

# **OECD Employment Outlook 2009**

TACKLING THE JOBS CRISIS



## **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.

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## **Editorial**

# *Preventing the Jobs Crisis from Casting a Long Shadow*

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*The financial and economic crisis quickly turned into a jobs crisis...*

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The global economy is in the midst of the worst financial and economic crisis of the past 50 years, with severe consequences for workers and their families. Since the second half of 2008, major declines in output have occurred in many OECD and non-OECD countries, leading to sharp falls in employment and steep hikes in unemployment. From a 25-year low at 5.6% in 2007, the OECD unemployment rate has risen to a postwar high of 8.3% in June 2009, corresponding to an increase of nearly 15 million in the ranks of the unemployed. Thus, OECD countries are facing a jobs crisis. As in previous severe economic downturns, already disadvantaged groups in the labour market – youth, low-skilled, immigrants, ethnic minorities and, among them, those in temporary or atypical jobs – are bearing most of the brunt of the job losses.

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*... and the short-term jobs outlook is grim*

---

Significant uncertainties surround the short-term economic and labour market outlook. At the time of writing, there are growing signs that the worst may be over and that a recovery may be in sight. But the short-term employment outlook is grim. The latest OECD projections suggest that output growth will regain positive territory only in the first half of 2010 and that growth will be mild until late in the year. In any event, job creation will lag significantly behind any pickup in output. As a result, the OECD unemployment rate is projected to continue rising through 2010, approaching a new postwar high of 10% (57 million unemployed) in the second half of the year.

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*The cyclical jump in unemployment risks becoming long-lasting, with negative effects on the labour market and potential output*

---

A major risk is that much of this large hike in unemployment becomes structural in nature as many of the unemployed drift into long-term joblessness or drop out of the labour force. This unwelcome phenomenon occurred in a number of OECD countries in past recessions, when unemployment remained at a new higher plateau compared with the pre-crisis level even after output returned to potential and it took many years, if ever, to bring it down again to the pre-crisis level. This persistence arises because the long-term unemployed become less attractive hires for employers as a result of declining human capital and diminished job-search activity. High and persistent unemployment brings in its train major social and economic costs: poorer health, lower living standards and less life satisfaction for the unemployed and their families; increased crime and lower growth potential for society.

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*Governments have taken steps recently to tackle this risk of high and persistent unemployment*

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Labour market and social policies have a key role to play in preventing the risk that the sharp jump in unemployment becomes persistent by promoting a quick reintegration of jobseekers into employment and enhancing their skills to enable them to move into more productive jobs when the recovery gathers speed. Most of the fiscal stimulus packages introduced recently by OECD countries to support aggregate demand include *additional* labour market and social policy measures to cushion the negative effects of the crisis on workers and low-income households.

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*Safety nets are being reinforced...*

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The first line of defence is the social safety nets (unemployment benefits and social assistance) which provide an essential income support to job losers during the economic downturn. While unemployment benefits have automatically stepped in to sustain the incomes of many job losers, coverage of such benefits is weak in some OECD countries, especially in those where part-time, temporary and other “non-standard” workers account for a significant share of the workforce. Such workers have often been the first to be laid off and have weaker benefit entitlements. In a number of countries, some efforts have been made to extend the coverage and, in some cases, the maximum duration of benefits to provide a more effective safety net. However, such measures should be carefully designed so as to minimize adverse effects on work incentives which could lengthen the joblessness spell.

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*... as is spending on active labour market policies, but more should be done*

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At the same time, governments have also sought to scale up the resources for active labour market policies (ALMPs) aimed at helping jobseekers find work. However, when compared with the overall resources available in the fiscal stimulus packages and the magnitude and pace of the job losses in the current crisis, the increase in spending on ALMPs is rather modest in many countries. This looks like a missed opportunity. While calls for additional public spending on labour market policies have to bear in mind that public finances are facing growing constraints in many countries due to the actual and projected build-up in public debt, they can be justified on cost-effectiveness grounds. We now know a lot about what works and what does not work in this area. In addition, this edition of the *OECD Employment Outlook* highlights some new OECD research showing how the *composition* of spending on ALMPs should vary with the cycle to maximise its effectiveness.

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*Effective re-employment services can make a real difference in tackling high and persistent unemployment...*

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A key priority is to provide *effective* employment services to a rapidly rising pool of jobseekers and ensure that the most vulnerable of them do not lose contact with the labour

market and drift into inactivity. Many countries can count on good progress made over the past decade to implement successful activation/mutual-obligation strategies, where, in return for receiving benefits and being offered re-employment services, recipients are required to participate in job search, training or employment programmes, enforced by the threat of benefit sanctions.

It will be important to build on this past success and not throw away the activation approach just because there are fewer job vacancies to which jobseekers can be referred. Instead, the activation approach needs some modification to the circumstances of a deep recession. It is essential to maintain core job-search assistance through the downturn. Even in a deep recession, many jobs are created by firms that are able to exploit new market opportunities and employment services can play a decisive role in helping fill these vacancies quickly.

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*... but there should be some shift towards a “train-first” approach*

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At the same time, OECD research suggests that it would be advisable to shift somewhat the focus and resources behind activation from the “work-first” approach which tended to dominate prior to the crisis to a “train-first” approach for those at high risk of long-term unemployment. This is likely to be particularly important at present, since the global economic crisis is accelerating structural adjustments in OECD countries and measures to foster skill formation and training can play an important role to ensure that workers are well-equipped with the appropriate skills for emerging jobs.

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*Measures to sustain labour demand can also help if they are well-targeted and temporary*

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During the recession, firms have been battered by a collapse in demand and a major credit crunch, resulting in massive lay-offs. Many OECD countries have introduced or scaled-up subsidies that encourage firms to retain or hire workers (*e.g.* short-time working schemes, hiring subsidies, cuts in social security contributions, etc.). In the short-term, these subsidies are playing a positive role in supporting labour demand. But they have often been plagued by high deadweight costs in the past. To minimize these costs, it is important that these schemes be *temporary* and *well-targeted* to firms for whom the demand is only depressed temporarily and to workers at high risk of long-term unemployment. Without these key features, there is a significant risk that these schemes will not only be less effective in preserving jobs but also become an obstacle to the recovery, by putting a break on the required reallocation of workers from declining to expanding firms.

Likewise, increased reliance on public-sector job creation schemes targeted to the hardest-to-place jobseekers might provide a useful, temporary backstop to activation regimes during the recession. However, past experience with such measures is not very encouraging in terms of their ability to help the most at-risk jobseekers. Therefore, in designing these measures, it will be very important to build in incentives to ensure that participants exit from them into regular jobs and the schemes can be unwound quickly once the recovery gathers pace.

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*Well-designed and adequately-resourced labour  
market policies can make a difference*

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There is real hope that a recovery is on the horizon. When it comes, this will make tackling the jobs crisis easier. But a recovery on its own is very unlikely to make swift inroads into high and persistent unemployment. Together with appropriate counter-cyclical macroeconomic policies and further structural reforms in labour and product markets, well-designed and adequately resourced labour market policies have a key role to play in this fight against the long shadow of persistent unemployment.



John P. Martin

Director, OECD Directorate for Employment, Labour and Social Affairs





## Chapter 1

# The Jobs Crisis: What Are the Implications for Employment and Social Policy?

*The world economy is experiencing the worst recession in the post-war period and governments need to respond vigorously to limit the social and economic costs of the resulting jobs crisis. A first priority is to assure that income support for job losers and other workers who need it is adequate and accessible. Temporary extensions of unemployment benefit duration or the coverage of non-standard workers may be desirable in some countries, provided incentives to find a new job are not undercut, as may be judicious expansions of in-work benefits or last-resort social assistance. A second priority is to scale up effective active labour market policies so as to provide increased numbers of jobseekers with the re-employment assistance they require and minimise the build-up of long-term joblessness. Core job-search assistance should be maintained through the downturn. However, greater emphasis on training, hiring subsidies and public-sector job creation (and other forms of subsidised work experience) may be required to shore-up activation regimes and ensure that more disadvantaged jobseekers do not disconnect from the labour market. It is also important to maintain effective labour supply and thus to resist the temptation to open pathways to early retirement and disability benefits. This proved to be a mistake in the past that was difficult to reverse and should not be repeated. The initial responses of OECD governments to the crisis appear to be largely consistent with these principles, but it is too early to evaluate their ultimate effectiveness in helping workers weather the storm. There is also a question mark over the scale of the expansion of active labour market policies to date in the face of the steep hikes in unemployment.*

## Introduction

The world economy is experiencing a severe economic downturn, with potentially dire economic and social consequences. Beginning in the second half of 2008, a growing number of OECD and non-OECD countries experienced sharp declines in output which quickly translated into sharp reductions in employment and hours worked, and, in some cases, unprecedented increases in unemployment. Despite some signs that the recession is slowing, output is expected to continue to decline for some time and the recovery to be rather muted (see OECD, 2009a).<sup>1</sup> The experience of previous severe economic downturns suggests that unemployment will continue to rise for some time even after the recovery begins and that it will take a long time to reabsorb the upsurge of unemployment. The rapid and massive increase of unemployment and under-employment in many OECD countries represents a daunting challenge for employment and social policies.

Employment losses reduce welfare in a myriad of ways that go far beyond the obvious decline of output and, hence, income. These include adverse impacts of joblessness on physical and mental health, crime rates and subjective happiness (including for persons remaining employed, but fearing job loss).<sup>2</sup> There is also evidence that job loss – especially when it results in long-term unemployment or inactivity – can have long-lasting negative effects on human capital and, thus, permanently reduce the earnings potential of the affected workers, with these scarring effects possibly being the worst for youth (Ellwood, 1982; Layard, 1986; Machin and Manning, 1999). Historical experience shows that national labour markets also can be scarred by steep recessions, in the sense that part of the upsurge in cyclical unemployment may transform itself into structural unemployment which is not absorbed during the ensuing recovery, so-called “hysteresis” (Ball, 2009). Indeed, the two forms of scarring are related since one of the ways cyclical unemployment becomes structural is for job losers in a recession to drift into long-term unemployment or inactivity and become effectively disconnected from the labour market.

The macroeconomic policy response to the current downturn has been vigorous and is playing an essential role – along with unprecedented interventions in financial markets – in boosting aggregate demand and creating the conditions for a resumption of economic growth. Appropriate employment and social policies are also essential to mitigate the economic and social costs of the upsurge in unemployment by providing income support and assisting job losers to re-integrate into employment. However, the sharp increase in unemployment represents a high-stakes stress test for policies intended to help job losers. One concern is whether it is feasible to scale up these programmes rapidly enough to meet the sharp increase in need while still retaining their effectiveness and, even if this should be the case, whether enough additional resources are being channelled towards labour market policies when public spending is under pressure on many different fronts. A second concern is whether programme design features which are well suited when labour market conditions are more favourable, such as the “work-first”

orientation associated with activation regimes, may prove to be ill-suited in the context of severe labour market slack.

Employment and social programmes in OECD countries have been tested by, and reformed in response to, many previous economic downturns. Nonetheless, the current downturn confronts these programmes with challenges that are likely to be different in several important respects. Specific features of the current downturn (e.g. its depth, length and sectoral composition) may mean that the number of workers becoming jobless exceeds that in previous recessions or that their demographic profile and labour market prospects are quite different. The starting point for this recession was also different in a number of ways that are shaping the challenges confronting employment and social policy makers, both for better and for worse. One important change is that many OECD countries have pursued a policy of structural reforms in product and labour markets over the past several decades. These reforms included measures to foster competition in markets for goods and services and make labour markets more adaptable, as well as reforms to employment and social programmes intended to encourage the rapid integration of social benefit recipients into employment (including some recipients of disability benefits, cf. Chapter 4). These reforms help explain why the OECD area entered the current downturn with the lowest unemployment rate since 1980 and the highest ever employment rate.<sup>3</sup> While that is clearly an advantage, it is less evident that an employment-centred social protection system, built around a mutual-obligations approach to moving recipients of benefits into work as quickly as possible – including into low-paid employment – and which places increased emphasis on in-work transfers (cf. Chapter 3), can be as effective in a period in which labour demand is abnormally low and competition for existing job vacancies intense.

Due to its unusual length, this chapter is divided into two parts. **Part A** analyses the labour market impact of the current economic downturn and is divided into two sections. *Section 1* assesses the *aggregate* impact of the downturn on OECD labour markets. It also analyses the effectiveness of automatic stabilisers and the fiscal stimulus packages implemented by many governments in cushioning the decline in aggregate employment. *Section 2* then provides an in-depth analysis of the *relative* vulnerabilities of different workforce groups to hours reductions, job loss and long-term unemployment in a downturn, documenting patterns during past recessions while also commenting upon specific features of the current downturn. Throughout Part A, the intent is to clarify the broad policy challenges created by the current economic downturn. **Part B** then provides a detailed assessment of the employment and social policy responses to the jobs crisis and is organised into four sections. *Section 3* provides an overview of the policy toolkit and summarises cross-country differences in income-support for unemployed persons and active labour market programmes (ALMPs) on the cusp of the current downturn. It also analyses how these programmes have reacted to past downturns and compares that historical record to the initial policy responses to the current downturn, drawing upon a questionnaire circulated to OECD governments. The next two sections analyse in detail a number of key policy choices that arise when providing income support (*Section 4*) and re-employment services (*Section 5*) in the context of a sharp increase in cyclical unemployment. Finally, *Section 6* discusses how the urgent need to provide timely assistance to job losers and other workers adversely affected by the downturn can be reconciled with the need to support high labour supply in the long run.

## Main findings

### ***The labour market impact of the crisis (Part A)***

- Although it is too soon to know how severely the current downturn ultimately will disrupt labour markets, a growing number of OECD countries are already facing very large increases in unemployment and under-employment, and labour market conditions are likely to deteriorate further in the months to come. If the most recent OECD projections should materialise, OECD-area unemployment would rise by over 25 million persons between the end of 2007 and the end of 2010, attaining an all-time high rate of nearly 10% of the labour force.
- Job losses would be significantly larger if vigorous macroeconomic measures had not been taken. Indeed, it is estimated that OECD-area employment will be 0.8-1.4% higher in 2010 than would have been the case had national governments not adopted often sizeable fiscal stimulus packages. In most countries, automatic stabilisers are making an even larger contribution to supporting aggregate demand and employment than are discretionary fiscal measures.
- Large numbers of job losers will require income support and re-employment assistance in the short-run and it is important that this help is forthcoming. However, it is also important that it be provided in a way that minimises the risk that high social benefit dependency will persist even after economic growth is restored, as has sometimes been the case following severe recessions in the past. Past investments in lowering structural unemployment and raising participation rates must be preserved.
- As compared with their counterparts in recent recessions, workers confront this downturn with both advantages and disadvantages. Among the advantages, most OECD countries entered the downturn with relatively low unemployment due, in part, to structural reforms in product and labour markets during the past two decades. Among the disadvantages, the trend increases in the shares of workers with temporary employment contracts or part-time working schedules may tend to accelerate the translation of deteriorating business conditions into job losses and/or hours reductions, while also depressing the share of job losers who qualify for unemployment benefits.
- New econometric analysis of historical data reveals significant differences across workforce groups and sectors in the way employment and average hours worked respond to the business cycle:
  - ❖ Already disadvantaged labour force groups, such as youth, immigrants, low-skilled and temporary workers, are likely to bear the brunt of rapidly rising unemployment. The compositional shift in unemployment towards disadvantaged groups in a recession reflects their greater vulnerability both to being laid-off and to being pushed even further toward the back of hiring queues, when many workers are competing for a limited number of job vacancies. To date, the current economic downturn conforms to these patterns.
  - ❖ Construction is the most cyclical industry, followed by durable manufacturing and business services. Despite the importance of credit-market disruptions and the boom-bust cycle in housing prices in a number of OECD countries in precipitating the current economic downturn, the crisis rapidly spread to other sectors. Early indications suggest that the sectoral composition of employment losses will be qualitatively similar to historical patterns in most countries.

- Reductions in the demand for total hours worked during a recession come about via varying combinations of declines in: i) average working time; ii) the employment rate; and iii) the labour force participation rate. New econometric analysis of historical data indicates that transitions out of employment – which raise particular concerns because they are associated with a total loss of earnings in the short run and a potentially permanent loss of human capital – account for the bulk of cyclical declines in total hours, although the role of working-time adjustments is also substantial. The relative importance of each margin of adjustment differs across age groups and countries. Adjustments on the *participation margin* are particularly important for youth and older workers, while changes in *working time* account for a larger share of the cyclical variation in total hours for prime-age workers.
- Unemployment *dynamics* have an important influence on the income replacement and re-employment assistance needs of job losers in a recession. In the majority of OECD countries, recessions are characterised by both large increases in the inflow rate into unemployment (i.e. more layoffs) and large reductions in the unemployment outflow rate (i.e. longer unemployment spells). The relative importance of cyclical variation in unemployment inflow and outflow rates differs across workforce groups and countries, and is influenced by labour market policies:
  - ❖ Cyclical changes in inflow rates account for a large share of recessionary increases in unemployment among older workers, while the role of outflows appears to be particularly important for youth and an intermediate pattern holds for prime-age workers. These differences illustrate how the public employment service (PES) needs to gear up to help diverse groups of job losers in a recession. On the one hand, the PES will need to assist increased numbers of relatively well-qualified and long-tenured job losers, whose stable work histories often qualify them for relatively generous unemployment benefits, but who lack recent experience in job search. On the other hand, there will also be increased numbers of disadvantaged jobseekers, including “back-of-the-queue” youth, who are used to moving between jobs but now find themselves at a heightened risk of long-term unemployment and inactivity.
  - ❖ Variations in the inflow and outflow rates are equally important, in an accounting sense, for explaining cyclical changes in unemployment in Denmark, Ireland, Japan and Sweden. In Belgium, France, Germany, Greece, Norway and Portugal, the variation in the outflow rate is somewhat more important than the variation in the inflow rate. Changes in the outflow rate (and, hence, expected unemployment duration) account for the largest share of cyclical changes in the unemployment rate in most English-speaking countries and Spain.
  - ❖ Labour market policies have important effects on both the inflow and outflow rates, and thus account for some of the cross-country differences in unemployment dynamics. Policy impacts vary depending on the state of the labour market. In particular, the new econometric results suggest that job-search assistance and employment subsidies may become less effective in periods of relative labour market slack, while training programmes may become more effective.

### **Employment and social policy responses to the jobs crisis (Part B)**

- OECD countries have a range of labour market programmes in place to reduce the social costs of a recession. Historically, expenditures on unemployment benefits have been strongly counter-cyclical, serving as an important automatic stabiliser for the macro economy while providing income support for the rising number of unemployed. However, new econometric analysis shows that ALMP spending has been acyclic, implying that resources per unemployed person declined strongly as unemployment rose in past recessions. If that pattern should continue to hold in the current downturn, it would raise concerns about the adequacy of the help available to job losers and imply that the public employment service (PES) faces difficult choices in deciding how to ration increasingly scarce re-employment services across the growing population of unemployed persons who potentially could benefit from them. There are encouraging signs that OECD countries are more aggressively scaling up ALMPs this time, particularly in the small number of countries which had put in place mechanisms which automatically increase funding when unemployment rises prior to the crisis. All OECD countries have taken discretionary actions to expand ALMP offerings, but the associated increase in spending appears modest compared with the rise the unemployment in many cases.
- The large increase in benefit claims in a severe recession stresses unemployment benefit systems in a number of ways and it is important to make sure that sufficient funding and administrative capacity are available to meet the increased demand for benefits, while also identifying the most pressing coverage gaps. In particular, the current downturn has revealed structural deficiencies in unemployment benefit systems in a number of countries related to poor effective coverage of “non-standard” workers. In such cases, a temporary increase in coverage may be desirable, provided this measure is accompanied by a parallel investment in ensuring enforcement of job-search requirements to avoid abuses, and a narrow majority of OECD countries have taken such measures. If these measures prove to be successful, they could establish a foundation for a permanent increase in the coverage of the unemployed that can be maintained even after the recession has ended. In some countries, temporary increases in the maximum duration of benefits have been enacted to avoid having many unemployed and their families falling into poverty, as unemployment spells lengthen. This can be an effective measure in countries with short-duration benefits, but care must be exercised to insure that any such benefit increases are temporary, well targeted on the most vulnerable and do not undermine activation regimes.
- Social assistance and similar minimum-income benefits provide an essential backstop to unemployment benefits in a recession, since an increased number of job losers will either fail to qualify for unemployment benefits or exhaust their benefit entitlements. In most OECD countries, social assistance and other “last-resort benefits” are not sufficient to lift people out of poverty and governments should carefully monitor whether cases of extreme hardship are arising which require an immediate response. One issue requiring particular attention is that these benefits be available and accessible to job losers and other persons who need them, since take-up rates are often quite low.
- Income support for low-income workers can facilitate maintaining a link with the labour market during a recession. Where they do not exist, benefits for those facing a partial earnings loss should be considered (*e.g.* part-time or partial unemployment benefits, in-

work benefits or, more experimentally, wage insurance). While well-designed in-work support can share the costs of labour market adjustments more equally across workforce groups, measures that preserve existing jobs for too long can stifle structural adjustment. There is also a danger that they will deepen labour market segmentation by channelling support to workers with more stable jobs, while excluding those with no or unstable employment histories. In-work benefits that are not tied to preserving pre-existing jobs or earnings levels are preferable in this respect, as they strengthen job-search incentives and extend support to groups that are likely to be particularly affected by the recession, such as recent school leavers and temporary workers.

