearbook of Labour Statistics*.

CBC: Estimates based on the assumption that about 30% of trade union members are not covered by bargaining units and that about 10% of workers in bargaining units are not union members.

Korea

TUD: Data series from *Korean Yearbook of Labour Statistics*.

CBC: Estimates based on the assumption that about 20% of workers in bargaining units are not union members (see OECD, 2000a).

Luxembourg

TUD: Adjusted administrative data series, based on various trade union sources.

CBC: EIRO (2002).

Mexico

TUD: Adjusted administrative data series

Netherlands

TUD: Labour force survey (from 1992 onwards) and adjusted administrative data series.

CBC: EIRO (2002) and previous publications and submissions by the Dutch government.

New Zealand

TUD: Data from Robyn *et al.* (2002).

CBC: Data from Harbridge *et al.* (2003) and previous information supplied directly by R. Harbridge.

Norway

TUD: Adjusted administrative data series.

CBC: EIRO (2002) and previous information published by T.S. Olsen (see the 1997 *Employment Outlook*).

Poland

TUD: Estimated administrative data based on *Representativity Survey of Unions and Employers Associations* conducted by the Institut des Sciences du Travail of the Catholic University of Louvain on behalf of the European Commission; and ILO (1997).

CBC: European Commission (2003b).

Portugal

TUD: Adjusted administrative data series.

CBC: EIRO (2002) and previous estimates supplied by the Portuguese authorities.

Slovak Republic

TUD: Estimated administrative data based on *Representativity Survey of Unions and Employers Associations* conducted by the Institut des Sciences du Travail of the Catholic University of Louvain on behalf of the European Commission and ILO (1997).

CBC: EIRO (2002).

Spain

TUD: Adjusted administrative data series.

CBC: EIRO (2002) and previous estimates supplied by the Spanish authorities.

Sweden

TUD: Labour Force Survey (from 1987 onwards) and adjusted administrative data series.

CBC: EIRO (2002) and previous data compiled by Christian Nilsson of Uppsala University.

Switzerland

TUD: Adjusted administrative data series.

CBC: Office Fédéral de la Statistique, OFS (2002) and previous publications in *La Vie Économique*.

Turkey

TUD: Administrative data from the *Turkish Statistical Yearbook*.

United Kingdom

TUD: Labour Force Survey (from 1995 onwards) and adjusted administrative data series.

CBC: EIRO (2002) and previous data based on New Earnings Survey and Workplace Industrial Relations Survey.

United States

TUD: Data from 1973 onwards based on the Current Population Survey (CPS). 1970 figure from administrative data based on union returns.

CBC: Current Population Survey (CPS).

For recent data on both indicators, see *www.bls.gov/news.release/union2.t01.htm*.

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Bibliography

ABS (Australian Bureau of Statistics) (2002), *Employee Earnings and Hours*, Australia, Cat. No. 6306.0, May.

Acemoglu, D. (2002), "Cross-Country Inequality Trends", NBER Working Paper, No. 8832.

Acemoglu, D. and S. Pischke (1998), "The Structure of Wages and Investment in General Training", *Journal of Political Economy*, Vol. 107, pp. 539-572.

Addison, J.T. and C.R. Belfield (2003), "Union Voice", IZA Discussion Paper, No. 862.

Agell, J. (1999), "On the Benefits from Rigid Labour Markets: Norms, Market Failures, and Social Insurance", *Economic Journal*, February, pp. F143-F164.

Akerlof, G. and J. Yellen (eds.) (1986), *Efficiency Wage Models of the Labor Market*, Cambridge University Press, Cambridge, United Kingdom.

Aidt, T. and Z. Tzannatos (2002), *Unions and Collective Bargaining, Economic Effects in a Global Environment*, The World Bank, Washington DC, United States.

Baker, D., A. Glyn, D. Howell and J. Schmitt (2004), "Labor Market Institutions and Unemployment: A Critical Assessment of the Cross-Country Evidence", Chapter 3 in D. Howell (ed.), *Fighting Unemployment: The Limits of the Free Market Orthodoxy*, Oxford University Press, Oxford, forthcoming.

Bamber, G. and P. Sheldon, (2004), "Collective Bargaining: Towards Decentralization?", Chapter 20 in R. Blanpain and C. Engels (eds.), *Comparative Labour Law and Industrial Relations in Industrialised Market Economies*, Kluwer, The Hague, forthcoming.

Bassanini, A. and G. Brunello (2003), "Is Training More Frequent When Wage Compression is Higher? Evidence from the European Community Household Panel", IZA Discussion Paper, No. 839.

Belot, M. and J. van Ours (2000), "Does the Recent Success of Some OECD Countries in Lowering Their Unemployment Rates Lie in the Clever Design of their Labour Market Reforms", IZA Discussion Paper, No. 147, April.

Bertola, G. and P. Garibaldi (2003), "The Structure and History of Italian Unemployment", CESifo Working Paper, No. 907.

Bertola, G. and W. Koeniger (2004), "Consumptions Smoothing and the Structure of Labor and Credit Markets", mimeo, University of Turin, February. *www.personalweb.unito.it/Giuseppe.Bertola/conslcmkts.pdf*.

Bertola, G., F. Blau and L. Kahn (2002a), "Comparative Analysis of Labor Market Outcomes: Lessons for the US from International Long-run Evidence", in A. Krueger and R. Solow (eds.), *The Roaring Nineties: Can Full Employment Be Sustained?*, Russell Sage and Century Foundations, pp. 159-218.

Bertola, G., F. Blau and L. Kahn (2002b), "Labor Market Institutions and Demographic Employment Patterns", NBER Working Paper, No. 9043.

Bispinck, R. and T. Schulten (2003), "Decentralisation of German Collective Bargaining? Current Trends and Assessments from a Works and Staff Council Perspective", *WSI Mitteilungen*, Vol. 56, special issue, pp. 24-33.

Blanchard, O. (1997), "The Medium Run", *Brookings Papers on Economic Activity*, No. 2, pp. 89-158.

Blanchard, O. and T. Philippon (2003), "The Decline of Rents, and the Rise and Fall of European Unemployment", mimeo, MIT, Cambridge. *http://econ-www.mit.edu/faculty/download_pdf.php?id=798*.

Blanchard, O. and J. Wolfers (2000), "Shocks and Institutions and the Rise of European Unemployment: the Aggregate Evidence", *Economic Journal*, Vol. 110, No. 1, pp. 1-3.

Blanchflower, D. and A. Bryson (2002), "Changes over Time in Union Relative Wage Effects in the UK and the US Revisited", NBER Working Paper, No. 9395.

Blanchflower, D. and A. Oswald (1994), *The Wage Curve*, The MIT Press, Cambridge, Massachusetts.

Blank, R.M. (1997), "Is There a Trade-Off Between Unemployment and Inequality? No Easy Answers: Labour Market Problems in the United States Versus Europe", Public Policy Brief, No. 33, Levy Economics Institute.

Blanpain R. (ed.) (2004), *International Encyclopedia for Labour Law and Industrial Relations*, Vol. I-XIV, Kluwer Law International, The Hague.

Blau, F. and L. Kahn (1999), "Institutions and Laws in the Labor Market", in O. Ashenfelter and D. Card (eds.), *Handbook of Labor Economics*, Vol. 3, North-Holland, Amsterdam, pp. 1399-1461.

Blau, F. and L. Kahn (2002), *At Home and Abroad: US Labor-Market Performance in International Perspective*, Russell Sage, New York.

BMWA (2004), "Tarifvertragliche Arbeitsbedingungen im Jahr 2002", Bundesministerium für Wirtschaft und Arbeit. *www.bmwi.de*.

Bosch, G. (2003), "The Changing Nature of Collective Bargaining in Germany: Co-ordinated Decentralisation", in H. Katz (ed.), *The New Structure of Labor Relations: Tripartism and Decentralization*, Cornell University Press.

Caballero, R. and M. Hammour (1998a), "Jobless Growth: Appropriability, Factor Substitution and Unemployment", *Carnegie-Rochester Conference Series on Public Policy*, Vol. 48, pp. 51-94.

Caballero, R. and M. Hammour (1998b), "The Macroeconomics of Specificity", *Journal of Political Economy*, Vol. 106, No. 4, pp. 724-767.

Calmfors, L. (1993), "Centralisation of Wage Bargaining and Macroeconomic Performance: A Survey", OECD Economics Department Working Papers, No. 131, OECD, Paris.

Calmfors, L. and J. Driffill (1988), "Bargaining Structure, Corporatism and Macroeconomic Performance", *Economic Policy*, April, pp. 14-61.

Cameron, D.R. (1984), "Social Democracy, Corporatism, Labour Quiescence and the Representation of Economic Interest in Advanced Capitalist Society", in J.H. Goldthorpe (ed.), *Order and Conflict in Contemporary Capitalism*, Clarendon Press, Oxford.

Card, D., F. Kramarz and T. Lemieux (1999), "Changes in the Relative Structure of Wages and Employment: A Comparison of the United States, Canada and France", *Canadian Journal of Economics*, Vol. 32, pp. 843-877.

Carone, G., H. Immervoll, D. Paturot and A. Salomäki (2004), "Indicators of Unemployment and Low-Wage Traps (Marginal Effective Tax Rates on Employment Incomes)", OECD Social, Employment and Migration Working Papers, No. 18, OECD, Paris.

Checchi, D. and C. Lucifora (2002), "Unions and Labour Market Institutions in Europe", *Economic Policy*, October, pp. 363-408.

Davis, S.J. and M. Henrekson (2000), "Wage-Setting Institutions as Industrial Policy", NBER Working Paper, No. 7502.

Department of Trade and Industry (1998), *Fairness at Work*, Stationary Office, London.

Desplatz, R., S. Jamet, V. Passeron and F. Romans (2003), "La modération salariale en France depuis le début des années 1980", *Économie et Statistique*, No. 367, pp. 39-67.

Disney, R., A. Gosling and S. Machin (1995), "British Unions in Decline: An Examination of the 1980s' Fall in Trade Union Recognition", *Industrial and Labour Relations Review*, Vol. 48, No. 3, pp. 403-419.

Ebbinghaus, B. and J. Visser (2000), *The Societies of Europe, Trade Unions in Western Europe since 1945*, Macmillan, London.

Edin, P.A. and R. Topel (1997), "Wage Policy and Restructuring: The Swedish Labor Market Since 1960", in R.B. Freeman, R. Topel and B. Swedenborg (eds.), *The Welfare State in Transition: Reforming the Swedish Model*, University of Chicago Press, pp. 155-201.

EIRO (2002), "Collective Bargaining Coverage and Extension Procedures", *eironline* (European industrial relations observatory on-line), December. *www.eiro.eurofound.ie/2002/12/study/tn0212102s.html*.

EIRO (2003), "Few Employers Using Binding 'Inability to Pay' Procedures", *eironline* (European industrial relations observatory on-line), December. *www.eiro.eurofound.ie/2003/12/feature/ie0312204f.html*.

EIRR (European Industrial Relations Review) (2003), "Ireland: New National Agreement", No. 351, April, pp. 15-18.

Elmeskov, J., J.P. Martin and S. Scarpetta (1998), "Key Lessons for Labour Market Reforms: Evidence from OECD Countries' Experience", *Swedish Economic Policy Review*, Vol. 5, pp. 205-252.

Estevão, M. and N. Nargis (2002), "Wage Moderation in France", IMF Working Paper, WP/02/151, Washington.

European Commission (2002), *European Economy: The EU Economy – 2002 Review*, No. 6, Brussels.

European Commission (2003a), *European Economy: Broad Economic Policy Guidelines (for the 2003-05 period)*, No. 4, Brussels.

European Commission (2003b), *Employment in Europe 2003: Recent Trends and Prospects*, Brussels.

Fajertag, G. and P. Pochet (eds.) (2000), *Social Pacts in Europe: New Dynamics*, Second Edition, ETUI, Brussels.

Farber, H. (1986), "The Analysis of Union Behavior", in O. Ashenfelter and R. Layard (eds.), *Handbook of Labor Economics*, Vol. II., North-Holland, Amsterdam, pp. 1039-1089.

Flanagan, R.J. (1999), "Macroeconomic Performance and Collective Bargaining: An International Perspective", *Journal of Economic Literature*, Vol. 37, September, pp. 1150-1175.

Freeman, R. and R. Schettkat (2000), "Skill Compression, Wage Differentials and Employment: Germany vs. the US", NBER Working Paper, No. 8140.

Glyn, A. (2004), "Labour Market Success and Labour Market Reform: Lessons from Ireland and New Zealand", in David R. Howell (ed.), *Fighting Unemployment: The Limits of Free Market Orthodoxy*, Oxford University Press, Oxford, forthcoming.

Golden, M., P. Lange and M. Wallerstein (2002), "Union Centralization among Advanced Industrial Societies: An Empirical Study", mimeo. Dataset available at *www.shelley.polisci.ucla.edu/data*. Version dated September 19, 2002.

Grubb, D., R. Jackman and R. Layard, (1982), "Causes of the Current Stagflation", *Review of Economic Studies*, Vol. 49, No. 5, pp. 707-730.

Harbridge, R. and J. Moulder (1993), "Collective Bargaining and the Employment Contracts Act 1991: One Year on", *The Journal of Industrial Relations*, Vol. 35, No. 1, pp. 62-83.

Harbridge, R., R. May and G. Thickett (2003), "The Current State of Play: collective bargaining and union membership under the Employment Relations Act 2000", *New Zealand Journal of Industrial Relations*, Vol. 28, pp. 140-149.

Hartog, T., E. Leuven and C. Teulings (2000), "Wages and the Bargaining Regime in a Corporatist Setting", Tinbergen Institute Discussion Paper, TI 2000-13/3.

Honohan, P. and B. Walsh (2002), "Catching up with the Leaders: The Irish Hare", Brookings Papers on Economic Activity, No. 1, pp. 1-77.

Holmlund, B. and J. Zetterberg (1991), "Insider Effects in Wage Determinations: evidence from five countries", *European Economic Review*, Vol. 35, pp. 1009-1035.

Howell, D. (ed.) (2004), *Fighting Unemployment: The Limits of Free Market Orthodoxy*, Oxford University Press, Oxford, forthcoming.

ILO (1997), *World Labour Report 1997/98*, International Labour Office, Geneva.

Iversen, T. (1998), "Wage Bargaining, Central Bank Independence and the Real Effects of Money", *International Organization*, Vol. 52, Summer, pp. 469-504.

Iversen, T. (1999), *Contested Economic Institutions, The Politics of Macroeconomics and Wage Bargaining in Advanced Democracies*, Cambridge University Press, Cambridge, United Kingdom.

Kahn, L. (1998), "Against the Wind: Bargaining Recentralisation and Wage Inequality in Norway, 1987-91", *The Economic Journal*, Vol. 108, No. 448, May, pp. 603-645.

Kahn, L. (2000), "Wage Inequality, Collective Bargaining and Relative Employment 1985-94: Evidence from 15 OECD Countries", *The Review of Economics and Statistics*, Vol. 82, No. 4, November, pp. 564-579.

Katz, L. and D. Autor (1999), "Changes in the Wage Structure and Earnings Inequality", in O. Ashenfelter and D. Card (eds.), *The Handbook of Labor Economics*, Vol. IIIa, Chapter 26, North-Holland Press, Amsterdam.

Kenworthy, L. (2001a), "Wage-setting Co-ordination Scores", dataset available at *www.emory.edu/SOC/lkenworthy*. Version dated June 17.

Kenworthy, L. (2001b), "Wage-Setting Measures, a Survey and Assessment", *World Politics*, Vol. 54, October, pp. 57-98.

Kenworthy, L. (2003), "Quantitative Indicators of Corporatism", mimeo, Emory University, Department of Sociology, January.

Kohaut, S. and C. Schnabel (2003), "Zur Erosion des Flächentarifvertrags: Ausmass, Einflussfaktoren und Gegenmassnahmen", *Industrielle Beziehungen*, Vol. 10, pp. 193-219.

Krueger, A.B. and J.S. Pischke (1997), "Observations and Conjectures on the US Employment Miracle", NBER Working Paper, No. 6146.

Krugman, P. (1994), "Past and Prospective Causes of High Unemployment", *Economic Review*, Federal Reserve Bank of Kansas City, pp. 23-43.

Layard, R., S. Nickell and R. Jackman (1991), *Unemployment: Macroeconomic performance and the labour market*, Oxford University Press, Oxford.

Manning, A. (2003), *Monopsony in Motion: Imperfect Competition in Labour Markets*, Princeton University Press, Princeton, N.J.

Manning, A. (2004), "Monopsony and the Efficiency of Labour Market Interventions", *Labour Economics*, Vol. 11, pp. 145-163.

Ministère des Affaires Sociales, du Travail et de la Solidarité (2002), *La négociation collective en 2001*, Vol. 1 and 2, Éditions législatives, Paris.

Nickell, S. and B. Bell, (1995), "The Collapse in Demand for the Unskilled and Unemployment across the OECD", *Oxford Review of Economic Policy*, Vol. 11, No. 1, Spring, pp. 40-62.

Nickell, S. and R. Layard (1999), "Labor Market Institutions and Economic Performance", in O. Ashenfelter and D. Card (eds.), *Handbook of Labor Economics*, Vol. 3, North-Holland, Amsterdam, pp. 3029-3084.

Nickell, S. and J. van Ours (2000), "The Netherlands and the United Kingdom: a European Unemployment Miracle?", *Economic Policy*, April, pp. 137-180.

Nickell, S., L. Nunziata, W. Ochel and G. Quintini (2003), "The Beveridge Curve, Unemployment and Wages in the OECD from the 1960s to the 1990s", in P. Aghion, R. Frydman, J. Stiglitz and M. Woodford (eds.), *Knowledge, Information and Expectations in Modern Macroeconomics: In Honor of Edmund S. Phelps*, Princeton University Press, Princeton.

Ochel, W. (2000a), "Collective Bargaining Coverage in the OECD from the 1960s to the 1990s", *CESifo Forum*.

Ochel, W. (2000b), "Collective Bargaining (Centralisation/Co-ordination)", Ifo Institute, mimeo.

OECD (1994a), *The OECD Jobs Study: Facts, Analysis, Strategy*, Paris.

OECD (1994b), *The OECD Jobs Study: Evidence and Explanations, Part II – The Adjustment Potential of the Labour Market*, Paris.

OECD (1994c), *Employment Outlook*, Paris.

OECD (1996), *Employment Outlook*, Paris.

OECD (1997a), *Employment Outlook*, Paris.

OECD (1997b), *Implementing the OECD Jobs Strategy: Member Countries' Experience*, Paris.

OECD (1997c), *OECD Economic Surveys: Mexico*, Paris.

OECD (1998), *Employment Outlook*, Paris.

OECD (1999), *Implementing the OECD Jobs Strategy: Assessing Performance and Policy*, Paris.

OECD (2000a), *Pushing Ahead with Reform in Korea: Labour Market and Social Safety-Net Policies*, Paris.

OECD (2000b), *OECD Economic Surveys: New Zealand*, Paris.

OECD (2001a), *Employment Outlook*, Paris.

OECD (2001b), *Innovations in Labour Market Policies – The Australian Way*, Paris.

OECD (2002), *Employment Outlook*, Paris.

OECD (2003a), *Employment Outlook*, Paris.

OECD (2003b), *OECD Economic Surveys: Spain*, Paris.

OECD (2003c), *OECD Economic Surveys: Germany*, Vol. 2002, Supplement No. 4, Paris.

OECD (2004a), "Recent Wage Developments in OECD Countries: Six Tables", Background Material for Chapter 3 of OECD *Employment Outlook 2004*, Paris (*www.oecd.org/els/employmentoutlook*).

OECD (2004b), *Economic Outlook Database Inventory* (EO75 June 2004 Version), Paris (*www.oecd.org/dataoecd/47/9/2742733.pdf*).

OFS (Office fédéral de la statistique) (2002), *Les Conventions collectives de travail (CCT) en Suisse*, Statistique suisse. *www.statistik.admin.ch/stat*.

Puhani, P.A. (2003), "A Test of the 'Krugman Hypothesis' for the United States, Britain, and Western Germany", IZA Discussion Paper, No. 764.

Robyn, M., P. Walsh, R. Harbridge and G. Thickett (2002), "Unions and Union Membership in New Zealand: Annual Review for 2002", working paper, Industrial Relations Centre, Victoria University, Wellington.

Saint-Paul, G. (2004), "Why are European Countries Diverging in their Unemployment Experience?", *Journal of Economic Perspectives*, forthcoming.

Schnabel, C. (2003), *Tarifpolitik unter Reformdruck*, Bertelsmann Stiftung, Gütersloh.

De Serres A., S. Scarpetta and C. de la Maisonneuve (2002), "Sectoral Shifts in Europe and the United States: How They Affect Aggregate Labour Shares and the Properties of Wage Equations", OECD Economics Department Working Paper, No. 326, OECD, Paris.

Soskice, D., (1990), "Wage Determination: the Changing Role of Institutions in Advanced Industrialized Countries", *Oxford Review of Economic Policy*, Vol. 6, No. 4.

Tarantelli, E. (1986), "The Regulation of Inflation and Unemployment", *Industrial Relations*, Vol. 25, pp. 1-15.

Teulings, C. (1998), "Wage Dispersion and Institutions: an Alternative Explanation", in S.W. Polachek and J. Robst (eds.), *Research in Labor Economics*, Vol. 17, JAI Press, pp. 357-382.

Teulings, C. and J. Hartog (1998), *Corporatism or Competition? Labour Contracts, Institutions and Wage Structures in International Comparison*, Cambridge University Press, Cambridge.

Traxler, F. (2003), "The Contingency Thesis of Collective Bargaining Institutions", *CESifo DICE Report* 2/2003.

Traxler, F, S. Blaschke and B. Kittel (2001), *National Labour Relations in Internationalized Markets, A Comparative Study of Institutions, Change, and Performance*, Oxford University Press, Oxford.

Van Het Kaar (2002), "NL Study for EIRO Comparative Study on Collective Bargaining Coverage and Extension Procedures", *eironline* (European industrial relations observatory on-line), November.

Visser, J. (2003), "Union and Unionism around the World", in J. Addison and C. Schnabel (eds.), *International Handbook of Trade Unions*, Edward Elgar, Cheltenham, United Kingdom and Northhampton Mass.

Visser, J. and A. Hemerijck (1997), *A Dutch Miracle: Job Growth, Welfare Reform and Corporatism in the Netherlands*, Amsterdam University Press, Amsterdam.

Wallerstein, M. and B. Western (2000), "Unions in Decline: What has Changed and Why", *Annual Review of Political Science*, Vol. 3, pp. 355-377.

Wood, S. and S. Moore (2003), "Reviewing the Statutory Union Recognition (ERA 1999)", Centre for Economic Performance, London, September.

Wooden, M. (2000), *The Transformation of Australian Industrial Relations*, Federation Press, Sydney.

Yakubovich, C. (ed.) (2002), *Négociation collective des salariés et passage à la monnaie unique. Une comparaison Allemagne, Espagne, France, Italie*, La Documentation Française, Paris.

ISBN 92-64-10812-2
OECD Employment Outlook
© OECD 2004

Chapter 4

Improving Skills for More and Better Jobs: Does Training Make a Difference?

It is often claimed that upgrading workers' skills could help meet the challenges of technological and structural change, as well as population ageing. Policies to enhance skills could thus be an important part of the OECD Jobs Strategy. Still, little is known about the labour market impact of adult learning. Do policies that enhance workers' skills help improve the overall employment situation? To what extent do workers who receive training enjoy better job prospects to the detriment of their non-trained counterparts? Are the effects of training different across demographic groups and what do empirical findings suggest as regards lifelong learning strategies?

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Introduction

The eighth policy guideline of *The OECD Jobs Strategy* focused on improving "labour force skills and competences through wide-ranging changes in education and training systems" (OECD, 1994a, p. 43). Three out of nine detailed policy recommendations concerning skills and competences dealt with options to overcome market failures and inequalities in order to "improve the incentives for enterprises and workers to invest in continued learning" (*op. cit.*, p. 48). Subsequent country-specific recommendations, however, have focused essentially on initial education rather than adult training – possibly reflecting a lack of consensus on the appropriate policies needed to upgrade workers' skills (OECD, 1997a).

Recently, some progress has been made in understanding which policies are more likely to be effective in increasing adult learning and for whom (see, for example, OECD, 2003a). However, there is relatively little empirical evidence on returns to training that can support the Jobs Strategy's emphasis on adult learning. The evidence on the impact on labour market performance of government-funded training programmes for the unemployed is mixed (see, for example, Martin and Grubb, 2001). Available evidence on employee training focuses on the *average* effect on wages and productivity[1] – thus leaving aside the issue of how training affects workers' employment prospects in general, as well as for specific groups. Few studies look at the relationship between employee training and employment security, and their results are somewhat inconclusive.[2] Furthermore, the fact that the number of hours of training received by each participant is much smaller than those received by full-time students enrolled in initial education might cast doubts on how much a marginal improvement in training provision can affect labour market performance. Finally, available studies ignore the risk that the gains enjoyed by individuals upgrading their skills might be offset by the losses experienced by those who do not participate in training – *i.e.* there might be significant so-called "displacement effects".

This chapter is an attempt to bridge this gap, by building on both cross-country comparative aggregate data on training and longitudinal surveys that were not available in the mid-1990s when the OECD Jobs Strategy was launched. It aims at evaluating as rigorously as possible aggregate and individual effects of adult education and training on labour market performance. After reviewing the mechanisms through which education and training might have an impact on aggregate employment, and discussing to what extent these mechanisms apply to adult learning, the chapter presents some empirical evidence on the relationship between adult training and aggregate labour market performance. The bulk of the chapter explores at the microeconomic level, the economic mechanisms suggested by the aggregate analysis, controlling as much as possible for selection bias and heterogeneity and examining their importance for specific groups. The final section exploits the policy analysis developed in the 2003 edition of the *Employment Outlook* to make a first attempt to assess how the policy recommendations underlying this plank of the Jobs Strategy match the findings of the paper.

Main findings

- *The importance of education and training for labour market performance is likely to have increased*. Education and training may enhance the potential benefits that individuals can reap from participating in the labour market. It can also raise productivity prospects for individual workers (as well as the wedge between productivity and wages), thereby stimulating labour demand. Global demand shifts associated with skill-biased technological and organisational change, as well as international competition, may have raised the risk of skill obsolescence while also adding upward pressure on the demand for skilled labour. More generally, the growth-enhancing role of human capital suggests a positive impact of education and training on aggregate employment.
- *Empirical analysis of the links between training and aggregate employment lends some support to these theoretical predictions*. There is a strong cross-country correlation between employment performance, on the one hand, and both initial education and adult training, on the other. This finding is essentially due to the robust correlation between human capital investments and labour force participation, which may reflect the fact that such investments make work more attractive, because either expected wages are higher or employment prospects better than in the absence of training. On the other hand, no significant cross-country correlation is found between training and unemployment rates.
- *At the individual level, there is a strong association between training histories and employment outcomes*. On average, a 10% increase in the time spent by an adult individual on education or training is estimated to be associated with: *a)* an increase in the probability of being active of almost 0.4 percentage points; and *b)* a fall in the probability of being unemployed of almost 0.2 percentage points. Importantly, these results hold even after attempting to control for selection bias, suggesting the existence of a causal link between training and individual labour market performance.
- Employee training has a clear impact on wage growth only in the case of young or highly educated employees. Conversely, *training appears to have a stronger impact on both subjective and objective measures of employment security* in the case of both older and low-educated workers. The latter finding suggests that, for older and low-educated workers, training allows attaining and maintaining the competences required to bring productivity in line with market wages, thereby sustaining employment prospects of these groups.
- Although *there is a substantial correspondence between results at the aggregate and individual levels for employment and labour force participation*, this is not the case as regards the impact of training on unemployment. One reason for the latter could be that individuals who receive education or training might partially *displace* (or *crowd-out*) those who do not. However, although it is not possible to estimate these crowding-out effects at the economy-wide level, there is evidence that, within each specific labour market group, crowding-out effects, if any, are not large.
- The fact that there is no evidence of large intra-group displacement effects of training lends strong support to the idea that *appropriate policies can improve the labour market position of specific targeted groups*. Such policies can be an important component of a general strategy geared at reducing non-employment traps.

1. Adult education and training and aggregate employment performance

The trend decline in the relative demand of low-skilled labour

It is a stylised fact in all OECD economies that employment rates of low-educated people are much lower than those of the high-educated (*cf.* Statistical Annex, Table D). In addition, the employment gap between high- and low-educated groups seems to be on the rise in practically all OECD countries. Between 1991 and 2001, the total employment rate increased by about 0.1 percentage points on an annual basis in the OECD area; during the same period, the employment rate of those with less than upper secondary education declined by about 0.3 percentage points each year (OECD, 2003a).

What can explain the low employment rates of those with little qualifications?

There are a number of possible explanations of why the employment rates of those with less than upper secondary education are so low in relative terms (see OECD, 1994b; and Nickell and Bell, 1995, amongst others). First, while low-educated workers tend to perform only jobs with relatively low levels of task complexity, high-educated workers have more generic skills and can, in principle, perform different types of jobs; they may therefore compete for low-skilled positions with their low-educated counterparts, in periods of depressed labour demand (Thurow, 1972, being the classic reference on job competition).

Second, higher levels of educational attainment may be associated with better labour market information and more effective job-search techniques, thereby reducing the likelihood, or the duration, of unemployment (see *e.g.* OECD, 1989).

Third, potential earnings from market activities are greater in the case of high-educated individuals, which is tantamount to a greater incentive for them to participate in the labour market (as opposed to staying on income-replacement benefits and/or engaging in home production; see *e.g.* Gronau, 1986; and OECD, 2003a).

Fourth, because of various imperfections in the labour market, the gap between marginal productivity and the wage (interpreted to include all variables costs associated with the worker) might be greater in the case of high-educated workers than in the case of the low-educated (see Box 4.1); therefore, employers might find it convenient to organise the production process in such a way as to employ more high-educated workers or, for the same reason, to hoard the high-educated in downturns while laying-off the low-educated.[3]

Although these explanations for the relative performance of high-educated workers are not mutually exclusive, they have different implications for policy. Indeed, to the extent that the success of the high-educated is only due to the fact that they can compete successfully with low-educated workers for low-skilled jobs, only relative shifts in the position of one individual in the distribution of educational attainments will matter for his/her employment performance and a population-wide increase in average educational attainment will have no effect on aggregate employment rates. Nevertheless, the evidence for this crowding-out mechanism is limited.[4] Conversely, according to the other explanations of the relative success of high-educated labour (namely, the fact that education may increase job-search efficiency, make work more attractive *vis-à-vis* inactivity, and boost the productivity-wage gap), better skills can lead to higher employment, even though the possibility that a population-wide increase in education has no effect on aggregate employment cannot be theoretically ruled out.[5]

Box 4.1. **Beyond institution-driven wage compression: factors shaping the relationship between education and the productivity-wage gap**

Policies and institutions – such as minimum wages and wage floors set by collective agreements (see Chapter 3) – are usually cited as one reason why the wedge between productivity and the wage might be smaller (and, potentially, even negative) at the bottom end of the skill market (see *e.g.* Siebert, 1997; and Freeman and Schettkat, 2001). Although the importance of institutions in shaping the wage distribution is undeniable, other reasons outside the control of policy might also explain why the gap between marginal productivity and the wage might be greater in the case of the high-educated. First, it might be less costly for employers to invest in firm-specific knowledge in the case of high-educated workers (Waldman, 1984; Stevens, 1994). Although these workers may reap some of the benefits from these investments, specialised skills do not transfer easily to many other well-paid jobs, and therefore it is unlikely that these workers can appropriate all the gains (see *e.g.* Parsons, 1986). Second, even when the skills accumulated on the job are general, these skills might not be easily recognised by other employers, due to asymmetric information (Greenwald, 1986; Acemoglu and Pischke, 1998). As a result, the search for suitable alternative jobs might be costly for high-educated workers, thereby leaving their employer with some degree of market power. Indeed, Booth and Zoega (2004) show that most of the compensation schemes that are normally considered in personnel economics – including piece rates – constitute departures from the competitive framework that imply a positive relationship between the degree of employers' market power and individual productivity.

Possible links between education and aggregate employment

There are in fact several related channels through which education might have an impact on aggregate employment rates:

- *Education is known to have a strong impact on productivity.* According to the most plausible estimates, increasing average education by one extra year would raise aggregate productivity by at least 5%, with possibly a stronger effect in the long-run through its enabling impact on innovation (de la Fuente and Ciccone, 2003). In turn, the productivity gains can be shared by workers (through greater wages) and firms (through a greater productivity-wage gap), thereby raising both the incentive to participate in the labour market and labour demand (to the extent that wage and productivity gains are not concentrated in population segments with already high participation and employment rates).
- *Education might accommodate rising demand for skills.* Unskilled workers have been experiencing an adverse demand shift in the past thirty years, compressing their labour market earnings (and therefore their incentive to participate) and/or worsening their unemployment prospects, to the extent that the wage structure cannot fully adapt. The causes of this adverse demand shift have been debated for more than a decade, with no final resolution of the controversy. The most common explanation holds that technological change is biased towards skilled workers (see Chennells and Van Reenen, 2002, for a survey). An alternative explanation points to the fact that trade flows and foreign direct investment (FDI) result in the relocation of unskilled labour-intensive production activities into less developed countries, and in industrialised countries specialising in sectors which are more intensive in terms of skilled labour (see OECD, 1997b). Irrespective of its causes, the demand shift against the low-skilled is estimated

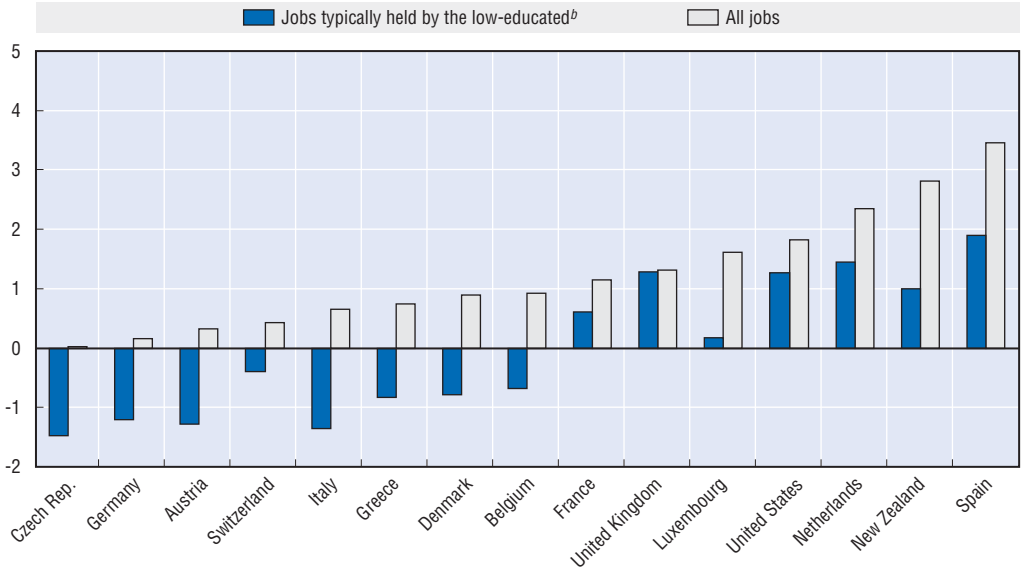
to be considerable. For instance, Nickell and Bell (1996), even in their most cautious estimates, attribute 10-30% of the increase between 1970 and 1990 in the unemployment rate of the G7 countries for which they report data to the skill-biased demand shift. The fact is that the nature of jobs is changing. Chart 4.1 shows that in half of the countries covered, the jobs typically held by the low-educated declined over the period 1993-2002; in the other countries employment growth in these jobs was positive but smaller than total employment growth. It seems, therefore, natural to conjecture that, by simply allowing the supply of human capital to accommodate demand shifts, education can have a positive impact on aggregate employment rates.

- *Education is crucial for competitiveness in high-tech sectors.* Job competition might also occur across national borders, thereby inducing a human capital race among countries. Recent studies (see *e.g.* Bartelsman *et al.*, 2004) point to the fact that, for OECD countries, the quality of human resources is crucial to maintain competitiveness in high-tech sectors and attract FDI. Indeed, Nicoletti *et al.* (2003) estimate that one additional year of average educational attainment in the population would increase total stock of inward FDI by 1.9%. In turn, inward FDI might result in strong employment growth, as the Irish experience suggests (Barry and Bradley, 1997; Walsh and Whelan, 2003).

In sum, whether human capital has an impact on aggregate employment remains an empirical issue. It is possible to shed some light on the aggregate education-employment relationship by extending the model of institutional and policy determinants of the

Chart 4.1. **The nature of jobs is changing**

Annual average growth in the number of jobs, 1993-2002[a]



a) Jobs typically held by the low-educated correspond to jobs with a high share of workers with less than upper secondary education. For each country, jobs (*i.e.* employment in industry/occupation cells) are ranked on the basis of the proportion of low-educated workers in 1993 and then placed into three groups of equal size in terms of employment shares. Aggregate employment growth and the employment growth of the group with the highest share of low-educated workers are reported in the chart.

b) 1994-2002 for Denmark; 1995-2002 for Austria, France and the United Kingdom; 1995-2001 for Germany; 1993-2001 for Luxembourg; 1996-2002 for the Netherlands; 1992-1998 for New Zealand, Switzerland and the United States and 1993-1998 for the Czech Republic; 1993-2002 for all other countries.

Source: Secretariat estimates based on the European Union Labour Force Survey for the EU countries; OECD database on services for the other countries.

employment rate used in Chapter 2 (see Table 4.A1.1 in Annex 4.A1).[6] The most reliable estimates suggest that, historically, the addition of one extra year of average education has been associated in OECD countries with an increase of 1.1-1.7 percentage points in both participation and employment rates, while no robust association is found between education and unemployment. However, any causal impact of education on aggregate employment and participation cannot be easily inferred from these estimates because of obvious endogeneity problems – due for instance to the fact that technical change has a simultaneous impact on returns to education (and therefore schooling; Bils and Klenow, 2000), on the one hand, and wages (and therefore labour force participation), on the other hand. Nevertheless, it is noteworthy that the association between education and both employment and participation remains significant even after controlling for GDP growth, institutions and a common (non-linear) trend.

Adult learning and aggregate employment

The OECD Jobs Study (OECD, 1994b) suggests at least four reasons why the mechanisms shaping the relationship between education and employment discussed above might also apply to skills acquired during adulthood. First, although learning begets learning, and the productivity of adult training is likely to increase with the quantity and quality of initial education, individuals who have entered their working life without qualifications might succeed in reducing this handicap through later investment in human capital (see Heckman, 2000; and Blundell, 2000, for an extensive discussion of this controversial issue).

Second, many empirical studies show that adult training has a positive impact on productivity at the firm level.[7] If displacement effects are small and productivity gains are not confined to workers with relatively good employment performance, these firm-level gains are likely to result in greater labour force participation and/or lower unemployment.

Third, the slow rate of labour force renewal through the entry of young qualified workers might not suffice to counteract the effects of skill-biased demand shifts and maintain a country's international competitiveness. Adult education and training can therefore be expected to have an impact on both containing international relocation of productive activities (see Box 4.2) and attracting inward FDI.

Fourth, due to human capital obsolescence, adult education and training might be required to maintain the employment prospects of workers far beyond school age. Studies of job inflows and separations show an unambiguously negative impact of technological change on the employment prospects of older workers. For instance, Bartel and Sicherman (1993) find that workers in US industries with a high average rate of technological change tend to retire later, but unexpected shocks to the rate of technological change force workers to anticipate their retirement. These findings suggest that, although workers self-select into industries according to their capacity to cope with the pace of technological change, technological innovations, when introduced, induce some skill obsolescence. Similarly, Givord and Maurin (2004) find that the risk of job loss for French high-seniority workers was higher in the 1990s in industries with above median computer- or Internet-intensity. Finally, Aubert *et al.* (2004) find that the adoption of new technologies has a negative impact on the employment of older workers at the firm level.

As in the case of initial education, the relevance of adult education and training for aggregate labour market performance remains an issue to be assessed empirically. The first thing that one can notice is that there is an extremely robust positive cross-country

Box 4.2. **Successfully coping with change: the survival strategy of the hosiery industry in North Carolina**

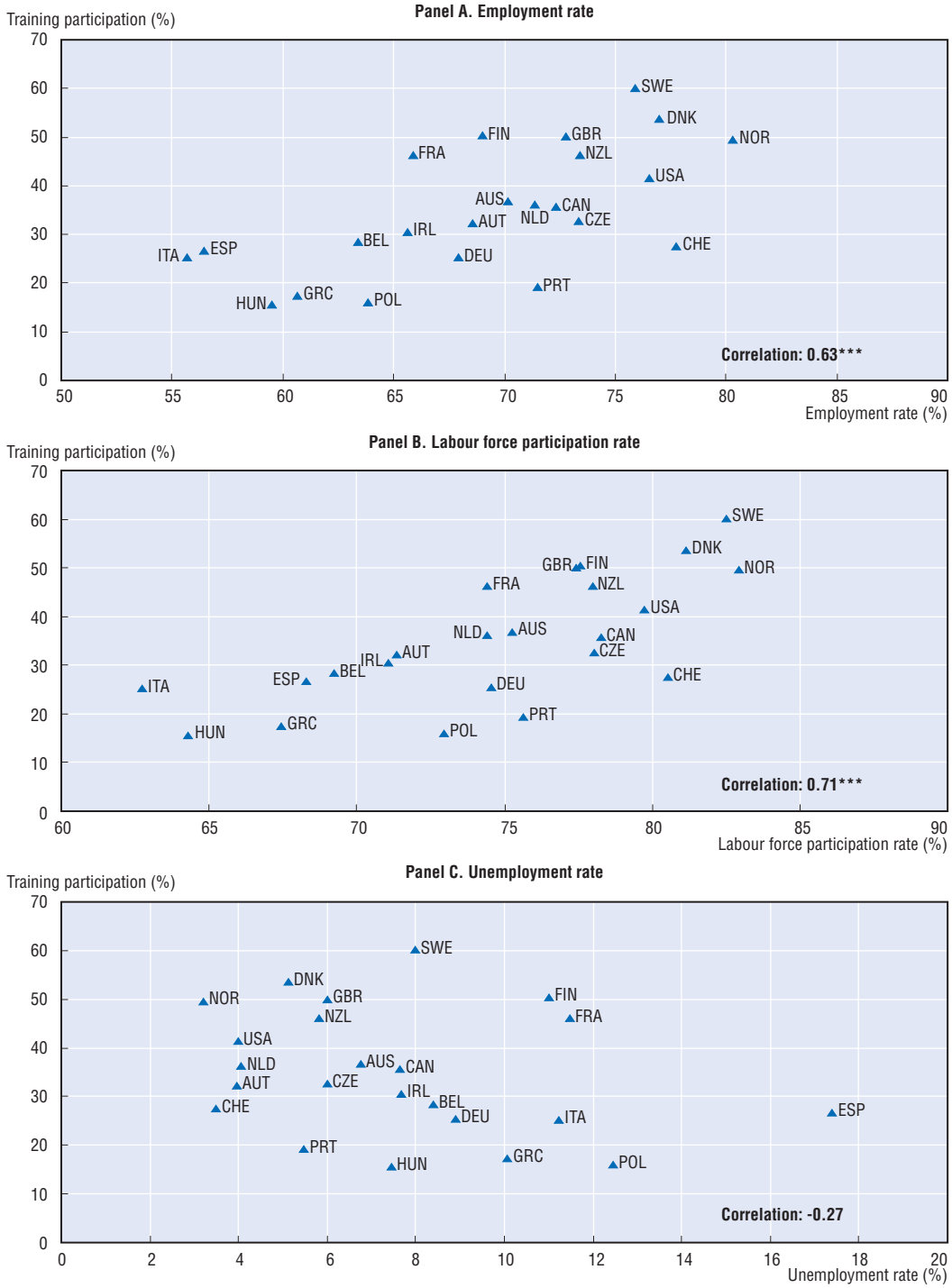
North Carolina has one of the greatest concentrations of hosiery manufacturing firms within the United States, mainly specialised in circular knitting for leg wear such as socks. Increasing competitive pressures from abroad have pushed the industry to modify its production process, namely by introducing computerised machinery and increasing the efficiency of tracking material throughout the production chain. Competitive pressures have also forced domestic producers to rethink their human resource management practices in order to increase worker retention and adapt to new technologies more quickly, by raising cognitive and problem-solving skills within a workforce which still has a low average level of educational attainment. Indeed, being a low-wage industry, despite the increase in skill requirements, the hosiery industry finds it difficult to attract more educated workers.

In 1990, in response to this situation, the Carolina Hosiery Association decided to initiate, develop, and support the Hosiery Technology Center (HTC) to transfer technological knowledge to new labour force entrants as well as experienced machine technicians and operators. There are several innovative features in this training program (Willis *et al*., 2003). First, the partnership among multiple stakeholders allowed pooling of resources and ideas, which consequently leads to efficient and quality training service delivery. Indeed, an ambitious co-operation programme was put in place between the HTC, the North Carolina community college system, individual firms within the industry, suppliers, the regional industry trade association, and the State government. Second, the HTC was strategically located within the North Carolina community college system to ensure proximity with clusters of hosiery manufacturers. The location choice is a fairly important component of this strategy since, due to the risk of disrupting the production process, training in this industry is best conducted outside the factory floor with the relevant equipment in place in HTC laboratories. It is therefore crucial to make it easy for workers in individual firms to have access to one of the community colleges linked to the HTC that can provide a flexible timing of classes (*e.g.* two or three hours at a time, two days a week for four weeks), which takes into account worker's schedules and allows for iteration between intensive training and on-the-job practice.

correlation between employee training and both employment and activity rates (Chart 4.2), while no significant correlation is found between training and unemployment rates (see Annex 4.A2 for data definition and sources, including the distinction between formal education and vocational training). Again, much care must be taken in interpreting these results since they may also reflect correlation between training and education (see *e.g.* OECD, 2003a), on the one hand, and education and labour market performance, on the other. However, even after controlling for the effects of education, GDP growth and institutions, there seems to be a significant relationship between employee training and aggregate employment – and this relationship appears to be essentially due to the correlation between adult training and labour force participation (see Table 4.A1.2 in Annex 4.A1).[8] Between 42% and 46% of the residual cross-country variance of labour force participation rates is statistically explained by the variance of training participation rates,[9] although the possible endogeneity bias – due for instance to the correlation of both training and labour force participation with the rate of technological change – must be taken into account while interpreting the figures.

Chart 4.2. **Training and employment rates are correlated**

Training participation[a] and aggregate labour market performance, second half of the 1990s



***, **, * statistically significant at 1% level, 5% level and 10% level, respectively.

a) Ratio of employees receiving training in one year to total employees.

Source: Secretariat estimates based on the International Adult Literacy Survey (IALS), the Second Continuing Vocational Training Survey (CVTS2) and data from Chapter 2 of this publication.

To sum up, this section shows a positive link between adult upgrading of skills and competences and aggregate labour force participation and employment. This evidence lends some empirical support to the hypothesis that investment in adult education and training, by increasing the income that individuals can expect from labour force participation, raises the relative value of market activities with respect to home production and, consequently, leads to higher employment rates.

2. Escaping non-employment traps: adult training and individual participation and unemployment

Individuals who participate in training have higher probability of being employed

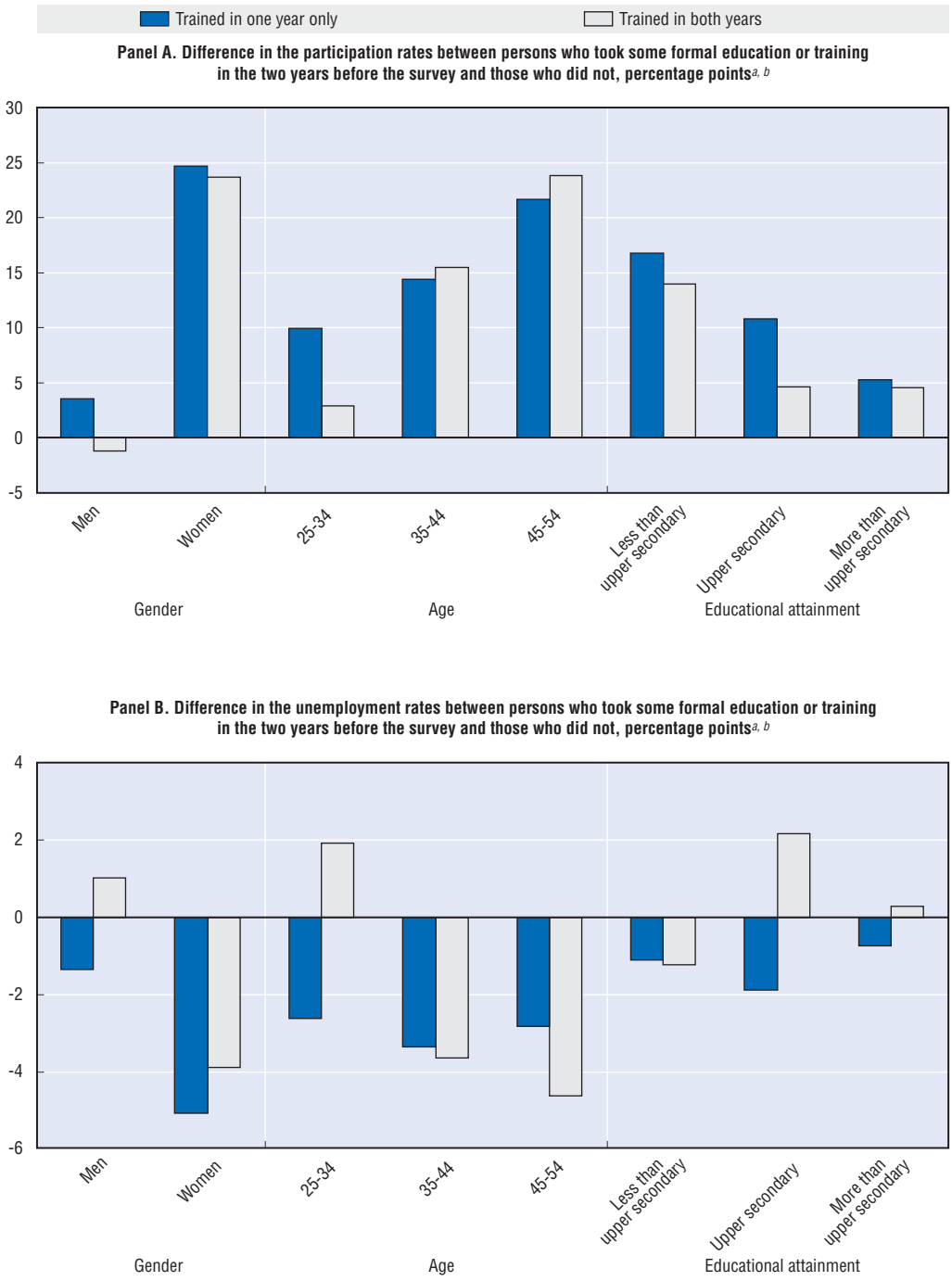
A first glance at individual data shows a pattern which is consistent with the aggregate analysis of the previous section. Chart 4.3 presents gaps in labour force participation and unemployment rates between individuals who received some training in the previous two years and those who did not (distinguishing between those who received training in both years from those who received it in one year only).[10] For all selected labour market groups, participation rates are greater for individuals who received some training in the last two years than for their counterparts who received no training in the same period.[11] Continuing education and training seems to matter particularly for women and older prime-age workers,[12] whose participation rate is more than 20 percentage points greater in the case of persons who received some training in the previous two years than in the case of those who did not. However, in contrast with the aggregate analysis of the previous section, individuals who received training in the previous two years seem to have on average lower unemployment rates than their counterparts who had no training in the same period.

Adult learning has a durable impact on individual employment prospects

Skills accumulate over the lifetime and participation in training in the previous two years is not very representative of the *stock* of accumulated competences. Nevertheless, these results are confirmed by multivariate analyses that, by fully exploiting the longitudinal structure of available data, can estimate the relationship between the whole *stock* of previous training and employment performance (see Box 4.3 as well as OECD, 2004, for a full exposition of the empirical models used in this chapter and the discussion of the procedures used for identification and elimination of selection bias). In all countries except the Netherlands, adult education and training are estimated to have a significant association with the probability of participating to the labour force (Chart 4.4). On average, a 10% increase in the volume of previous education or training courses taken by an individual is associated with an increase in the probability of being active comprised between 0.3 and 0.4 percentage points.[13] The association is stronger for women and younger workers and in countries such as Austria, Italy and Spain. The opposite relationship is found between training and unemployment (Chart 4.5). Although with a relatively important cross-country variation, a 10% increase in the volume of previous education and training is associated with an average fall in the probability of being unemployed comprised between 0.15 and 0.2 percentage points, with again a stronger effect for younger workers and women.

In sum, the micro-econometric evidence presented here is fairly consistent with the findings of the literature on evaluations of training programmes for the unemployed (where positive outcomes are found more often in the case of training schemes included in job-first strategies – that is, strategies geared at finding a suitable job first and improving competences on the job later; see *e.g.* Martin and Grubb, 2001; Layard, 2003; and Betcherman *et al.*, 2004) and

Chart 4.3. **Trained workers participate more in the labour market and have lower unemployment than their non-trained counterparts**



a) Data refer to individuals aged 25-54 years.
b) Weighted average of the following countries: Austria, Belgium, Denmark, Finland, France, Germany (German Socio-Economic Panel, SOEP), Greece, Ireland, Italy, the Netherlands, Portugal and Spain.

Source: Secretariat calculations based on the European Community Household Panel, waves 1 to 7 (1994-2000).

Box 4.3. **Estimating the impact of training on individual labour market performance**

The simple associations shown in Chart 4.3 do not allow one to establish a causal link between training and better employment prospects. Skills accumulate over the lifetime and participation in training in the previous two years is not very representative of the stock of accumulated competences. Furthermore, selection bias might alter the results: individuals endowed with more productive characteristics are likely to receive more training (because of greater expected returns from training), while being more likely to be employed even in the absence of training. A multivariate analysis exploiting the longitudinal structure of the data is necessary to solve this problem.

As a first step, a panel multivariate analysis of the impact of training on individual employability can be conducted by controlling for individual fixed effects and other observable characteristics. Individual fixed effects control for all time-invariant unobservable characteristics, including training received before the sample window. Abstracting from human capital obsolescence – which is however unlikely to induce major measurement problems given that time-series are relatively short – this approach makes it possible to estimate the effect of the *stock* of previous training on employment prospects, while simultaneously eliminating selection bias due to time-invariant factors.

Controlling for fixed effects is not enough to correct for time-variant sources of selection bias and establish a causal link. For instance, a number of people are not employed because of prolonged study periods. These people might continue to be outside the labour force for a certain number of years in order to enter (or re-enter) it at a later date outside the sample window. Similarly, in the case of the employed, participation in training might reflect job-match-specific events – including a faster pace of adoption of new technologies in more dynamic firms – that are correlated both with the probability of training and the probability of keeping a job (thereby remaining employed), without implying a causal link between them.

When employability is measured by individual wages or employment security (see Sections 3 and 4), it is possible, however, to go one step further and split previous training into two components: training taken while working for the current employer, on the one hand, and training taken while working for previous employers, on the other hand. While the identification of the impact of the former is problematic (*e.g.* because it can capture match-specific effects that are correlated with training), the impact of training taken with previous employers can be shown to be essentially unaffected by selection bias (see OECD, 2004, for a fuller discussion).

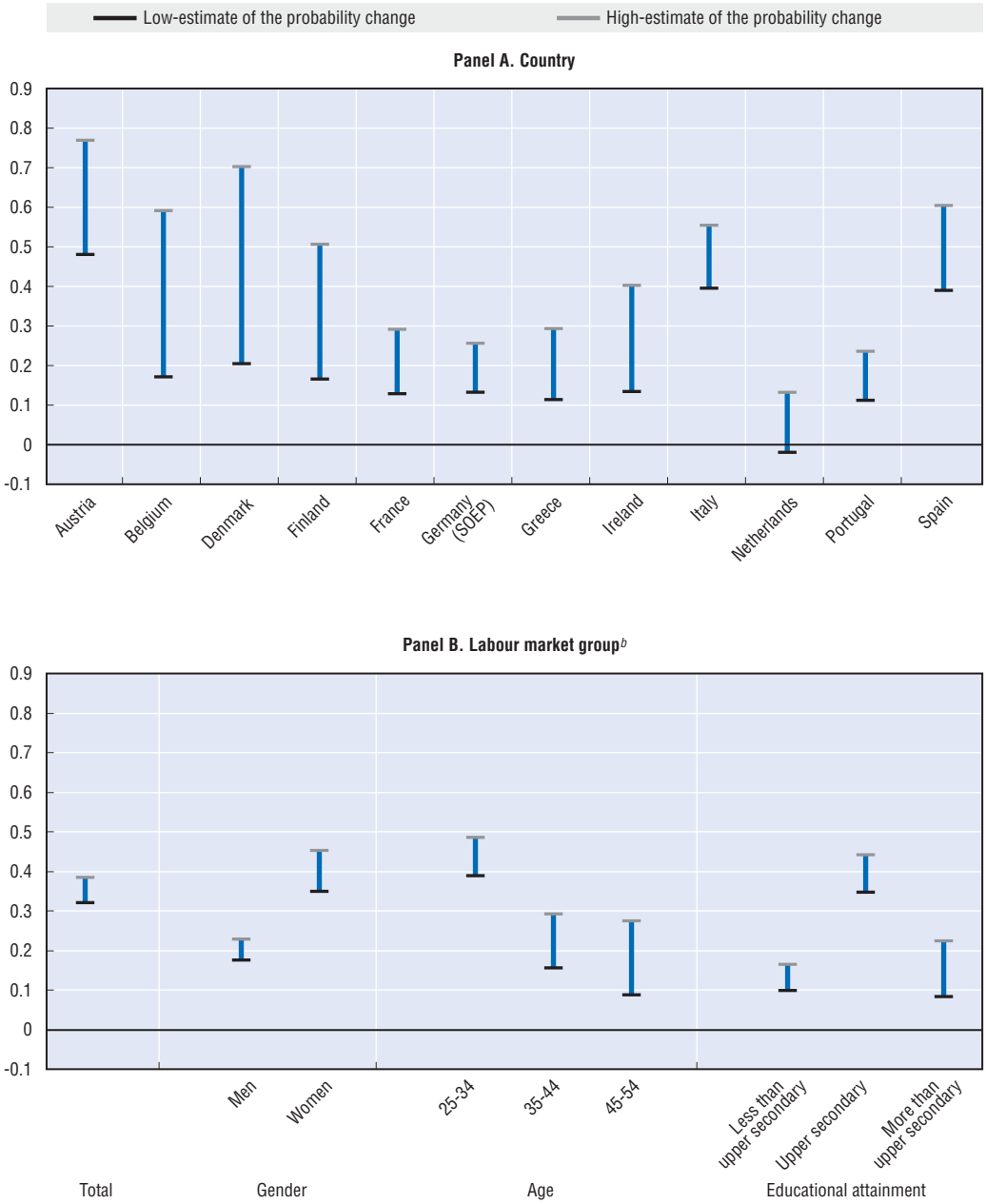
provides some support for the lifelong learning component of the Jobs Strategy. The incentive to participate in the labour market (as well as the probability of being employed) seems to be affected by the amount of education and training individuals receive throughout their working life. On the one hand, this implies that work seems to "pay" (and jobs seem to be easy to find) for individuals who continually received education and training. On the other hand, workers appear to reduce the risk of human capital obsolescence by resorting to continuing education and training.

Do workers who participate in training displace those who do not?

Can these results – based on the labour market performance of individual workers who participated in training *vis-à-vis* non-participants – be extended to the economy as a whole? This is not so simple: the micro-econometric estimates presented here do not take into

Chart 4.4. **Training increases the probability of being active**

Estimated change in the probability of participating in the labour market as a result of training, percentage points[a]



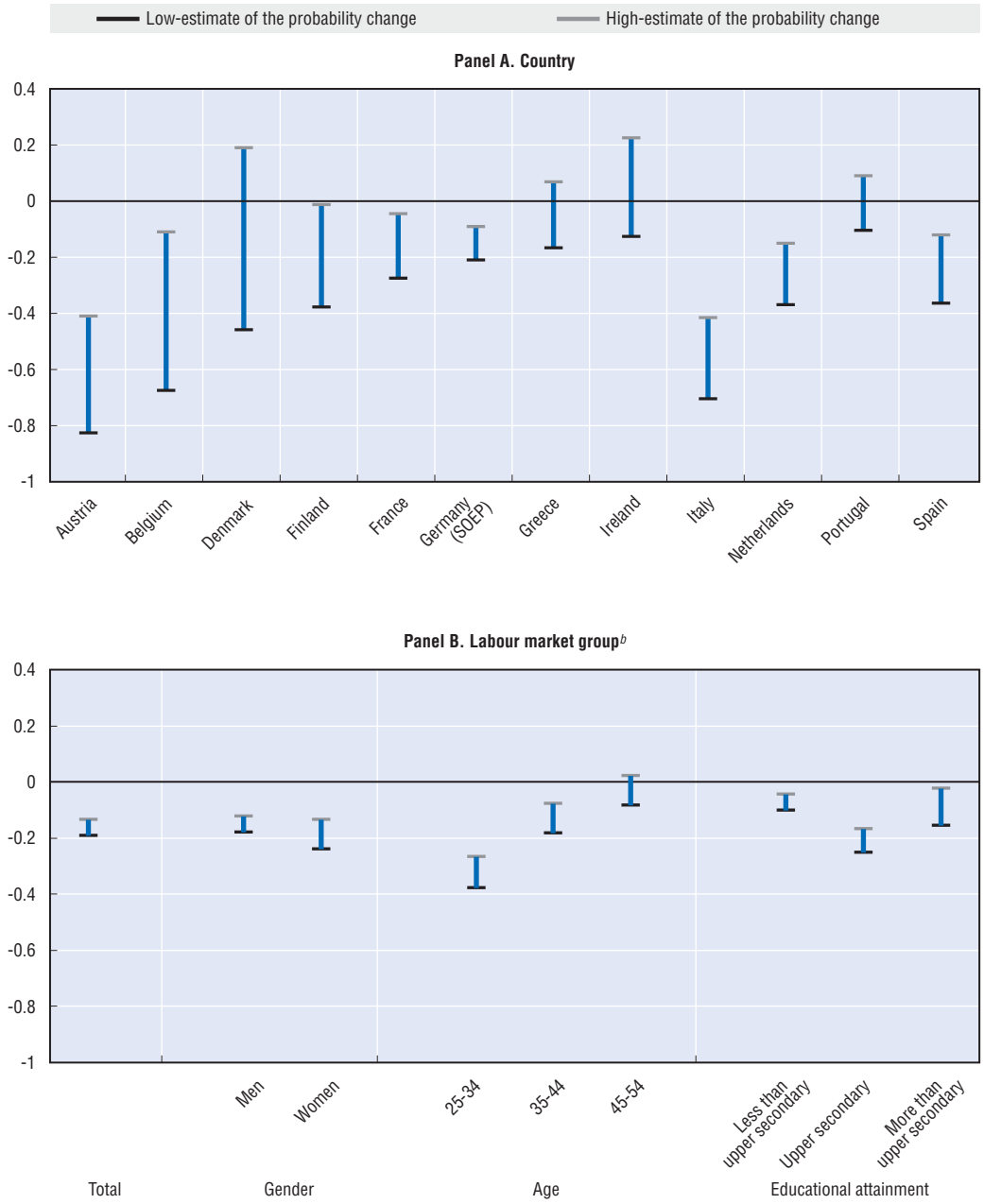
a) Ten per cent confidence interval of the impact of a 10% increase in the number of years in which an average individual receives some education or training. The estimates are obtained by maximising the conditional likelihood of a fixed-effect logit model. Beyond individual fixed effects, the specification includes country-year dummies, age and age squared, health status, family type, marital status, consensual union and presence of children. Family-related variables are interacted with gender. Data refer to individuals aged 25-54 years.

b) The sample includes the countries shown in Panel A.

Source: Secretariat calculations based on the European Community Household Panel, waves 1 to 7 (1994-2000).

Chart 4.5. **Training reduces the risk of unemployment**

Estimated change in the probability of being unemployed as a result of training, percentage points[a]



a) Ten per cent confidence interval of the impact of a 10% increase in the number of years in which an average individual receives some education or training. The estimates are obtained by maximising the conditional likelihood of a fixed-effect logit model. Beyond individual fixed effects, the specification includes country-year dummies, age and age squared, health status, family type, marital status, consensual union and presence of children. Family-related variables are interacted with gender. Data refer to individuals aged 25-54 years.

b) The sample includes the countries shown in Panel A.

Source: Secretariat calculations based on the European Community Household Panel, waves 1 to 7 (1994-2000).