- One of the major challenges facing labour market programmes is how to adapt the constellation of re-employment services and behavioural requirements placed upon recipients of unemployment benefits so as to foster rapid re-integration of job losers into employment, when this is possible, while keeping all unemployed persons engaged with employment-related activities, so as to protect the long-run integrity of the mutual-obligations ethos underlying activation regimes. This will involve making a series of interconnected choices including:
  - ❖ Deciding how rapidly different ALMP components should be expanded in light of their relative effectiveness in the context of slack labour markets, the difficulty of maintaining quality levels when expanding capacity quickly and intense competition for government revenues. While it may not be desirable (or feasible) to expand all of these programmes in proportion to the increase in unemployment, it is important to scale up spending much more strongly than typically was the case in the past and appears to be the case in many countries in the current downturn to date.
  - ❖ Deciding on whether to extend the involvement of private providers in job placement and the provision of other employment services to unemployed beneficiaries, while ensuring that objective procedures are in place to assess their performance and that the incentives built into service contracts are consistent with labour market policy objectives in a recession.
  - ❖ Deciding how to *target* the various re-employment and training measures across different groups of jobseekers. While it would be important to maintain job-search support for all unemployed persons, increased use of training, hiring subsidies and public sector job creation (and other forms of subsidised work experience) could be devoted to harder-to-place benefit recipients. For the latter group, it may also be desirable to relax moderately behavioural requirements intended to demonstrate work availability and active job search, both to conserve on caseworker time and to avoid demoralisation, although conversely, unemployed workers should be expected to accept changes of occupation or jobs with lower earnings more rapidly than when the job market is favourable.
  - ❖ In deciding which services to offer to different benefit recipients and whether to relax temporarily behavioural requirements, the evaluation criteria should shift somewhat from achieving immediate gains in employment and earnings to preserving the integrity of the mutual-obligations approach to activation and keeping the growing number of long-term unemployed connected to the labour market. In this context, labour demand supports, including public-sector job-creation schemes (and other forms of subsidised work experience), could be considered as a backstop to activation regimes, provided that appropriate targeting to the most vulnerable unemployed

could be ensured and such schemes can be unwound quickly once the job market recovers.

- Many OECD countries are responding to the jobs crisis by expanding certain types of ALMP measures that have generated mixed and overall disappointing evaluation results in the past and, in some cases, had fallen somewhat out of favour in recent years. For example, the majority of OECD countries are expanding measures intended to alleviate the social impact of recessions through employment subsidies, including short-time working schemes, and direct public job creation. Quite a lot has been learned about the problems that these schemes can engender when they are not properly designed, such as employment subsidies which generate large deadweight, substitution and displacement effects and short-time working subsidies that impede structural change. It will be important to monitor whether governments are able to achieve better results with these measures, than in the past, by taking advantage of what has been learned about good and bad practices. If that should prove to be the case, then future enhancement of the capacity to scale up these ALMPs in recessions could help maintain the effectiveness of activation regimes in slack labour markets and, thus, reduce the immediate social costs resulting from recessions while also reducing the risk of hysteresis.
- The measures adopted to reduce the social costs of economic downturns need to be designed so as not to undermine labour market efficiency in the long-run, including by reducing effective labour supply:
  - ❖ In the context of rising unemployment, there is a strong temptation to open pathways into early retirement for older job losers and into long-term sickness or disability schemes for job losers with health problems. These schemes were abject failures in the past, tending to undermine long-run labour supply and increase benefit dependency in ways that are particularly damaging in the context of demographic ageing.
  - ❖ The situation of youth on the labour market is particularly strongly affected by economic downturns and it is especially important to guard against an expanded group of low-qualified youth losing connection with the labour market or experiencing permanent reductions in their earnings potential. Efforts to prevent youth from entering the labour market without adequate credentials should be redoubled and care should be taken to ensure that out-of-school youth are able to access appropriate ALMPs, even when they do not qualify for unemployment benefits.
  - ❖ Governments need to be vigilant to ensure that the particular vulnerability of immigrants in recessions does not mortgage the possibility of further migration when growth resumes. Integration programmes need to be maintained, anti-discrimination measures reinforced and immigrants to profit equally from ALMPs for the unemployed. If such steps are not taken, it will create barriers to migration playing the role expected of it in the context of ageing populations and in helping to fill labour shortages.



## Part A. The Labour Market Impact of the Crisis

### 1. Labour market impact of the crisis in historical context

#### 1.1. The impact of the downturn on labour market conditions: how bad is it?

The OECD average harmonised unemployment rate reached a trough of 5.6% in December 2007 – its lowest level since the early 1980s – but had risen to 8.3% by June 2009 (Table 1.1).<sup>4</sup> As of that month, the downturn had caused nearly 15 million workers in the OECD area to join the ranks of the unemployed since the end of 2007. Although the

Table 1.1. **OECD harmonised unemployment rates, 2006-09**

Percentage of the labour force

	Trough (Dec 2007)	2006	2007	2008	2008		2009		2009 <sup>a</sup>			% -point change of the unemployment rate from trough	Absolute change in total unemployment from trough (thousands)
					Q3	Q4	Q1	Q2	Apr	May	Jun		
<b>OECD</b>	<b>5.6</b>	<b>6.2</b>	<b>5.7</b>	<b>6.0</b>	<b>6.1</b>	<b>6.6</b>	<b>7.5</b>	<b>8.2</b>	<b>8.0</b>	<b>8.3</b>	<b>8.3</b>	<b>2.7</b>	<b>14 936</b>
<b>G7</b>	<b>5.4</b>	<b>5.8</b>	<b>5.4</b>	<b>5.9</b>	<b>6.0</b>	<b>6.4</b>	<b>7.2</b>	<b>8.0</b>	<b>7.8</b>	<b>8.1</b>	<b>8.2</b>	<b>2.8</b>	<b>10 279</b>
<b>European Union</b>	<b>6.9</b>	<b>8.2</b>	<b>7.1</b>	<b>7.0</b>	<b>7.0</b>	<b>7.5</b>	<b>8.3</b>	<b>8.8</b>	<b>8.7</b>	<b>8.8</b>	<b>8.9</b>	<b>2.0</b>	<b>5 147</b>
<b>Euro area</b>	<b>7.3</b>	<b>8.3</b>	<b>7.5</b>	<b>7.6</b>	<b>7.6</b>	<b>8.0</b>	<b>8.8</b>	<b>9.3</b>	<b>9.2</b>	<b>9.3</b>	<b>9.4</b>	<b>2.1</b>	<b>3 475</b>
Australia	4.3	4.8	4.4	4.2	4.2	4.5	5.3	5.7	5.5	5.7	5.8	1.5	185
Austria	4.0	4.7	4.4	3.9	3.7	4.1	4.3	4.4	4.3	4.4	4.4	0.4	20
Belgium	7.2	8.3	7.5	7.0	7.3	7.1	7.7	8.1	8.1	8.1	8.1	0.9	50
Canada	5.9	6.3	6.0	6.1	6.1	6.4	7.6	8.4	8.0	8.4	8.6	2.7	526
Czech Republic	4.8	7.1	5.3	4.4	4.3	4.5	5.5	6.1	6.0	6.1	6.3	1.5	81
Denmark	3.3	3.9	3.8	3.4	3.3	3.8	4.8	5.9	5.7	5.9	6.2	2.9	93
Finland	6.5	7.7	6.8	6.4	6.4	6.7	7.4	8.3	8.0	8.3	8.5	2.0	55
France	7.8	9.3	8.3	7.9	7.9	8.3	8.8	9.3	9.1	9.3	9.4	1.6	509
Germany	7.9	9.8	8.4	7.3	7.2	7.1	7.3	7.7	7.6	7.7	7.7	-0.2	-71
Greece	8.0	8.9	8.3	7.7	7.6	7.9	8.7	..	..	..	..	0.7	40
Hungary	7.9	7.5	7.4	7.8	7.9	8.1	9.3	10.2	10.0	10.2	10.3	2.4	100
Iceland	..	2.9	2.3	3.0	3.0	4.4	7.6	7.0	..	..	..	..	..
Ireland	4.7	4.5	4.6	6.0	6.3	7.7	10.2	11.9	11.5	12.0	12.2	7.5	160
Italy	6.4	6.8	6.1	6.8	6.8	7.0	7.4	..	..	..	..	1.0	270
Japan	3.7	4.1	3.9	4.0	4.0	4.0	4.5	5.2	5.0	5.2	5.4	1.7	1 080
Korea	3.1	3.5	3.2	3.2	3.2	3.2	3.5	3.9	3.7	3.9	4.0	0.9	228
Luxembourg	4.2	4.6	4.2	4.8	5.0	5.2	5.8	6.3	6.1	6.3	6.4	2.2	5
Mexico <sup>b</sup>	3.8	3.6	3.7	4.0	3.9	4.5	4.8	5.7	5.4	6.1	5.6	1.8	..
Netherlands	2.9	3.9	3.2	2.8	2.7	2.7	2.9	3.2	3.2	3.2	3.3	0.4	40
New Zealand	..	3.8	3.7	4.2	4.3	4.7	5.0	..	..	..	..	..	..
Norway	2.4	3.4	2.6	2.5	2.4	2.8	3.1	..	3.1	..	..	0.7	20
Poland	8.3	13.9	9.6	7.2	6.9	6.9	7.7	8.2	8.1	8.2	8.2	-0.1	-5
Portugal	7.7	7.8	8.1	7.8	7.8	8.0	8.8	9.3	9.2	9.3	9.3	1.6	87
Slovak Republic	10.6	13.4	11.2	9.6	9.1	9.2	10.1	11.3	11.0	11.3	11.7	1.1	36
Spain	8.8	8.5	8.3	11.4	11.9	14.0	16.4	17.9	17.6	17.9	18.1	9.3	2 213
Sweden	6.0	7.0	6.2	6.1	6.0	6.9	7.6	8.7	8.4	8.8	9.0	3.0	161
Switzerland	..	4.0	3.6	3.5	3.5	3.6	3.9	..	..	..	..	..	..
Turkey	8.8	8.4	8.6	9.8	9.9	11.2	12.5	..	..	..	..	3.7	988
United Kingdom	5.1	5.4	5.3	5.6	5.8	6.3	7.0	..	7.5	..	..	2.4	777
United States	4.9	4.6	4.6	5.8	6.0	6.9	8.1	9.2	8.9	9.4	9.5	4.6	7 188

a) Iceland, New Zealand and Switzerland do not appear in the Table because OECD harmonised unemployment rate data are not available on a monthly basis for these countries.

b) OECD harmonised unemployment level data are not available on a monthly basis for Mexico.

Source: OECD Main Economic Indicators.

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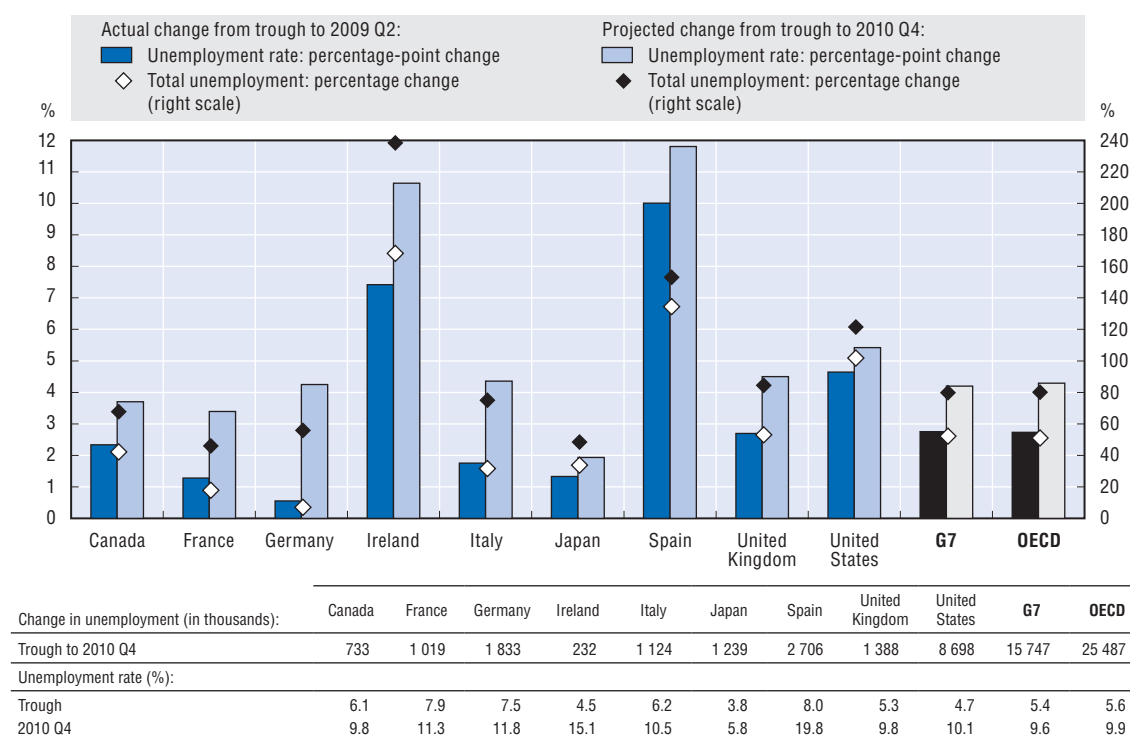
downturn hit some OECD countries sooner and harder than others, labour market conditions were deteriorating in a large majority of OECD countries by early 2009 and substantial increases in unemployment were becoming widespread. As of June 2009, Spain had experienced the sharpest increase in unemployment since the end of 2007 (9.3 percentage points corresponding to 2.2 million persons), followed by Ireland and the United States (7.5 and 4.6 percentage points, respectively, corresponding to 0.2 and 7.2 million persons). All three countries had experienced large housing price bubbles and unsustainable increases in residential construction in the years immediately preceding the crisis, but the crisis rapidly spread to other sectors of the economy.

There is great uncertainty looking forward, but labour market conditions appear set to deteriorate further in the coming months. The OECD projections released on 24 June 2009 indicate a further decline in activity throughout 2009 in the OECD area, with a rather muted recovery surfacing only in the first half of 2010 (OECD, 2009a). In these projections, growth in the OECD area is expected to remain below potential throughout 2010 with a widening slack in the economy. However, these projections are based on assumptions (e.g. that tensions in financial markets gradually dissipate and that growth picks-up only moderately in the non-OECD area) which may prove to be either too optimistic or too pessimistic by a considerable margin.<sup>5</sup>

If these projections were to materialise, Figure 1.1 shows that the unemployment rate would be approaching 10% in the OECD area as a whole by the end of 2010 (projections for all OECD countries are provided in OECD, 2009e, Table 1.A1.1). The number of unemployed people in the OECD area would have risen by more than 25 million in under three years, an amount similar to that observed in the ten-year period to the early 1980s, which included two major oil shocks. These projections imply that the largest part of the total expected increase in unemployment had already taken place in Ireland, Japan, Spain and the United States by mid-2009, whereas in other countries, including France, Germany and Italy, the largest part of the increase was yet to come.

It is still relatively early to compare the severity of the labour market impact of the current downturn with that of previous recessions, given the current uncertainty about the way the crisis will develop in the coming months. Nonetheless, a provisional assessment is informative. Figure 1.2 presents an index of the relative increase in the unemployment rate since the economic downturn began in the third quarter of 2007 through the end of the most recent OECD projections, which can be compared with the relative rise in the unemployment during four previous recessions.<sup>6</sup> This exercise indicates that the current downturn is overall the most severe in recent decades, at least judged by this metric. For example, the OECD average unemployment rate is projected to increase by nearly 80% between its previous trough and the twelfth quarter of the downturn, whereas the corresponding increases ranged between 20% and 50% in the previous four recessions. The OECD average unemployment rate is also projected to reach 9.9% at the end of 2010, substantially above its previous post-1970 maximum of 7.5% in the second quarter of 1993.

Extrapolating US unemployment forward using the latest OECD projections also implies that the labour market impact of this downturn would be the worst of any recession since 1970 by a considerable margin, judged in terms of the proportionate increase in the unemployment rate.<sup>7</sup> By contrast, the proportionate rise in average unemployment for France, Germany, Italy and the United Kingdom is projected to be comparable with that experienced in both the 1970s and 1980s recessions, but

Figure 1.1. **Actual and projected change in unemployment in selected OECD countries**<sup>a, b, c</sup>

- a) The actual and projected changes in unemployment for all OECD countries can be found in Table 1.A1.1 of OECD (2009e).  
 b) Unemployment data reported in this figure are based on national definitions since that is the concept used in OECD economic projections. These may differ from the harmonised unemployment data used in Table 1.1.  
 c) Through dates are defined using the preceding business-cycle peak of the output gap. The dates are the following: Canada and Spain: 2007 Q2; France, the United Kingdom, the United States, the G7 economies and OECD: 2007 Q3; Germany: 2008 Q1; Ireland and Italy: 2007 Q1; and Japan: 2007 Q4.

Source: OECD calculations based on OECD Economic Outlook Database.

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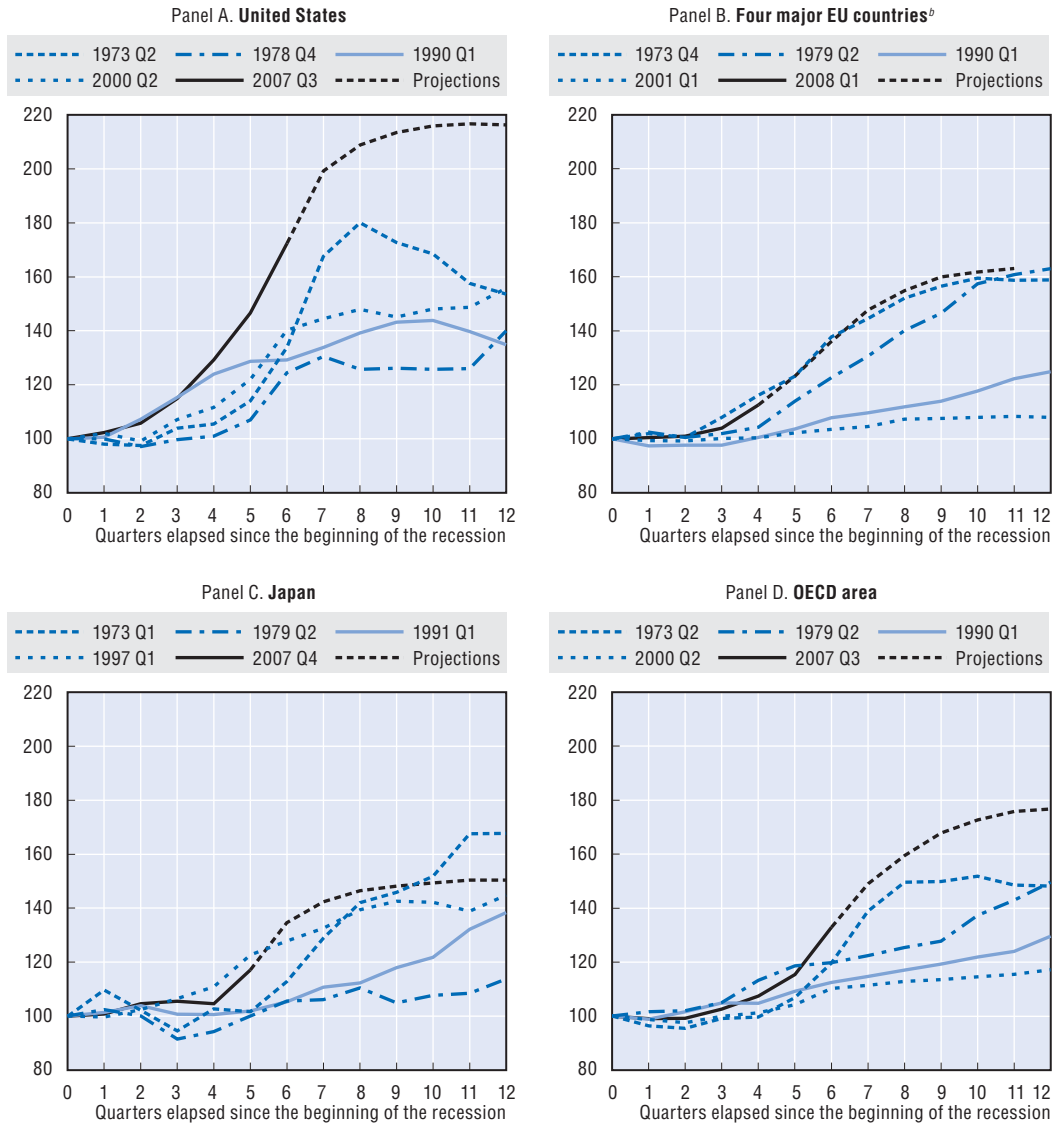
substantially larger than that associated with the two most recent recessions. In Japan, the unemployment rate only began to rise sharply in the fourth quarter of the current downturn, but OECD projections suggest that the ultimate impact will be to raise the unemployment rate by approximately one-half. If that increase is realised, it would still be substantially smaller than the proportionate increase in the unemployment rate that followed the first oil shock in the early 1970s, but larger than that observed during all subsequent recessions. Even though the proportionate increase projected for the unemployment rate in Japan would not be unprecedented in the post-1970 period, the 5.8% unemployment rate projected for the final quarter of 2010 would represent a post-war high.<sup>8</sup>

## 1.2. The jobs impact of fiscal stimulus packages

Macroeconomic stabilisation policy can have a decisive impact on how workers fare during recessions, by limiting the size and duration of the associated increase in unemployment, whereas the employment and social policy measures, which are the primary focus of this chapter, are primarily intended to reduce the economic and social costs resulting from an upsurge in cyclical unemployment. In the current downturn, many OECD governments moved quickly to stabilise their economies through a combination of

**Figure 1.2. Comparing unemployment rate trajectories during previous downturns and the current downturn**


Index base 100 = unemployment rate at the preceding business cycle peak (based on output gap), quarterly data<sup>a</sup>



a) Similar information for all OECD countries can be found in Table 1.A1.2 of OECD (2009e).

b) Aggregated unemployment of the following countries: France, Germany, Italy and the United Kingdom.

Source: OECD calculations based on the OECD Economic Outlook Database.

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monetary easing, other less orthodox measures to relieve financial market stress and discretionary fiscal stimulus packages. Fiscal expansion, both the stimulus provided by automatic stabilisers and discretionary tax and spending measures, appears to be particularly important in this downturn. This is because unprecedented cuts in policy interest rates quickly brought them close to zero in most major OECD countries, leaving little or no room for further monetary easing. The stress in financial markets also appears to have impaired monetary transmission channels.

Virtually all OECD countries have introduced fiscal stimulus packages in response to the crisis with their total cumulative impact on fiscal balances over the period

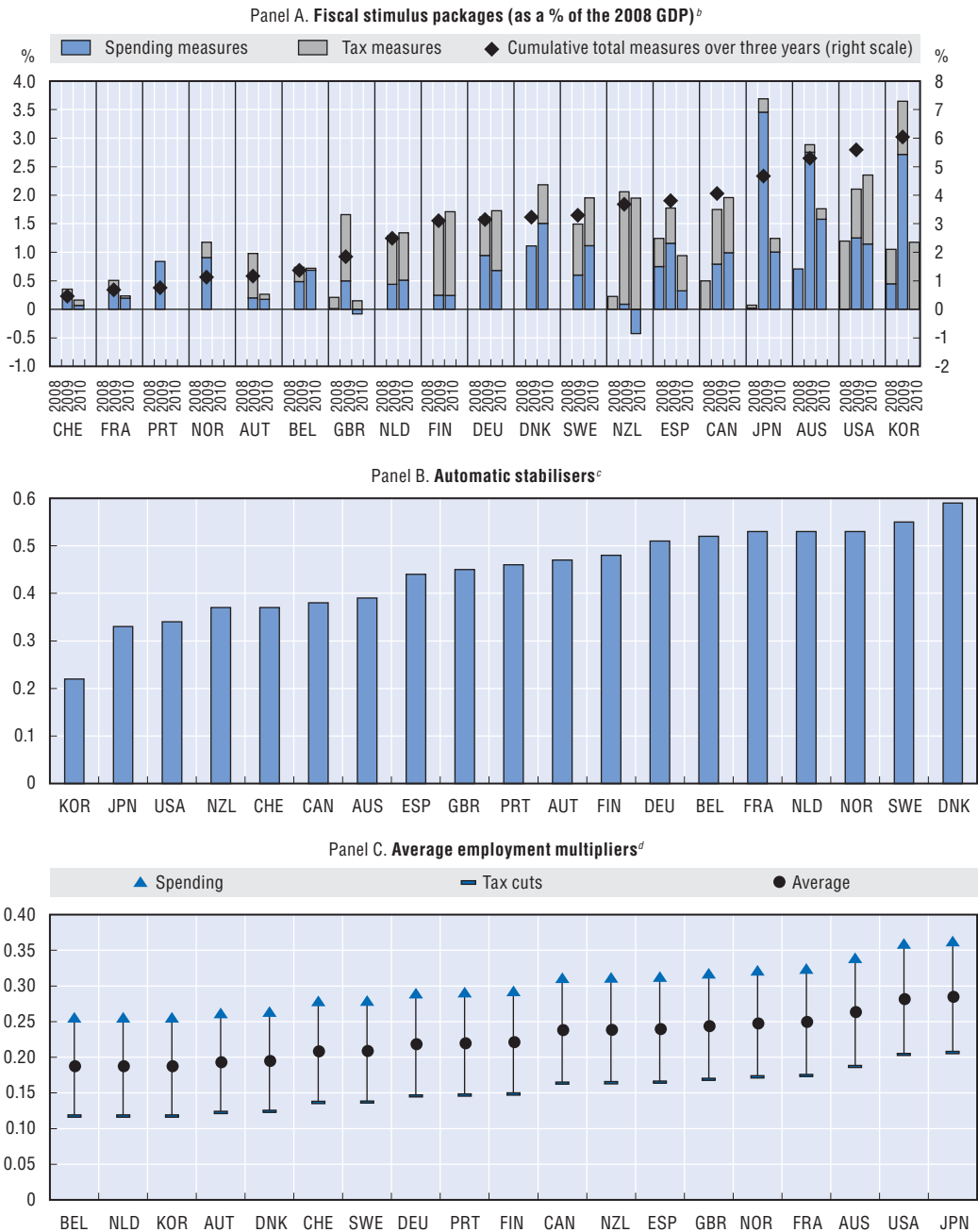
2008-10 approaching 4% of area-wide GDP (OECD, 2009a). However, there are substantial differences across OECD countries in these fiscal packages as regards their size, composition across different revenue and spending measures and timing (see Figure 1.3, Panel A).<sup>9</sup> Similarly, cross-country differences in fiscal structures mean that automatic stabilisers operate much more strongly in some countries than in others (see Figure 1.3, Panel B). Among the patterns that emerge:

- Panel A shows that the largest discretionary fiscal package was adopted in Korea (6.1% of 2008 GDP), followed by the United States (5.6%), Australia (5.4%), and Japan (4.7%). Differences in the size of discretionary fiscal stimulus reflect a combination of factors, including the severity of the downturn, the strength of automatic stabilisers and whether the government faces resistance from international capital markets in issuing additional debt.<sup>10</sup>
- Among the countries enacting stimulus packages, there is a lot of variation in the relative importance of revenue measures (i.e. tax cuts) versus spending increases, but both types of fiscal stimulus were used about equally on average. Reductions in personal income taxes account for the largest part of the tax measures. However, reductions in employer social security contributions are also quite common, albeit relatively small in most cases. Only in Belgium, the Czech Republic and Germany, do reductions in employer contributions account for more than 10% of the total package. A significant part of the spending measures reflects infrastructure and other public investment programmes, including measures already planned which have been brought forward. Income transfers to low-income households have also been expanded in a number of countries.
- Panel B shows that automatic stabilisers tend to be strongest in northern European and other countries where public social spending, particularly on unemployment and other social protection benefits, is relatively generous and tax revenue more cyclical. In most OECD countries, the stimulus provided by automatic stabilisers in the current downturn is expected to be larger than that provided by discretionary fiscal measures (OECD, 2009a).<sup>11</sup> The countries which have enacted the largest fiscal stimulus packages also tend to be characterised by relatively weak automatic stabilisers, suggesting that the two forms of fiscal stimulus are to a considerable extent substitutes.<sup>12</sup>

The effectiveness of fiscal policy in boosting economic activity and employment is particularly hard to gauge in the current context. Nevertheless, the jobs impact of fiscal stimulus packages can be approximated using short-run employment multipliers which translate an increase in fiscal stimulus equivalent to 1% of GDP into the resulting percentage increase in employment.<sup>13</sup> These employment multipliers are the product of country-specific Keynesian GDP multipliers and the short-run elasticity of employment with respect to output, which is assumed to be constant across countries. Since there is considerable uncertainty concerning the size of the GDP multipliers, three different sets of multipliers were used to illustrate how the estimated impacts vary for different modelling assumptions. Each set of GDP multipliers is based on average multipliers derived from a survey of multiplier values in macro models for ten OECD countries and the Euro area (OECD, 2009b), to which somewhat different adjustments were made.<sup>14</sup>

The set of intermediate employment multipliers is reported in Panel C of Figure 1.3. Separate employment multipliers are calculated for revenue and spending measures, because these two forms of fiscal stimulus generally have different impacts on aggregate

Figure 1.3. **The scale and labour market impact of fiscal stimulus varies across OECD countries<sup>a</sup>**



- a) The analysis takes account of all OECD countries: i) which have adopted positive fiscal stimulus packages; ii) for which complete information on fiscal stimulus packages is available for the period 2008-10; and iii) for which employment multipliers could be estimated.
- b) Countries ordered by ascending order of the total cumulative fiscal impact over the period 2008-10 in terms of 2008 GDP.
- c) Coefficients summarising the automatic change in fiscal balance due to a 1-percentage-point change in the output gap.
- d) Employment multipliers calculated as the product of the elasticity of employment to real GDP and the GDP multipliers from government spending and tax cuts. The average multiplier assumes that the spending and tax cut shares of the fiscal package equal the average share for the 19 countries shown. See Annex 1.A2 in OECD (2009e) for details.

Source: OECD estimates based on the OECD Economic Outlook Database for Panel A and Panel C, Girouard and André (2005) for Panel B.

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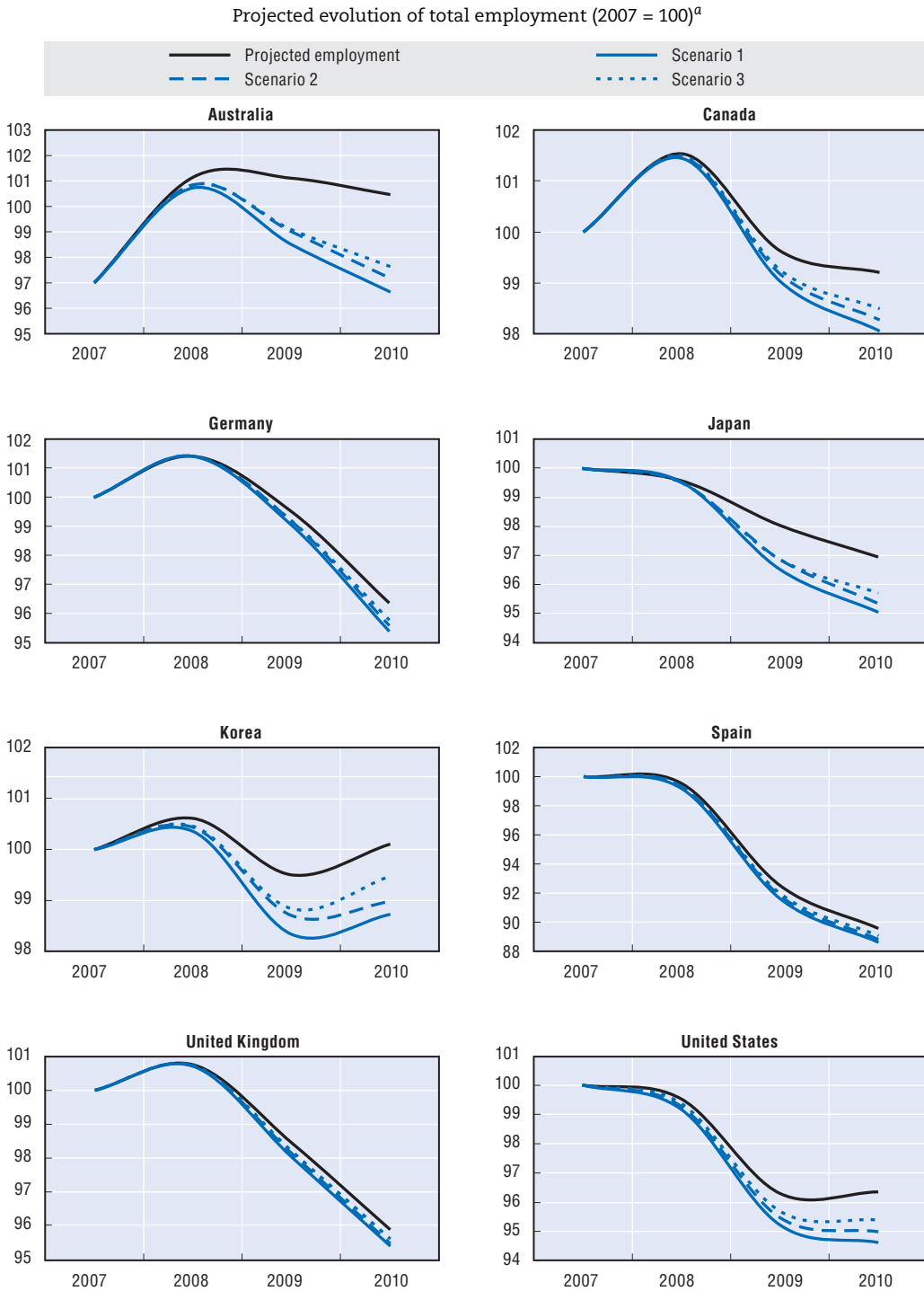
demand and production, due to some part of tax reductions being saved rather than spent. The average employment multiplier for the OECD is 0.23. Cross-country differences in estimated employment multipliers are entirely attributable to differences in the GDP multipliers since the GDP elasticity of employment is assumed to be the same for all countries.<sup>15</sup> GDP multipliers are assumed to be largest in countries with low import penetration rates, such as Japan, the United States and Australia, and smallest in small-open economies, such as Belgium, the Netherlands and Korea (OECD, 2009b).

One way to assess the jobs impact of fiscal stimulus packages is by comparing OECD employment projections of the impact of the crisis on employment, which take account of the expansionary impact of fiscal stimulus measures and can be treated as a baseline, with counterfactual projections that do not. These counterfactual projections were constructed using the information in Figure 1.3 on fiscal packages and the three sets of employment multipliers to generate three alternative no-stimulus scenarios. Figure 1.4 juxtaposes the baseline employment projections with these three counterfactual projections for selected OECD countries. The following patterns emerge:

- Even though many countries moved quickly to enact large fiscal stimulus packages, these packages generally have not had a strong effect in cushioning the initial decline in employment caused by the crisis, although Australia is a notable exception. By contrast, the projected impacts of the discretionary fiscal stimulus packages cumulate through 2010 and are likely to represent an important support for labour demand in later stages of the recession and the early recovery period.
- The average employment effect in 2010 for the 19 countries corresponds to between 0.8 to 1.4%, depending on which set of employment multipliers is used (see Table 1.A2.1 in OECD, 2009e).
- The jobs impact of fiscal stimulus measures is particularly strong in Australia, Japan and the United States, due to both the relatively large size of the fiscal packages in these countries and their relatively large fiscal employment multipliers. The estimated jobs impact in 2010 ranges from 1.3-2% in Japan, 1.4-1.9% in Australia and 1-1.8% in the United States.<sup>16</sup>
- More moderate jobs impacts are projected for the other countries in Figure 1.4. Despite Korea having adopted the largest fiscal stimulus package (6.1% of 2008 GDP), its jobs impact is dampened by a relatively low employment multiplier. In the case of Canada and Spain, the moderately sized impact reflects the combination of an above-average fiscal stimulus with a moderately-above average multiplier. In Germany, the jobs impact is relatively small reflecting an average sized fiscal package and an employment multiplier somewhat below the OECD average. In the United Kingdom, the jobs impact is modest reflecting the combination of a relatively small fiscal stimulus package and an above-average employment multiplier.

As noted above, tax reductions are generally thought to be less effective than increased government spending in propping up employment in the short-run following a negative shock to aggregate demand, because spending has a higher output multiplier. However, tax reductions which reduce unit labour costs and hence also create an incentive for employers to increase the labour intensity of production may be more effective in supporting labour demand than other tax cuts. In fact, a narrow majority of OECD countries have reduced employer social security contributions as one component of their fiscal stimulus package, confirming that it is important to assess whether this form of tax

Figure 1.4. **Jobs impact of fiscal stimulus packages in selected OECD countries, 2007-10**



a) Projected employment is taken from OECD (2009a). See text for an explanation of the three, no-fiscal-stimulus scenarios.

Source: OECD estimates based on the OECD Economic Outlook Database.

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cut is significantly more effective than other types of tax cuts in limiting the increase in cyclical unemployment. The analysis of the short-run, own-price elasticity of labour demand in Section 3 below suggests that these measures may well have a significant additional employment impact, beyond the Keynesian multipliers analysed here, due to the relative price effect associated with a reduction in unit labour costs. If so, the analysis above may understate the jobs impact of fiscal stimulus packages which include significant cuts in employer social security contributions.

### **1.3. Implications of a sharp economic downturn for job losers: three provisional lessons from recent history**

Vigorous government actions to stabilise financial markets and raise aggregate demand appear to have prevented the financial crisis from developing into a depression, but have not been adequate to prevent a severe recession in most OECD countries. Accordingly, it is important to survey what is known about how labour market conditions are affected by a severe recession and what challenges that creates for employment and social policy makers.

#### ***Even in a recession there is still considerable hiring***

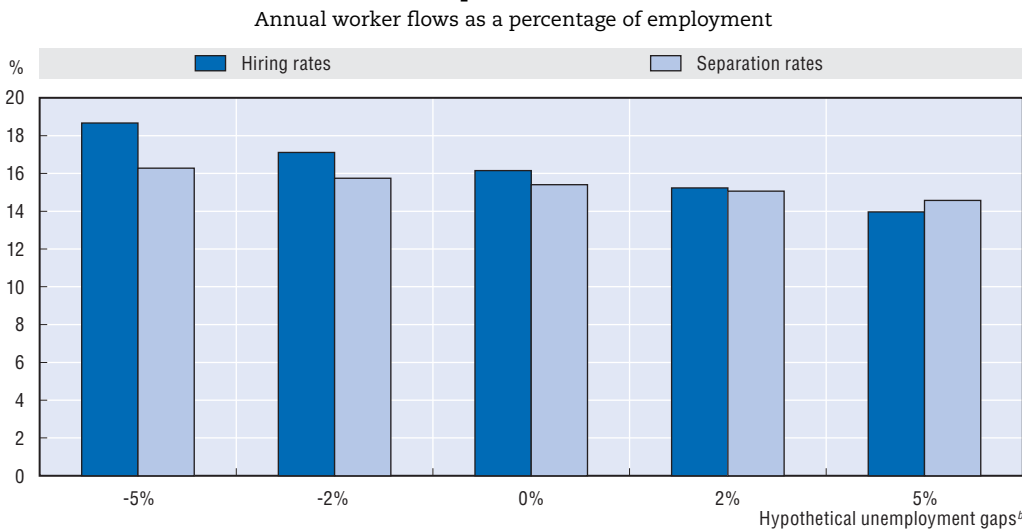
A growing empirical literature has shown that there is a wide heterogeneity in firms' performances which results in large job and worker flows (see Chapter 2 and the studies cited there). Even in a deep recession, many firms hire new workers, even as others shed labour or even close. This implies that labour market programmes should help facilitate the movement of job losers into the available jobs, even during a recession.<sup>17</sup>

Figure 1.5 illustrates this point using the data on worker flows that are analysed in detail in Chapter 2. It presents fitted values from simple panel regression models that relate aggregate hiring and separation rates to business-cycle conditions.<sup>18</sup> Business-cycle conditions are proxied by the unemployment gap defined as the difference between the unemployment rate and the Secretariat's estimate of the NAIRU.<sup>19</sup> The middle bar in the chart represents a period of cyclical balance, while the two bars to the left represent a situation where output is above-potential GDP and those to the right a moderate and a severe recession. These simple simulations indicate that both hirings and separations are pro-cyclical, but that hirings vary more strongly with the cycle, at least as measured here.<sup>20</sup> Most importantly, even in a severe recession there is still considerable hiring in the economy (14-15% of total employment annually). As is discussed in detail in Chapter 2 of this publication (see also Davis et al., 2006), a large majority of the turnover in jobs and workers reflects reallocation across firms *within the same industry* and this process continues at all stages of the business cycle.