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account the risk of *displacement effects* – that is, the extent to which training an individual reduces the employment prospects of untrained individuals. The fact that, as shown in Section 1, training is not associated with lower aggregate unemployment – while being associated with a lower individual probability of being unemployed – suggests that some displacement might indeed be at work, thereby partially offsetting any aggregate employment gains from skill upgrading.

In the absence of valid instruments for the aggregate amount of training, it is difficult to measure the relevance of crowding-out effects for aggregate employment. Nevertheless, simple tests can be constructed to check whether trained workers are more or less likely to crowd out workers belonging to their same labour market group rather than workers in other groups (results from these tests are reported in Tables 4.A1.3 and 4.A1.4 in Annex 4.A1).[14] Since these tests find no evidence that intra-group crowding out effects are strong,[15] it can be argued that the empirical evidence does suggest that lifelong learning policies, if well-targeted on specific groups that are less successful in the labour market, can be effective in improving the relative labour market performance of these groups (in the worst possible scenario, at the expense of non-targeted groups) and therefore be part of a general strategy to reduce non-employment traps as well as to increase participation rates among mature and older workers. The cost of these policies for the public budget and the possible deadweight losses associated to them need, however, to be carefully evaluated and taken into account in their design (see OECD, 2003a).

Altogether, trained individuals participate more in the labour market than their non-trained counterparts. This is so because either the earnings individuals can expect to obtain from work (*conditional* on having a job) are greater once they have received some training or training increases the likelihood of securing stable income flows from participating in the labour market – in both cases raising the incentive to participate in the labour market. It is therefore useful to check whether training is associated with higher wages and/or greater employment security. This is the purpose of the remainder of this chapter.

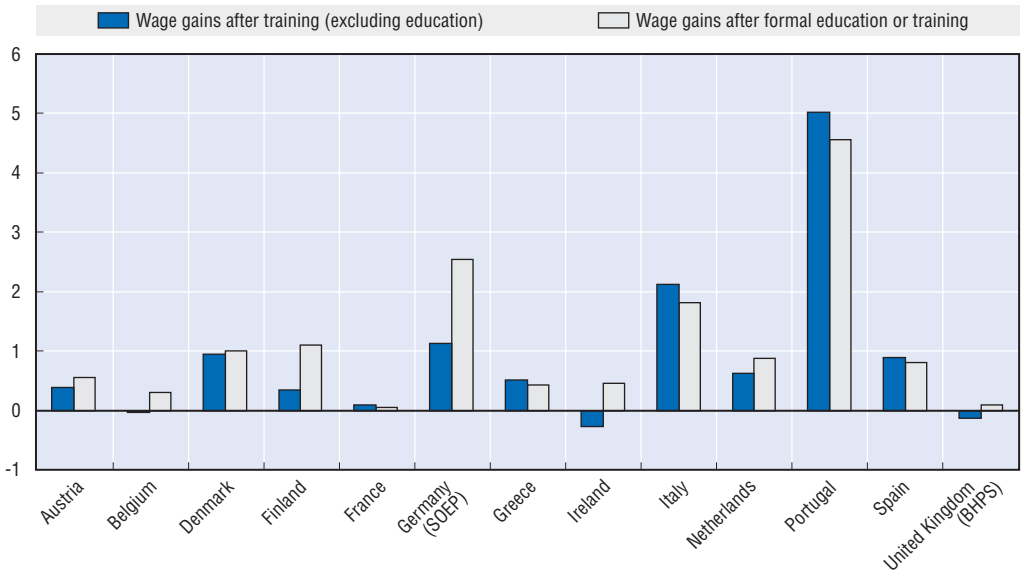
3. Better paid jobs: the effect of training on individual wages

If training boosts labour force participation by increasing the individual returns to undertaking market activities, it seems natural to expect that training will raise individual wages, particularly for those individuals for whom work does not always pay. There are various ways to compute a training wage premium.[16] The simplest method, when longitudinal data are available, is to compare wage growth rates between two interviews for workers receiving training between the same two interviews *vis-à-vis* those not receiving it. Chart 4.6 shows simple average measures of the wage premium computed along these lines. Training premia so computed range from practically zero in France and the United Kingdom to a peak of almost 5% in Portugal. Furthermore, they are lower in many countries when computed with respect to vocational training only (excluding education), but remain positive in all but three countries (Belgium, Ireland and the United Kingdom).

For policy purposes, it is important to know whether better skills gained through training are transferable across jobs and employers. This is particularly important in the context of a Jobs Strategy geared towards making the labour market more flexible and resource allocation more rapid and smoother. Furthermore, workers employed by high-performing establishments (for example, those belonging to more innovative firms) might receive more training and experience faster wage growth. For these reasons – as well as to eliminate

Chart 4.6. **Wages grow faster after training**

Wage growth difference between trained and untrained employees, percentage points[a]



BHPS: British Household Panel Survey.
SOEP: German Socio-Economic Panel.

a) Percentage-point difference in average annual wage growth rates between employees receiving training between two interviews and those not receiving it. Figures are adjusted to take into account that the time spell between two interviews can be different from one year. Data refer to wage and salary workers aged 25-54 years and working more than 15 hours per week.

Source: Secretariat calculations based on the European Community Household Panel, waves 1 to 7 (1994-2000).

selection bias – Table 4.1 decomposes raw training premia presented above into the premium to training taken with the current employer – estimated by correcting for match-specific heterogeneity (see OECD, 2004) – and the premium to training taken with previous employers, correcting also for changes in observable individual and firm characteristics.

In all countries for which data are available, continuous education and training taken with *previous* employers have, on average, a positive impact on wages, although this impact is not significant in Italy and Portugal. Participating in formal education and training in one year is estimated to increase earnings by up to 5.8% (in Austria). By contrast, workers usually reap a lower (and sometimes insignificant) wage premium if they do not change employer after having received training. These results are also broadly confirmed when wage premia to training and education are estimated separately, although estimates are less precise – and somewhat lower in the case of vocational training.[17] The fact that the wage premium to training taken with previous employers is smaller in the case of vocational training than in the case of formal education is not surprising because competences acquired through formal education are more easily signalled and recognised. Accreditation and recognition of competences acquired through short vocational training spells and informal training is indeed a crucial issue (and policy problem) for the transferability of training (OECD, 2003a). Overall, these findings are consistent with previous studies that typically find that the training wage premium increases in the aftermath of job change.[18]

Looking at results by labour market group is instructive in many respects. First, training wage premia seem to be lower for women than for men, possibly due to heterogeneity in the quality of training courses and/or occupational gender segregation (see Bardone *et al.*, 2004).

Table 4.1. **A durable effect of training only for certain groups**

Panel data estimates of training premia, percentage[a]

	Training taken with		Formal education taken with		Formal education or training taken with	
	Previous employers	Current employer	Previous employers	Current employer	Previous employers	Current employer
Panel A. Country						
Austria	. .	. .	. .	. .	5.81***	0.88**
Belgium	2.30*	1.84***	–1.20	–1.84	2.12*	1.57***
Denmark	1.60***	0.87***	4.39***	0.17	2.26***	0.78***
Finland	2.78***	0.66**	2.70*	1.22*	3.47***	0.83***
Germany (SOEP)	0.67	1.02	4.06***	2.11***	3.08***	1.82***
Ireland	3.31*	0.21	6.15***	0.67	4.46***	0.39
Italy	. .	. .	. .	. .	1.65	2.21***
Netherlands	0.48	0.44	6.12***	0.23	2.78**	0.58
Portugal	. .	. .	. .	. .	2.41	2.98***
Spain	3.83***	0.32	5.99***	0.20	5.05***	0.24
United Kingdom (BHPS)	. .	. .	. .	. .	5.09*	0.92
Panel B. Labour market group						
Total	**1.19*** **	**1.11*** **	**5.28*** **	**0.91*** **	**2.65*** **	**1.22*** **
Gender						
Men	1.65***	1.25***	5.51***	1.49***	3.12***	1.43***
Women	0.70	0.93***	4.97***	0.34	2.17***	0.97***
Age						
25-34	2.13***	1.55***	6.21***	1.41***	4.40***	1.65***
35-44	0.55	0.92***	2.70**	0.78*	0.83*	1.06***
45-54	0.56	0.71***	1.47	0.17	0.81	0.72***
Educational attainment						
Less than upper secondary	1.09	1.29***	2.58	0.64	1.39*	1.24***
Upper secondary	0.11	0.93***	6.87***	0.35	2.44***	0.96***
More than upper secondary	1.43***	0.95***	3.03***	0.95***	1.97***	1.10***

BHPS: British Household Panel Survey.
SOEP: German Socio-Economic Panel.
***, **, * statistically significant at 1% level, 5% level and 10% level, respectively.
. . Not enough observations with at least one job change after a training spell.
a) Estimates of the wage premium of participating in training in one additional year, obtained from the estimation of a wage equation controlling for individual fixed effects, age, age squared, tenure, tenure squared, firm size, public sector dummy, occupation, permanent contract dummy, log of hours worked, log of hours worked squared, the number of previous jobs, reason of last job change and interaction terms between country dummies, year dummies and date of interview. Training taken with the current employer has been demeaned by subtracting job-match-specific means. Wage premia to training and formal education are estimated through a specification that simultaneously includes both variables.

Source: Secretariat calculations based on the European Community Household Panel, waves 1 to 7 (1994-2000).

Second, the wage premium to participating in training while already working for the current employer is relatively homogeneous across age and educational attainment groups (being about 1% for all groups). Conversely, the impact of training on wages seems to be transferable across jobs only in the case of relatively young and/or high-educated workers, at least insofar as vocational training only (excluding education) is concerned.

Should one conclude that education and training does not have a *durable* impact on earnings for other groups, and particularly for those who have already lower earnings, greater employment insecurity as well as more imperfect access to training opportunities?

This conclusion would be unwarranted. In fact, these returns are computed only for workers that are employed. That is, these estimates do not take into account the impact of training on employment prospects and on containing the loss of income associated with unemployment spells. Indeed, due to the existence of downward wage rigidity, one can expect that those workers who are unable to maintain their productivity (due, for instance, to skill obsolescence) are more frequently laid-off – rather than experiencing a fall in wages and kept in employment – and thereby excluded from our sample. In particular, it can be conjectured that, in the case of older workers, training enables employers to *match* individual productivity with constant individual wages and therefore *retain* the worker. Conversely, workers not receiving training are more likely to enter non-employment because their productivity has fallen below their wage. This issue will be explored further in the next section.

4. More stable employment prospects: the effect of training on employment security

The term "employment insecurity" is generally used in the literature to denote the risk that a worker will experience a significant fall in earnings (and/or well-being) due to job loss or the threat of it (see *e.g.* Nickell *et al.*, 2002). Job loss is intended to refer to separations that are *involuntary* from the perspective of the worker. In practice, this means that employment security is composed of two elements (see also Chapter 2): the likelihood of maintaining the employment relationship with unmodified working conditions (including pay) and the expected cost of job loss, which, in turn, can be seen as the product of the probability of job loss and its cost conditional on losing the job. This (conditional) cost of job loss will tend to be higher when the expected duration of the non-employment spell following job loss is longer (see OECD, 1997b, 2002).

Does training decrease employment insecurity? By increasing individual productivity, training taken with the current employer can be expected to increase either potential wages (without increasing the probability of involuntary job separation) or the productivity-wage gap (thereby reducing the risk of job loss). To the extent that training is general and the productivity-wage gap is greater the greater the worker's competences, it can also be expected that training will increase the likelihood of finding a new job in the event of job loss.

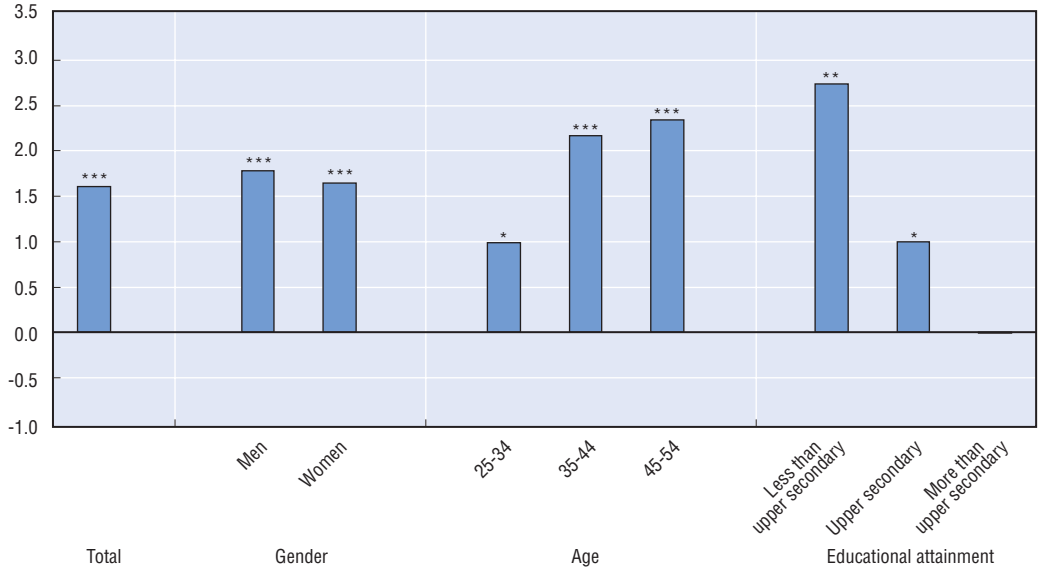
The remainder of this section tries to shed some light on the empirical relationship between training and employment security at the individual level. By focusing on several different indicators, it aims at disentangling the effect of training on the different aspects of employment security and at providing a relatively accurate picture in spite of the lack of satisfactory comprehensive objective measures of employment security.

Trained workers feel more secure

Chart 4.7 focuses on the two-year variation of subjective *perceptions* of job security (measured on a 1-6 Likert scale). As was done before, in order to control for selection bias, the analysis distinguishes between training with previous employers and training with the current employer. In this case, however, the effect of training with the current employer cannot be identified by controlling for match-specific effects.[19] For this reason, only the estimated impact of training taken with previous employers is reported in Chart 4.7.[20]

Chart 4.7. **Training has a positive impact on employment security**

Change in perceived employment security as a result of training, percentage[a, b, c]



***, **, * statistically significant at 1% level, 5% level and 10% level, respectively.

a) Estimates of the percentage impact on the average employee's perception of job security (measured on a 1-6 Likert scale) of participating in some formal education or training in one additional year. Each security category is assumed to identify an interval of length one, except the bottom and top categories that are assumed to be bottom- and top-coded. In the estimation model two-year changes in perceived job security are taken as dependent variables and estimates are obtained by maximum likelihood estimation of a Gaussian interval regression model. Controls are: two year differences of age, age squared, tenure, tenure squared, log wage, and log of hours worked, as well as dummies for public/private employment, the number of previous jobs, lagged level of perceived job security, voluntary or involuntary separations in the two-year reference period and country per year dummies.

b) Data refer to employees working more than 15 hours per week and aged 25-54 years.

c) The sample includes the following countries: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Italy, the Netherlands, Portugal, Spain and the United Kingdom (British Household Panel Survey, BHPS).

Source: Secretariat calculations based on the European Community Household Panel, waves 1 to 7 (1994-2000).

Two clear facts seem to emerge from Chart 4.7. First, education and training taken with previous employers have a positive impact on the perception of job security of all categories of workers (with the exception of those with the highest educational attainment). Given that these measures are partially forward-looking (that is, take into account the perceived risk of job loss), these results yield some support to the conjecture that returns to training might be positive even for those groups of workers for which they do not show up in the wage level (conditional on being employed). Second, and more striking, training taken with previous employers has the greatest impact on perceived job security for those categories for which estimated wage premia are smaller. Conditional on changing job, for each year of previous training, employees without upper secondary qualifications are estimated to increase their perceived job security by 2.7%, and employees aged from 35 to 54 years, by more than 2%. Interestingly, as shown by Bassanini (2004), the effect of vocational training on employment security appears to be greater than that of formal education, in contrast with what occurs in the case of wages (see Section 3).

The relationship between training and mobility is complex…

Training can be expected to have ambiguous effects on job mobility. On the one hand, the probability of losing one's job can be expected to decrease in the aftermath of training,

particularly in the case of employer-paid training. On the other hand, training in transferable competencies might increase the probability that workers quit because of better job offers elsewhere. In fact, Parent (1999) – who looks at repeated job spells in the US National Longitudinal Survey of Youth without considering the reason of termination of the employment relationship – finds no correlation between the amount of training received during a job spell and its length.

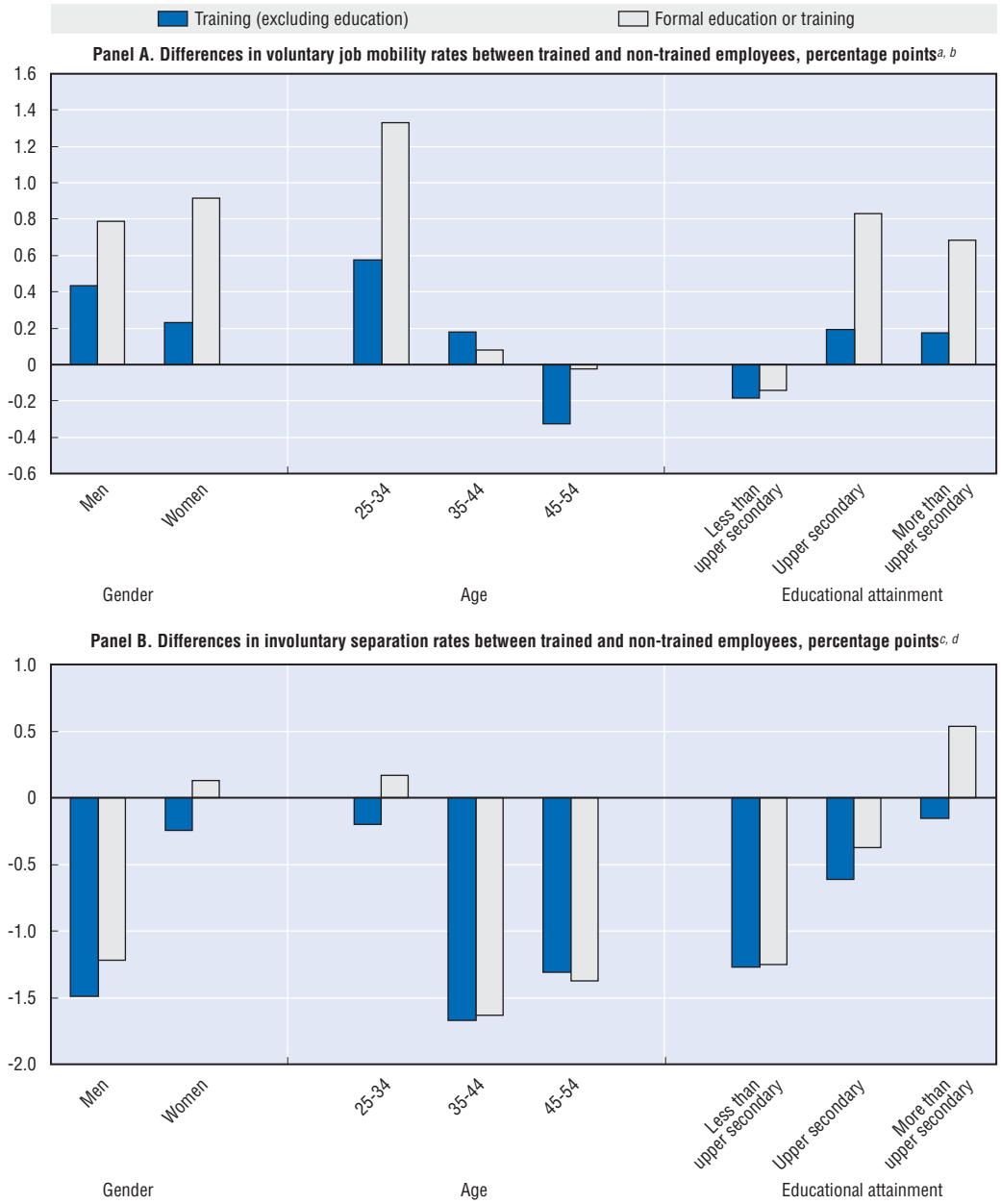
For all countries for which data are available, workers who previously received education or training tend to quit more often for better jobs and to separate less often against their will (Chart 4.8).[21] Nevertheless, important differences can be observed across labour market groups as well as type of training. The impact of training on voluntary job mobility is mostly confined to relatively young and educated workers – for example, the difference between trained and untrained individuals in terms of annualised voluntary job mobility rates is 1.7 percentage points, for workers aged 25-34 years, and about 0.7-0.8 percentage points, for workers with at least upper secondary education. Conversely, the negative correlation between training and involuntary separations is clearer in the case of older and less educated workers – the difference in involuntary separation rates being above 1.2 percentage points for workers aged 35 years or more or with less than upper secondary education. Furthermore, workers tend to be less mobile if they receive only vocational training rather than when they receive some formal education. This finding is not surprising: formal education is less frequently paid by the employer (OECD, 2003a) and imparts competences that are usually transferable and whose value is more easily signalled to the external labour market.

The probability of experiencing an involuntary separation is a natural objective measure for the risk of job loss – that is one of the components of employment insecurity discussed above. However, the figures presented here must be handled with special caution. Indeed, the fact that lay-offs seem to be less frequent in the presence of training does not prove that training reduces the probability of being laid-offs. Providing an employee with training might be the *consequence* (and not the *cause*) of the employer's decision of not laying him/her off, which in turn might be dependent on individual characteristics (including unobserved ability). The natural framework to deepen this analysis and address this issue would be a standard hazard model with controls for individual fixed effects. Unfortunately, there is no cross-country comparable dataset with sufficiently long individual time series where two complete job spells can be observed for a large portion of the sample. For this reason, a formal multivariate analysis of separation rates cannot be developed further in this chapter. Nevertheless, it is possible to go one step further by using the distinction between permanent and temporary contracts, which typically involve different job loss risk (OECD, 2002).

... but trained workers have greater chances to find (and keep) a permanent job

Chart 4.9 examines the impact of training with previous employers on the probability of being in a *permanent contract* using the same framework adopted for the analysis of subjective measures of job security.[22] The estimation results mirror the findings of the analysis of subjective perceptions of job security. First, for all labour market groups considered therein, training taken with previous employers has a positive impact on the probability of holding a permanent contract. On average, the probability of being in a permanent contract is estimated to increase by 0.6 percentage points for each year of work with previous employers in which the employee received some training. Second, training taken with previous employers has the greatest impact for those categories for which estimated training wage premia are smaller, although differences across groups are less

Chart 4.8. **Trained workers quit more often and are less frequently dismissed than non-trained workers**



a) Percentage-point difference in annualised rates of voluntary job changes between trained and non-trained employees. Voluntary job changes are defined as quits motivated by "better job opportunities" according to the interviewee. Voluntary mobility rates are defined as the share of employees at date *t* who voluntary quit their employer between date *t* and date *t* + 1. Trained employees are those who received some training between date *t* – 1 and date *t*. Data refer to persons aged 25-54 years.

b) Weighted average of the following countries: Austria, Belgium, Denmark, Finland, France, Greece, Ireland, Italy, the Netherlands, Portugal, Spain and the United Kingdom (British Household Panel Survey, BHPS).

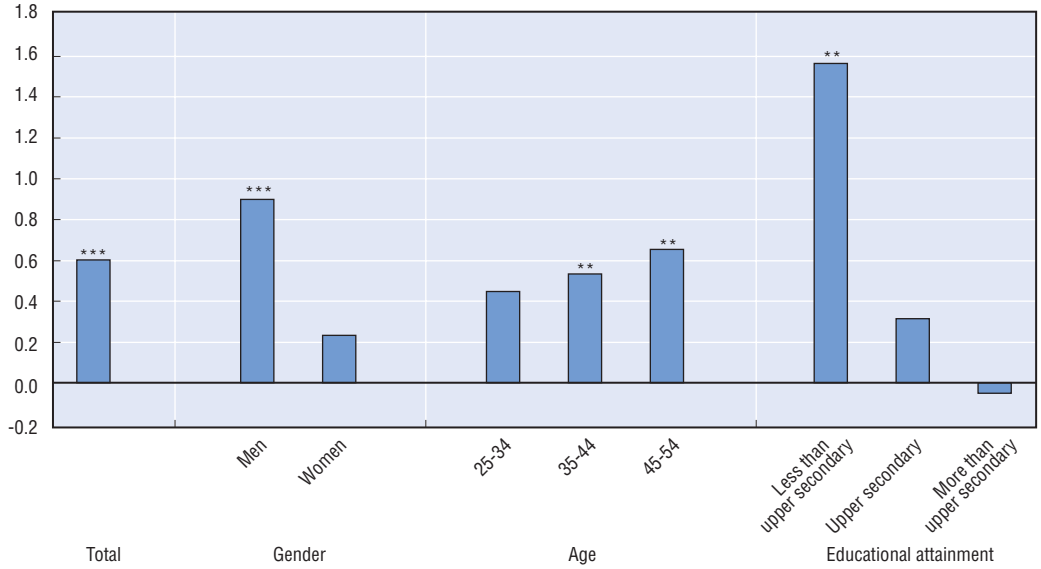
c) Percentage-point difference in annualised rates of involuntary separations between trained and non-trained employees. Involuntary separation rates are defined as the share of employees at date t who have lost their job against their will by date *t* + 1. Trained employees are defined as those who received some training between date *t* – 1 and *t*. Data refer to persons aged 25-54 years.

d) Weighted average of the following countries: Austria, Belgium, Denmark, Finland, France, Germany (German Socio-Economic Panel, SOEP), Greece, Ireland, Italy, the Netherlands, Portugal, Spain and the United Kingdom (BHPS).

Source: Secretariat calculations based on the European Community Household Panel, waves 1 to 7 (1994-2000).

Chart 4.9. **Training increases workers' chances of getting a permanent contract**

Change in the probability of being on a permanent contract as a result of training, percentage points[a, b]



***, **, * statistically significant at 1% level, 5% level and 10% level, respectively.

a) Estimates of the percentage-point impact on the probability of being on a permanent contract for an average employee who participates in some formal education or training in one additional year. Estimates are obtained by fitting a generalised ordered probit model of two-year changes in the contract status. Maximum likelihood estimation of this model takes into account the fact that left or right censoring of categories depends on the contract status of the employee at the beginning of the period. Controls are: two-year differences of age, age squares, tenure, tenure squared, log wage, log of hours worked, public/private employment and number of previous jobs, as well as dummies for lagged contract type, voluntary or involuntary separations in the two-year reference period and country per year dummies.

b) The sample includes the following countries: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Italy, the Netherlands, Portugal, Spain and the United Kingdom (British Household Panel Survey, BHPS).

Source: Secretariat calculations based on the European Community Household Panel, waves 1 to 7 (1994-2000).

sharp in this case than in the case of subjective perceptions of job security. For instance, conditional on changing job, for each year in which they received previous training, employees aged from 45 to 54 years increase their probability of being in a permanent contract by almost 0.7 percentage points.

As conjectured in Section 3, the fact that training seems to have a stronger impact on job loss risk than on wages (conditional on being employed) in the case of older prime-age workers can be easily explained through the effect of skill obsolescence on the age profile of the productivity-wage gap: in the presence of downward wage rigidity, skill obsolescence compresses the wedge between productivity and the wage, thereby increasing the risk of job loss without affecting the wage level conditional on keeping the job. In this case training is required to maintain workers' competences so that their productivity will match their wage. If the wage structure is compressed, a similar argument can be generalised to all low-productivity workers (including, potentially, those with little or no qualifications). For instance, if the minimum wage is relatively high, a greater chance of being employed constitutes the main benefit from training for workers whose productivity would otherwise not match the minimum wage under all possible contingencies (Agell and Lommerud, 1997).

Training before job loss tends to reduce unemployment duration

As said above, to assess the impact of training on employment insecurity it is necessary to evaluate its effect on both the risk of job loss and the extent to which job displacement creates insecurity concerning the earnings capacity and living standards of workers and their dependants. Indeed, there seems to be a trade-off between the frequency of job loss and the resulting costs, for instance with markets with lower levels of employment protection characterised by relatively high rates of involuntary job loss, but also by relatively quick re-employment (see Chapter 2 above).

Insofar as training imparts transferable competences, it can be expected to increase re-employment probabilities in the event of dismissals, and therefore reduce the cost of job loss by reducing the length of the possible unemployment spell. Chart 4.10 shows that workers who received training or education in the year before losing their job are more frequently re-employed two years later than their untrained peers. However, cross-country variation is marked: in countries such as Austria, Belgium, Finland or Ireland, the share of trained workers who are re-employed two years after the separation is 20 percentage points greater than the share of untrained workers, while in Denmark, France, Greece, the Netherlands and Portugal, the difference between the two groups is negligible.

Chart 4.10. **In some countries, trained workers experience relatively short unemployment spells after dismissal**

Percentage[a] of people re-employed two years after dismissal



SOEP: German Socio-Economic Panel.

a) Data refer to the employment status at date *t* of persons aged 25-54 years, who were employed in *t* – 3 and experienced an involuntary separation between *t* – 3 and *t* – 2. Trained individuals are those who received some formal education or training between *t* – 4 and *t* – 3. Countries are ranked by increasing order of re-employment rate for trained people.

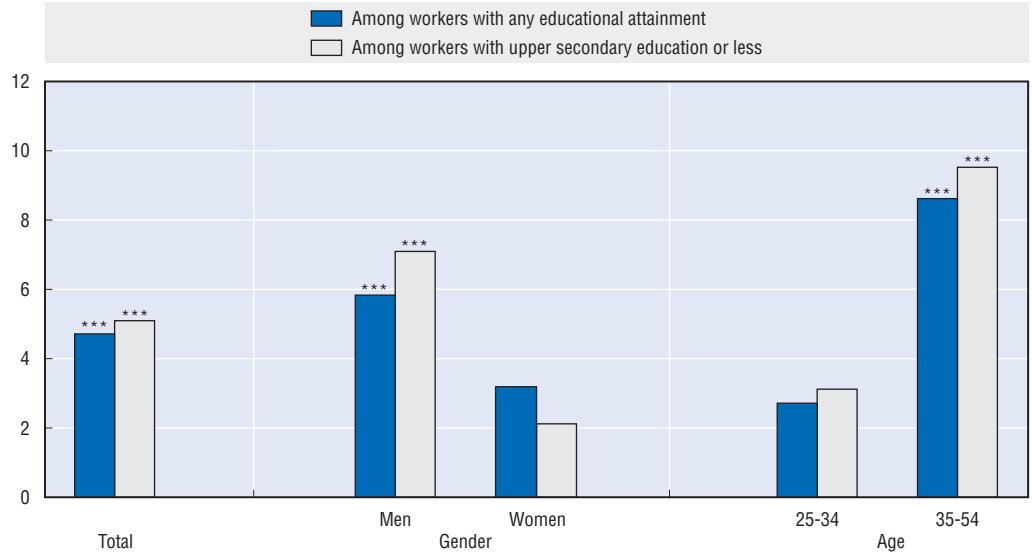
Source: Secretariat calculations based on the European Community Household Panel, waves 1 to 7 (1994-2000).

Again, no policy-relevant conclusion can be derived from this chart. Individuals receiving training might be endowed with more productive characteristics, and the apparent positive correlation between training and re-employment probabilities might not reflect a causal link. Unfortunately, due to the lack of cross-country comparative datasets where many spells of unemployment are observed for a large portion of the sample, this problem cannot be studied within a fixed-effects framework (see OECD, 2004). The analysis is therefore developed in two

steps. First, Chart 4.11 reports estimates of the effect of training and education received before job loss, obtained on the basis of a simple econometric specification wherein controls for the characteristics of the lost job as well as changes in personal and household characteristics are included. Second, this simple model is re-estimated by using matching methods to control the robustness of results to selection on observables (results from this sensitivity analysis being presented in Table 4.A1.5 in Annex 4.A1).[23]

Chart 4.11. **Training increases the probability of re-employment after job loss**

Changes in the probability of re-employment as a result of training, percentage points[a, b]



***, **, * statistically significant at 1% level, 5% level and 10% level, respectively.

a) Probit estimates of the percentage point increase in the probability of re-employment two years after an involuntary separation for an average employee due to participating in some education or training in one year while working for the employer who he/she separated from. Controls are two-year changes in health status, family type, marital status, presence of children, age, age squared, consensual union, as well as variables characterizing the job held before the separation: tenure, tenure squared, firm size, 1-digit occupation dummies, part-time status, unemployment experience before the job, log wage. Family-related variables are interacted with gender. Due to the small sample size, jointly insignificant groups of variables are dropped in the final specification, in order to have a parsimonious model.

b) The sample includes the following countries: Austria, Belgium, Denmark, Finland, Germany (German Socio-Economic Panel, SOEP), Italy, Ireland, the Netherlands, Portugal and Spain.

Source: Secretariat calculations based on the European Community Household Panel, waves 1 to 7 (1994-2000).

For persons aged from 35 to 54 years, each year in the previous (lost) job in which they received some training is estimated to increase their probability of being re-employed two years after the job loss by about 8 percentage points, on average. This effect is slightly greater (9 percentage points) if these persons have qualifications below or equal to upper secondary education and still holds if vocational training only (excluding education) is taken into account. This finding also appears to be robust to all checks undertaken in the sensitivity analysis. Conversely, results are less clear-cut for other groups, and it can be argued that certain patterns that emerge from the estimation of the baseline model (such as the apparent gender gap) might be the result of age-composition effects.

Overall, this section has shown that those workers, who do not seem to benefit from training through greater wages, can benefit from training by securing more stable employment prospects through lower job loss risk and greater chances to be re-employed quickly in the event of job loss. This is particularly the case for those categories (such as low-educated older workers) for whom their productivity-wage gap is more likely to be

increasingly compressed – as they age – by companies' personnel policies and/or institutional arrangements (such as minimum wages). Once foregone income due to non-employment spells is taken into account, training premia for these groups appear to be large.

Conclusions

The 2000 Nobel Prize winner in economics James Heckman argued that "in evaluating a human capital investment strategy, it is crucial to consider the entire policy portfolio of interventions together (training programmes, school-based policies, school reform, and early interventions) rather than focusing on one type of policy in isolation from the others. […] We cannot afford to postpone investing in children until they become adults, nor can we wait until they reach school age – a time when it may be too late to intervene. Learning is a dynamic process and is most effective when it begins at a young age and continues through to adulthood" (Heckman, 2000, p. 50). This observation is key for policy guidance. Nevertheless, as noted by Blundell (2000), Heckman's remarks do not imply that later interventions have no pay-off, and indeed the OECD Jobs Study enumerates several reasons why "the prevailing approach to human resource development based on systematic provision of 'front-end' formal education and training preceding entry to the labour market is increasingly insufficient" (OECD, 1994b, p. 154). It is therefore desirable to complement early interventions with policies for adult learning.

This chapter has provided evidence that training has indeed a positive impact on individual labour market performance. Furthermore, the chapter shows that potential benefits from training are not limited to those individuals who have already adequate skills, high wages and good employment prospects. In particular, in the case of more mature and less educated workers, training plays an important role in enhancing employment security. Altogether, this suggests that well-designed policies to foster lifelong learning can complement making-work-pay schemes and effective active labour market programmes, with the aim of "minimising the number of people who do not attain and maintain the skills required to command earnings that bring them above the poverty threshold" (OECD, 1999a, p. 12).

Three detailed recommendations of the OECD Jobs Strategy focused on improving "the incentives for enterprises and workers to invest in continued learning" (OECD, 1994a, p. 48):

a) Enable workers to alternate between work and extended periods of off-the-job training over their working life (*e.g.* through reductions in working time that are compensated by increases in training time).

b) Implement a training levy/grant scheme to stimulate enterprises to undertake more skill development or a system of "training credits" for adult workers which permits them to acquire new skills at certified training establishments or firms; pay specific attention to design and enforcement mechanisms so as to minimise deadweight and substitution effects.

c) Make the value of skills relative to other factor inputs more transparent (*e.g.* by encouraging changes in financial accounting and reporting practices and related institutional arrangements), so that workers and firms can treat them as long-term assets.

Based on the results of this chapter as well as Chapter 5 of the 2003 *Employment Outlook*, several comments are in order with respect to these policy recommendations. First, co-financing schemes – under which employers, employees and governments jointly finance training – must be geared at reducing *marginal* (direct and opportunity) costs, in order to minimise deadweight losses. What counts for individual or employer's decisions to invest in

training is the difference between marginal expected benefits and marginal training costs. For firms that would have spent up to the legal minimum anyway, "train or pay" levy/grant schemes do not increase incentives to invest in training. Conversely, by covering total costs up to a pre-determined ceiling, "train or pay" levy/grant schemes "overpay" the increase in training investment they induce on the part of firms that would have spent less than the legal minimum in the absence of the scheme.[24] What is more, individuals and organisations are more likely to be effective in monitoring service quality when the subsidy is a *matched* contribution and they have some own resources at stake.

Second, as a general rule, it seems preferable to favour financing schemes with large leverage potential, which have greater scope to minimise deadweight as well as the *costs* for the public budget. These schemes include regulatory and institutional arrangements that allow mobilising substantial private resources from both employers and employees, with limited public co-financing (for example, pay-back clauses, apprenticeship contracts, time accounts, company-based individual learning accounts, etc.; see OECD, 2003a), as well as policy measures that favour the establishment of training consortia pooling together resources from different enterprises. The typical example of the latter is the German co-management of the apprenticeship system by business associations (see *e.g.* Soskice, 1994). Nevertheless, various types of training consortia are gaining momentum also in many other countries, both with and without public financial support (see Box 4.4 for Korea, as well as Box 4.2 above for one example concerning the United States).

Box 4.4. **Pooling resources together: training consortia in Korea**

To address skill shortages and to facilitate training provision, training institutions of large enterprises (including multinational enterprises – MNEs) in Korea have pooled resources to create joint training centres to cater for partners (*i.e.* suppliers, distributors, and subcontractors), most of which are small or medium-sized enterprises. The benefit of this collaboration is to increase efficiency and quality of training delivery by sharing resources and know-how of pre-existing training institutions, to enlarge the pool of training recipients to employees of all partner enterprises, as well as to streamline curricula while providing flexible and demand-driven programmes. The government provides support by subsidising the consortium itself as well as partner enterprises and their employees, as established by the Promotion of Vocational Training of Workers Act of 2001.

Two training consortia recently established by Samsung Heavy Industries (SHI) and Volvo are good examples of this initiative. Facing severe skilled labour shortages and inadequate quality of intermediate products supplied by partner enterprises, SHI created a joint training facility for partner enterprises. The pilot project started in 2001 by developing and delivering training programmes and materials that reflect the skill needs of partner enterprises. The preliminary assessment of this pilot indicates a positive improvement in both access to and completion of training: in 2002, 92% of partner enterprises participated in the training programme with a 98% completion rate for trainees (KRIVET, 2004). The Volvo training consortium is an example of a MNE-driven strategy to pool training resources to improve the skill level of suppliers and subcontractors. This scheme benefited not only Volvo – by raising the quality of inputs from its suppliers – but also partner companies – by raising the efficiency and quality of their production process. In the light of this success in mobilising enterprise-driven consortia, the Korean government is currently considering the possibility of supporting the establishment of industry-wide and region-wide training consortia.

Third, policy action can also increase individual *benefits* from training. By fostering the *portability* of skills and *transparency* in the signalling of learning outcomes, trained workers can better price themselves into higher-pay jobs. Many countries have introduced standardised competence-based qualification systems, according to which acquisition of qualifications is not conditioned to course attendance in vocational training or educational institutions. Under these systems, workers are allowed to take individual skill tests independently of the way skills are acquired. Yet, much remains to be done to ensure the correct functioning of these mechanisms (Bjørnåvold, 2002; OECD, 2003b). But the need to proceed faster down this route is key in the context of labour market reforms. In fact, the whole set of policy recommendations of the OECD Jobs Strategy is "designed to improve the abilities of economies and of societies both to cope with, and benefit from, change, by: *i)* enhancing the ability to adjust and adapt; and *ii)* increasing the capacity to innovate and be creative" (OECD, 1994a, p. 43). In practice, this implies making the reallocation of resources within the economy more rapid and smoother, thereby requiring workers to be able to move efficiently from one job to another many times during their working life.

Fourth, while simultaneously increasing the share of training benefits potentially reaped by workers, enhancing the portability of skills – as well as fostering efficient labour reallocation and wage flexibility through labour market reforms – is likely to decrease the share of these benefits that is appropriated by employers. In the presence of capital or training market imperfections, however, employees might not find themselves to be able to afford and/or accept to increase their share of training financing.[25] For instance, credit constraints may create a barrier to training of low-educated (low-income/low-wealth) workers or these workers may find it difficult to negotiate with their employers about the content and quality of training programmes. In such a situation, in order to raise incentives for firms to invest in training, corporate tax deductions – possibly financed through a specific corporate levy and in any case covering less than total training costs[26] – might be required to sustain training outcomes.

Notes

1. Four exceptions to be noted are Bassanini and Brunello (2003), Kuckulenz and Zwick (2003), Leuven and Oosterbeek (2004) and Arulampalam *et al.* (2004).
2. These studies tend to be plagued by selection bias. See Bishop (1997) and Ok and Tergeist (2003) among others.
3. The latter phenomenon can occur in two cases. First, if wages are compressed with respect to productivity, a negative shock will more frequently push individual productivity (in nominal terms) below the wage in the case of low-productivity (low-educated) workers. Second, if firms invest more in job-specific capital for the high-educated – or if vacancies for jobs usually held by the high-educated are more costly to fill – firms will hoard high-educated workers even if the productivity-wage gap becomes temporarily negative, since job-specific capital would be lost upon lay-off (Oi, 1962; and Hamermesh, 1993, are classic references on this issue).
4. For example, Gautier *et al.* (2002) use a unique dataset for the Netherlands – where they can control for workers, jobs and firm characteristics – and find that in cyclical downturns firms do not increase the average educational attainment of inflows in any particular job, although they decrease the average educational attainment of outflows, at any level of job complexity. The existence of job competition would have required an increase in the average educational attainment of inflows, at least for low-complexity jobs (see *e.g.* Okun, 1981).
5. For instance, all these mechanisms may reflect the possibility that education acts as a sorting-screening device to select high-ability individuals, so that increasing the educational attainment of all workers would not result, other things equal, in higher productivity (see *e.g.* Weiss, 1995).

6. The baseline specification considered in Chapter 2 as been augmented by average years of educational attainment in the population, time dummies and real GDP. The latter variable controls for country-specific trends (due to *e.g.* technical change) and is "demeaned" by subtracting its country-specific sample mean in order to eliminate size effects. Two different variants of this augmented model are estimated using both fixed and random effects. Beyond the base model, a reduced model, excluding the institutional variables with less time variation, is estimated. The latter model is motivated by the fact that the effect of institutions that do not change much over time might be poorly estimated once fixed effects, time dummies and two variables with a strong time trend (GDP and education) are included in the specification. On the other hand, time dummies and GDP growth must be included because otherwise the coefficient of education will just capture the upward historical trend in participation rates.

7. See Barron *et al.* (1999), Dearden *et al.* (2000) and Ballot *et al.* (2001) for recent evidence for the United States, the United Kingdom as well as France and Sweden, respectively; see also Bartel (2000) for a survey of previous studies.

8. Unfortunately, unlike the case of the aggregate education-employment relationship, the cross-sectional nature of cross-country comparative data on training does not allow a pooled cross-country/time-series model. Nevertheless, the partial correlation between training and labour market performance (once education and institutions have been controlled for) can be estimated by looking at the bivariate correlation between employee training and the fixed effects obtained from estimating the models used for Table 4.A1.1.

9. This figure surges up to more than 70% upon elimination of two outliers (Portugal and Switzerland).

10. The entire micro-analysis is based on the European Community Household Panel (ECHP), the British Household Panel Survey (BHPS) and the German Socio-Economic Panel (SOEP). The choice of the datasets is due to the need of preserving cross-country comparability of training measures (see Annex 4.A2).

11. The fact that participation rates are smaller in the case of training received in both years is not surprising, since individuals in full-time education cannot be excluded from the sample. Indeed, when formal education is excluded, participation rates are higher in the case of individuals who received some training in both years. In order to limit the bias induced by individuals still participating in initial education, persons aged 24 years or less are not considered in the analysis.

12. In this chapter, workers aged 45 to 54 years are termed "older prime-age workers" to distinguish them from "younger prime-age workers" (aged 25 to 34 years) and "mature prime-age workers" (aged 35 to 44 years). Due to sample size problems, workers aged 55 years or more could not be included in the analysis.

13. More precisely, Charts 4.4 and 4.5 show the effect of a 10% increase in the number of years in which an individual endowed with average characteristics has received some training (see also Box 4.3). In fact, available data allow establishing only whether an individual participated in training in a specific year, but it is not possible to identify either the number of training spells taken or the hours of training he/she received. As a consequence, all training measures used in the remainder of this chapter can at most be based on the number of years in which an individual received some training (see Annex 4.A2).

14. To perform these tests, contemporaneous or lagged group-specific and aggregate training and/or employment rates are included into the econometric specifications used for Charts 4.4 and 4.5 (substituting year dummies for country-year dummies). Since the individual effect of training is controlled for in the regression, one might expect that, if within-group crowding out is important, the estimated effect of the group-specific training rate on participation (unemployment) will be negative (positive). However, this argument is not correct because of the possible endogeneity of group-specific training and participation (unemployment) rates with, say, the rate of technological change. Nevertheless, a first possible test can be based on the *simultaneous* inclusion in the specification of *lagged* group-specific employment and training rates. In fact, since the positive (negative) relationship between technological change and participation (unemployment) is controlled for by the lagged employment rate – and the individual effect of training is controlled for by the individual training stock – it can be expected that, if within-group crowding out is important, the estimated coefficient of the lagged group-specific training rate on participation (unemployment) will be negative (positive). A second alternative consists in including in the specification both *group-specific* and *economy-wide* training rates (either contemporaneous or lagged). Although both the estimated coefficients of these measures are likely to be biased upwards (downwards), it can be argued that if group-specific crowding-out effects are more important than economy-wide ones, the difference between the estimated coefficients of group-specific and economy-wide training rates should be negative (positive).

Appealing though it might be, this second alternative has the drawback of making the implicit unwarranted assumption that the upward (downward) bias on the estimated coefficient of the group-specific training rate is no greater than that on the coefficient of the aggregate training rate. These tests are performed for nine groups of age by educational attainment levels and test statistics are reported in Tables 4.A1.3 and 4.A1.4.

15. To be more precise, the results are less clear-cut for unemployment than for participation (compare Table 4.A1.3 and Table 4.A1.4), although this should come as no surprise once the findings from the aggregate analysis are taken into account. The only exceptions are perhaps younger low-educated workers for whom test statistics are not robust.

16. The economic literature is crowded with empirical results on the issue. See Bishop (1997), OECD (1999b), Leuven (2003) and Ok and Tergeist (2003) for recent surveys.

17. Still, they are significant at the 10% level in almost all countries for which separate premia could be estimated (to limit the risk of unreliability, country-specific estimates are not computed when there are less than 100 individuals who received some training before a job change within the sample window and/or when these individuals represent less than 2% of the sample of individuals).

18. See Loewenstein and Spletzer (1998, 1999) and Parent (1999), for the United States, Fougère *et al.* (2001), for France, Blundell *et al.* (1999) and Booth and Bryan (2002), for the United Kingdom, and Gerfin (2003), for Switzerland. These papers interpret the fact that the training wage premium increases in the aftermath of job change as evidence of employers' market power. However, there are at least two other possible explanations. First, the training firm does not always have a high-pay position to offer to the trained worker. In this case – if competences acquired through training are transferable – trained workers may have better job options outside the firm. Second, workers might accept to be paid less than their marginal product in the current job if they are sensitive to reciprocity. In particular, workers might interpret the firm's investment in general training as a kind action which deserves reward in the form of wage moderation after the training (Leuven *et al.*, 2004).

19. This is due to the fact that the quality of the job-match might not be known by workers at the moment of hiring and training provision by the employers might be one of the channels through which information on job-match quality is disclosed: receiving employer-sponsored training, employees realise that their employers do not intend to lay them off or, in the case of temporary workers, that their contract will be renewed or transformed, thereby improving their perception of job security, with no causal effect of training.

20. For this chapter, three types of models (linear, Gaussian interval regression and generalised ordered probit models; see OECD, 2004) have been estimated with qualitatively identical results. The models use the two-year difference in perceived job security as dependent variable and, given that the use of long differences reduces sample size, no separate estimation by country is attempted. Results from the Gaussian interval regression model are presented in Chart 4.7.

21. In this chapter, voluntary quits correspond to separations due to better job opportunities, according to the respondent. Involuntary separations refer to individuals who reported they were "obliged to stop by employer", "end of contract" or "sale/closure of own or family business" as well as those who experienced an unemployment spell after separating from the last job.

22. In contrast to Chart 4.7, Chart 4.9 presents the results obtained from the generalised ordered probit model of changes in the contract status over a two-year period. In fact, as contract status is a dichotomous variable, it is easy to express the estimates from the generalised ordered probit model in terms of percentage-point impact on probabilities.

23. The absence of appropriate instruments for training makes it impossible to control for selection on unobservables. In order to correct for selection on observables, matching methods based on the propensity score are used (Nearest Neighbour matching and Gaussian Kernel matching based, in both cases, on a common support; see OECD, 2004). Note also that the labour market groups used in this analysis are more aggregate than in the other analyses of this chapter. This is done to preserve sample size, which can become easily a problem when a common support is used to implement propensity score matching methods. For instance, in the case of workers aged from 35 to 54 years with upper secondary education or less, there are only 1 631 observations in the sample; of these, 1 268 are effectively used in the Kernel matching estimation and only 210 in the Nearest Neighbour matching estimation.

24. Train-or-pay schemes confront employers with a financially neutral choice between training (and not paying the tax), or not training (and paying the tax). Funds collected this way are then distributed to firms in the form of additional grants. Strictly speaking, firms receive no automatic subsidy, since grants are not necessarily awarded. "Train-or-pay" levies, however, are equivalent to schemes where

there is a tax of a given percentage of payroll independent of training expenditures, a 100% automatic subsidy of training expenditures up to that percentage of payroll, and an additional grant awarded through case-by-case analysis of training projects (see OECD, 2003a).

25. See OECD (2003a) for a discussion of the effect on training provision of the interaction among different market failures.

26. In countries where corporate tax deductions are used (*e.g.* Austria, Italy, Luxembourg and the Netherlands) the average deduction rate is approximately 120% of training expenditures, which implies a 20% subsidy to firms (see OECD, 2003a for a discussion of different types of financial incentives for firms). Note also that in most other countries the costs associated with training are treated by tax regulations as a cost of doing business and deducted from taxable income of employers. As such, however, the treatment is similar to that of investment in fixed assets (where depreciation is deducted from taxable income), and certain forms of investment in intangible capital (such as R&D costs that are deducted from taxable income), but is not tax incentive.

ANNEX 4.A1

Supplementary Evidence

Table 4.A1.1. **Education and employment go hand in hand**

Fixed and random-effect estimates of the association between education and labour market performance

	Fixed effects base model[a]	Random effects base model[a]	Fixed effects reduced model[b]	Random effects reduced model[b]
		Panel A. Employment rate		
Percentage-point change associated with education[c]	**1.06**	**1.32****	**1.55*****	**1.85*****
Number of observations	219	219	251	251
Number of countries	19	19	21	21
Hausman test (P-value)	–	1.00	–	0.00***
		Panel B. Activity rate		
Percentage-point change associated with education[c]	**1.15****	**1.24****	**1.59*****	**1.72*****
Number of observations	219	219	251	251
Number of countries	19	19	21	21
Hausman test (P–value)	–	1.00	–	0.84
		Panel C. Unemployment rate		
Percentage-point change associated with education[c]	**–0.17**	**–0.65****	**–0.30**	**–0.55***
Number of observations	219	219	251	251
Number of countries	19	19	21	21
Hausman test (P-value)	–	0.81	–	0.11

Dependent variable indicated in the title of each panel.

***, **, * statistically significant at 1% level, 5% level and 10% level, respectively.

a) Base model: additional controls are tax wedge, expenditures on active labour market policies (ALMP), replacement ratio, index of employment protection legislation (EPL), centralisation/corporatism index, collective bargaining coverage, logarithm of demeaned GDP (in volume), output gap and year dummies.

b) Reduced model: same controls as for the base model, except for EPL and wage-bargaining variables.

c) Percentage-point change in the dependent variable associated with one extra year of average educational attainment in the population.

Source: Secretariat estimates based on the International Adult Literacy Survey (IALS), the Second Continuing Vocational Training Survey (CVTS2), data from Bassanini and Scarpetta (2002), and Chapters 2 and 3 of this publication.

Table 4.A1.2. **The correlation between training and employment is not only due to institutions and education**

Two-step estimates of the partial correlation between employee training and labour market performance

	Employment rate, base model[a]	Employment rate, reduced mode[b]	Activity rate, base model[a]	Activity rate, reduced model[b]	Unemployment rate, base model[a]	Unemployment rate, reduced model[b]
Training participation[c]	0.58**	0.59***	0.65***	0.68***	–0.08	–0.04
Training hours[d]	0.52**	0.48**	0.61***	0.63***	0.06	0.18

The table shows the correlation coefficient between training variables and the country fixed effects obtained from aggregate regressions presented in Table 4.A1.1.

***, **, * statistically significant at 1% level, 5% level and 10% level, respectively.

a) Base model: additional controls are tax wedge, expenditures on active labour market policies (ALMP), replacement ratio, index of employment protection legislation (EPL), centralisation/corporatism index, collective bargaining coverage, logarithm of demeaned GDP (in volume), output gap and year dummies.

b) Reduced model: same controls as for the base model, except for EPL and wage-bargaining variables.

c) Ratio of employees receiving training in one year to total employees.

d) Annual training hours per employee.

Source: Secretariat estimates based on the International Adult Literacy Survey (IALS), the Second Continuing Vocational Training Survey (CVTS2), data from Bassanini and Scarpetta (2002), and Chapters 2 and 3 of this publication.

Table 4.A1.3. **Tests of within-group crowding-out effects (activity)**

Z-statistics[a]

	Model i[b]	Model ii[c]	Model iii[d]
More than upper secondary education			
Aged 25-34	–0.46	–1.34	0.89
Aged 35-44	–1.84*	1.23	1.37
Aged 45-54	–1.52	0.88	–0.54
Upper secondary education			
Aged 25-34	–0.54	0.87	0.50
Aged 35-44	2.12**	2.82***	1.19
Aged 45-54	0.73	0.91	0.58
Less than upper secondary education			
Aged 25-34	–2.12**	2.06**	–1.96*
Aged 35-44	1.46	2.37**	1.97**
Aged 45-54	–0.87	0.59	–1.08

***, **, * statistically significant at 1% level, 5% level and 10% level, respectively.

a) A fixed effect logit specification with the same controls as for Chart 4.4 is used, except that aggregate variables and year dummies are included in substitution of country per year dummies.

b) Included aggregate variables are lagged group-specific training participation and employment rates. The reported statistics refer to testing that the coefficient of training participation is significantly different from zero. A significantly negative value suggests the presence of within-group crowding-out effects.

c) Included aggregate variables are group-specific and economy-wide training participation rates. The reported statistics refer to testing that the difference between the coefficients of group-specific and economy-wide training participation is different from zero. A significantly negative value suggests that group-specific effects are stronger than economy-wide ones.

d) Included aggregate variables are lagged group-specific and economy-wide training participation rates. The reported statistics refer to testing that the difference between the coefficients of group-specific and economy-wide training participation is different from zero. A significantly negative value suggests that group-specific effects are stronger than economy-wide ones.

Source: Secretariat calculations based on the European Community Household Panel, waves 1 to 7 (1994-2000).

Table 4.A1.4. **Tests of within-group crowding-out effects (unemployment)**

Z-statistics[a]

	Model i[b]	Model ii[c]	Model iii[d]
More than upper secondary education			
Aged 25-34	0.80	1.20	–0.90
Aged 35-44	0.48	2.56**	0.18
Aged 45-54	0.10	–2.23**	–1.59
Upper secondary education			
Aged 25-34	–0.29	–1.35	–1.36
Aged 35-44	–0.19	1.98**	1.20
Aged 45-54	–0.69	1.85*	–0.44
Less than upper secondary education			
Aged 25-34	–0.04	0.35	3.20***
Aged 35-44	–1.08	–0.54	0.04
Aged 45-54	–1.03	0.79	0.35

***, **, * statistically significant at 1% level, 5% level and 10% level, respectively.

a) A fixed effect logit specification with the same controls as for Chart 4.5 is used, except that aggregate variables and year dummies are included in substitution of country per year dummies.

b) Included aggregate variables are lagged group-specific training participation and employment rates. The reported statistics refer to testing that the coefficient of training participation is significantly different from zero. A significantly positive value suggests the presence of within-group crowding-out effects.

c) Included aggregate variables are group-specific and economy-wide training participation rates. The reported statistics refer to testing that the difference between the coefficients of group-specific and economy-wide training participation is different from zero. A significantly positive value suggests that group-specific effects are stronger than economy-wide ones.

d) Included aggregate variables are lagged group-specific and economy-wide training participation rates. The reported statistics refer to testing that the difference between the coefficients of group-specific and economy-wide training participation is different from zero. A significantly positive value suggests that group-specific effects are stronger than economy-wide ones.

Source: Secretariat calculations based on the European Community Household Panel, waves 1 to 7 (1994-2000).

Table 4.A1.5. **Sensitivity analysis for the estimated effect of training on the probability of re-employment by labour market group**

Percentage points[a, b]

	Base[c]	Last year[d, e]	NNM[e, f]	Kernel[e, g]
	Panel A. Formal education or training			
Total				
Any educational attainment	4.7***	2.8	6.1**	3.3*
Upper secondary education or less	5.1***	4.4	5.5	5.6**
Gender				
Men				
Any educational attainment	5.8***	5.5*	4.3	5.3**
Upper secondary education or less	7.1***	7.0*	6.0	6.4*
Women				
Any educational attainment	3.2	–1.4	–6.3	1.3
Upper secondary education or less	2.1	–1.6	–3.5	1.6
Age				
25-34				
Any educational attainment	2.7	–0.8	–1.0	0.1
Upper secondary education or less	3.1	–0.6	–2.8	–0.1
35-54				
Any educational attainment	8.6***	8.8**	–0.3	6.7**
Upper secondary education or less	9.5***	11.8**	10.6*	11.2**
	Panel B. Training			
Total				
Any educational attainment	1.8	2.7	3.6	3.2
Upper secondary education or less	2.5	4.1	6.5*	5.1*
Gender				
Men				
Any educational attainment	6.4***	5.5*	5.1	5.4**
Upper secondary education or less	8.2**	6.8*	0.9	6.0**
Women				
Any educational attainment	–2.2	–1.4	–1.5	1.7
Upper secondary education or less	–4.8	–2.1	1.4	1.3
Age				
25-34				
Any educational attainment	–1.1	–1.0	–2.0	0.1
Upper secondary education or less	–0.9	–1.1	–0.7	–1.1
35-54				
Any educational attainment	7.7**	8.1**	5.6	6.8**
Upper secondary education or less	9.3**	11.8**	17.8***	11.3**

Table 4.A1.5. **Sensitivity analysis for the estimated effect of training on the probability of re-employment by labour market group** *(cont.)*

Percentage points[a, b]

	Base[c]	Last year[d, e]	NNM[e, f]	Kernel[e, g]
	Panel C. Formal education			
Total				
Any educational attainment	8.9***	6.8**	5.2	7.0**
Upper secondary education or less	11.5***	8.3**	3.5	7.4**
Gender				
Men				
Any educational attainment	3.3	0.6	1.9	0.7
Upper secondary education or less	5.0	4.0	–7.8	–1.1
Women				
Any educational attainment	13.9***	11.8**	18.4***	11.2**
Upper secondary education or less	18.9***	13.6**	15.8*	13.9**
Age				
25-34				
Any educational attainment	8.1**	6.2**	14.5***	7.1**
Upper secondary education or less	12.0***	8.6*	5.3	8.0
35-54				
Any educational attainment	8.6	8.4	5.3	5.1
Upper secondary education or less	8.3	3.7	3.3	2.1

***, **, * statistically significant at 1% level, 5% level and 10% level, respectively.

a) Estimates of the percentage point increase in the probability of re-employment two years after an involuntary separation for an average employee due to participating in some training while working for the employer who he/she separated from. Controls are two-year changes in health status, family type, marital status, presence of children, age, age squared, consensual union, as well as variables characterizing the job held before the separation: tenure, tenure squared, firm size, 1-digit occupation dummies, part-time status, unemployment experience before the job, log wage. Family-related variables are interacted with gender. Due to the small sample size, jointly insignificant groups of variables are dropped in the final specification, in order to have a parsimonious model. Separate estimates for training and formal education are obtained by including both variables in the same specification.

b) The sample includes the following countries: Austria, Belgium, Denmark, Finland, Germany (German Socio-Economic Panel, SOEP), Italy, Ireland, the Netherlands, Portugal and Spain.

c) Probit estimates. Training is codified as the number of years in which, during the previous job, the individual participated in some training.

d) Probit estimates.

e) Training is codified as a dummy variable, taking value 1 if the individual participated in some training in the year before the separation.

f) Estimates by Nearest-Neighbour Matching (NNM) on a common support, with a logit specification for the propensity score.

g) Estimates by Gaussian Kernel Matching on a common support, with a logit specification for the propensity score; standard errors are obtained by bootstrapping with 100 replications.

Source: Secretariat calculations based on the European Community Household Panel, waves 1 to 7 (1994-2000).

ANNEX 4.A2

Data Description

Aggregate data

Data used for Chart 4.1 come from the European Union Labour Force Surveys for EU countries and from the OECD-DELSA database on services for the other countries. Jobs are defined as industry/occupation cells. For each country, 96 jobs (industry/occupation cells) are ranked on the basis of proportion of low-educated workers in 1993 and then placed into three groups of equal size in terms of their share of total employment.

All other aggregate data used in this chapter come from Chapters 2 and 3, except for average years of education that come from Bassanini and Scarpetta (2002) and data on employee training that have been reconstructed on the basis of the following two sources (see OECD, 2003a, for more details):

- The *International Adult Literacy Survey* (IALS), which is an individual survey that was carried out by the OECD and Statistics Canada in the 1990s. The survey asks whether the workers have received any training or education during the 12 months prior to the survey, but it includes details only about the three most recent courses (purpose, financing, training institution, duration, etc.). Data refer to 1994 for Canada, Ireland, the Netherlands, Poland, Switzerland (German and French-speaking regions), and the United States, to 1996 for Australia, Belgium (Flanders only), New Zealand and the United Kingdom and to 1998 for the Czech Republic, Denmark, Finland, Hungary, Italy, Norway and the Italian-speaking regions of Switzerland.
- The second *Continuing Vocational Training Survey* (CVTS2), which is an enterprise survey covering establishments with at least ten employees and was carried out by Eurostat in 2000 in EU member states, Norway and nine countries that were candidates to EU membership at that date. It provides information on employer-sponsored training, which is taken during the year prior to the survey, for employed persons, excluding apprentices and trainees. The survey provides a large set of characteristics for the enterprises, but only gender, training participation and total training hours for the employee.

The definition of employee training in different surveys varies. Therefore, the coverage of the different forms of training is not the same across surveys. In the CVTS2, employee training is defined as courses which take place away from the place of work, *i.e.* in a classroom or training centre, at which a group of people receive instruction from teachers/tutors/lecturers for a period of time specified in advance by those organising the course. Post-graduate education is included in this definition while initial training – *i.e.* training received by a person when hired in order to make his/her competencies suited to his/her job assignment – is

excluded. In the IALS, there is a distinction between job- or career-related training and training for other purposes. Furthermore, education and training courses are divided into seven mutually exclusive categories: *i)* leading to a university degree/diploma/certificate; *ii)* leading to a college diploma/certificate; *iii)* leading to a trade-vocational diploma/certificate; *iv)* leading to an apprenticeship certificate; *v)* leading to an elementary or secondary school diploma; *vi)* leading to professional or career upgrading; and *vii)* other. For the purpose of this chapter, only job or career-related training has been considered in the analysis.

CVTS2 and IALS samples are relatively small (the number may vary depending on the training measure but it is in any case no greater than 18 countries per dataset). To increase the size and variety of the sample, for the sake of the analysis of this chapter, CVTS2 and IALS data on both training participation rates and the log of training hours per employee have been merged by using the technique suggested in OECD (1999b). First, the cross-country distributions of both surveys were standardised to have zero mean and unit variance. Second, a cross-survey training index was constructed by taking, for each country, the cross-distribution unweighted average of the available standardised values (taking the single standardised value for countries that are not present in both datasets). The problem of the cross-survey index is that its values (by having approximately zero cross-country average) are difficult to relate to actual participation rates and hours. For this reason, as a third step, cross-survey final measures were reconstructed by multiplying the cross-survey index by the average of the standard errors of the original distributions and adding the average of their means.