#### ***However, the competition for job vacancies becomes extremely intense***

Although many firms continue to hire during recessions, the competition among jobseekers becomes much more intense. Figure 1.6 illustrates this point with simulations of how job-vacancy rates vary over the cycle.<sup>21</sup> Job vacancies fall very strongly as the economy moves from a condition of overheating to severe recession (i.e. from left to right). The reason that vacancies are so much more cyclical than hirings (cf. Figure 1.5) is because the vacancies measure used here refers to the stock of unfilled vacancies at a point in time. Even though the rate of hiring only falls moderately in a recession, firms posting vacancies find suitable workers much more quickly, so that the stock of open vacancies contracts

Figure 1.5. **Simulated impact of macroeconomic conditions on hiring and separation rates<sup>a</sup>**



- a) Fitted values from OLS estimates of unbalanced panel regression models of annual hiring and separation rates for 20 OECD countries during 1994-2007. Models include a full set of country and year dummies, while simulations reflect a cross-country average for the end of the estimation sample period.
- b) Difference between the unemployment rate and the NAIRU.

Source: OECD estimates based on worker flows data described in Chapter 2 of this publication, and OECD Economic Outlook Database.


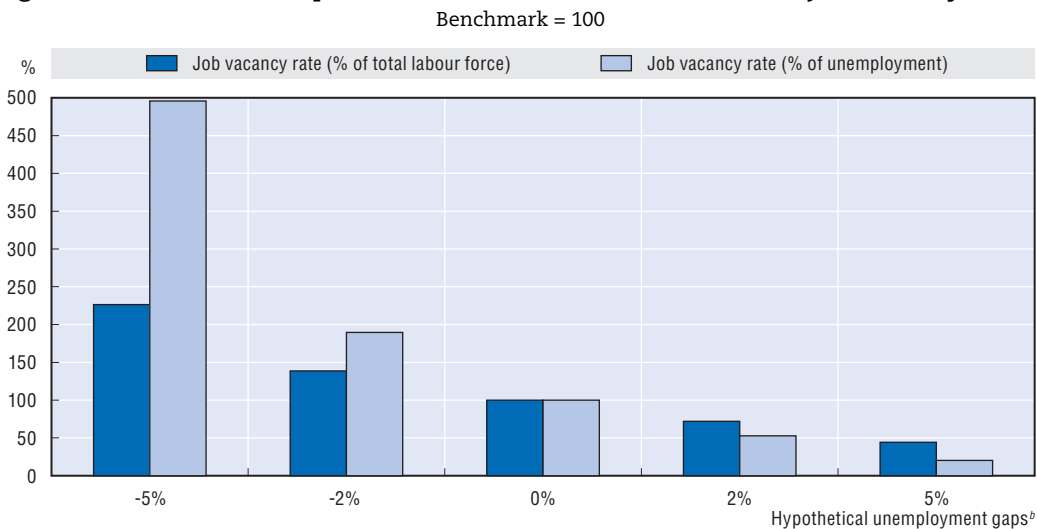

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Figure 1.6. **Simulated impact of macroeconomic conditions on job vacancy rates<sup>a</sup>**



- a) Fitted values from OLS estimates of unbalanced panel regression models of quarterly job vacancy rates for 20 OECD countries during 1970Q1-2008Q3. Models include a full set of country and year dummies, while simulations reflect a cross-country average for the end of the estimation sample period.
- b) Difference between the unemployment rate and the NAIRU.

Source: OECD estimates based on data from OECD Main Economic Indicators and OECD Economic Outlook Database.

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sharply. Most importantly for assessing the prospects of jobseekers, vacancies relative to the number of unemployed persons fall even more steeply.<sup>22</sup> This suggests that competition for job opening becomes very intense and certain groups of job losers risk being effectively locked out of the labour market in a recession. For example, this could

happen to less qualified workers, should a significant share of better qualified workers respond to deteriorating labour market conditions by accepting jobs for which they are overqualified. The scarcity of formal vacancies in a recession also suggests that workers who are not well connected to the informal channels through which much hiring occurs may also be at a particular disadvantage (*e.g.* immigrants or ethnic minorities). Activation policies in a recession clearly need to take account of the very different job-search environment that is signalled by these estimates.<sup>23</sup>

### ***Severe recessions hurt lots of people and can take a long time to fix***

While historical experience confirms that it becomes increasingly difficult to re-integrate job losers into employment during a recession, it also indicates the importance of preventing job losers from drifting into permanent exclusion from the labour market which may or may not be associated with long-term dependency on social benefits. Figure 1.7 provides a four-decade view of the evolution of unemployment rates in nine OECD countries. The first striking finding is that a number of OECD countries have experienced very sharp increases in unemployment during recessions. For example, the unemployment rate in Finland rose by nearly 15 percentage points between 1990 and 1994. A second finding is that unemployment often has climbed more rapidly in a downturn than it subsequently descended during the economic recovery. The recession in Finland in the early 1990s provides a striking example of this asymmetry: unemployment has never since returned to the cyclical lows that prevailed in the late 1980s. However, other episodes show that recessions need not raise unemployment for an extended period of time. For example, the early 1990s recession in Ireland caused unemployment to rise for approximately three years, before descending back to its previous level in another two years and then continuing its descent to much lower levels before its recent sharp upturn.

A number of factors appear to play a role in determining the extent to which higher unemployment persists following an initial cyclical increase. As is discussed in OECD (2003), national labour markets may be more likely to get locked into a high-unemployment/high benefit-dependency equilibrium following a steep recession when income replacement benefits are more generous and benefit recipients less exposed to effective activation measures, although a number of other factors may also contribute to strong *persistence* effects.<sup>24</sup> While it is important to provide workers with effective support in a recession, it is also important that this safety net functions as a trampoline and not as a passive net.<sup>25</sup>

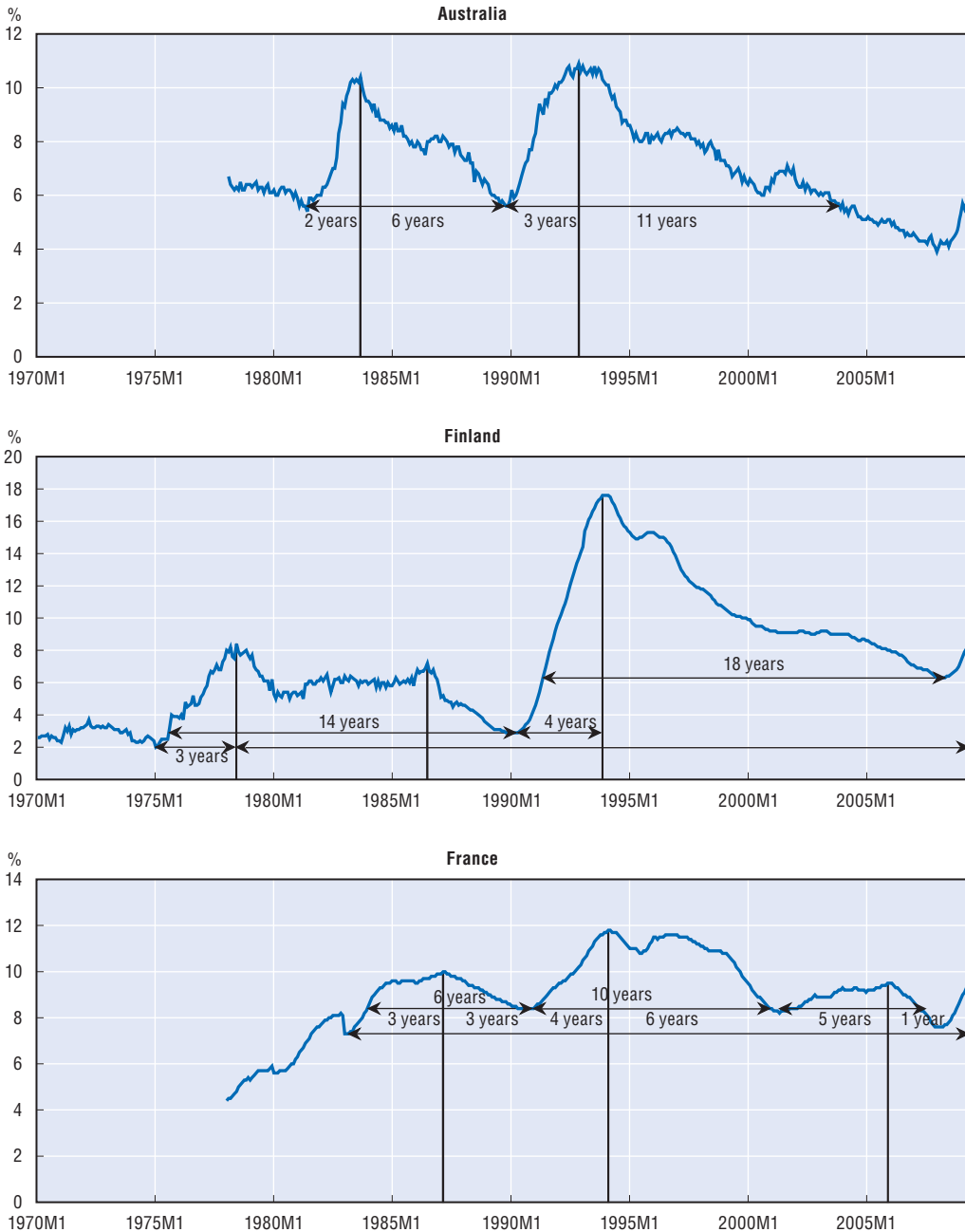
### **1.4. Specific features of this downturn as regards its impact on labour markets<sup>26</sup>**

#### ***Have structural reforms made the economy more resilient to adverse shocks?***

A number of OECD countries have enacted important labour market reforms in recent decades motivated, at least in part, by concerns over persistently high unemployment. OECD (2006a) provides an overview of this structural reform agenda, as laid-out in the Reassessed OECD Jobs Strategy, as well as an in-depth description of the reforms undertaken in the previous decade. These reforms have included measures to address the problem of excessive benefit dependency (*e.g.* activation measures to more effectively condition benefit receipt on availability for work and fiscal measures to increase the economic returns from working), as well as measures to reinforce labour demand (*e.g.* the relaxation of regulatory rules affecting job protection – see Venn, 2009, for an update – and

**Figure 1.7. Severe recessions generate sharp increases in unemployment which are long-lasting and often not reversed completely in recoveries**

Evolutions of monthly harmonised unemployment rates<sup>a</sup> in selected countries, January 1970-June 2009



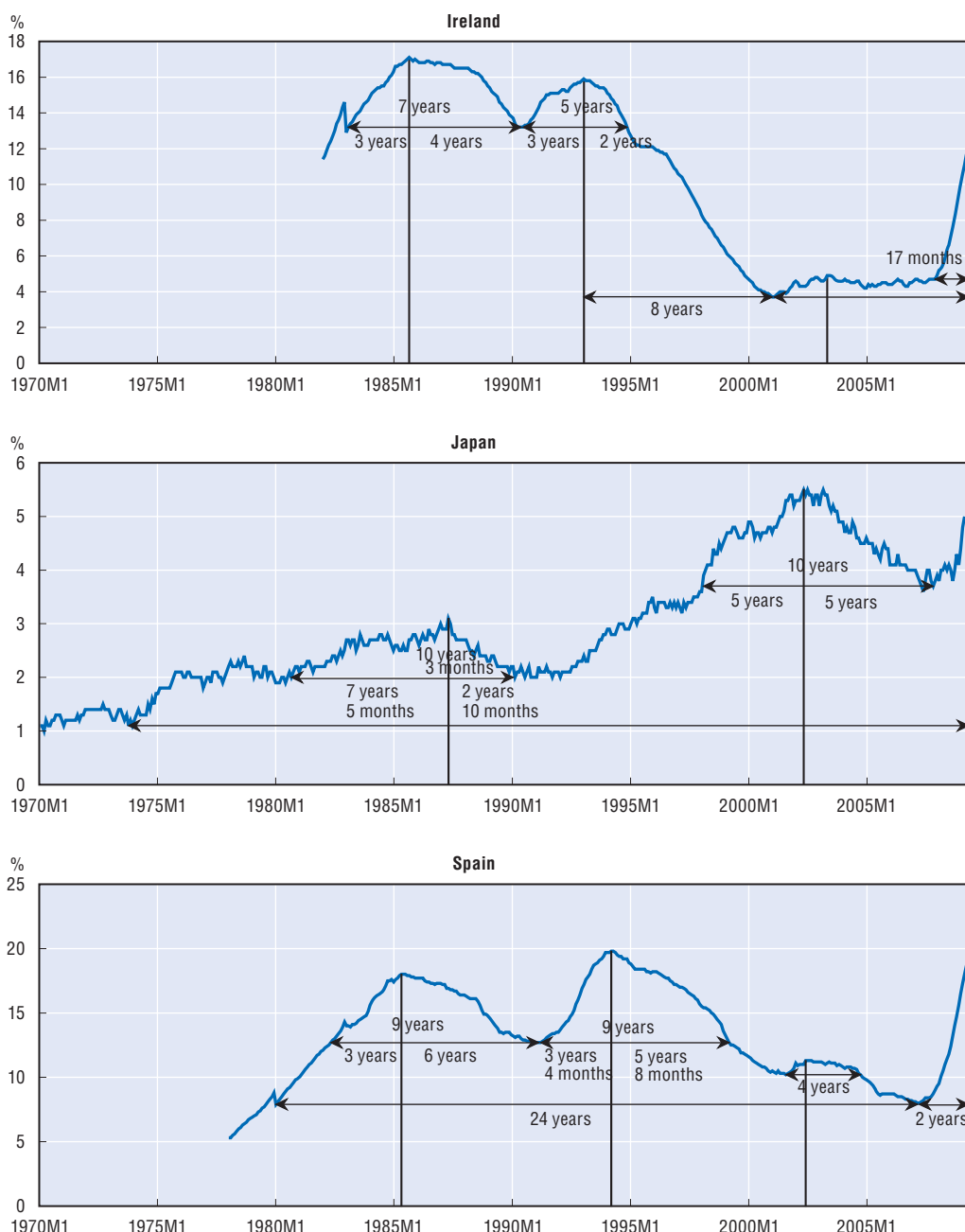
a) Harmonised monthly unemployment rates as a percentage of the labour force.

Source: OECD, *Main Economic Indicators*.

working time). Many OECD countries have also revamped product market regulation, so as to increase competition, and this has reinforced the impact of labour market reforms in fostering higher employment rates (Boeri et al., 2000; Nicoletti and Scarpetta, 2005; Griffith et al., 2007; Berger and Danninger, 2006; Bassanini and Duval, 2006; Amable et al., 2007; Fiori et al., 2007).

**Figure 1.7. Severe recessions generate sharp increases in unemployment which are long-lasting and often not reversed completely in recoveries (cont.)**

Evolutions of monthly harmonised unemployment rates<sup>a</sup> in selected countries, January 1970-June 2009



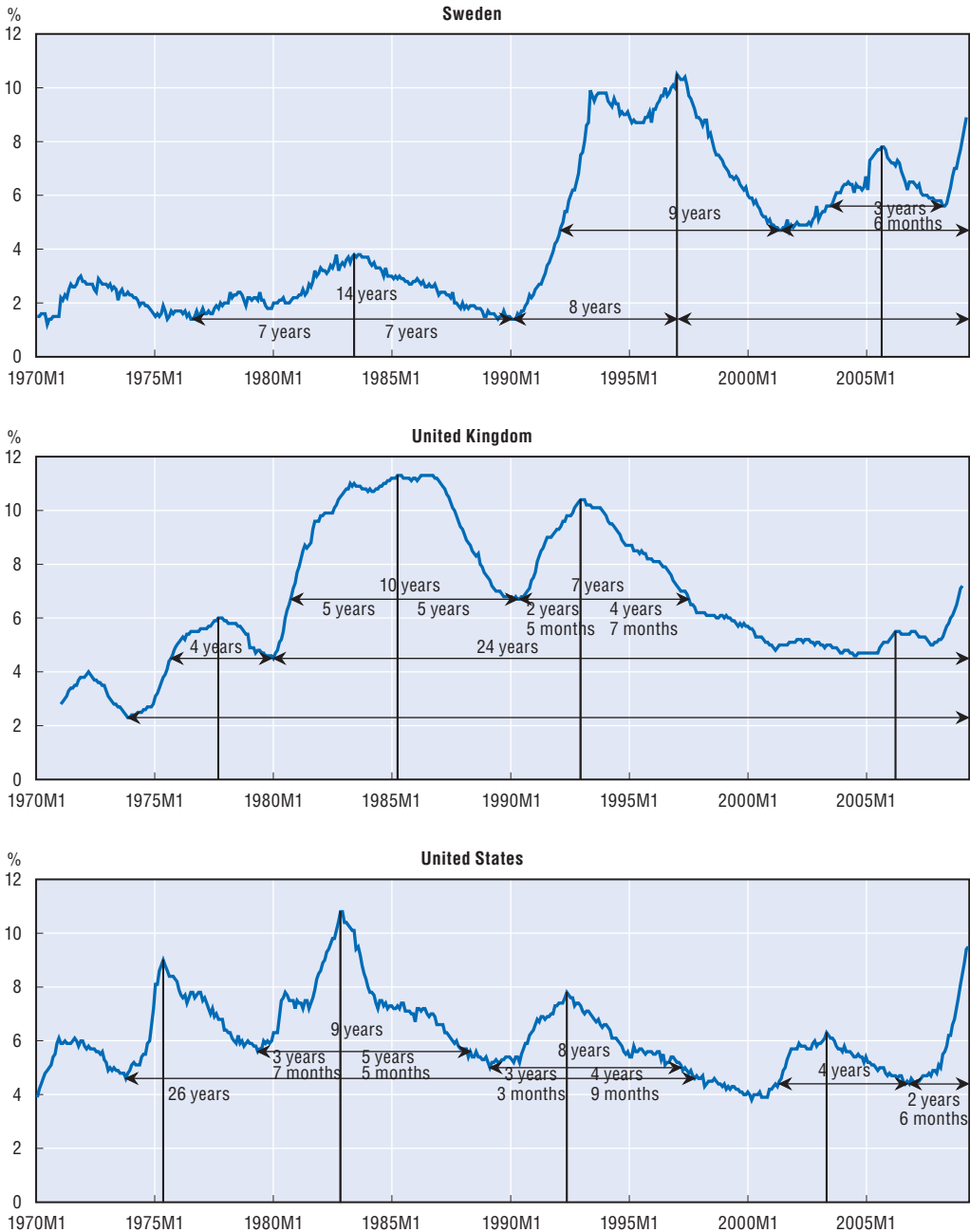
a) Harmonised monthly unemployment rates as a percentage of the labour force.

Source: OECD, *Main Economic Indicators*.

Have these structural reforms made OECD labour markets better able to withstand a severe downturn or to recover more quickly once overall economic conditions have improved? Much recent research has shown that these types of structural reforms are associated with better labour market performance, at least in the long-run. In particular, coherent packages of structural reforms appear to be associated with a reduction in the


**Figure 1.7. Severe recessions generate sharp increases in unemployment which are long-lasting and often not reversed completely in recoveries (cont.)**

Evolutions of monthly harmonised unemployment rates<sup>a</sup> in selected countries, January 1970-June 2009



a) Harmonised monthly unemployment rates as a percentage of the labour force.

Source: OECD, Main Economic Indicators.

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structural rate of unemployment and, perhaps, also with higher employment rates for certain demographic groups, including women, youth and older workers.<sup>27</sup> Thus, it is very likely that structural reforms in labour and product markets deserve much of the credit for the fact that the OECD area entered the current slowdown with the lowest unemployment rate in nearly three decades and an all-time high employment rate. Bassanini and Duval

(2006) also present some tentative evidence that these reforms affect the way unemployment reacts to a negative economic shock, although there often appears to be a trade-off between the policies best suited to weaken *shock amplification* (i.e. the size of the response) and those aimed to reduce *shock persistence*. In particular, they find that:

- Reduced *shock amplification* is associated with stricter employment protection and product market regulation, a higher tax wedge on labour income, higher spending on active labour market programmes (ALMPs), more centralised/co-ordinated collective bargaining, and less generous unemployment benefits.
- Reduced *shock persistence* is associated with less strict employment protection and product market regulation, higher spending on ALMPs, and more centralised/co-ordinated collective bargaining.

The impact of these structural reforms on the overall *resilience* of OECD economies is analysed in Duval *et al.* (2007). They also find that the types of structural reforms which many countries have enacted during the past two decades have had offsetting effects on resilience: increasing shock amplification, while reducing shock persistence. Since there is a very strong link between the output-gap measure they analyse and unemployment, it follows that these reforms have had a qualitatively similar impact on labour market resilience, as studied directly by Bassanini and Duval (2006).<sup>28</sup> The results from both of these analyses of recent changes in economic resilience should be considered as only suggestive, because this is a difficult area where research results are still highly preliminary. Nonetheless, they suggest that there does not appear to be any strong reason to expect that recent structural reforms mean that OECD labour markets are now substantially less sensitive to severe economic downturns than was the case in the past. Although there is considerable evidence that some large OECD economies were unusually stable between the mid-1980s and the mid-2000s (Stock and Watson, 2002; Davis and Kahn, 2008; Jaimovich and Siu, 2009), this “great moderation” apparently cannot be attributed to greater resilience due to the types of structural reforms that have received a lot of attention from labour market analysts and policy makers. On the other hand, it does appear that these reforms have had a significant effect on cyclical dynamics, since the initial response to a negative demand shock is now greater, but output also tends to recover more quickly. From the perspective of employment and social policies, these tentative findings suggest that unemployment may rise more rapidly at the onset of a recession, but is less likely to plateau at a high level for a long period of time. However, all such conclusions must be considered to be highly tentative because many of the recent structural reforms were launched in a context of relatively strong economic growth and have yet to be tested by a severe economic downturn.

### ***Are workers better prepared now to weather a period of high unemployment?***

Workers who are at risk of unemployment in the current downturn have both advantages and disadvantages as compared with their counterparts in the past several downturns. One advantage previously mentioned is that unemployment rates had reached a 27-year low on the eve of this downturn. Multiple-worker households are potentially better prepared to cope with job loss than are single-worker households and the increase in overall employment rates in the past decade was associated with a slight increase in the share of two-adult families in which there are two or more workers (up from 66% in the mid-1990s to 68% in the mid-2000s). However, the share of persons living in one-adult households increased, so that the share of the entire working-age population living in

dual-earner households only increased marginally between the mid-1990s and the middle of this decade (from 54% to 55%). While employment rates began this recession at a high level, trend increases in the shares of temporary jobs in many countries suggest potential vulnerabilities for the workers in these jobs, since it appears to be particularly easy for employers not to renew their contract when business conditions deteriorate. A rising share of part-time work – together with the trend toward more flexible hours regulation (OECD, 2006a) – may also mean that employers are more easily able to impose hours reductions on their workforce than was the case in the past. The increase in these and other forms of “non-standard” employment in many countries also raises the concern that an increased share of job losers may not be covered by unemployment benefits (on either *de jure* or *de facto* grounds).

The picture is also mixed as regards the level of inequality in the labour market and the adequacy of social safety nets (see Chapter 3). There has been a broad trend toward rising inequality in OECD countries, including increases in relative poverty rates, due in part to increased earnings inequality (OECD, 2008b). As with the rise of part-time and temporary employment, the rise in low-paid employment suggests that labour market segmentation may have tended to increase in ways that will affect how the burden of rising unemployment is shared across the workforce. The social safety net for job losers has been improved significantly in recent decades in some OECD countries, notably in Korea following the Asian financial crisis of 1997-98. Similarly, a number of countries have introduced or expanded in-work benefits which top-up earnings for low-paid workers (Immervoll and Pearson, 2009). However, safety nets have also been tightened up in a number of ways. For example, the *net* (i.e. after tax) replacement rate for unemployment benefits over 60 months fell by 5 percentage points between 2000 and 2005 on average in the OECD area (OECD, 2007a). More generally, OECD analysis has shown that the equalising impact of taxes and transfers on market income tended to decline between the mid-1990s and the mid-2000s (OECD, 2008b).

Overall, there do not appear to be any clear grounds for concluding that workers, generally, are either better or worse prepared to weather a period of weak labour markets than was the case for the past several recessions. As has always been the case, the burden of labour market slack will be unevenly shared. However, there appear to be grounds to expect that the distribution of costs across the workforce is likely to differ somewhat in this downturn due to its origins in a housing price bubble and a broader financial market crisis and some of the recent trends mentioned above, such as the increased share of temporary workers in some countries. Section 2 analyses in detail which workforce groups are most vulnerable to cyclical downturns and how the cyclical dynamics of unemployment affect the environment in which employment and social policies function.

## 2. Uneven impact of recessions on the labour market across workforce groups

In order to get a better idea of the *relative* impact of the current economic downturn on labour market outcomes for different workforce groups, this section uses historical data to identify a number of stylised facts related to the labour market difficulties created by recessions and who is most exposed to them. The first part presents a statistical portrait of the relative sensitivity of total hours worked to the business cycle for different groups of workers, defined in terms of their industry of employment or individual characteristics such as age, gender, educational attainment and type of employment contract. The relative importance of variations in average hours per worker, employment rates of the labour force



and labour-force participation rates in accounting for the total cyclical variation in total hours worked is then analysed, including differences in the relative importance of these three margins of adjustment across workforce groups. The last part of the section analyses the cyclical *dynamics* of unemployment in particular detail, because the social costs of economic downturns derive, to a disproportionate degree, from the resulting upsurge in unemployment. Following the research literature, attention focuses on documenting the relative importance of changes in unemployment inflows and outflows in driving cyclical changes in unemployment rates (Shimer, 2007). Unemployment inflows – which reflect the rate at which workers lose their jobs and become unemployed – tend to rise in a recession, while unemployment outflows – which reflect the rate at which jobseekers find jobs – tend to fall, causing the expected duration of unemployment to rise. Heightened risks of job loss and long-term unemployment represent somewhat different challenges for labour market programmes and it is thus important to understand the relative importance of each in a steep downturn and how that differs across workforce groups. The impact of different labour market policies on the cyclical profile of unemployment inflows and outflows is also analysed.

### **2.1. The cyclical sensitivity of total hours worked to the business cycle across workforce groups**

This sub-section analyses differences in business-cycle sensitivity of total hours worked.<sup>29</sup> Attention focuses on determining the relative exposure of different workforce groups, defined by industry, key individual characteristics (age, gender and education) and type of employment contract, to cyclical variations in labour demand. As no single data source covers all these dimensions over a sufficiently long time period to make possible a simultaneous analysis across all workforce dimensions, the analysis is conducted separately for each dimension. However, interactions across the various dimensions are analysed towards the end of this sub-section. The level of business-cycle volatility of total hours worked can be summarised by calculating the percentage standard deviation of its cyclical component.<sup>30</sup> For each of the workforce groups considered, this measure of business-cycle sensitivity is expressed relative to the national average (normalised to 100). The resulting index of relative business-cycle sensitivity is also adjusted to correct for measurement error and idiosyncratic shocks unrelated to the business cycle. For more details on the methodology and a sensitivity analysis of the results, see Annex 1.A3 in OECD (2009e).<sup>31</sup>

#### ***There are large differences in business-cycle sensitivity across sectors...***

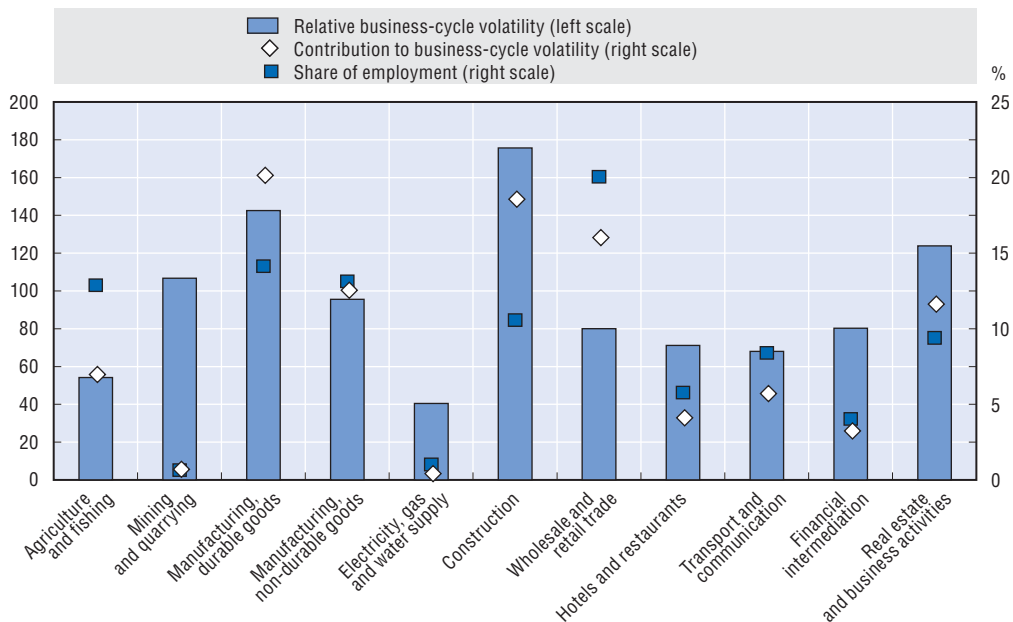
There are various reasons why cyclical sensitivity differs across industries. One factor is directly related to the current economic downturn, namely, differences in the degree of dependence on external finance and availability of consumer credit. Braun and Larrain (2005) show that industries that are more dependent on external finance tend to be more sensitive to the business cycle. Industries also differ in the relative importance of firm-specific skills (e.g. due to differences in skill-intensity or the role of product differentiation) which create an incentive to retain skilled workers through a period of slack demand, so-called “labour hoarding”. As a result, industries where firm-specific skills are more important may be less cyclical in terms of employment, but more so in terms of average hours (Fay and Medoff, 1983).<sup>32</sup> Finally, the degree of wage flexibility may differ across industries due to the differential role of trade unions in some countries. Wage rigidity is

expected to raise the sectoral cyclicity of employment and hours. For example, Bils (1991) finds that wage rigidity more than doubles employment fluctuations in the motor-vehicles industry.<sup>33</sup> The relative decline in trade union power in a number of OECD countries over the past two decades may imply that sectoral differences in wage flexibility are less important in the current crisis.

Figure 1.8 reports estimates of the relative business-cycle volatility of total hours worked by industry averaged across countries.<sup>34</sup> Construction is the most cyclical industry followed by durable manufacturing and business services. Compared with aggregate business-cycle volatility (normalised to 100), construction is over 70% more cyclical and durable manufacturing 40% more cyclical. Electricity and agriculture are the least cyclical industries, only 40% as volatile as the average for all industries. The contribution of each sector to aggregate volatility depends on both industry volatility and industry size. Durable manufacturing makes the largest contribution to aggregate volatility, since it employs more workers than construction. It accounts for one fifth of aggregate volatility despite employing only one out of seven workers.


Figure 1.8. **Business-cycle sensitivity of total hours worked by industry**

Index of relative business-cycle volatility (national average = 100)<sup>a</sup>



a) Unweighted average for countries analysed.

Source: OECD estimates based on EUKLEMS Database. See OECD (2009e) Annex 1.A3 for further details on the sample coverage and the methodology.

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As in previous downturns, the current economic downturn has a clear sectoral dimension. For example, the bursting of the property price bubble in a number of countries has resulted in many job losses in construction. This has been particularly evident in Spain and Ireland, where employment in the construction sector dropped, respectively, by 26% in the year to the 1st quarter of 2009 and by 17% in the year to the 4th quarter of 2008,<sup>35</sup> but also in the United States (14% drop in the year to June 2009). However, job losses soon spread to manufacturing and, in more recent months, also to business services.<sup>36</sup> Export-

dependent industries are also being strongly affected by the downturn due to the sharp decline in world trade. For example, the auto industry is experiencing a severe retrenchment in a number of countries. Early indications are that the broad sectoral composition of employment losses in the downturn may be qualitatively similar to historical patterns in most countries.

Large differences in terms of the vulnerability of different sectors to the economic downturn provide a possible rationale for government interventions which are targeted on the hardest hit sectors. Indeed, a number of governments have responded to the current downturn by targeting assistance to specific sectors, most notably the automobile sector. However, such measures may slow down the required structural adjustment process or become a form of implicit trade protectionism and must be carefully designed. An alternative way to target measures to alleviate the social cost of recessions is to focus instead on the workforce groups defined in terms of individual characteristics, such as age and education, who are most adversely affected by economic downturns.

**... and some workforce groups are likely to be more affected than others**

Business-cycle sensitivity is also likely to differ across workforce groups defined by their individual characteristics. A particularly important reason why some groups may be affected more than others is because of differences in their *turnover costs*, that is, the costs that employers incur when they replace existing employees with new recruits (Lindbeck and Snower, 1988, 2001). Turnover cost depend on factors such as job tenure, type of employment contract and firm-specific skills. Importantly, turnover costs shift the burden of adjustment to changes in business-cycle conditions from so-called “insiders” (i.e. workers for whom turnover costs are relatively high) to “outsiders” (i.e. workers with relatively low levels of labour market experience or employment protection).<sup>37</sup> The remainder of this sub-section provides a detailed description of the relative business-cycle sensitivity of different workforce groups defined by gender, age, education and employment status. While it would have been interesting to include immigrants in the analysis, appropriate data are lacking. Box 1.1 discusses other types of evidence indicating that immigrants generally are more vulnerable than native workers to economic downturns and that the current downturn conforms to that pattern.

Figure 1.9 summarises differences in the business-cycle sensitivity of total hours worked across workforce groups defined by age, gender, education and contract type.<sup>38</sup> Important differences in the degree of exposure to cyclical volatility emerge:

- Differences in business-cycle sensitivity are very pronounced across *age groups*. Youth exhibit the highest level of business-cycle volatility, whereas this is lowest for prime-age individuals. Business-cycle sensitivity is more than twice as high for youth as for individuals aged between 25 and 54 and 70% to 80% above the national average.<sup>39</sup> Relatively low turnover costs, due to limited labour market experience and seniority rules, may explain why youth bear the brunt of adjustment to the business cycle.<sup>40</sup> Older workers are about 20% more sensitive to the business cycle than prime-age workers, but their business-cycle sensitivity is not significantly different from the national average.
- Business-cycle sensitivity falls with *educational attainment*. This suggests that turnover costs are higher for more skilled workers, perhaps, because workers with higher levels of generic skills also tend to have higher levels of firm-specific skills.<sup>41</sup> However, the differences across education groups are rather small by comparison to those across age groups.

### Box 1.1. Immigrants in the downturn

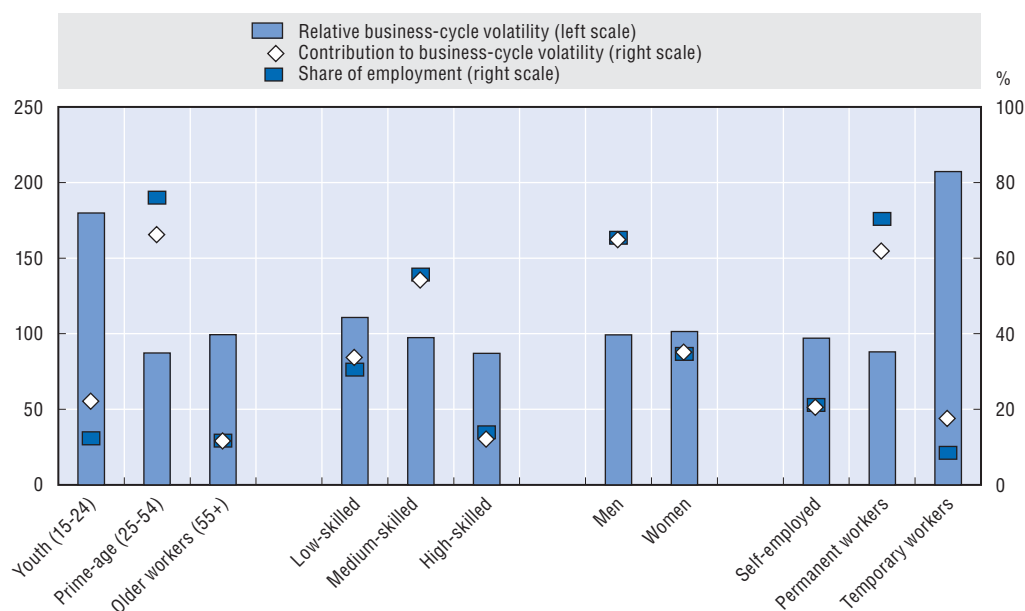
Immigrants are more sensitive to economic downturns than natives for at least three reasons (OECD, 2009g):

- They tend to be disproportionately employed in cyclical industries. One reason for this is that immigration is pro-cyclical and consequently, immigrants are more likely to find jobs in sectors that are highly pro-cyclical. OECD (2009g) confirms that highly pro-cyclical sectors such as construction and manufacturing tend to account for a disproportionate share of immigrant employment.
- Labour-turnover costs are likely to be considerably lower for foreign-born workers than for natives because their (host country) labour market experience tends to be more limited and labour market entrants are more likely to be employed on temporary contracts. The role of temporary contracts may be particularly important for migrants as such contracts may be less attractive for natives. The overrepresentation of immigrants in construction, wholesale, hotels and restaurants may, in part, be related to the extensive use of temporary contracts in those industries.
- Immigrants may be more vulnerable in recessions because discrimination intensifies as the economy slows down. Empirical evidence on the role of discrimination for the risk of displacement among immigrants over the business cycle is limited, however. Couch and Fairlie (2008) examine the impact of the business cycle on employment transitions for racial minorities in the United States. Their evidence partially supports the “last in, first out” hypothesis. They find that racial minorities (blacks) are fired first when the economy stumbles, but not that they are hired last in the recovery.

As labour markets opportunities have deteriorated almost everywhere during the current economic downturn, voluntary return migration may be quite limited. Unfortunately, there is little empirical evidence on the importance of economic downturns on return migration in previous crises. Although it is still too early to assess in detail how immigrants are faring in the current crisis, there are a number of indications that they are being disadvantaged both by rising labour market slack and by changes in immigration policy. For example, most host countries have been reluctant to renew permits of immigrants who have lost their jobs and some countries have put in place policies to encourage return migration among unemployed immigrants (*e.g.* Spain, Czech Republic). However, other countries have stepped up efforts to help newly-arrived migrants integrate in the labour market (*e.g.* Sweden).


- There is no appreciable *gender* difference in business-cycle sensitivity. However, the absence of a bivariate association between gender and hours volatility could reflect the offsetting effects of opposing influences. On the one hand, the business-cycle volatility of men is likely to be higher due to their overrepresentation in the most cyclical industries (*e.g.* construction and durable manufacturing). On the other hand, turnover costs may tend to be lower for women than for men employed in the same industry and their labour supply decisions more sensitive to cyclical variation in remuneration levels, both factors that would tend to make female hours more sensitive to changes in the cycle. This issue will be explored in more detail below in the discussion of Table 1.2.
- In terms of *job status*, workers on a temporary contract are highly sensitive to changes in the business cycle. Their business-cycle sensitivity is about 2.5 times that of permanent workers and more than double that of the national average. The sensitivity of the self-employed is somewhat greater than that of workers with a permanent contract but very

Figure 1.9. **Business-cycle sensitivity of total hours worked by workforce group**  
Index of relative business-cycle volatility (national average = 100)<sup>a</sup>



a) Unweighted average for countries analysed.

Source: OECD estimates based on the European Union Labour Force Survey (EULFS) for age groups, gender and job status and *EUKLEMS Database* for education. See OECD (2009e) Annex 1.A3 for further details on the sample coverage and the methodology.

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close to the national average. The relative vulnerability of temporary workers may be of particular concern when this group has limited access to social safety nets, as discussed in Section 4 below.

Thus, previous economic downturns indicate that certain groups in the labour market – youth, low-skilled and temporary workers – are likely to bear most of the brunt of rapidly falling demand for total hours worked. This is unlikely to be different in the current downturn. In the United States, for example, the employment rate for 16-19 year olds fell by about 12% in the year to June 2009 compared with 5% for total employment. In the year to the 1st quarter of 2009, youth employment in Spain (16-24) fell by almost 20% and UK youth employment (18-24) fell by 6%, much faster than total employment. Temporary employment fell by almost 20% in the 12 months to April 2009 in Spain, while employment on open-ended contracts actually increased by 0.6%. In France and the United States, employment through temporary work agencies fell by 30% over the year up to May 2009 and 27% over the year to June 2009, respectively.

An important implication of these findings is that the composition of non-employment in recessions shifts even more towards traditionally disadvantaged labour market groups than is already the case in normal times. In part, this is likely to reflect lower turnover costs for disadvantaged groups, as highlighted above, which makes them particularly vulnerable to layoffs. However, the compositional shift in non-employment towards disadvantaged groups is likely to be exacerbated by the increased competition for job vacancies in a recession, when there is an unusually large number of jobseekers, including well-qualified workers with stable work histories, competing for fewer vacancies. In this environment, employers can be more selective in their hiring and it is likely that

Table 1.2. **Workforce characteristics interact to influence the business-cycle sensitivity of total hours worked**Multivariate estimates of the determinants of hours volatility<sup>a</sup>Panel A. **Contributions of differences in workforce composition to univariate indexes of business-cycle volatility**

	Volatility <sup>b</sup>	Interaction effects (%)				
		Industry	Age	Education	Gender	Job status
<b>Industry</b>						
Agriculture and fishing	54.2	–	–3.68	0.63	–0.03	–2.71
Mining and quarrying	106.7	–	–0.08	–0.02	–0.02	–0.05
Manufacturing, non-durable goods	142.5	–	–1.28	0.10	0.19	–3.19
Manufacturing, durable goods	95.5	–	–1.00	–0.04	–0.19	–3.28
Electricity	40.4	–	–0.31	–0.14	–0.02	–0.44
Construction	175.6	–	2.59	0.36	–0.35	4.71
Wholesale and retail trade	79.9	–	4.86	0.24	0.23	2.77
Hotels and restaurants	71.1	–	4.24	0.32	0.16	5.17
Transport and communication	68.0	–	–2.24	0.24	–0.13	–3.05
Financial intermediation	80.3	–	–0.93	–0.93	0.03	–2.06
Real estate and business activities	123.8	–	–2.18	–0.76	0.13	2.14
<b>Age groups</b>						
Youth (15-24)	179.8	–0.93	–	1.56	0.02	10.34
Prime-age (25-54)	87.2	3.81	–	–2.39	0.14	–6.21
Older workers (55+)	99.3	–2.88	–	0.84	–0.17	–4.13
<b>Educational attainment</b>						
Low-skilled	110.7	–16.41	6.66	–	–0.23	–0.43
Medium-skilled	97.4	–21.87	2.49	–	0.64	1.93
High-skilled	87.0	38.27	–9.14	–	–0.41	–1.51
<b>Gender</b>						
Men	99.2	63.90	–4.71	0.67	–	–2.88
Women	101.4	–63.90	4.71	–0.67	–	2.88
<b>Job status</b>						
Self-employed	97.0	6.10	–14.26	0.37	–0.38	–
Permanent	88.0	–28.16	–2.41	–0.93	0.24	–
Temporary	207.2	17.93	16.67	0.56	0.15	–


Panel B. **The contribution of changes in workforce composition to changes in aggregate business-cycle volatility<sup>c</sup> (%)**

	Industry	Age	Education	Gender	Job status
Implied change in aggregate volatility	4.44	–8.25	–6.97	0.57	8.90

a) Unweighted average for countries analysed.

b) This column reproduces univariate indexes of relative business-cycle sensitivity reported in Figures 1.8 and 1.9.

c) The time period used for this exercise differs across countries and workforce groups. It ranges from a minimum of 22 years to a maximum of 48 years within the period 1960-2007.