In the case of the IALS, several measures could be used. In the measure that was retained, only courses that were not job-related were discarded but both job-related education and vocational training courses were retained. Cross-country correlation rates of the cross-survey measures with the original CVTS2 and IALS measures are very high (greater than 0.95 in all cases). As an additional quality test, cross-survey final measures were regressed on the original measures (separately on IALS and CVTS2) without including a constant. If no systematic data modification of the levels is introduced by this data-harmonisation process, we expect that the coefficient of the original measure will not be statistically different from one. In the case of participation rates, this hypothesis cannot be rejected at the 5% level, while it is rejected in the case of training hours. The possibility of experimenting with the IALS breakdown of course types was explored to check whether a different definition of training could improve the quality of the cross-survey measure for training hours. However, all other alternatives yielded worse results (in terms of quality tests) as regards to training participation without improving cross-country comparability of training hours data.

Due to data availability, the samples used in Tables 4.A1.1 and 4.A1.2 cover only the following countries: Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Japan (only Table 4.A1.1), the Netherlands, New Zealand, Norway, Portugal, Spain, Sweden, Switzerland, the United Kingdom and the United States. The samples span from 1985 to 1998, although they are unbalanced, due to missing data on institutional variables for certain countries in certain years (see Chapters 2 and 3).

Individual data

The microeconomic analysis of this chapter is based on individual data from the 2003 release of the *European Community Household Panel* (ECHP). This survey provides a wealth of

information on individual income and socio-economic characteristics for all EU countries and aims to be representative, both in cross-sections and longitudinally. Due to the common questionnaire, the information contained in the ECHP is, in principle, comparable across countries, which is its main strength. Moreover, releases of the ECHP contain additional longitudinal data from other sources for certain countries – such as the German Socio-Economic Panel (SOEP) and the British Household Panel Survey (BHPS), whose questions are made comparable with those of the ECHP questionnaire.

The main question on vocational training in the ECHP is as follows "Have you at any time since January (year before the survey year) been in any vocational education or training, including part-time and short-courses?". From this question, a dichotomous variable "participation in vocational training", which takes the value 1 if the individual responded "yes" and 0 if he/she responded "no", is constructed. Similarly, the main question on formal education in the ECHP is as follows "Have you at any time since January (year before the survey year) been in any formal education course?". From this question, a dichotomous variable "participation in formal education", which takes the value 1 if the individual responded "yes" and 0 if he/she responded "no", is constructed. The distinction between formal education and vocational training is based on the corresponding categories of national Labour Force Surveys.

In the year of the interview, the stock of vocational training and formal education is increased by 1 if the individual reported to have participated in one of them in the period covered by that interview. Each training stock is further decomposed in three aggregates: training taken with the current employer, with previous employers and while not in employment. Due to the scattered nature of the information on course duration (with many missing values for many countries), start and end dates are not used for the analysis of this chapter. This has two consequences. First, training reported in one interview is attributed to belong to the period between that interview and the previous one, although it might have been taken before the latter. This is equivalent to increasing the risk of false reporting, which, as shown by Frazis and Loewenstein (1999), is likely to bias returns towards zero. Second, training reported in one interview is either considered to have been taken with the current employer at the time of the interview or, if the individual is not in employment at that time, to have been taken while not in employment. If, at a given interview, the individual says he/she has separated from the employer he/she was working for at the time of the previous interview, the training reported in previous interviews as training with the current employer is added to the stock of training taken with previous employers and the stock of training with the current employer is re-set to either 0 or 1 (depending on whether training is reported in the current interview).

The microeconomic analysis of this chapter is limited to individuals aged from 25 to 54 years. Due to data availability a person is defined as employed if he/she works at least 15 hours per week. Moreover, employee's gross hourly wages are computed from gross monthly earnings in the main job at the date of the interview, by dividing them by 52/12 and by usual weekly hours of work. Overtime pay and hours are included.

The ECHP release used in this chapter contains data from 1994 to 2000. Although, in principle, the ECHP covers 15 European Union countries, the country sample in the different analyses is chosen on the basis of data availability. Luxembourg and Sweden never appear in the analysis – due to the small sample size for the former and the absence of longitudinal data for the latter. SOEP and BHPS sources are preferred for Germany and

the United Kingdom, respectively, since data from ECHP sources on these two countries are not available after 1996. Nevertheless, due to a change in the BHPS questionnaire, starting in 1998, only the waves 1998-2000 are used for the United Kingdom; and due to the lack of information on subjective perceptions of job security in the SOEP, ECHP data are used for Germany in the analysis of Section 4. Furthermore, data for Austria are not available in 1994 and data for Finland are not available in 1994 and 1995. In addition, observations for certain countries and certain years are excluded from the sample in the case of specifications including wages as dependent variable or co-variate, due to lack of time-series comparability of wage data – notably, 1995 for Austria, 1994 and 1997-2000 for France, 1994-1996 for Greece, 2000 for Ireland, and 1994 for Spain. Finally, the United Kingdom is excluded from the analysis of the probability of being active or unemployed, since the unemployed cannot be distinguished from the inactive in BHPS data, while Ireland is excluded from the analysis of subjective perceptions of job security due to a large number of missing values.

Bibliography

Acemoglu, D. and J.S. Pischke (1998), "Why Do Firms Train? Theory and Evidence", *Quarterly Journal of Economics*, Vol. 113, pp. 79-119.

Agell, J. and K. Lommerud (1997), "Minimum Wages and the Incentives for Skill Formation", *Journal of Public Economics*, Vol. 64, pp. 25-40.

Arulampalam, W., A. Booth and M. Bryan (2004), "Are there Asymmetries in the Effects of Training on the Conditional Male Wage Distribution?", IZA Discussion Paper, No. 984, January.

Aubert, P., E. Caroli and M. Roger (2004), "New Technologies, Workplace Organisation and the Age Structure of the Workforce: Evidence from France in the 1990s", mimeo, CREST-INSEE and INRA-LEA, Paris, March.

Ballot, G., F. Fakhfakh and E. Taymaz (2001), "Who Benefits from Training and R&D ? The Firm or the Workers? A study on panels of French and Swedish firms", ERMES Working Paper, No. 01-12.

Bardone, L., A. Bassanini, A. Puymoyen and P. Swaim (2004), "Dissecting the Gender Pay Gap: What Can We Learn from International Comparisons?", *Gender Statistics: Occupational Segregation: Extent, Causes and Consequences, Proceedings of the 25th CEIES Conference*, Eurostat, European Communities, Luxembourg, forthcoming.

Barron, J.M., M.C. Berger and D.A. Black (1999), "Do Workers Pay for On-the-Job Training?", *Journal of Human Resources*, Vol. 34, No. 2, pp. 235-252.

Barry, F. and J. Bradley (1997), "FDI and Trade: The Irish Host-Country Experience", *Economic Journal*, Vol. 107, pp. 1798-1811.

Bartel, A. (2000), "Measuring the Employer's Return on Investments in Training: Evidence from the Literature", *Industrial Relations*, Vol. 39, pp. 502-524.

Bartel, A. and N. Sicherman (1993), "Technological Change and Retirement Decisions of Older Workers", *Journal of Labor Economics*, Vol. 11, pp. 162-183.

Bartelsman, E., A. Bassanini, J. Haltiwanger, R. Jarmin, S. Scarpetta and T. Schank (2004), "The Spread of ICT and Productivity Growth: Is Europe Really Lagging Behind in the New Economy?", in D. Cohen, P. Garibaldi and S. Scarpetta (eds.), *The ICT Revolution: Productivity Differences and the Digital Divide*, Oxford University Press, Oxford.

Bassanini, A. (2004), "Improving Skills for More and Better Jobs? The Quest for Efficient Policies to Promote Adult Education and Training", paper presented at the European Commission Conference on Quality and Efficiency in Education, Brussels, May.

Bassanini, A. and G. Brunello (2003), "Is Training More Frequent When Wage Compression is Higher? Evidence from the European Community Household Panel", IZA Discussion Paper, No. 839, August.

Bassanini, A. and S. Scarpetta (2002), "Does Human Capital Matter for Growth in OECD Countries? A Pooled Mean Group Approach", *Economics Letters*, Vol. 74, No. 3, pp. 399-405.

Betcherman, G., K. Olivas and A. Dar (2004), "Impacts of Active Labor Market Programs: New Evidence from Evaluations with Particular Attention to Developing and Transition Countries", World Bank Social Protection Discussion Paper, No. 0402, January.

Bils, M. and P. Klenow (2000), "Does Schooling Cause Growth?", *American Economic Review*, Vol. 90, No. 5, pp. 1160-1183.

Bishop, J.H. (1997), "What We Know about Employer – Provided Training: A Review of the Literature", *Research in Labor Economics*, Vol. 16, pp. 19-87.

Bjørnåvold, J. (2002), "Assessment of Non-formal Learning: A Link to Strategies for Lifelong Learning", in D. Colardyn (ed.), *Lifelong Learning: Which Ways Forward?*, 2nd ed., Lemma Publishers, Utrecht.

Blundell, R. (2000), "Comments on James Heckman's Policies to Foster Human Capital", *Research in Economics*, Vol. 54, No. 1, pp. 57-60.

Blundell, R., L. Dearden and C. Meghir (1999), "Work-related Training and Earnings", mimeo, Institute for Fiscal Studies, London.

Booth, A. and M. Bryan (2002), "Who Pays for General Training? New Evidence for British Men and Women", IZA Discussion Paper, No. 486, April.

Booth, A. and G. Zoega (2004), "Is Wage Compression a Necessary Condition for Firm-financed General Training?", *Oxford Economic Papers*, Vol. 56, pp. 88-97.

Chennells, L., and J. Van Reenen (2002), "Has Technology Hurt Less Skilled Workers? An Econometric Survey of the Effects of Technical Change on the Structure of Pay and Jobs", in Y. L'Horty, N. Greenan and J. Mairesse (eds.), *Productivity, Inequality, and the Digital Economy*, The MIT Press, Boston, MA.

Dearden, L., H. Reed and J. Van Reenen (2000), "Who Gains When Workers Train? Training and Productivity in a Panel of British Industries", IFS Working Paper, No. 00-04.

De La Fuente, A. and A. Ciccone (2003), *Human Capital in a Global Knowledge – Based Economy*, European Communities, Luxembourg.

Fougère, D., D. Goux and E. Maurin (2001), "Formation continue et carrières salariales : Une évaluation sur données individuelles", *Annales d'Économie et de Statistique*, No. 62, pp. 49-69.

Frazis, H. and M. Loewenstein (1999), "Re-examining the Returns to Training: Functional Form, Magnitude, and Interpretation", BLS Working Paper, No. 325.

Freeman, R. and R. Schettkat (2001), "Skill Compression, Wage Differentials, and Employment: Germany vs. the US", *Oxford Economic Papers*, Vol. 53, pp. 582-603.

Gautier, P.A., G. Van Den Berg, J. Van Ours and G. Ridder (2002), "Worker Turnover at the Firm Level and Crowding Out of Lower Educated Workers", *European Economic Review*, Vol. 46, pp. 523-538.

Gerfin, M. (2003), "Firm-sponsored Work Related Training in Frictional Labour Markets: An Empirical Analysis for Switzerland", *Universität Bern Diskussionschriften*, No. 03-17, October.

Givord, P. and E. Maurin (2004), "Changes in Job Security and Their Causes: An Empirical Analysis Method Applied to France 1982-2000", *European Economic Review*, forthcoming.

Greenwald, B.C. (1986), "Adverse Selection in the Labour Market", *Review of Economic Studies*, Vol. 53, pp. 325-347.

Gronau, R. (1986), "Home Production: A Survey", in O. Ashenfelter and R. Layard (eds.), *Handbook of Labor Economics*, Vol. 1, North-Holland, Amsterdam.

Hamermesh, D.S. (1993), *Labor Demand*, Princeton University Press, Princeton, NJ.

Heckman, J.J. (2000), "Policies to Foster Human Capital", *Research in Economics*, Vol. 54, No. 1, pp. 3-56.

KRIVET (Korea Research Institute for Vocational Education and Training) (2004), *Korea Background Report: Thematic Review of Adult Learning*, Seoul, forthcoming.

Kuckulenz, A. and T. Zwick (2003), "The Impact of Training on Earnings: Differences between Participant Groups and Training Forms", ZEW Discussion Paper, No. 03-57.

Layard, R. (2003), "A Note for Discussion", Meeting of the Employment, Labour and Social Affairs Committee at the Ministerial Level, Forum: Good Jobs/Bad Jobs: Myth and Realities, DELSA/ELSA/MIN(2003)5, OECD, Paris.

Leuven, E. (2003), "The Economics of Training: A Survey of the Literature", mimeo, University of Amsterdam.

Leuven, E. and H. Oosterbeek (2004), "Evaluating the Effect of Tax Deductions on Training", *Journal of Labor Economics*, forthcoming.

Leuven, E., H. Oosterbeek, R. Sloof and C. van Klaveren (2004), "Worker Reciprocity and Employer Investment in Training", *Economica*, forthcoming.

Loewenstein, M.A. and J.R. Spletzer (1998), "Dividing the Costs and Returns to General Training", *Journal of Labor Economics*, Vol. 16, No. 1, pp. 142-171.

Loewenstein, M.A. and J.R. Spletzer (1999), "General and Specific Training: Evidence and Implications", *Journal of Human Resources*, Vol. 34, No. 4, pp. 710-733.

Martin, J.P. and D. Grubb (2001), "What Works and for Whom: A Review of OECD Countries' Experiences with Active Labour Market Policies", *Swedish Economic Policy Review*, Vol. 8, No. 2, pp. 9-56.

Nickell, S. and B. Bell (1995), "The Collapse in Demand for the Unskilled and Unemployment Across the OECD", *Oxford Review of Economic Policy*, Vol. 11, No. 1, pp. 40-62.

Nickell, S. and B. Bell (1996), "Changes in the Distribution of Wages and Unemployment in OECD Countries", *American Economic Review Papers and Proceedings*, Vol. 86, pp. 302-308.

Nickell, S., P. Jones and G. Quintini (2002), "A Picture of Job Insecurity Facing British Men", *Economic Journal*, Vol. 112, pp. 1-27.

Nicoletti, G., S. Golub, D. Hajkova, D. Mirza and K.Y. Yoo (2003), "The Influences of Policies on Trade and Foreign Direct Investment", *OECD Economic Studies*, No. 36, OECD, Paris, pp. 7-84.

OECD (1989), *Employment Outlook*, Paris.

OECD (1994a), *The OECD Jobs Study – Facts, Analysis, Strategies*, Paris.

OECD (1994b), *The OECD Jobs Study – Evidence and Explanations. Part II: The Adjustment Potential of the Labour Market*, Paris.

OECD (1997a), *Implementing the OECD Jobs Strategy – Member Countries' Experience*, Paris.

OECD (1997b), *Employment Outlook*, Paris.

OECD (1999a), *Implementing the OECD Jobs Strategy – Assessing Performance and Policy*, Paris.

OECD (1999b), *Employment Outlook*, Paris.

OECD (2002), *Employment Outlook*, Paris.

OECD (2003a), *Employment Outlook*, Paris.

OECD (2003b), *Beyond the Rhetoric: Adult Learning Policies and Practices*, Paris.

OECD (2004), "A General Empirical Model to Estimate the Impact of Training on Individual Labour Market Performance", Background Material for Chapter 4 of *OECD Employment Outlook 2004* (*www.oecd.org/els/employment/outlook*).

Oi, W.Y. (1962), "Labor as a Quasi – Fixed Factor", *Journal of Political Economy*, Vol. 70, pp. 538-555.

Ok, W. and P. Tergeist (2003), "Improving Workers' Skills: Analytical Evidence and the Role of the Social Partners", OECD Social, Employment and Migration Working Papers, No. 10, OECD, Paris, July.

Okun, A. (1981), *Prices and Quantities*, Brookings Institution, Washington, DC.

Parent, D. (1999), "Wages and Mobility: The Impact of employer – Provided Training", *Journal of Labor Economics*, Vol. 17, No. 2, pp. 298-317.

Parsons, D.O. (1986), "The Employment Relationship: Job Attachment, Work Effort, and the Nature of Contracts", in O. Ashenfelter and R. Layard (eds.), *Handbook of Labor Economics*, Vol. 2, pp. 789-848, North-Holland, Amsterdam.

Siebert, H. (1997), "Labor Market Rigidities: At the Root of Unemployment in Europe", *Journal of Economic Perspectives*, Vol. 11, pp. 37-54.

Soskice, D. (1994), "Reconciling Markets and Institutions: The German Apprenticeship System", in L.M. Lynch (ed.), *Training and the Private Sector: International Comparisons*, NBER Series in Comparative Labor Markets, University of Chicago Press, Chicago.

Stevens, M. (1994), "A Theoretical Model of On-the-Job Training with Imperfect Competition", *Oxford Economic Papers*, Vol. 46, No. 4, pp. 537-562.

Thurow, L.C. (1972), "Education and Economic Equality", *The Public Interest*, No. 28, pp. 66-82.

Waldman, M. (1984), "Job Assignments, Signalling, and Efficiency", *Rand Journal of Economics*, Vol. 15, pp. 255-267.

Walsh, P.P. and C. Whelan (2003), "Employment Responses to Trade Liberalisation: Ireland's Industrial Development 1972-2000", paper presented at the joint Upjohn Institute/William Davidson Institute Conference on Microeconomic Analyses of Labor Reallocation, Augusta, MI, August.

Weiss, A. (1995), "Human Capital vs. Signalling Explanations of Wages", *Journal of Economic Perspectives*, Vol. 9, No. 4, pp. 133-154.

Willis, R., R. Connelly and D. Degraff (2003), "The Future of Jobs in the Hosiery Industry", in E. Appelbaum, A. Bernhardt and R.J. Murnane (eds.), *Low-Wage America*, Russell Sage Foundation, New York.

ISBN 92-64-10812-2
OECD Employment Outlook
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Chapter 5

Informal Employment and Promoting the Transition to a Salaried Economy[1]

"Informal" employment escapes taxation and regulation. Such forms of employment make it difficult to manage social protection; undermine tax collection, implying either high tax rates on those in formal employment or poor-quality government services; involve unfair competition and inefficient production methods; and facilitate illegal migration. To what extent does undeclared work include household production, work helping out friends, work by illegal migrants, undeclared wages, "black market" transactions, tax evasion by the self-employed, and the production of illicit goods? Do high taxes, red tape, poor-quality government services and strict employment regulations exclude workers from formal employment, and how can the transition to a salaried economy be promoted?

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Introduction

This chapter examines so-called "informal", "undeclared" or "underground" employment, that is, employment which falls mainly outside the scope of taxation, social insurance and other regulations. In developing countries, often the majority of disadvantaged workers are in this sector, which means that the main instruments of labour market policy – employment regulation, social assistance and social insurance, and active labour market programmes – have difficulty in reaching them. For a number of middle-income OECD countries, informal employment and its consequences are more important labour market issues than unemployment *per se*. Among the main concerns raised by informal employment are: *i)* the weak social protection for the workers themselves; *ii)* the fact that informal employment is often a trap which offers few prospects to improve careers; *iii)* its consequences for workers in the formal economy, who suffer unfair competition and have to pay higher taxes than in the absence of informal employment; and *iv)* potential rewarding of tax evasion and corruption associated with government inability to enforce the rule of law. More generally, informal employment may lock the economy into a low level of development.

Section 1 discusses these and other reasons for concern about informal employment. Section 2 examines issues of definition and measurement. Background factors which may cause informal employment are addressed in Section 3. Section 4 reviews enforcement mechanisms and tax policies to bring undeclared workers into the salaried economy. Section 5 highlights issues for social protection and labour market programmes in economies with significant levels of informal work.

Main findings

- *It is difficult to measure undeclared work*. Survey-based and national accounts estimates suggest that in many high-income OECD countries 5% or less of work is undeclared. However, in a number of OECD countries – some countries of Southern Europe, transition countries (except for the Czech and Slovak Republics), Korea and Mexico – the incidence of undeclared work appears to be several times higher. In a few OECD countries (Hungary, Korea, and Mexico), actual social security contribution receipts are about 30% short of what could be expected on the basis of scheduled contribution rates and ceilings, compared with total wages and salaries in national accounts which include estimates of undeclared incomes. Shortfalls in personal income tax receipts may be somewhat larger, reflecting lower effective tax rates on self-employment incomes. In less-developed non-OECD countries, statistical estimates usually include purely informal work, which is unregistered but is not hidden because there is no effective requirement for it to be declared. Formal employment with payment of tax and social security contributions becomes an "island" in a larger "sea" of informal work. The formal sector may still account for over 50% of GDP – due to its higher relative productivity – suggesting that the benefits from a long-term transition to a salaried economy through progressive expansion of the sector can be large.

- *Evidence for a trend increase in the size of the informal economy is mixed*. The low incidence of informal employment recorded in many high-income countries is probably the result of a long-term transition to formal employment which continued into the 1950s and 1960s. Rates of participation in the black economy reported in surveys from OECD countries in the 1970s and 1980s seem to have been similar to or perhaps slightly below those reported today. In central and eastern European countries, the informal economy grew rapidly during the first years of transition, but in several cases there is evidence of a declining trend in recent years.
- *Direct policy measures to reduce undeclared work include* detection *and* enforcement. Measures include information exchange (linking computer files); unique social security numbers; co-operation between labour, social security and tax inspectorates; administrative requirements for immediate declaration of new hires; making chief contractors responsible for tax compliance by subcontractors; encouraging employer and trade union denunciation of unfair competition; enforcing employees' rights such as protection against unfair dismissal, even within undeclared relationships; and strict sanctions. Detection is generally easiest in the case of wholly-undeclared work by employees, and more difficult in the cases of under-declaration of work and black-market work. Evidence about the overall effectiveness of these policies is mixed: they can have an impact, but at the same time, some countries attain low levels of undeclared work without significant use of detection and enforcement measures focused on labour inputs, focusing instead upon ensuring the accuracy of accounts and record-keeping among small businesses. There is a general issue of how far such direct measures are desirable, given that non-declaration is partly motivated by the administrative burden and red tape involved in business creation and the formal hiring of employees.
- *Red tape* (e.g. *requirements to obtain various licences before starting a business) is often thought to be the most important single cause of undeclared work*. However, regulations are also designed to prevent tax evasion and general fraud by fly-by-night operations. Research should focus on identifying not just the costs of regulation, but also the underlying needs for regulation and how to meet these needs at minimal cost.
- *High tax rates* per se *do not appear to influence levels of undeclared work in international (or time-series) comparisons*. On the other hand, methods of tax administration influence incentives for concealment of dependent employment. If assessed liability to tax is based on the observed volume of labour input (*e.g.* as detected by inspection visits which determine the number of employees working at a given work site) there are still incentives for under-declaring earnings per employee. To counter this, the tax authorities may appeal to employment regulations such as the minimum wage and restrictions on part-time and temporary work. This issue helps explain why countries with a large informal economy maintain *de facto* strict employment regulations, even though these regulations are seen by many analysts as a prime cause of informality.
- *The tax treatment of business profits,* i.e. *earnings from self-employment, in the case of unincorporated businesses* vis-à-vis *wages and salaries matters*. Labour costs (which include employer social security contributions as well as wages and salaries) are deducted from business value added in determining taxable profits, so if taxation is based on assessments of value added (*i.e.* sales less non-labour input costs) rather than assessment of labour inputs, there is usually little incentive to conceal dependent employment. In cases where effective marginal tax rates on profits (*i.e.* earnings from

self-employment, in the case of unincorporated businesses) exceed tax rates on labour incomes, there is a positive tax incentive to declare wages and salaries. But factors such as partial exemption from social security contributions and simplified tax regimes for self-employment incomes, or dividend tax reliefs and low corporate tax rates when combined with high social security contributions on wages and salaries, may to varying degrees reverse this incentive.

- *Several European governments have introduced tax concessions in sectors where the incidence of undeclared work is high* (*e.g.* domestic staff, home improvement and repair services). Generous income tax credits and reductions in consumption taxes are costly, but increase incentives to declare work in these sectors. Service employment cheques in France have also achieved administrative simplification. But these sectors and the concessionary measures for them demand continuing attention by the tax authorities.
- *The payment of adequate unemployment benefits combined with effective checks on fraud can reduce the incidence of low-paid informal work*. By contrast, if benefit levels are below subsistence level and/or anti-fraud measures are ineffective, the payment of unemployment benefits may act as a subsidy to informal work. Therefore, outcomes depend on adequate funding and administrative capacity.
- *Local authorities may tolerate undeclared work* because it gives local small and medium-size enterprises a competitive advantage over similar enterprises in other regions of the country. Central government needs to ensure that tax collection is under control, and establish a consensus against this type of unfair competition. The authorities also must explain that heavy fines, which drive noncompliant firms out of business, do not reduce aggregate employment in the long run at the national level.
- *The informal economy involves broad issues of the legitimacy of central government and its taxation and regulatory powers*. If central government is viewed as corrupt, unresponsive and wasteful with money, or if local actors view central government as a foreign power, tax evasion may be socially valued. But in informal arrangements and verbal contracts, the risk of being cheated is considerable: if the government enforces contracts and protects property rights, economic actors often prefer to conduct arms-length business on a formal basis in spite of tax costs.
- *Social protection systems in economies with a large informal sector are often relatively ineffective*. Social insurance schemes provide less effective protection because of contribution evasion by low-risk groups, and the most disadvantaged working-age population groups may not be covered at all: thus for example a free health service financed from general taxation may be preferable to insurance-based health coverage. Minimum income and other unemployment benefits may not be viable because the government lacks accurate records of low income and unemployment, and because most unemployed workers are not registered the targeting of active labour market programmes on the registered unemployed is not viable either. Different delivery models must be used: one interesting example from Mexico is *Progresa/Oportunidades*, which pays social assistance to families conditional on their children attending school in poor areas. Another example is relief jobs, which pay below-market wages but provide an income of last resort when unemployed people cannot find any other work. However, further research into delivery models for basic social and employment services in countries with a large informal economy is needed.

1. Why is the informal economy a problem?

The informal economy can be interpreted in a positive way, permitting individuals to escape from poverty, exploiting information and social relationships based on trust and allowing economic activity to escape from dysfunctional regulations or the demands of inefficient (or in some cases corrupt) government. However, here an assumption – realistic for OECD member countries – is made that these dysfunctions of government can be redressed in tandem with any strategy that reduces informal employment. In this context, negative consequences of informal employment come to the fore. EU integration has given a particular impetus to the struggle against undeclared work (Box 5.1).

Box 5.1. **Undeclared work in the context of EU integration**

In the European Union, concern about the informal economy arises for a number of reasons:

- First, more than 50% of the EU budget is based on a schedule of contributions related to measured GDP (in fact Gross National Income, since 2002). In the mid-1990s, Eurostat launched a project to improve the exhaustiveness of national accounts in member countries, and involved the EU Candidate Countries in a Pilot Project aimed at improving the comparability and exhaustiveness of their accounts.
- Second, the informal economy, the fight against corruption and the effectiveness of tax collection are critical issues for many of the 10 countries (Cyprus, the Czech Republic, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, the Slovak Republic, and Slovenia) joining the EU in 2004.
- Third, for the original members of the EU the large informal economy in the accession countries, especially insofar as it is associated with phenomena such as cross-border crime and illegal migration, may be a threat (Stefanov, 2003): it may justify a period of increased vigilance to counter importation of techniques or habits of undeclared work. Overall, both the original and the acceding members of an expanded EU have an interest in ensuring that undeclared work declines throughout the Union.

Finally, undeclared work undermines the policy objective of social cohesion, notably through its negative impact on the financing and coverage of social protection schemes; and measures against undeclared work may help in achieving targets for the employment rate set by the European Council in Lisbon.

A. High tax rates and low spending capacity

In an economy with significant informal employment, several mechanisms operate to result in low actual tax and social security receipts coexisting with high scheduled tax rates:[2]

- Evasion of social security contributions (and any corresponding income tax) among individuals in paid (wage and salary) employment, through non-declaration of work and under-declaration of earnings.
- A high incidence of self-employment: its share in non-agricultural employment, which averages about 12% in OECD countries, exceeds 20% in Italy and exceeds 25% in Greece, Korea, Mexico and Turkey. In such cases, several factors combine to make the taxable capacity of earnings from self-employment relatively low.

- Selective rate reductions: where scheduled social security contribution rates are high but evasion is common, selective rate reductions (*e.g.* for low-paid workers, for hiring youths and the long-term unemployed, or for hiring workers with a permanent contract) are applied in an attempt at bringing more workers into regular declared employment. For example, Italy and Spain have long used reductions of this kind.
- Open toleration: at high levels, undeclared work is widely tolerated and has blurred boundaries with the broader concept of the purely informal economy, which is not taxed even in principle.

Low tax receipts exert pressure to raise tax rates on the formal sector, in order to fund spending programmes. This, in turn, reinforces the incentive to move activities into the informal sector, leading to a vicious circle (Box 5.2).

Box 5.2. **Vicious circles, dual equilibria and negative externalities**

Nearly all analysts highlight that high levels of informal employment strengthen the incentives to engage in informal employment, leading to a vicious circle: "The vicious circle of high tax and regulation burdens causes growth of the shadow economy, additional pressure on public finance resulting in higher tax rates, which, in turn, increase the incentives to evade taxes and to escape in the shadow economy and so on" (Enste, 2003); "The informal economy – dodging taxes and social contributions while taking advantage of public goods and services – increases the budget deficit and is an immediate cause for raising taxes and social contributions which are a heavy burden on lawful activities" (Marc and Kudatgobilik, 2003); "Black activities… [undermine] the tax base, which, *ceteris paribus*, means that an unchanged level of public expenditure will necessitate higher taxes… nobody wants to be 'the last idiot in the street' who keeps on paying his taxes regardless of the fact that everyone else is cheating" (Pedersen, 1999).

As a result of these mechanisms, countries can find themselves in self-sustaining equilibria of either low or high levels of informal employment. Johnson *et al.* (1998) concluded that economies in transition from communism had entered a downward spiral and most of the former Soviet Union "ended up in a 'bad' equilibrium with low tax revenue, high unofficial economy as a percentage of GDP, and low quality of publicly provided services".

In this view, not only high tax rates but also poor governance (*e.g.* excessive regulation, or a poor rule of law) are caused by and are the cause of high levels of tax evasion. For countries in between the two extremes, any measure reducing the incidence of undeclared work has an externality or multiplier effect, leading to improved finances and better corruption control, which facilitates a further reduction in undeclared work. As the number of non-compliant enterprises in an economy shrinks, tax and labour inspectorates become able to visit the remaining ones more frequently, persuading many of them to comply as well.

B. Inability to effectively target and manage social protection

A high incidence of informal employment complicates the task of social protection systems which seek to target assistance on the needy. Belev (2003) considers that in the EU accession countries, the beneficiaries of social protection programmes "are the same individuals or societal groups that are most often involved in the informal economy". Similarly a review of the public employment service in Greece, Ireland and Portugal (OECD, 1998) noted that: "With self-employment widespread in the three countries, the

employment status of individuals is often unclear (individuals who are not formally employed are often family helpers), the government lacks reliable records of individual earnings and household incomes, and the PES has few local vacancies in wage and salary jobs for the low-skilled unemployed. These background factors have historically made it difficult to administer any system of unemployment benefits with broad coverage."

In countries with significant informal employment, contribution-based benefits also suffer from moral hazard. It is difficult to make either assistance or insurance-type unemployment benefits effectively conditional on availability for work. These issues, discussed further in Section 5, mean that a shortage of funding for social protection is compounded by difficulties in delivering the funds reliably to those in need.

C. Unfair competition and incentives for unproductive activities

Enterprises which pay taxes in full compete with other enterprises that evade taxes and thus have lower direct costs. In an economy without effective tax discipline, success in evading taxes without being caught becomes a major determinant of business success, diverting management from genuinely productive activity.

According to some surveys carried out by CEESP (*Centro de Estudios Económicos del Sector Privado*) among almost 500 companies located in several Mexican cities, between 30 and 40% of producers and retailers consider that the informal economy has a big presence in their markets and that they have been partially or totally wiped out of markets by informal business (Winkler, 1997). In Sweden, 16% of all companies agreed with the statement "Our company is to a great extent exposed to competition based on tax evasion by companies in the branch", rising to about 40% for construction, restaurants and haulage contractors and 64% for hairdressers (RSV, 2002). Toleration of work by illegal migrants can have similar effects (Reyneri, 2003b).[3]

D. Inefficiency of informal economy production

Abstracting from the issues of unfair competition, informality hampers productivity in various ways. Business needs to operate in a framework of property rights and enforcement of contracts, which is often not available in the informal economy. In EU accession countries, "[i]nformality comes at a cost too – these include the need to stay small, uncertainty in the prospects for the future, absence of safety nets, inability to tap formal credit channels and, more generally, the various types of SME assistance programs available to the private sector" (Belev, 2003). In EU countries, "[e]nterprises experience unfair competition, people enjoy less protection (*e.g.* worker's insurance or pension coverage) than they are entitled to. They suffer from limitations in their ability to interact with the public sector, financial organisations, and each other. People engaged in the shadow economy enjoy lower status than they would as regular entrepreneurs or workers. Entrepreneurs, workers and the government alike waste considerable resources endeavouring respectively to hide or to unveil shadow activities" (Avignon Academy, 2002). In Mexico, "[t]hese costs of informality – the cost of lack of legal protection, the cost of being unable to apply to the courts, the cost of not having access to credit, the cost of lack of insurance, the cost of invasion, the cost of grafting and bribery, the cost of the definition of property rights, the cost of insecurity in contracts, etc. – are precisely those which argue the need to face the problem of informality as the principal one which the country is currently undergoing… A market cannot operate at its full capacity unless it has a 'metamarket' that reduces its costs, internalizes externalities, stabilizes contractual

relations, and guarantees property rights… Both formality and informality represent legal conditions of economic activities, not separate activities. In fact, the problem should be viewed from a different standpoint. It is the law that should be integrated; in other words, law must be adjusted to reality" (Winkler, 1997).[4]

E. Facilitating illegal immigration

In Europe, the underground economy appears to be a prime determinant of the extent of illegal immigration. Reyneri (2003a) remarks that illegal migrants to Southern European countries do not come mainly by boat, and continues: "In Portugal the overwhelming majority of migrants who availed themselves of the last regularization are from Eastern Europe and entered the country having crossed at least five European land borders… about one out of five African migrants living in Southern Spain had previously migrated to other European countries. Most of them left those countries because they did not succeed in finding jobs, whereas they were sure that in Spain finding work was easy, although in marginal and undeclared jobs… Although few immigrants knew the difference between 'regular' and 'irregular' jobs before migrating, the prevailing view was that work is easy to come by in Italy, even without documents. Some migrants explicitly mention this state of affairs as an explanation for why they chose this country… Migrant workers entering Greece, Italy, Portugal, as well as Spain found a huge, firmly rooted and flourishing underground economy, which offered them a wide range of jobs without demanding any documents, either for working or for staying. This was not the case for France, where undeclared work is estimated at a medium-low level by the EU standards… unauthorized immigration is mainly caused by the well-rooted underground economy in receiving countries, not by too weak controls on the borders… the easy solution of tightening the border controls is destined to fail. On the contrary, to really fight migrants' insertion in the undeclared work as well as unauthorized immigration, [there] should be implemented a set of policies mainly aimed at reducing the size of the domestic underground economy."[5] Along the same lines, Tapinos (2000) notes that "the existence of a hidden economy that is broadly tolerated by society as a whole makes the recruitment of unauthorised migrants more likely, particularly as networks of migrants make it easier to hire undocumented workers in this sector", and the OECD Secretariat (2000) concluded "[t]he employment of undocumented foreigners is just one element, and not necessarily the most important, of economic activity in the so-called 'underground' or 'undeclared' economy… whatever is done to combat the hiring of illegal immigrants must address the problem of undeclared work in general and not just the employment of illegal immigrants *per se*".

More generally informal employment, being outside the reach of the law, makes other types of good government more difficult.[6]

2. Definition and measurement

A. Definitional distinctions

Terms such as the "shadow", "hidden" and "informal" economy are used in such varied ways as to make statistics for it meaningless without some definitional clarification. OECD (1986) proposed to define "concealed employment" as "employment (in the sense of the current international guidelines on employment statistics) which, while not illegal in itself, has not been declared to one or more administrative authorities…". The EU similarly defines "undeclared work" as: "any paid activities that are lawful as regards their nature but not declared to the public authorities, taking into account differences in the regulatory

system of member States. Applying this definition, criminal activities would be excluded, as would work not covered by the usual regulatory framework and which does not have to be declared…" (EC, 1998).

In the light of these definitions and the types of statistics that are available, some outstanding issues are:

- The definition of "undeclared work" remains imprecise: for example, is there concealed employment when the job itself is declared, but hours worked in the job are concealed? Is pure tax evasion, with concealment of earnings but without concealment of work, included?
- Estimates for undeclared work are frequently based on information about undeclared incomes and production.[7] National accountants distinguish a number of different categories of the "non-observed economy" (NOE) within gross domestic product (GDP) (Box 5.3). Relationships between the non-observed economy as seen from the income and production perspectives, and as seen from the employment perspective, need to be set out.
- "Undeclared work" and similar concepts are not used in analysis of developing countries, where some broader definition of the "informal" economy is preferred. A conceptual framework which encompasses the statistics available from both low- and high-income countries is needed to permit comparisons and potentially allow tracking of the transition process in which many middle-income countries are engaged.

To address these issues, Table 5.1 sets out a framework showing different categories of informal incomes, production and employment and the relationships between them. A number of subcategories are involved because, for example, hidden income does not always involve hidden production, and hidden production does not always involve hidden employment. The middle rows of the table show detailed subcategories of informal income, production and employment which together constitute the broadest definition of the informal economy. The top rows group these detailed subcategories to define categories of informal *income* such as underground production, and the bottom rows group the same detailed subcategories to define categories of informal *employment* such as undeclared work and black-market work.

It may be noted that, in addition to using national accounting categories (income generated without production, household production that falls inside and outside GDP, illegal production), Table 5.1 distinguishes the subcategories of informal production and employment in terms of the *behaviour* that results in work and/or income from it being unregistered or unreported, particularly for tax purposes. Distinctions can also be made in terms of direct administrative status, *i.e.* the type of illegality involved (*e.g.* migrant work without a permit, or benefit fraud rather than tax evasion) and the rights of the workers (*e.g.* covered or not covered by social insurance). These may be seen as additional dimensions of informality, which can subdivide some subcategories in Table 5.1 (*e.g.* some wholly undeclared workers are also workers without a work permit; some self-employed black-market workers are illegally claiming unemployment benefits; some purely-informal workers nevertheless have health or other social insurance because the head of household has a formal job, or thanks to a universal insurance system). But they seem inadequate as criteria for distinguishing primary subcategories of informal employment.[8, 9]

The Rockwool Foundation has for some years conducted detailed questionnaire surveys to estimate the size of the "black economy" and some related concepts. The surveys give careful attention to the status in tax law of specific situations (*e.g.* if neighbours help each other to move house, or if a bricklayer does some work for his brother-in-law who in return

Box 5.3. **The non-observed economy in national accounts**

Informal employment is often related to forms of income and production which are illegal, unregistered or otherwise non-observed. OECD (2002) distinguishes five main components of the "non-observed economy" (NOE) within GDP:

- Statistical underground production which is missed by the basic data collection programme due to statistical deficiencies. Viewed from the production approach to GDP compilation, the three main categories involved are undercoverage of enterprises in registers, non-reporting by enterprises which are in the sample, and underreporting of value added by enterprises (NOE Types 1 to 3).[a]
- Underground production, defined as those activities that are productive and legal but are deliberately concealed from the public authorities to avoid payment of taxes or complying with regulations (NOE Type 4, underreporting and NOE Type 5, not registered).[b]
- Informal sector production, defined as those productive activities conducted by unincorporated enterprises in the household sector that are unregistered and/or are less than a specified size in terms of employment, and that have some market production (NOE Type 6).
- Illegal production, defined as those productive activities that generate goods and services forbidden by law or that are unlawful when carried out by unauthorised producers (NOE Type 7).[c]
- Production of households for own final use defined as those productive activities that result in goods consumed (or major housing improvements which are capitalised) by the households that produced them (this may be included in NOE Type 8 "other", which also includes tips and wages and salaries paid in kind).

The "statistical underground" reflects the deficiencies of particular statistical instruments, and its size will vary across countries or through time for reasons that do not correspond to differences in real economic activity. Therefore, only the latter four categories need to be taken into account in a framework relating informal production within GDP to informal forms of employment.

Two further categories of income and production which are identified by some authors as informal, but which do not contribute to GDP even in principle, are:

- Non-productive illegal activities such as social security fraud, pilfering, theft and extortion, which transfer incomes but without voluntary exchange.
- Household production of services for own use which (except for the imputed rent received by owner-occupiers) falls outside the "production boundary" that defines GDP.[d, e]

a) The "statistical underground" is described by Blades and Roberts (2002) in these terms: "It may simply be impractical to cover every producer in a survey so a cut-off point is used to exclude the smallest enterprises. In other cases, the problem arises from poor statistical practices. The business register used for the survey is out of date or incomplete; the questionnaires are not returned or come back with missing answers; informal activities such as street trading may not be covered by any survey; inappropriate methods are used to correct for non-response."

b) Note that some American literature on the "underground economy" does describe this largely in terms of illegal activity (*e.g.* Lippert and Walker, 1997).

c) Estimates for illegal production (narcotics, prostitution and related, production and trade in counterfeit goods, fencing of stolen vehicles) for a few countries put its value at approaching 1% of GDP. Illegal production falls within the recognised definition of GDP (the "production boundary"), but the estimates are usually published separately and not included in regular tabulations of GDP (Blades and Roberts, 2002; UNECE, 2003).

Box 5.3. **The non-observed economy in national accounts** *(cont.)*

d) When household production for own use, including services, is included in the concept of informal employment, it will often dominate the total. Low-income survey respondents in rural Canada report spending on average about 25 minutes per day on informal exchange with agents outside the household, but over 100 minutes on formal economy work and over 100 minutes on household ("informal") production. For higher-income respondents, the balance tips further towards time spent in the formal economy, at the expense of informal exchange (Reimer, 2003).

e) Do-it-yourself (DIY) home repairs and improvements are analysed by Brodersen (2002) for Denmark: "The combination of high taxes and the equalisation of pay rates between various groups in the labour market has meant that most people have to work four hours or more extra to pay for one craftsman hour, including VAT, from an organised firm. In previous surveys, we have illustrated this by the example of a doctor who, instead of working overtime at the hospital, hurries home to carry out repairs in the house." Survey-based estimates indicate that in 2000/01 about 38% of home improvements by value were invoiced work by a firm, 57% were DIY work by the household, but only 5% were non-invoiced work by others: these proportions have not changed much since 1987/88. Brodersen (2003) extends this study to Norway, Sweden, Germany and Great Britain. DIY home repairs and improvements range in value from 1% to 3% of GDP, of which a part (major improvements) is in principle included in GDP, although it may not be captured directly (in the long term it increases the imputed rent from owner-occupied dwellings). Williams (2004) similarly reports that a list of 42 domestic, family and housekeeping tasks in a UK city were done 74% by domestic work, 3% by unpaid community help, 6% by cash-in-hand work and 17% by formal labour. The relatively low estimates for undeclared work suggests that the regulatory framework – which for example makes it difficult for undeclared workers to advertise and gives purchasers legal recourse against fraud in the case of declared work – frequently tips the balance in favour of either formal work or DIY work.

helps repair a car). These clarify the distinction between "purely informal" activities and "underground" or "undeclared" activities (rows 2 to 5 of Table 5.1) for high-income countries. In the United Kingdom, "black" hours worked are 1.2% of total hours, while in Denmark, Norway, Sweden and Germany the figures range from 2.3% to 4.1%. However, the low percentage in the United Kingdom is largely attributable to the fact that "one of the main criteria for liability to pay tax is that an activity can be regarded as being carried out for business purposes". This definition allows exchanges between neighbours and friends to be treated as non-taxable, in the same way as exchanges within the household. As a result, "far more activities are considered non-taxable in Great Britain compared with the other countries… extra questions were included in the survey for Great Britain in an attempt to capture some of the activities that would be regarded as taxable in the Scandinavian countries… this would increase the size of the black economy in Great Britain to about 2.3% of GDP, *i.e.* about the same level as Norway and Sweden". Thus, purely informal employment, in the form of barter or reciprocal exchanges between households which in principle enter GDP but are not liable to tax and are not registered, appears to be worth about 1% of GDP in Great Britain but it is probably close to zero in the Scandinavian countries owing to their stricter tax legislation.[10]

In low-income countries, where production and work may be liable to tax (or other regulations) in theory but hardly at all in practice,[11] the borderline between "purely informal" activity and "underground production" or "undeclared work" is blurred.[12] This explains why analysis in this case usually uses only a concept of "informal" production and employment which covers both categories.

The Rockwool Foundation surveys also distinguish "black activities" from "tax evasion" (Pedersen, 2003).[13] This too is a central issue distinction because, when estimates for undeclared work include the self-employed, they may account for half or more of the total.[14] When a distinction is made between undeclared work and pure tax evasion by the self-employed, as in row 4 of Table 5.1, it is seen that undeclared work is defined not only by *concealment* from government, but also by *collusion* between the employee and his or her

Table 5.1. **Terms and concepts for main subcategories of informal income, output and employment and the relationships between them**

1. GDP status[a]	Not included in GDP		Included in published totals for GDP, as far as possible							Included in principle, but often not in published totals
2. Source of income	**Social security fraud, VAT fraud, pilfering, theft, extortion**	Household production of services for own use (except imputed rent)	Household production of goods for own use	Informal production/informal economy for exchange						Production of illegal goods and services for exchange
				Purely informal production/ economy	Underground production/underground economy					
3. Typical employment status	Any	Not employed	Self-employed, family workers	Employees or self-employed	Employee in the main job			Self-employed		Employee or self-employed
4. Form of concealment	Various	Production may occur inside the home: production may be difficult to value, in terms of its equivalent in the open market		No concealment, because no requirement to declare employment or earnings	Employment status and earnings concealed, in collusion with the employer	Employee status declared, part of earnings concealed in collusion with employer	Work in a secondary job with earnings concealed in collusion with the purchaser	Earnings concealed in collusion with the purchaser	Earnings concealed from tax authorities, but not in collusion with the purchaser	Production, sale and consumption all concealed
5. Detailed subcategories of informal employment	(not usually regarded as employment)	**Employment in household production for own use**		**Purely informal employment**	**Wholly undeclared work**	**Under-declared work**	**Black market work**		**Pure tax evasion on earnings**	**Employment in illegal production**[b]
					Undeclared work					
6. Broader and narrower informal employment	(may be in a broad definition of the informal economy)	(may be in a broad definition of informal employment)		**Informal employment (core definition)**					(may be in a broad definition of informal employment)	

a) The "non-observed economy" within GDP, as defined in OECD (2002) and UNECE (2003) includes not only household production of goods for own use and purely informal production (T6: informal sector), underground production (T4 and T5: economic underground), and production of illegal goods and services (T7: illegal production) but also non-response to surveys and out-of-date registers, etc. (T1 to T3: statistical underground), which is not shown here.

b) The term "illegal employment" will frequently refer to the employment of immigrants without a work permit, and might also describe illegal work for profit by government employees, rather than employment in illegal production.

Source: Adapted by OECD Secretariat drawing on definitions of the non-observed economy used in national accounts (OECD, 2002) and definitions of the "shadow economy" and "black activities" used in the Rockwool Foundation's questionnaire surveys (Pedersen, 2003), and other sources cited in the main text.

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employer, or between the self-employed person and the customer for his or her services. This explains why undeclared work is widely discussed and why it is seen as particularly threatening to the social fabric. Pure tax evasion, which involves concealment but not collusion is less visible, and may seem less contagious.[15]

As a practical matter income-based estimates derived from national accounts, discrepancies between financial aggregates, or grossing-up the findings from tax audits, include under-reporting of income so far as possible for any reason including pure tax evasion by the self-employed, so Table 5.1 specifies that "underground" production includes this. By contrast employment data – including total employment from labour force surveys and censuses, as well as many questionnaire surveys of black activities – may not capture pure tax evasion by the self-employed, who are likely to report their employment (or working hours) situation without seeing any connection between this and any tax evasion that may be occurring. From this point of view, income-based approaches are likely to give higher estimates for the level of informal activities than employment-based approaches because they have a broader coverage. However, this tendency will often be offset by further definitional issues (see Box 5.4).[16]

Box 5.4. **Definitional issues affecting the share of the informal economy in GDP**

The net hourly wage in undeclared work may be higher than it is in formal work, because the undeclared worker requires a premium to cover the risk of detection and reduced social insurance contributions; or it may be lower, if undeclared work is done by unemployed people who are unable to find formal work or illegal migrants who are barred from it, who lack market power. For illustrative purposes, we can first assume that the net hourly wage is the same in both sectors.

GDP is generally reported at market prices (with goods and services at prices after taxes and subsidies), not at "factor cost" (with wages, as well as interest, rent and profit, at their prices before tax and subsidies). This is essentially a convention, with no particular economic significance. If social security and income taxes make up 50% of labour costs for declared work (these are the scheduled rates in some countries), in an economy with 10 wholly-undeclared workers and 90 declared workers each earning USD 1 net, total net wages and salaries are USD 100, social security and tax receipts are USD 90, and total labour costs are USD 190. The share of the "undeclared" sector in total labour costs – which also, assuming low profit margins in all sectors, is roughly its share in GDP at market prices – is then only just over 5% (10/190 = 0.0526): which is little more than half of the share of undeclared work in total work (10%). Also actual tax receipts (USD 90) fall 10% short of the amount calculated by applying the scheduled tax rate on net wages and salaries (100%) to true net wages and salaries (USD 100). Thus, statistics for GDP at market prices by definition understate the significance of the informal economy as compared to its importance as seen from the other two perspectives.

In an economy with a much larger informal economy, this phenomenon is attenuated: where 50% of work is undeclared, the share of the undeclared sector in GDP is one-third (50/150 = 1/3), and the GDP share understates the relative importance of undeclared work and tax evasion by one third rather than a half. However, in developing countries with a large informal sector, net wages may be significantly lower in the informal sector, and this may also make the informal sector's share in GDP lower than its share in total employment.

Total employment is conventionally measured on a head-count basis. However, statistics on a head-count basis will reflect only wholly-undeclared work. In non-OECD countries "informal" employment is often measured as the proportion of the population in employment that does not pay social insurance contributions or tax, which is a head-count concept. Failure to capture under-declared work is a major drawback, given that under-declaration is often a major feature in middle-income countries.[17]

Questionnaire surveys may mainly capture black-market work as defined in row 5 of Table 5.1, but not under-declared work or pure tax evasion.[18] In the case of wholly-undeclared work, parts of this may be captured, but coverage of work done by illegal migrants, who do not have a fixed address or telephone line and in some cases do not speak the national language, is likely to be low.

Another issue relates to the pricing of undeclared or informal work. Statistics for the share of the underground economy in GDP need to be interpreted with care. Particularly in countries with a relatively low incidence of informal employment and relatively high tax rates, GDP shares may be little more than half of either the informal work share in total hours worked, or the percentage of potential tax receipts that is lost to tax evasion (Box 5.4).

The ILO in 1993 passed a resolution concerning statistics of employment in the informal sector, but this left countries free to define informal employment in terms of a range of possible criteria. The focus was on employment in unregistered enterprises, but one of the permitted criteria (non-registration of employees for the purpose of taxation) is roughly consistent with definitional framework set out in Table 5.1. Several statistical compilations have been published, but few OECD countries are included and definitions and methods tend to vary across countries (Hussmans and du Jeu, 2001).

The harmonized definition applied in ILO (2003) refers to employment in "private unincorporated enterprises (excluding quasi-corporations), which produce at least some of their goods and services for sale or barter, have less than five paid employees, are not registered, and are engaged in non-agricultural activities (including professional or technical activities)". On this basis, 11% of employment in Turkey in 2000 was in the informal economy. However because employment is only counted as being in the informal economy when the employing enterprise itself is not registered and is below a certain size, much undeclared work as defined in Table 5.1 (wholly-undeclared work within enterprises that are registered or have five or more employees, as well as under-declared work and black-market work) is excluded by definition from this figure.

In the national accounting approach to measurement, NOE Type 5 (intentionally not registered enterprises, or parts of a registered enterprise) and Type 6 (unregistered units) reflect the 1993 ILO guidelines, and in principle capture only employment in unregistered enterprises or parts of an enterprise. However NOE Type 4 (underreporting of production) should capture, in addition, production associated with wholly-undeclared and under-declared employment within registered enterprises. Unless NOE Type 4 is fully implemented, statistics from the production perspective (shown at the top of Table 5.1) could have a relatively restricted coverage as compared to those from the employment perspective (shown at the bottom of Table 5.1).

The 17th International Conference of Labour Statisticians in 2003 issued further guidelines, distinguishing "employment in the informal sector" based on the enterprise as unit of observation from "informal employment" based on jobs as the unit of observation. The latter concept in principle will fully cover wholly-undeclared work but still not include several of the other categories identified in Table 5.1.

B. The organisation of informal work

In some economies with low rates of informal employment, many people know it mainly in the form of a few "black market" personal and household services, such as babysitting or gardening. The previous section described some other types of informal employment and this section mentions additional types or subcategories that often figure in the literature.

False self-employment and chain subcontracting

One type of work that is sometimes described as black labour (*e.g. www.be.ch/travailaunoir* ; SECO, 2000; EU, 2000) is false self-employment, *i.e.* relationships which are in fact dependent employment and thus normally carry certain responsibilities for the employer (including deduction of taxes and social security contributions at source), but are declared as a purchase of services from a self-employed person. Chain subcontracting ("en cascade") can similarly obscure the link between the principal employer and the employee. At the bottom of the chain, recipients may be declared as self-employed and then escape taxation on earnings through disappearance or simply because tax authorities lack the time to cross-check individual returns systematically. Also, individuals who are declared as employees of a very small enterprise may claim to have already had social security contributions and tax deducted from their pay, while the very small enterprise has disappeared without handing the money over to the tax authorities. Semjén and Tóth (2002) suggest that the subcontractors can more easily *evade* some of their taxes and social security contributions, by over-reporting material costs and underreporting their own wage costs. Relatively few reports pinpoint how chain subcontracting leads to evasion, but authorities in many countries nevertheless regard it with suspicion and target policies against it.

Illegal work

"Illegal work" usually refers to work by people who are not legally allowed to work, and this should not be confused with the national accounting concept of illegal production (see Box 5.3 and Table 5.1). In terms of Table 5.1, illegal work will typically be wholly-undeclared work by migrants without a work permit, or work in second jobs by government employees who are legally banned from engaging in this.

Estimates for the extent of illegal work by migrants are controversial: Mateman and Renooy (2001) write: "There is an enormous lack of reliable data on the effectiveness of existing measures. This lack of data leads to myths, such as the myth that most undeclared work is carried out by illegal immigrants. This particular myth fosters xenophobia and seriously hampers European integration." By contrast, OECD Secretariat (2000) claimed that "nationals engaged in the underground economy are almost always declared, while understating their hours of work and income, migrants are not", *i.e.* wholly-undeclared workers are usually illegal migrants. The number of migrants in undeclared work clearly is significant in some countries: the United States has about 4.5 million illegal foreign workers, representing approximately 3.5% of the workforce (Fraser, 2000), and in Italy there were 460 000 undeclared immigrant workers 2001, two-thirds of them lacking a residence permit (estimates by Reyneri, 2003a). However, Italy also has many nationals engaged in wholly-undeclared work (see the citation below from Bàculo, 2002).

Industry sectors

National accountants often arrive at a relatively low estimate for the GDP share of the informal economy because they consider that the informal economy is restricted to a

certain sectors such as domestic service, home repairs, taxis and to varying extents retail trade, restaurants and construction. "In power generation, heavy industry, rail and air transport, government services, banking and telecommunications, for example, there is little scope for a 'shadow' economy" (Blades and Roberts, 2002).

Field-work reports seem to confirm that undeclared work in the manufacturing sector is relatively rare in most but not all OECD countries. Considering Southern Europe, Reyneri (2003b) reports: "Only in Italy a sizeable and increasing proportion of [illegal] migrants are employed in manufacturing. The most concerned sectors are plastics, ceramics, metalworking, tanneries, garment and cement factories… the insertion in manufacturing is scarce in Portugal as well as in Greece. It is a bit larger in Spain, but… concerns only the textile and garment industry." Field-work in France also documented high levels of undeclared work in the garment industry.[19] Field-work in New York in the 1980s found a high incidence of informal work (often by migrants) in certain types of manufacturing, as well as services, construction and transportation (Sassen, 1988).

There is also evidence of undeclared work in parts of the public sector in some countries. Cash payments to doctors employed by the National Health Service are common in Greece (Yfantopoulos, 2003). In World Bank surveys, about 20% of patients in Albania and Bulgaria, rising to 60%-80% in the Slovak Republic, Moldova, Poland and the Russian Federation, report making payments (Marc and Kudatgobilik, 2003). These payments may be not only undeclared but illegal.[20] Undeclared work can also be significant in the education sector, particularly private tuition. Therefore, national accountants should not make overly-restrictive assumptions about the sectors involved.

Hidden employment within medium-sized enterprises

Where the incidence of undeclared work is high, much of it may take place within medium-size enterprises, which organise their business in ways that make this possible: "… [I]n the coastal areas of Campania and in the city of Naples, irregular, undeclared employment (*black wages*) is predominant: in this case, in companies with 3 or 4 declared employees, at least double or triple that number are actually employed. Another form of irregularity is concealed by the decentralisation of many workshops of different phases of production: in this way, a company with 4 declared employees is operating with 6 or 7 or more workshops, each of which can have an unspecified number of undeclared workers; whereas the first one is completely regular, the others are partially so…" (Bàculo, 2002).

Other types of informality

In high-income OECD countries, the non-registration or non-compliance which defines informality can usefully be interpreted in terms of tax compliance (other types of non-compliance merit investigation as a distinct topic). This perspective remains reasonably valid in transition countries, where social provision has generally remained significant, calling for high levels of taxation. In Latin America, non-payment of taxes is not always involved and there is some tendency to interpret informality, or irregularity, in terms of other regulations: for example, informality in the housing market (provisional settlements acquired or built without abiding by or contrary to legal requirements), in retail trade (street trading or traders in unlicensed markets), and transport (minibuses and taxies operating without a permit). Ghersi (1997) describes these forms of informality in Lima, Peru, and cites estimates that about half the housing, and 90% of the transport, clothing, shoe and furniture industry output is informal in these senses.

C. Estimates for the incidence of informal employment

Much of the literature on informal employment centres around estimates for the size of the shadow, hidden, or informal economy based on proxy variables such as currency demand and electricity consumption – sometimes augmented with variables that are *expected* to influence informal employment, such as tax rates. However it should be stressed that the proxies are highly approximate and the concepts underlying resulting estimates for the size of the shadow economy are poorly defined (Box 5.5). Orthodox statistical concepts and instruments, based on questionnaire surveys and national accounting procedures, give a richer and more precise picture of the nature and extent of different types of informal employment and related problems such as shortfalls in tax receipts. Three main types of statistic are presented here: survey-based estimates, estimates emerging from the construction of the national accounts, and estimates based on tax revenues. At the national level, administrative data[21] and findings from tax audits[22] (or perhaps the work of labour inspectorates) may also be useful, but international comparisons based primarily on these sources have not been developed so far.

Survey-based estimates

Recent Rockwool Foundation surveys are "based on completely identical questions in all countries. This means that, for the first time, it is possible to give a comparable picture of this part of the informal economy in northwestern Europe" (*www.rff.dk/ukhome.htm*). These surveys find that "black" hours worked are just over 1% of the total in Great Britain, 2-3% in Norway and Sweden and about 4% in Denmark and Germany (Table 5.2). An earlier study, based upon interpretation of national surveys with similar but not completely identical questions, also generated estimates for the Netherlands and Spain (Table 5.3). According to these estimates, the black economy in the Netherlands, Norway and Germany was close to 5% of GDP. They show a much higher level of 17% in Spain, in 1985, which "can be cautiously compared with a figure for Italy of 18% of GDP in 1982". (Note that these are percentages of GDP when informal work is valued at formal prices and that valuing informal work at the actual prices paid by purchasers, percentages are much lower.) The authors concluded that: "[t]he shadow economy in these countries is thus probably smaller than presumed by many researchers. It is at a similar and fairly small level in the Northern European countries, and several times higher in the countries around the Mediterranean." The finding of a large difference between Northern European and Southern European countries is consistent with field-work studies.[23] Certain questionnaire survey findings are also available for Australia (here, relatively few workers report receipts of cash payments)[24] and for the Czech and Slovak Republics (here the reported undeclared share in total hours worked is greater than in Northern Europe, but less than in Southern Europe).[25] Annex 5.A1 (see OECD, 2004b) provides some further discussion of survey methods.

National accounts-based estimates for the incidence of undeclared work

Principles of national accounting. According to international guidelines, GDP includes all types of value added in the economy as evidenced by voluntary transactions where payments are made, including illegal and barter transactions. (GDP also includes some production without transactions.)[26] For less-developed countries, the need for inclusion of unregistered and barter transactions has always been clear. Thus, the general principle that unregistered, illegal and barter transactions should be included has been present for many years in guidelines such as the SNA 1968 and the European System of Integrated Economic Accounts (ESA) 1979.

Box 5.5. **Macroeconomic proxy estimates of the size of the informal economy**

There is an extensive literature on the estimation of the size of the informal economy using proxy indicators for economic activity. Recently Schneider (2002) presented estimates for 110 countries. The main proxies used are the demand for banknotes (which is used as a direct proxy for the size of the shadow economy) and electricity consumption (which is used as a proxy for true GDP, so that the *difference* between trends in this and in officially-reported GDP estimates the size of the shadow economy). These approaches can be made more sophisticated by econometric modelling. They assume a benchmark level of demand for cash, or electricity consumption relative to official GDP, that arises in an economy without an informal sector.

These methodologies have been criticised. Some authors find the estimates implausible.[a] Other authors note that estimated parameters are unstable, making estimates of changes in the size of the informal economy unreliable.[b] Finally, different methods tend to lead to diverging estimates for the size of the informal economy or its changes over time.[c] Thus, judgements are involved in deciding which proxies and econometric estimation methods and assumptions give plausible estimates: these judgements reflect diverse information, adding to the difficulty of defining the quantity that is being measured, and creating a risk that the results can appear plausible yet be biased in obscure ways.

Clearly, data for the amount of cash in circulation or the consumption of electricity may sometimes hint that an economy's true size (or its recent growth) is larger than it appears to be according to administrative sources (such as income tax returns). However, presenting such data even after econometric or other processing as an actual measure of some part of the true economy is misleading. In general, national accounts experts have already reviewed a variety of information sources relating to production and undeclared income, and it seems unlikely that proxy estimates based on one or two indicators can be systematically more accurate than national accounts.

a) Pahl (1988) wrote: "[s]ome of these indirect macroeconomic measures may be mentioned since, however implausible, they are frequently referred to by those who do not understand them… In 1974 Feige's approach produced a peak of 22% of GDP, whereas Matthews… suggests that there was a trough in that year so that he estimates a black economy of a mere 2% of GDP…" Smith notes: "Some of the indicators that have been used to show a growing black economy in the United States appear to point to a rapidly shrinking one in the UK'… Smith tabulates the ratio of cash to consumers' expenditure in 1981 and whilst UK, USA and Canada are at the bottom of the table, Switzerland tops the table with 21% – three times that of the UK."

b) Hanousek and Palda (2004) reviewing the money use and electricity consumption [ECM] methods comment: "[t]he instability of parameters used in macro-methods may be such as to throw off estimates of the transition underground economies to the point where such estimates are nearly useless both as indicators of the absolute size of the underground economy, and, more seriously, useless as measures of the change in the size of the underground economy… [f]inancial products liable to affect currency demand grow at a much greater pace in transition economies than they do in mature western economies… [g]rowth in currency demand was related to factors that had nothing to do with the underground economy… [p]rice deregulation, and the introduction of long-overdue technologies move electricity demand in ways difficult to attribute to underground economy growth." Similarly Zizza (2003) reports that the share of the informal economy in Italy, estimated by using Schneider's method but adding an index of petty crimes as an additional regressor, is about half of Schneider's estimate.

c) Feige and Urban (2003) report that: "[u]pdated ECM estimates of the size of the unrecorded sector are not only highly sensitive to initial conditions, but they produce negative estimates of unrecorded income for many transition countries. Our findings are also compared to the new national accounting procedures that attempt to estimate exhaustive measures of the 'non-observed economy'. Our disturbing results call into question many of the substantive conclusions reached by other scholars who relied on earlier ECM estimates to draw inferences about the transition process as well as the causes and consequences of underground economies in transition." They suggest that estimates may nevertheless still be usable in time-series.