Source: OECD estimates based on *EUKLEMS Database* for education and industry, and the European Union Labour Force Survey (EULFS) for age groups, gender and job status. See OECD (2009e) Annex 1.A3.1 for further details on sample coverage and methodology.StatLink  <http://dx.doi.org/10.1787/706325516068>

disadvantaged groups will be pushed to the back of hiring queues and, hence, at an elevated risk of becoming long-term unemployed or even permanently disconnected from the labour market. These issues are examined in greater detail near the end of this section.

The univariate analysis of business-cycle sensitivity discussed above does not capture multivariate relationships, such as the extent to which cross-industry differences in business-cycle sensitivity are attributable to differences in workforce composition or the

extent to which differences in the business-cycle sensitivity across workers of different ages are attributable to their tending to be employed in different industries. The way in which the various labour market dimensions interact can be assessed by combining the results in Figures 1.8 and 1.9 with recent data that cover *all* dimensions simultaneously (see Annex 1.A3 in OECD, 2009e for details). Panel A of Table 1.2 documents the extent to which differences in the univariate measures of relative cyclical volatility already presented can be attributed to compositional differences along other workforce dimensions. The results indicate that the different demographic and job characteristics interact in determining the sensitivity of different workforce groups to the business cycle:

- *Industry* composition has important implications for the relative business-cycle volatility of gender, education and job-status groups. The tendency for women to be disproportionately employed in low-volatility industries reduces the relative business-cycle volatility of women by 64% (and increases that of men by a equal amount), as indicated by the entry in the cell in the row “Women” and the column “Industry” in Panel A of Table 1.2. In other words, the business-cycle volatility of women would increase sharply relative to that for men, if there were no gender differences in the industry mix of employment. This confirms the conjecture expressed above that women are relative outsiders in the labour market compared to men employed in the same industry. Differences in industry composition also have a sizeable impact on the relative business-cycle volatility of workers with different levels of education or different types of employment contracts. For example, differences in industry of employment raise volatility for temporary workers and the self-employed by 18% and 6%, respectively, while reducing that of permanent workers by 28%. Similarly, the industry mix has a large positive effect on the volatility of high-skilled workers, which primarily reflects their under-representation in several industries with below-average volatility.
- *Age* composition effects have an important impact on the relative volatility of different workforce groups defined by job-status and skill category. The relative volatility of the self-employed is reduced by 14%, due to their overrepresentation in the 25-54 age group, while that for temporary workers is increased by 17%, due to the disproportionate share of youth in temporary jobs. Age compositional effects also moderately increase volatility for low-skilled workers relative to that of high-skilled workers, raising the relative volatility of low-skilled workers by 7% and reducing that of high-skilled workers by 9%.
- *Job-status* composition raises the relative volatility of youth by 10%, because they have an above-average incidence of temporary jobs, while it reduces that of the two older age groups by 6% and 4% respectively.

Have changes in the composition of the workforce during the past several decades significantly raised or lowered the aggregate level of the business-cycle volatility of hours worked?<sup>42</sup> This question is analysed in Panel B of Table 1.2:

- Changes in the *age* and *skill* structure of the workforce are estimated to have reduced aggregate business-cyclicality by 8% and 7% respectively, everything else equal.<sup>43</sup> This reflects the population ageing and secular up-skilling of the workforce occurring in most OECD countries.
- Changes in the *industry* mix had a slight tendency to increase aggregate volatility. This largely reflects the long-run decline of agriculture and growth of business services. In some countries (*e.g.* Ireland and Spain), the construction boom also played an important role in recent years (country-specific results not shown).

- The increased use of *temporary contracts* in the majority of OECD countries led to an increase of almost 9% in average aggregate volatility.<sup>44</sup>

This analysis suggests that the more widespread use of temporary contracts in many OECD countries and changes in the industry mix are likely to strengthen the impact of the current downturn on total hours worked compared with previous recessions. However, changes in the age and skill structure of the workforce will tend to have a dampening effect. The estimates reported in Table 1.2 suggest that these offsetting compositional effects approximately cancel each other out, so that total hours worked may decline about as strongly with real GDP as has been the case in previous recession. Even if this conjecture is verified, these compositional shifts will change the profile of job losers in the recession in ways that may be important for labour market programmes. In countries where the use of temporary contracts has risen, it is also possible that an increased share of the total reduction in hours worked will take the form of layoffs, rather than reduced hours for continuing employees, and raise particular concerns about access to unemployment benefits and ALMPs.

## **2.2. The role of different adjustment margins in accommodating cyclical changes in labour demand**

This sub-section analyses the relative importance of different adjustment margins in accommodating changes in labour demand. Changes in total hours worked may be accommodated through changes in average hours (the *intensive margin*) or through changes in the number of employed (the *extensive margin*). Changes in employment may, in turn, be accommodated through changes in unemployment or inactivity (*e.g.* job losers may either search actively for a new job or withdraw from the labour force). Understanding the role of these different margins in accommodating cyclical changes in labour demand is important from a policy point of view. In particular, the social costs associated with downward adjustments in total hours worked are likely to differ across the different margins of adjustment:

- *Reduced working hours* may involve the lowest costs for the affected workers. As a form of work sharing, hours reductions may also result in smaller efficiency losses because it maintains the working relationship and thus avoids any loss of firm-specific human capital. Sharing a reduced volume of work equally across a firm's workforce may also be considered more equitable than laying-off part of the workforce while other workers continue to work full-time. These considerations probably explain why many countries have responded to the current downturn by introducing or expanding short-time work schemes intended to encourage firms to trade-off greater adjustment on the intensive margin against less adjustment on the extensive margin). However, it is not always efficient to protect existing jobs. Excessive use of short-time work schemes could become an obstacle to the economic recovery by placing a brake on the reallocation of resources from declining to expanding activities.<sup>45</sup>
- *Increased unemployment* is likely to entail greater social costs than reduced working time for the affected worker, since the loss of earnings is greater. Job separations (both to unemployment and to inactivity) are also more likely to be associated with a loss of human capital in the form of firm-specific skills or through skills depreciation, which can translate into a sustained loss of earnings potential for the individual as well as an efficiency loss for the economy as a whole. However, in cases where the lost job had become non-competitive, there is a long-run efficiency gain provided the worker



eventually moves into a suitable new job. The main policy concerns related to increased unemployment are to alleviate hardship through income support and to help job losers find their way back into employment.

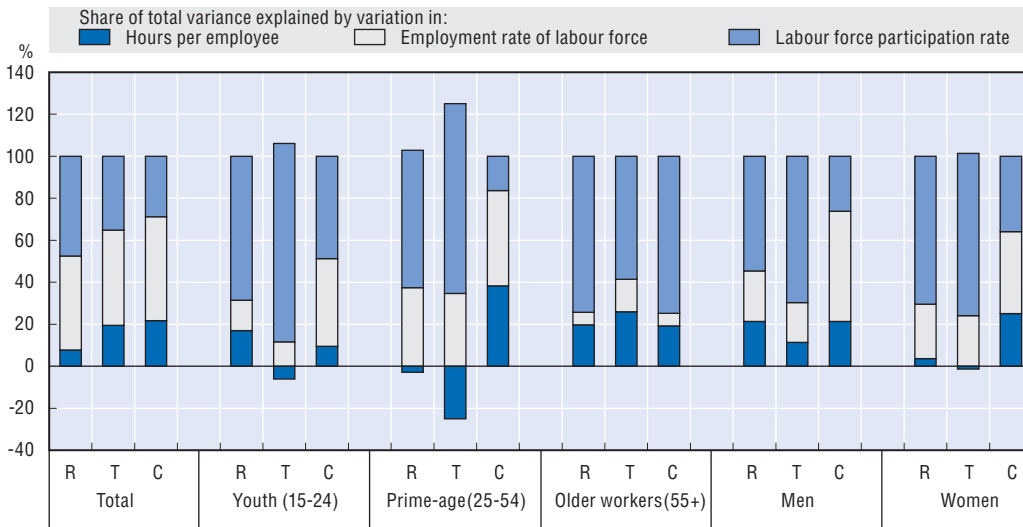
- *Increased inactivity* in a recession raises the same concerns about the loss of earnings and human capital as increased unemployment, but these concerns may be less pressing when the movement out of the labour force reflects a voluntary choice to pursue alternative time-use options that are nearly as attractive as working. The welfare calculation is complicated, however, since the choice to become inactive is based on a comparison of the shadow value of time to the expected returns to searching in a depressed labour market. Since the latter may be much lower than the level of earnings and well-being on the lost job, the costs associated with increased inactivity in a recession are probably very heterogeneous. To the extent that withdrawal from the labour force may create barriers to re-entry once the economy recovers, increased inactivity due to discouragement over short-term job prospects may involve large social costs in the longer term, perhaps even more so than increased unemployment. From a policy perspective, the main challenge is to prevent temporarily depressed job prospects from turning into quasi-permanent exits of potentially productive workers from the labour force. In particular, fiscal incentives encouraging forms of labour force withdrawal which tend to be irreversible (e.g. early retirement schemes) need to be avoided.

Using variance decomposition techniques, the variation in hours worked per capita can be decomposed into the proportions attributed to: i) the variation in average hours worked; ii) the ratio of employees to the labour force (an inverse measure of the unemployment rate); and iii) the labour force participation rate. As the relative importance of each of these margins may differ depending on whether the changes in total hours are cyclical or structural, the decomposition is applied to both the trend and the cycle components of hours per capita, as well as to the “raw” hours worked data. The decomposition is also conducted separately by country, age group and gender.<sup>46</sup> Figure 1.10 summarises OECD-average results for the total workforce and workforce groups defined by gender and age:

- For the *workforce as a whole*, cyclical variation in unemployment (as reflected in the employment rate of the labour force) accounts for the largest share of the total variation in hours worked (45%), followed by variation in labour force participation (33%) and hours per worker (22%). The decomposition is similar for trend variation in total hours, although adjustment on the participation margin accounts for a moderately larger share of the total adjustment and unemployment for a correspondingly smaller share. Cyclical changes in unemployment are particularly important in Portugal, Germany, Luxembourg and Ireland (country-specific results not reported).<sup>47</sup> The proportion of the cyclical variation in hours which can be attributed to changes in average hours is relatively small compared with that accounted for by unemployment or labour force participation, but far from negligible. Cyclical changes in working time are particularly important in Greece, the Netherlands and Italy.<sup>48</sup>
- The relative importance of the three margins of adjustment in explaining changes in total hours differs dramatically across *age groups*. Both cyclical and especially structural changes in total hours for youth are disproportionately accounted for by movements in and out of the labour force. Adjustments along the participation margin account for nearly one-half of cyclical variation in youth hours worked, as compared with 90% of


Figure 1.10. **Decomposition of the variance of total hours worked**

Unweighted average across countries



C: Cyclical component. R: Raw series. T: Trend component.

Source: OECD estimates based on the European Union Labour Force Survey (EULFS). See OECD (2009e) Annex Table 1.A3.1 for further details on sample coverage and OECD (2009e) Annex 1.A4 for details on the methodology.

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trend variation. Nonetheless, unemployment changes also play an important role in accommodating cyclical changes in total hours for youth, accounting for 42% of the total variation, while variation in average hours accounts for less than 10%.<sup>49</sup> For older workers, changes in total hours (both cyclical and structural) are primarily accommodated through changes in labour-force participation, possibly reflecting labour-force exits via early retirement in recessions. Changes in working time are considerably more important than changes in unemployment for older workers, probably reflecting the relative importance of high turnover costs for a group characterised by high job seniority. Labour market attachment is much stronger for prime-age workers, as reflected by the relative importance of adjustments in average working time (38%) and unemployment (46%). By contrast, changes in participation account for only 16% of the cyclical variation in total hours for prime-age workers.

- Gender differences in how cyclical variation is achieved are less dramatic than those associated with age, but still substantial. Changes in unemployment are somewhat more important for men than for women in accommodating cyclical changes in total hours (53% and 39%, respectively), whereas the opposite is true for labour force participation (26% and 36%, respectively). Changes in average hours account for approximately one-fifth of total hours variation for men and one-quarter for women.

The variance decomposition of total hours worked confirms that all three margins of adjustment play an important role in adjusting to cyclical changes in labour demand, although transitions between employment and unemployment/inactivity jointly account for nearly four times as much of the overall variation in total hours as does the variation in average hours per worker. This confirms the widespread perception that policy-makers concerned with the social impact of the current economic crisis need to focus on difficulties associated with the concomitant upsurge in non-employment. The next

sub-section concentrates on transitions from employment to unemployment, because this margin appears to be quantitatively the most important form that cyclical downturns in labour demand take and to account for a disproportionate share of the social costs resulting from recession. However, it should be borne in mind that the other adjustment margins are also relevant for calibrating policy responses to a recession. In particular, the decomposition analysis suggests that policy-makers may want to consider measures that promote labour market attachment, especially among youth and older workers. In-work poverty is also likely to become a more pressing problem in a recession, due to working-time reductions and a factor excluded in the analysis above, namely, the wage cuts some workforce groups may be forced to accept to save their jobs.

### **2.3. The nature of cyclical unemployment**

The cyclical variation in unemployment may reflect changes in the number of persons becoming unemployed, the average length of unemployment spells or a combination of the two. More formally, cyclical changes in unemployment can be decomposed into changes in the rate of inflows into unemployment and changes in the rate of outflows from unemployment. Understanding the relative importance of unemployment inflows and outflows in explaining changes in unemployment is of importance for policy design for at least two reasons. First, it may help to determine the extent to which policy-makers should focus on preserving jobs *versus* creating new jobs and facilitating labour market mobility. Second, it may offer insights about priorities for scaling up ALMPs in a recession (e.g. whether the bigger challenge is dealing with much larger numbers of newly unemployed job losers or combating an increased risk that persons already unemployed will drift into long-term unemployment). Similarly, the question whether the maximum duration of unemployment benefits should be temporarily raised in a recession depends to some degree on how sharply the unemployment outflow rate declines.

Measuring the relative importance of inflows and outflows in explaining cyclical changes in unemployment is complex and it has been the subject of intense debate among researchers. In an early paper using US data, Darby *et al.* (1986) argued that the cyclical changes in unemployment are predominantly driven by changes in inflow rates and this conclusion came to be widely accepted. More recently, Shimer (2005, 2007) challenged the conventional wisdom by presenting evidence that variations in outflow rates from unemployment are much more important in explaining cyclical changes in US unemployment than are variations in inflow rates. Elsby, Michaels and Solon (2008) and Fujita and Ramey (2009) re-examine the same data and conclude that both dimensions are important in the United States, while Elsby, Hobijn and Sahin (2008) conclude that this is also the case in some other OECD countries. This sub-section presents new evidence on this question.

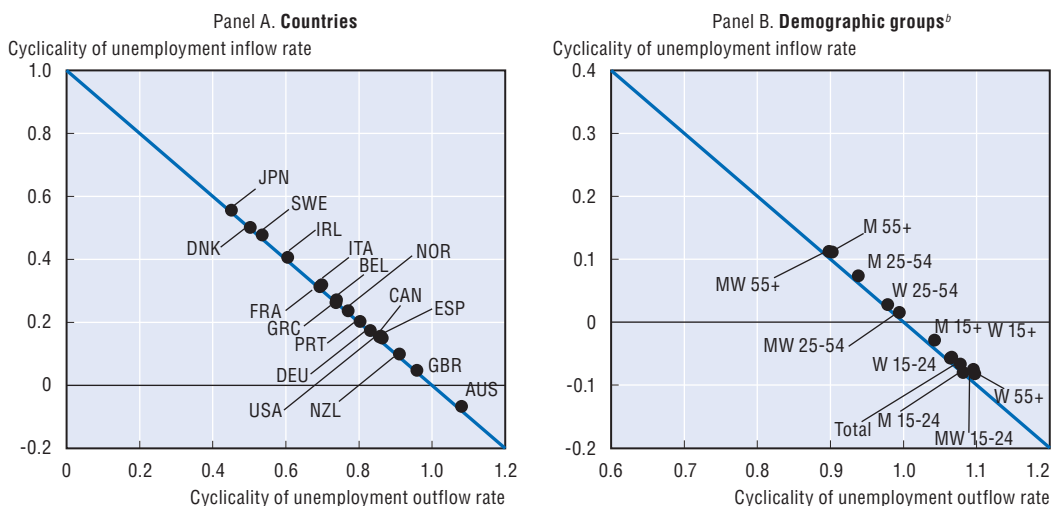
#### ***Does unemployment in recessions rise because of higher inflows or longer unemployment spells?***

The relative importance of unemployment inflows and outflows for changes in unemployment can be analysed by comparing the contribution of the variations in the inflow and outflow rates to the variation of the unemployment rate (Shimer, 2007; Fujita and Ramey, 2009). These methods were applied to as many as 42 years of data for 17 OECD

countries.<sup>50</sup> Figure 1.11 presents the main results of this decomposition in the form of a scatter diagram:

- Panel A shows that in the majority of countries changes in the outflow rate are more important than changes in the inflow rate in explaining cyclical changes in unemployment. This is indicated by the fact that most observations are concentrated in the bottom right quadrant. However, there are important differences across countries. In four countries, Denmark, Ireland, Japan and Sweden, the cyclical variation in the inflow and outflow rates are almost equally important in explaining cyclical changes in unemployment. In Belgium, France, Germany, Greece, Norway and Portugal, the variation in outflows is somewhat more important than the variation in inflows. In five mainly English-speaking countries, as well as Spain, changes in the outflow rate appear to be by far the most important driver of changes in the unemployment rate. In these countries, the upsurge of unemployment in recessions is predominantly, although not exclusively, a problem of increased unemployment duration.<sup>51</sup>
- Panel B reports the relative contribution of cyclical variations in the in- and the outflow rates to unemployment dynamics for workforce groups defined by age and gender. Once again, changes in the outflow rate generally dominate changes in the inflow rate. Differences across age and gender groups are modest compared with cross-country differences. Changes in inflow rates explain a somewhat larger share of unemployment changes for older workers and a somewhat lower share for youth, while prime-age individuals take an intermediate position. This is broadly consistent with results obtained by Fujita and Ramey (2006) for the United States. They find that unemployment inflows are particularly important for prime-age males, whereas unemployment outflows are relatively more important for youth.<sup>52</sup> The message for public employment

Figure 1.11. **Cyclicality of unemployment inflow and outflow rates by country and demographic group<sup>a</sup>**



- a) The coefficients displayed in the charts represent the proportion of the variance of steady-state unemployment that can be explained by the variation in the inflow and the outflow rates, respectively.
- b) M: Men; MW: Both sexes; W: Women.

Source: OECD calculations based on the *OECD Unemployment Distribution Database*. See OECD (2009e) Annex 1.A5 for further details on sample coverage and methodology.