Table 5.2. **Black hours worked and the value of black activities**

Based on actual black prices from detailed questionnaire surveys in Denmark, Norway, Sweden, Germany and Great Britain, 1997-2001

	Survey date	Proportion of population aged 18-74 who carried out black activities within the last year		Black hours worked as a proportion of "white" working hours	Black activities valued at actual black prices paid as a proportion of GDP
		Yes	Don't know/refusal		
		Per cent			
Denmark	2001	20.3	0.5	3.8	1.8
Norway	1998/2002	17.3	0.4	2.6	1.1
Sweden	1997/98	11.1	0.5	2.3	1.0
Germany	2001	10.4	2.8	4.1	1.3
Great Britain	2000	7.8	1.0	1.2	0.6

Note: Estimates based on further questions about average weekly hours worked in black activities (these ranged from about 3 to 8 hours per week) and average hourly earnings in black activities. About half of the earnings reported are non-cash (*i.e.* on a barter/*quid pro quo* basis) with a cash-equivalent value estimated by the respondent.

Source: Pedersen (2003).

Table 5.3. **The shadow economy in Denmark, Norway, Sweden, Netherlands, Germany and Spain**

Estimated from questionnaire surveys

		Size of the shadow economy	Adjusted size of the shadow economy (value in the formal market)
Denmark	1994-98	c. 1.4% of GDP	2.6-3.4% of GDP
Norway	1980-83	. .	4-6% of GDP
Norway	1988/89	1.3% of GDP	5-6% of GDP
Sweden	1997	1% of GDP	2.5-2.6% of GDP
Netherlands	1983-84	1-3% of GNP	4-5% of GDP
Germany	1984	0.6-1.2% of GDP	4-6% of GDP
Spain	1985	Not estimated in relation to GDP	16.9% of GDP

Note: The Norwegian figures for 1980-83 were already adjusted in the analyses. The figures for Norway (1988/89), Sweden, Netherlands and Germany are calculated in black prices in column three. In column four, an attempt is made to adjust for differences in the values of black activities used and for differences in the definition of black activities. For example, neither the German nor Dutch researchers include black transactions or payments in kind. This does not apply to the Swedish figures, however, which are based on the Rockwool Foundation Research Unit's question, and which are thus directly comparable with the Danish figures. For Spain, the same valuation method as for the Danish figures has been used. See Pedersen (1998) for a fuller explanation of the adjusted figures.

Source: Pedersen (1999).

The nature of national accounts adjustments. National accountants have traditionally sought to incorporate undeclared incomes, expenditures and production by reconciling income, expenditure and output estimates of GDP. For example, Canada's submission to the UNECE (2003) survey of statistical practices claims that: "[b]ecause GDP is measured from all three approaches in Canada and balanced through an annual Input-Output Table, much of the hidden economy is unearthed in the balancing process and accounted for in the final estimates." Submissions by several other countries echo this idea. "Balancing" involves comparing different estimates for particular components of GDP. Where there are discrepancies between income, expenditure and production-based estimates of economic activity, typically the highest estimate is retained on the assumption that the lower figures (*e.g.* declarations of self-employment income, from income-tax records; spending on alcohol and tobacco, as reported in household budget surveys) suffer under-reporting.

"Balancing" at a more disaggregated level allows a higher proportion of under-reporting to be corrected.[27] The construction of a detailed input-output table, which allows consistent and detailed disaggregation, is an important part of national accounts procedures partly for this reason.

Statisticians also undertake a range of other measures to account for specific types of hidden or informal activity.[28] On this basis, statisticians in some countries have identified the adjustments they have made to "basic" sources (such as business register or income tax information) to arrive at a final estimate. However statisticians in some other countries argue that the concept of hidden or underground economic activities is not clearly defined, and that given the important role of methods such as balancing, national accounting methods do not allow separate identification of the "non-observed" components of GDP.[29] Therefore, although GDP statistics do include the informal economy to a considerable extent, specific methods need to be developed in order to be able to report the size of the informal economy that is included in GDP for a wider range of countries.

Sectoral analysis. In this chapter, a first approach to this problem involves examining sectoral differences in the mark-up of labour costs over wages and salaries. To the extent that child-minders or bartenders are paid in cash and without social security contributions, the difference between the employer's labour costs and the employee's wage or salary in these sectors is relatively small. Relative non-wage labour costs in the "hotels and restaurants" and "private households with domestic staff" sectors are shown in Table 5.4.[30] In the "domestic staff" sector – which will include undeclared cleaning ladies, child carers, etc. employed by households – non-wage labour costs are less than one-third of the all-sector average in seven countries, less than two-thirds in a further three countries, and above two-thirds in only six countries.[31] This suggests that in the domestic staff sector, undeclared employment frequently accounts for more than half of total employment.

Since the "hotel and restaurant" and "domestic staff" sectors account for about 4% of total labour costs, national accounts appear to imply that undeclared employment in these sectors alone exceeds 2% of total employment (in terms of earnings) in Belgium and Italy, where non-wage labour costs in these sectors are less than half the economy-average level. It may exceed 1% in a number of other countries. At the same time, variation across countries (particularly in terms of the amount of dependent employment in the domestic staff sector, and the undeclared share within it)[32] invites scepticism about the degree of consistency across countries of national accounting practices – as regards recording either formal or informal income in this specific sector.

Aggregate estimates. As mentioned above, statisticians in some countries have identified the share of the non-observed economy in their GDP estimates. The estimates shown in Table 5.5 correspond so far as possible to the NOE Types 4 to 6 although for the high-income countries little or nothing is reported under Type 6 (purely informal production). They confirm the general picture of a somewhat bipolar cross-country distribution, where informal (including underground) production is about 5% of GDP, or in some cases perhaps as low as 1 or 2% in many high-income OECD countries, but reaches about 15% in Italy and in many transition countries.[33] In line with the survey evidence cited above, informal production in the Czech and Slovak Republics is estimated at not much above 5% of GDP.[34]

Table 5.4. **Relative non-wage labour costs in the industry sectors "hotels and restaurants" and "private households with domestic staff", 2000**[a, b]

	Sectoral non-wage labour costs relative to economy average		Sector share in total economy labour costs (%)
	Hotels and restaurants (1)	Private households with domestic staff (2)	Private households with domestic staff (3)
Austria	76.4	12.8	0.42
Belgium	42.0	3.0	0.95
Canada	64.9	. .	. .
Czech Republic	92.9	0.0	0.03
Finland	84.2	66.7	0.23
France	70.0	62.3	1.27
Germany	78.5	31.4	0.24
Greece	92.7	81.1	1.21
Hungary	89.0	. .	0.00
Ireland	118.1	130.1	0.19
Italy	48.7	16.1	1.76
Luxembourg	92.9	46.1	0.80
Netherlands	82.9	69.5	0.01
Norway	78.7	70.0	0.20
Poland	86.8	. .	0.00
Portugal	90.1	26.2	1.08
Spain	65.1	11.7	1.96
Sweden	89.7	107.4	0.02
United Kingdom	89.6	89.6	0.71
United States	81.7	19.0	0.24

a) The labour cost markup is measured as (LC/WS-1) where LC is labour cost (compensation of employees) and WS is wages and salaries, both as reported in OECD National Accounts. Columns (1) and (2) are markups for the sector shown as a percentage of the markup for the economy as whole.

b) Australia, Denmark and New Zealand are omitted because compulsory employer social security contributions are zero or low in these countries. For other OECD countries that are not shown, data were not available.

Source: OECD National Accounts database.

Inferring the size of the informal economy from theoretical tax liability calculations

Nearly all research into the informal economy emphasises that it erodes the tax base. If this is correct, the extent of erosion should be relatively easy to document in those countries where GDP estimates include large amounts of untaxed production. In 2000, according to scheduled tax rates, income tax plus employee and employer social security contributions (as reported in OECD *Taxing Wages*) for a single person at the Average Production Worker level of earnings totalled over 50% of labour costs in a few OECD countries. Actual tax receipts for roughly comparable categories of tax as a percentage of GDP (as reported in OECD *Revenue Statistics*) were lower (some components of GDP are usually taxed at lower rates, or not at all), but to quite varying degrees. Relatively low tax receipts plausibly do reflect the extent of undeclared work and the existence of a large self-employed sector where income is taxed at relatively low rates, among other things. However a wide variety of factors influence any comparison between aggregate tax receipts and scheduled tax rates, making it difficult to pinpoint the role of any particular factor.

In general, theoretical tax liability calculations will be more accurate for a proportional tax with few concessionary rates. Thus, theoretical tax liability calculations for value-added tax (VAT) have been used as a possible indicator for the size of the informal economy

Table 5.5. **National-accounts-based estimates for the share of economic underground (hidden) output and informal economic activity in GDP**

		Per cent of GDP[a, b, c]
Australia	2000-01	3.0[d]
Armenia	1997	28.9
Belgium	1997	3.5
Bulgaria	2000	11.1
Canada	1992	3.0[e]
Czech Republic	1998	5.6
Hungary	1997	15.4
Italy	2000	16.0[f]
Kazakhstan	2000	26.8
Kyrgyz Republic	1999	47.9
Latvia	1998	14.1
Lithuania	1998	14.8
Poland	1998	13.3
Slovak Republic	1998	7.3
United Kingdom	2002	1.5

a) Mid-point of range if a range is cited.

b) Estimates differ from NOE shares charted by Blades and Roberts (2002) because so far as possible only underreporting of production, intentionally not registered production, and unregistered units in the informal sector (NOE Types 4 to 6) are included. The "statistical underground" is not included, nor is illegal production and "other" production. In Kyrgyz Republic, only 9.2% from the 47.9% reported is hidden, the remainder is informal production complying with regulations.

c) Among the countries not shown, Finland estimates that about 5% of gross output in construction, 6% of value added in hotels and restaurants, and 23% of value added in personal services is hidden. The implied share in GDP as a whole is low (possibly below 1%). The United States makes adjustments for under-reporting in income tax returns which amount to 4.8% of GDI (gross domestic income) but only 1.2% of GDP (since GDP is mainly estimated from the output side). The former figure might represent economic underground production defined in terms of non-reporting of the corresponding income for tax purposes, but the US report does not use this terminology.

d) This is an approximate estimate by the Secretariat, based on the discussion in ABS (2004) which estimates that missing income due to underground activity could be 4.8% of GDP as an upper limit, but more realistically it could be 3.0% of GDP. Of this 3.0%, 1.3% is currently included in GDP through adjustments to the base data.

e) This is an approximate estimate by the Secretariat, based on the detailed discussion by Gervais (1994), who estimated that underground production already included in GDP could amount to 1.5% as an upper limit, and underground transactions not included in GDP could amount to 2.7% as an upper limit.

f) This is a revised and updated figure from ISTAT (2003), but on the same basis as figures reported in UNECE (2003).

Source: As cited, UNECE (2003) and UK National Action Plan for Employment (EC, 2003).

(Box 5.6). Another approach along these lines is to estimate theoretical tax liability for compulsory social security contributions, based on wages and salaries in the national accounts. This seems a promising approach because theoretical liability in this case is:

- Based on earnings without personal deductions and allowances (although some countries provide rebates on employer contributions for special target groups).
- Often proportional to earnings.[35]
- Unrelated to the individual's household status (except in the Netherlands).

So a calculation of theoretical liability for compulsory social security contributions is easier than it is for general income taxes.

Table 5.6 compares calculations of the theoretical liability to compulsory employee and employer social security contributions (based on detailed contribution schedules as reported in OECD *Taxing Wages*, taking account of contribution floors and ceilings, in cases where contributions are not exactly proportional to earnings, as described in the note to the table) with actual receipts of contributions (reported in OECD *Revenue Statistics*).

Box 5.6. **Theoretical tax liability calculations for VAT**

Nam *et al.* (2001) have proposed theoretical tax liability calculations for value-added tax (VAT) as an approach to measuring the extent of "tax evasion and the shadow economy". They estimate the extent of evasion of value-added taxes using mainly national accounts data for private and intermediate consumption (and with some supplementary information for the state sector) as the tax base to calculate expected VAT revenues, taking account of lower-rate VAT and exemptions applying to certain types of spending and tax collection lags. The actual amount of VAT revenues, compared with the calculated expected revenues, then gives an estimate for the extent of VAT evasion. This method suggests VAT evasion rates varying from 5% or less in several EU countries up to 20% in Belgium, Spain and Greece and over 30% in Italy.

HM Customs and Excise (2002) estimated that in the United Kingdom overall losses were about 14% of VAT theoretical tax liability in 2001-02, and complemented this "top-down" estimate for aggregate VAT evasion with "bottom-up" estimates. These suggest that "general non-compliance" – which includes "deliberate mis-declaration of input or output tax on tax returns [by VAT registered businesses]" – and failure to register for VAT by enterprises which should register accounted for 30 to 45% of the tax losses. Thus the losses from this cause were 6% of theoretical tax liability or less. Part of this could be associated with black market transactions, and part could be pure tax evasion, but no further estimation was attempted. Other reasons for VAT revenue shortfalls were legitimate or near-legitimate tax avoidance, issues such as the late submission of VAT returns and late payments, and "missing trader" frauds where enterprises collect VAT and then disappear.

Theoretical liability is calculated first on the basis of national accounts figures for wages and salaries, which approximates the true tax base, then on the basis of labour costs (with corresponding adjustments to the theoretical calculation) so as to be able to provide some results for countries where OECD *National Accounts* do not report wages and salaries.

In most cases, actual social security contribution receipts for wages and salaries as a whole are below this (relatively simplistic) calculation of theoretically expected amounts. A possible general reason for this – not in all countries, but no list of the detailed situation by country has been identified – is that some government employees do not pay contributions to the main social security scheme. The last three columns of Table 5.6 therefore estimate the ratio of tax receipts to theoretical tax liability for the non-government sector alone. Unfortunately, this involves combining figures for the government share from two publications (OECD *Revenue Statistics* and OECD *National Accounts*) where the definition of government (in terms of coverage of sectors such as education and state-owned or semi-privatised enterprises) may not be consistent.

Also, a number of particular factors which make actual receipts of social security contributions differ from the theoretical schedules used in OECD *Taxing Wages* have been identified (Box 5.7).[36] If the results for Austria, Canada, Denmark, Greece, Switzerland and the United Kingdom are discounted on grounds of these identified factors, results for the non-government sector are:

- Actual social security receipts in the non-government sector are close to or over 100% of theoretical liability in six countries: Czech Republic, Japan, Luxembourg, Netherlands, Norway and Slovak Republic. One possible explanation for figures slightly over 100% is that

Table 5.6. **Total receipts of compulsory social security contributions, compared with theoretical liability arising on wages and salaries as recorded in national accounts, 2000**[a, b]

	Ratio of actual receipts to theoretical liability[c]						Government share in:		Column 6 re-estimated for non-government sector[i]
	Based on wages and salaries[d]			Based on labour costs[g]					
	Employee	Employer	Employee plus employer[e, f]	Employee	Employer	Employee plus employer[e, f]	Social security contributions[h]	Labour costs	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	Ratios						Per cent		Ratio
Austria	0.86	0.77	0.81	0.84	0.75	0.79	5.9	21.2	0.94
Belgium	0.84	0.67	0.72	0.83	0.67	0.72	6.9	22.3	0.86
Canada	1.04	1.26	1.16	0.97	1.17	1.08	11.3	21.9	1.23
Czech Republic	0.88	0.90	0.89	0.90	0.91	0.91	10.0	16.8	0.98
Denmark	0.33	1.39	0.37	0.31	1.30	0.35	2.6	31.8	0.50
Finland	0.84	0.90	0.89	0.84	0.90	0.88	23.0	27.5	0.94
France	0.80	0.74	0.76	0.81	0.75	0.76	9.4	26.0	0.93
Germany	0.82	0.91	0.87	0.78	0.87	0.82	6.6	15.1	0.90
Greece	1.00	0.76	0.84	0.98	0.74	0.83	1.4	34.9	1.26
Hungary	0.52	0.67	0.64	0.55	0.71	0.68	21.4	24.4	0.71
Ireland	0.85	0.68	0.73	0.88	0.70	0.75	10.1	19.7	0.84
Italy	0.82	0.83	0.82	0.80	0.80	0.80	25.8	26.0	0.80
Japan	0.86	1.08	0.97	0.81	1.02	0.92	0.0	12.5	1.05
Korea	. .	. .	. .	0.89	0.54	0.70	. .	15.9	. .
Luxembourg	0.80	0.83	0.82	0.79	0.82	0.80	0.0	16.4	0.96
Mexico	. .	. .	. .	. .	. .	0.65	49.6	27.5	0.45
Netherlands	0.99	1.03	1.00	0.89	0.92	0.90	3.1	19.6	1.08
Norway	1.02	1.08	1.06	0.95	1.00	0.98	21.3	28.7	1.09
Poland	0.00	1.28	0.67	0.00	1.31	0.68	11.7	26.5	0.82
Portugal	0.77	0.55	0.62	0.75	0.53	0.60	1.9	30.4	0.84
Slovak Republic	0.65	0.69	0.84	0.68	0.71	0.87	11.9	21.0	0.97
Spain	0.84	0.76	0.78	0.85	0.77	0.78	. .	20.8	. .
Sweden	1.16	0.84	0.89	1.15	0.83	0.87	27.6	28.2	0.88
Switzerland	. .	. .	. .	0.55	0.55	0.55	10.2	13.1	0.57

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Table 5.6. **Total receipts of compulsory social security contributions, compared with theoretical liability arising on wages and salaries as recorded in national accounts, 2000**[a, b] *(cont.)*

	Ratio of actual receipts to theoretical liability[c]						Government share in:		Column 6 re-estimated for non-government sector[i]
	Based on wages and salaries[d]			Based on labour costs[g]					
	Employee	Employer	Employee plus employer[e, f]	Employee	Employer	Employee plus employer[e, f]	Social security contributions[h]	Labour costs	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	Ratios						Per cent		Ratio
Turkey	. .	. .	. .	0.81	0.77	0.79	. .	. .	. .
United Kingdom	0.80	0.80	0.78	0.75	0.75	0.74	7.5	12.9	0.78
United States	0.79	0.94	0.86	0.72	0.85	0.78	6.1	16.1	0.88

a) Figures in this table are derived by combining data sources whose detailed coverage is not always consistent, for reasons which vary by country. See the main text for information about these data issues in general and Box 5.7 for information about data issues in particular countries.

b) Australia and New Zealand are absent from this table because they levy no social security contributions.

c) Social security contribution receipts are net of transfers from other social security funds (*e.g.* contributions paid on behalf of unemployed people by the benefit fund) except in Italy, the Netherlands (where data for transfers from other social security funds are not published) and Spain (where published data for these transfers are implausible).

d) Theoretical liability is calculated as total wages and salaries multiplied by the distribution-average scheduled rate of contributions. Where social security contributions are not proportional to earnings, the distribution-average scheduled rate of contributions is estimated assuming a distribution of earnings with 400 people in the range of 0 to 0.5 times average production worker (APW) earnings, 500 in range 0.5 to 1x, 350 in the range 1 to 1.5x, 175 in the range 1.5 to 2x, 75 in the range 2 to 2.5x, 25 in the range 2.5 to 3x, 10 in the range 3 to 4x, 4 in the range 4 to 6x and 2 in the range 6 to 10x. Individuals within each earnings range are assumed to have earnings at the mid-point of the range. This distribution implies average earnings across all employed people are 99.1% of the APW level. The distribution average scheduled social security contribution tax rate is between 90% and 100% of the rate at the APW earnings level, except in Canada (74%), Germany (88%), Ireland (85%), Mexico (106%), Netherlands (68%), and Turkey (76%). These countries cap social security contributions at a certain earnings level, except for Mexico which has a progressive contribution schedule (higher rates above a certain earnings threshold).

e) The column "employee plus employer" includes receipts which were not allocated to either subcategory in Hungary, Mexico, and Slovak Republic.

f) For Mexico, total social security receipts (paid by employees, employers and self-employed) are used in calculating the "employer plus employee" column. Data for Poland may also relate to these three categories of receipt (see main text).

g) Theoretical liability is calculated by assuming that total wages and salaries are total labour costs divided by (1 + ter) where ter is the distribution-average scheduled rate of employer contributions, and then proceeding as for the calculations based on wages and salaries. The actual mark-up of labour costs on wages and salaries is higher than the scheduled employer social security contribution rate in countries where employer voluntary contributions are significant (*e.g.* pension and health care contributions in the United States). But in a few countries (Czech Republic, France, Hungary, Ireland, Poland, and Slovak Republic), it is lower.

h) Published data for the "government share in total contributions" for Korea and Turkey are implausible, and are not shown.

i) Column 6 multiplied by (1 – col. 7) and divided by (1 – col. 8).

Source: OECD *Taxing Wages 2000-2001*, and Excel files which implement the tax models in this publication; OECD National Accounts database; OECD Revenue Statistics database, tables for "Details of Tax Revenue", "Financing Social Benefits" and "Social Security Contributions and Payroll Taxes Paid by Government".

Box 5.7. **National differences in the scope and coverage of social security contribution rate and revenue data**

The comparison in Table 5.6 is approximate for various reasons, for example because when contributions are not exactly proportional to earnings the impact of contribution ceilings and similar factors is estimated using simplified assumptions. There are also some specific national factors which make actual receipts of social security contributions differ from what is implied by the theoretical schedules used in OECD *Taxing Wages*, as follows.

In Austria, the theoretical contribution rates (as modelled in *Taxing Wages*) apply for blue-collar workers. Rates for salaried employees are marginally lower (by 0.7-1.6 percentage points, for employee and employer contributions combined). Also revenues corresponding to 1.5 percentage points of the theoretical contribution rate (contributions for the promotion of residential buildings and to the chamber of labour) are counted as payroll taxes in *Revenue Statistics*. Given that the theoretical combined contribution rate is about 42%, these factor approximately explain the whole shortfall below 100% shown in column 9 of Table 5.6.

In Canada, theoretical employer contributions (as modelled in *Taxing Wages*) do not include contributions to sickness and work injury insurance, which are determined at provincial level. Receipts (reported in *Revenue Statistics*) probably do include these contributions.

In Denmark, theoretical employee contributions (as modelled in *Taxing Wages*) include unemployment insurance contributions which are paid to union insurance funds. Receipts (as reported in *Revenue Statistics*) probably do not include these contributions.

In Greece, some pension funds offer a good return on contributions and there is some evidence that individuals make contributions to pension funds on the basis of fictitious or fictitiously high reported earnings – this form of "tax evasion" works in the opposite of the usual direction.[a]

In Switzerland, data for receipts appear to omit contributions paid into private pension funds (*caisses de pension*). Excluding these contributions the combined employee and employer contribution rate is 13.1%, rather than 23.1%.

In the United Kingdom, some married women still pay social security contributions at reduced rates, and contribution rates are lowered for "contracted out" employees (when the employer is contributing to an employer-based pension scheme on their behalf).

Targeted exemptions (*e.g.* for employment of apprentices and trainees, hiring the long-term unemployed, reduction of working time, conversion of temporary contracts into permanent contracts) reduced receipts of employer contributions in a number of European countries. In 2000, the shortfalls for this reason may have been around 14% in Belgium (the low level of employer contribution receipts in Belgium probably reflects this factor), around 5% in France, Italy (where there were also general rate reductions in the South of the country), and the Netherlands, and an unreported but probably significant amount in Spain.[b]

a) OECD (1997b) reported that in Greece "for the largest fund (IKA), declared earnings for contributions fall far short of the respective total earnings data from the national accounts… little collaboration exists with the income tax authorities to verify if contributions are consistent with declared income" and yet at the same time "the total number of contributors across primary funds exceeds total employment – as measured by the labour force survey – by about 20%… the number of primary pensioners exceeds the population aged over 65 years by a wide margin".

b) Eurostat (2002) reports that transfers to employers for labour market programmes were about € 2.5 billion in Italy, € 2 billion in France and € 1.5 billion in Spain. These may not all have taken the form of reduced employer contributions. Marini and Bourdin (2003) report contribution reductions of € 2.9 billion in Belgium (for older workers, youth, reduction of working time), € 7.6 billion in France (for reduction of working time) and € 1.1 billion in the Netherlands (for the long-term unemployed). However, it is clear that they had difficulty in obtaining precise information.

contributions are levied on a wider tax base than national accounts wages and salaries *e.g.* they are paid on certain non-wage company benefits, on some types of business profits,[37] or in some cases on a voluntary basis by people with no earnings. This explanation remains uncertain, because contributions by the self-employed and non-employed, and transfers from other social security funds such as unemployment insurance should in principle be reported under separate headings in OECD *Revenue Statistics*.

- In six more countries, Belgium, Finland, France, Germany, Sweden and the United States, the apparent shortfall in receipts is 6% to 14% (in Belgium most of the shortfall can be explained by reductions in employer social security contributions, as mentioned in Box 5.7).
- The shortfall in receipts is 16% in Ireland and Portugal and about 20% in Italy, Poland[38] and (in figures for the whole economy) Spain and Turkey.
- The shortfall in receipts is 30% or more in Hungary, Mexico and (in figures for the whole economy) Korea.

It is not possible to draw strong conclusions for individual high-income countries because so-far-unidentified data comparability issues and quirks of national systems[39] appear to be causing variations of up to 10% in revenues, relative to theoretical liability, that are unrelated to undeclared work. However, the list of countries with (unexplained) social security revenue shortfalls of 20% or more seems to correspond quite well with other measures of the size of the informal economy. Revenue shortfalls in percentage terms seem to be larger than informal economy shares in GDP (Table 5.5) which seems plausible (see Box 5.4) but smaller than the share of wage earners not contributing to social insurance.[40]

This comparison suggests that the extent of non-reporting of wage and salary income for contribution purposes, as identified by this type of theoretical tax liability calculation – although work is needed to identify data issues and non-standard contribution arrangements in particular countries – can be used as an indicator for the extent of informal employment for a wide range of countries. This indicator also seems suitable for use as a policy objective, *i.e.* the objective can be to reduce the extent of non-reporting for contribution purposes, except where it is explicitly allowed. It remains true that this indicator at best reflects wages and salaries that have been included in the national accounts even though they are not reported by enterprises and workers for social security contribution purposes (*cf.* the findings in Table 5.4). It is not an independent source of information as compared with Table 5.5.

Trends in the incidence of undeclared work

In Denmark, the discrepancy between personal incomes in tax statistics and according to the national accounts was between 15 and 20% in 1947 to 1955, and then declined, first falling below 5% in the early 1970s (Viby Mogensen, 2003, here quoted by Pedersen, 2003, Figure 1.2).

The pattern has probably been similar in most of today's high-income OECD countries, which in the past had large numbers of non-agricultural self-employed, unregulated domestic servants, day labourers paid in cash, etc. and yet by about 1970 often had undergone a process of transition to a salaried economy which at the same time transformed informal into formal work, with always a certain amount of hidden employment as the formal coverage of tax and other regulations increased. Self-employment by 1979 was typically around, often below, 10% of total non-agricultural

employment, although since 1979 the previous downwards trend in self-employment has been slightly reversed (OECD, 2000a, Table 5.1). But to varying extents, in Greece, Italy, Portugal and Spain this process never went so far and current self-employment shares in non-agricultural employment are around 20% (higher in Greece). It seems important to reflect upon the reasons for this and how it may be linked to the phenomenon of undeclared work.

In Denmark, surveys report an increase in the incidence of "black activities" from 1980 to 1994 and a decline thereafter. These surveys report a monotonic decline in the incidence of carrying out black activities in 1998 with age, from 44% among 18-19 year-olds to 16% among 50-59 year-olds. Also, 81% of 20-29 year-olds were assessed as having an "overall positive attitude" to black activities, declining to 50% for 50-59 year-olds (Pedersen, 1999). Although this age distribution suggests that tax morality has collapsed between one generation and another, it seems possible that the younger generation will become more conservative with age (*e.g.* because health and pension entitlements are increasingly valued).

Pedersen (1998) summarizes five "anthologies on the shadow economy in various countries" published from 1982 to 1992, and OECD (1986) surveyed evidence on the size and growth of concealed employment. Various individual-country estimates based on surveys or expert judgement cited in OECD (1986) seem similar to those cited here, although it was then emphasised more strongly that there was "little evidence or *a priori* argument… that concealed employment is especially important among those recorded as unemployed in the regular economy". Also, although no estimates are tabulated, OECD (1986) cites national-accounts-based estimates according to which "4% seems to be at the upper limit of the plausible range for most countries… For certain countries, notably the southern Mediterranean countries, the proportion may well be much higher". Today, the "upper limit of the plausible range for most countries" (excluding both Southern Europe and new OECD members) is perhaps slightly higher (according to Table 5.5). In some countries there are clear signs of increase, *e.g.* in Belgium "since the beginning of the 1990s, the inspection services have observed a sharp increase in social fraud" (*i.e.* contribution evasion: Pacolet and Marchal, 2003a) and in France "clandestine employment has led the list of grounds for conviction on employment law violations since 1993, far surpassing 'health and safety' which led at the beginning of the decade" (Marie, 2000).

In transition economies, in the early 1990s "adequate regulation was missing and parallel to the flourishing private enterprise informality underwent an explosive expansion… the capacity of the states in the region to interact with private business had to be built practically from scratch, the opportunities for informal activities were abundant. In spite of the growing efforts of governments to get a grip on the economic activities, the informal sector reached a size of over 30% of GDP in some CEE countries" (Belev, 2003). However, there is evidence that the informal economy shrank after 1993 in Croatia (Ott, 2002), after 1995 in Poland, after 1997 in Lithuania, after the mid-1990s in Hungary (Semjén and Tóth, 2002; Belev, 2003), and recently in some other transition countries (UNECE, 2003). Survey evidence for the Czech and Slovak Republics, however, shows an increase since the mid-1990s.[41]

In Latin American countries often less than 40% of the economically active population are contributing to social security systems: estimates for nine countries from 1980 to 1999 show a decline in this proportion in some countries and an increase in others: in Mexico this proportion has been relatively stable at about 30% (Packard *et al.*, 2001).

Undeclared work among the unemployed and benefit recipients

Rates of undeclared work among unemployment benefit recipients are frequently reported to be lower than among the general population. This was a theme in the European Commission's 1988 series of national reports on the Black Economy: the UK report characterised black economy work as mainly self-employment (including "moonlighting" by those with an employee main job) adding: "Quite clearly unemployed people play a negligible role in the black economy and do not merit any further discussion" (Pahl, 1988). However, this was not the view of the UK government and its ministers at the time.[42] More recently, Grabiner (2000) reported that extrapolating from samples of claims by the Benefits Agency about 120 000 people are fraudulently working and claiming at any one time, with about one-third of them on Income Support and two-thirds on Jobseeker's Allowance, which suggests an incidence of 7 or 8% among recipients of the Jobseeker's Allowance.[43] Personal Advisors in Employment Zones even estimate that "between one in six and one in four of those referred to the programme [adult long-term unemployed] had been working at the time they were signing on, at least to some extent" (Hales *et al.*, 2003).

Viby Mogensen (1999) reports for Denmark that: "people on cash benefits, early retirement pensions and old age pensions are less active in the black sector than the population as a whole. On the other hand, the unemployed are just as active in the black sector as the population in general (22.5%), and they work considerably more 'black hours' than the others, who, of course, also have a job to do in the formal economy." Pedersen (1999) notes that "in recent years… [t]he Directorate of the Unemployment Insurance System has even exposed quite sophisticated cheating involving false pay slips, enabling persons to receive unemployment benefit for a longer period than they were entitled to while at the same time working in the black sector", and that the unemployed (and recipients of cash benefits) may more often fail to report black work in the survey.

The incidence of black activities among the unemployed, reported in recent comparable surveys, is about the same as among employed workers in Denmark, Norway, Sweden and Great Britain, but about twice as high (20% compared to 10%) in Germany (Pedersen, 2003, Table 3.3). Surveys in Czech and Slovak Republics also find that the incidence of informal working by the unemployed is nearly twice as high as it is among employees, but it is still not as high as among entrepreneurs (Hanousek and Palda, 2003a). In Spain, Miguelez Lobo (1988) reported that according to other studies, at least 30% of those officially (counted as) unemployed in Andalucia and Catalonia were working but only 12% of the unemployed with a benefit were working (less than the irregular share in employment generally which was about 20%). Mateman and Renooy (2001) more recently reported that undeclared work in Spain is carried out mainly by unemployed people and illegal immigrants.

Overall, it seems that the incidence of undeclared work can be high among individuals who are unemployed (according to some measure of unemployment that does not exclude workers by definition, *e.g.* self-classification) without benefits. For those on unemployment benefits the incidence may be lower, related to the lesser need for income and increased fear of detection and sanctions. It makes sense for government policy to target benefit fraud, because this involves not only short-term loss of tax revenue and overpayment of benefit, but also incentives for long-term growth in the beneficiary caseload at the expense of formal employment. However, undeclared work is a much broader problem.

Although unemployment beneficiaries are in principle the benefit category that is most often available for work, reports of undeclared work by people in other benefit categories, such as early retirees who in some countries are subject to a strict earnings test, are quite common. In the Netherlands, according to a survey in 2002 "8% of invalidity benefit claimants, 11% of unemployment benefit claimants and 13% of social assistance claimants admitted having failed to declare work… only 50% of the people approached wish to take part in the survey which suggests that the actual percentages are probably higher" (EC, 2003). In Sweden, RRV (1998) was particularly worried by its finding that about 23% of students with study support (*i.e.* a student allowance) perform illicit work, which is a much larger proportion than among the population in general: "those who establish themselves on the informal labour market at an early stage, albeit on a temporary basis, are likely to accept the idea of doing illicit work later on in life."

3. Causes of informal employment

A wide range of background factors influence the level of informal employment. Many of them – notably tax rates and employment regulation – primarily address other policy objectives, so that they can only partly be used as instruments to tackle informal employment.

A. Tax, social security and regulatory burden

High tax rates

The immediate motive for non-declaration of work is often tax evasion. However, international and historical comparisons do not necessarily support the idea that high tax rates are associated with high levels of undeclared work. The historical development process has typically involved a gradual shift from self-employment into salaried employment, yet also increasing tax rates, so that now many high-income OECD countries combine high tax rates with a relatively low incidence of undeclared work.[44] Friedman *et al.* (2000) find that high tax rates are actually associated with lower unofficial activity as a percentage of GDP – they argue that entrepreneurs go underground not to avoid official taxes, but in order to avoid bureaucracy and corruption. However a number of countries, particularly the former socialist economies, do now combine high scheduled tax rates (mainly in terms of social security contribution rates) with a high incidence of informal employment, so the safest conclusion is that there is no clear cross-country relationship between tax rates and the size of the informal economy.[45]

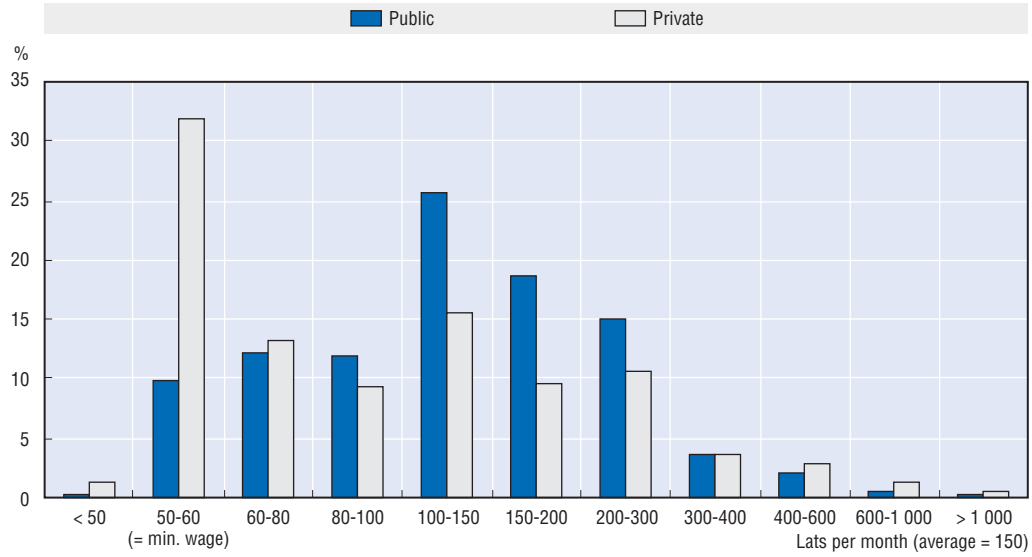
Some mechanisms can mitigate the negative impact of high tax rates on compliance. When tax rates are high, honest citizens and enterprises have a greater incentive to denounce tax evasion and unfair competition, and governments can spend more on services (some of which are unavailable to irregular enterprises) and on monitoring compliance. At the same time, as with many economic relationships, reverse and joint causality mechanisms enter into the correlation. Government spending can only rise to high levels in countries with good levels of tax compliance, and this may obscure any negative impact that an exogenous increase in tax rates has on compliance.

Hanousek and Palda (2003a) compare trends since the Czech and Slovak Republics split in 1993 and find that evasion is more common in Czech Republic. They claim this is because "the Czech Republic decided to keep taxes low and enforced their payment laxly", *i.e.*"the most important determinant of tax evasion… is not a divergence between tax rates, but rather the difference in opportunities for tax evasion in each country".

Employment protection and the minimum wage

Employment protection legislation (EPL) is one of the reasons most widely cited by employers for avoiding hiring, and expert observers often see deregulation as a key precondition for tackling undeclared work. This proposition is probably correct in general terms,[46] but the problems that are also faced by a policy of deregulation in economies with high levels of informal employment also need to be recognised. Undeclared work is liable to take the form not only of wholly-undeclared (unregistered) employment but also of under-declaration of earnings in respect of registered employees. Indeed, reports from some countries indicate that this is much the largest component of undeclared work. OECD (2003b) recently noted: "In Latvia in 2000 – when the minimum wage there was 50 LVL – no less than 32% of the private employees earned 50 to 60 LVL per month according to official statistics… This result is not very plausible, considering that the average wage was 150 LVL and that the *public-sector* wage distribution did indeed show the expected bell-shaped normal distribution around the average". Thus, the minimum wage for many employees is not actually a constraint on true earnings but, as Chart 5.1 suggests, the lowest amount of earnings that can be declared for tax purposes.[47] Not surprisingly then, the minimum wage may tend to be increased not for reasons of employment policy, but in order to increase tax receipts.[48]

Chart 5.1. **Latvia: wage distribution in the public and private sectors**



Source: OECD (2003b).

This type of policy may take a variety of forms, with a primary focus on the minimum level of tax to be paid, or a mixed focus on the minimum wage and the payment of tax corresponding to the minimum wage:

> In Hungary, during the 1990s, "when the early transition crisis was over economic growth started to pick up and the number of registered businesses stabilized, the government began to send signals indicating the expected level of declared income; most of the entrepreneurs got the message and stated income just above this expected level. The result was a gradual increase of the portion of formally declared income.

Another element of this strategy has been raising the level of minimum social security contributions every year" (Belev, 2003, summarizing Kallay, 2003).

In Italy, under the "realignment agreements" of the late 1980s and 1990s, "at a provincial level the Trade Unions of each sector and the corresponding Employers' Associations agree to a starting wage and the way in which it will be realigned to the wage in the National Collective Agreement for that sector… The execution and the subsequent transfer of the agreement at the corporate level makes it possible to consider wages resulting from the provincial agreements as minimum wages for the calculation of the Social Security contributions. Furthermore, these wages are progressively adjusted within 36 months from the execution to 100% of the minimum wages according to the national collective agreements…" (Mateman and Renooy, 2001).

If many employers do pay taxes only on the minimum wage, the level of the minimum wage that maximizes tax revenues will exceed worker productivity levels at the bottom of the distribution. The social partners, if they mainly represent large employers and their employees, may not object to minimum wage levels that exceed those prevailing among small and non-unionised firms.[49] In Lithuania, employees "are often officially hired for the statutory minimum wage and receive the remaining portion as undeclared payments" and yet at the same time increases in the minimum wage have "ousted low-skilled workers from the official labour market and inhibited the creation of low-productivity jobs" (Renooy *et al.*, 2004). This combination of forces may explain why many – probably most – middle-income countries appear to be locked into, or tend to revert to, levels of regulation of the formal sector that make continuing informality inevitable and depress the overall employment rate.

Until quite recently, OECD labour markets with high levels of employment protection often also had a low incidence of part-time work. While this has sometimes been explained in terms of union hostility to part-time work, it may also be related to measures targeted on under-declaration. Pirenne (2003) lists the main forms of black work in Belgium as the undeclared employment of foreigners without work permits, workers who are receiving unemployment benefits, and seasonal workers, and "infractions concerning part-time work. This mainly involves the lack of a part-time work contract that defines the time schedule and work regime and, when hours are variable, failure to display the rota". The main instrument available to labour, social security, or tax inspectorates to detect undeclared work is the unannounced visit to a work site, which determines the identity of all persons found there. This instrument is often effective enough to ensure that the majority of workers are registered, but the authorities cannot continuously observe worksites in order to check whether a worker declared as part-time is in fact working full-time. Few countries seem to attempt direct enforcement of accurate reporting of actual hours worked in the way that Belgium does. Specifying minimum rates for social insurance contributions (corresponding to a full-time minimum wage) seems to be a more common strategy, but this discourages workers from engaging in work that really is part-time within the formal economy.

Another characteristic until quite recently of rigid labour markets (*e.g.* in Italy and Spain) has been strict limitation of temporary work, except in defined cases of "objective" need. When only work under a permanent contract is legal and there are heavy costs to dismissals and quits, the tax authorities can expect to receive year-round payment of taxes from each work-site in line with the number of staff found at work during a single

inspection visit. By contrast, if temporary contracts are unrestricted, employers and workers can, for example, agree to work under temporary contracts, and after these expire (with no inspection having occurred) destroy the contracts and omit the earnings from tax declarations. As an alternative to strict regulation of temporary contracts, rules about frequent reporting of withholding taxes and the immediate declaration of new contracts (see Section 4.A) enforced through unannounced inspection visits, can help minimise this type of evasion.

Other business regulation and red tape

OECD (2001) surveyed the costs to business of compliance with regulations. Among the main conclusions were:

- Administrative compliance costs represent around 4% of Business Sector GDP across the countries surveyed. The estimates varied from less than 2% in Finland to 7% in Spain.
- A dramatic "regressive effect", seen in other surveys, is confirmed. Regulatory and formality costs have an increasingly disproportionate impact on smaller companies. Small SMEs (with 1-19 employees) spent USD 4 600 per employee per year, medium-sized SMEs USD 1 500, and large SMEs (with 50-500 employees) only USD 900.
- Companies used a mix of internal and external resources to comply with regulations. Approximately 44% of these costs were internal to the company, and around 56% were external, usually contracted out to experts.
- The great majority of compliance costs relate to tax (46%) and employment (35%) regulations.
- Employment regulations were reported, in particular, to increase non-wage labour costs; create difficulties in making staff reductions; and create difficulties in hiring new staff.

In a study using proxy-based estimates of unofficial activity for 69 countries,[50] Friedman *et al.* (2000) conclude "every available measure of over-regulation is significantly correlated with the share of the unofficial economy and the sign of the relationship is unambiguous: more over-regulation is correlated with a larger unofficial economy".[51] Referring to Central and Eastern Europe, Djankov *et al.* (2003) formulate policy recommendations in this regard including "a reduction of the number of business licenses, permits and approvals, streamlining administrative procedures, adopting uniform taxes and enhancing access to capital, easing operating constraints on existing micro-finance institutions, reforming banking regulations to encourage lending to small firms, avoiding state-sponsored financial intermediation, etc." (Belev, 2003).

Nevertheless, like employment regulations, business and tax regulations have some rationale. In particular, the costs of regulatory barriers to starting up a new business which are frequently decried need to be balanced against the costs to third parties when businesses go bankrupt with business debts, and the cost to taxpayers when small enterprises disappear with tax debts. This occurs at the bottom of subcontracting chains and it is central in VAT "missing trader" frauds (see Box 5.6). Restrictions on who can start a new business, and conditions to be met before trading can start, may be necessary to minimise these problems. Once again, research should, as well as documenting the costs of regulations, focus on identifying the needs for regulations, and what form regulations can take so as to meet these needs at lower cost.

B. Broader economic environment

Social security benefits as an incentive for declaration of work

A link between social security entitlements and contributions improves the incentive to declare employment relationships. However, social insurance is not actuarially neutral for individuals for a number of reasons:

- It redistributes across incomes, *i.e.* contributions typically increase with income more than benefits do.
- It redistributes across risks, *e.g.* low-risk employers pay the same UI contributions or accident insurance contributions as high-risk employers.
- Contributions towards pensions to be received forty and more years ahead are subject to a large financial discount and the risk of changes to the pension entitlement rules.
- Entitlement rules incorporate various non-linearities, thresholds and kinks, creating a high individual return to additional contributions at the margin in some areas, offset by low individual return in other areas.
- The employment of the head of household in some cases provides health insurance coverage for dependent relatives (spouses and adult children), and disability and old age pensions with supplements for dependents and continuing entitlements for survivors. As a result, secondary family members can often get relatively little additional return from social security contributions that are paid if they enter formal-sector jobs.[52]

So even though the return to social insurance contributions at the margin may be positive for some individuals, it inevitably is negative (in the same sense as it is for income tax payments, *i.e.* the contributions may be socially justified, but they finance public goods) on average. Even where many workers place a high value on social insurance entitlements, there are many others who would prefer not to pay the contributions. Effective social security systems cannot tolerate voluntary non-payment rates of 20%, 40% or more, and it is only by enforcing the payment of social contributions in the same way as for other income taxes that lower rates of non-payment can be achieved.

By contrast, the payment of (insurance-based or assistance-based) benefits during unemployment may reduce incentives for undeclared work. In the absence of unemployment benefits, unemployment is not a long-run option and many workers can only choose between regular work and undeclared work. If unemployment benefits are paid with lax controls on combining these with undeclared work, the benefits promote undeclared work. But if controls are rigorous, the payment of benefits may discourage undeclared work among those who are temporarily unable to find regular work and facilitate its detection:

- Because of the reduced incentive for undeclared work, its volume is reduced and therefore more intensive inspection of the remaining amount of undeclared work is possible.
- The coverage of administrative records become more complete, and this may permit identification of individuals (*e.g.* prime-age males who are neither in work nor claiming benefits) who are working irregularly.
- In some countries without benefits, social security contributions and tax rates on low earnings are low and the tax authorities may have relatively little institutional incentive to investigate undeclared work. When benefits are paid, the benefit administration has a strong institutional incentive.

C. General governance

An effective legal framework for transactions in the formal economy

Djankov *et al.* (2003) cite the theory (Johnson *et al.*, 2002) that the enforcement of property rights within the formal sector is the most important factor promoting formal work. "The services of the courts or the police are only at the disposal of legally operating companies. In countries where the courts and the police are inefficient and corrupt anyway, there is really no recourse for entrepreneurs of any kind, formal or not. However, in countries with reasonably functioning law and justice systems, entrepreneurs have a lot to lose by operating informally. The obvious channels for enforcing contracts and defending their property rights against competitors and government bureaucrats are not available to them. This suggests that one of the most powerful ways, perhaps the most powerful, to reduce informality is to improve the functioning of law and justice."[53]

This is a second counter-point to the argument that over-regulation of the formal economy is the primary cause of the informal economy. Regulations and bureaucracy which secure property rights and counter corruption make the formal economy attractive. Again, any drive to simplify and reduce regulation must carefully distinguish regulations which have these positive functions from those which are burdensome for no good reason.

Centralisation and local government

SECO (2000) found that one of the main problems facing the struggle against black economy work in Switzerland was the lack of political will among the cantons which are mainly responsible for applying the existing legislation. Most cantons had no specialized personnel working on this function. The main reason suspected apart from lack of resources, was that "many cantonal governments particularly fear the direct negative consequences of the struggle against black-market work in the branches where the phenomenon is most widespread". If local governments grant local firms even a 5% cost advantage over their competitors elsewhere in the country by turning a blind eye to undeclared work, this in the long run is likely to greatly increase both local employment and revenues from local (*e.g.* property) taxes: but this behaviour reduces total tax and social security revenues.

Local tax collection agencies are usually in principle organs of national government, but there is nevertheless evidence that local governments influence the collection of national taxes in some countries.[54] Tax collection agencies need help from other local actors in order to work effectively: for example, local governments usually manage land-use and business zoning registers, which identify local work sites. The perceived political legitimacy of central government's fiscal demands, and incentives such as allowing local levels to keep a share of tax revenues, may influence its ability to suppress undeclared work.[55]

Social consensus in favour of suppressing black economy

Meldolesi (2003) concludes that in the fight against irregular work in Italy: "What matters is finding the collective strength to isolate (and overrun) the many administrative, economic and social forces that, *de facto*, oppose regularization. I am thinking of those inspectors who do not look into firms; of those politicians and operators who see regularization as a new occasion for the old patronage politics; of those planning officials who take pleasure in the questions of all those who are still trying to cheat the State; and

so on. More generally, this kind of battle can be fought effectively only if we are aware of the thousands of forms of connivance and inertia that have so far protected the underground economy." Even in Nordic countries, often regarded as models of tax morality, there is no clear consensus for measures to suppress undeclared work. RSV (2002) reports for Sweden in 1998 that 27% "agree" and 42% "don't agree" with the statement. "It is reasonable that the person who buys black work, *i.e.* work on the summer house, also gets punished." In Denmark, two-thirds of survey respondents either had carried out "black activities" or would be willing to do so (Viby Mogensen, 1999). Hanousek and Palda (2002) report on the basis of attitudinal surveys "strong evidence that indicates that citizens will avoid taxes if they do not believe they are getting quality government services for the taxes levied on them".

Despite political controversy in relation to illegal migration, attitudes in practice may be ambiguous. Illegal migrants provide cheap labour, increasing the real incomes of nationals and contributing directly or indirectly to the competitiveness of the legitimate economy. Moreover, since rich countries need to impose high costs in some form on immigration in order to limit its volume, the process of illegal migrants starting off exploited and then gradually being allowed to integrate mainstream society may be seen as fair. Countries which in practice tolerate the use of migrant labour might be able to define a legal framework which better recognizes these considerations.

Unions and employer organizations might be expected to favour the suppression of undeclared work for a range of reasons, including unfair competition. However the social partners may be reluctant to recognise the informal economy because they do not manage or represent employers and workers in this area, and because effective policies will involve giving government (*e.g.* tax) inspectors key powers in workplace. Perhaps related to this, the ILO and its supervisory organs have over the years been quite cautious about analysing policies towards the informal sector, as described by Bangasser (2000).

General social norms

Prevailing social norms can make it difficult to collect taxes on the basis of objective evidence, limit petty corruption and suppress the informal economy:

> "Rural post-communist societies have never reached a stage of full modernization and their administrations never achieved the degree of impartiality, impersonality and fairness characteristic of modern bureaucracies. Thus, corruption often manifests itself not just in the use of public position for personal gain, but more broadly as widespread infringement on the norms of impersonality and fairness. Providing discriminative public service, as a general rule, may not be motivated by a pursuit of financial gain only, but stem from the norms of status-based societies. Pippidi argues that 'the slow, modest, often contradictory or ill-aimed reforms in post-Soviet or South-East European countries since 1990 have been unable to pin down this structural problem and address it fully and this is the main reason why so many of them failed miserably to achieve any difference'" (Belev, 2003).
>
> "… almost everywhere in Bulgaria it is a common practice that people use connections, patronage, family and friends networks to deal with everyday problems. Kinship and friends networks are seen more as moral support than functional" (Marc and Kudatgobilik, 2003).

Such social norms can probably change slowly with factors such as good national leadership, increasing education and a successful introduction of impersonal social insurance schemes. But in the short to medium term, they mean that given policies may work differently in different countries – in the same way that policies in Italy produce rather different results in the North as compared to the South.

4. Enforcement, tax administration and tax incentives

A limited number of countries have undertaken a general review of polices towards informal employment and undeclared work, focusing on potential changes in legislation and administration. Recommendations have generally emphasised labour market enforcement mechanisms and tax measures: additional themes include influencing public attitudes and simplifying red tape to facilitate entry to the formal economy. Annex 5.A2 (see OECD, 2004b) briefly summarises these policy reviews.

A. Enforcement measures

Some expert observers criticise enforcement: "it does not make much sense to fight illicit work with intensified controls and higher fines. The tendency to engage in shadow economic activities should be perceived as a warning signal by politicians" (Enste, 2003). However, some framework of enforcement measures and sanctions is certainly necessary to counteract tax evasion. SECO (2000) notes that the DIY and self-help sectors of the economy engage in a form of competition with the official economy which provides flexibility and competitiveness, and goes on to argue that the availability of this safety-valve undermines the case for tolerating any other form of the underground economy.

Enforcement measures focusing on the detection, observation and reporting of work plausibly may succeed in reducing the size of the category "wholly-undeclared work by employees". There will be some exceptions in cases where work is not done at an easily-visible work-site (which is commonly the case for black-market work) and, as already discussed above, these measures will tend to be less effective in tackling the under-declaration of work by employees who are correctly registered.

Workplace inspection visits

Workplace inspection visits are the basic procedure used by inspectorates to identify undeclared work. Tax inspectorates are concerned with many forms of tax and tax evasion and owing to the low earnings involved in undeclared work often give it low priority, so labour, social security, and benefit fraud inspectorates often play a key role in workplace inspections.[56]

According to Mateman and Renooy (2001), surveying developments in seven EU countries, in general terms "control activities are intensified in almost all countries". In Germany, there was a "huge increase in control efforts" with 2 800 employees in the Labour Offices and 1 100 in the Customs police (to be increased to 2 500) devoted to undeclared work.[57] In Belgium, staffing of the labour and social security inspectorates increased from about 800 in 1995 to 1 200 in 2003 – which remains about 20 times lower than it is for the tax inspectorate (Pacolet and Marchal, 2003a).

For small firms, it is practically impossible to conduct systematic checks and inspectorates have to rely upon a strategy of deterrence, *i.e.* unannounced inspection visits, imposing sanctions and requiring regularization of employment when undeclared employment is detected. Mateman and Renooy (2001) report increases in legal maximum

fines for illegal employment in most countries surveyed, although time-series data on this point are not available. Nevertheless, Pirenne (2003) notes that in some sectors, particularly hotels, restaurants and horticulture, in Belgium the same employers are often sanctioned several times, showing that the penalties are no longer dissuasive.

Requirements for immediate declaration of businesses and employment relationships

Many European countries have recently introduced requirements on employers to immediately declare new employment relationships:

- In France, since 1993, employers are obliged to declare an employee (currently via the *déclaration unique d'embauche*, DUE) to the social security body URSSAF before work starts.
- In Belgium, since 1 January 2003 employers must declare employees immediately (*Dimona*).
- In Italy "The INAIL counter required individual insurance of workers, by name, as soon as they were hired. This was a major step forward, but it also had the effect of swelling the number of accidents reported on the first or second day at work (that is, many workers were insured only after they had accidents)" (Meldolesi, 2003).

This requirement seems to be far from universal. OECD (1998) reported that in Ireland (where administrative cross-checks between receipt of benefits and payment of employee contributions were lacking), "There is an obvious incentive for people who start work to 'forget' to inform the benefit authorities for as long as possible. In order to tackle this problem, Ireland has introduced regulations requiring employers in construction, forestry, road haulage, contract cleaning, security, catering and the bar trade to send in a Notification of Employment form to DSW within one month of a new employee or subcontractor being taken on. DSW issues notification receipts, which can be checked by inspectors visiting the workplace." However there was still no general requirement for declaration of new hires. This is a typical example of a regulation which some countries find necessary in order to tackle tax evasion, while others feel the need for it, but nevertheless consider that the regulatory burden involved is not justified.

A related issue is the frequency of employer remittances of withholding tax, with lists of the employees concerned, to the tax authorities. If the frequency is monthly, work-site inspections should find that, on any work contract that has been in existence for more than a month, withholding taxes have already been paid. This will make it difficult to evade taxation on temporary contracts that are longer than this.

In a similar move, in the United Kingdom as from 2000 new businesses have been required to register with the Inland Revenue as soon as they are set up, whereas previously registration could take place up to 18 months later (Mateman and Renooy, 2001). Many European countries have a requirement for businesses to register before they can start trading.

Legal responsibility for the actions of subcontractors

To combat chain subcontracting (described above), many European countries have now made the chief contractor of a chain legally responsible for compliance with regulations, including tax liabilities, by subcontractors:

- In France in 1995, six professional organisations in the building industry and civil engineering adopted a new standard contract for subcontracting. This contract includes a provision requiring the company that subcontracts to make sure when concluding a contract that the subcontractor exercises the activity within regular conditions, excluding all kinds of undeclared work.

- Germany, from 2002, introduced in the construction sector the principle of general contractor's liability for the social security contributions of the contracted firm (EC, 2003).
- In the Netherlands, the *Law on Ultimate Responsibility in the clothing industry* came into force of 1994, allowing the authorities to claim tax and social security debts of subcontractors (usually clothing workshops) from contractors.
- Under the UK *Inland Revenue Construction Industry scheme* introduced in 1999, building industry contractors may only pay their subcontractors gross if they hold a particular certificate from the Inland Revenue. This measure is one of the most recent in a long line of initiatives that have attempted to regulate casual labour in the construction industry.

In Sweden, the National Tax Board in 1998 set up a "subcontractor chain analysis" project group aimed at the building industry. The procedure is that *e.g.* a big building company is asked to submit information on what subcontractors it uses. These subcontractors are subsequently asked what subcontractors they use, etc. Having identified all parties and levels within a building project, the information from the companies and from the tax authorities database is linked. If strange proportions between contract value and salaries arise from this analysis, undeclared work is most probably involved (Mateman and Renooy, 2001).

Exchange of information and unique social security numbers

Another trend identified by Mateman and Renooy (2001) is a steady increase in co-operation between control bodies, meaning chiefly the exchange of information. In Germany, "[t]he exchange of data between authorities, mainly intended to reveal benefit fraud, has been improved. Since the beginning of 1998 the social assistance offices have been integrated into this automatic data exchange". And in the Netherlands, "on 1 July 1998 the so-called *Koppelingswet* (literally: Linking law) came into force. [This] allows for the extensive linking of client files from *e.g.* social security institutions, social services, Inland Revenue and health insurers. This link is made possible by the Social Fiscal Number, which should be registered in all these files." National Action Plans for Employment (EC, 2003) report further measures. In Ireland, individuals not recorded on the tax system are identified among other things by information on rent subsidy payments, purchases of property, etc. In Greece, the labour inspectors and OAED (the Public Employment Service) are developing computer infrastructure to allow widespread exchange of information within OAED and with social security records. In the United Kingdom, "the Social Security Fraud Act (2001) set out new stronger powers allowing Authorised Officers to access information from certain organisations, including banks, building societies, utilities and educational establishments, to help combat social security fraud… The UK experience indicates that the key to successfully addressing the problem of undeclared work lies in developing a co-ordinated strategy linking the work of all the public agencies which have an impact on illegal working."

In some countries, steps to link data have been challenged on grounds of data protection and privacy. Another concern is that existing registers have uneven coverage, and the use of them to detect irregularities may unfairly target particular social groups. This may argue for approaches based on a unique social security number for each person, which is used to match data across a fairly wide range of functions and registers in an explicitly-defined and transparent way. Belgium introduced a social security card (SIS) in 1998, with a requirement on all employees to have the SIS card with them at the workplace: this allows for faster and more foolproof controls by the social inspectors of the Labour Administration (Bruyninckx, 1998). Related to the exchange of information are measures to prevent people from obtaining false

identities: the United Kingdom has tightened procedures for checking birth certificates and issuing new National Insurance numbers (EC, 2003).

One data match which seems to be lacking or sporadic in most countries is a real-time link between the records of social security contributions (paid on behalf of an employee by the employer) and social security benefits paid to the same person. In Switzerland, SECO (2000) recommended exchange of data from unemployment insurance records with old age and survivors (AVS) contribution records.

Employer denunciation of unfair competition and collective agreements

Some countries actively encourage employers to denounce competitors who are not complying with regulations.[58] Collective agreements may commit both parties to denounce black-market work. In Belgium, a recent agreement with the Labour Ministry commits the cleaning and transport sectors to informing the public about the quality and guarantees offered by enterprises which respect the law, to notify illegal practices to public authorities and themselves take cases to court (Pacolet and Marchal, 2003b). In Switzerland, collective agreements in construction, plasterwork, painting, hairdressing, heating, ventilation, plumbing, metalwork and carpentry contain measures against black-market work, and have been extended to all employers in these sectors (SECO, 2000).

Employee rights as an incentive for denunciation

Employee rights to social security benefits or employment protection can create an incentive for employees to inform the authorities when they are laid off, even from undeclared work:

- In Japan, "the PES accepts claims for [unemployment] benefit even when the employer has not actually paid insurance contributions. An enterprise that does not pay insurance contributions thus runs a risk of detection when a former worker applies for benefit. A system of insurance benefits, although it may lead to some fraudulent claims, can make a significant contribution to suppressing undeclared work in the economy as a whole if workers losing jobs are actively encouraged to claim" (OECD, 1993, p. 74).
- In France, a leaflet gives the following example "Following a disagreement between Madame Y and her undeclared employee, the employee is fired. She then goes to the workers' tribunal. Madame Y is sentenced to pay her lump-sum compensation equivalent to 6 months of salary" (URSSAF, 2003).

However, although rights enforceable against the employer help in regularizing employment relationships once they have started, they also make employers reluctant to hire employees who have these entitlements. This approach may lead employers to prefer illegal migrants, who will not bring any complaints because they do not have a work permit.

Sanctions and amnesties

As in other policy areas, in a theoretical view low rates of detection need to be accompanied by strict sanctions in order to enforce compliance. However, there are practical objections to this: heavy sanctions on an employer may lead to closure of their business with the loss of its regular as well as its irregular jobs; the self-employed who previously were only concealing some work may be driven wholly underground; and when undeclared work reflects genuine difficulty in complying with complex regulations, heavy fines seem contrary to natural justice.

Grabiner (2000) considered the option of a general amnesty but concluded based on experience from several other countries that they were perceived as unfair, tended to create an expectation of future amnesties, and generated little revenue. However according to Tapinos (2000), experience in Europe with illegal migrants shows that the only choice is between repeated amnesties and discreet amnesties carried out on a case-by-case basis. This is certainly true if non-compliance has been tolerated in a particular sector for years. Legislation will typically require that all evaded taxes are repaid. If this is enforced, even businesses which want to register will be deterred from doing so, whereas governments will want to reward rather than punish the first firms in the sector that regularize their activities. Against this background, it is easy to understand why Italy's policies have long included amnesties in various forms (the principle is inherent in "re-alignment agreements"). However, this underscores how essential it is not to tolerate undeclared work in the first place. If the problem is kept limited in size, the principle of repayment of all evaded taxes can be maintained even when this drives existing businesses into bankruptcy, with discreet amnesties existing at most in the form of regularization by the back door (*e.g.* closing and reopening the firm while keeping production facilities unchanged, as described by Meldolesi, 2003).

B. Tax administration and tax structure

There is not necessarily a political consensus for reducing the total tax burden specifically in order to reduce the size of the informal economy, which would in any case be long term strategy. *Methods* of tax administration and the *structure* of tax rates are little-analysed and probably more feasible areas for policy action.

Methods of tax administration

Avoidance, evasion and administration are central, not peripheral, concepts in public finance (Slemrod and Yitzhaki, 2000). Although incomes are the most appropriate base for much of the tax burden in principle, taxes are frequently levied in practice on more readily-monitored indicators of taxable capacity.[59] For small manufacturing, retail and service businesses, the most visible indicator of taxable capacity may be the number of people found at work during work-site inspections. As explained above, to tackle under-declaration tax authorities have to also enforce various regulations which put a floor on the amount to be paid per registered worker, and businesses and households then have an incentive to employ prime-aged males working long hours and a disincentive to employ lower-productivity workers such as part-timers and secondary family members on a registered basis.

As an alternative tax collection strategy, administrations can attempt to assess the value added (sales, less allowable non-labour inputs) from a business directly. This method starts by checking total sales. Typically, tax authorities will require all but very small firms to implement accounting procedures (*e.g.* for retailers, require the use of secure tills with daily recording of till receipts), and check on a sample basis whether sales are correctly recorded in the accounts:[60]

> In the United Kingdom, "'Catch teams' make observations of cash transactions and check whether business owners are registered and whether their declared income appears to be reasonable in relation to the number of customers, opening hours, etc., where there is any suspicion of illicit income the authorities can present themselves and check all the transactions made in the course of one day; these transactions are then compared with sales on other days. This method results in a substantial increase in declared income…

experience… is that it is necessary to work in the field, that observations are often more rewarding than the information contained in computers and that it is necessary to operate without warning at any time during business hours" (RRV, 1998).

Once a business's value added has been determined, then – regardless of whether the level of value added so determined is actually accurate – there may be no tax incentive to conceal labour input, because value added that is not reported as labour costs becomes taxable as net profit, which often (see below) is subject to a similar or higher overall rate of tax.[61] In some OECD countries such as Australia the tax collection strategy clearly does focus on business record-keeping and accounts, rather than the detection of work and employment relationships or the enforcement of employment regulations,[62] yet there is little evidence of any general tendency in the economy to conceal labour inputs (though cases of concealment do arise when additional incentives come into play, such as illegal migrants who will work for low wages, or informal suppliers who are concealing most or all of their sales). Rates of tax evasion can be high in some areas,[63] but nevertheless these strategies are found mainly in countries with a relatively small underground economy.

In order to assess taxable capacity in terms of gross business income and value added, tax authorities need to have discretionary powers that allow them to promote reliable accounting, *e.g.* allowing a high tax liability to be estimated or fines to be imposed when a business presents incomplete or implausible accounts, and does not promise to introduce more transparent and verifiable accounting procedures. At the institutional level, the tax administration which has responsibility for taxing profits would have the prime responsibility for taxes on labour costs as well. The tax administration would also need a remit and adequate staffing to allow assessments of small businesses, and not only tackle cases of large-scale evasion while smaller businesses are left to the labour inspectorate or social insurance authorities.

The possibility of focusing tax administration on assessing total value added, rather than labour input, is relevant mainly for wholly-undeclared work and under-declared work. It does not solve the problem of "black market" work where, as defined in Table 5.1, the final sale itself is concealed, typically through payment in cash with simultaneous concealment of earnings. However, field work can aim to ensure that when black-market work expands to the point of becoming a regular business activity which engages in arms-length trading, a business is registered and starts to keep accounts.

Relative tax rates and tax schedules

The incentives generated by tax rates and tax schedules can be analysed by considering the change in total tax payments when a business distributes a given amount of pre-tax value added by different methods or to different economic actors. In a small family business, decisions on whether value added takes the form of profits or wage and salary income and whether the wage and salary income is paid to two employees or just one can be made almost at will. In other small businesses, the employer and employees may also co-operate to use the most tax-efficient method, irrespective of how the after-tax earnings are finally distributed between the different parties. In the economy more broadly, the same incentives will affect more substantive decisions on whether an individual works as self-employed or does similar work as an employee, and on hours worked by different members of a household. In general, the incentive response is likely to consist of a change in the declared situation, part of which is a change in the real situation, while conventional statistics have limited ability to distinguish between the two.

Average tax rates on self-employment. Relatively high or low effective average tax rates on incomes from self-employment as compared to wages and salaries may influence the share of self-employment in total employment. For Hungary, where the self-employed could pay a fixed minimum social security contribution, Scharle (2002) explains that in the early 1990s a large proportion of unincorporated firms were established to evade taxes on wages (a conclusion based on analysis of their cost structure), but since then improved tax enforcement and increases in relative tax rates on self-employment have led to a declining trend in self-employment.

Cullen and Gordon (2002) estimate using US individual tax return data that the tax rates on business versus wage and salary income have a large effect on behaviour, such that a shift to a 20% flat tax on all income would virtually triple the self-employment rate. This highlights the great extent to which tax rates on distributed profits (the sum of corporate tax rates and taxes on dividend income, in the case of incorporated enterprises) are higher than they are on wages and salaries in the United States. It seems likely that this structure of taxation plays a role in achieving a situation where most labour income in the economy is paid in the form of wages and salaries.

Some reasons that it might be good policy to keep self-employment at a relatively low level include:

- This reduces aggregate tax evasion because rates of tax evasion on declared wages and salaries are very low (due to tax withholding and the possibility of matching personal income tax returns with employer returns).
- Record-keeping and accounting, to accurately determine the net income from self-employment, involve high monitoring costs for tax authorities and high compliance costs for the worker.[64]
- Where self-employment is high in high-income countries, many of the self-employed resemble dependent employees. For example in Italy positions as "collaborator" are commonly advertised and the business which advertises will usually have an existing management strategy, business premises and customer base, while the collaborator gets good idea of his/her likely earnings before agreeing to join the business. There are wide variations in the proportion of self-employed who have no employees (OECD, 2000a, Table 5.4), so the technical or efficiency costs arising when this proportion is kept fairly low do not appear to be large.

Tax rates on profits earned by business owners as compared to wages and salaries paid to their employees. The tax incentive for small businesses to declare the wages and salaries of their employees depends upon the effective marginal tax rate on business profits,[65] as compared to the average or marginal tax rate on labour incomes, which are deductible from business profits. If this tax rate on profits is relatively low, there is a direct incentive for undeclared work, *i.e.* the payment of wages wholly or partly in cash. In a simple tax system, assuming that the business owner's true earnings exceed those of his or her employees, distributed profits from a small business do tend to face a higher marginal tax rate than wages and salaries within the same business because:

- In the case where the business owner is self-employed (also including owner-managers of incorporated businesses who take profits as wage and salary)[66] the profits are taxed as personal income of the business owner, and face a higher marginal tax rate than wages and salaries owing to the progressivity of the personal tax schedule.

- In the case where the business is incorporated under a "classical" tax system, business profits are subject to corporation tax and dividends distributed to the business owner are subject in addition to personal income tax.

After about 1980, tax rates on distributed corporate profits are likely to have fallen relative to those on labour costs in many countries. There were substantial reductions in top marginal rates for personal income taxes and reductions in corporation tax rates (Leibfritz *et al.*, 1997), and many tax systems were changed to mitigate the double taxation of dividends.[67] These changes would have weakened although not necessarily removed tax incentives for declaring wages and salaries, in the incorporated case.

Various situations where effective marginal tax rates on business profits are below those on labour costs can arise:

- If personal income taxation is regressive (*i.e.* marginal rates are lower on higher incomes) owing to a ceiling on social security contributions whose impact is not offset by progressivity in the personal income tax.
- If scheduled social security contribution rates for the self-employed are lower than for employees.[68]
- If profits of small businesses are assessed using simplified tax reporting procedures and benchmark ratios. An extreme example would be taxation of shopkeepers on the basis of square metres of the shop and other observable characteristics.[69] In this case, the effective *marginal* tax rate (on the profits of the business owner, when they vary as a function of compensation paid to employees) is actually zero.
- If income distributed as wage and salary is subject to high rates of social security contributions which are not payable on dividend income, and profits distributed as dividends to the owner of a small incorporated business are not heavily taxed (*e.g.* because corporate tax rates are low and/or because dividends are relieved from double taxation).

It is difficult to determine in detail in which countries one (or more) of these situations arises, but some relevant information is available relating to the situation in 1999 and 2000:[70]

- Ceilings on social security contributions, which make this component of the personal tax system regressive, are a significant feature in Austria, Canada, France, Germany, Greece, Ireland, the Netherlands, Spain and Turkey. However in several cases they apply only to certain categories of contribution, and the schedule for social security contributions combined with personal income tax may remain progressive.
- The self-employed in Czech Republic, Greece and Portugal were allowed to pay lump-sum contributions or lower contribution rates than employees, and the self-employed in Hungary, Mexico and Spain had access to special simplified tax regimes (Chen *et al.*, 2002).
- A number of OECD countries gave full relief from double taxation on profits distributed as dividends (Chen *et al.*, 2002, Table 2). However, the majority of these countries have other unusual features which tend to prevent marginal tax rates on distributed profits from falling below those on wages and salaries: no social security contributions are payable on wages and salaries in Australia and New Zealand; social security contributions and personal income tax are payable at the margin on profits of small businesses in Finland and Norway,[71] and there is an additional tax on profits in Germany (trade/franchise tax). Three other countries that taxed dividends only as personal income (*i.e.* with no corporate tax, net of arrangements for relieving double taxation) in 1999 were Greece, Italy and Mexico.[72] This resulted in a relatively low maximum tax

wedge on distributed corporate profits in these countries (Joumard, 2001, Figure 9) where, with the partial exception of Mexico, wages and salaries are subject to relatively high social security contributions.

In general it appears that countries with high levels of informal employment may often have at least one route through which the marginal tax rate on profits received by a business owner can be less than it is on the wages and salaries paid to his or her employees. This is less often the case, or only to a slight extent and when social security contributions are counted as a pure tax, in high-income countries with low levels of informal employment.[73] These countries when they have reformed corporate taxation, have often remained attentive towards the risks of this form of tax arbitrage of this kind.[74] And undeclared work is hardly an issue in some high-income non-EU countries – particularly Canada, the United States and Japan – which have a strong tax bias towards declaration in the corporate case.[75] The situation in CEE countries seems similar to EU countries, as regards corporate and personal income tax schedules, but is characterised by high social security contributions on wages and salaries, with lower social security contributions and weak assessment regimes for self-employment incomes.[76] So cross-country comparisons seem consistent with the idea that this factor influences undeclared work. Further research is needed although, owing to the complexity and variety of taxation (and social security) systems, no simple statistical assessment of the tax incentives for under-declaration can be expected.

It is probably not practical for low-income countries with high rates of self-employment to avoid some use of simplified tax reporting and assessment procedures for self-employment incomes in the short term. The tax administration and the administered population are not able to put practices of record-keeping and checking audit trails into place overnight and the process must be seen as one of longer-term transition, rather than only certain legislative requirements and tax rates. Middle-income countries nevertheless need to pay careful attention to these issues of administration and rate structure in order to keep moving towards a situation where fiscal incentives – rather than tight surveillance – are the main proximate factor motivating the declaration of labour incomes.

Incentives for declaring a larger number of employees. A further tax issue which arises is that, for a given total amount of wages and salaries paid, a progressive system of taxation of individual earnings creates a tax incentive, for firms and households, to declare a larger number of employees. For example, the United Kingdom in 2000 had a zero rate of social security contributions on about the first GBP 4 200 (USD 7 500) of annual earnings, and a 22.2% rate (employee plus employer contributions) on higher earnings. So a switch of wage and salary from a higher-earning employee to a new employee (in a small business, this might be a secondary family member working part-time) provided a net tax saving of about GBP 1 000 (USD 1 700) per year (over 5% of an average full-time wage) while also creating some social security entitlements for the part-time employee. The tax system in Nordic countries is similar insofar as income taxation is high and is a progressive function of individual rather than household income.[77] Since savings or costs of this kind are both large and permanent, they are likely to influence employment patterns in international comparison more than formal labour market programmes, which offer hiring subsidies or social security concessions on a temporary basis and involve much less money.[78] Tax incentives for declaring part-time or part-year workers may in the long run also cause the regulatory framework, as determined in collective agreements and legislation, to adapt to the needs of these forms of employment.

Tax incentives and concessions targeted on sensitive sectors

A number of European countries have reduced tax rates in sectors where undeclared work is widespread. Measures include Service employment cheques in France and the *Haushaltsscheck* in Germany (allowing some of the employer's spending on domestic staff to be deducted from taxable income), and rebates on personal income tax for construction work on owner-occupied houses and apartments in Sweden.[79] One risk with these measures is that incentives may arise for new forms of collusion, *e.g.* false invoices for work that has not really been done, up to the limits on tax deductions.[80]

Smaller but uncapped tax rate reductions include reductions in VAT rates on rebuilding works in France (1999-2002, but subsequently prolonged) and Italy (from 2000), a reduction in VAT on various labour-intensive services (bicycle repair, barbers, housing renovation, clothing repair and shoe repair) from 17.5% to 6% in 8 EU countries (from 2000) (RRV, 1998; Mateman and Renooy, 2001). In addition to VAT measures, in Italy social security (other than pension) and workers compensation contributions in the building sector were, from 1995, reduced for full-time blue-collar workers (amount varies from year to year). Two risks with this approach are:[81]

- A sector where effective tax rates have been reduced to low levels may get less attention from tax inspectorates, so that lower rates of detection offset the reduced financial incentives for evasion.
- The tax system is made more complex and this in general opens up new possibilities for evasion, *e.g.* by running two businesses and booking sales so far as possible to the category that enjoys reduced VAT rates.

5. Delivering social protection in an economy with informal employment

A. Social insurance and social assistance

Social insurance

Social insurance systems in economies with informal employment are often relatively ineffective, owing to gaps in coverage and high contribution rates relative to benefits.[82] Unemployment insurance benefits are relatively short in duration (often up to one year) in Greece and Italy, some other OECD countries such as Portugal in the past, and the Baltic states: but as compared to Canada, Japan, and the United States (other OECD countries with relatively short UI durations) these countries have a high incidence of long-term unemployment. Apart from the problem that the most disadvantaged unemployed will exhaust benefits, two other problems with such systems are:

- With short-duration UI and often few job openings in the formal sector, authorities are likely to consider that intensive job-search monitoring and assistance is not justified since the resulting benefit savings are limited. The United States seems to be the only country with short-term UI benefits that engages in significant job-search monitoring.[83]
- Contribution-based UI is open to abuse when informal-sector employment is available. In Italy, "workers combine spells of unemployment, funded by state benefits, with periods of formal or informal employment. A common pattern is for construction firms to hire workers on the books for the minimum number of weeks legally required for benefits and then to dismiss them and rehire them informally through subcontractors. Similar findings have been reported in Greece and in Northern Ireland" (Portes and Haller, 2002).

Marc and Kudatgobilik (2003) conclude that: "In the poor countries of Southeast Europe, in which potential for large savings is limited and informal activity is widespread, financing social protection and health insurance through payroll taxes does not seem to be appropriate. It can only increase the rigidity of the labour market, be very costly in terms of tax collection and ineffective in mobilizing savings. It also contributes to social exclusion by not covering people employed in the informal sector – this is particularly relevant for health insurance. A major effort in this area is needed by governments and donors to find more effective ways of financing social programs."

Social assistance

OECD (2003b) analyses the problem of delivering social assistance in the Baltic States at some length: information about individuals is lacking, and either individuals are able to claim full benefits by reporting no incomes, or some combination of "categorical" benefit criteria with partial assessment of more particular needs is used with social workers usually responsible for assessing the likely level of the actual incomes. While some form of social assistance in the sense of municipal assistance which may be highly discretionary exists in most countries, many OECD countries have difficulty in administering guaranteed minimum income schemes:

- In Greece, "problems in under-reporting income for tax purposes mean that it is unlikely that any government initiative will be taken in this direction, as it would result in many, who have income from other sources, being subsidized" (quoted in Eardley *et al.*, 1996).
- In Italy, "Two serious obstacles seem to be blocking the road to a full implementation of the minimum income scheme: the weak institutional capabilities of local administrations and the specific socio-economic environment of the Italian South… RMI is demanding in terms of institutional capabilities and managerial skills. Moreover, there is a risk of functional overload: rather than a programme of last resort, RMI tends to become 'the only game in town'" (Moreno *et al.*, 2003).
- In Portugal and Spain, where minimum incomes have been introduced in the 1990s, these schemes "remain frail", although Portugal's scheme (first introduced in 1997) is continuing with fairly minor changes after being renamed in 2002 (Moreno *et al.*, 2003).
- The Slovak Republic, which seems to be one of the few transition countries to have a general entitlement to social assistance, had in 1999 a very high recipiency rate for this benefit, and the highest overall ratio of beneficiaries to the working-age population yet recorded (OECD, 2003a).

Thus, OECD countries where according to Tables 5.3 and 5.5 the informal economy is about 5% of GDP seem usually to be able to administer social assistance as a minimum income system, with means-testing based on declared incomes; the Slovak Republic with an informal economy share between 5% and 10% of GDP has a national scheme, but has found it difficult to administer; and countries with informal economy shares above 10% of GDP rarely implement a minimum income scheme, at least not at national level (in Spain the situation varies by region since the regions finance and define the schemes). Where there are difficulties in setting a general minimum income, restrictions such as time limits (if the time limit is quite short) or a very low benefit level do not really improve the welfare trade-offs involved.[84]

Despite potential difficulties, minimum income schemes may as discussed in Section 3 above contribute to discouraging and detecting undeclared employment.

Through vigorous efforts to detect and suppress benefit fraud, countries such as Portugal and the Slovak Republic can both ensure the viability of the benefit system and favour the transition to declared employment.

B. Targeted conditional transfers and labour market programmes

Targeted conditional transfer (TCT) programmes give cash grants to poor families with children on the condition that they visit health centres and/or keep their children in school. TCTs were introduced in the early-mid 1990s in the form of *Bolsa Escola* in urban Brazil, and subsequently *Progresa* (now renamed *Oportunidades*) in Mexico and PETI in rural Brazil, and similar programmes are being created in Honduras, Nicaragua and Ecuador.

In the case of Progresa, which began in 1997, targeting was accomplished by first selecting communities using a marginality index based on census data, then conducting a census of all households in the selected marginal localities, to calculate household per capita income. The first criterion alone (targeting on marginal localities) allows targeting of the poor with far less error than was the case in earlier milk and food subsidy programmes (Skoufias *et al.*, 2001). PETI instead chooses the localities with the highest incidence of the worst forms of child labour. In implementing these schemes, local schools and health centres are important stakeholders and various agents of civil society are actively involved in monitoring and enforcement and this promises better success for these programs than other social protection programs (Sedlacek *et al.*, 2000). Evaluations show a relatively strong positive impact from *Progresa*. In 2002 its name was changed to *Oportunidades* and it received a USD 1 billion loan – the largest ever – from the Inter-American Development Bank to extend it to urban areas.

In countries without unemployment benefits, receipt of unemployment benefits cannot be the main basis for targeting of labour market programmes as it is in many other OECD countries. Participation in programmes is voluntary, the authorities do not generally have records of participants' labour market status prior to participation or after participation, and spending on active programmes remains relatively low. Relief work schemes are a traditional way to deliver poverty relief on an assistance basis, with targeting on need: relatively low wages ensure that only those really in need apply for the work. In Mexico, spending on the *Programa de empleo temporal* (PET) peaked in 1999. This and the training programme *Probecat*, which provides small grants to participants, are the main items of spending on active labour market programmes.

Conclusions

Although levels of informal employment in a majority of OECD countries are fairly low, keeping them low is an important policy objective. In other OECD countries, where informal employment is moderately high, action is needed across a wide range of policy areas. This section discusses key policy issues and strategic recommendations which might be used for the reassessment of the Jobs Strategy.

First, this chapter recommends a definitional framework which links the production and employment perspectives on the informal economy, and encompasses the types of informality that characterise high-income, middle-income and low-income countries. Particular policies are likely to be more effective against some types of informality than others. Because of the multidimensional nature of informal employment, the use of different types of measurement methodologies is recommended (*e.g.* self-standing

interview surveys, national accounts estimates of the non-observed economy, and theoretical tax liability calculations, supplemented by field-work research).

Second, an overall strategy to reduce informal employment should include governance issues such as providing an effective legal framework for transactions in the formal economy; adequate pay for public servants; and improving the administrative capacity of central government, particularly the tax authorities, across the country.

Third, the strategy needs to take into account the complex interactions between employment regulations, tax collection and informal employment. Although overly strict regulation of declared work tends to drive workers into informal or wholly undeclared work, the chapter also considers that tax authorities often rely on the regulatory framework to improve tax collection among declared workers. For example, if some employers only declare the minimum wage, paying the rest of wages in cash, tax revenues will be maximised at a relatively high level of the minimum wage which excludes the least-productive workers in the economy from formal employment. This example may help in understanding why middle-income countries often seem to be locked into a combination of strict regulation of formal work alongside high levels of informal employment. Therefore, though "deregulation" may sometimes be appropriate, the general need is to devise better-quality regulation which promotes tax-collection and other objectives effectively, but with low compliance costs. Enforcement measures such as work-site visits that directly detect undeclared work and requirements on employers to immediately report new hires can be effective particularly in minimising wholly-undeclared work, and this approach can be enhanced by measures of co-ordination and exchange of information between different government services. However some of these measures impose additional costs on employment relationships, and are not so effective in countering under-declaration of work. Therefore, economic incentives for the declaration of work should be created where possible. Where an incentive approach is working, regulatory and tax-related barriers to low-paid, part-time, or temporary employee work can be relaxed allowing higher rates of formal dependent employment, particularly as measured on a head-count basis, to be attained.

Fourth, tax authorities should strive to accurately assess the value added (*i.e.* sales less purchases) that is generated in small businesses. This creates an incentive for the declaration of wages and salaries. For example, if business owners do not keep true accounts and are taxed in a "presumptive" way – based on simple indicators such as the floor area of their shop – they face a zero true marginal tax rate on profits, and in this case the business will minimize declared wages and salaries and pay its employees in cash, so far as possible. Where business owners are taxed on the basis of true profits and the marginal tax rate on profits is higher than it is on wages and salaries, there is a positive incentive to declare a maximum amount of wages and salaries.

Fifth, policies need to be kept in line with current realities. In low- and middle-income economies, the self-employed are typically independent workers without employees, with low earnings, and are not expected to pay significant amounts of tax. In high-income economies with low levels of undeclared work, there are fewer self-employed, but they typically have relatively high earnings and have responsibility for declaring the wages and social security contributions of their employees, as well as keeping sales records and other accounts as the basis for an accurate determination of profits. Policies cannot promote an overnight switch to this second type of situation, so the focus needs to be upon promoting a longer-term transition to it. Existing regulations and reporting requirements need to be enforced with sanctions, but

at the same time possible opportunities for relaxing "bad" regulations and red tape need to be kept in mind. A comprehensive and in some respects gradual policy strategy is needed.

Finally, in countries where the incidence of informal employment remains high, social and labour market policies need to be designed and delivered differently as compared to the prevailing models in high-income countries. Social assistance benefits to help the needy cannot be targeted mainly using administrative records of household income, and active labour market programmes cannot be targeted mainly on the registered unemployed. However, in general well-managed social programmes can contribute to tackling informality: for example, the payment of adequate unemployment benefits combined with effective checks on fraud can reduce the incidence of low-paid informal work, and public placement services can promote job vacancies in the formal economy.

Notes

1. Jacques Charmes, Søren Pedersen, Margit Schratzenstaller and Peter Birch Sørensen are thanked for comments, and advice contributed to this chapter.
2. OECD (2003b) – studying the three Baltic states Estonia, Latvia and Lithuania – notes that: "social spending amounts to 15 to 17% of GDP in the three countries, of which 10 to 13% represent income transfers to households… This is substantially less than in most EU countries, and also less than in Poland, though comparable with the spending in the United States, Canada and Australia. Much of the difference in public social spending compared with EU countries concerns the two biggest items: health care and pensions. Spending on labour market programmes also appears modest by international standards… Notwithstanding these apparently moderate spending levels… the rates of income tax and social security contributions charged on employment are among the highest in the world. This situation… appears to be largely a result of underreporting of incomes, work in the informal sector and, in Latvia and Lithuania, the fact that many self-employed persons do not need to contribute more than small amounts to social insurance."
3. "Foreigners realize at once that everything is relative in Italy. We don't allow anyone to enter to work, but then we reward the transgressors by legalizing them all [a reference to Italy's 5 waves of regularization between 1986 and 2002]. From their point of view, our contradictions are seen as an unreliable attitude, which makes them not very confident in legal behaviour and favours exploiters" (Reyneri, 2003b, citing a social worker).
4. By contrast, in the Emilia-Romagna region of northern Italy, informal production seems to be quite efficient: "Workers are hired informally, but are paid reliably and are treated as apprentices who would be eventually able to set up their own firms… Many small firms concentrated on performing certain manufacturing operations or on producing certain manufacturing operations or on producing certain parts of the machine… Thus a subsystem of enterprises gradually evolved in which there was no leading firm. The factory that produced the final good did not necessarily constitute the centre of the system because its role was often only that of assembling various parts produced by other firms" (Capecchi, 1989, cited by Portes and Haller, 2002). However, this apparent efficiency probably survives only thanks to partial toleration on the part of the authorities, a feature which creates many other problems.
5. Southern European countries became countries of mass immigration only in the late 1980s and 1990s. Greece, Portugal and to some extent Italy and Spain introduced regularisation measures, stronger employer sanctions and other legislation mainly in the latter 1990s and 2000s, and these measures may have taken effect more recently.
6. For example, it will be easier for trade in stolen cars to flourish in an economy where garages are already unregistered enterprises with undeclared employees.
7. EC (1998), after giving the definition of undeclared work cited above, immediately reports that the undeclared economy is between 7% and 16% of EU GDP.
8. Work that is illegal in terms of absence of a work permit or other factors usually also involves non-payment of tax, *i.e.* cases of tax evasion include other cases of significant illegality. Social insurance entitlements can be retained despite under-declaration of work or work in a concealed secondary job, and can be absent in entirely formal jobs (due to minimum contribution requirements, and the omission of the self-employed from some schemes, etc.), so insurance entitlements cannot be used to define informality and formality.

9. Renooy *et al.* (2004) suggest a distinction between "linked", "semi-autonomous" and "autonomous" undeclared activities, where "linked" activities take place within a regular firm but off the books, and "autonomous" activities consist of the sale of goods and services direct to the consumer. Household, barter and reciprocal work are proposed as a final category.

10. Unregistered work in a family business could also be described as "purely informal": the authorities hardly check whether the declared employees are the real ones.

11. Subsistence incomes may not be taxed partly because taxable capacity is low: in the Baltic states "qualitative poverty conditions are incomparably different from those found in richer countries, as illustrated by much higher food shares in household consumption. In 2000 and 2001, the poorest quintile (*i.e.* the poorest 20%) of Latvian households and the three poorest deciles (the poorest 30%) of Lithuanian households spent over half of their total incomes on food alone" (OECD, 2003b).

12. "The informal sector in the country is neither entirely legal nor completely illegal; it operates extensively in a grey area ranging from fully within the law to entirely outside it. A number of assessments carried out through direct surveys or indirect methods show a level of informal sector presence in the economy oscillating from 30 to 40 or 45% of the GDP. Thus, we have a rather large informal sector, but the depth of informality is quite different in various economic activities. The informal sector in Albania appears in some typical forms: the activity of rural families; individual or familiar micro-business, mainly temporary and almost entirely not registered; registered businesses, small, medium or large in size, which operate at different levels and forms of informality; illegal and criminal activities, such as money laundering, smuggling, for instance, which in certain cases can be disguised as legal businesses" (Ruli, 2003).

13. "With regard to normal under-declaration and fraud with tax deductions and interests received, only the one party (the doer) knows that the activity in question is not declared to the authorities. Black activities in a narrow sense thus cover those cases where the buyer and seller of the activity concerned are aware of, or suspect, that the activity is not declared to the tax authorities. Here, both buyer and seller share, so to speak, the tax and VAT saved" (Pedersen, 2003). To clarify and implement this definition, Rockwool Foundation questionnaire surveys incorporate an introductory text which is read out to respondents: "… large parts of the population accept black activities and non-invoiced transactions, *i.e.* activities which are kept outside the tax system, where all parties benefit because they save on tax and VAT, etc."

14. Pahl (1988) concludes: "The UK's irregular economy is almost entirely a problem of tax evasion by those, mainly the self-employed, who are in work." RRV (1998) concludes that: "The largest groups of illicit workers are self-employed persons and students. Salaried employees and pensioners are under-represented."

15. Tax evasion by shopkeepers which involves underreporting of gross sales without collusion on the part of the customer is not naturally described as "undeclared work" because there is no concealment of work (the hours of shop opening are visible, and not in any way concealed). Kesselman (1997) sees the "underground economy" and "pure tax evasion" as the two main types of informal economy.

16. "Underground production" may however be a concept with narrower coverage than "undeclared work" if businesses declare their sales correctly, but without declaring employee incomes as a deductible expense, paying employees in cash instead. This is illegal but in some circumstances it can allow a tax saving as discussed in Section 4.B.

17. Under-declaration, *i.e.* situations where employers declare only part of the wages that are paid to employees, is not always recognised in the literature. However, there is extensive evidence for its importance. In Italy: "in areas in Campania, we encountered semi-informal workers, under a formal contract of employment, but paid for a smaller period of time than put in. This type of what is known as *'light' or 'white' wages,* which is widespread also in Puglia and in Basilicata is, as we discovered, made easier in part by certain policies geared to the formalise the economy" (Bàculo, 2002). In Bulgaria: "There are plenty of cases in which the terms of the written labor contract do not correspond to the real working conditions, particularly with regard to payment and hours worked. Companies might declare official wages to be lower than the real ones. In this way a part of the value added is not officially declared… According to another non-representative survey of small and medium-size businesses in Bulgaria, the number of people employed without a labor contract made up only 2.2% in 1998… Work on a fake labor contract is a much more common and significant way to participate in the informal sector of the economy. Its share is relatively high – 22% of all contracts according to the 1996 national survey. In a 1999 survey nearly two-thirds of the participating managers replied that this practice was common for most firms…" (Chavdarova, 2003). Cash payments are called "envelope salaries" in Estonia (UNECE, 2003) and other Baltic states (OECD, 2003b), and according to Renooy *et al.* (2004) these exist in practically all of the CEE

countries, though sometimes only in particular sectors (see also Section 3.A). Bernabé (2002) describes a different phenomenon of "left-hand work" which "is usually done during working hours, using state tools equipment and means of transport", which was widespread in the Soviet Union and has continued in Georgia and Russia after the transition.

18. The Rockwool Foundation questionnaire – in particular the text read out to respondents (see note 13 above) – specifically evokes black market transactions, and not pure tax evasion or under-declaration of earnings from the main job or pure tax evasion. In Sweden, RRV (1998) attempted to include pure tax evasion by the self-employed in its questionnaire survey but this was exceptional. Under-declaration of employee earnings in the main job may involve black market transactions by the employer, not by questionnaire respondents. The questionnaire approach could be modified to include direct questions about pure tax evasion and cash payments of employee earnings, so that coverage is closer to that of the concept of underground production in Table 5.1, but there may be additional doubts about response accuracy for such questions.

19. In the French garment industry, undeclared work takes place in two different forms. At the top end of the market, the workshops themselves are visible to public authorities but "[f]ull-time workers are routinely declared as part-time, others are hired under temporary contracts (that often last less than a week) every time an order comes in, some are 'borrowed' from other firms, and still others are classified as 'freelance'". In the "low-road production methods" sector, "[m]any of [the] sites fit the traditional profile for homework production set-ups, with one or more family members producing garments for a contractor directly out of a family home… [T]hese arrangements are concealed from easy public view: they are tucked away in basements or living rooms of suburban houses, squeezed into extra bedrooms or kitchens of crowded city slum apartments, or hidden in tool shacks at the edges of overgrown vegetable gardens. Perhaps the most important reason why these production spots are covert is their complete reliance on undeclared labour. Their employment arrangements are uniformly and wholly undeclared…" (Iskander, 2000).

20. Yfantopoulos (2003) explains that: "[i]n the middle of the 1970s, Spain, Portugal, Italy and Greece introduced laws aiming to create an new National Health Service. The British model was taken as a template, but without taking into account the necessity for a simultaneous structural and organisational reform." He reports that in Greece, doctors work for the National Health Service in the morning and for private clients in the afternoon and evening, although this is legally forbidden. In Jamaica in 1983, employer withholding taxes fell short of scheduled rates for over 90% of higher-paid public sector employees, probably related to a pervasive practice of treating earnings as overtime even though overtime was illegal in the public sector (Alm *et al.*, 1990).

21. ILO (2002) reports informal employment in total non-agricultural employment for many countries, estimated by the residual method, *i.e.* comparing population census data with establishment survey data: but the only OECD country covered is Mexico, where an estimated 55% of non-agricultural employment is informal. Meldolesi (2003) argues that administrative statistics by themselves are useful for policy purposes: the aim of regularization policy can be to increase employment, as measured by administrative statistics for payments of social security contributions, towards the EC objective of 70% of the working-age population. Additional statistics are not essential, when it is already clear what actions need to be undertaken. Indeed, high-income economies historically achieved their transition to a salaried economy despite a lack of large banks of comparable data. Pacolet and Marchal (2003b) by contrast argue that adequate statistics are a necessary precondition for the struggle against black-market work.

22. Konijn (2003) explains that although random tax audits could in principle provide relatively direct estimates for the extent of hidden incomes, this approach has given few results because most countries undertake tax audits only in cases where there is prior suspicion of evasion and the results cannot be grossed up.

23. Borghi and Kieselbach (2000), citing irregular employment rates of 30% and more for Greece, Italy and Spain, report that their interview research for the YUSEDER (youth unemployment) project: "basically confirms the general hypothesis that the submerged economy plays only a limited role in the lives of long-term unemployed young people in *northern European* countries. For example, the submerged economy appears very sporadically in the results of the study conducted in Belgium… The submerged economy seems to be of equally limited importance to the phenomenon of youth unemployment, as is in fact shown by a study conducted in Sweden… the submerged economy seems to play a greater role in Germany… Nevertheless, in the German case the effects of the submerged economy were relatively limited… The situation in the three *southern European* countries is very different, however. National estimates of the consistency of the submerged economy in each of the three countries in question show a socio-economic reality that is strongly conditioned by this phenomenon… Our field research has confirmed these differences between the northern and southern European countries involved in the study."

24. In Australia 6% of survey respondents reported receiving cash-in-hand payments, with an average value of about AUD 2 000, over the last 12 months (Schneider *et al.*, 2001).

25. For Czech and Slovak Republics between 1995 and 2002, Hanousek and Palda (2003a, 2003b) report a steady increase in the proportion of survey respondents who "often" or "sometimes" engaged in the undeclared sector between 1995 and 2001, from 15.8% to 23.9% in Czech Republic and from 9.1% to 16.6% in Slovak Republic. Average weekly hours, when reported, were 3.2 in Czech Republic and 5.7 in Slovak Republic so the findings do not imply particularly high total hours of undeclared work.

26. GDP includes imputed rents and household production of goods for own use. Within the income analysis of GDP, labour costs include imputed contributions to pay-as-you-go pension schemes.

27. For example if family budget surveys correctly state spending on food but understate spending on drink, while excise tax records understate spending on food but correctly report spending on drink, the items "food" and "drink" need to be balanced separately, to give a correct estimate.

28. Other methods used to improve "exhaustiveness" of the national accounts include special estimates based on surveys of household spending and the commodity balance for construction materials to estimate income from home repairs and improvements; estimation of gross rental income from a household survey of rents paid multiplied by official estimates of the number of rental units in the housings stock, to avoid reliance on tax reporting of rental income; using the survey of household spending to impute income from childcare services; using findings from tax audits which have estimated the extent of understatement of incomes; and using labour force surveys, population censuses and industry surveys to estimate the proportion of employment that is not covered in the register of enterprises (which is often a principal source for the production and income estimates of GDP).

29. See the German submission to UNECE (2003). Konijn (2003) similarly warns: "National accounts concentrate on including non-observed income in their measure of GDP. They do not, in principle, attempt to separately estimate the size of the non-observed economy (because that would have no economic significance). Usually they do not try either to explicitly measure undeclared income. Although this is an interesting aggregate, it is difficult to achieve in practice. It would imply breaking each part of the accounts down into a declared part and another undeclared part. There simply do not exist statistical sources allowing this operation to be done."

30. Employer social security contributions are less than half of non-wage labour costs in some countries, including Canada, the Netherlands, the United Kingdom and the United States (1996 data from *OECD National Accounts*, 1984-96, Vol. II).

31. Non-wage labour costs for domestic staff may be high if declared expenditure on child-care is heavily subsidised (creating an incentive for declaration). Also, food and lodging for domestic staff might be counted as a non-wage labour cost.

32. Value added in the domestic staff sector appears only as compensation of employees in Germany, but is mainly included with gross operating surplus in the Netherlands.

33. Renooy *et al.* (2004) come to a similar conclusion, citing for example a figure of 3-4% of GDP for Belgium, which has been credited with a share of over 20% in some other EU sources (see EU, 2000).

34. The share of underground production in GDP at market prices seems to be about the same as survey-based estimates for the share of black activities in total employment. However, the latter is well above the share of black activities when valued at actual purchaser's prices. This could be correct because, as noted in Section 2, underground production is a broader concept than black activities. Implementing both approaches to measurement can give fairly robust aggregate estimates for the size of the informal economy. The surveys give information about demographic and related characteristics of respondents.

35. As shown in OECD *Taxing Wages*, the social security contribution rate is the same at 67%, 100% and 167% of APW earnings in 16 of the 28 countries where rates are non-zero.

36. Another quirk is that in Poland, receipts reported as employer contributions (*i.e.* this is their attribution in *Revenue Statistics 1965-2001*, Table 63) are also described as the joint receipts of the "social insurance fund, labour fund and farmers' insurance fund". This suggests that the reported figure in fact includes employee contributions. This issue does not affect the total for employer plus employee contributions.

37. In Norway the business profits of closely-held corporations – roughly speaking, those where the working managers are also the main shareholders – above a fixed rate of return on invested capital are treated as earnings of these working managers subject to social security taxes as well as personal income tax (see *http://odin.dep.no/fin/engelsk/* – direct taxes).

38. A possible explanation for the large shortfall in Poland is that some nonfarm employees pay (low) contributions to the (heavily subsidised) KRUS agricultural fund, rather than the general fund (ZUS). In principle, this is allowed when the employee is a member of a farmer household and the non-farm activity is related to the agricultural land, but lax interpretation of these criteria is a suspected abuse. This might be counted as a form of undeclared work.

39. The "quirks" in high-income countries include some affecting the national accounts: some countries may be attributing the exhaustiveness adjustments entirely to the income category of gross operating surplus, when they should appear partly in compensation of employees; and some appear to include in their regular tabulations only part of the underground economy that studies have identified (see the notes to Table 5.5 concerning Australia and Canada).

40. Blakemore *et al.* (1996), extrapolating from a detailed investigation of a sample of 875 firms in Illinois in 1987, estimated that US employers failed to report 13.6% of their workers resulting in loss of 4.2% of the theoretical take for UI taxes. Evasion was often done by treating employees as independent contractors for tax purposes. Pacolet and Marchal (2003a) estimate based on audit information that about 6% of social security contributions in Belgium in 1995 were not collected (they also list some higher estimates by other authors). Tansel (2000) cites estimates for Turkey, relating to 1989, 1994 and 1996, according to which either 25% or 35% of wage earners do not have social security coverage, and thus work in the informal sector. In Korea in 1999 when UI coverage was extended to most sectors apart from government regardless of firm size, about 35% of those covered by law were not actually registered in the Employment Insurance database (Hur, 2000). In Mexico nearly 70% of the economically active population (including the self-employed) does not contribute to social security (Packard *et al.*, 2001).

41. See note 25 above: however, the time-series information is based on retrospective recall in a single survey so its reliability is unclear.

42. In the United Kingdom, a 1981 official report estimated that 8% of those on unemployment benefit were unlawfully working. In the Restart programme, from 1986, many benefit claimants failed to turn up for interviews and lost benefits, and this was interpreted by ministers and senior officials in terms of the programme's effect in deterring undeclared work (Price, 2000).

43. In financial terms, social security fraud in the United Kingdom is estimated to cost about GBP 2 billion each year, of which around 60% relates to claims for Income Support, Jobseeker's Allowance and Housing Benefit (*www.targetingbenefitfraud.gov.uk*) (this is about 3% of amounts paid out under these headings). However, these seem to be lower estimates, because based on cases with a strong suspicion of fraud but without actual proof, there are (or were) strong indications that a further GBP 3 billion is lost each year (Darling, 1999).

44. In some historical or international comparisons, a high overall tax burden may tend to arise in situations where tax rates on distributed profits are even higher than those on employee incomes. If there is good compliance with these higher rates a positive effect on the declaration of employee incomes is predicted, as discussed in Section 4.B.

45. At the microeconomic level, Pedersen (1999, 2003) reports that average and marginal tax rates are on average slightly lower for those who carry out black activities. Carillo and Pugno (2002) argue that the regions in the South of Italy are characterised by lower development and a more widespread underground economy, even though they are subject to broadly the same tax system and regulations as in the North. However, regional estimates for irregular employment suggest that its incidence is high even in the North of Italy (Muratore, 2003).

46. When employment regulations are implemented on an all-or-nothing basis, stricter regulations seem likely to increase the incidence of wholly-undeclared work. But when there is a grey area of partial compliance, enforcement measures may reduce its size. Fraser (2000) argues that enforcement of minimum wage requirements in the United States can reduce employers' incentives to hire illegal migrants with falsified work documents.

47. A system where taxes must be paid on a single minimum wage fails to fully exploit the taxable capacity of above-minimum-wage earners. However, some countries with high levels of informal employment have a complex structure of minimum wages related to one or more of the variables industry, occupation, skill level, job tenure and marital status. In Latin America, multiple minimum wages are not uncommon (Gindling and Terrell, 2004). In six out of thirteen countries surveyed, more than 10% of all workers earn below the minimum wage (IADB, 2004). Situations

where employers pay tax on the minimum wage for their formal-sector workers, who are actually paid either more or less than this with relatively little attention from the authorities, cannot be ruled out in some countries. This interpretation may help to explain findings that wages at higher levels react to changes in the minimum wage (even where a structure of wages relative to the minimum is not officially specified, tax authorities and firms assume this as a basis for tax negotiation) and why wage levels in informal employment rise when the minimum wage rises (findings by Maloney and Nuñez, 2001).

48. In Hungary, tripartite negotiations over the minimum wage from 1990 to 1998 resulted in a steady decline in its real value, which was dramatically reversed in 1999-2002 when the government set the minimum wage unilaterally (Kertesi and Köllö, 2003). The government is currently maintaining a fixed rate of employer health contributions (17% of the minimum wage) for fiscal reasons (OECD, 2004a).

49. Italy's "realignment" contracts concerning "on-the-books" underground employment (*i.e.* jobs that are formally declared but with salaries not actually paid in full) are "spontaneous agreements between business and unions" (Meldolesi, 2003).

50. As noted in Box 5.5, the meaning of the proxy-based estimates used is unclear.

51. Torrini (2002) finds that self-employment rates are generally related to product market regulation (as well as tax and social security contribution rates, in countries in countries with a high "perceived corruption" index). An example of such regulation is granting incumbent (small) retailers powers to prevent large chain stores from entering local markets.

52. The incentive in terms of social security entitlements for secondary workers to work informally is noted for Spain by Ahn and de la Rica (1997). Diamond and Gruber (1997) estimate that in the United States the effective payroll tax (contributions, net of the expected social security benefits related to the contributions) is much higher for the secondary worker than for the primary worker in a married couple.

53. Similarly Marc and Kudatgobilik (2003) report that in poorer countries of Southeast Europe the creation and growth of enterprises is severely constrained by poor and arbitrary enforcement of legal, regulatory and administrative rules. Citing examples from the the United States, Portes and Haller (2002) argue that in the absence of supervisory agents: "Isolated arms-length transactions may still occur among strangers, such as the quick sale of a contraband good, but the activities that require greater resources and a longer-time perspective are subject to every kind of uncertainty and peril."

54. Tapinos (2000) in a survey of work by illegal migrants writes: "In reality, there is usually quite a gap between being found breaking the law and being found guilty in a court of law. It is hardly surprising, therefore, that the legal process comes to a halt somewhere between the two as a result of local considerations and political pressures that highlight the difficulties that enterprises would face if they had to pay for labour at the current market rate and the risks that a cessation of activities would have on the employment of nationals." Treisman (2000, 2003) presents a model where subnational governments can "compete to offer 'protection' to enterprises against the central government's tax collectors, regulators, or bankruptcy agency" by allowing them to cumulate tax arrears. Treisman finds that in Russia "fiscal decentralization" – where regional governments are given a proportion of the taxes collection in their region – has been associated with a reduction in tax arrears.

55. Interestingly, the most specific factor identified by Viby Mogensen (2003) as a cause of Denmark's long-term fall in under-declaration is the progressive increase in the skills of tax authorities at the expense of locally-elected politicians. The more general factors he identifies are increasing acceptance of taxation and recognition of the benefits that it provides, and development from an agricultural and barter economy towards a more sophisticated and regulated economy with larger companies and fewer self-employed.

56. Tax authorities give low priority to undeclared work both in Spain (Mateman and Renooy, 2001) and the United Kingdom (Grabiner, 2000). "During the OECD's site visits in Latvia and Lithuania, it emerged that labour inspectors visited many of the larger firms regularly, imposing fines on employers when employment contracts were lacking… Estonia's labour inspectorate until recently checked the legality of all new contracts reported to them, a practice currently being reconsidered… The collection of taxes and social security contributions falls under tax authorities, not the labour inspectorates. In Latvia, however, a labour inspectorate visited by the OECD co-operated with tax authorities, making joint inspections in enterprises to check tax payments and employment conditions at the same time" (OECD, 2003b).

57. One innovation reported by Germany is the hiring of private detectives to catch shadow economy workers (EC, 2003).

58. In France "Employers may denounce individuals who supply undeclared work (generally in cases of unfair competition)" (Mateman and Renooy, 2001). In Quebec, a website for plumbing professionals sets out how they can denounce black-market competitors (*www.cmmtq.org*). In the United Kingdom the government set up a business anti-fraud hotline in 1998 which claimed immediate success (*www.dwp.gov.uk/mediacentre/dss/*, January and February 1998). The front page of the Australian Tax Office website (*www.ato.gov.au*) invites all callers to report suspected tax evasion.

59. Countries with low literacy rates tend to rely on highly distorting but (relatively) easily collectable import and export taxes; developing countries generally make pervasive use of "presumptive" taxes, where the presumed tax base is a formula based on readily-monitored items, *e.g.* taxation of taxi drivers on the basis of accumulated mileage of the taxicab (Slemrod and Yitzhaki, 2000). Taxation also took the form of import and export tariffs, road tolls, window and hearth taxes etc. in European countries at earlier stages of development. Jenkins and Khadka (2000) give a striking general description of tax administration in low-income countries, its impact on economic relationships and possible modernisation strategies.

60. In Sweden, the government is considering whether to introduce approved cash registered in sectors where direct sales to the public take place, *i.e.* secure systems for preserving information and preventing manipulation (EC, 2003). The use of electronic methods of payment such as credit cards also facilitates tracking of sales.

61. The converse does not hold: even if the tax authorities assess labour input, they need to assess value added as well. Given limited resources for assessment, it may be most efficient to concentrate them all on assessing value added, although it might also be argued that assessment at both points can achieve lower overall rates of tax evasion.

62. Tax enforcement strategies in Australia, described in some detail in ATO (1998; 2003) focus on failure to register a business or lodge a tax return and the existence and regularity of a business's financial records, with essentially no attention to the detection and reporting of labour input.

63. Extrapolations from the US Taxpayer Compliance Measurement Program, which audited a random sample of income tax returns, suggest that in 1992 nonfarm sole proprietors reported about 68% of their net business income. Informal supply (*e.g.* home and auto repairs, domestic services, for cash) accounted for about 21% of aggregate net income under-reporting by all tax filers (Erard, 1997). The aggregate impact of tax evasion in self-employment in the United States is partly limited by its low employment share (about 7%, outside agriculture).

64. The costs of complying with tax reporting and other accounting requirements are substantial, as documented *inter alia* by OECD (2001), cited above. Because economies of scale and the division of labour can reduce these costs, a dependent employment status – leaving the employer to handle these issues – will be preferred by most workers if there is no tax advantage or evasion opportunity in self-employment. The salaried economy is maintained by business owners (with employees) who handle paperwork, accounting and tax affairs as well as bearing business risk: but the business owners need to be rewarded as a scarce productive resource rather than through concessionary tax rates.

65. The term "effective" is used here in the sense of "truly applying" rather than "statistical mean". The term "marginal" refers to how tax changes when taxable profits change, in contrast to certain tax literature where this term refers to calculations about the return on a marginal investment (which is affected by accelerated depreciation allowances, etc.). And "business profits" refers to "pure profits" which include the return to entrepreneurial effort and effectiveness, not "normal profits" (the market rate of return on invested capital) which in some countries are taxed separately.

66. Owner-managers of incorporated businesses (OMIBs), who may take income from their business either as dividends or as wage and salary, are the most important borderline case in defining self-employment. Their propensity to report themselves as self-employed is not known. Surveys in some countries ask the self-employed further questions to identify OMIBs who are then reclassified as employees, and this in some cases sharply reduces the reported level of self-employment. Usually about 20% to 50% of the self-employed have employees (more in Denmark and Germany, fewer in Belgium and Italy) (OECD, 1992).

67. "Double taxation of dividends at the company and the personal level was the rule in the industrialised countries up to the 1970s. Although the EU Commission failed in its program to harmonize corporate income tax systems… all but one of the 15 member countries have meanwhile adopted measures to reduce the double taxation of corporate profits" (Genser, 2001).

68. The personal income tax schedule usually applies to self-employment incomes in the same way as wage and salary incomes. OECD (1992) documented that social security contribution rates for the self-employed in 1990 were about the same as the employer and employee rates combined for

dependent workers in Australia, New Zealand and Denmark (countries with rates near zero) as well as Finland and the United States, but in other countries were often about half as high. In some non-OECD countries rates for the self-employed, especially marginal rates, can be minimal *e.g.* in Latvia and Lithuania, "many self-employed persons do not need to contribute more than small amounts to social insurance… Non-agricultural self-employed persons in Lithuania are mostly enrolled in social insurance, though seldom contributing for more than the minimum wage. This is a condition for licensing in the business register, which is compulsory for them but not for farmers" (OECD, 2003b).

69. Grabowski and Smith (1995) argue as a compromise solution for transition economies (but they do not consider the implications for the self-employed who have employees) for making "the maximum possible use of presumptive and lump-sum taxes, set broadly in line with the average tax burdens that the activities covered would incur if taxed 'properly'".

70. The tax structures involved in reducing double taxation have changed considerably in recent years (Hamaekers, 2003).

71. "Small businesses" here refers to "closely held" corporations: see note 37 above and literature on "dual income tax" systems for further details. In this case, low tax rates on dividends apply to a fixed rate of return on capital invested in the business but not to a marginal change in profits.

72. France also gave full relief from double taxation, but had a relatively high top tax rate on distributed profits for other reasons.

73. The combined corporate and personal income tax wedge on distributed profits for top earners was lower than the average tax rate on labour incomes (for the case of a single person at 100% of the average production worker earnings level, including social security contributions) in 1999 and/or 2002 in the four OECD transition countries (Czech Republic, Hungary, Poland and Slovak Republic), in dual-income-tax countries where closely-held corporations are taxed very differently (Finland, Norway and Sweden) and by small amounts in Belgium, Italy, Germany and Greece (tax rates from OECD *Taxing Wages*; Joumard, 2001; and Schratzenstaller, 2003). Taxes on distributed profits will be lower in cases were the business owner's income is below the top tax-rate band, and marginal rates on labour incomes will often be higher than average rates: so in these countries in a range of small business scenarios, tax savings could arise from paying employees wholly or partly in cash. In other OECD countries (including Korea, Mexico, Portugal, Spain and Turkey) top rates on distributed corporate profits are commonly 10 to 35 percentage points higher than average rates on labour incomes, suggesting that there is no general incentive for non-declaration of wages and salaries in the corporate case.

74. In Germany the principle that the corporate tax on retained profits should not be below the top marginal rate of the personal income tax has been a prime political constraint through many changes in tax policy (Ganghof, 2000).

75. Lee and Gordon (2003) find, using binned time-series data from 1972 to 1998 for 87 countries, that social security tax revenue (which reflects wage and salary income) is positively correlated with the top corporate tax rate and negatively correlated with the top personal income tax rate, *i.e.* they find that relative statutory tax rates on wages and salaries vs. corporate profits influence whether the value added generated by businesses is paid out as wages and salaries, or channelled into corporate profits. Italy in 1985 had a lower statutory top corporate tax rate than any other OECD country except Switzerland, in their data. They argue that low corporate tax rates encourage "entrepreneurial activity", but the data are consistent with other mechanisms including a shifting volume of "envelope wages", *i.e.* cash payments to employees from the business owner, in lieu of declared wages and salaries.

76. Employer plus employee social insurance contribution rates are 45% and more in Czech Republic, Hungary, Poland and Slovak Republic, and 33% or more in other transition countries (those with data in Dabrowski and Tomczynska, 2001 and OECD, 2003b). Limited administrative resources and other factors which magnified the difficulty of assessing small business incomes in transition economies are described by Grabowski and Smith (1995).

77. OECD (1990), Chart 6.8, showed a cross-country correlation between a tax variable – the tax saving (in 1974-78) when the husband's salary falls from 1.33 to 1.00 times the average production worker (APW) level, while the wife's salary increases from zero to 0.33 times the APW level – and the female part-time labour force participation rate. Denmark, Norway, Sweden, the United Kingdom and Australia showed relatively high values for both variables. A general argument that the participation decision – more than the hours decision – is responsive to such incentives especially among the lower skilled is advanced by Roed and Strøm (2002).

78. Germany has a partly-similar tax provision which gives low-wage jobs (for some years, jobs paying less than DEM 630 per month; since 2003, those paying less than € 400) exemption from employee contributions and reduced employer contributions. This is seen partly as a measure for promoting employment in its own right, but also as a measure that allows a portion of shadow economy activities to be done legally.

79. In France, the use of Service employment cheques exempts the employer from administrative formalities attached to hiring and employing employees: the cheque is a means of payment which also functions as an employment contract for a fixed-term or part time job. Employers pay substantial social security contributions, but 50% of the total labour cost up to a ceiling can be claimed as a tax credit. The number of employers registered for the scheme rose from 250 000 at end 1995 to nearly 800 000 in 2002, employing over 400 000 employees, each working an average 400 hours per year (Adjerad, 2003). In Germany the Haushaltsscheck has been relatively little used owing to a low (10%) rate of tax incentives for the employer, restrictive conditions that applied up to 2003, and more recently the lack of additional social insurance entitlements for workers in "minijobs" (Jaehrling, 2003).

80. RRV (1998) suggests a generalisation of the principle of tax deductions for household maintenance services. "Taxpayers could be granted a basic deduction up to a certain amount, provided that they present receipts and invoices…" or this system could be simplified by allowing taxpayers to "submit a list of the invoices and receipts that established their eligibility for tax rebates or deductions, and the tax authorities could then carry out spot checks". This would encourage purchasers to ask for invoices and reduce the tax bias in favour of DIY production. But it would also create paperwork and new possibilities for evasion.

81. Pacolet and Marchal (2003b) argue against the general principle of removing tax liability in cases where tax is more difficult to collect.

82. OECD (2003b) cites several examples of this from the Baltic states.

83. Sanction rates for 14 countries (Gray, 2003, Table 1) show that Canada and Japan had the lowest rates of sanction for failure to seek work and refusal of suitable work: these are two of only three countries in the table that had an unemployment benefit duration below a year (not counting Australia and the United Kingdom which have indefinite-duration assistance benefits).

84. Time limits on social assistance face problems similar to time limits on social insurance, noted above. As Grabowski (2003) notes, very low benefits which do not really relieve poverty create incentives for taking informal jobs.

Bibliography

ABS (Australian Bureau of Statistics) (2004), *The Underground Economy and Australia's GDP*, Cat. No. 5257.0, March.

ACOSS (Agence centrale des organismes de sécurité sociale) (2003), *La lutte contre le travail illégal: bilan 2002* (*www.acoss.fr* – publications – études).

Adjerad, S. (2003), "Dynamisme du secteur des emplois familiaux en 2002", *DARES Premières Informations*, No. 51.1, December (*www.travail.gouv.fr/etudes/etudes_f.html*).

Ahn, N. and S. de la Rica (1997), "The Underground Economy in Spain: an Alternative to Unemployment?", *Applied Economics*, No. 29, June, pp. 733-743.

Alm, J., R. Bahl and M. Murray (1990), "Tax Structure and Tax Compliance", *Review of Economics and Statistics*, Vol. 72, No. 4, November, pp. 603-613.

ATO (Australian Tax Office) (1998), *Improving Tax Compliance in the Cash Economy, Second Report of the Cash Economy Task Force*, Canberra (*http://ctsi.anu.edu.au/publications.html*).

ATO (2003), *The Cash Economy under the New Tax System, Third Report of the Cash Economy Task Force*, Canberra (*www.ato.gov.au/content/downloads/N9544CEbookfinal.pdf*).

Avignon Academy (2002), *Undeclared Work: Empirical Evidences and New Policy Issues at European Level* (*www.academyavignon.net/undwork.htm*).

Bàculo, L. (2002), "The Shadow Economy in Italy: Results from Field Studies" (*www.academyavignon.net/undwork.htm*).

Bangasser, P. (2000), "The ILO and the Informal Sector: an Institutional History", ILO Employment Paper, 2000/9 (*www.ilo.org/public/english/employment/strat/publ/ep00-9.htm*).

Belev, B. (ed.) (2003), *The Informal Economy in the EU Accession Countries: Size, Scope, Trends and Challenges in the Process of EU Enlargement*, Centre for the Study of Democracy (in partnership with the World Bank and the Bertelsman Group (*www.csd.bg* – publications), pp. 139-174.

Bernabé, S. (2002), "Informal Employment in Countries in Transition: a Conceptual Framework", Centre for Analysis of Social Exclusion Paper, No. 56 (*http://sticerd.lse.ac.uk/case/publications/casepapers.asp*).

Blades, D. and Roberts, D. (2002), "Measuring the Non-observed Economy", OECD Statistics Brief No. 5 (*www.oecd.org/std* – publications and documents – The Statistics Brief).

Blakemore, A., P. Burgess, S. Low and R. St. Louis (1996), "Employer Tax Evasion in the Unemployment Insurance Program", *Journal of Labor Economics*, Vol. 14. No. 2, April, pp. 201-230.

Borghi, V. and T. Kieselbach (2000), "The submerged economy as a trap and a buffer: comparative evidence on long-term youth unemployment and the risk of social exclusion in Southern and Northern Europe", paper presented to the EU Workshop on "Unemployment, Work and Welfare" Directorate General Research of the European Commission, Brussels, 11-13 November (*www.cordis.lu/improving/socio-economic/conf_work.htm*).

Brodersen, S. (2002), "Big Increase in Do-it-Yourself (DIY) Home Repairs and Improvements", Rockwool Foundation Newsletters, March (*www.rff.dk/ukhome.htm*).

Brodersen, S. (2003), *Do-it-yourself Work in North-Western Europe. Maintenance and improvement of homes*, Rockwool Foundation Research Unit Study, No. 11, Copenhagen.

Bruyninckx, H. (1998), "Social Identity Card Marks New Step in Fight against Social Fraud" (*www.eiro.eurofound.ie/1998/05/inbrief/be9805237n.html*).

Capecchi, V. (1989), "The Informal Economy and the Development of Flexible Specialization", in A. Portes, M. Castells and L. Benton (eds.), *The Informal Economy: Studies in Advanced and Less Developed Countries*, The Johns Hopkins University Press, Baltimore, MD., pp. 189-215.

Carillo, R. and M. Pugno (2002), "The Underground Economy and the Underdevelopment Trap", *Economia*, Technical Report 1, University of Trento (*http://eprints.biblio.unitn.it/archive/00000024/*).

Chavdarova, T. (2003), "Transactions versus Work: The Informal Economies in Bulgaria in the 1990s", in Belev (ed.).

Chen, D., F. Lee and J. Mintz (2002), "Taxation, SMEs and Entrepreneurship", OECD STI Working Paper, No. 2002/9, OECD, Paris (*www.oecd.org/sti*).

Çinar, D., A. Gächter and H. Waldrauch (2000), *Irregular Migration: Dynamics, Impact, Policy Options*, Eurosocial Reports, Vol. 67, European Centre for Social Welfare Policy and Research, Vienna.

Cullen, J. and R. Gordon (2002), "Taxes and Entrepreneurial Activity: Theory and Evidence for the US", (*http://econ.ucsd.edu/~rogordon/papers.html*).

Dabrowski, M. and M. Tomczynska (2001), "Tax Reforms in Transition Economies – a Mixed Record and Complex Future Agenda", Centre for Social and Economic Research, Studies and Analyses, No. 231 (*www.case.com.pl*).

Darling, A. (1999), *A New Contract for Welfare: Safeguarding Social Security*, Green Paper (Cm 4276) (*www.dwp.gov.uk/publications/dss/1999/fraud/index.asp*).

Diamond, P. and J. Gruber (1997), "Social Security and Retirement in the US", NBER Working Paper, No. 6097.

DILTI (Délégation interministérielle à la lutte contre le travail illégal) (2002), *Plaquette de présentation de la DILTI* (*www.travail.gouv.fr/ministere/dilti.html*).

Djankov, S., I. Lieberman, J. Mukherjee and T. Nenova (2003), "Going Informal: Benefits and Costs", in Belev (ed.).

Eardley, T., J. Bradshaw, J. Ditch, I. Gough and P. Whiteford (1996), *Social Assistance in OECD Countries: Country Reports*, Department of Social Security Research, Report No. 46, HMSO, London.

EC (1998), "Communication of the Commission on Undeclared Work", COM(1998)219 (*http://europa.eu.int/comm/employment_social/empl_esf/docs/com98-219_en.pdf*).

EC (2003), *European Employment Strategy: 2003 National Action Plans* (*http://europa.eu.int/comm/employment_social/employment_strategy/index_en.htm*).

Enste, D. (2003), "Shadow Economy and Institutional Change in Transition Countries", in Belev (ed.).

Erard, B. (1997), "A Critical Review of the Empirical Research on Canadian Tax Compliance", Department of Finance, Business Income Tax Division Working Paper 97-6 (*www.fin.gc.ca/taxstudy/wp97-6e.html*).

EU (2000), "Report on the Commission Communication on Undeclared Work", European Parliament Committee on Employment and Social Affairs, report by rapporteur Anne-Karin Glase (FINAL A5-0220/2000).

EU (2003), "Council Resolution on Transforming Undeclared Work into Regular Employment", *Official Journal*, C 260, 29 October (*http://europa.eu.int/eur lex/en/archive/index.html*).

Eurostat (2002), *European Social Statistics: Labour Market Policy: Expenditure and Participants: Data 2000*, Office for Official Publications of the European Communities, Luxembourg.

Feige, E. and I. Urban (2003), "Estimating the Size and Growth of Unrecorded Economic Activity in Transition Countries: a Re-evaluation of Electric Consumption Method Estimates and their Implications", William Davison Institute Working Paper, No. 636 (*www.wdi.bus.umich.edu*).

Fraser, J. (2000), "Preventing and Combating the Employment of Foreigners in an Irregular Situation in the United States", in OECD (2000b).

Friedman, E., S. Johnson, D. Kaufmann and P. Zoido-Lobaton (2000), "Dodging the Grabbing Hand: the determinants of unofficial activity in 69 countries", *Journal of Public Economics*, Vol. 76, No. 3, June, pp. 459-493.

Fries, S., T. Lysenko and S. Polanec (2003), "The 2002 Business Environment and Enterprise Performance Survey: Results from a Survey of 6,100 firms", EBRD Working Paper, No. 84 (*www.ebrd.com/pubs/find/index.htm*).

Ganghof, S. (2000), "Corporate Tax Competition, Budget Constraints, and the New Trade-Offs in Domestic Tax Policy: Germany and Italy in Comparative Perspective" (*www.mpi-fg-koeln.mpg.de/people/ga/downloads_de.html*).

Genser, B. (2001), "Corporate Income Taxation in the European Union: Current State and Perspectives", Centre for Tax System Integrity Working Paper, No. 17 (*http://ctsi.anu.edu.au/publications.html*).

Gervais, G. (1994), *The Size of the Underground Economy: A Statistics Canada View*, Statistics Canada, Catalogue No. 13-603, No. 2, June.

Ghersi, E. (1997), "The Growing Importance of Informality and Possibilities for Integration", in Lippert and Walker (eds.).

Gindling, T. and K. Terrell (2004), "Legal Mininum Wages and the Wages of Formal and Informal Sector Workers in Costa Rica", IZA Discussion Paper, No. 1018 (*www.iza.org* – publications).

Grabiner, Lord (2000), *The Informal Economy*, HM Treasury Public Enquiry Unit, HMSO (*www.hm-treasury.gov.uk/documents/taxation_work_and_welfare/tax_index.cfm* – other tax issues).

Grabowski, M. (2003), "Informal Labor Market and Informal Economy during Economic Transition: The Polish Perspective", in Belev (ed.).

Grabowski, M. and S. Smith (1995), "The Taxation of Entrepreneurial Income in a Transition Economy: Issues Raised by Experience in Poland", CEPR Discussion Paper, No. 1166 (*www.cepr.org/pubs/dps/DP1166.asp*).

Gray, D. (2003), "National versus Regional Financing and Management of Unemployment and Related Benefits: The Case of Canada", OECD Social, Employment and Migration Working Papers, No. 14, OECD, Paris (*www.oecd.org/employment* – employment policy – working papers).

Hales, J., R. Taylor, W. Mandy and M. Miller (2003), *Evaluation of Employment Zones: Report on a Cohort Survey of Long-Term Unemployed People in the Zones and a Matched Set of Comparison Areas*, DWP/JAD Research and Analysis Publications, No. 176, November (*www.dwp.gov.uk/jad/index_intro.asp*)

Hamaekers, H. (2003), "Taxation Trends in Europe", *Asia-Pacific Tax Bulletin*, February (*http://europa.eu.int/comm/taxation_customs/taxation/company_tax/conference_rome.htm*).

Hanousek, J. and F. Palda (2002), "Quality of Government Services and Tax Evasion; A Look at the Czech and Slovak Repubics", presentation to CERGE-EI Round Table Discussion (*www.cerge-ei.cz/pdf/events/RTNov2002.pdf*).

Hanousek, J. and F. Palda (2003a), "Why People Evade Taxes in The Czech and Slovak Republics: a Tale of Twins", in Belev (ed.).

Hanousek, J. and F. Palda (2003b), "Quality of Government Services and the Civic Duty to Pay Taxes in the Czech and Slovak Republics, and other Transition Countries", mimeo (*http://home.cerge-ei.cz/hanousek/evasion*).