StatLink  <http://dx.doi.org/10.1787/706018228856>

services may be that they need to gear up in a recession to help both: i) increased numbers of stable workers, who have little recent experience in job search and potentially high replacement rates, but relatively good odds of finding a new job; and ii) back-of-the-queue youth who move in and out of jobs frequently even in good times, but now find themselves at a heightened risk of long-term unemployment.<sup>53</sup>

### ***The importance of the inflow rate for the cyclicity of unemployment may be greater in practice...***

The analysis so far suggests that unemployment outflows generally play a somewhat greater role than unemployment inflows in accounting for unemployment dynamics, consistent with the results of similar exercises conducted by other researchers. However, inflows were seen to play a significantly larger role in a few countries and for certain workforce groups. Furthermore, a number of assumptions underlying this decomposition exercise may lead to an underestimation of the role of inflows:

- For example, it is assumed that unemployment changes only as a result of contemporaneous changes in the inflow and outflow rates. In many countries, changes in inflow and outflow rates may take more than a year to work their way through the labour market and reach a new equilibrium.
- Moreover, inflow and outflow rates are not independent, as is assumed in the decomposition. In particular, an increase in inflow rates is likely to reduce the outflow rates of incumbent unemployed due to “crowding out” (Burgess and Turon, 2005). The potential of crowding out further suggests that the causal interpretation of results of the decomposition of changes in unemployment is difficult and should be undertaken with caution. In particular, the causal role of the inflow rate may be considerably more important than is suggested by this accounting exercise.
- Another complication is that both inflows and outflows are heterogeneous in ways that have not been accounted for. Inflows into unemployment reflect a combination of new jobseekers who have been laid-off, quit their job or entered the labour-force (*e.g.* school leavers). Similarly, unemployment outflows reflect both transitions back to work and exits out of the labour force. Aggregate measures of the cyclicity of inflows and outflows could be potentially misleading, to the extent that their individual components behave differently over the economic cycle. In particular, the inclusion of quits – often considered to be pro-cyclical – in the measure of total inflows may reduce the estimated cyclicity of the inflow rate (Davis *et al.*, 2006; Elsby, Michaels and Solon, 2008).<sup>54</sup>

Table 1.3 provides separate estimates of the cyclicity of inflows for layoffs, quits and labour-force entrants for a sample of European countries. It shows that lay-offs, and to a lesser extent also labour-force entrants, are counter-cyclical. By contrast, quits are comparatively a-cyclical. Thus, the inclusion of job leavers has a tendency to reduce the overall cyclicity of unemployment inflows. This strengthens the conclusion reached above that cyclical changes in unemployment reflect increases in both inflows into unemployment and average unemployment duration.

### ***... particularly in the current downturn***

The analysis so far has estimated the relative importance of unemployment inflows and outflows in explaining unemployment variations over the typical business cycle, as reflected in historical data. However, the relative importance of these two flows may also


Table 1.3. **The cyclicity of unemployment inflows by reason<sup>a</sup>**

Log inflow rate of:	Total	Men	Women	Youth (15-24)	Prime-age (25-54)	Older workers (55 and over)	Low-skilled	Medium-skilled	High-skilled
Layoffs	-0.040***	-0.047***	-0.029**	-0.056***	-0.042***	-0.009	-0.043***	-0.042***	-0.014**
Quits	0.001	0.001	0.002	0.005	0.001	0.000	0.003	0.001	0.001
Labour force entrants	-0.022**	-0.010	-0.036***	-0.185***	-0.009	-0.006	-0.026	-0.022**	-0.033***
<b>All inflows</b>	<b>-0.061***</b>	<b>-0.056***</b>	<b>-0.064***</b>	<b>-0.237***</b>	<b>-0.051***</b>	<b>-0.015</b>	<b>-0.067**</b>	<b>-0.063***</b>	<b>-0.047***</b>

\*\*, \*\*\*: statistically significant at the 5% and 1% level, respectively.

a) Coefficients are obtained from fixed-effects regressions of the log inflow rate by reason on the output gap and a full-set of time dummies.

Source: OECD estimates based on the European Union Labour Force Survey (EULFS). See OECD (2009e) Annex 1.A5 for further details on sample coverage.

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depend on the severity of recessions and the strength of expansions. Davis *et al.* (2006), for example, show that the relative importance of unemployment inflows rises relative to outflows in severe recessions. This is due to the highly non-linear relationship between worker flows (*i.e.* hires and separations) and job flows (*i.e.* job creation and destruction) at the micro level. In sharp recessions, more firms adjust to declines in product demand through increased layoffs and fewer firms through reduced hiring. The implication for public employment services is that they may have to be prepared to scale up their services for new jobseekers even more quickly in severe recessions, such as the current downturn, than was the case in most previous recessions.

### **The role of labour market policies for unemployment dynamics**

As a first step towards analysing how labour market institutions affect the cyclicity of unemployment flows, the following question is addressed: Are countries with more dynamic labour markets – as proxied by higher average levels of worker turnover – better equipped to respond to cyclical changes in macro-economic conditions? Chapter 2 of this publication shows that there are large differences in average unemployment flows across OECD countries (see also Annex 1.A5 of OECD, 2009e). Worker flows tend to be much larger in mainly English-speaking and Nordic countries than in other countries and this greater dynamism might make it easier to adjust to cyclical demand shocks. To shed some light on the relationship between average worker flows and the cyclical variation in unemployment flows, Table 1.4 reports the pair-wise correlations between average flows and their cyclicity. The significant and sizeable negative correlations suggest that more flexible labour markets may indeed be better equipped to deal with business-cycle shocks to labour demand than labour markets with low turnover, perhaps because the mobility of workers between jobs is relatively easy. It seems plausible that these negative correlations reflect, at least in part, the association between structural policy settings which contribute to labour market flexibility and lower shock persistence (*cf.* Section 1).<sup>55</sup>

In order to more formally analyse the role of labour market policies in explaining cyclical variation in unemployment flows – especially, how labour market policies affect the propagation of cyclical demand shocks to labour markets – panel regression analysis is used (see Annex 1.A5 of OECD, 2009e for details). The following labour market policies are considered: the strictness of employment protection legislation (EPL) for permanent and temporary employment, unemployment benefit generosity (proxied with the initial unemployment benefit replacement rate), the tax wedge, and average spending on three key types of ALMPs: i) jobseeker support provided by the PES and benefit administration,

Table 1.4. **Are average and cyclical unemployment flows related?**  
Correlation coefficients

	Inflow rate	Outflow rate	Cyclical variation of inflow rate <sup>a</sup>	Cyclical variation of outflow rate <sup>a</sup>
Inflow rate	1			
Outflow rate	0.83***	1		
Cyclical variation of inflow rate <sup>a</sup>	-0.49***	-0.43***	1	
Cyclical variation of outflow rate <sup>a</sup>	-0.34***	-0.43***	0.67***	1

\*\*\*: statistically significant at 1% level.

a) The cyclical variation in unemployment inflows and outflows is measured by the percentage standard deviation. Source: OECD calculations based on the OECD *Unemployment Distribution Database*. See OECD (2009e) Annex 1.A5 for further details on sample coverage and the methodology.

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ii) training; and iii) labour-demand support.<sup>56</sup> The estimation results are reported in Table 1.5.<sup>57</sup>

The coefficients of the labour market policy variables represent the estimated effect of each policy on the unemployment inflow and outflow rates when the economy is producing at full capacity (i.e. the output gap is zero). The unemployment regressions capture the effect of labour market policies on structural unemployment. The estimates indicate that:

- Stricter EPL for regular and temporary workers tends to reduce worker flows in and out of unemployment. For permanent workers, the negative impact of employment protection on unemployment outflows (i.e. hires) dominates the negative impact on inflows (i.e. separations), resulting in an increase in the level of structural unemployment, as is confirmed by the positive coefficients in the unemployment regressions. EPL for temporary workers has a stronger negative impact on unemployment inflows than on outflows, suggesting that this type of regulation may reduce structural unemployment. The significant and negative relationship between EPL for temporary workers and unemployment inflows probably reflects a reduced incidence of temporary work in countries with relatively strict regulation. Countries with a lower incidence of temporary work may tend to have lower levels of frictional unemployment. However, it is also known that restricting flexible forms of employment tends to lower sharply employment and participation rates for youth, women and other groups which tend to be on the margin of the labour market (OECD, 2004).
- The *unemployment benefit* replacement rate does not have a significant impact on the unemployment inflow rate, but tends to have a negative impact on the unemployment outflow rate, especially for older workers. This is consistent with the unemployment regressions and results in the existing literature that indicate a positive relationship between the replacement rate and the unemployment rate (e.g. Bassanini and Duval, 2006; Blanchard and Wolfers, 2000). This is likely to capture the negative impact of the replacement rate on the incentive to search for a new job, which tends to result in longer unemployment spells.
- The *tax wedge* has a positive effect on the unemployment inflow rate and a negative effect on the unemployment outflow rate. The tax wedge also has a positive effect on the unemployment rate. Together, these findings suggest that the tax wedge depresses labour demand by increasing unit labour costs.

Table 1.5. Labour market policies influence unemployment dynamics

Fixed-effect regression coefficients<sup>a</sup>

	Total	Prime-age men (25-54)	Men	Women	Youth (15-24)	Prime-age (25-54)	Older workers (55 +)
<b>Panel A. Inflow rate</b>							
Cyclical indicator	0.022*	0.008	0.003	0.043***	0.001	0.032**	-0.003
EPL temporary workers	-0.142***	-0.140***	-0.154***	-0.127***	-0.225***	-0.125***	-0.103
EPL regular workers	0.061	0.146*	0.178**	-0.082	0.096	0.000	0.142
Initial replacement rate	-0.001	-0.006	-0.007	0.005	-0.007	0.001	-0.012
Tax wedge	0.017***	0.011*	0.014**	0.021***	0.022***	0.015***	-0.003
<b>Interaction terms with cyclical indicator</b>							
EPL temporary workers	0.032***	0.026***	0.024**	0.041***	0.030**	0.032***	-0.001
EPL regular workers	-0.028***	-0.032***	-0.029***	-0.026***	-0.035***	-0.030***	0.000
Initial replacement rate	-0.002	-0.003*	-0.002	-0.003*	0.000	-0.003*	-0.005**
Tax wedge	-0.002	-0.001	-0.002	-0.003**	-0.004*	-0.001	0.003
Average spending on ALMP (PES and administration)	0.021	0.009	0.006	0.035*	0.021	0.026	-0.062*
Average spending on ALMP (Training)	-0.002	-0.013	0.005	-0.008	0.016	-0.018	0.042
Average spending on ALMP (Labour demand)	-0.013	-0.001	-0.015	-0.012	-0.030	-0.005	-0.007
Number of observations	309	296	309	309	296	296	254
R <sup>2</sup>	0.27	0.39	0.32	0.23	0.36	0.32	0.19
<b>Panel B. Outflow rate</b>							
Cyclical indicator	0.088***	0.103***	0.089***	0.086***	0.077***	0.100***	0.107***
EPL temporary workers	-0.055	0.002	-0.019	-0.093**	-0.123***	-0.035	-0.017
EPL regular workers	-0.120	-0.065	-0.091	-0.232**	-0.207*	-0.091	0.204
Initial replacement rate	-0.012*	-0.015**	-0.016**	-0.010	-0.011	-0.010	-0.008
Tax wedge	-0.018***	-0.021***	-0.018***	-0.019***	-0.009	-0.020***	-0.019
<b>Interaction terms with cyclical indicator</b>							
EPL temporary workers	0.018*	0.019*	0.014	0.023**	0.006	0.021*	0.030
EPL regular workers	-0.014	-0.011	-0.009	-0.017	-0.015	-0.016	0.000
Initial replacement rate	-0.001	-0.002	-0.001	0.000	0.001	-0.001	-0.007**
Tax wedge	-0.004**	-0.003*	-0.003**	-0.004**	-0.003	-0.003*	-0.005
Average spending on ALMP (PES and administration)	0.025	0.029	0.015	0.030	0.020	0.037*	-0.035
Average spending on ALMP (Training)	-0.034*	-0.065***	-0.033*	-0.032	-0.012	-0.060***	0.000
Average spending on ALMP (Labour demand)	0.023	0.045**	0.025	0.019	0.006	0.038*	0.057
Number of observations	309	296	309	309	296	296	253
R <sup>2</sup>	0.50	0.48	0.49	0.47	0.48	0.49	0.28
<b>Panel C. Unemployment rate</b>							
Cyclical indicator	-0.054***	-0.072***	-0.071***	-0.033***	-0.061***	-0.052***	-0.049***
EPL temporary workers	-0.055**	-0.113***	-0.103***	-0.006	-0.064***	-0.055**	-0.135***
EPL regular workers	0.102*	0.150*	0.195***	0.048	0.183***	0.021	-0.062
Initial replacement rate	0.009**	0.008	0.006	0.013***	0.001	0.011**	0.007
Tax wedge	0.031***	0.031***	0.030***	0.035***	0.026***	0.033***	0.030***
<b>Interaction terms with cyclical indicator</b>							
EPL temporary workers	0.005	-0.002	0.001	0.010	0.014**	0.003	-0.018
EPL regular workers	-0.006	-0.013*	-0.011	-0.002	-0.011*	-0.007	-0.001
Initial replacement rate	-0.001	0.000	0.000	-0.001	0.000	0.000	0.000
Tax wedge	0.002*	0.003*	0.002*	0.001	0.000	0.002**	0.005***
Average spending on ALMP (PES and administration)	0.002	-0.005	-0.002	0.010	0.004	-0.001	-0.003
Average spending on ALMP (Training)	0.013	0.020	0.019	0.005	0.007	0.016	-0.006
Average spending on ALMP (Labour demand)	-0.023**	-0.026	-0.028**	-0.018	-0.023*	-0.026*	-0.010
Number of observations	309	296	309	309	296	296	254
R <sup>2</sup>	0.67	0.59	0.63	0.70	0.63	0.64	0.60

\*, \*\*, \*\*\*: statistically significant at the 10%, 5% and 1% level, respectively.

ALMP: Active Labour Market Programmes; EPL: Employment Protection Legislation.

a) Dependent variables are in logs.

Source: OECD estimates based on the OECD Unemployment Distribution Database. See OECD (2009e) Annex 1.A5 for further details on sample.

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The effect of each labour market policy on the cyclical component of the unemployment inflow and outflow rates is given by the interaction term of each labour market policy with the output gap. A positive coefficient indicates that the effect of a given labour market policy is more positive (or less negative) in periods when labour markets are tight (when the output gap is positive) and more negative (or less positive) in periods with considerable labour market slack (when the output gap is negative). Among the key findings:

- The impact of EPL on unemployment inflows and outflows appears to be weaker in tight labour markets than when labour markets are depressed, since the interaction terms tend to have the opposite sign of the corresponding direct effects. This pattern holds for the impacts of employment protection for both temporary and regular jobs on unemployment inflows, and it is intuitively plausible: employment protection rules are likely to be more constraining in downturns than in expansions. Stricter EPL for temporary workers also appears to increase the pro-cyclicality of in- and outflows. There is weak evidence that stricter EPL for regular workers reinforces the counter-cyclicality of unemployment inflows.
- There is little evidence to suggest that the impact of *unemployment benefits* on unemployment flows or the level of unemployment depends on the economic cycle.<sup>58</sup>
- There is some evidence that the impact of the *tax wedge* on unemployment outflows is more negative in tight than in slack labour markets. Consistent with these findings, the unemployment regressions indicate a more positive impact of the tax wedge in tight labour markets.
- There is some indication that the effectiveness of spending on ALMPs in raising the unemployment outflow rate depends on the business cycle and that this dependence may differ across different types of ALMPs.<sup>59</sup> More specifically, the results indicate that the effectiveness of jobseeker support and labour-demand policies decreases when labour market conditions deteriorate, while the effectiveness of training policies to help the unemployed back into work appears to increase. The former may reflect the increase in the marginal cost of helping jobseekers back into employment when the number of vacancies per unemployed person declines. The increased effectiveness of training policies in slack labour markets may reflect smaller lock-in effects when labour demand is slack (see also Section 5.5). This interpretation is weakly confirmed by the estimation results for the unemployment rate, which also suggest that the effectiveness of labour demand policies is greatest in tight labour markets. However, these estimates should be considered as suggestive only because they take no account of any adjustments that countries may have made in their ALMP offerings to changing business cycle conditions.

The econometric results discussed above should be considered tentative and more research will be necessary, particularly at the micro-economic level. However, it seems safe to conclude that the impact of employment policies on unemployment dynamics is likely to vary depending on the state of the labour market and that, in principle, this deserves to be taken into account when designing a policy response to the emerging jobs crisis. This consideration could be particularly important for ALMPs, which can be adjusted rapidly in response to an economic downturn more easily than, for example, EPL or national tax structures. The estimation results suggest that job-search assistance and subsidised employment programmes may be less effective (or more ineffective) when the ratio of

vacancies to the number of unemployed declines, whereas training programmes may become more effective (or less ineffective).

***The social cost of becoming unemployed increases in recessions and tends to persist well beyond the duration of unemployment***

The analysis of unemployment dynamics above suggests that the costs borne by job losers tend to rise in recessions due to the decline in the job-finding probability and the corresponding rise in the expected duration of unemployment. However, the social costs of recessions go well beyond the earnings losses attributable to the unemployment immediately following layoffs. In particular, re-employment earnings can be considerably lower than pre-displacement earnings and it can take a long time for earnings to recover fully. In an influential paper, Jacobson *et al.* (1993) show that even six years after displacement, the earnings of high-tenure job losers in the United States are 25% lower than the estimated level of their counterfactual earnings had they not been displaced. These losses are entirely attributed to lower wages and do not reflect differences in non-employment. They further find that long-term earnings losses depend to an important extent on the labour market conditions at the time of displacement, ranging from 13% for workers laid-off at business-cycle peaks to 37% for those displaced in troughs.<sup>60</sup> Higher earnings losses during recessions reflect in part the greater cyclicality of the wages of newly hired workers, as compared to the wages of workers who stay in the same job and whose employers somewhat insulate them from conditions in the external labour market (“implicit contracts”). Another source of higher earnings losses for workers displaced in recessions is that they tend to remain unemployed longer and hence are more vulnerable to human-capital depreciation.<sup>61</sup> Studies of displaced workers in European countries typically find much smaller wage losses following re-employment than their counterparts in the United States, but a greater risk of large earnings losses due to long-term unemployment or labour force withdrawal (Kuhn, 2002). Even workers becoming re-employed following a layoff appear to remain at an elevated risk of subsequent layoffs. These differences concord well with the conventional wisdom that wages tend to be more flexible in the United States, whereas unemployment spells tend to be longer in European countries.

The long-term consequences of recessions for youth are of particular concern. There is some evidence that scarring effects tend to be more important for youth than for adults. For example, Blanchflower and Bell (2009) show that unemployment spells experienced before the age of 23 tend to leave quasi-permanent scars, whereas there is no evidence of such an effect for unemployment spells experienced at a later age (at the age of 33). Oreopoulos *et al.* (2006) find that recessions adversely affect long-term career prospects of university graduates. They estimate that a typical recession – associated with a 5 percentage-points increase of the unemployment rate – induces an initial earnings loss of about 10% and that it takes ten years for this earnings loss to disappear entirely. The cumulative earnings losses of recessions on the future earnings of university graduates can thus be substantial. Moreover, the negative effect of recessions is stronger for graduates whose future earnings potential already appeared to be lower (based on the school attended, years of study and the degree obtained), mainly because it is more difficult for them to move to better jobs. In sum, the increase in the social cost of becoming unemployed in recessions due to the reduction in the job-finding probability, the loss of human capital and long-lasting scarring effects provides a rationale for stepping up efforts

in recessions, both to help displaced workers make their way back into work and to assist recent school leavers to make the transition to stable employment.

***The downturn as a stress test for employment-centred social policy***

It is too early to know how effectively the employment and social policies in place in OECD countries will contain the social costs resulting from the current severe economic downturn. Nonetheless, it seems reasonable to conclude that the viability of a strategy, which takes a “work-first” approach emphasising high employment rates, will be severely tested should unemployment rates increase as much as now appears to be likely and remain high for an extended period of time. Recent OECD country experiences, as well as much research, have shown that such a policy approach can help to reconcile economic dynamism and efficiency with broadly-shared economic prosperity and social inclusion, at least in normal economic times. It is important to preserve past investments in developing this policy approach, while also moving rapidly to address any social needs arising from the downturn that could not be adequately addressed by the programmes in place when the crisis began.