Hanousek, J. and F. Palda (2004), "Mission Implausible III: Measuring the Informal Sector in a Transition Economy using Macro Methods", mimeo (*http://home.cerge-ei.cz/hanousek/*).

HM Customs and Excise (2002), *Measuring Indirect Tax Losses* (*www.hm-treasury.gov.uk/documents/taxation_work_and_welfare/tax_index.cfm* – other tax issues).

Hur, J.J. (2000), "Expanding the Coverage of Korea's Unemployment Insurance System", paper presented at the International Conference on Economic Crisis and Labour Market Reform: the Case of Korea (*www.kli.re.kr/20_english/04_forum/list.asp*).

Hussmanns, R. and B. du Jeu (2001), "ILO Compendium of Official Statistics on Employment in the Informal Sector", STAT WP No. 1, Geneva (*www.ilo.org/public/english/employment/infeco/publ.htm*).

IADB (Inter-American Development Bank) (2004), *Good Jobs Wanted: Labor Markets in Latin America*, 2004 Economic and Social Progress Report, John Hopkins University Press, Washington DC.

ILO (2002), *Women and Men in the Informal Economy: A Statistical Picture*, Geneva (*www.ilo.org/public/english/employment/infeco/publ.htm*).

ILO (2003), *Key Indicators of the Labour Market, 3rd edition*, Geneva.

Iskander, N. (2000), "Immigrant Workers in an Irregular Situation: The Case of the Garment Industry in Paris and its Suburbs", in OECD (2000b).

ISTAT (2003), La misura dell'economia sommersa secondo le statistiche ufficiali: Anno 2000 (*www.istat.it/Comunicati/Fuori-cale/allegati/La-misura-/2stima-del-Pil.pdf*).

Jaehrling, K. (2003), "Political Reforms in the Domestic Service Sector – Aims and Impact", paper presented at the conference on Models of Domestic Services, University of Munich, September (*www.iatge.de/aktuell/veroeff/2003/jaehr01.pdf*).

Jenkins, S. and R. Khadka (2000), "Modernization of Tax Administration in Low-Income Countries: the Case of Nepal", CAER II Discussion Paper, No. 68 (*www.cid.harvard.edu/caer2/htm/*).

Johnson, S., D. Kaufmann and P. Zoido-Lobatón (1998), "Regulatory Discretion and the Unofficial Economy", *American Economic Review*, Vol. 88, No. 2, May, pp. 387-392.

Johnson, S., J. McMillan and C. Woodruff (2002), "Property Rights and Finance", NBER Working Paper, No. 8852.

Jönsson, H. (2002), "Undeclared Work in Sweden – Results and Recommendations" (*www.academyavignon.net/undwork.htm*).

Joumard, I. (2001), "Tax Systems in European Countries", OECD Economic Department Working Papers, No. 301, OECD, Paris (*www.oecd.org/eco*).

Kallay, L. (2003), "Barriers to Participation: the Informal Sector in Emerging Democracies: the case of Hungary", in Belev (ed.).

Kazemier, B. (2003), "The Measurement of the Non-observed Economy in the Dutch National Accounts", paper presented to seminar, "The Non-Observed Economy: Measurement and Policy Issues", 20 January, Rome (*www.lex.unict.it/eurolabor/ricerca/dossier.htm* – dossier 7, bibliografia).

Kertesi, G. and J. Köllö (2003), "Fighting 'Low Equilibria' by Doubling the Minimum Wage? Hungary's Experiment", IZA Discussion Paper, No. 970.

Kesselman, J. (1997), "Policy Implications of Tax Evasion and the Underground Economy", in Lippert and Walker (eds.).

Konijn, P. (2003), "Vérification du PNB des États Membres de l'UE : Inclusion de l'Économie Souterraine", *Revue Belge de la Sécurité Sociale*, 3rd quarter, pp. 817-823.

Kuchta-Helbling, C. (2002), "Barriers to Participation: the Informal Sector in Developing and Transition Countries", paper for the conference on Unofficial Activities in Transition Countries: Ten Years of Experience, Zagreb (*www.ijf.hr/UE_2002/program.html*).

Lee, Y. and R. Gordon (2003), "Tax Structure and Economic Growth" (*http://econ.ucsd.edu/~rogordon/papers.html*).

Leibfritz, W., J. Thornton and A. Bibbee (1997), "Taxation and Economic Performance", OECD Economics Department Working Papers, No. 176, OECD, Paris (*www.oecd.org/eco*).

Lippert, O. and M. Walker (eds.) (1997), *The Underground Economy: Global Evidence of its Size and Impact*, The Fraser Institute (*http://collection.nlc-bnc.ca/100/200/300/fraser/underground/index.html*).

Maloney, W. and J. Nunez (2001), "Measuring the Impact of Minimum Wages: Evidence from Latin America", World Bank Latin American and Caribbean Region, Policy Research Working Paper, No. 2597 (*www-wds.worldbank.org/default.jsp*).

Marc, A. and Z. Kudatgobilik (2003), "Poverty and Informality in Southeast Europe", in Belev (ed.).

Marie, C.V. (2000), "Measures Taken to Combat the Employment of Undocumented Workers in France", in OECD (2000b).

Marini, P. and J. Bourdin (2003), *Rapport d'information sur les réformes fiscales intervenues dans les pays européens au cours des années 1990* (*www.senat.fr/rapinf02.html*).

Mateman, S. and P. Renooy (2001), "Undeclared Labour in Europe: Towards an Integrated Approach of Combatting Undeclared Labour: Final Report", Regioplan Research Advice and Information, Amsterdam (*http://europa.eu.int/comm/employment_social/docs/undeclared_labour.pdf*).

Meldolesi, L. (2003), "Policy for the Regulation of the Underground Economy and Employment", *Review of Economic Conditions in Italy*, No. I, January-April (*www.emersionelavorononregolare.it/catania/index.php*).

Miguelez Lobo, F. (1988), "Irregular Work in Spain", Final Report for the EC Program of Research on the Black Economy in Europe (V/1778/88-EN).

Moreno, L., M. Matsaganis, M. Ferrera, L. Capucha and L. Moreno (2003), "¿Existe una 'malla de seguridad' en la Europa del Sur? La lucha contra la pobreza y la exclusión en España, Grecia, Italia y Portugal", UPC Working Paper 03-17 (*www.iesam.csic.es/doctrab.htm*).

Muratore, L. (2003), "Undeclared Work Increases" (*www.eiro.eurofound.eu.int* – browse by country – Italy).

Nam, C., R. Parsche and B. Schaden (2001), "Measurement of Value Added Tax evasion in Selected EU Countries on the Basis of National Accounts Data", CESifo Working Paper, No. 431 (*www.cesifo.de*).

OECD (1986), "Concealed Employment", Chapter 3, *Employment Outlook*, Paris.

OECD (1990), "Employer versus Employee Taxation: the Impact on Employment", Chapter 6, *Employment Outlook*, Paris (*www.oecd.org/els/employmentoutlook*).

OECD (1992), "Recent Developments in Self-Employment", Chapter 4, *Employment Outlook*, Paris.

OECD (1993), *The Public Employment Service in Japan, Norway, Spain and the United Kingdom*, Paris.

OECD (1997b), *Economic Survey of Greece*, Paris.

OECD (1998), *The Public Employment Service: Greece, Ireland, Portugal*, Paris.

OECD (2000a), "The Partial Renaissance of Self-Employment", Chapter 5, *Employment Outlook*, Paris.

OECD (2000b), *Combating the Illegal Employment of Foreign Workers*, Paris.

OECD (2001), *Business Views on Red Tape: Administrative and Regulatory Burdens on Small and Medium-Sized Enterprises*, Paris.

OECD (2002), "Measuring the Non-observed Economy: a Handbook", jointly authored with the International Labour Organisation, the International Monetary Fund, the Interstate Statistical Committee of the Commonwealth of Independent States (*www.oecd.org/std* – publications).

OECD (2003a), "Benefits and Employment, Friend or Foe?", Chapter 4, *Employment Outlook*, Paris.

OECD (2003b), *Labour Market and Social Policies in the Baltic Countries*, Paris.

OECD (2004a), *Economic Survey of Hungary*, Paris.

OECD (2004b), "Informal Employment: Survey Methods of Measurement and National Policy Reviews", Background Material for Chapter 5 of OECD *Employment Outlook 2004* (*www.oecd.org/els/employmentoutlook*).

OECD Secretariat (2000), "Preventing and Combating the Employment of Foreigners in an Irregular Situation: Principal Conclusions and Recommendations made during the OECD Seminar (The Hague, 22-23 April 1999)", in Çinar *et al.* (eds.).

Ott, K. (2002), "The Underground Economy in Croatia 1990-2000", Institute of Public Finance Occasional Paper, No. 12 (*www.csd.bg/news/bert/croatia_presentation.PDF*).

Packard, T., N. Shinkai and R. Fuentes (2001), "The Reach of Social Security in Latin America and the Carribean", background paper for Regional Study on Social Security Reform, World Bank (*http://wbln0018.worldbank.org/external/lac/lac.nsf* – office of the chief economist – research – poverty and inequality).

Pacolet, J. and A. Marchal (2003a), "Fraude sociale et travail au noir en Belgique : quête de l'indéfinissable?", *Revue Belge de Sécurité Sociale*, 3rd quarter, pp. 689-724.

Pacolet, J. and A. Marchal (2003b), "Le travail au noir en Europe analysé sous un angle belge: conscience accrue de la triple menace pesant sur l'État-providence", *Revue Belge de Sécurité Sociale*, 3rd quarter, pp. 783-823.

Pahl, R. (1988), "The Black Economy in the United Kingdom", final report for the EC Program of Research on the Black Economy in Europe (V/1775/88-EN).

Pedersen, S. (1998), *The Shadow Economy in Western Europe: Measurement and Results for Selected Countries*, Rockwool Foundation Research Unit Study, No. 5, Copenhagen.

Pedersen, S. (1999), "The Black Sector in Denmark in 1998", Rockwool Foundation Research Unit Newsletter, August (*www.rff.dk/ukhome*).

Pedersen, S. (2003), *The Shadow Economy in Germany, Great Britain and Scandinavia: A Measurement based on Questionnaire Surveys*, Rockwool Foundation Research Unit Study, No. 10, Copenhagen.

Pirenne, P. (2003), "Travail au noir et fraude", *Revue Belge de Sécurité Sociale*, 3rd quarter, pp. 735-746 (*http://socialsecurity.fgov.be/bib/annonces/Revue_03_2003.htm*).

Portes, A. and W. Haller (2002), "The Informal Economy", Princeton University Centre for Migration and Development Working Paper 03-05 (*http://cmd.princeton.edu/papers.shtml*).

Price, D. (2000), *Office of Hope: A History of the Employment Service*, Policy Studies Institute, London.

Reimer, B. (2001), "The Informal Economy in Rural Canada", draft report (*http://nre.concordia.ca/nre_reports.htm*).

Renooy, P., S. Ivarsson, O. van der Wusten-Gritsai and R. Meijer (2004), "Undeclared Work in an Enlarged Union", Final report of the project An Analysis of Undeclared Work: An In-Depth Study of Specific Items, Inregia AB and Regioplan BV, Amsterdam/Malmö (draft, 19/4/04).

Reyneri, E. (2003a), "Underground Economy and the New Immigration. The Case of Southern Europe", paper presented at the EU workshop Informal/Undeclared Work: Research on its Changing Nature and Policy Strategies in an Enlarged Europe, jointly organised by DG Research and DG Employment and Social Affairs Brussels, 21 May 2003 (*www.lex.unict.it/eurolabor/ricerca/dossier.htm* – dossier 7, bibliografia).

Reyneri, E. (2003b), "Illegal Immigration and the Underground Economy", ANU National Europe Centre Paper No. 68, paper presented to the conference The Challenges of Immigration and Integration in the European Union and Australia, 18-20 February 2003, University of Sydney (*www.anu.edu.au/NEC/reyneri.pdf*).

Roed, K. and S. Strøm (2002), "Progressive Taxes and the Labour Market: is the Trade-off between Equality and Efficiency Inevitable?", *Journal of Economic Surveys*, Vol. 16, No. 1.

RRV (Riksrevisionsverket) (1998), *Illicit Work in Sweden: A Report on a Welfare State Dilemma*, report RRV 1998:61, Swedish National Audit Administration (*www.riksrevisionen.se/* – publikationer – Riksdagens revisorer).

RSV (Swedish Tax Agency) (2002), *Tax Statistical Yearbook of Sweden* (*http://skatteverket.se/broschyrer/152/15205/15205.html*).

Ruli, G. (2003), "Characteristics of Informal Sector Development in Albania", in Belev (ed.).

Sassen, S. (1988), "New York City's Informal Economy", Institute for Social Science Research, Conference on Comparative Ethnicity, Papers, Vol. IV.

Scharle, A. (2002), "Tax Evasion as Innovation in Small Businesses in Hungary", paper for the conference on Unofficial Activities in Transition Countries: Ten Years of Experience, Zagreb (*www.ijf.hr/UE_2002/program.html*).

Schneider, F. (2002), "Size and Measurement of the Informal Economy in 110 Countries around the World" (*http://rru.worldbank.org/documents/paperslinks/informal_economy.pdf*).

Schneider, F.V. Braithwaite and M. Reinhart (2001), "Individual Behaviour in Australia's Shadow Economy: Facts, Empirical Findings and some Mysteries", Centre for Tax System Integrity Working Paper, No. 19 (*http://ctsi.anu.edu.au/publications.html*).

Schratzenstaller, M. (2003), "Dualisierung von Einkommensteuersystemen – Stand und Perspektiven im internationalen Vergleich", in DIW Vierteljahrshefte zur Wirtschaftsforschung, Vol. 71(4), pp. 535-550 (*www.diw.de/deutsch/produkte/publikationen/vierteljahrshefte/jahrgang03/content_4.html*).

SECO (Secrétariat d'État à l'Économie) (2000), *Rapport du groupe de travail fédéral sur la lutte contre le travail au noir,* Switzerland (*www.seco-admin.ch/themen/arbeit/recht/schwarzarbeit_recht/?lang=fr*).

Sedlacek, G., N. Ilahi and E. Gustafsson-Wright (2000), "Targeted Conditional Transfer Programs in Latin America: An Early Survey", World Bank paper prepared for the Regional Study: Securing our Future, Washington DC (*www1.worldbank.org/sp/safetynets/publications/cct.asp*).

Semjén, A. and J. Tóth (2002), "Unofficial Economic Activities and Fiscal Discipline in Hungary as Mirrored in Consecutive Enterprise Surveys on Tax Behaviour", paper for the conference on Unofficial Activities in Transition Countries: Ten Years of Experience, Zagreb (*www.ijf.hr/UE_2002/program.html*).

Skoufias, E., B. Davis and S. De la Vega (2001), "Targeting the Poor in Mexico: an Evaluation of the Selection of Households into PROGRESA", *World Development*, Vol. 29, No. 10, pp. 1769-1784 (*www.worldbank.org*).

Slemrod, J. and S. Yitzhaki (2000), "Tax Avoidance, Evasion and Administration", NBER Working Paper, No. 7473.

Stefanov, R. (2003), "Undeclared Work in the Acceding States and Candidate Countries", paper presented to a Workshop on Informal/Undeclared Work: Research on its changing nature and policy strategies in an enlarged Europe, Brussels, 21 May (*www.cordis.lu/improving/socio-economic/conf_work.htm*).

Tansel, A. (2000), "Formal versus Informal Sector Choice of Wage Earners and their Wages in Turkey", in T. Bulutay (ed.), *Informal Sector I*, State Institute of Statistics, Ankara (*www.econ.metu.edu.tr/people/atansel/atansel.htm*).

Tapinos, G. (2000), "Irregular Migration: Economics and Political Issues", in OECD (2000b).

Torrini, R. (2002), "Cross-country Differences in Self-employment Rates: the Role of Institutions", Banca de Italia, Economic Research Department, No. 459, Rome.

Treisman, D. (2000), "Decentralization, Tax Evasion, and the Underground Economy: A Model with Evidence from Russia", mimeo (*www.isr.umich.edu/cps/pewpa/archive.htm*).

Treisman, D. (2003), "Fiscal Pathologies and Federal Politics: Understanding Tax Arrears in Russia's Regions", in J. McLaren (ed.), *Institutional Elements of Tax Design and Reform*, World Bank, Washington DC (*www-wds.worldbank.org*).

UNECE (United Nations Economic Commission for Europe) (2003), *Non-observed Economy in National Accounts: Survey of National Practices*, Geneva (*www.unece.org/stats/publications/non.observed.economy.pdf*).

URSSAF (2003), "Les risques du travail dissimulé" (*www.urssaf.fr/images/ref_depliant_Travai_dissimule_part.pdf*).

Viby Mogensen, G. (1999), "New Measurements of the Black Sector", Rockwool Foundation Newsletters, August (*www.rff.dk/ukhome.htm*).

Viby Mogensen, G. (2003), *Skattesnyderiets historie. Udviklingen i underdeklarationen i Danmark i 1900-tallet* (The history of tax evasion – the development of under-declaration in Denmark in the 20th century), Odense.

Williams, C. (2004), "Cash-in-hand Work: Unravelling Informal Employment from the Moral Economy of Favours", *Sociological Research Online*, Vol. 9, Issue 1 (*www.socresonline.org.uk*).

Winkler, R. (1997), "The Size and Some Effects of the Underground Economy in Mexico", in Lippert and Walker (eds.).

Yfantopoulos, J. (2003), "Economie souterraine et paiements informels dans le secteur des soins de santé: le cas de la Grèce", *Revue Belge de Sécurité Sociale*, 3rd quarter.

Zizza, R. (2003), "Metodologie di Stima dell'Economia Sommersa: Un'Applicazione al Caso Italiano", paper presented to the Associazione Italiana degle Economisti del Lavoro conference, Messina (*www.dise.unisa.it/AIEL/Messina/zizza.pdf*).

ISBN 92-64-10812-2
OECD Employment Outlook
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Statistical Annex

Sources and definitions

Most of the statistics shown in these tables can be found as well in two other (paper or electronic) publications or references, as follows:

- the annual edition of *OECD Labour Force Statistics, 1983-2003*;
- the OECD On-Line Labour Force Statistics database that shows both raw data (see URL: *www.oecd.org/scripts/cde/members/LFSDATAAuthenticate.asp*) and derived statistics (*www.oecd.org/scripts/cde/members/LFSINDICATORSAuthenticate.asp*), and allows free access to the data.

These publications, which include information on definitions, notes and sources used by member countries, include longer time series and more detailed disaggregations by age group, gender, duration of unemployment, etc., than are shown in this annex.

Sources and definitions for data shown in the Statistical Annex tables are specified at the bottom of each table.

Please note that the data on employment, unemployment and the labour force are not necessarily the same as the series used for analyses and forecasting by the OECD Economics Department and reproduced in Tables 1.2 and 1.3 of Chapter 1 of this publication.

Interested users can refer to the on-line database, which contains data series describing the labour supply: population, labour force, employment and unemployment disaggregated by gender and age, educational attainment, employment status and sector of activity, participation and unemployment rates, statistics on part-time employment and duration of unemployment. The on-line database contains a number of additional series on labour market results and on features of the institutional and regulatory environment affecting the functioning of labour markets. Among these are the following:

- annual hours of work data for comparisons of trends over time;
- gross earnings by percentile for deriving measures of earnings dispersion for full-time workers by gender;
- gross mean and median earnings of full-time workers by age group and gender;
- statutory minimum wages;
- public expenditure and participant inflows in labour market programmes;
- trade union density rates in OECD member countries.

Conventional signs

. . Data not available

. Decimal point

| Break in series

– Nil or less than half of the last digit used

Note on the statistical treatment of Germany

In this Statistical Annex, data up to end-1990 are for Western Germany; unless otherwise indicated, they are for the whole of Germany from 1991 onwards.

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Table A. **Standardised unemployment rates in 27 OECD countries**

As a percentage of total labour force

	1990	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
Australia	6.7	10.5	10.6	9.5	8.2	8.2	8.3	7.7	6.9	6.3	6.8	6.4	6.1
Austria	. .	. .	4.0	3.8	3.9	4.4	4.4	4.5	4.0	3.7	3.6	4.3	4.4
Belgium	6.6	7.1	8.6	9.8	9.7	9.5	9.2	9.3	8.6	6.9	6.7	7.3	8.1
Canada	8.1	11.2	11.4	10.4	9.4	9.6	9.1	8.3	7.6	6.8	7.2	7.7	7.6
Czech Republic	. .	. .	4.4	4.4	4.1	3.9	4.8	6.4	8.6	8.7	8.0	7.3	7.8
Denmark	7.2	8.6	9.6	7.7	6.8	6.3	5.3	4.9	4.8	4.4	4.4	4.6	5.6
Finland	3.2	11.6	16.4	16.8	15.2	14.6	12.7	11.3	10.2	9.8	9.1	9.1	9.0
France	8.7	10.0	11.3	11.9	11.4	11.9	11.8	11.4	10.7	9.3	8.5	8.8	9.4
Germany[a]	4.8	6.4	7.7	8.2	8.0	8.7	9.7	9.1	8.4	7.8	7.8	8.6	9.3
Greece	6.3	7.8	8.6	8.9	9.1	9.7	9.6	11.0	11.8	11.0	10.4	10.0	. .
Hungary	. .	9.9	12.1	11.0	10.4	9.6	9.0	8.4	6.9	6.3	5.6	5.6	5.8
Ireland	13.4	15.4	15.6	14.3	12.3	11.7	9.9	7.5	5.6	4.3	3.9	4.4	4.6
Italy	8.9	8.8	10.1	11.0	11.5	11.5	11.6	11.7	11.3	10.4	9.5	9.0	8.6
Japan	2.1	2.2	2.5	2.9	3.2	3.4	3.4	4.1	4.7	4.7	5.0	5.4	5.3
Korea	. .	. .	. .	. .	. .	. .	. .	. .	. .	4.4	4.0	3.3	3.6
Luxembourg	1.7	2.1	2.6	3.2	2.9	2.9	2.7	2.7	2.4	2.3	2.1	2.8	3.7
Netherlands	5.9	5.3	6.2	6.8	6.6	6.0	4.9	3.8	3.2	2.9	2.5	2.7	3.8
New Zealand	7.8	10.3	9.5	8.1	6.3	6.1	6.6	7.5	6.8	6.0	5.3	5.2	4.7
Norway	5.8	6.6	6.6	6.0	5.5	4.8	4.0	3.2	3.3	3.4	3.6	3.9	4.5
Poland	. .	. .	14.0	14.4	13.3	12.3	10.9	10.2	13.4	16.4	18.5	19.8	19.2
Portugal	4.8	4.3	5.7	6.9	7.3	7.3	6.8	5.2	4.5	4.1	4.1	5.1	6.4
Slovak Republic	. .	. .	. .	13.7	13.1	11.3	11.9	12.6	16.8	18.7	19.4	18.7	17.1
Spain	13.1	14.9	18.6	19.8	18.8	18.1	17.0	15.2	12.8	11.3	10.6	11.3	11.3
Sweden	1.7	5.6	9.1	9.4	8.8	9.6	9.9	8.2	6.7	5.6	4.9	4.9	5.6
Switzerland		3.0	3.9	3.9	3.5	3.9	4.2	3.6	3.0	2.7	2.6	3.2	4.1
United Kingdom	6.9	9.8	10.0	9.2	8.5	8.0	6.9	6.2	5.9	5.4	5.0	5.1	5.0
United States	5.6	7.5	6.9	6.1	5.6	5.4	4.9	4.5	4.2	4.0	4.7	5.8	6.0
EU-15[b]	8.1	9.1	10.1	10.5	10.1	10.2	10.0	9.4	8.7	7.8	7.4	7.7	8.0
EU-19[b]	. .	. .	. .	10.7	10.3	10.2	9.9	9.4	10.0	8.7	8.5	8.8	9.0
OECD Europe[b]	8.0	8.9	10.2	10.5	10.1	10.1	9.8	9.2	9.0	8.5	8.3	8.6	8.8
Total OECD[b]	6.1	7.4	7.8	7.7	7.3	7.2	7.0	6.9	6.7	6.3	6.5	7.0	7.1

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. For a fuller description, please refer to the following URL: *www.oecd.org\std*.

a) Up to and including 1992, western Germany; subsequent data concern the whole of Germany.

b) For above countries only.

Source: OECD (2004), *Main Economic Indicators*, May.

Table B. **Employment/population ratios, activity and unemployment rates**[a]

Persons aged 15-64 years (percentages)

	Employment/population ratio						Labour force participation rate						Unemployment rate					
	1990	1999	2000	2001	2002	2003	1990	1999	2000	2001	2002	2003	1990	1999	2000	2001	2002	2003
Australia	67.9	67.8	69.2	68.7	69.2	69.3	73.0	72.8	73.6	73.7	73.7	73.6	7.0	6.8	6.0	6.7	6.1	5.8
Austria	. .	68.2	67.9	67.8	68.2	68.2	. .	71.6	71.3	70.7	71.7	71.6	. .	4.7	4.7	4.0	4.9	4.7
Belgium	54.4|	58.9	60.9	59.7	59.7	59.3	58.7|	64.6	65.2	63.6	64.1	64.3	7.3|	8.7	6.6	6.2	6.9	7.7
Canada	70.3	70.1	71.1	70.9	71.5	72.1	76.6	75.9	76.3	76.5	77.5	78.1	8.2	7.6	6.9	7.3	7.7	7.7
Czech Republic	. .	65.9	65.2	65.3	65.7	64.9	. .	72.2	71.6	71.1	70.9	70.4	. .	8.7	8.8	8.2	7.3	7.8
Denmark	75.4|	76.5	76.4	75.9	76.4	75.1	82.4|	80.6	80.0	79.2	79.9	79.4	8.5|	5.2	4.5	4.2	4.3	5.5
Finland	74.1	66.0	67.0	67.7	67.7	67.4	76.6	73.6	74.3	74.6	74.5	74.1	3.2	10.3	9.9	9.2	9.1	9.1
France[b]	59.9	59.8	61.1	62.0	62.2	61.9	66.0	67.8	68.0	68.0	68.3	68.2	9.2	11.8	10.1	8.8	8.9	9.3
Germany	64.1|	65.2	65.6	65.8	65.3	64.6	67.4|	71.2	71.1	71.5	71.5	71.3	4.9|	8.5	7.8	7.9	8.7	9.4
Greece	54.8|	55.4	55.9	55.6	56.9	58.0	59.1|	62.9	63.0	62.1	63.1	63.8	7.2|	12.0	11.3	10.4	9.8	9.1
Hungary	. .	55.7|	56.0	56.2	56.2	57.0	. .	59.9|	59.9	59.6	59.7	60.6	. .	7.0|	6.4	5.7	5.8	5.9
Iceland[c, d]	79.9	84.2	84.6	84.6	82.8	. .	82.1	85.9	86.6	86.6	85.6	. .	2.7	1.9	2.3	2.3	3.2	. .
Ireland	52.1|	62.5	64.5	65.0	65.0	65.0	60.1|	66.3	67.4	67.5	67.9	68.0	13.3|	5.8	4.4	3.7	4.3	4.5
Italy	52.6	52.9	53.9	54.9	55.6	56.2	59.5	59.8	60.3	60.7	61.2	61.6	11.5	11.5	10.6	9.6	9.1	8.7
Japan	68.6	68.9	68.9	68.8	68.2	68.4	70.1	72.4	72.5	72.6	72.3	72.3	2.2	4.9	5.0	5.2	5.6	5.4
Korea	61.2	59.6	61.5	62.1	63.3	63.0	62.8	63.8	64.2	64.7	65.4	65.3	2.5	6.6	4.3	3.9	3.2	3.5
Luxembourg	59.2|	61.6	62.7	63.0	63.6	. .	60.1|	63.1	64.2	64.1	65.3	. .	1.6|	2.4	2.4	1.8	2.6	. .
Mexico[d]	58.0	61.2	60.9	60.1	60.1	59.6	59.9	62.5	62.3	61.5	61.6	61.2	3.1	2.2	2.2	2.2	2.5	2.6
Netherlands	61.1|	70.9	72.9	74.1	74.5	73.6	66.2|	73.6	74.9	75.7	76.5	76.4	7.7|	3.6	2.7	2.1	2.6	3.6
New Zealand	67.3	70.0	70.7	71.8	72.4	72.5	73.0	75.2	75.2	75.9	76.4	76.1	7.8	6.9	6.1	5.4	5.3	4.8
Norway[c]	73.0|	78.0	77.9	77.5	77.1	75.9	77.1|	80.6	80.7	80.3	80.3	79.4	5.4|	3.2	3.5	3.5	4.0	4.5
Poland	. .	57.5|	55.0	53.5	51.7	51.4	. .	65.9|	65.8	65.7	64.8	64.2	. .	12.8|	16.4	18.6	20.3	20.0
Portugal	67.4|	67.4	68.3	68.6	68.1	67.1	70.9|	70.7	71.3	71.7	72.0	72.0	4.9|	4.6	4.2	4.3	5.4	6.8
Slovak Republic	. .	58.1|	56.8	56.9	56.9	57.7	. .	69.5|	69.9	70.5	69.9	70.0	. .	16.4|	18.8	19.3	18.6	17.6
Spain[c]	51.8	55.0	57.4	58.8	59.5	60.7	61.7	65.3	66.7	65.8	67.1	68.5	16.1	15.7	13.9	10.5	11.4	11.4
Sweden[c]	83.1|	72.9	74.2	75.3	74.9	74.3	84.6|	78.5	78.9	79.3	79.0	78.9	1.8|	7.1	5.9	5.1	5.2	5.8
Switzerland[d]	78.2	78.4	78.3	79.1	78.9	77.8	79.7	80.9	80.5	81.2	81.3	81.2	1.8	3.1	2.7	2.5	3.0	4.2
Turkey	54.5	50.8	48.9	47.8	46.7	45.5	59.4	55.2	52.4	52.3	52.3	51.1	8.2	7.9	6.7	8.6	10.6	10.8
United Kingdom[c]	72.5	71.7	72.4	72.8	72.7	72.9	77.8	76.3	76.6	76.4	76.6	76.6	6.8	6.1	5.6	4.8	5.1	4.9
United States[c]	72.2	73.9|	74.1	73.1	71.9	71.2	76.5	77.2|	77.2	76.8	76.4	75.8	5.7	4.3|	4.0	4.8	5.9	6.1
E-15[e]	61.4|	62.6	63.6	64.3	64.4	64.8	67.1|	69.0	69.4	69.4	69.8	70.3	8.4|	9.3	8.3	7.4	7.8	7.8
E-19[e]	61.4|	62.0	62.6	63.0	63.0	63.2	67.1|	68.6	68.9	68.9	69.2	69.4	8.4|	9.6	9.1	8.5	8.9	9.0
OECD Europe[e]	61.0|	61.0|	61.3	61.5	61.3	60.9	66.5|	67.2|	67.1	67.1	67.3	67.0	8.2|	9.3|	8.7	8.4	8.9	9.1
Total OECD[e]	65.1|	65.4|	65.7	65.5	65.1	65.0	69.3|	70.1|	70.1	69.9	70.0	69.8	6.0|	6.7|	6.2	6.3	6.9	6.9

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Table B. **Employment/population ratios, activity and unemployment rates**[a] *(cont.)*

Men aged 15-64 years (percentages)

	Employment/population ratio						Labour force participation rate						Unemployment rate					
	1990	1999	2000	2001	2002	2003	1990	1999	2000	2001	2002	2003	1990	1999	2000	2001	2002	2003
Australia	78.5	76.2	76.6	75.9	76.4	76.4	84.4	82.0	81.9	81.6	81.5	81.0	6.9	7.1	6.4	7.0	6.3	5.7
Austria	. .	76.7	76.2	75.9	75.3	75.3	. .	80.5	80.1	79.0	79.5	79.4	. .	4.7	4.8	4.0	5.2	5.1
Belgium	68.1|	67.5	69.8	68.5	68.1	67.1	71.3|	73.0	73.8	72.7	72.6	72.6	4.6|	7.5	5.3	5.7	6.3	7.5
Canada	77.8	75.5	76.3	75.9	76.1	76.5	84.9	82.0	82.1	82.1	82.9	83.2	8.3	7.9	7.0	7.6	8.2	8.1
Czech Republic	. .	74.3	73.6	73.6	74.2	73.4	. .	80.2	79.4	79.0	78.9	78.2	. .	7.3	7.4	6.8	5.9	6.1
Denmark	80.1|	81.2	80.7	80.2	80.2	79.7	87.1|	85.0	84.0	83.3	83.8	84.0	8.0|	4.5	4.0	3.7	4.3	5.2
Finland	76.7	68.4	69.4	70.0	69.2	69.0	79.6	75.9	76.4	76.7	76.2	76.1	3.6	9.8	9.2	8.7	9.1	9.3
France[b]	69.7	66.8	68.1	69.0	68.6	67.7	75.0	74.4	74.4	74.3	74.5	73.8	7.0	10.2	8.5	7.1	7.9	8.3
Germany	75.7|	72.8	72.9	72.8	71.7	70.4	79.0|	79.2	78.9	79.0	78.7	78.0	4.1|	8.1	7.6	7.8	8.8	9.7
Greece	73.4|	70.9	71.3	70.9	71.7	72.5	76.8|	76.9	77.1	76.2	76.6	77.0	4.4|	7.7	7.5	6.9	6.4	5.9
Hungary	. .	62.6|	62.7	63.0	62.9	63.4	. .	67.8|	67.5	67.2	67.1	67.6	. .	7.5|	7.1	6.3	6.2	6.1
Iceland[c, d]	85.2	88.2	88.2	88.0	85.7	. .	87.3	89.4	89.8	90.0	88.9	. .	2.4	1.4	1.8	2.1	3.6	. .
Ireland	67.5|	73.5	75.6	76.0	74.7	74.5	77.5|	78.3	79.1	79.0	78.3	78.3	13.0|	6.1	4.5	3.9	4.7	4.9
Italy	69.2	67.6	68.2	68.7	69.2	69.7	75.1	74.1	74.3	74.2	74.5	74.8	7.9	8.8	8.2	7.4	7.0	6.8
Japan	81.3	81.0	80.9	80.5	79.9	79.8	83.0	85.3	85.2	85.0	84.8	84.6	2.1	5.0	5.1	5.4	5.8	5.7
Korea	73.9	71.3	73.1	73.5	74.9	75.0	76.2	77.0	76.9	76.9	77.7	77.9	3.0	7.4	4.9	4.4	3.6	3.7
Luxembourg	76.4|	74.4	75.0	74.9	75.5	. .	77.4|	75.7	76.4	76.1	77.0	. .	1.2|	1.7	1.8	1.6	1.9	. .
Mexico[d]	84.1	84.6	84.0	83.4	82.6	82.0	86.4	86.2	85.8	85.2	84.7	84.2	2.6	1.9	2.1	2.1	2.5	2.6
Netherlands	75.2|	80.3	82.1	82.7	82.9	81.2	79.7|	82.6	83.9	84.2	84.8	84.2	5.7|	2.7	2.2	1.8	2.3	3.5
New Zealand	76.1	77.3	78.0	78.9	79.6	79.3	83.0	83.2	83.2	83.4	83.9	83.0	8.3	7.1	6.2	5.5	5.1	4.5
Norway[c]	78.6|	82.1	81.7	81.0	80.2	78.8	83.4|	85.0	84.8	84.0	83.8	82.9	5.8|	3.4	3.6	3.6	4.2	4.9
Poland	. .	63.6|	61.2	59.2	57.0	56.7	. .	72.3|	71.7	71.5	70.8	70.2	. .	12.0|	14.6	17.2	19.5	19.3
Portugal	80.1|	75.6	76.3	76.5	75.7	73.9	82.8|	78.8	79.0	79.2	79.3	78.5	3.3|	4.1	3.3	3.4	4.5	5.9
Slovak Republic	. .	64.3|	62.2	62.1	62.5	63.4	. .	76.9|	76.8	77.4	76.7	76.7	. .	16.3|	19.0	19.8	18.6	17.4
Spain[c]	71.9	70.8	72.7	73.8	73.9	74.5	81.3	79.6	80.4	79.8	80.4	81.1	11.7	11.0	9.6	7.5	8.1	8.2
Sweden[c]	85.2|	74.8	76.1	77.0	76.3	75.6	86.7|	80.9	81.2	81.4	80.9	80.8	1.8|	7.5	6.3	5.4	5.7	6.4
Switzerland[d]	90.0	87.2	87.3	87.6	86.1	84.9	91.1	89.6	89.4	89.2	88.7	88.4	1.2	2.7	2.3	1.7	2.9	3.9
Turkey	76.9	72.7	71.7	69.3	66.9	65.9	83.6	79.0	76.9	76.1	75.1	74.0	8.0	7.9	6.8	9.0	11.0	11.0
United Kingdom[c]	82.1	78.4	79.1	79.3	78.9	79.3	88.3	84.1	84.3	83.8	83.7	83.9	7.1	6.8	6.1	5.3	5.7	5.5
United States[c]	80.7	80.5|	80.6	79.4	78.0	76.9	85.6	84.0|	83.9	83.4	83.0	82.2	5.7	4.1|	3.9	4.9	6.0	6.4
EU-15[e]	74.2|	72.1	73.0	73.4	73.0	73.5	79.6|	78.5	78.6	78.4	78.5	79.2	6.7|	8.1	7.2	6.5	7.0	7.2
EU-19[e]	74.2|	71.1	71.6	71.8	71.3	71.4	79.6|	77.7	77.8	77.6	77.6	78.0	6.7|	8.5	7.9	7.5	8.1	8.4
OECD Europe[e]	74.9|	71.7|	71.9	71.8	71.0	70.9	80.3|	78.1|	77.9	77.6	77.5	77.6	6.7|	8.3|	7.7	7.6	8.3	8.6
Total OECD[e]	78.2|	76.1|	76.4	75.9	75.2	74.7	82.6|	81.2|	81.0	80.7	80.5	80.2	5.4|	6.3|	5.8	6.0	6.7	6.9

Table B. **Employment/population ratios, activity and unemployment rates**[a] *(cont.)*

Women aged 15-64 years (percentages)

	Employment/population ratio						Labour force participation rate						Unemployment rate					
	1990	1999	2000	2001	2002	2003	1990	1999	2000	2001	2002	2003	1990	1999	2000	2001	2002	2003
Australia	57.1	59.4	61.8	61.6	62.1	62.2	61.5	63.5	65.4	65.8	66.0	66.1	7.2	6.4	5.5	6.4	5.9	5.9
Austria	. .	59.7	59.7	59.8	61.1	61.2	. .	62.7	62.5	62.3	64.0	63.9	. .	4.8	4.6	4.1	4.6	4.3
Belgium	40.8|	50.2	51.9	50.7	51.1	51.4	46.1|	56.0	56.6	54.5	55.4	55.8	11.5|	10.3	8.3	6.9	7.8	8.0
Canada	62.7	64.7	65.8	66.0	66.8	67.7	68.3	69.8	70.5	70.8	71.9	73.0	8.1	7.3	6.7	6.8	7.2	7.3
Czech Republic	. .	57.4	56.9	57.0	57.1	56.3	. .	64.1	63.7	63.2	62.8	62.5	. .	10.5	10.6	9.9	9.1	9.9
Denmark	70.6|	71.6	72.1	71.4	72.6	70.5	77.6|	76.1	75.9	75.0	75.9	74.8	9.0|	5.9	5.0	4.8	4.4	5.8
Finland	71.5	63.5	64.5	65.4	66.1	65.7	73.5	71.2	72.1	72.5	72.7	72.1	2.7	10.8	10.6	9.7	9.1	8.9
France[b]	50.3	53.0	54.3	55.2	55.8	56.0	57.2	61.4	61.7	61.8	62.1	62.5	12.1	13.6	11.9	10.8	10.1	10.4
Germany	52.2|	57.4	58.1	58.7	58.8	58.7	55.5|	63.0	63.3	63.8	64.2	64.5	6.0|	8.9	8.1	8.0	8.4	8.9
Greece	37.5|	40.7	41.3	41.2	42.7	44.0	42.6|	49.7	49.7	48.8	50.2	51.0	12.0|	18.2	16.9	15.6	14.9	13.8
Hungary	. .	49.0|	49.6	49.8	49.8	50.9	. .	52.3|	52.6	52.4	52.7	53.9	. .	6.3|	5.7	5.0	5.4	5.6
Iceland[c, d]	74.5	80.2	81.0	81.1	79.8	. .	76.8	82.3	83.3	83.1	82.2	. .	3.0	2.5	2.8	2.5	2.9	. .
Ireland	36.6|	51.3	53.3	54.0	55.2	55.4	42.6|	54.3	55.7	56.0	57.3	57.6	14.0|	5.5	4.2	3.5	3.7	3.9
Italy	36.2	38.3	39.6	41.1	42.0	42.7	44.0	45.5	46.3	47.3	47.9	48.3	17.7	15.8	14.6	13.1	12.3	11.7
Japan	55.8	56.7	56.7	57.0	56.5	56.8	57.1	59.5	59.6	60.1	59.7	59.9	2.3	4.7	4.7	5.1	5.4	5.1
Korea	49.0	48.1	50.1	51.0	52.0	51.1	49.9	50.8	51.8	52.7	53.4	52.8	1.9	5.3	3.5	3.2	2.7	3.3
Luxembourg	41.4|	48.5	50.0	50.8	51.5	. .	42.4|	50.2	51.7	52.0	53.5	. .	2.5|	3.3	3.2	2.2	3.6	. .
Mexico[d]	34.2	39.8	40.1	39.4	39.9	39.4	35.7	40.9	41.2	40.4	41.0	40.5	4.3	2.7	2.5	2.4	2.5	2.7
Netherlands	46.7|	61.3	63.4	65.3	65.9	65.8	52.4|	64.4	65.7	66.9	67.9	68.4	10.9|	4.9	3.5	2.5	2.9	3.8
New Zealand	58.5	63.0	63.5	64.8	65.4	65.8	63.2	67.4	67.5	68.5	69.1	69.3	7.3	6.6	5.9	5.3	5.4	5.1
Norway[c]	67.2|	73.8	74.0	73.8	73.9	72.9	70.7|	76.1	76.5	76.4	76.7	75.9	4.9|	3.0	3.2	3.4	3.7	4.0
Poland	. .	51.6|	48.9	47.8	46.4	46.2	. .	59.8|	59.9	59.9	58.9	58.4	. .	13.8|	18.4	20.2	21.2	20.8
Portugal	55.4|	59.5	60.5	61.0	60.8	60.6	59.6|	62.9	63.8	64.5	65.0	65.6	7.0|	5.3	5.2	5.4	6.5	7.7
Slovak Republic	. .	52.1|	51.5	51.8	51.4	52.2	. .	62.3|	63.2	63.8	63.2	63.5	. .	16.4|	18.6	18.8	18.7	17.8
Spain[c]	31.8	39.1	42.0	43.8	44.9	46.8	42.2	50.9	52.9	51.6	53.7	55.7	24.7	23.2	20.6	15.3	16.4	16.0
Sweden[c]	81.0|	70.9	72.2	73.5	73.4	72.8	82.5|	76.0	76.4	77.1	77.1	76.9	1.8|	6.7	5.4	4.7	4.7	5.3
Switzerland[d]	66.4	69.6	69.3	70.6	71.6	70.6	68.2	72.2	71.6	73.2	73.9	73.9	2.6	3.6	3.2	3.5	3.1	4.5
Turkey	32.9	28.9	26.2	26.3	26.6	25.2	36.0	31.4	28.0	28.5	29.5	28.1	8.7	7.9	6.5	7.8	9.8	10.5
United Kingdom[c]	62.8	64.9	65.5	66.1	66.3	66.4	67.3	68.4	68.9	69.0	69.3	69.2	6.6	5.1	4.8	4.2	4.4	4.1
United States[c]	64.0	67.6|	67.8	67.1	66.1	65.7	67.8	70.7|	70.7	70.4	70.1	69.7	5.6	4.4|	4.1	4.7	5.7	5.7
EU-15[e]	48.6|	53.0	54.2	55.1	55.7	56.1	54.5|	59.5	60.1	60.3	61.0	61.3	10.9|	10.9	9.8	8.6	8.7	8.6
EU-19[e]	48.6|	52.9	53.7	54.3	54.7	54.9	54.5|	59.5	60.1	60.2	60.7	60.9	10.9|	11.1	10.6	9.7	9.9	9.9
OECD Europe[e]	47.1|	50.4|	50.6	51.2	51.5	50.9	52.6|	56.4|	56.4	56.5	57.1	56.4	10.4|	10.7|	10.2	9.4	9.7	9.7
Total OECD[e]	52.5|	54.9|	55.3	55.4	55.4	55.3	56.4|	59.3|	59.4	59.4	59.6	59.6	7.0|	7.3|	6.9	6.7	7.1	7.2

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) Provisional estimates based on changes between 2002 and 2003 in the ratios derived from the European Labour Force Survey.
c) Refers to persons aged 16 to 64.
d) The year 1990 refers to 1991.
e) For above countries only.

Source: OECD database on Labour Force Statistics (see URLs at the beginning of the Annex). For Austria, Belgium, Denmark, Greece, Luxembourg and the Netherlands, data are from the European Union Labour Force Survey.

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Table C. **Employment/population ratios, activity and unemployment rates by selected age groups**

Both sexes (percentages)

		15 to 24					25 to 54					55 to 64				
		1990	2000	2001	2002	2003	1990	2000	2001	2002	2003	1990	2000	2001	2002	2003
Australia	Unemployment rates	13.2	11.8	12.9	12.7	11.6	5.1	4.7	5.3	4.8	4.5	5.4	3.9	4.8	3.7	3.9
	Labour force participation rates	70.4	68.5	69.0	68.2	67.7	79.9	80.4	80.6	80.9	80.6	44.1	48.8	48.6	50.0	52.2
	Employment/population ratios	61.1	60.4	60.1	59.6	59.9	75.8	76.6	76.3	77.1	76.9	41.8	46.9	46.3	48.2	50.1
Austria	Unemployment rates	. .	6.3	6.0	7.2	7.5	. .	4.3	3.6	4.5	4.2	. .	6.7	5.6	5.8	6.2
	Labour force participation rates	. .	56.1	54.7	55.7	54.8	. .	85.3	85.2	86.6	87.0	. .	31.4	29.0	29.8	30.8
	Employment/population ratios	. .	52.5	51.4	51.7	50.7	. .	81.6	82.2	82.7	83.4	. .	29.2	27.4	28.1	28.9
Belgium	Unemployment rates	14.5|	15.2	15.3	15.7	19.0	6.5|	5.8	5.4	6.2	7.0	3.6|	3.2	3.0	3.5	1.7
	Labour force participation rates	35.5|	35.7	33.6	33.8	33.5	76.7|	82.8	80.9	81.7	81.8	22.2|	25.9	26.0	26.7	28.5
	Employment/population ratios	30.4|	30.3	28.5	28.5	27.1	71.7|	77.9	76.6	76.6	76.1	21.4|	25.0	25.2	25.8	28.1
Canada	Unemployment rates	12.4	12.6	12.8	13.7	13.8	7.3	5.8	6.2	6.6	6.5	6.0	5.4	5.9	6.2	6.3
	Labour force participation rates	69.7	64.4	64.7	66.3	67.0	84.2	84.8	85.1	85.9	86.3	49.3	51.2	51.3	53.7	56.6
	Employment/population ratios	61.1	56.3	56.4	57.3	57.8	78.0	79.9	79.8	80.2	80.6	46.3	48.4	48.3	50.4	53.0
Czech Republic	Unemployment rates	. .	17.0	16.6	16.0	17.6	. .	7.7	7.2	6.5	7.0	. .	5.2	4.9	4.0	4.4
	Labour force participation rates	. .	46.1	43.2	40.1	38.1	. .	88.4	88.4	88.2	87.8	. .	38.2	39.0	42.5	44.2
	Employment/population ratios	. .	38.3	36.1	33.7	31.4	. .	81.6	82.1	82.5	81.7	. .	36.3	37.1	40.8	42.3
Denmark	Unemployment rates	11.5|	6.7	8.3	7.1	9.8	7.9|	4.1	3.5	3.7	5.0	6.1|	4.0	4.0	4.7	3.9
	Labour force participation rates	73.5|	71.9	67.2	68.8	65.9	91.2|	87.9	87.5	88.0	87.8	57.1|	56.9	58.9	60.1	63.1
	Employment/population ratios	65.0|	67.1	61.7	64.0	59.4	84.0|	84.3	84.5	84.7	83.5	53.6|	54.6	56.5	57.3	60.7
Finland	Unemployment rates	9.4	21.5	19.9	20.7	21.6	2.1	8.0	7.4	7.3	7.3	2.3	9.4	8.9	8.1	7.7
	Labour force participation rates	57.5	50.8	50.4	49.6	49.1	89.7	87.9	88.0	88.1	87.5	43.8	46.6	50.3	52.0	54.1
	Employment/population ratios	52.2	39.8	40.3	39.4	38.5	87.9	80.9	81.5	81.6	81.1	42.8	42.3	45.9	47.8	49.9
France	Unemployment rates	19.1	20.7	18.7	20.2	. .	8.0	9.2	8.1	8.1	. .	6.7	7.9	6.1	5.8	. .
	Labour force participation rates	36.4	29.3	29.9	30.2	. .	84.1	86.2	86.3	86.4	. .	38.1	37.3	38.8	41.7	. .
	Employment/population ratios	29.5	23.2	24.3	24.1	. .	77.4	78.3	79.3	79.4	. .	35.6	34.3	36.5	39.3	. .
Germany	Unemployment rates	4.5|	8.4	8.3	9.8	10.6	4.6|	7.0	7.3	8.1	9.1	7.7|	12.3	11.7	10.8	9.7
	Labour force participation rates	59.1|	51.5	51.3	49.7	47.4	77.1|	85.3	85.5	85.8	86.0	39.8|	42.9	42.9	43.3	43.1
	Employment/population ratios	56.4|	47.2	47.0	44.8	42.4	73.6|	79.3	79.3	78.8	78.2	36.8|	37.6	37.9	38.6	39.0
Greece	Unemployment rates	23.3|	29.5	28.0	25.7	25.1	5.1|	9.6	8.8	8.6	8.0	1.6|	3.8	4.1	3.6	3.0
	Labour force participation rates	39.4|	38.1	36.2	36.3	35.1	72.2|	77.6	77.2	78.2	78.9	41.5|	40.6	39.6	40.7	43.2
	Employment/population ratios	30.3|	26.9	26.0	27.0	26.3	68.5|	70.2	70.4	71.5	72.6	40.8|	39.0	38.0	39.2	41.9
Hungary	Unemployment rates	. .	12.7	11.2	12.6	13.4	. .	5.7	5.1	5.2	5.3	. .	3.0	2.9	3.1	2.8
	Labour force participation rates	. .	37.2	34.6	32.6	30.8	. .	77.3	77.1	77.0	77.8	. .	22.6	24.2	26.4	29.8
	Employment/population ratios	. .	32.5	30.7	28.5	26.7	. .	73.0	73.1	73.0	73.7	. .	21.9	23.5	25.6	29.0

Table C. **Employment/population ratios, activity and unemployment rates by selected age groups** *(cont.)*

Both sexes (percentages)

		15 to 24					25 to 54					55 to 64				
		1990	2000	2001	2002	2003	1990	2000	2001	2002	2003	1990	2000	2001	2002	2003
Iceland[a, b]	Unemployment rates	4.9	4.7	4.8	7.2	. .	2.2	1.7	1.7	2.7	. .	2.1	1.7	2.0	1.4	. .
	Labour force participation rates	59.5	71.6	70.2	64.0	. .	90.1	92.2	92.3	92.5	. .	87.2	85.7	87.3	88.4	. .
	Employment/population ratios	56.6	68.2	66.8	59.4	. .	88.1	90.6	90.7	90.0	. .	85.4	84.2	85.6	87.2	. .
Ireland	Unemployment rates	17.7|	6.4	6.2	7.7	7.6	12.5|	4.0	3.2	3.7	3.9	8.4|	2.5	2.6	2.4	2.4
	Labour force participation rates	50.3|	51.6	50.1	49.1	49.6	68.5|	78.5	78.9	79.5	79.1	42.1|	46.3	47.9	49.2	50.5
	Employment/population ratios	41.4|	48.2	47.0	45.3	45.8	60.0|	75.3	76.4	76.6	76.0	38.6|	45.2	46.6	48.0	49.3
Italy	Unemployment rates	31.5	29.7	27.0	26.3	26.3	7.7	8.5	7.9	7.5	7.2	2.3	4.5	4.3	4.1	3.8
	Labour force participation rates	43.5	39.5	37.6	36.3	35.3	73.9	74.3	75.1	75.8	76.3	33.4	29.0	29.2	30.1	31.5
	Employment/population ratios	29.8	27.8	27.4	26.7	26.0	68.2	68.0	69.2	70.1	70.8	32.6	27.7	28.0	28.9	30.3
Japan	Unemployment rates	4.3	9.2	9.7	10.0	10.2	1.6	4.1	4.4	4.9	4.7	2.7	5.6	5.7	5.8	5.5
	Labour force participation rates	44.1	47.0	46.5	45.6	44.8	80.9	81.9	82.2	82.0	82.1	64.7	66.5	65.8	65.4	65.8
	Employment/population ratios	42.2	42.7	42.0	41.0	40.3	79.6	78.6	78.6	78.0	78.3	62.9	62.8	62.0	61.6	62.1
Korea	Unemployment rates	7.0	10.2	9.7	8.1	9.6	1.9	3.7	3.4	2.8	3.0	0.8	2.6	2.1	1.6	1.9
	Labour force participation rates	35.0	32.8	33.3	34.2	34.0	74.6	75.0	75.1	75.5	75.3	62.4	59.4	59.5	60.4	58.9
	Employment/population ratios	32.5	29.4	30.1	31.5	30.8	73.2	72.2	72.6	73.4	73.1	61.9	57.8	58.3	59.5	57.8
Luxembourg	Unemployment rates	3.6|	6.4	6.3	7.0	. .	1.4|	2.0	1.4	2.4	. .	0.6|	1.4	0.3	0.2	. .
	Labour force participation rates	44.9|	34.0	34.5	34.7	. .	72.8|	79.8	79.8	81.0	. .	28.4|	27.6	24.9	27.9	. .
	Employment/population ratios	43.3|	31.8	32.3	32.3	. .	71.8|	78.2	78.7	79.1	. .	28.2|	27.2	24.8	27.9	. .
Mexico[b]	Unemployment rates	5.4	4.4	4.1	4.9	5.3	2.2	1.5	1.6	1.8	1.9	1.0	1.2	1.0	1.3	1.0
	Labour force participation rates	52.2	51.8	49.7	48.4	47.2	65.9	69.3	68.9	69.6	69.5	54.6	53.5	52.6	53.8	54.4
	Employment/population ratios	49.3	49.6	47.7	46.0	44.7	64.4	68.3	67.8	68.4	68.1	54.1	52.8	52.1	53.1	53.8
Netherlands	Unemployment rates	11.1|	5.3	4.4	4.6	6.6	7.2|	2.3	1.7	2.2	3.1	3.8|	1.9	1.5	2.1	2.2
	Labour force participation rates	59.6|	72.2	73.6	73.9	73.2	76.0|	83.6	84.2	84.7	85.1	30.9|	38.6	39.9	42.9	45.9
	Employment/population ratios	53.0|	68.4	70.4	70.5	68.4	70.6|	81.7	82.8	82.9	82.4	29.7|	37.9	39.3	42.0	44.9
New Zealand	Unemployment rates	14.1	13.2	11.8	11.4	10.2	6.1	4.5	4.1	4.0	3.5	4.6	4.7	3.5	3.2	3.6
	Labour force participation rates	67.9	63.0	63.5	64.2	63.0	81.2	82.3	82.7	83.0	82.8	43.8	60.0	62.9	65.5	66.8
	Employment/population ratios	58.3	54.7	56.0	56.8	56.6	76.3	78.6	79.3	79.7	79.8	41.8	57.2	60.7	63.4	64.4
Norway[a]	Unemployment rates	11.8|	10.2	10.5	11.5	11.7	4.3|	2.6	2.6	3.0	3.8	2.5|	1.3	1.6	1.8	1.4
	Labour force participation rates	60.5|	64.7	63.1	64.2	62.6	85.9|	87.6	87.4	87.1	86.3	63.1|	68.0	68.5	69.7	69.7
	Employment/population ratios	53.4|	58.1	56.5	56.9	55.3	82.2|	85.3	85.1	84.4	83.0	61.5|	67.1	67.4	68.4	68.8
Poland	Unemployment rates	. .	35.2	41.0	43.9	43.0	. .	13.9	15.8	17.5	17.3	. .	9.4	9.7	10.5	11.2
	Labour force participation rates	. .	37.8	37.4	35.6	34.4	. .	82.4	82.2	81.8	81.7	. .	31.3	32.1	31.2	32.2
	Employment/population ratios	. .	24.5	22.1	20.0	19.6	. .	70.9	69.3	67.5	67.6	. .	28.4	29.0	27.9	28.6

Table C. **Employment/population ratios, activity and unemployment rates by selected age groups** *(cont.)*

Both sexes (percentages)

		15 to 24					25 to 54					55 to 64				
		1990	2000	2001	2002	2003	1990	2000	2001	2002	2003	1990	2000	2001	2002	2003
Portugal	Unemployment rates	9.6	8.6	9.4	11.5	14.6	3.8	3.5	3.5	4.5	5.7	2.1	3.3	3.2	3.7	4.3
	Labour force participation rates	60.6	46.0	47.1	47.3	45.0	81.5	84.7	85.2	85.4	85.9	48.0	52.5	51.7	52.9	53.4
	Employment/population ratios	54.8	42.0	42.7	41.9	38.4	78.4	81.8	82.2	81.5	81.0	47.0	50.8	50.0	50.9	51.1
Slovak Republic	Unemployment rates	. .	37.0	39.1	37.4	33.1	. .	15.5	15.9	15.3	15.1	. .	12.3	12.3	15.3	13.6
	Labour force participation rates	. .	46.0	45.8	43.5	41.2	. .	88.4	88.9	88.6	89.5	. .	24.3	25.4	27.0	28.5
	Employment/population ratios	. .	29.0	27.9	27.2	27.6	. .	74.7	74.8	75.1	76.0	. .	21.3	22.3	22.9	24.6
Spain[a]	Unemployment rates	30.2	25.3	20.8	22.2	22.7	13.1	12.3	9.3	10.2	10.2	8.0	9.4	6.3	7.1	6.9
	Labour force participation rates	54.9	48.5	46.8	47.0	47.6	70.7	78.0	76.5	78.1	79.4	40.1	40.9	41.9	42.7	43.8
	Employment/population ratios	38.3	36.3	37.1	36.6	36.8	61.4	68.4	69.5	70.1	71.3	36.9	37.0	39.2	39.7	40.8
Sweden[a]	Unemployment rates	4.5	11.9	11.8	12.8	13.8	1.3	4.9	4.1	4.2	4.9	1.5	6.1	4.9	4.7	4.8
	Labour force participation rates	69.1	52.3	54.3	53.3	52.3	92.8	88.1	88.2	87.9	87.8	70.5	69.4	70.4	71.7	72.5
	Employment/population ratios	66.0	46.1	47.9	46.5	45.0	91.6	83.8	84.6	84.2	83.5	69.4	65.1	67.0	68.3	69.0
Switzerland[b]	Unemployment rates	3.2	4.8	5.6	5.7	8.6	1.6	2.3	2.1	2.7	3.6	1.1	2.7	1.7	2.0	2.5
	Labour force participation rates	71.6	68.3	67.8	69.2	69.2	85.9	87.4	87.9	88.4	87.9	63.8	65.1	68.2	66.1	67.3
	Employment/population ratios	69.3	65.0	64.0	65.3	63.2	84.5	85.4	86.1	86.0	84.8	63.1	63.3	67.1	64.8	65.6
Turkey	Unemployment rates	16.0	13.1	16.2	19.2	20.5	5.4	4.9	6.7	8.7	8.7	3.1	2.1	2.3	3.5	3.7
	Labour force participation rates	54.7	42.5	42.1	40.9	38.4	65.1	59.6	59.5	59.8	59.1	44.1	37.2	36.8	36.6	34.0
	Employment/population ratios	45.9	37.0	35.3	33.0	30.5	61.6	56.7	55.5	54.6	54.0	42.7	36.4	35.9	35.3	32.7
United Kingdom[a]	Unemployment rates	10.1	11.8	10.5	11.0	11.5	5.8	4.4	3.9	4.1	3.8	7.2	4.4	3.3	3.5	3.3
	Labour force participation rates	78.0	69.7	68.2	68.6	67.6	83.9	84.1	83.9	84.0	84.1	53.0	52.8	54.0	55.2	57.5
	Employment/population ratios	70.1	61.5	61.1	61.0	59.8	79.1	80.4	80.7	80.6	80.9	49.2	50.5	52.2	53.3	55.5
United States[a]	Unemployment rates	11.2	9.3	10.6	12.0	12.4	4.6	3.1	3.8	4.8	5.0	3.3	2.5	3.0	3.9	4.1
	Labour force participation rates	67.3	65.8	64.5	63.3	61.6	83.5	84.0	83.7	83.3	83.0	55.9	59.2	60.4	61.9	62.4
	Employment/population ratios	59.8	59.7	57.7	55.7	53.9	79.7	81.5	80.5	79.3	78.8	54.0	57.8	58.6	59.5	59.9
EU-15[c]	Unemployment rates	16.2	15.6	14.0	14.7	14.7	6.8	7.3	6.5	6.9	7.0	5.7	7.5	6.4	6.2	5.7
	Labour force participation rates	53.8	48.4	47.7	47.4	50.0	78.8	82.4	82.4	82.9	82.6	40.9	41.4	42.0	43.3	44.9
	Employment/population ratios	45.1	40.8	41.0	40.5	42.6	73.4	76.5	77.1	77.1	76.9	38.5	38.3	39.3	40.6	42.3
EU-19[c]	Unemployment rates	16.2	17.6	16.8	17.5	17.7	6.8	7.9	7.4	7.9	8.1	5.7	7.5	6.5	6.4	6.0
	Labour force participation rates	53.8	46.9	46.1	45.5	47.0	78.8	82.5	82.5	82.8	82.7	40.9	40.0	40.7	41.9	43.2
	Employment/population ratios	45.1	38.6	38.4	37.6	38.7	73.4	76.0	76.4	76.3	76.0	38.5	37.0	38.0	39.2	40.7
OECD Europe[c]	Unemployment rates	15.9	16.6	16.4	17.5	17.9	6.6	7.5	7.2	7.8	8.0	5.3	6.9	6.1	6.0	5.7
	Labour force participation rates	54.3	46.5	45.8	45.1	45.6	77.4	80.0	79.9	80.1	79.4	41.8	40.4	41.1	42.1	43.1
	Employment/population ratios	45.7	38.8	38.2	37.2	37.5	72.3	74.0	74.1	73.8	73.0	39.6	37.6	38.6	39.6	40.7
Total OECD[c]	Unemployment rates	11.7	11.8	12.2	13.1	13.3	4.8	5.3	5.4	6.0	6.0	3.8	4.9	4.7	4.9	4.7
	Labour force participation rates	55.4	51.8	51.1	50.4	50.3	78.9	80.4	80.2	80.3	79.9	50.4	50.4	50.9	52.0	53.4
	Employment/population ratios	48.9	45.7	44.9	43.8	43.6	75.1	76.1	75.9	75.5	75.1	48.4	47.9	48.5	49.4	50.8

Table C. **Employment/population ratios, activity and unemployment rates by selected age groups** *(cont.)*

Men (percentages)

		15 to 24					25 to 54					55 to 64				
		1990	2000	2001	2002	2003	1990	2000	2001	2002	2003	1990	2000	2001	2002	2003
Australia	Unemployment rates	13.9	12.6	13.6	13.6	12.0	4.9	5.1	5.6	4.8	4.4	6.3	4.8	5.6	4.8	4.1
	Labour force participation rates	73.0	69.2	70.6	69.6	69.0	93.1	90.3	90.0	90.1	89.3	63.2	61.2	59.9	61.0	63.3
	Employment/population ratios	62.8	60.5	61.0	60.2	60.8	88.5	85.7	85.0	85.8	85.4	59.2	58.3	56.6	58.1	60.7
Austria	Unemployment rates	. .	6.9	6.2	7.8	8.1	. .	4.2	3.4	4.7	4.4	. .	7.1	5.7	6.8	7.3
	Labour force participation rates	. .	60.7	59.3	60.6	59.7	. .	93.6	93.5	93.9	94.3	. .	44.5	40.2	40.8	42.3
	Employment/population ratios	. .	56.5	55.6	55.9	54.9	. .	89.7	90.3	89.5	90.1	. .	41.4	37.9	38.1	39.2
Belgium	Unemployment rates	10.1|	12.9	14.3	16.0	20.1	4.0|	4.6	4.8	5.4	6.6	3.1|	3.4	3.9	3.3	1.8
	Labour force participation rates	37.0|	38.7	37.2	37.3	38.1	92.2|	92.1	90.9	91.2	90.4	35.4|	36.3	36.6	36.3	39.4
	Employment/population ratios	33.3|	33.7	31.8	31.3	30.4	88.5|	87.9	86.5	86.2	84.4	34.3|	35.1	35.1	35.1	38.7
Canada	Unemployment rates	13.6	13.9	14.5	15.3	15.6	7.2	5.7	6.3	6.9	6.6	6.2	5.4	6.0	6.5	6.8
	Labour force participation rates	72.2	65.9	66.1	67.7	68.0	93.1	91.1	91.1	91.5	91.6	64.3	61.0	61.2	64.0	65.9
	Employment/population ratios	62.3	56.7	56.5	57.3	57.4	86.4	85.9	85.4	85.3	85.6	60.3	57.7	57.6	59.8	61.4
Czech Republic	Unemployment rates	. .	16.7	16.0	15.1	16.6	. .	6.0	5.5	4.9	5.0	. .	5.0	4.4	3.5	4.0
	Labour force participation rates	. .	51.3	48.2	44.8	42.1	. .	94.9	95.0	94.9	94.5	. .	54.5	55.0	59.4	59.9
	Employment/population ratios	. .	42.8	40.5	38.0	35.1	. .	89.3	89.7	90.2	89.7	. .	51.7	52.6	57.3	57.5
Denmark	Unemployment rates	11.4|	6.5	7.3	8.8	10.6	7.5|	3.5	2.9	3.3	4.4	5.1|	3.9	4.0	5.0	4.0
	Labour force participation rates	76.5|	75.2	69.4	70.6	68.1	94.5|	91.5	91.4	91.7	92.0	69.1|	64.5	65.6	67.6	70.8
	Employment/population ratios	67.8|	70.3	64.3	64.4	60.9	87.4|	88.3	88.8	88.7	88.0	65.6|	61.9	63.0	64.2	68.0
Finland	Unemployment rates	10.4	21.2	19.6	20.9	21.7	2.5	7.2	6.9	7.4	7.5	1.8	9.3	8.9	8.2	7.9
	Labour force participation rates	58.1	50.4	50.0	48.8	48.5	92.9	90.7	91.0	90.6	90.1	47.1	48.1	51.2	52.6	55.8
	Employment/population ratios	52.1	39.8	40.2	38.6	38.0	90.6	84.1	84.7	84.0	83.3	46.3	43.7	46.7	48.3	51.4
France	Unemployment rates	15.3	18.4	16.2	18.2	. .	5.9	7.5	6.3	7.0	. .	6.0	7.6	5.6	6.0	. .
	Labour force participation rates	39.6	32.6	33.1	33.8	. .	95.4	94.2	94.1	93.9	. .	45.8	41.7	43.8	47.0	. .
	Employment/population ratios	33.6	26.6	27.8	27.6	. .	89.8	87.1	88.1	87.4	. .	43.0	38.5	41.4	44.2	. .
Germany	Unemployment rates	4.0|	9.2	9.3	11.4	12.3	3.7|	6.6	7.1	8.2	9.4	7.0|	11.5	11.1	10.3	9.4
	Labour force participation rates	61.2|	54.7	54.3	52.3	49.9	90.2|	93.4	93.5	93.3	93.0	55.9|	52.4	52.2	52.6	52.0
	Employment/population ratios	58.7|	49.7	49.3	46.4	43.8	86.9|	87.2	86.9	85.6	84.2	52.0|	46.4	46.4	47.2	47.1
Greece	Unemployment rates	15.1|	22.1	21.0	18.7	17.8	3.2|	6.1	5.5	5.4	5.0	1.8|	3.5	4.1	3.3	2.8
	Labour force participation rates	44.1|	41.0	38.5	39.4	38.7	94.3|	94.3	94.0	94.1	94.1	59.5|	57.3	57.0	57.0	60.7
	Employment/population ratios	37.4|	31.9	30.4	32.0	31.8	91.3|	88.6	88.8	89.0	89.4	58.4|	55.3	54.6	55.1	59.0
Hungary	Unemployment rates	. .	13.8	12.2	13.2	13.8	. .	6.2	5.7	5.4	5.5	. .	3.7	3.7	3.9	2.9
	Labour force participation rates	. .	41.8	39.2	36.0	34.4	. .	84.4	84.2	84.3	84.8	. .	34.1	35.4	36.9	39.0
	Employment/population ratios	. .	36.0	34.4	31.2	29.7	. .	79.2	79.4	79.7	80.1	. .	32.8	34.1	35.4	37.9

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Table C. **Employment/population ratios, activity and unemployment rates by selected age groups** *(cont.)*

Men (percentages)

		15 to 24					25 to 54					55 to 64				
		1990	2000	2001	2002	2003	1990	2000	2001	2002	2003	1990	2000	2001	2002	2003
Iceland[a, b]	Unemployment rates	5.8	5.7	5.4	9.7	. .	1.8	1.1	1.3	2.5	. .	1.0	0.5	2.0	1.7	. .
	Labour force participation rates	60.1	70.1	70.3	65.4	. .	97.0	96.1	96.3	96.6	. .	93.5	94.7	92.8	91.5	. .
	Employment/population ratios	56.6	66.1	66.6	59.0	. .	95.2	95.1	95.0	94.2	. .	92.6	94.2	91.0	89.9	. .
Ireland	Unemployment rates	19.0|	6.1	6.4	8.7	8.6	12.0|	4.3	3.4	4.1	4.4	8.5|	2.6	2.6	2.5	2.6
	Labour force participation rates	53.2|	56.1	55.1	53.1	53.4	91.8|	92.0	91.8	91.3	90.9	65.0|	64.7	66.4	66.8	66.5
	Employment/population ratios	43.1|	52.7	51.5	48.5	48.8	80.9|	88.1	88.7	87.6	87.0	59.5|	63.0	64.6	65.1	64.8
Italy	Unemployment rates	26.2	25.4	23.2	22.6	23.0	4.8	6.3	5.8	5.6	5.4	2.2	4.4	4.4	4.0	3.6
	Labour force participation rates	46.1	44.6	42.4	41.4	40.5	94.1	90.6	90.7	91.0	91.5	53.0	42.7	42.3	42.9	44.4
	Employment/population ratios	34.0	33.2	32.6	32.0	31.2	89.6	84.9	85.5	86.0	86.5	51.9	40.9	40.4	41.2	42.8
Japan	Unemployment rates	4.5	10.4	10.7	11.3	11.6	1.4	3.9	4.2	4.7	4.6	3.4	6.8	7.0	7.1	6.7
	Labour force participation rates	43.4	47.4	46.5	46.2	45.2	97.5	97.1	96.9	96.5	96.4	83.3	84.1	83.4	82.8	83.0
	Employment/population ratios	41.4	42.5	41.6	41.0	40.0	96.2	93.4	92.8	92.0	92.0	80.4	78.4	77.5	76.8	77.4
Korea	Unemployment rates	9.5	12.7	12.1	9.9	11.3	2.5	4.3	4.0	3.3	3.3	1.2	3.6	2.9	2.1	2.4
	Labour force participation rates	28.4	28.2	27.6	28.4	28.0	94.6	92.0	91.6	91.7	91.9	77.2	71.0	71.7	73.7	72.6
	Employment/population ratios	25.7	24.6	24.3	25.6	24.8	92.2	88.0	87.9	88.7	88.9	76.3	68.5	69.6	72.1	70.8
Luxembourg	Unemployment rates	2.7|	5.7	7.1	5.3	. .	1.0|	1.4	1.1	1.8	. .	0.6|	2.0	0.5	0.3	. .
	Labour force participation rates	45.7|	37.4	36.8	38.2	. .	95.0|	94.2	94.2	95.0	. .	43.2|	38.6	35.5	37.7	. .
	Employment/population ratios	44.5|	35.3	34.2	36.1	. .	94.0|	92.8	93.2	93.3	. .	42.9|	37.9	35.3	37.6	. .
Mexico[b]	Unemployment rates	5.2	4.2	3.6	4.5	4.9	1.5	1.4	1.6	1.8	2.0	1.0	1.4	1.2	1.7	1.2
	Labour force participation rates	71.2	68.4	66.2	64.4	63.0	96.8	96.3	96.2	96.2	96.2	85.9	80.8	80.4	81.1	81.0
	Employment/population ratios	67.5	65.6	63.8	61.5	59.9	95.4	95.0	94.6	94.5	94.3	85.1	79.7	79.5	79.7	80.0
Netherlands	Unemployment rates	10.3|	4.7	4.2	4.3	6.7	4.9|	1.7	1.4	1.9	3.0	2.8|	1.7	1.7	2.3	2.2
	Labour force participation rates	60.0|	73.4	74.7	75.1	73.7	93.4|	93.8	94.0	93.8	93.6	45.8|	50.8	51.4	56.2	58.7
	Employment/population ratios	53.8|	69.9	71.5	71.8	68.7	88.8|	92.2	92.7	92.0	90.7	44.5|	49.9	50.5	54.9	57.4
New Zealand	Unemployment rates	14.9	14.1	12.1	11.5	10.1	6.6	4.4	4.0	3.8	3.2	5.0	5.4	4.0	3.2	3.4
	Labour force participation rates	71.4	65.9	66.5	67.1	65.7	93.4	91.4	91.3	91.4	91.0	56.8	72.2	74.3	77.3	76.2
	Employment/population ratios	60.7	56.6	58.5	59.4	59.1	87.3	87.3	87.6	88.0	88.1	53.9	68.3	71.3	74.9	73.6
Norway[a]	Unemployment rates	12.4|	9.5	10.6	12.4	12.7	4.7|	2.9	2.7	3.2	4.3	3.0|	1.8	1.7	1.6	1.6
	Labour force participation rates	63.9|	67.5	64.8	64.7	63.2	92.3|	91.4	91.4	91.0	90.0	72.8|	74.4	73.6	74.0	74.7
	Employment/population ratios	56.0|	61.0	57.9	56.6	55.2	88.0|	88.8	88.9	88.1	86.1	70.7|	73.1	72.3	72.8	73.5
Poland	Unemployment rates	. .	33.3	40.1	43.5	42.1	. .	12.1	14.2	16.5	16.5	. .	9.1	10.4	11.2	12.0
	Labour force participation rates	. .	40.9	40.5	39.1	38.2	. .	88.3	88.0	87.6	87.4	. .	40.4	41.5	40.3	41.8
	Employment/population ratios	. .	27.3	24.2	22.1	22.1	. .	77.6	75.5	73.1	73.0	. .	36.7	37.1	35.8	36.8

Table C. **Employment/population ratios, activity and unemployment rates by selected age groups** *(cont.)*

Men (percentages)

		15 to 24					25 to 54					55 to 64				
		1990	2000	2001	2002	2003	1990	2000	2001	2002	2003	1990	2000	2001	2002	2003
Portugal	Unemployment rates	7.1 |	6.2	7.3	9.7	12.6	2.3 |	2.7	2.7	3.5	4.9	2.2 |	3.7	3.2	3.7	4.8
	Labour force participation rates	66.5 |	50.8	52.1	52.3	48.5	94.3 |	92.5	92.7	92.6	92.5	66.5 |	64.5	63.3	63.5	64.7
	Employment/population ratios	61.8 |	47.7	48.3	47.2	42.4	92.1 |	90.0	90.2	89.4	88.0	65.0 |	62.1	61.3	61.2	61.6
Slovak Republic	Unemployment rates	. .	39.7	41.8	38.9	34.3	. .	15.2	16.0	14.9	14.5	. .	13.5	12.6	15.6	14.7
	Labour force participation rates	. .	49.4	50.2	47.7	45.2	. .	93.9	94.0	93.4	94.1	. .	41.0	43.0	46.3	48.1
	Employment/population ratios	. .	29.8	29.2	29.2	29.7	. .	79.6	79.0	79.5	80.5	. .	35.4	37.6	39.1	41.0
Spain[a]	Unemployment rates	23.2	19.4	16.1	18.4	19.4	9.3	8.0	6.3	6.8	6.9	8.3	8.6	5.6	5.9	5.8
	Labour force participation rates	61.8	53.6	52.7	52.4	53.1	94.4	93.0	91.6	92.1	92.4	62.5	60.5	61.4	62.2	62.9
	Employment/population ratios	47.5	43.2	44.2	42.8	42.8	85.7	85.6	85.9	85.8	86.0	57.3	55.2	57.9	58.6	59.3
Sweden[a]	Unemployment rates	4.5 |	12.3	12.7	13.8	14.8	1.3 |	5.2	4.4	4.5	5.3	1.3 |	6.9	5.3	5.3	5.7
	Labour force participation rates	69.3 |	53.3	54.2	53.0	51.9	94.7 |	90.6	90.6	90.0	90.1	75.4 |	72.8	73.5	74.7	75.5
	Employment/population ratios	66.1 |	46.7	47.3	45.7	44.2	93.5 |	85.8	86.6	85.9	85.3	74.4 |	67.8	69.6	70.7	71.2
Switzerland[b]	Unemployment rates	3.0	5.6	5.7	7.3	8.5	0.8	1.6	1.0	2.2	3.3	1.4	3.0	1.8	2.1	2.4
	Labour force participation rates	72.9	70.5	68.6	70.7	70.3	97.8	96.7	96.3	96.0	95.5	86.4	79.3	82.4	79.0	79.5
	Employment/population ratios	70.7	66.5	64.7	65.5	64.4	97.0	95.2	95.3	93.8	92.3	85.2	77.0	81.0	77.4	77.6
Turkey	Unemployment rates	16.6	13.7	17.2	20.3	21.5	5.2	5.0	7.1	9.0	8.9	4.0	2.9	3.1	4.6	5.0
	Labour force participation rates	71.8	57.6	56.3	53.3	50.6	94.2	89.5	88.7	88.2	87.7	61.3	53.4	52.7	50.8	47.1
	Employment/population ratios	59.9	49.7	46.7	42.4	39.7	89.3	85.0	82.4	80.2	79.9	58.8	51.9	51.1	48.5	44.7
United Kingdom[a]	Unemployment rates	11.1	13.2	12.0	12.9	13.2	5.6	4.8	4.1	4.4	4.2	8.4	5.5	4.3	4.3	4.3
	Labour force participation rates	83.5	73.7	72.0	72.3	71.1	94.8	91.9	91.3	91.2	91.4	68.1	63.3	64.4	65.0	67.9
	Employment/population ratios	74.2	63.9	63.4	63.0	61.7	89.5	87.5	87.6	87.2	87.6	62.4	59.8	61.6	62.1	65.0
United States[a]	Unemployment rates	11.6 |	9.7	11.4	12.8	13.4	4.6 |	2.9	3.7	4.8	5.2	3.8 |	2.4	3.3	4.3	4.5
	Labour force participation rates	71.8 |	68.6	67.0	65.5	63.9	93.4 |	91.6	91.3	91.0	90.6	67.8 |	67.3	68.3	69.2	68.7
	Employment/population ratios	63.5 |	61.9	59.4	57.1	55.3	89.1 |	89.0	87.9	86.6	85.9	65.2 |	65.7	66.0	66.3	65.6
EU-15[c]	Unemployment rates	14.0 |	14.4	13.2	14.4	14.8	5.2 |	6.0	5.5	6.0	6.3	5.7 |	7.3	6.3	6.1	5.7
	Labour force participation rates	57.3 |	52.1	51.4	51.1	53.6	93.6 |	92.7	92.4	92.4	92.2	56.5 |	52.3	52.8	53.9	56.4
	Employment/population ratios	49.3 |	44.6	44.7	43.7	45.7	88.7 |	87.1	87.3	86.8	86.4	53.2 |	48.5	49.4	50.6	53.2
EU-19[c]	Unemployment rates	14.0 |	16.5	16.0	17.2	17.7	5.2 |	6.7	6.3	7.0	7.3	5.7 |	7.3	6.5	6.3	6.1
	Labour force participation rates	57.3 |	50.6	49.8	49.2	50.6	93.6 |	92.2	91.9	91.9	91.6	56.5 |	51.1	51.6	52.7	54.8
	Employment/population ratios	49.3 |	42.3	41.8	40.7	41.6	88.7 |	86.0	86.1	85.5	84.9	53.2 |	47.4	48.2	49.3	51.5
OECD Europe[c]	Unemployment rates	14.2 |	15.7	16.0	17.6	18.2	5.1 |	6.4	6.3	7.1	7.4	5.4 |	6.8	6.1	6.1	5.8
	Labour force participation rates	59.8 |	52.3	51.4	50.3	51.0	93.7 |	91.9	91.6	91.5	91.1	57.6 |	51.9	52.4	53.2	54.8
	Employment/population ratios	51.3 |	44.1	43.1	41.5	41.7	88.9 |	86.1	85.8	85.0	84.3	54.5 |	48.4	49.2	49.9	51.6
Total OECD[c]	Unemployment rates	11.2 |	11.7	12.3	13.5	13.8	4.1 |	4.7	4.9	5.6	5.8	4.2 |	5.2	5.1	5.4	5.2
	Labour force participation rates	60.8 |	57.1	56.1	55.2	55.1	94.4 |	92.7	92.4	92.3	92.0	66.4 |	62.8	63.1	63.9	65.4
	Employment/population ratios	54.0 |	50.4	49.2	47.7	47.5	90.5 |	88.4	87.8	87.1	86.7	63.7 |	59.5	59.8	60.5	62.0

Table C. **Employment/population ratios, activity and unemployment rates by selected age groups** *(cont.)*

Women (percentages)

		15 to 24					25 to 54					55 to 64				
		1990	2000	2001	2002	2003	1990	2000	2001	2002	2003	1990	2000	2001	2002	2003
Australia	Unemployment rates	12.4	11.0	12.2	11.8	11.1	5.5	4.3	5.0	4.8	4.7	3.0	2.3	3.3	1.9	3.5
	Labour force participation rates	67.7	67.8	67.4	66.8	66.3	66.6	70.7	71.4	71.9	72.0	24.9	36.1	37.0	38.8	40.8
	Employment/population ratios	59.3	60.3	59.2	58.9	58.9	62.9	67.7	67.8	68.4	68.6	24.2	35.3	35.7	38.0	39.4
Austria	Unemployment rates	. .	5.6	5.8	6.5	6.8	. .	4.4	3.8	4.3	3.9	. .	5.9	5.2	3.9	4.1
	Labour force participation rates	. .	51.5	50.1	51.0	49.9	. .	76.8	76.9	79.2	79.8	. .	18.9	18.3	19.4	20.0
	Employment/population ratios	. .	48.6	47.2	47.6	46.5	. .	73.5	74.0	75.8	76.7	. .	17.8	17.4	18.6	19.1
Belgium	Unemployment rates	19.2|	18.2	16.6	15.2	17.5	10.3|	7.4	6.1	7.2	7.4	5.0|	2.8	0.9	3.8	1.3
	Labour force participation rates	34.1|	32.6	30.0	30.2	28.8	60.8|	73.2	70.7	72.0	73.1	9.9|	15.8	15.8	17.4	18.0
	Employment/population ratios	27.5|	26.7	25.0	25.7	23.8	54.5|	67.8	66.4	66.8	67.7	9.4|	15.4	15.6	16.7	17.7
Canada	Unemployment rates	11.0	11.3	11.0	11.8	11.9	7.6	5.8	6.0	6.3	6.4	5.7	5.5	5.6	5.8	5.6
	Labour force participation rates	67.3	62.9	63.3	64.9	66.0	75.4	78.6	79.1	80.2	80.9	34.9	41.6	41.8	43.8	47.7
	Employment/population ratios	59.9	55.8	56.3	57.2	58.2	69.7	74.0	74.3	75.2	75.7	33.0	39.3	39.4	41.3	45.0
Czech Republic	Unemployment rates	. .	17.4	17.3	17.3	18.8	. .	9.9	9.1	8.3	9.3	. .	5.4	5.8	4.9	5.2
	Labour force participation rates	. .	40.6	38.0	35.3	34.0	. .	81.8	81.8	81.4	81.0	. .	23.7	24.6	27.3	30.0
	Employment/population ratios	. .	33.6	31.5	29.2	27.6	. .	73.7	74.3	74.6	73.5	. .	22.4	23.2	26.0	28.4
Denmark	Unemployment rates	11.6|	7.0	9.3	5.2	9.0	8.4|	4.7	4.1	4.2	5.6	7.5|	4.2	4.0	4.2	3.8
	Labour force participation rates	70.4|	68.8	65.0	67.0	63.6	87.8|	84.3	83.5	84.4	83.6	45.9|	48.2	51.9	52.1	55.2
	Employment/population ratios	62.2|	64.0	59.0	63.5	57.9	80.3|	80.4	80.1	80.8	78.9	42.4|	46.2	49.8	49.9	53.1
Finland	Unemployment rates	8.3	21.8	20.2	20.5	21.5	1.6	8.8	8.0	7.3	7.0	2.8	9.4	8.8	8.1	7.6
	Labour force participation rates	56.9	51.1	50.8	50.5	49.7	86.5	85.0	85.0	85.4	84.8	40.8	45.2	49.5	51.4	52.4
	Employment/population ratios	52.2	39.9	40.5	40.1	39.0	85.1	77.6	78.2	79.1	78.8	39.7	40.9	45.1	47.3	48.5
France	Unemployment rates	23.9	23.7	21.8	22.8	. .	10.7	11.1	10.1	9.4	. .	7.6	8.3	6.6	5.5	. .
	Labour force participation rates	33.1	26.0	26.5	26.5	. .	72.9	78.4	78.7	79.0	. .	31.1	33.0	34.1	36.6	. .
	Employment/population ratios	25.2	19.8	20.7	20.4	. .	65.1	69.6	70.8	71.6	. .	28.8	30.3	31.8	34.6	. .
Germany	Unemployment rates	5.0|	7.5	7.1	8.0	8.6	6.0|	7.5	7.5	8.0	8.8	9.1|	13.6	12.6	11.7	10.1
	Labour force participation rates	56.8|	48.2	48.1	47.0	44.9	63.4|	76.9	77.4	78.1	78.9	24.7|	33.5	33.6	34.1	34.3
	Employment/population ratios	54.0|	44.6	44.7	43.2	41.1	59.6|	71.2	71.6	71.8	72.0	22.4|	29.0	29.4	30.1	30.9
Greece	Unemployment rates	32.6|	37.7	35.7	33.7	34.1	8.6|	14.7	13.5	13.2	12.3	1.2|	4.4	4.0	4.3	3.4
	Labour force participation rates	35.3|	35.4	33.9	33.2	31.5	51.5|	61.7	61.3	63.1	64.5	24.3|	25.5	23.7	25.5	26.8
	Employment/population ratios	23.8|	22.0	21.8	22.0	20.7	47.1|	52.6	53.0	54.7	56.6	24.0|	24.4	22.7	24.4	25.8
Hungary	Unemployment rates	. .	11.2	10.0	11.9	12.9	. .	5.0	4.5	4.9	5.0	. .	1.6	1.4	1.9	2.7
	Labour force participation rates	. .	32.5	29.9	29.2	27.2	. .	70.5	70.1	69.9	71.0	. .	13.3	15.1	18.0	22.4
	Employment/population ratios	. .	28.8	26.9	25.8	23.7	. .	66.9	67.0	66.5	67.4	. .	13.1	14.9	17.6	21.8

Table C. **Employment/population ratios, activity and unemployment rates by selected age groups** *(cont.)*

Women (percentages)

		15 to 24					25 to 54					55 to 64				
		1990	2000	2001	2002	2003	1990	2000	2001	2002	2003	1990	2000	2001	2002	2003
Iceland[a, b]	Unemployment rates	3.9	3.6	4.3	4.4	. .	2.6	2.4	2.2	2.9	. .	3.4	3.2	1.9	1.0	. .
	Labour force participation rates	58.8	73.2	70.0	62.6	. .	83.0	88.2	88.1	88.3	. .	81.1	76.8	81.7	85.3	. .
	Employment/population ratios	56.5	70.5	67.0	59.8	. .	80.8	86.0	86.2	85.7	. .	78.3	74.4	80.2	84.4	. .
Ireland	Unemployment rates	16.1	6.9	5.8	6.5	6.5	13.5	3.6	3.0	3.2	3.4	8.3	2.4	2.7	2.2	2.0
	Labour force participation rates	47.3	46.9	44.9	44.9	45.7	45.4	65.0	66.1	67.8	67.4	19.9	27.8	29.2	31.4	34.1
	Employment/population ratios	39.6	43.7	42.3	41.9	42.7	39.3	62.7	64.1	65.6	65.1	18.2	27.1	28.4	30.7	33.5
Italy	Unemployment rates	37.8	35.4	32.2	31.4	30.9	12.8	12.1	11.1	10.5	10.0	2.6	4.7	4.1	4.4	4.3
	Labour force participation rates	40.8	34.3	32.6	31.0	29.9	53.9	57.9	59.3	60.3	60.9	15.5	16.1	16.9	18.1	19.3
	Employment/population ratios	25.4	22.1	22.1	21.2	20.6	47.1	50.9	52.8	54.0	54.9	15.2	15.3	16.2	17.3	18.5
Japan	Unemployment rates	4.1	7.9	8.7	8.7	8.7	2.1	4.4	4.7	5.2	4.9	1.4	3.6	3.7	3.6	3.7
	Labour force participation rates	44.8	46.6	46.4	44.8	44.4	64.2	66.5	67.3	67.4	67.7	47.2	49.7	49.2	48.8	49.3
	Employment/population ratios	43.0	43.0	42.4	41.0	40.5	62.9	63.6	64.1	63.9	64.4	46.5	47.9	47.3	47.1	47.5
Korea	Unemployment rates	5.5	8.5	8.1	6.9	8.5	0.9	2.7	2.5	2.0	2.5	0.3	1.2	0.9	0.8	1.1
	Labour force participation rates	40.7	36.8	38.2	39.2	39.4	54.2	57.6	58.2	58.9	58.3	49.6	48.6	48.2	48.0	45.9
	Employment/population ratios	38.5	33.6	35.1	36.5	36.0	53.7	56.0	56.8	57.7	56.8	49.4	48.0	47.8	47.6	45.4
Luxembourg	Unemployment rates	4.7	7.3	5.4	9.0	. .	2.0	2.9	1.9	3.2	. .	0.6	0.0	0.0	0.0	. .
	Labour force participation rates	44.0	30.6	32.1	31.2	. .	49.7	64.9	65.0	66.7	. .	13.8	16.8	14.4	18.1	. .
	Employment/population ratios	42.0	28.3	30.3	28.4	. .	48.7	63.0	63.8	64.5	. .	13.7	16.8	14.4	18.1	. .
Mexico[b]	Unemployment rates	5.8	4.7	5.0	5.6	6.2	3.8	1.7	1.7	1.6	1.8	1.0	0.7	0.5	0.3	0.3
	Labour force participation rates	34.5	36.1	34.3	33.3	31.9	38.2	45.6	45.3	46.5	46.4	24.4	28.6	27.6	29.2	30.1
	Employment/population ratios	32.5	34.4	32.6	31.4	29.9	36.8	44.8	44.6	45.8	45.5	24.2	28.4	27.4	29.1	30.0
Netherlands	Unemployment rates	11.9	5.9	4.5	4.8	6.5	10.9	3.0	2.1	2.5	3.3	6.3	2.1	1.1	1.6	2.0
	Labour force participation rates	59.2	70.9	72.4	72.7	72.7	57.9	73.0	74.2	75.4	76.5	16.8	26.4	28.3	29.4	32.9
	Employment/population ratios	52.2	66.7	69.2	69.2	68.0	51.6	70.9	72.6	73.5	74.0	15.8	25.8	28.0	29.0	32.2
New Zealand	Unemployment rates	13.2	12.1	11.5	11.3	10.4	5.4	4.6	4.1	4.2	3.9	4.0	3.5	2.8	3.3	3.8
	Labour force participation rates	64.3	59.9	60.2	61.1	60.2	69.3	73.8	74.5	75.0	74.9	30.7	48.0	51.8	53.9	57.5
	Employment/population ratios	55.8	52.7	53.3	54.2	53.9	65.6	70.3	71.5	71.8	72.0	29.5	46.3	50.3	52.1	55.4
Norway[a]	Unemployment rates	11.0	10.9	10.3	10.5	10.7	3.9	2.3	2.5	2.8	3.3	1.9	0.7	1.4	1.9	1.2
	Labour force participation rates	56.9	61.8	61.3	63.8	62.0	79.2	83.5	83.3	82.9	82.4	53.9	61.6	63.2	65.3	64.7
	Employment/population ratios	50.7	55.0	55.0	57.1	55.4	76.1	81.6	81.2	80.6	79.7	52.8	61.2	62.3	64.0	63.9
Poland	Unemployment rates	. .	37.3	42.0	44.4	44.3	. .	16.0	17.6	18.7	18.3	. .	9.7	8.7	9.6	10.2
	Labour force participation rates	. .	34.8	34.4	32.2	30.5	. .	76.5	76.5	76.1	76.1	. .	23.7	24.1	23.3	23.9
	Employment/population ratios	. .	21.8	20.0	17.9	17.0	. .	64.3	63.1	61.9	62.1	. .	21.4	22.0	21.1	21.5
Portugal	Unemployment rates	12.8	11.6	12.2	13.9	16.9	5.8	4.4	4.4	5.6	6.7	1.8	2.7	3.2	3.7	3.7
	Labour force participation rates	54.4	41.0	42.0	42.2	41.3	69.4	77.3	78.1	78.3	79.6	32.3	41.9	41.5	43.5	43.5
	Employment/population ratios	47.5	36.2	36.9	36.3	34.3	65.4	73.9	74.6	74.0	74.2	31.7	40.8	40.2	41.9	41.8

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Table C. **Employment/population ratios, activity and unemployment rates by selected age groups** *(cont.)*

Women (percentages)

		15 to 24					25 to 54					55 to 64				
		1990	2000	2001	2002	2003	1990	2000	2001	2002	2003	1990	2000	2001	2002	2003
Slovak Republic	Unemployment rates	. .	33.8	35.7	35.5	31.6	. .	15.8	15.8	15.8	15.7	. .	8.7	11.2	14.4	9.9
	Labour force participation rates	. .	42.6	41.5	39.2	37.1	. .	82.9	83.9	83.9	84.8	. .	10.7	11.0	11.2	12.4
	Employment/population ratios	. .	28.2	26.6	25.3	25.4	. .	69.8	70.7	70.6	71.5	. .	9.8	9.8	9.6	11.2
Spain[a]	Unemployment rates	39.7	32.9	27.0	27.3	27.2	21.0	18.9	13.7	15.1	14.8	7.1	11.3	8.0	9.8	9.3
	Labour force participation rates	47.7	43.3	40.7	41.4	41.9	46.9	62.8	61.2	63.9	66.3	19.4	22.6	23.6	24.4	25.8
	Employment/population ratios	28.7	29.0	29.7	30.1	30.5	37.1	51.0	52.8	54.2	56.5	18.0	20.1	21.8	22.0	23.4
Sweden[a]	Unemployment rates	4.4|	11.4	10.8	11.9	12.7	1.2|	4.6	3.7	3.8	4.4	1.6|	5.3	4.5	4.0	3.9
	Labour force participation rates	68.9|	51.2	54.4	53.6	52.7	90.8|	85.6	85.6	85.6	85.5	65.8|	65.9	67.3	68.6	69.5
	Employment/population ratios	65.9|	45.4	48.5	47.3	46.0	89.7|	81.7	82.5	82.4	81.7	64.8|	62.4	64.3	65.9	66.8
Switzerland[b]	Unemployment rates	3.4	3.9	5.5	3.9	8.8	2.6	3.1	3.4	3.2	4.0	0.6	2.3	1.6	1.8	2.5
	Labour force participation rates	70.3	66.0	66.9	67.7	68.1	73.7	78.0	79.5	80.7	80.4	43.8	51.3	54.5	53.5	55.4
	Employment/population ratios	67.9	63.4	63.2	65.1	62.1	71.8	75.6	76.8	78.1	77.2	43.5	50.1	53.6	52.5	54.0
Turkey	Unemployment rates	15.0	11.9	14.4	17.1	18.9	5.9	4.6	5.5	7.5	8.1	1.0	0.5	0.4	1.2	1.1
	Labour force participation rates	39.4	28.1	28.5	29.0	26.8	36.0	28.9	29.6	30.7	29.8	26.6	21.6	21.5	22.9	21.4
	Employment/population ratios	33.5	24.8	24.4	24.0	21.7	33.9	27.6	28.0	28.4	27.4	26.4	21.5	21.4	22.6	21.2
United Kingdom[a]	Unemployment rates	9.0	10.1	8.7	8.8	9.5	6.0	4.0	3.6	3.8	3.3	5.0	2.8	1.8	2.3	2.0
	Labour force participation rates	72.4	65.6	64.2	64.8	63.9	73.0	76.1	76.3	76.7	76.6	38.7	42.6	44.0	45.7	47.3
	Employment/population ratios	65.9	58.9	58.6	59.0	57.8	68.6	73.1	73.6	73.8	74.1	36.7	41.4	43.2	44.7	46.4
United States[a]	Unemployment rates	10.7|	8.9	9.6	11.1	11.4	4.6|	3.3	3.9	4.8	4.8	2.8|	2.5	2.7	3.5	3.7
	Labour force participation rates	62.9|	63.0	62.0	61.1	59.2	74.0|	76.7	76.4	75.9	75.6	45.2|	51.9	53.2	55.2	56.6
	Employment/population ratios	56.1|	57.4	56.0	54.3	52.5	70.6|	74.2	73.4	72.3	72.0	44.0|	50.6	51.7	53.2	54.5
EU-15[c]	Unemployment rates	18.8|	17.1	15.0	15.0	14.7	9.2|	8.8	7.8	8.0	7.9	5.8|	7.8	6.5	6.3	5.6
	Labour force participation rates	50.1|	44.6	43.9	43.7	46.4	63.9|	72.2	72.3	73.2	72.9	26.4|	30.9	31.7	33.1	33.7
	Employment/population ratios	40.7|	37.0	37.3	37.1	39.5	58.0|	65.8	66.7	67.4	67.2	24.9|	28.5	29.6	31.0	31.8
EU-19[c]	Unemployment rates	18.8|	19.0	17.7	17.8	17.7	9.2|	9.5	8.8	9.0	9.1	5.8|	7.8	6.6	6.4	5.9
	Labour force participation rates	50.1|	43.0	42.3	41.8	43.2	63.9|	72.9	73.0	73.7	73.6	26.4|	29.5	30.3	31.6	32.2
	Employment/population ratios	40.7|	34.8	34.8	34.3	35.6	58.0|	65.9	66.6	67.1	66.9	24.9|	27.2	28.3	29.6	30.3
OECD Europe[c]	Unemployment rates	17.9|	17.7	16.9	17.3	17.5	8.8|	9.1	8.5	8.8	8.9	5.1|	7.1	6.0	5.9	5.4
	Labour force participation rates	48.6|	40.6	40.1	39.8	40.2	61.0|	67.9	68.0	68.7	67.6	27.0|	29.5	30.3	31.6	32.0
	Employment/population ratios	39.9|	33.4	33.3	32.9	33.2	55.6|	61.7	62.3	62.6	61.6	25.6|	27.4	28.5	29.7	30.3
Total OECD[c]	Unemployment rates	12.3|	11.9	12.0	12.6	12.8	5.9|	6.1	6.0	6.4	6.3	3.2|	4.4	4.1	4.2	4.1
	Labour force participation rates	50.1|	46.6	46.1	45.6	45.5	63.7|	68.2	68.2	68.5	68.0	35.5|	38.8	39.4	40.7	42.0
	Employment/population ratios	43.9|	41.0	40.5	39.8	39.7	59.9|	64.0	64.1	64.1	63.7	34.3|	37.1	37.7	38.9	40.3

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 database on Labour Force Statistics (see URLs at the beginning of the Annex). For Austria, Belgium, Denmark, Greece, Luxembourg and the Netherlands, data are from the European Union Labour Force Survey.

Table D. **Employment/population ratios, activity and unemployment rates by educational attainment, 2002**

Persons aged 25-64 (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	7.5	4.3	3.3	8.6	4.0	3.3	6.3	4.9	3.3
	Labour force participation rates	64.8	81.3	86.3	79.2	89.5	92.7	54.6	67.5	80.5
	Employment/population ratios	60.0	77.8	83.5	72.3	86.0	89.6	51.2	64.2	77.9
Austria	Unemployment rates	6.9	3.4	1.9	8.3	3.5	1.8	5.7	3.4	2.0
	Labour force participation rates	58.7	77.9	87.7	71.2	84.8	90.0	51.3	70.3	84.4
	Employment/population ratios	54.7	75.3	86.0	65.3	81.8	88.4	48.3	67.9	82.7
Belgium	Unemployment rates	10.3	6.0	3.5	8.6	4.9	3.2	13.1	7.6	3.8
	Labour force participation rates	54.3	78.6	86.8	68.8	87.6	90.4	39.8	68.9	83.3
	Employment/population ratios	48.8	73.8	83.7	62.9	83.3	87.5	34.6	63.6	80.1
Canada	Unemployment rates	11.0	6.7	5.1	11.2	6.7	5.4	10.8	6.8	4.8
	Labour force participation rates	62.2	81.4	86.3	74.3	88.0	91.0	49.2	74.1	82.3
	Employment/population ratios	55.3	75.9	82.0	66.0	82.1	86.1	43.9	69.1	78.3
Czech Republic	Unemployment rates	18.8	5.6	1.8	21.1	4.1	1.8	17.3	7.6	2.0
	Labour force participation rates	55.7	80.7	88.7	67.8	88.6	94.1	50.2	72.3	81.4
	Employment/population ratios	45.3	76.2	87.1	53.5	85.0	92.5	41.5	66.9	79.8
Denmark	Unemployment rates	6.2	3.4	3.5	4.6	3.3	3.6	8.1	3.4	3.4
	Labour force participation rates	65.0	84.3	90.4	75.4	87.3	92.7	55.8	80.7	88.4
	Employment/population ratios	61.0	81.5	87.2	71.9	84.4	89.3	51.3	77.9	85.3
Finland	Unemployment rates	12.2	8.8	4.5	11.6	8.8	4.3	13.0	8.8	4.6
	Labour force participation rates	65.7	81.5	89.1	68.7	84.3	90.7	62.3	78.5	87.8
	Employment/population ratios	57.7	74.4	85.1	60.7	76.9	86.8	54.2	71.6	83.8
France	Unemployment rates	11.8	6.8	5.2	10.6	5.3	5.3	13.1	8.8	5.1
	Labour force participation rates	65.5	82.3	87.9	75.8	88.1	91.9	56.7	75.7	84.4
	Employment/population ratios	57.8	76.7	83.3	67.8	83.4	87.0	49.3	69.0	80.0
Germany	Unemployment rates	15.3	9.0	4.5	17.7	9.2	4.2	13.0	8.7	5.0
	Labour force participation rates	60.1	77.3	87.5	76.5	83.8	90.4	49.9	70.8	83.0
	Employment/population ratios	50.9	70.3	83.6	62.9	76.0	86.6	43.4	64.6	78.8
Greece	Unemployment rates	7.3	9.6	6.4	4.9	5.6	4.3	11.3	15.6	9.0
	Labour force participation rates	60.3	72.6	86.3	81.0	88.5	89.7	42.1	57.2	82.4
	Employment/population ratios	55.9	65.6	80.8	77.0	83.6	85.9	37.4	48.3	75.0
Hungary	Unemployment rates	10.5	4.4	1.5	12.7	4.6	1.1	8.5	4.3	1.9
	Labour force participation rates	41.1	75.0	83.3	49.4	82.4	87.2	35.4	66.8	79.7
	Employment/population ratios	36.7	71.7	82.0	43.1	78.7	86.2	32.4	63.9	78.2

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Table D. **Employment/population ratios, activity and unemployment rates by educational attainment, 2002** *(cont.)*

Persons aged 25-64 (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
Iceland	Unemployment rates	3.0	2.6	1.6	3.1	2.4	1.5	3.0	3.0	1.6
	Labour force participation rates	88.3	91.6	96.7	94.6	94.8	98.7	84.2	86.6	94.8
	Employment/population ratios	85.6	89.3	95.2	91.7	92.5	97.2	81.7	84.0	93.2
Ireland	Unemployment rates	5.9	2.8	1.8	6.2	2.6	2.2	5.2	3.1	1.5
	Labour force participation rates	60.5	79.3	88.2	78.8	92.5	93.2	40.2	67.2	83.6
	Employment/population ratios	57.0	77.1	86.5	73.9	90.1	91.2	38.1	65.1	82.3
Italy	Unemployment rates	9.0	6.4	5.3	6.7	4.6	3.6	14.0	8.9	7.2
	Labour force participation rates	54.8	77.1	86.8	75.5	86.1	90.9	34.8	67.9	82.7
	Employment/population ratios	49.8	72.1	82.2	70.5	82.1	87.6	30.0	61.8	76.8
Japan	Unemployment rates	6.6	5.3	3.9	7.9	5.5	3.5	4.6	5.1	4.4
	Labour force participation rates	71.3	77.7	82.9	86.2	94.2	97.2	56.0	63.0	67.0
	Employment/population ratios	66.6	73.6	79.7	79.3	89.1	93.8	53.4	59.8	64.0
Korea	Unemployment rates	2.1	2.8	3.0	2.9	3.2	3.3	1.4	2.1	2.4
	Labour force participation rates	69.9	72.5	78.5	84.0	89.7	92.0	61.2	53.9	57.1
	Employment/population ratios	68.4	70.5	76.1	81.6	86.8	88.9	60.3	52.8	55.8
Luxembourg	Unemployment rates	3.8	1.2	1.8	2.5	0.9	1.9	5.7	1.7	1.6
	Labour force participation rates	61.6	74.5	86.8	78.9	86.4	91.9	47.6	61.4	79.5
	Employment/population ratios	59.3	73.6	85.2	76.9	85.6	90.2	44.9	60.4	78.2
Mexico	Unemployment rates	2.9	1.5	1.7	2.8	1.8	2.2	3.1	1.1	0.4
	Labour force participation rates	62.1	72.1	53.8	83.0	95.9	77.1	43.1	48.4	30.2
	Employment/population ratios	60.3	70.9	52.9	80.7	94.3	75.4	41.8	47.9	30.1
Netherlands	Unemployment rates	3.8	2.2	2.1	3.3	1.7	2.0	4.6	2.8	2.3
	Labour force participation rates	61.1	81.5	89.0	77.7	88.4	92.9	47.2	74.1	84.1
	Employment/population ratios	58.7	79.7	87.1	75.1	86.9	91.1	45.0	72.1	82.1
New Zealand	Unemployment rates	5.6	3.3	3.4	5.9	2.8	3.4	5.2	4.1	3.3
	Labour force participation rates	67.5	84.1	84.5	79.6	92.2	91.2	56.8	74.8	79.1
	Employment/population ratios	63.7	81.3	81.6	74.9	89.6	88.1	53.8	71.8	76.5
Norway	Unemployment rates	3.4	2.9	2.1	3.2	3.1	2.3	3.5	2.7	1.9
	Labour force participation rates	66.4	84.0	91.4	74.4	88.0	94.0	58.5	79.6	88.9
	Employment/population ratios	64.2	81.5	89.5	72.0	85.3	91.8	56.5	77.4	87.2
Poland	Unemployment rates	26.6	18.1	6.3	26.9	16.8	5.5	26.1	19.8	7.0
	Labour force participation rates	52.3	76.3	89.8	63.5	82.6	92.3	42.9	69.8	87.8
	Employment/population ratios	38.4	62.5	84.1	46.4	68.7	87.2	31.7	56.0	81.7

Table D. **Employment/population ratios, activity and unemployment rates by educational attainment, 2002** *(cont.)*

Persons aged 25-64 (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
Portugal	Unemployment rates	4.4	4.3	3.9	3.6	3.9	2.6	5.5	4.8	4.8
	Labour force participation rates	76.2	86.1	92.0	86.2	88.1	93.6	66.3	84.0	91.1
	Employment/population ratios	72.8	82.3	88.5	83.1	84.6	91.2	62.7	80.0	86.8
Slovak Republic	Unemployment rates	42.3	14.2	3.6	47.9	13.9	3.5	38.1	14.7	3.7
	Labour force participation rates	48.9	82.2	89.8	61.0	88.2	93.9	42.5	75.6	85.9
	Employment/population ratios	28.2	70.5	86.6	31.8	76.0	90.7	26.3	64.4	82.7
Spain	Unemployment rates	11.2	9.5	7.7	7.7	5.7	5.1	17.9	14.7	10.7
	Labour force participation rates	62.6	79.1	87.6	83.5	90.1	91.9	42.3	67.6	83.1
	Employment/population ratios	55.6	71.6	80.8	77.1	85.0	87.2	34.7	57.7	74.2
Sweden	Unemployment rates	5.8	4.6	3.0	5.4	5.1	3.6	6.3	4.0	2.5
	Labour force participation rates	72.3	85.7	89.2	78.0	87.9	90.4	65.1	83.4	88.1
	Employment/population ratios	68.2	81.8	86.5	73.8	83.5	87.2	61.0	80.1	85.8
Switzerland	Unemployment rates	4.7	2.3	2.1	4.6	1.9	1.9	4.8	2.7	2.6
	Labour force participation rates	73.1	82.9	92.7	86.5	91.6	96.4	63.7	75.8	85.3
	Employment/population ratios	69.7	81.0	90.7	82.5	89.9	94.5	60.6	73.7	83.0
Turkey	Unemployment rates	8.8	8.6	7.3	9.5	7.1	6.5	6.1	16.0	9.2
	Labour force participation rates	54.6	67.4	82.1	82.5	86.7	88.3	24.2	32.2	71.1
	Employment/population ratios	49.8	61.6	76.1	74.7	80.5	82.6	22.8	27.0	64.6
United Kingdom	Unemployment rates	8.5	4.1	2.4	10.4	4.1	2.8	6.4	4.0	2.0
	Labour force participation rates	57.8	82.7	90.0	65.9	88.1	92.2	50.7	76.4	87.3
	Employment/population ratios	52.9	79.4	87.8	59.1	84.4	89.7	47.5	73.3	85.6
United States	Unemployment rates	10.2	5.7	3.0	9.9	6.2	3.3	10.6	5.1	2.7
	Labour force participation rates	63.5	78.5	85.7	75.5	85.4	91.3	50.4	72.0	80.4
	Employment/population ratios	57.0	74.0	83.2	68.0	80.1	88.3	45.0	68.3	78.2
EU-15[a]	Unemployment rates	9.8	6.5	4.4	8.3	5.8	3.9	12.0	7.4	5.0
	Labour force participation rates	61.1	79.7	88.2	77.3	86.5	91.4	46.6	72.4	84.6
	Employment/population ratios	55.1	74.5	84.3	70.9	81.5	87.8	41.0	67.0	80.4
EU-19[a]	Unemployment rates	10.7	8.0	4.4	9.3	7.2	3.9	12.8	9.0	5.1
	Labour force participation rates	60.1	79.2	88.2	76.0	86.0	91.4	46.2	72.0	84.7
	Employment/population ratios	53.6	72.9	84.3	68.9	79.8	87.9	40.2	65.5	80.4

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Table D. **Employment/population ratios, activity and unemployment rates by educational attainment, 2002** *(cont.)*

Persons aged 25-64 (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
OECD Europe[a]	Unemployment rates	10.9	8.0	4.5	10.1	7.3	4.0	12.1	8.9	5.0
	Labour force participation rates	59.5	79.2	88.2	78.0	86.3	91.5	42.7	71.4	84.4
	Employment/population ratios	53.1	72.9	84.2	70.1	80.0	87.8	37.6	65.1	80.2
Total OECD[a]	Unemployment rates	7.8	6.5	3.8	7.4	6.3	3.6	8.4	6.8	3.9
	Labour force participation rates	61.6	78.4	85.2	79.3	87.4	92.1	45.3	69.2	77.9
	Employment/population ratios	56.8	73.3	82.0	73.5	81.9	88.7	41.5	64.5	74.8

a) For above countries only.

Source: OECD (2004), *Education at a Glance – OECD Indicators*.

Table E. **Incidence and composition of part-time employment**[a]

Percentages

	Part-time employment as a proportion of employment									
	Men					Women				
	1990	2000	2001	2002	2003	1990	2000	2001	2002	2003
Australia[b, c]	11.3	14.8	15.8	16.3	16.5	38.5	40.7	41.7	41.4	42.2
Austria	. .	2.6	2.7	3.1	3.2	. .	24.4	24.8	26.2	26.1
Belgium	4.4|	7.1	5.7	6.0	5.9	28.8|	34.5	32.5	32.4	33.4
Canada	9.2	10.3	10.4	10.9	11.0	26.9	27.3	27.1	27.8	27.9
Czech Republic	. .	1.6	1.6	1.4	1.6	. .	5.4	5.4	4.9	5.3
Denmark	10.2|	9.3	9.3	10.3	10.5	29.7|	24.0	21.0	23.0	21.9
Finland	4.8	7.1	7.3	7.5	8.0	10.6	13.9	14.0	14.8	15.0
France	4.5	5.5	5.1	5.2	4.7	22.5	24.9	24.4	24.1	22.8
Germany	2.3|	4.8	5.1	5.5	5.9	29.8|	33.9	35.0	35.3	36.3
Greece	4.0|	3.0	2.6	2.9	2.9	11.6|	9.5	8.5	10.0	9.9
Hungary	. .	1.7	1.7	1.7	2.1	. .	4.7	4.0	4.3	5.1
Iceland[d]	7.5	8.8	9.7	10.2	. .	39.7	33.7	32.6	31.2	. .
Ireland	4.4|	7.8	7.1	7.2	8.1	21.2|	33.0	33.4	33.2	34.7
Italy	4.0|	5.7	5.4	4.9	4.9	18.4|	23.4	23.7	23.5	23.6
Japan[b, e]	9.5	11.6	13.7	14.0	14.7	33.4	38.6	41.0	41.2	42.2
Korea[b]	3.1	5.1	5.2	5.4	5.3	6.5	9.8	10.4	10.6	11.2
Luxembourg	1.6|	2.0	2.0	2.3	. .	19.1|	28.4	30.1	28.1	. .
Mexico	. .	7.1	7.5	7.1	7.0	. .	25.6	25.7	25.6	25.7
Netherlands	13.4|	13.4	13.8	14.7	14.8	52.5|	57.2	58.1	58.8	59.6
New Zealand	7.9	11.0	11.0	11.4	10.9	34.6	35.9	36.1	36.1	35.8
Norway	6.9	8.7	9.1	9.2	9.9	39.8	33.4	32.7	33.4	33.4
Poland[b]	. .	8.8|	7.4	7.5	7.1	. .	17.9|	16.6	16.7	16.8
Portugal	3.9|	4.9	5.1	5.7	5.9	12.8|	14.9	14.3	14.4	14.9
Slovak Republic	. .	1.0	1.1|	1.0	1.3	. .	2.9	2.8|	2.3	3.6
Spain	1.4|	2.6	2.6	2.4	2.5	11.5|	16.5	16.6	16.3	16.5
Sweden	5.3	7.3	7.3	7.5	7.9	24.5	21.4	21.0	20.6	20.6
Switzerland[c, d]	6.8	8.4	8.9	7.7	8.1	42.6	44.7	44.7	45.3	45.8
Turkey	4.9	5.7	3.2	3.8	3.6	18.8	19.3	14.0	13.5	12.3
United Kingdom	5.3|	8.6	8.3	8.9	9.6	39.5|	40.8	40.3	40.1	40.1
United States[f]	8.6	7.7	8.0	8.0	8.0	20.2	18.0	18.0	18.5	18.8
EU-15[g]	4.3|	6.0	5.9	6.1	6.3	27.0|	30.0	30.0	30.0	30.1
EU-19[g]	4.3|	6.0	5.8|	6.0	6.1	27.0|	27.6	27.5|	27.5	27.6
OECD Europe[g]	4.4|	6.0|	5.5|	5.8	5.9	26.5|	27.4|	27.0|	27.0	27.1
Total OECD[g]	5.0|	5.9|	5.9|	7.1	7.2	19.5|	20.7|	20.6|	24.6	24.8

	Part-time employment as a proportion of total employment					Women's share in part-time employment				
	1990	2000	2001	2002	2003	1990	2000	2001	2002	2003
Australia[b, c]	22.6	26.2	27.2	27.5	27.9	70.8	68.6	67.8	67.0	67.2
Austria	. .	12.2	12.4	13.5	13.6	. .	88.1	88.0	87.3	87.3
Belgium	13.5|	19.0	17.0	17.2	17.7	79.8|	79.0	80.7	80.1	81.0
Canada	17.1	18.1	18.1	18.7	18.8	70.0	69.3	69.1	68.8	68.9
Czech Republic	. .	3.2	3.2	2.9	3.2	. .	72.5	72.0	73.4	71.9
Denmark	19.2|	16.1	14.7	16.2	15.8	71.1|	69.4	66.0	66.2	64.2
Finland	7.6	10.4	10.5	11.0	11.3	67.0	63.8	63.4	64.6	63.5
France	12.2	14.2	13.8	13.7	12.9	78.6	78.8	79.6	79.5	80.0
Germany	13.4|	17.6	18.3	18.8	19.6	89.7|	84.5	84.6	83.7	83.3
Greece	6.7|	5.5	4.9	5.6	5.6	60.8|	65.4	66.4	67.8	67.9
Hungary	. .	3.2	2.8	2.9	3.5	. .	71.2	68.4	69.9	69.0
Iceland[b]	22.2	20.4	20.4	20.1	. .	81.6	77.0	74.5	73.1	. .

Table E. **Incidence and composition of part-time employment**[a] *(cont.)*

Percentages

	Part-time employment as a proportion of total employment					Women's share in part-time employment				
	1990	2000	2001	2002	2003	1990	2000	2001	2002	2003
Ireland	10.0|	18.1	17.9	18.1	18.1	70.3|	74.4	76.5	77.0	72.1
Italy	8.9|	12.2	12.2	11.9	12.0	70.5|	70.5	72.6	74.4	74.7
Japan[b, e]	19.2	22.6	24.9	25.1	26.0	70.5	69.7	67.5	67.0	66.7
Korea[b]	4.5	7.0	7.3	7.6	7.7	58.7	57.7	58.8	58.3	59.4
Luxembourg	7.6|	12.4	13.3	12.6	. .	86.6|	90.0	90.7	89.1	. .
Mexico	. .	13.5	13.7	13.5	13.4	. .	65.1	63.8	65.6	65.7
Netherlands	28.2|	32.1	33.0	33.9	34.5	70.4|	76.2	76.3	75.4	76.0
New Zealand	19.6	22.3	22.4	22.6	22.3	77.1	72.9	73.2	72.5	73.3
Norway	21.8	20.2	20.1	20.6	21.0	82.7	77.0	76.0	76.2	75.2
Poland[b]	. .	12.8|	11.6	11.7	11.5	. .	61.7|	64.7	65.0	66.2
Portugal	7.6|	9.4	9.2	9.6	10.0	70.3|	71.5	69.9	67.8	68.3
Slovak Republic	. .	1.9	1.9|	1.6	2.3	. .	70.6	68.2|	66.1	69.1
Spain	4.6|	7.7	7.8	7.6	7.8	79.2|	78.5	79.0	80.1	80.7
Sweden	14.5	14.0	13.9	13.8	14.1	81.1	72.9	72.7	71.8	70.8
Switzerland[c, d]	22.1	24.4	24.8	24.7	25.1	82.4	80.6	80.1	82.8	82.2
Turkey	9.2	9.4	6.2	6.6	6.0	62.6	55.4	62.6	58.6	56.9
United Kingdom	20.1|	23.0	22.7	23.0	23.3	85.1|	79.4	79.8	78.8	77.3
United States[f]	14.1	12.6	12.8	13.1	13.2	68.2	68.1	67.5	68.3	68.8
EU-15[g]	13.3|	16.2	16.2	16.4	16.6	80.6|	78.7	79.2	78.8	78.5
EU-19[g]	13.3|	15.2	15.1|	15.3	15.5	80.6|	77.6	78.3|	77.9	77.7
OECD Europe[g]	12.9|	14.8|	14.5|	14.7	14.8	79.1|	76.2|	77.6|	77.2	77.0
Total OECD[g]	11.1|	12.2|	12.2|	14.6	14.8	73.9|	72.0|	72.4|	72.3	72.3

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. For Poland until 2000 only.
c) Part-time employment based on hours worked at all jobs.
d) Data 1990 refer to 1991.
e) Less than 35 hours per week.
f) Data are for wage and salary workers only.
g) For above countries only.

Sources and definitions: OECD database on Labour Force Statistics (see urls at the beginning of the Annex). For Austria, Belgium, Denmark, France, Germany, Greece, Ireland, Italy, Luxembourg, the Netherlands, Portugal, Spain and the United Kingdom, data are from the European Union Labour Force Survey. See OECD (1997), "Definition of Part-time Work for the Purpose of International Comparisons", Labour Market and Social Policy Occasional Paper No. 22, available on Internet (*www.oecd.org/els/workingpapers*).

Table F. **Average annual hours actually worked per person in employment**[a]

	1979	1983	1990	1999	2000	2001	2002	2003
Total employment								
Australia	1 904	1 853	1 866	1 860	1 855	1 837	1 824	1 814
Austria				1 572	1 582	1 593	1 567	1 550
Belgium	. .	1 696	1 690	1 546	1 524	1 548	1 547	1 542
Canada	1 785	1 735	1 743	1 759	1 752	1 749	1 731	1 718
Czech Republic	. .	. .	. .	2 088	2 092	2 000	1 980	1 972
Denmark	. .	1 597	1 452	1 496	1 467	1 495	1 462	1 475
Finland[b]	. .	1 809	1 763	1 765 |	1 721	1 694	1 686	1 669
Finland[c]	1 870	1 823	1 771	1 765	1 750	1 734	1 727	1 713
France	1 764	1 672	1 618	1 547	1 500	1 477	1 459	1 453
Germany[d]	. .	. .	1 541	1 479	1 463	1 450	1 443	1 446
Western Germany	1 758	1 692	1 566	1 457	1 443	1 431	1 426	1 429
Greece	. .	1 990	1 919	1 947	1 921	1 928	1 928	1 938
Iceland	. .	. .	. .	1 873	1 885	1 847	1 812	. .
Ireland	. .	1 902	1 911	1 692	1 687	1 680	1 666	1 613
Italy	1 697	1 674	1 655	1 617	1 613	1 601	1 599	1 591
Japan	2 126	2 095	2 031	1 810	1 821	1 809	1 798	1 801
Mexico	. .	. .	. .	1 923	1 888	1 864	1 888	1 857
Netherlands	. .	. .	1 456	1 350	1 368	1 368	1 338	1 354
New Zealand	. .	. .	1 820	1 842	1 817	1 817	1 816	1 813
Norway	1 514	1 485	1 432	1 398	1 380	1 360	1 342	1 337
Poland	. .	. .	. .	. .	1 963	1 957	1 958	1 956
Portugal	. .	. .	1 858	1 734	1 691	1 696	1 697	1 676
Slovak Republic	. .	. .	. .	2 022	2 017	2 026	1 979	1 814
Spain	2 022	1 912	1 824	1 816	1 814	1 816	1 813	1 800
Sweden	1 530	1 532	1 561	1 647	1 625	1 603	1 581	1 564
Switzerland	. .	. .	. .	1 597	1 568	1 541	1 510	. .
United Kingdom	1 815	1 713	1 767	1 719	1 708	1 711	1 692	1 673
United States	1 833	1 819	1 829	1 840	1 827	1 806	1 800	1 792
Dependent employment								
Austria	. .	. .	. .	1 501	1 509	1 520	1 497	1 481
Belgium	. .	1 562	1 571	1 444	1 432	1 457	1 451	1 449
Canada	1 759	1 721	1 730	1 756	1 745	1 742	1 730	1 717
Czech Republic	. .	. .	. .	2 014	2 018	1 922	1 896	1 882
Denmark	. .	. .	1 384	1 447	1 409	1 447	1 410	1 423
Finland[b]	. .	. .	1 666	1 673 |	1 638	1 616	1 609	1 596
France	1 652	1 554	1 528	1 479	1 431	1 410	1 393	. .
Germany[d]	. .	. .	1 473	1 397	1 381	1 370	1 361	1 362
Western Germany	1 687	1 618	1 489	1 370	1 356	1 348	1 341	1 342
Greece	. .	1 766	1 763	1 807	1 813	1 823	1 816	1 811
Hungary	. .	1 829	1 710	1 795	1 795	1 766	1 766	1 777
Iceland	. .	. .	. .	1 810	1 820	1 779	1 740	. .
Ireland	. .	1 702	1 712	1 599	1 597	1 600	1 585	1 541
Italy	. .	1 607	1 580	1 545	1 548	1 534	1 533	1 523
Japan[e]	2 114	2 098	2 052	1 842	1 859	1 848	1 837	1 846
Japan[f]	. .	. .	2 064	1 840	1 853	1 836	1 825	1 828
Korea	. .	2 734	2 514	2 497	2 474	2 447	2 410	2 390
Mexico	. .	. .	. .	1 977	1 935	1 915	1 945	1 908
Netherlands	1 591	1 530	1 433	1 343	1 331	1 330	1 306	1 323
New Zealand	. .	. .	. .	1 765	1 768	1 761	1 759	1 767
Poland	. .	. .	. .	. .	1 988	1 974	1 979	1 984
Portugal	. .	. .	1 770	1 705	1 670	1 684	1 688	1 675
Slovak Republic	. .	. .	. .	1 984	1 980	1 993	1 950	1 770
Spain	1 936	1 837	1 762	1 753	1 753	1 757	1 753	1 745
United Kingdom	1 750	1 652	1 704	1 695	1 684	1 686	1 671	1 652
United States	1 812	1 805	1 810	1 821	1 809	1 790	1 784	1 777

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Table F. **Average annual hours actually worked per person in employment**[a] *(cont.)*

a) The concept used is the total number of hours worked over the year divided by the average number 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) The year 1990 refers to 1991.
e) Data refer to establishments with 30 or more regular employees.
f) Data refer to establishments with five or more regular employees.

Sources and definitions:

Secretariat estimates for Austria, Belgium, Denmark, Greece, Ireland, Italy, Netherlands (for total employment only) and Portugal for annual hours worked for the total economy based on the European Labour Force Survey. Estimates of annual working time per employed persons are based on the Spring European Labour Force Survey (EULFS) as the main source of data for various components of working time (overtime, illness, maternity leave, etc.). The data from the EULFS correspond to one single reading in the year, which requires the use of external sources for hours not worked due to public holidays and annual leave. A correction is also made to account for an estimated 50 per cent underreporting, on average, of hours lost due to illness and maternity leave in the EULFS. In sum, the estimates are computed by multiplying weekly usual hours worked by the number of effective weeks worked during the year (taking into account vacation and time not worked due to other reasons). This edition presents revised estimates of annual working time, which take into account the number of public holidays and annual leave shown in the EIRO (2002) report on "Working Time Developments – 2002" (see *www.eiro.eurofound.ie/2003/03/update/tn0303103u.html*).

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, revised back to 1997 following a change in methodology, 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. Secretariat estimates for years 1979 and 1983 are obtained by prolonging the trend of the old annual hours of work series for the period prior to 1997.

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 until 2000 and are excluded thereafter.

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 for the period 1990 to 2001 communicated by the Institut national de la statistique et des études économiques (INSEE) based on National Accounts. The revised series mainly take into account the change in the definition of working time that occurred following the reduction in work hours (RTT). Secretariat estimates for years 1979 and 1983 are obtained by prolonging the trend of the old annual hours of work series for the period prior to 1990. Estimates for 2002 and 2003 are Secretariat estimates based on alternative estimates of annual working time derived from the European Labour Force Survey (see notes for Belgium, Denmark, etc.).

Germany and Western Germany: Data series from 1991 onward extend coverage of part-time work with few hours of work. Data supplied by the Institut für Arbeitsmarkt- und Berufsforschung (IAB), 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. For Western Germany, data prior to 1991 have been revised by IAB back to 1970. Estimates for unified Germany and Western Germany have been slightly revised since 1999.

Hungary: Data supplied by the Hungarian Statistical office. Annual hours estimates based on an establishment survey for manufacturing covering five or more employees.

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 1985 to 1999 (see notes for Belgium, Denmark, etc.). From 1960 to 1985, the trend in data is taken from the series provided by ISTAT and based on a special establishment survey on 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. Annual working time estimates for total employment in 2002 and 2003 are provisional and are calculated based on year-to-year changes in annual working time estimates of employees working in establishments with five or more employees.

Table F. **Average annual hours actually worked per person in employment**[a] *(cont.)*

Sources and definitions:
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.

Source: 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. Estimates for dependent employment in 2002 and 2003 are Secretariat estimates based on alternative estimates of annual working time derived from the European Labour Force Survey (see notes for Belgium, Denmark, etc.).

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.

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.

Poland: Data supplied by the Central Statistical Office of Poland and derived from the continuous quarterly labour force survey since 2000. Annual hours actually worked are obtained by dividing total weekly hours at work by average number of people in employment annualised by mutiplying by 52 weeks. Data prior to 1999 are based on the quarterly labour force survey with fixed monthly reference weeks. In 1999, the survey was conducted only in the first quarter and last quarter when the continuous survey was introduced, which causes a break in the series prior and after 1999.

Slovak Republic: Data supplied by the Statistical Office of the Slovak Republic and based on the continuous labour force survey with quarterly results. Hours worked cover the main meal break until 2001 and are excluded thereafter.

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.

Switzerland: Data supplied by the 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. Estimate for dependent employment in 2002 are Secretariat estimates based on alternative estimates of annual working time derived from the European Labour Force Survey (see notes for Belgium, Denmark, etc.).

United Kingdom: Since 1994, data refer to the United Kingdom (including Northern Ireland). Break in series 1994/95 are 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: Revised historical series supplied by the Bureau of Labor Statistics (BLS), Office of Productivity and Technology (OPT). The annual working hours series are unpublished data expressed on a per job basis. The annual hours series are derived from the Current Employment Statistics (CES) for production and non-supervisory workers in private sector jobs and from the Current Population Survey (CPS) for other workers. The OECD Secretariat converts hours per job series to hours per worker series by multiplying the job-based annual hours of work by (1 + CPS based share of multiple jobholders in total employment).

Table G. **Incidence of long-term unemployment**[a, b, c, d, e]

As a percentage of total unemployment

	1990		2000		2001		2002		2003	
	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	45.4	29.1	38.3	21.2	39.8	22.1	39.7	22.5
Austria	. .	. .	39.7	25.8	36.1	23.3	33.5	19.2	41.0	24.5
Belgium	81.4	68.5 |	71.8	56.3	66.5	51.7	67.3	49.6	64.7	46.3
Canada	20.2	7.2	19.5	11.2	16.8	9.5	18.7	9.7	18.6	10.1
Czech Republic	. .	. .	69.9	48.8	71.3	52.7	70.3	50.7	69.9	49.9
Denmark	53.2	29.9 |	38.1	20.0	38.5	22.2	33.3	19.7	40.9	19.9
Finland[f]	32.6	9.2 |	46.5	29.0	42.2	26.2	41.7	24.4	41.4	24.7
France	55.6	38.1	62.0	42.6	57.2	37.6	53.4	33.8	. .	. .
Germany	64.7	46.8 |	67.6	51.5	66.2	50.4	64.8	47.9	68.5	50.0
Greece	72.0	49.8 |	73.5	56.4	69.0	52.8	72.6	52.4	74.5	56.5
Hungary	. .	. .	69.8	49.0	67.9	46.6	67.4	44.8	65.4	42.2
Iceland[f]	13.6	6.7	18.6	11.8	21.0	12.5	24.8	11.1	. .	. .
Ireland	81.0	66.0 |	. .	. .	50.3	33.1	50.3	29.3	56.6	35.4
Italy	85.2	69.8 |	77.6	61.3	77.4	63.4	75.7	59.2	74.1	58.2
Japan	39.0	19.1	46.9	25.5	46.2	26.6	49.0	30.8	50.9	33.5
Korea	13.9	2.6	14.3	2.3	13.0	2.3	13.9	2.5	10.1	0.6
Luxembourg[g]	(68.4)	(47.4) |	(37.0)	(22.4)	(44.9)	(28.4)	(46.8)	(27.4)	. .	. .
Mexico			5.0	1.1	4.1	1.1	5.4	0.9	4.9	1.0
Netherlands	63.6	49.3 |	. .	. .	. .	. .	43.2	26.7	49.2	29.2
New Zealand	39.5	20.9 |	36.2	19.2	31.3	16.8	28.5	14.4	27.4	13.3
Norway	40.8	20.4 |	16.6	5.3	16.1	5.5	20.0	6.4	20.6	6.4
Poland[h]	62.8	34.7 |	63.0	37.9	66.1	43.1	70.0	48.4	70.2	49.7
Portugal	62.3	44.9 |	60.0	42.9	58.0	38.1	54.4	35.5	57.1	32.0
Slovak Republic	. .	. .	74.4	54.6 |	73.4	53.7	77.5	59.8	76.4	61.1
Spain	70.2	54.0 |	64.8	47.6	61.8	44.0	59.2	40.2	59.6	39.8
Sweden	22.2	12.1 |	41.5	26.4	36.7	22.3	36.2	21.0	35.4	17.8
Switzerland[f]	27.5	17.0	45.7	29.0	47.3	29.9	37.2	21.8	48.8	27.0
Turkey	72.3	46.6	36.0	21.1	35.6	21.3	45.5	29.4	39.9	24.4
United Kingdom	50.3	34.4 |	43.2	28.0	43.6	27.8	38.8	23.1	37.3	23.0
United States	10.0	5.5 |	11.4	6.0	11.8	6.1	18.3	8.5	22.0	11.8
EU-15[i]	65.3	48.7 |	63.8	46.9	61.8	45.3	59.0	41.4	61.3	43.4
EU-19[i]	64.9	46.4 |	64.2	45.8	63.3	45.4	62.0	43.5	63.8	45.3
OECD Europe[i]	65.3	46.2 |	61.8	43.7 |	60.1	42.6	59.7	41.6	60.4	42.3
Total OECD[i]	46.3	31.3 |	46.9	31.6 |	44.0	29.7	45.0	29.6	45.2	30.1

Table G. **Incidence of long-term unemployment among men**[a, b, c, d, e] *(cont.)*

As a percentage of male unemployment

	1990		2000		2001		2002		2003	
	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	47.4	31.5	39.9	23.8	43.3	25.9	44.1	27.1
Austria	. .	. .	39.0	28.1	34.0	23.7	32.1	16.4	40.6	25.0
Belgium	79.5	66.1 |	70.2	55.9	68.2	52.5	66.6	45.9	63.5	44.8
Canada	20.4	7.9	20.9	12.2	17.9	10.5	19.7	10.3	20.0	11.4
Czech Republic	. .	. .	68.4	47.5	70.0	52.0	69.2	50.3	67.2	47.4
Denmark	48.9	27.8 |	36.5	20.1	39.1	26.2	30.3	17.2	43.6	21.8
Finland[f]	36.8	9.7 |	49.6	32.2	45.0	30.0	44.8	27.3	45.3	27.7
France	53.2	35.5	60.6	41.2	56.9	37.6	52.5	32.2	. .	. .
Germany	65.2	49.1 |	65.9	50.1	64.0	48.4	63.4	46.0	67.2	48.3
Greece	61.8	39.9 |	67.1	49.4	61.8	47.0	68.0	47.1	70.4	49.2
Hungary	. .	. .	71.4	51.2	69.9	48.2	69.2	47.0	66.0	42.2
Iceland[f]	5.1	1.3	17.4	8.7	17.2	11.2	19.4	9.5	. .	. .
Ireland	84.3	71.1 |	. .	. .	57.9	40.8	57.6	35.9	61.7	40.9
Italy	84.1	68.6 |	76.8	61.4	76.1	63.7	74.0	58.2	73.1	57.5
Japan	47.6	26.2	52.8	30.7	53.2	32.1	54.5	36.2	56.9	38.9
Korea	16.0	3.3	16.7	3.1	15.4	2.9	16.3	3.1	12.6	0.7
Luxembourg[g]	(80.0)	(60.0) |	(40.0)	(26.4)	(53.3)	(32.8)	(39.3)	(28.6)	. .	. .
Mexico	. .	. .	4.3	0.5	4.3	1.1	5.5	1.2	5.1	1.1
Netherlands	65.6	55.2 |	. .	. .	. .	. .	39.5	26.9	49.9	30.1
New Zealand	44.0	24.5 |	39.5	23.1	34.4	19.6	31.8	16.9	30.7	15.5
Norway	37.9	19.0 |	20.5	6.9	18.5	6.8	23.1	8.3	23.3	7.1
Poland[h]	60.2	33.3 |	59.3	34.1	62.7	39.9	67.4	45.1	69.3	48.6
Portugal	56.3	38.2 |	60.1	46.7	53.8	35.7	52.4	34.8	55.9	31.2
Slovak Republic	. .	. .	74.1	54.1 |	71.6	52.1	76.6	58.5	76.0	60.2
Spain	63.2	45.6 |	58.5	41.0	56.0	37.9	52.9	34.3	54.5	34.3
Sweden	22.2	12.3 |	44.3	29.3	39.0	24.2	38.9	23.1	38.4	19.6
Switzerland[f]	28.8	15.9	47.6	28.2	38.8	20.6	36.8	19.3	43.7	21.6
Turkey	70.8	44.6	33.1	18.1	31.9	18.2	43.5	27.0	36.3	22.1
United Kingdom	56.8	41.8 |	48.1	33.7	48.6	33.0	43.8	26.9	40.8	26.5
United States	12.1	7.0 |	12.1	6.7	12.1	6.4	18.9	8.9	23.1	12.5
EU-15[i]	63.5	47.0 |	61.9	45.5	60.3	44.4	57.3	39.5	59.8	41.8
EU-19[i]	62.9	44.8 |	62.2	44.2	61.5	44.1	60.2	41.5	62.5	43.9
OECD Europe[i]	63.7	44.5 |	58.8	41.1 |	56.8	40.0	57.2	38.9	57.6	39.7
Total OECD[i]	45.1	30.0 |	45.4	30.2 |	42.5	28.4	44.1	28.5	44.6	29.4

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Table G. **Incidence of long-term unemployment among women**[a, b, c, d, e] *(cont.)*
As a percentage of female unemployment

	1990		2000		2001		2002		2003	
	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	42.5	25.5	36.2	17.7	35.2	17.1	34.5	17.0
Austria	. .	. .	40.6	22.8	38.8	22.9	35.5	23.3	41.6	23.9
Belgium	82.5	70.0 |	73.1	56.7	64.5	50.8	68.0	53.6	66.2	48.2
Canada	19.8	6.2	17.8	10.0	15.3	8.2	17.5	8.8	16.7	8.4
Czech Republic	. .	. .	71.2	49.8	72.5	53.4	71.2	51.1	72.1	51.9
Denmark	57.7	32.0 |	39.6	20.0	38.0	18.8	36.7	22.4	38.1	17.9
Finland[f]	26.3	8.4 |	43.7	26.2	39.6	22.6	38.3	21.2	37.0	21.4
France	57.5	40.0	63.2	43.7	57.5	37.6	54.3	35.2	. .	. .
Germany	64.2	44.5 |	69.5	53.1	68.9	52.9	66.7	50.3	70.3	52.3
Greece	78.2	55.9 |	77.7	61.0	73.7	56.6	75.5	55.7	77.1	61.0
Hungary	. .	. .	67.4	45.7	64.8	44.1	64.9	41.7	64.6	42.2
Iceland[f]	21.1	11.5	19.5	14.1	24.7	13.8	32.6	13.3	. .	. .
Ireland	75.0	56.8 |	. .	. .	38.6	21.3	37.9	18.0	48.0	26.0
Italy	86.0	70.7 |	78.3	61.2	78.5	63.1	77.2	60.1	74.9	58.9
Japan	26.3	8.8	37.4	17.1	35.7	18.3	40.3	22.4	40.8	24.6
Korea	8.8	0.9	9.3	0.8	8.3	1.2	9.3	1.2	6.1	0.3
Luxembourg[g]	(55.6)	(33.3) |	(34.3)	(18.8)	(35.8)	(23.7)	(52.6)	(26.5)	. .	. .
Mexico	. .	. .	6.1	2.0	3.9	1.0	5.1	0.4	4.5	0.8
Netherlands	62.0	44.6 |	. .	. .	. .	. .	47.0	26.4	48.4	28.1
New Zealand	32.6	15.5 |	32.0	14.3	27.5	13.4	24.8	11.5	24.1	11.0
Norway	45.0	22.5 |	11.5	3.3	13.3	3.9	16.0	3.9	16.8	5.4
Poland[h]	65.2	36.0 |	66.6	41.3	69.5	46.2	72.8	52.0	71.1	50.8
Portugal	66.4	49.4 |	60.0	40.0	61.0	39.9	56.1	36.2	58.1	32.7
Slovak Republic	. .	. .	74.8	55.1 |	75.6	55.7	78.7	61.2	76.7	62.1
Spain	76.5	61.5 |	69.3	52.2	66.1	48.6	63.8	44.5	63.4	43.9
Sweden	22.2	11.8 |	37.9	22.8	33.8	20.0	32.7	18.2	31.4	15.3
Switzerland[f]	26.6	17.8	44.0	29.7	52.3	35.5	37.7	24.5	54.2	32.6
Turkey	75.1	50.8	44.2	29.8	47.1	31.1	51.5	36.5	50.0	30.9
United Kingdom	40.8	23.7 |	35.6	19.0	35.7	19.5	30.8	17.1	31.4	17.1
United States	7.3	3.7 |	10.6	5.3	11.5	5.8	17.6	8.1	20.7	11.0
EU-15[i]	67.0	50.2 |	65.6	48.2	63.2	46.2	60.7	43.3	62.9	45.2
EU-19[i]	66.7	48.0 |	66.1	47.3	65.0	46.6	63.8	45.6	65.3	47.0
OECD Europe[i]	67.0	47.9 |	64.9	46.4 |	63.8	45.6	62.7	44.7	63.8	45.4
Total OECD[i]	48.0	33.0 |	48.1	32.9 |	45.7	31.1	46.0	30.9	46.8	31.5

Table G. **Incidence of long-term unemployment among women**[a, b, c, d, e] *(cont.)*

As a percentage of female unemployment

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, the Slovak Republic and Spain, averages of semi annual figures for Turkey until 1999 and quarterly averages since 2000. The reference period for the remaining countries is as follows (among EU countries it occasionally varies from year to year): Australia, August; Austria, March; Belgium, April; Denmark, April-May; Finland, autumn prior to 1995, spring between 1995 and 1998, and averages of monthly figures since 1999; France, March; Germany, April; Greece, March-July; Iceland, April; Ireland, May; Italy, April; Japan, February; Luxembourg, April; Mexico, April; the Netherlands, March-June; 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, the Netherlands, New Zealand, Poland, Portugal, the Slovak Republic, 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, for Norway to persons aged 16-74 and for Sweden 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) Data for 1990 refer to 1992.

i) For above countries only.

Source: OECD database on Labour Force Statistics (see URLs at the beginning of the Annex).

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Table H. **Public expenditure and participant inflows* in labour market programmes in OECD countries**

Programme categories and sub-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			
	1998-99	1999-00	2000-01	2001-02	1998-99	1999-00	2000-01	2001-02	1999	2000	2001	2002	1999	2000	2001	2002	1999	2000	2001	2002	1999	2000	2001	2002
1. Public employment services and administration	**0.20**	**0.20**	**0.20**	**0.20**					**0.13**	**0.13**	**0.14**	**0.14**					**0.20**	**0.18**	**0.21**	**0.21**				
2. Labour market training	**0.02**	**0.02**	**0.02**	**0.03**	**0.79**	**0.97**	**0.96**	**0.85**	**0.18**	**0.17**	**0.19**	**0.21**	**3.01**	**3.00**	**3.74**	**4.42**	**0.24**	**0.25**	**0.26**	**0.30**	**10.18**	**10.79**	**13.31**	**13.43**
a) Training for unemployed adults and those at risk	0.02	0.02	0.02	0.02	0.58	0.78	0.73	0.65	0.16	0.16	0.18	0.19	. .	. .	. .	. .	0.16	0.16	0.17	0.19	2.99	3.04	3.64	3.44
b) Training for employed adults	–	–	–	–	0.21	0.19	0.23	0.21	0.02	0.02	0.02	0.02	. .	. .	. .	. .	0.09	0.09	0.10	0.11	7.19	7.75	9.67	9.99
3. Youth measures	**0.05**	**0.06**	**0.07**	**0.08**	**0.53**	**0.79**	**3.11**	**2.98**	**0.05**	**0.04**	**0.03**	**0.02**	**0.20**	**0.11**	**0.10**	**0.10**	**–**	**–**	**0.01**	**0.01**	**–[c]**	**0.33[c]**	**0.93[c]**	**0.74[c]**
a) Measures for unemployed and disadvantaged youth	–	0.01	0.01	–	0.23	0.62	0.88	0.16	0.02	0.02	0.01	0.01	. .	. .	. .	. .	–	–	0.01	0.01	–[c]	0.33[c]	0.93[c]	0.74[c]
b) Support of apprenticeship and related forms of general youth training	0.05	0.05	0.07	0.07	0.31	0.18	2.22	2.82	0.03	0.02	0.01	0.01	. .	. .	. .	. .	–	–	–	–	–	–	–	–
4. Subsidised employment	**0.09**	**0.11**	**0.11**	**0.10**	**0.78**	**1.21**	**1.32**	**1.52**	**0.09**	**0.11**	**0.11**	**0.10**	**0.64**	**0.56**	**0.64**	**0.67**	**0.75**	**0.78**	**0.74**	**0.60**	**6.84[c]**	**7.51[c]**	**7.27[c]**	**4.72[c]**
a) Subsidies to regular employment in the private sector	0.01	0.01	0.01	0.01	–	0.04	0.07	0.08	0.05	0.05	0.06	0.04	. .	. .	. .	. .	0.27	0.29	0.29	0.23	3.75[c]	3.91[c]	4.06[c]	2.62[c]
b) Support of unemployed persons starting enterprises	0.02	0.02	0.01	0.02	0.07	0.08	0.07	0.06	0.01	0.02	0.02	0.02	. .	. .	. .	. .	–	–	–	–	0.01[c]	0.02[c]	0.01[c]	0.02[c]
c) Direct job creation (public or non-profit)	0.07	0.09	0.09	0.08	0.70	1.09	1.18	1.38	0.03	0.04	0.03	0.04	. .	. .	. .	. .	0.47	0.48	0.45	0.37	3.08[c]	3.58[c]	3.20[c]	2.08[c]
5. Measures for the disabled	**0.06**	**0.05**	**0.05**	**0.05**	**0.80**	**0.75**	**0.81**	**0.83**	**0.06**	**0.05**	**0.06**	**0.06**	*b*	*b*	*b*	*b*	**0.12**	**0.12**	**0.12**	**0.13**	**. .**	**. .**	**. .**	. .
a) Vocational rehabilitation	0.02	0.02	0.02	0.01	0.28	0.19	0.19	0.17	0.02	0.02	0.03	0.05	. .	. .	. .	. .	0.02	0.02	0.01	0.01	. .	. .	. .	. .
b) Work for the disabled	0.04	0.04	0.04	0.04	0.52	0.56	0.62	0.66	0.03	0.03	0.02	0.02	. .	. .	. .	. .	0.10	0.10	0.11	0.12	. .	. .	. .	. .
6. Unemployment compensation	**1.17**	**1.04**	**0.97**	**1.00**	**. .**	**8.55**	**8.56**	**8.50**	**1.15**	**1.01**	**1.00**	**1.12**	**18.88**	**18.13**	**18.93**	**19.92**	**1.80**	**1.70**	**1.78**	**1.94**	**. .**	**. .**	**. .**	**. .**
7. Early retirement for labour market reasons	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**0.04**	**0.04**	**0.06**	**0.13**	**0.59**	**0.78**	**1.11**	**1.41**	**0.52**	**0.49**	**0.46**	**0.45**	**. .**	**. .**	**. .**	**. .**
TOTAL	**1.60**	**1.49**	**1.43**	**1.46**	**. .**	**12.27**	**14.76**	**14.68**	**1.71**	**1.55**	**1.58**	**1.78**	**23.32**	**22.59**	**24.51**	**26.52**	**3.64**	**3.52**	**3.59**	**3.65**	**. .**	**. .**	**. .**	**. .**
Active measures (1-5; for inflows, 2-5)	0.43	0.45	0.46	0.45	2.90	3.72	6.19	6.18	0.52	0.50	0.52	0.53	3.84	3.68	4.48	5.19	1.32	1.34	1.34	1.25	. .	. .	. .	. .
Passive measures (6 and 7)	1.17	1.04	0.97	1.00	. .	8.55	8.56	8.50	1.19	1.05	1.06	1.24	19.47	18.91	20.03	21.33	2.32	2.18	2.25	2.40	. .	. .	. .	. .

. . Data not available.
– Nil or less than half of the last digit used.
* Data for participant inflows are reported only for categories 2 to 7 since data for category 1 "Public employment services and administration" are commonly incomplete and non-comparable. Totals shown must be interpreted with caution.
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".
c) Data for categories 3 and 4 refer to stocks.

Table H. **Public expenditure and participant inflows* in labour market programmes in OECD countries** *(cont.)*

Programme categories and sub-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			
	1999-00	2000-01	2001-02	2002-03	1999-00	2000-01	2001-02	2002-03	1999	2000	2001	2002	1999	2000	2001	2002	1997	1998	1999	2000	1997	1998	1999	2000
1. Public employment services and administration	**0.20**	**0.19**	**0.20**	**. .**					**0.09**	**0.08**	**0.08**	**0.07**					**0.12**	**0.12**	**0.12**	**0.12**				
2. Labour market training	**0.15**	**0.15**	**0.15**	**. .**	**1.18**[b]	**1.09**[b]	**1.21**[b]	**1.15**[b]	**0.01**	**0.02**	**0.02**	**0.02**	**0.44**	**0.64**	**0.68**	**0.70**	**0.93**	**0.97**	**0.99**	**0.86**	**18.47**	**20.62**	**19.72**	**15.90**
a) Training for unemployed adults and those at risk	0.15	0.14	0.15	. .	1.18	1.09	1.21	1.15	0.01	0.02	0.02	0.02	0.44	0.64	0.68	0.70	0.64	0.72	0.78	0.67	8.82	12.46	11.64	5.76
b) Training for employed adults	–	–	–	. .	. .	. .	. .	. .	–	–	–	–	–	–	0.01	–	0.28	0.25	0.21	0.19	9.65	8.16	8.09	10.15
3. Youth measures	**0.02**	**0.02**	**0.02**	**. .**	**0.55**	**0.48**	**0.42**	**0.39**	**0.02**	**0.02**	**0.02**	**0.02**	**0.21**	**0.22**	**0.19**	**0.15**	**0.10**	**0.08**	**0.12**	**0.10**	**1.50**	**1.50**	**1.88**	**1.83**
a) Measures for unemployed and disadvantaged youth	0.01	0.01	0.01	. .	0.21	0.17	0.10	0.08	0.02	0.02	0.02	0.02	0.21	0.22	0.19	0.15	0.10	0.08	0.12	0.10	1.50	1.50	1.88	1.83
b) Support of apprenticeship and related forms of general youth training	0.01	0.01	0.01	. .	0.34	0.31	0.32	0.30	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
4. Subsidised employment	**0.05**	**0.03**	**0.03**	**. .**	**0.41**	**0.34**	**0.31**	**0.29**	**0.05**	**0.09**	**0.09**	**0.06**	**0.60**	**0.90**	**0.80**	**0.59**	**0.30**	**0.27**	**0.23**	**0.17**	**1.11**	**1.05**	**1.00**	**0.82**
a) Subsidies to regular employment in the private sector	0.01	–	–	. .	0.16	0.18	0.17	0.15	0.02	0.04	0.04	0.02	0.24	0.40	0.33	0.21	0.02	0.02	0.02	0.02	0.22	0.25	0.22	0.20
b) Support of unemployed persons starting enterprises	0.01	0.01	0.01	. .	0.09	0.07	0.07	0.08	0.01	0.01	0.01	–	0.06	0.11	0.09	0.06	0.06	0.04	0.02	–	0.10	0.02	–	–
c) Direct job creation (public or non-profit)	0.04	0.02	0.02	. .	0.15	0.08	0.06	0.06	0.03	0.04	0.04	0.03	0.31	0.38	0.39	0.32	0.22	0.21	0.19	0.15	0.78	0.78	0.78	0.62
5. Measures for the disabled	**0.02**	**0.02**	**0.02**	**. .**	**. .**	**. .**	**. .**	**. .**	**0.01**	**0.01**	**0.01**	**0.01**	**0.02**	**0.03**	**0.02**	**0.02**	**0.21**	**0.25**	**0.33**	**0.34**	**2.28**	**2.51**	**3.05**	**2.58**
a) Vocational rehabilitation	0.02	0.02	0.02	. .	. .	. .	. .	. .	–	–	–	–	–	–	–	–	0.21	0.25	0.33	0.34	2.28	2.51	3.05	2.58
b) Work for the disabled	–	–	–	. .	0.04	0.03	0.03	0.02	0.01	0.01	0.01	0.01	0.02	0.03	0.02	0.02	–	–	–	–	–	–	–	–
6. Unemployment compensation	**0.77**	**0.70**	**0.80**	**. .**	**. .**	**. .**	**. .**	**. .**	**0.30**	**0.29**	**0.24**	**0.27**	**. .**	**. .**	**. .**	**. .**	**2.12**	**1.69**	**1.44**	**1.37**	**24.42**	**23.08**	**21.15**	**19.61**
7. Early retirement for labour market reasons	**–**	**–**	**–**	**. .**	**. .**	**. .**	**. .**	**. .**	**–**	**–**	**–**	**–**	**1.11**	**1.09**	**0.99**	**0.39**	**1.71**	**1.72**	**1.71**	**1.67**	**1.06**	**1.06**	**0.58**	**0.98**
TOTAL	**1.23**	**1.11**	**1.23**	**. .**	**. .**	**. .**	**. .**	**. .**	**0.48**	**0.50**	**0.45**	**0.45**	**. .**	**. .**	**. .**	**. .**	**5.49**	**5.09**	**4.94**	**4.63**	**48.86**	**49.83**	**47.39**	**41.72**
Active measures (1-5; for inflows, 2-5)	0.45	0.40	0.42	. .	2.18[b, c]	1.93[b, c]	1.97[b, c]	1.85[b, c]	0.18	0.22	0.21	0.17	1.27	1.78	1.69	1.47	1.66	1.68	1.79	1.58	23.37	25.69	25.66	21.13
Passive measures (6 and 7)	0.78	0.70	0.80	. .	. .	. .	. .	. .	0.30	0.29	0.24	0.27	. .	. .	. .	. .	3.83	3.41	3.15	3.04	25.48	24.15	21.72	20.59

. . Data not available.
– Nil or less than half of the last digit used.
* Data for participant inflows are reported only for categories 2 to 7 since data for category 1 "Public employment services and administration" are commonly incomplete and non-comparable. Totals shown must be interpreted with caution.
a) Fiscal years starting on April 1.
b) Participant inflows for category 2b "Training for employed adults" are not included.
c) Participant inflows for category 5a "Vocational rehabilitation" are not included.

Table H. **Public expenditure and participant inflows* in labour market programmes in OECD countries** *(cont.)*

Programme categories and sub-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			
	1999	2000	2001	2002	1999	2000	2001	2002	1999	2000	2001	2002	1999	2000	2001	2002	1999	2000	2001	2002	1999	2000	2001	2002
1. Public employment services and administration	**0.15**	**0.11**	**0.12**	**0.12**					**0.17**	**0.18**	**0.18**	**0.18**					**0.23**	**0.23**	**0.23**	**0.23**				
2. Labour market training	**0.40**	**0.30**	**0.29**	**0.30**	**4.22**	**3.40**	**2.95**	**2.95**	**0.29**	**0.25**	**0.24**	**0.23**	**2.64**	**2.39**	**2.27**	. .	**0.35**	**0.34**	**0.34**	**0.32**	**1.38**	**1.55**	**1.27**	**1.24**
a) Training for unemployed adults and those at risk	0.37	0.27	0.26	0.27	2.33	2.55	2.35	2.51	0.25	0.22	0.21	0.21	2.11	1.85	1.73	. .	0.35	0.34	0.34	0.32	1.38	1.55	1.27	1.24
b) Training for employed adults	0.04	0.03	0.03	0.03	1.89	0.85	0.60	0.44	0.04	0.03	0.03	0.02	0.53	0.54	0.54	. .	–	–	–	–	–	–	–	–
3. Youth measures	**0.20**	**0.18**	**0.16**	**0.17**	**2.49**	**2.28**	**2.00**	**2.11**	**0.40**	**0.42**	**0.43**	**0.40**	**2.96**	**2.81**	**2.69**	. .	**0.07**	**0.07**	**0.08**	**0.10**	**0.84**	**0.87**	**0.91**	**1.01**
a) Measures for unemployed and disadvantaged youth	0.07	0.06	0.06	0.07	1.25	1.05	1.07	1.01	0.21	0.24	0.25	0.25	0.70	0.56	0.44	. .	0.06	0.06	0.07	0.09	0.62	0.67	0.67	0.74
b) Support of apprenticeship and related forms of general youth training	0.13	0.11	0.10	0.11	1.23	1.23	0.93	1.10	0.19	0.18	0.18	0.15	2.26	2.25	2.25	. .	0.01	0.01	0.01	0.02	0.22	0.21	0.24	0.27
4. Subsidised employment	**0.38**	**0.32**	**0.29**	**0.33**	**2.74**	**2.24**	**2.23**	**1.73**	**0.43**	**0.38**	**0.35**	**0.35**	**3.52**	**3.10**	**2.45**	. .	**0.40**	**0.31**	**0.25**	**0.22**	**1.62**	**1.26**	**1.06**	**0.97**
a) Subsidies to regular employment in the private sector	0.16	0.15	0.14	0.16	1.06	0.91	0.85	0.42	0.23	0.18	0.16	0.15	1.95	1.65	1.20	. .	0.03	0.02	0.02	0.03	0.10	0.11	0.13	0.08
b) Support of unemployed persons starting enterprises	0.03	0.03	0.03	0.03	0.17	0.16	0.44	0.43	–	–	–	–	0.16	0.16	0.14	. .	0.04	0.04	0.04	0.05	0.25	0.23	0.24	0.31
c) Direct job creation (public or non-profit)	0.19	0.13	0.12	0.14	1.51	1.17	0.94	0.88	0.19	0.18	0.18	0.17	1.36	1.23	1.06	. .	0.33	0.25	0.19	0.15	1.27	0.91	0.69	0.58
5. Measures for the disabled	**0.10**	**0.09**	**0.09**	**0.08**	**0.83**	**0.90**	**0.88**	**0.83**	**0.09**	**0.09**	**0.09**	**0.09**	**0.37**[a]	**0.44**[a]	**0.55**[a]	. .	**0.27**	**0.27**	**0.29**	**0.30**	**0.33**[a]	**0.34**[a]	**0.34**[a]	**0.38**[a]
a) Vocational rehabilitation	0.06	0.05	0.05	0.05	0.83	0.90	0.88	0.83	0.02	0.03	0.03	0.03	0.37	0.44	0.55	. .	0.12	0.12	0.13	0.13	0.33	0.34	0.34	0.38
b) Work for the disabled	0.05	0.04	0.04	0.04	–	–	–	–	0.06	0.06	0.06	0.07	. .	. .	. .	. .	0.15	0.15	0.16	0.17	. .	. .	. .	. .
6. Unemployment compensation	**1.88**	**1.65**	**1.51**	**1.53**	. .	. .	. .	. .	**1.46**	**1.37**	**1.39**	**1.63**	**6.58**	**6.35**	**7.12**	. .	**2.12**	**1.88**	**1.92**	**2.10**	. .	. .	. .	. .
7. Early retirement for labour market reasons	**0.47**	**0.48**	**0.50**	**0.53**	. .	. .	. .	. .	**0.30**	**0.27**	**0.24**	**0.17**	**0.29**	**0.25**	**0.17**	. .	**0.01**	**0.01**	**0.02**	**0.03**	. .	. .	. .	. .
TOTAL	**3.57**	**3.13**	**2.95**	**3.07**	. .	. .	. .	. .	**3.13**	**2.95**	**2.92**	**3.06**	**16.36**[a]	**15.35**[a]	**15.26**[a]	. .	**3.44**	**3.13**	**3.13**	**3.31**	. .	. .	. .	. .
Active measures (1-5; for inflows, 2-5)	1.23	1.00	0.94	1.01	10.27	8.82	8.07	7.61	1.38	1.31	1.29	1.25	9.49[a]	8.75[a]	7.96[a]	. .	1.31	1.23	1.18	1.18	4.16[a]	4.01[a]	3.58[a]	3.60[a]
Passive measures (6 and 7)	2.34	2.13	2.01	2.06	. .	. .	. .	. .	1.75	1.64	1.63	1.81	6.87	6.60	7.30	. .	2.12	1.90	1.94	2.13	. .	. .	. .	. .

. . Data not available.
– Nil or less than half of the last digit used.
* Data for participant inflows are reported only for categories 2 to 7 since data for category 1 "Public employment services and administration" are commonly incomplete and non-comparable. Totals shown must be interpreted with caution.
a) Participant inflows for category 5b "Work for the disabled" are not included.

Table H. **Public expenditure and participant inflows* in labour market programmes in OECD countries** *(cont.)*

Programme categories and sub-categories	Greece								Hungary								Ireland			
	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	1999	2000	2001	2002	1999	2000	2001	2002	2000	2001	2000	2001
1. Public employment services and administration	**0.14**	**0.14**	**0.12**	**0.06**					**0.12**	**0.11**	**0.12**	**0.12**					**. .**	**0.24**		
2. Labour market training	**0.13**	**0.09**	**0.06**	**0.21**	**2.01**	**2.09**	**. .**	**. .**	**0.07**	**0.07**	**0.07**	**0.06**	**1.35**	**1.34**	**1.62**	**1.17**	**. .**	**0.15**	**. .**	**. .**
a) Training for unemployed adults and those at risk	. .	. .	. .	0.12	0.13	0.19	. .	. .	0.07	0.06	0.07	0.06	1.24	1.25	1.57	1.09	. .	0.15	. .	1.43
b) Training for employed adults	. .	. .	. .	0.07	1.88	1.91	. .	. .	–	–	–	–	0.11	0.09	0.06	0.09	. .	0.01	. .	. .
3. Youth measures	**0.10**	**0.09**	**0.09**	**0.10**	**0.32**	**0.38**	**. .**	**. .**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**. .**	**0.18**	**. .**	**1.73**
a) Measures for unemployed and disadvantaged youth	0.03	0.03	0.02	–	–	–	. .	. .	–	–	–	–	–	–	–	–	. .	0.08	. .	0.73
b) Support of apprenticeship and related forms of general youth training	0.07	0.07	0.07	0.10	0.32	0.38	. .	. .	–	–	–	–	–	–	–	–	. .	0.10	. .	1.00
4. Subsidised employment	**0.08**	**0.10**	**0.06**	**0.08**	**0.91**	**0.54**	**. .**	**. .**	**0.22**	**0.21**	**0.29**	**0.34**	**4.07**	**4.02**	**5.10**	**6.71**	**. .**	**0.53**	**. .**	**5.00**
a) Subsidies to regular employment in the private sector	0.05	0.07	0.04	0.05	0.73	0.45	. .	. .	0.09	0.07	0.09	0.08	1.03	0.98	1.15	0.66	. .	0.17	. .	2.52
b) Support of unemployed persons starting enterprises	0.02	0.02	0.02	0.03	0.18	0.09	. .	. .	–	–	0.01	0.01	0.09	0.09	0.24	0.22	. .	. .	. .	–
c) Direct job creation (public or non-profit)	–	–	–	–	–	–	–	–	0.13	0.14	0.19	0.26	2.96	2.95	3.72	5.82	. .	0.36	. .	2.48
5. Measures for the disabled	**–**	**0.03**	**0.01**	**0.01**	**0.01**	**0.02**	**. .**	**. .**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**. .**	**0.03**	**. .**	**. .**
a) Vocational rehabilitation	–	. .	. .	0.01	0.01	0.01	. .	. .	–	–	–	–	–	–	–	–	. .	0.03	. .	. .
b) Work for the disabled	–	. .	. .	–	0.01	0.01	. .	. .	–	–	–	–	–	–	–	–	. .	0.01	. .	. .
6. Unemployment compensation	**0.42**	**0.44**	**0.49**	**0.47**	**7.87**	**8.26**	**. .**	**. .**	**0.47**	**0.43**	**0.37**	**0.37**	**7.44**	**7.02**	**7.16**	**7.10**	**. .**	**0.63**	**. .**	**7.34**
7. Early retirement for labour market reasons	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**0.09**	**0.03**	**–**	**–**	**–**	**–**	**–**	**–**	**. .**	**0.07**	**. .**	**0.66**
TOTAL	**0.87**	**0.88**	**0.84**	**0.93**	**11.13**	**11.28**	**. .**	**. .**	**0.97**	**0.86**	**0.86**	**0.90**	**12.86**	**12.38**	**13.88**	**14.98**	**. .**	**1.83**	**. .**	**. .**
Active measures (1-5; for inflows, 2-5)	0.45	0.44	0.35	0.46	3.26	3.02	. .	. .	0.41	0.39	0.48	0.52	5.42	5.36	6.73	7.88	. .	1.14	. .	. .
Passive measures (6 and 7)	0.42	0.44	0.49	0.47	7.87	8.26	. .	. .	0.56	0.46	0.38	0.37	7.44	7.02	7.16	7.10	. .	0.70	. .	8.00

. . Data not available.
– Nil or less than half of the last digit used.
* Data for participant inflows are reported only for categories 2 to 7 since data for category 1 "Public employment services and administration" are commonly incomplete and non-comparable. Totals shown must be interpreted with caution.

Table H. **Public expenditure and participant inflows* in labour market programmes in OECD countries** *(cont.)*

Programme categories and sub-categories	Italy				Japan[b]				Korea								Mexico							
	Public expenditure as a percentage of GDP				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			
	1999	2000	2001	2002	1999-00	2000-01	2001-02	2002-03	1999	2000	2001	2002	1999	2000	2001	2002	1998	1999	2000	2001	1998	1999	2000	2001
1. Public employment services and administration	**. .**	**. .**	**. .**	**. .**	**0.17**	**0.17**	**0.17**	**0.18**	**0.04**	**0.04**	**0.05**	**0.05**					**–**	**–**	**–**	**–**				
2. Labour market training	**0.07**	**0.05**	**0.04**	**0.05**	**0.04**	**0.04**	**0.04**	**0.04**	**0.11**	**0.09**	**0.08**	**0.07**	**5.37**	**6.82**	**8.09**	**8.24**	**0.04**	**0.04**	**0.04**	**0.03**	**2.92**	**3.42**	**3.39**	**1.87**
a) Training for unemployed adults and those at risk	. .	. .	. .	. .	. .	. .	. .	. .	0.08	0.06	0.04	0.04	1.73	1.26	1.15	0.88	0.03	0.03	0.03	0.02	1.32	1.44	1.52	1.01
b) Training for employed adults	. .	. .	. .	. .	–	–	–	–	0.02	0.03	0.04	0.04	3.64	5.56	6.94	7.35	0.01	0.01	0.01	0.01	1.60	1.98	1.88	0.85
3. Youth measures	**0.24**	**0.23**	**0.21**	**0.20**	. .	. .	. .	**0.01**	**0.04**	**0.03**	**0.02**	**0.02**	**0.36**	**0.42**	**0.34**	**0.19**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**
a) Measures for unemployed and disadvantaged youth	0.01	0.01	0.01	–	–	–	–	–	0.01	0.01	0.01	0.01	0.14	0.16	0.18	0.15	–	–	–	–	–	–	–	–
b) Support of apprenticeship and related forms of general youth training	0.23	0.21	0.20	0.20	–	–	–	–	0.03	0.02	0.01	–	0.22	0.26	0.16	0.05	–	–	–	–	–	–	–	–
4. Subsidised employment	**0.27**	**0.32**	**0.38**	**0.32**	**0.08**	**0.08**	**0.07**	**0.06**	**0.51**	**0.31**	**0.14**	**0.11**	**9.28**	**5.66**	**4.51**	**3.99**	**0.03**	**0.04**	**0.03**	**0.02**	**1.19**	**1.76**	**1.37**	**1.43**
a) Subsidies to regular employment in the private sector	0.19	0.24	0.27	0.26	. .	. .	. .	. .	0.02	0.01	0.01	0.01	2.24	1.64	1.94	1.73	–	–	–	–	–	–	–	–
b) Support of unemployed persons starting enterprises	0.01	0.04	0.07	0.02	. .	. .	. .	. .	0.01	0.01	0.01	0.01	0.01	–	–	–	–	–	–	–	0.16	0.12	0.10	0.07
c) Direct job creation (public or non-profit)	0.07	0.05	0.05	0.04	. .	. .	. .	. .	0.48	0.29	0.12	0.09	7.04	4.01	2.57	2.25	0.03	0.04	0.02	0.02	1.04	1.64	1.27	1.36
5. Measures for the disabled	**. .**	**. .**	**. .**	**. .**	**0.01**	**0.01**	**0.01**	**0.01**	**0.01**	**0.01**	**0.01**	**0.02**	**0.11**	**0.12**	**0.14**	**0.28**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**
a) Vocational rehabilitation	. .	. .	. .	. .	. .	. .	. .	. .	0.01	0.01	0.01	0.02	0.11	0.11	0.11	0.20	–	–	–	–	–	–	–	–
b) Work for the disabled	. .	. .	. .	. .	. .	. .	. .	. .	–	. .	. .	–	0.01	0.01	0.02	0.08	–	–	–	–	–	–	–	–
6. Unemployment compensation	**0.56**	**0.52**	**0.53**	**0.54**	**0.50**	**0.54**	**0.45**	**0.47**	**0.19**	**0.09**	**0.15**	**0.14**	**2.14**	**1.38**	**1.67**	**1.78**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**
7. Early retirement for labour market reasons	**0.13**	**0.11**	**0.08**	**0.10**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**
TOTAL	**1.26**[a]	**1.22**[a]	**1.25**[a]	**1.20**[a]	**0.80**	**0.83**	**0.75**	**0.76**	**0.89**	**0.58**	**0.46**	**0.41**	**17.26**	**14.40**	**14.75**	**14.48**	**0.07**	**0.08**	**0.06**	**0.06**	**4.12**	**5.18**	**4.76**	**3.30**
Active measures (1-5; for inflows, 2-5)	0.58[a]	0.60[a]	0.63[a]	0.57[a]	0.29	0.29	0.28	0.28	0.70	0.49	0.31	0.27	15.13	13.02	13.08	12.70	0.07	0.08	0.06	0.06	4.12	5.18	4.76	3.30
Passive measures (6 and 7)	0.68	0.62	0.61	0.63	0.51	0.55	0.46	0.48	0.19	0.09	0.15	0.14	2.14	1.38	1.67	1.78	–	–	–	–	–	–	–	–

. . Data not available.
– Nil or less than half of the last digit used.
* Data for participant inflows are reported only for categories 2 to 7 since data for category 1 "Public employment services and administration" are commonly incomplete and non-comparable. Totals shown must be interpreted with caution.
a) Only active categories 2-4 are taken into account.
b) Fiscal years starting on April 1.

Table H. **Public expenditure and participant inflows* in labour market programmes in OECD countries** *(cont.)*

Programme categories and sub-categories	Netherlands								New Zealand[b]								Norway							
	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			
	1999	2000	2001	2002	1999	2000	2001	2002	1999-00	2000-01	2001-02	2002-03	1999-00	2000-01	2001-02	2002-03	1999	2000	2001	2002	1999	2000	2001	2002
1. Public employment services and administration	**0.28**	**0.26**	**0.25**	**0.28**					**0.15**	**0.12**	**0.12**	**0.12**					**0.15**	**0.12**	**0.12**	**0.13**				
2. Labour market training	**0.46**	**0.51**	**0.54**	**0.60**	**3.46**	**3.62**	**3.82**	**3.97**	**0.17**	**0.16**	**0.12**	**0.14**	**5.43**	**3.34**	**2.87**	**2.57**	**0.05**	**0.08**	**0.06**	**0.05**	**1.03**	**1.05**	**0.86**	**0.99**
a) Training for unemployed adults and those at risk	0.40[a]	0.44[a]	0.46[a]	0.52[a]	1.37	1.34	1.37	1.44	0.17	0.16	0.12	0.14	5.43	3.34	2.87	2.57	0.05	0.08	0.06	0.05	1.03	1.05	0.86	0.99
b) Training for employed adults	0.06	0.07	0.08	0.09	2.09	2.28	2.44	2.53	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
3. Youth measures	**0.04**	**0.04**	**0.04**	**0.04**	**0.64**	**0.63**	**0.64**	**0.68**	**0.14**	**0.14**	**0.14**	**0.15**	**4.46**	**4.93**	**5.28**	**. .**	**0.01**	**0.01**	**0.01**	**0.01**	**0.39**	**0.41**	**0.41**	**0.51**
a) Measures for unemployed and disadvantaged youth	–	–	–	–	–	–	–	–	0.07	0.07	0.06	0.06	1.07	1.32	1.04	1.03	0.01	0.01	0.01	0.01	0.39	0.41	0.41	0.51
b) Support of apprenticeship and related forms of general youth training	0.04	0.04	0.04	0.04	0.64	0.63	0.64	0.68	0.07	0.07	0.08	0.09	3.40	3.60	4.24	. .	–	–	–	–	–	–	–	–
4. Subsidised employment	**0.38**	**0.33**	**0.33**	**0.33**	**1.88**	**1.88**	**1.77**	**1.55**	**0.11**	**0.09**	**0.08**	**0.08**	**2.63**	**1.96**	**1.67**	**1.11**	**0.01**	**0.01**	**–**	**0.01**	**0.25**	**0.26**	**0.27**	**0.24**
a) Subsidies to regular employment in the private sector	0.05	0.05	0.05	0.04	1.39	1.43	1.41	1.21	0.06	0.05	0.04	0.04	1.06	0.91	0.93	0.83	0.01	0.01	–	0.01	0.19	0.22	0.22	0.21
b) Support of unemployed persons starting enterprises	–	–	–	–	–	–	–	–	0.03	0.03	0.03	0.03	0.35	0.36	0.30	. .	–	–	–	–	0.06	0.05	0.05	0.02
c) Direct job creation (public or non-profit)	0.33	0.27	0.28	0.29	0.49	0.45	0.36	0.35	0.02	0.01	0.01	0.01	1.22	0.68	0.44	0.28	–	–	–	–	–	–	–	–
5. Measures for the disabled	**0.56**	**0.55**	**0.58**	**0.59**	**0.73**	**0.77**	**0.99**	**1.00**	**0.05**	**0.05**	**0.05**	**0.05**	**1.33**	**1.31**	**. .**	**. .**	**0.57**	**0.52**	**0.59**	**0.67**	**1.84**	**2.29**	**2.54**	**2.74**
a) Vocational rehabilitation	–	–	–	–	0.02	–	–	–	0.03	0.01	0.01	0.01	1.00	0.40	. .	. .	0.39	0.37	0.42	0.50	1.26	1.58	1.78	. .
b) Work for the disabled	0.56	0.55	0.58	0.59	0.71	0.77	0.99	1.00	0.02	0.04	0.04	0.04	0.33	0.90	. .	. .	0.18	0.15	0.16	0.17	0.58	0.72	0.76	. .
6. Unemployment compensation	**2.12**	**1.81**	**1.65**	**1.72**	**5.72**	**4.77**	**4.33**	**5.16**	**1.56**	**1.38**	**1.14**	**1.00**	**10.21[c]**	**8.64[c]**	**7.98[c]**	**7.22[c]**	**0.45**	**0.43**	**0.44**	**0.54**	**4.70**	**4.46**	**4.20**	**5.37**
7. Early retirement for labour market reasons	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**
TOTAL	**3.84**	**3.49**	**3.39**	**3.56**	**12.43**	**11.67**	**11.55**	**12.36**	**2.18**	**1.95**	**1.66**	**1.52**	**24.06**	**20.17**	**17.80[d]**	**. .**	**1.24**	**1.17**	**1.22**	**1.41**	**8.20**	**8.47**	**8.26**	**9.85**
Active measures (1-5; for inflows, 2-5)	1.72	1.68	1.74	1.85	6.71	6.90	7.22	7.20	0.62	0.56	0.51	0.52	13.84[c]	11.54[c]	9.82[c, d]	. .	0.79	0.74	0.78	0.87	3.50	4.02	4.06	4.48
Passive measures (6 and 7)	2.12	1.81	1.65	1.72	5.72	4.77	4.33	5.16	1.56	1.38	1.14	1.00	10.21[c]	8.64[c]	7.98[c]	7.22[c]	0.45	0.43	0.44	0.54	4.70	4.46	4.20	5.37

. . Data not available.
– Nil or less than half of the last digit used.
* Data for participant inflows are reported only for categories 2 to 7 since data for category 1 "Public employment services and administration" are commonly incomplete and non-comparable. Totals shown must be interpreted with caution.
a) Incorporates a revised estimate for unemployment benefits paid to participants in training.
b) Fiscal years starting on July 1.
c) Income support paid to participants in active programmes is counted in "unemployment compensation".
d) Participant inflows for category 5 "Measures for the disabled" are not included.

Table H. **Public expenditure and participant inflows* in labour market programmes in OECD countries** *(cont.)*

Programme categories and sub-categories	Poland								Portugal								Slovak Republic							
	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			
	1999	2000	2001	2002	1999	2000	2001	2002	1997	1998	1999	2000	1997	1998	1999	2000	1999	2000	2001	2002	1999	2000	2001	2002
1. Public employment services and administration	. .	. .	. .	. .					**0.11**	**0.11**	**0.11**	**0.11**					**0.16**	**0.15**	**0.15**	**0.15**				
2. Labour market training	**0.02**	**0.01**	**0.01**	**0.01**	**0.74**	**0.57**	**0.27**	**0.40**	**0.27**	**0.29**	**0.29**	**0.15**	**10.77**	**14.96**	. .	. .	**0.01**	**0.01**	**0.02**	**0.04**	**0.23**	**0.19**	**0.95**	**1.91**
a) Training for unemployed adults and those at risk	0.02	0.01	0.01	0.01	0.74	0.57	0.27	0.40	0.08	0.08	0.08	0.07	0.60	0.61	0.81	. .	0.01	–	0.02	0.04	0.22	0.18	0.93	1.86
b) Training for employed adults	–	–	–	–	–	–	–	–	0.19	0.22	0.21	0.09	10.17	14.35	. .	. .	–	–	–	–	0.01	0.01	0.03	0.05
3. Youth measures	**0.09**	**0.07**	**0.08**	**0.07**	**2.37**	. .	. .	**0.75**	**0.28**	**0.24**	**0.28**	**0.22**	. .	. .	. .	. .	**–**	**–**	**–**	**0.01**	**–**	**–**	**0.01**	**0.50**
a) Measures for unemployed and disadvantaged youth	0.04	0.03	0.02	0.03	0.81	. .	. .	0.33	0.05	0.07	0.09	0.10	0.27	0.41	0.56	0.50	–	–	–	0.01	–	–	0.01	0.50
b) Support of apprenticeship and related forms of general youth training	0.05	0.03	0.05	0.04	1.56	. .	. .	0.42	0.22	0.18	0.19	0.12	. .	. .	. .	. .	–	–	–	–	–	–	–	–
4. Subsidised employment	**0.10**	**0.06**	**0.04**	**0.03**	**1.19**	**0.90**	**0.41**	**0.51**	**0.09**	**0.09**	**0.10**	**0.09**	**1.02**	**1.06**	**1.13**	**1.07**	**0.03**	**0.14**	**0.17**	**0.21**	**0.27**	**2.64**	**2.29**	**2.63**
a) Subsidies to regular employment in the private sector	0.05	0.02	0.02	0.01	0.74	0.58	0.23	0.30	0.01	0.01	0.01	0.01	0.04	0.06	0.08	0.05	0.01	–	0.01	0.06	0.03	0.04	0.21	0.74
b) Support of unemployed persons starting enterprises	0.02	0.01	0.01	0.01	0.05	0.03	0.02	0.02	0.02	0.03	0.03	0.03	0.13	0.11	0.12	0.09	–	–	0.01	0.06	0.02	–	0.09	0.35
c) Direct job creation (public or non-profit)	0.03	0.02	0.02	0.01	0.40	0.29	0.17	0.20	0.05	0.05	0.05	0.05	0.84	0.89	0.94	0.92	0.01	0.14	0.15	0.09	0.22	2.59	1.99	1.54
5. Measures for the disabled	**0.14**	**0.09**	. .	. .	**0.23**	**0.21**	. .	. .	**0.03**	**0.04**	**0.04**	**0.04**	**0.15**	**0.17**	**0.14**	**0.16**	**0.02**	**0.02**	**0.03**	**0.04**	**0.11**[a]	**0.10**[a]	**0.12**[a]	**0.19**[a]
a) Vocational rehabilitation	0.01	0.01	. .	. .	0.04	0.06	. .	. .	0.02	–	–	–	0.13	. .	–	–	–	–	–	–	. .	. .	. .	. .
b) Work for the disabled	0.13	0.09	. .	. .	0.20	0.15	. .	. .	0.01	0.01	–	–	0.02	. .	–	–	0.01	0.02	0.02	0.03	0.11	0.10	0.12	0.19
6. Unemployment compensation	**0.61**	**0.79**	**0.96**	**1.14**	**3.58**	**4.58**	**5.26**	**6.09**	**0.69**	**0.65**	**0.65**	**0.69**	**3.40**	**3.26**	**3.18**	**3.18**	**0.86**	**0.66**	**0.47**	**0.48**	**10.64**	**7.93**	**7.46**	**7.36**
7. Early retirement for labour market reasons	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**0.14**	**0.15**	**0.15**	**0.21**	**0.50**	**0.55**	**0.53**	**0.81**	**0.18**	**0.18**	**0.07**	**0.01**	**0.82**	**0.32**	**–**	**–**
TOTAL	. .	. .	. .	. .	**8.12**	. .	. .	. .	**1.60**	**1.57**	**1.62**	**1.51**	. .	. .	. .	. .	**1.26**	**1.16**	**0.91**	**0.94**	**12.06**[a]	**11.18**[a]	**10.83**[a]	**12.58**[a]
Active measures (1-5; for inflows, 2-5)	. .	. .	. .	. .	4.53	. .	. .	. .	0.77	0.77	0.81	0.61	. .	. .	. .	. .	0.21	0.32	0.37	0.46	0.61[a]	2.93[a]	3.37[a]	5.22[a]
Passive measures (6 and 7)	0.61	0.79	0.96	1.14	3.58	4.58	5.26	6.09	0.83	0.80	0.81	0.90	3.90	3.81	3.71	3.98	1.05	0.84	0.54	0.48	11.45	8.25	7.46	7.36

. . Data not available.
– Nil or less than half of the last digit used.
* Data for participant inflows are reported only for categories 2 to 7 since data for category 1 "Public employment services and administration" are commonly incomplete and non-comparable. Totals shown must be interpreted with caution.
a) Participant inflows for category 5a "Vocational rehabilitation" are not included.

Table H. **Public expenditure and participant inflows* in labour market programmes in OECD countries** *(cont.)*

Programme categories and sub-categories	Spain[a]								Sweden								Switzerland							
	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			
	1999	2000	2001	2002	1999	2000	2001	2002	1999	2000	2001	2002	1999	2000	2001	2002	1999	2000	2001	2002	1999	2000	2001	2002
1. Public employment services and administration	**0.11**	**0.10**	**0.09**	**0.09**					**0.29**	**0.30**	**0.35**	**0.37**					**0.15**	**0.11**	**0.10**	**0.11**				
2. Labour market training	**0.26**	**0.25**	**0.24**	**0.22**	**10.12**	**10.45**	**12.30**	**10.98**	**0.47**	**0.29**	**0.30**	**0.29**	**3.79**	**2.84**	**2.68**	**2.50**	**0.13**	**0.10**	**0.09**	**0.13**	**1.73**	**1.37**	**1.22**	**1.74**
a) Training for unemployed adults and those at risk	0.10	0.10	0.10	0.12	1.95	2.14	2.20	2.24	0.46	0.29	0.29	0.28	3.21	2.42	2.32	2.40	0.13	0.10	0.09	0.12	1.70	1.34	1.19	1.71
b) Training for employed adults	0.11	0.11	0.10	0.10	8.17	8.31	10.10	8.74	0.01	0.01	0.01	0.01	0.58	0.42	0.36	0.10	–	–	–	–	0.03	0.03	0.03	0.03
3. Youth measures	**0.08**	**0.05**	**0.04**	**0.06**	**2.41**	**1.98**	**. .**	**. .**	**0.03**	**0.02**	**0.02**	**0.02**	**0.73**	**0.62**	**0.55**	**0.61**	**–**	**0.01**	**0.01**	**0.01**	**0.06**	**0.06**	**0.06**	**0.07**
a) Measures for unemployed and disadvantaged youth	0.06	0.05	0.04	0.04	0.98	0.80	. .	. .	0.03	0.02	0.02	0.02	0.73	0.62	0.55	0.61	–	0.01	0.01	0.01	0.06	0.06	0.06	0.07
b) Support of apprenticeship and related forms of general youth training	0.01	–	–	–	1.43	1.18	. .	. .	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
4. Subsidised employment	**0.48**	**0.49**	**0.43**	**0.45**	**5.09**	**5.17**	**5.42**	**5.06**	**0.44**	**0.26**	**0.23**	**0.21**	**3.33**	**2.97**	**2.11**	**1.95**	**0.24**	**0.14**	**0.11**	**0.13**	**3.02**	**2.14**	**1.67**	**2.00**
a) Subsidies to regular employment in the private sector	0.30	0.30	0.25	0.28	3.20	3.64	4.07	3.75	0.17	0.14	0.18	0.17	2.78	2.66	1.89	1.70	0.07	0.06	0.04	0.04	2.05	1.53	1.16	1.37
b) Support of unemployed persons starting enterprises	0.04	0.05	0.05	0.06	0.20	0.17	0.19	0.14	0.07	0.05	0.04	0.04	0.36	0.30	0.22	0.25	0.01	–	–	–	0.06	0.05	0.04	0.05
c) Direct job creation (public or non-profit)	0.09	0.09	0.08	0.09	1.69	1.37	1.17	1.18	0.20	0.07	–	–	0.19	–	–	–	0.16	0.07	0.06	0.08	0.92	0.57	0.48	0.57
5. Measures for the disabled	**0.03**	**0.03**	**0.03**	**0.03**	**0.17**	**0.23**	**0.24**	**0.27**	**0.55**	**0.50**	**0.49**	**0.50**	**0.85**	**0.90**	**0.87**	**0.99**	**0.14**	**0.13**	**0.14**	**0.15**	**. .**	**. .**	**. .**	**. .**
a) Vocational rehabilitation	–	–	–	–	–	–	–	–	0.03	0.03	0.03	0.03	0.51	0.55	0.43	0.50	0.14	0.13	0.14	0.15	. .	. .	. .	. .
b) Work for the disabled	0.03	0.03	0.03	0.03	0.17	0.23	0.24	0.27	0.52	0.47	0.46	0.47	0.34	0.34	0.44	0.48	–	–	–	–	–	–	–	–
6. Unemployment compensation	**1.40**	**1.34**	**1.32**	**1.55**	**1.39**	**1.37**	**1.47**	**1.59**	**1.53**	**1.31**	**1.04**	**1.04**	**. .**	**. .**	**. .**	**. .**	**0.88**	**0.55**	**0.48**	**0.77**	**10.27**	**8.84**	**8.86**	**11.23**
7. Early retirement for labour market reasons	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**0.09**	**0.06**	**0.03**	**0.01**	**. .**	**. .**	**. .**	**. .**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**
TOTAL	**2.37**	**2.28**	**2.17**	**2.42**	**19.17**	**19.21**	**19.44**[b]	**17.90**[b]	**3.39**	**2.75**	**2.45**	**2.45**	**. .**	**. .**	**. .**	**. .**	**1.54**	**1.04**	**0.92**	**1.30**	**15.08**[c]	**12.42**[c]	**11.81**[c]	**15.03**[c]
Active measures (1-5; for inflows, 2-5)	0.98	0.94	0.85	0.87	17.78	17.83	17.96[b]	16.31[b]	1.77	1.37	1.38	1.40	8.70	7.33	6.22	6.05	0.67	0.49	0.44	0.53	4.81[c]	3.58[c]	2.96[c]	3.80[c]
Passive measures (6 and 7)	1.40	1.34	1.32	1.55	1.39	1.37	1.47	1.59	1.62	1.37	1.07	1.05	. .	. .	. .	. .	0.88	0.55	0.48	0.77	10.27	8.84	8.86	11.23

. . Data not available.
– Nil or less than half of the last digit used.
* Data for participant inflows are reported only for categories 2 to 7 since data for category 1 "Public employment services and administration" are commonly incomplete and non-comparable. Totals shown must be interpreted with caution.
a) Data by category and for total expenditure include expenditure on LMPs financed by the Autonomous Communities and municipalities. The figures by sub-categories 2a, 2b, etc., do not include these expenses except for those of the Autonomous Communities in 2002: they therefore do not add up to the totals shown for each category.
b) Participant inflows for category 3 "Youth measures" are not included.
c) Participant inflows for category 5 "Measures for the disabled" are not included.

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Table H. **Public expenditure and participant inflows* in labour market programmes in OECD countries** *(cont.)*

Programme categories and sub-categories	United Kingdom[a]								United States[b]							
	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			
	1999-00	2000-01	2001-02	2002-03	1999-00	2000-01	2001-02	2002-03	1999-00	2000-01	2001-02	2002-03	1999-00	2000-01	2001-02	2002-03
1. Public employment services and administration	**0.13**	**0.13**	**0.15**	**0.17**					**0.04**	**0.04**	**0.04**	**0.04**				
2. Labour market training	**0.05**	**0.04**	**0.03**	**0.02**	**0.52**	**0.51**	**0.31**	**. .**	**0.04**	**0.04**	**0.03**	**0.03**	**. .**	**0.97**	**0.94**	**. .**
a) Training for unemployed adult s and those at risk	0.04	0.04	0.02	0.01	0.46	0.45	0.25	0.26	0.04	0.04	0.03	0.03	. .	0.97	0.94	. .
b) Training for employed adults	0.01	0.01	0.01	0.01	0.06	0.06	0.06	. .	–	–	–	–	–	–	–	. .
3. Youth measures	**0.15**	**0.15**	**0.12**	**0.13**	**. .**	**. .**	**. .**	**. .**	**0.03**	**0.03**	**0.03**	**0.02**	**. .**	**0.44**	**0.44**	**. .**
a) Measures for unemployed and disadvantaged youth	0.04	0.04	0.03	0.03	. .	. .	. .	. .	0.03	0.03	0.03	0.02	. .	0.36	0.35	. .
b) Support of apprenticeship and related forms of general youth training	0.11	0.11	0.09	0.10	1.03	1.06	0.94	1.01	–	–	–	–	. .	0.09	0.09	. .
4. Subsidised employment	**0.01**	**0.02**	**0.03**	**0.03**	**. .**	**. .**	**. .**	**. .**	**0.01**	**0.01**	**0.01**	**0.01**	**0.37**	**0.38**	**0.35**	**. .**
a) Subsidies to regular employment in the private sector	0.01	0.01	0.02	0.02	. .	. .	. .	. .	–	–	–	–	0.37	0.33	0.29	. .
b) Support of unemployed persons starting enterprises	–	–	–	–	0.03	0.03	. .	. .	–	–	–	–	–	–	–	. .
c) Direct job creation (public or non-profit)	–	0.01	0.01	0.01	. .	. .	. .	. .	0.01	0.01	0.01	0.01	. .	0.05	0.06	. .
5. Measures for the disabled	**0.02**	**0.02**	**0.02**	**0.02**	**0.18**	**0.18**	**0.17**	**. .**	**0.03**	**0.03**	**0.03**	**0.03**	**. .**	**. .**	**. .**	**. .**
a) Vocational rehabilitation	0.01	0.01	0.01	0.01	0.10	0.09	0.09	0.15	0.03	0.03	0.03	0.03	. .	. .	. .	. .
b) Work for the disabled	0.02	0.02	0.02	0.01	0.08	0.08	0.08	. .	–	–	–	–	–	–	–	. .
6. Unemployment compensation	**0.56**	**0.44**	**0.40**	**0.37**	**10.33**	**9.61**	**9.21**	**9.81**	**0.23**	**0.30**	**0.55**	**0.57**	**. .**	**. .**	**. .**	**. .**
7. Early retirement for labour market reasons	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**–**	**. .**
TOTAL	**0.92**	**0.81**	**0.76**	**0.75**	**. .**	**. .**	**. .**	**. .**	**0.38**	**0.45**	**0.71**	**0.71**	**. .**	**. .**	**. .**	**. .**
Active measures (1-5; for inflows, 2-5)	0.36	0.37	0.36	0.37	. .	. .	. .	. .	0.15	0.15	0.15	0.14	. .	1.80[c]	1.74[c]	. .
Passive measures (6 and 7)	0.56	0.44	0.40	0.37	10.33	9.61	9.21	9.81	0.23	0.30	0.55	0.57	. .	. .	. .	. .

. . Data not available.
– Nil or less than half of the last digit used.
* Data for participant inflows are reported only for categories 2 to 7 since data for category 1 "Public employment services and administration" are commonly incomplete and non-comparable. Totals shown must be interpreted with caution.
a) Excluding Northern Ireland. Fiscal years starting on April 1.
b) Fiscal years starting on October 1.
c) Participant inflows for category 5 "Measures for the disabled" are not included.

Source: OECD database on Labour Market Programmes.

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PRINTED IN FRANCE
(81 2004 12 1 P) ISBN 92-64-10812-2 – No. 53525 2004