## Part B. The Employment and Social Policy Response to the Jobs Crisis

### 3. Overview of national labour market programmes and their responsiveness to recessions

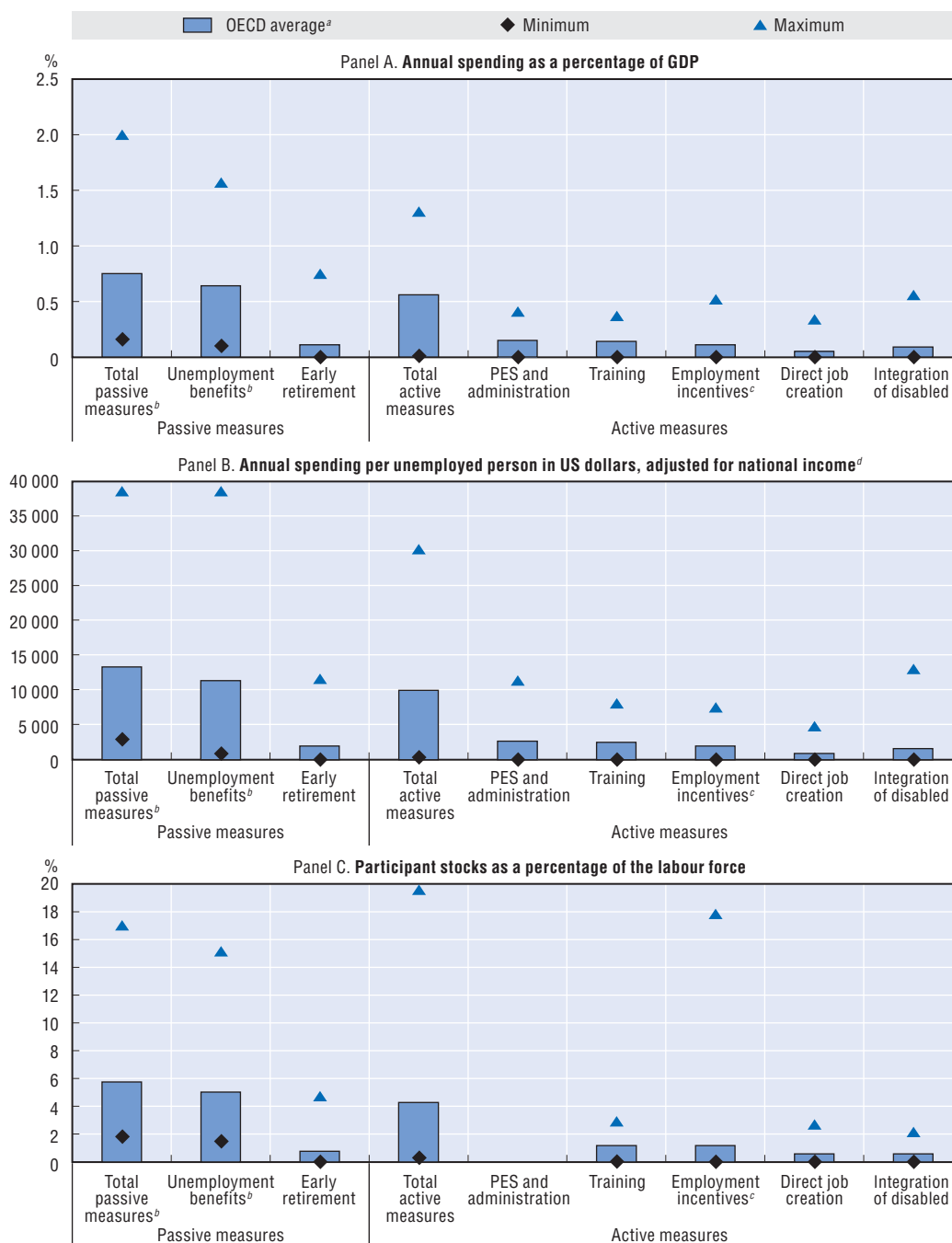
Part B of this chapter analyses how OECD governments can best provide adequate help to job losers and other workers adversely affected by the current downturn, without opening the gates to another protracted period of persistently high unemployment and insufficiently dynamic labour markets. This is a difficult challenge to meet since the preceding pages have shown that a deep recession disrupts labour markets in complex ways which put all workers at increased risk of unemployment and underemployment. However, the exposure of different workforce groups to these different risks is highly uneven implying that labour market programmes need to be prepared to assist a very heterogeneous population who require different forms of assistance to weather the recessionary storm. The following pages analyse important policy choices in the areas of income support, active labour market policies and long-run labour supply. The policy measures taken by OECD countries in the early stages of the crisis are reviewed in the light of these reflections.

#### 3.1. Overview of national labour market programmes

Before evaluating different policy choices, it is essential to have an overview of the types of labour market programmes that constitute the policy tool-kit available to help minimise the social costs of recessions, while fostering a quicker return to labour market balance and economic growth. Figure 1.12 summarises the main types of programmes and also indicates spending levels – both as a percentage of GDP and per unemployed person – and numbers of participants on the cusp of the current economic downturn. There are two main types of measures, namely, income-support schemes (“passive” measures) and services intended to assist reintegration into employment (“active” measures). On average in 2007, OECD countries devoted 0.8% of GDP to passive measures and 0.6% to active measures. Spending per unemployed person averaged a little more than USD 13 000 on a PPP basis for passive measures and nearly USD 10 000 for active measures.<sup>62</sup> It should be noted, however, that public programmes not accounted for here, such as social assistance benefits and adult education more generally, can also play an important role in reducing the social costs of recessions.<sup>63</sup>

On average over the OECD, unemployment benefits account for 85% of all passive spending, with early retirement schemes (for economic reasons) accounting for the remainder. The two largest categories of active spending are “public employment service (PES) and administration” (which includes substantial resources for job-search assistance and job brokering in some countries) and training. These two types of measures account for just over half of all active spending. Most of the rest of the active spending is devoted to a variety of measures intended to generate employment opportunities for unemployed persons (e.g. hiring subsidies for the long-term unemployed or direct job creation by the public sector). Finally, there is a moderate amount of spending on programmes to integrate persons with partial disabilities into employment.<sup>64</sup>

Expenditures on labour market programmes vary widely across OECD countries, as is indicated by the minimum and maximum values presented in Figure 1.12. For example,

Figure 1.12. **Passive and active labour market programmes in OECD countries, 2007**


a) Unweighted average for 28 OECD countries.

b) Minimum value calculated excluding Mexico which does not have an unemployment benefits system.

c) Sum of expenditures for employment incentives, job rotation and job sharing, and start-up incentives.

d) Annual expenditures per unemployed person expressed in US dollars using OECD purchasing power parities. Values for each country are then multiplied by the ratio of per capita GDP in the United States to per capita GDP in that country (expressed in USD PPP) in order to adjust for differences in national income.

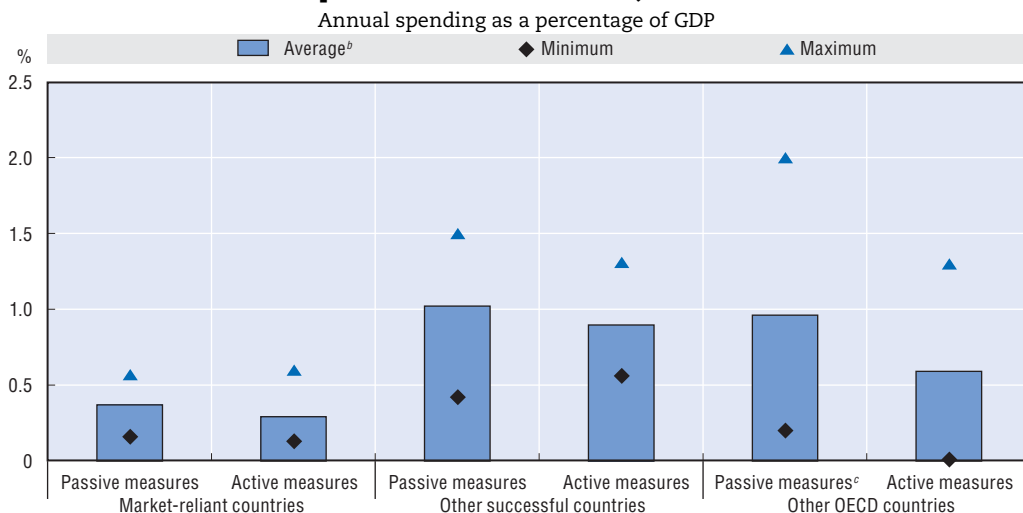
Source: OECD calculations based on OECD Labour Market Programmes Database and OECD National Accounts Database.

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passive spending varies from 0.2% to 2% of GDP,<sup>65</sup> while active spending varies from under 0.01% to 1.3%. Figure 1.13 makes use of three broad country groupings – based on a principal-components analysis grouping countries according to similarities in aggregate labour market performance and labour market policies and institutions at the beginning of the 2000s (OECD, 2006a) – to illustrate how cross-country differences in the resources devoted to labour market programmes reflect variation in both national preferences concerning the overall level of resources devoted to these types of measures (e.g. countries with above-average passive spending also tend to have above-average active spending) and national differences in the relative emphasis placed on active *versus* passive measures. The following patterns emerge:

- The “market-reliant countries” and “other successful countries” (i.e. the two country groupings singled out by the Reassessed OECD Jobs Strategy for having achieved similarly strong aggregate employment performance with very different policy mixes) differ dramatically in the level of spending on labour market programmes. Spending on both types of programmes is nearly three times higher in the second group (Austria, Denmark, Ireland, the Netherlands, Norway and Sweden) than in the first (Australia, Canada, Japan, Korea, New Zealand, Switzerland, the United Kingdom and the United States). Although there is a fair amount of heterogeneity within these two groupings, there is little overlapping of spending levels across the two groupings.
- Spending is at an intermediate level and more concentrated on passive benefits in the third group of countries, which had weaker aggregate employment performance in the early 2000s. This is quite a heterogeneous group, including a number of western

Figure 1.13. **Passive and active spending on labour market programmes in three groupings of OECD countries<sup>a</sup> according to labour market performance, policies and institutions, 2007**



a) The three country groupings shown are defined as follows: “Market-reliant countries” grouping includes Australia, Canada, Japan, Korea, New Zealand, Switzerland, the United Kingdom and the United States; “Other successful countries” grouping includes Austria, Denmark, Ireland, the Netherlands, Norway and Sweden; and “Other OECD countries” grouping includes Belgium, the Czech Republic, Finland, France, Germany, Greece, Italy, Luxembourg, Mexico, Poland, Portugal, the Slovak Republic and Spain.

b) Unweighted averages of the indicated countries.

c) Minimum value calculated excluding Mexico which does not have an unemployment benefits system.

Source: OECD Labour Market Programmes Database.

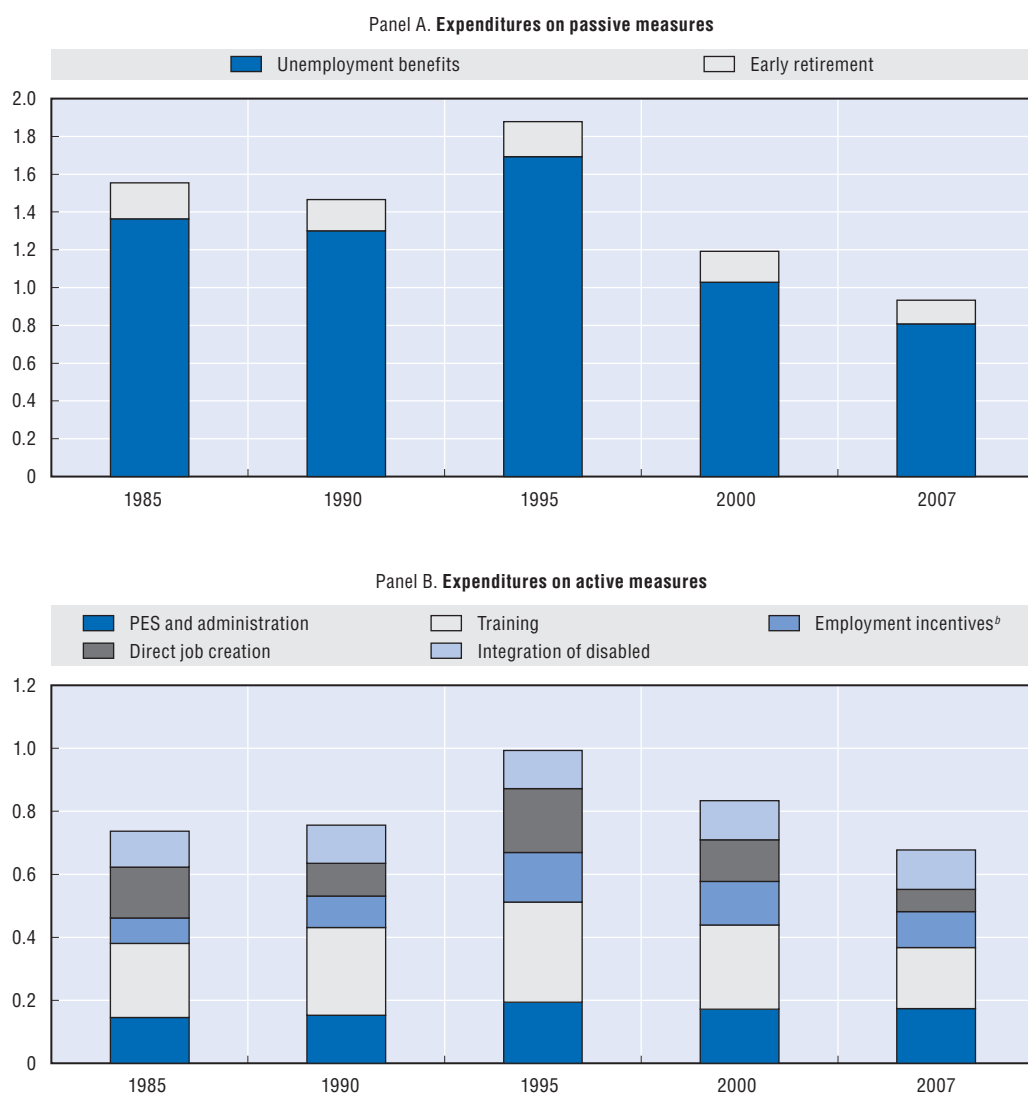
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European countries (Belgium, Finland, France, Germany, Italy, Luxembourg, Portugal and Spain) where overall spending is comparable with that of the “other successful countries” but more weighted towards passive benefits, and central and eastern European and several non-European countries where spending tends to be much lower and more concentrated on active measures.

OECD governments have adjusted their spending on labour market programmes since 1985 as a result of both changing labour market conditions and changing policy choices. Figure 1.14 provides an overview of the evolution of spending patterns by

Figure 1.14. **Evolution of passive and active spending on labour market programmes since 1985**

Annual spending as a percentage of GDP<sup>a</sup>



a) Data shown are unweighted averages for Australia, Austria, Belgium, Canada, Denmark (with 1986 for 1985), Finland, France, Germany, Ireland, the Netherlands, New Zealand, Norway, Portugal, Sweden, Switzerland, the United Kingdom and the United States.

b) Sum of expenditures for employment incentives, job rotation and job sharing, and start-up incentives.

Source: OECD Labour Market Programmes Database.

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programme type, focussing on average spending patterns for the 12 countries for which a full 22-year historical series is available. Three broad patterns emerge:

- There was a general trend increase in spending on labour market programmes between 1985 and 1995 (two years in which the OECD average harmonised unemployment rate was 7.2%), followed by a trend decrease in the following decade. This suggests that the budget priority according to this spending first rose and then fell, especially as OECD unemployment declined in the latter period.
- Cyclical variation around the medium-term expansion and then contraction of spending is also visible.
- Finally, the share of total spending devoted to active spending has risen steadily. Active measures accounted for 32% of total spending in 1985, rising to 35% in 1995 and 43% in 2007. There has also been some shifting of emphasis across the different types of active measures. For example, the share of active spending devoted to direct job creation in the public sector has fallen considerably in recent years. This share was 22% in 1985 and 20% in 1995, but fell to 10% in 2007.

### 3.2. Historical patterns in the cyclicity of programme expenditures

The question how expenditures on labour market programmes adjust to changing business-cycle conditions is of particular importance for this chapter. Whether this spending grows in proportion to the number of unemployed persons in a recession provides an important first clue as to whether the expanding needs for income support and assistance reintegrating job losers into employment are being addressed adequately.

Labour market programme spending, especially that for unemployment benefits, represents an important automatic stabiliser. Panel regression estimates for the OECD area indicate that a 1-percentage-point decrease in the output gap is associated with a 0.13 percentage-point increase in labour market programme spending as a percentage of GDP, with unemployment benefits accounting for more than 80% of the automatic stabiliser effect (see Annex Figure 1.A6.1 and Table 1.A6.1 in OECD, 2009e). Since this is a historical association, some of the increase in spending probably reflects *discretionary* policy changes (e.g. an extension of the maximum duration of benefit payments in a recession in response to the rising incidence of long-term unemployment). However, most of the strong counter-cyclicity is an automatic entitlement effect: the decline in GDP below its potential level results in higher unemployment which, in turn, means that an increased number of persons qualify to receive unemployment benefits.<sup>66</sup>

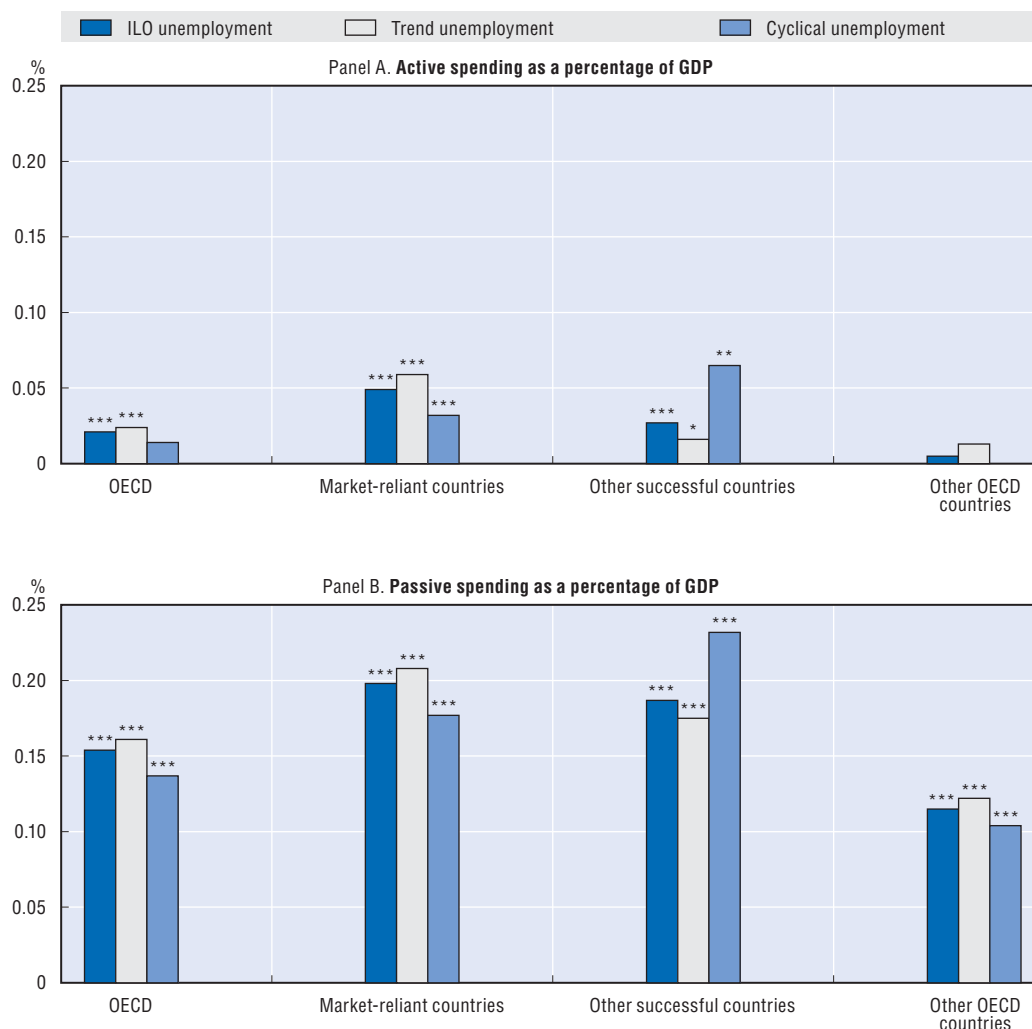
From the point of view of labour market functioning and minimising the social costs of recession, it is important to assess the extent to which the increase in unemployment during a recession exceeds the concomitant expansion in assistance for job losers. Figures 1.15 and 1.16 provide historical evidence on this relationship. These figures also introduce a distinction between spending responses to increases in *trend* and *cyclical* unemployment (cf. Section 2) – trend unemployment is likely to be associated with longer-term labour market problems associated with structural unemployment and disadvantaged groups in the workforce, whereas cyclical unemployment captures the specific demands placed on employment programmes in an economic downturn. The following patterns emerge:

- On average for OECD countries, both passive and active spending expands a little more strongly with increases in trend unemployment than with cyclical unemployment



**Figure 1.15. Responsiveness of passive and active spending to changes in unemployment in OECD countries, 1985-2006**

Estimated percentage-point increase in spending (as a percentage of GDP) in response to a 1-percentage-point increase in the indicated unemployment rates<sup>a, b</sup>



\*, \*\*, \*\*\*: statistically significant at the 10%, 5% and 1% level, respectively.

- a) OLS regression coefficients from unbalanced panel regressions which contain decadal dummies for the 1990s and 2000s and a full set of country dummies. Robust standard errors are used to assess statistical significance.
- b) The three country groupings shown are defined as follows: “Market-reliant countries” grouping includes Australia, Canada, Japan, Korea, New Zealand, Switzerland, the United Kingdom and the United States; “Other successful countries” grouping includes Austria, Denmark, Ireland, the Netherlands, Norway and Sweden; and “Other OECD countries” grouping includes Belgium, the Czech Republic, Finland, France, Germany, Greece, Italy, Luxembourg, Mexico, Poland, Portugal, the Slovak Republic and Spain.

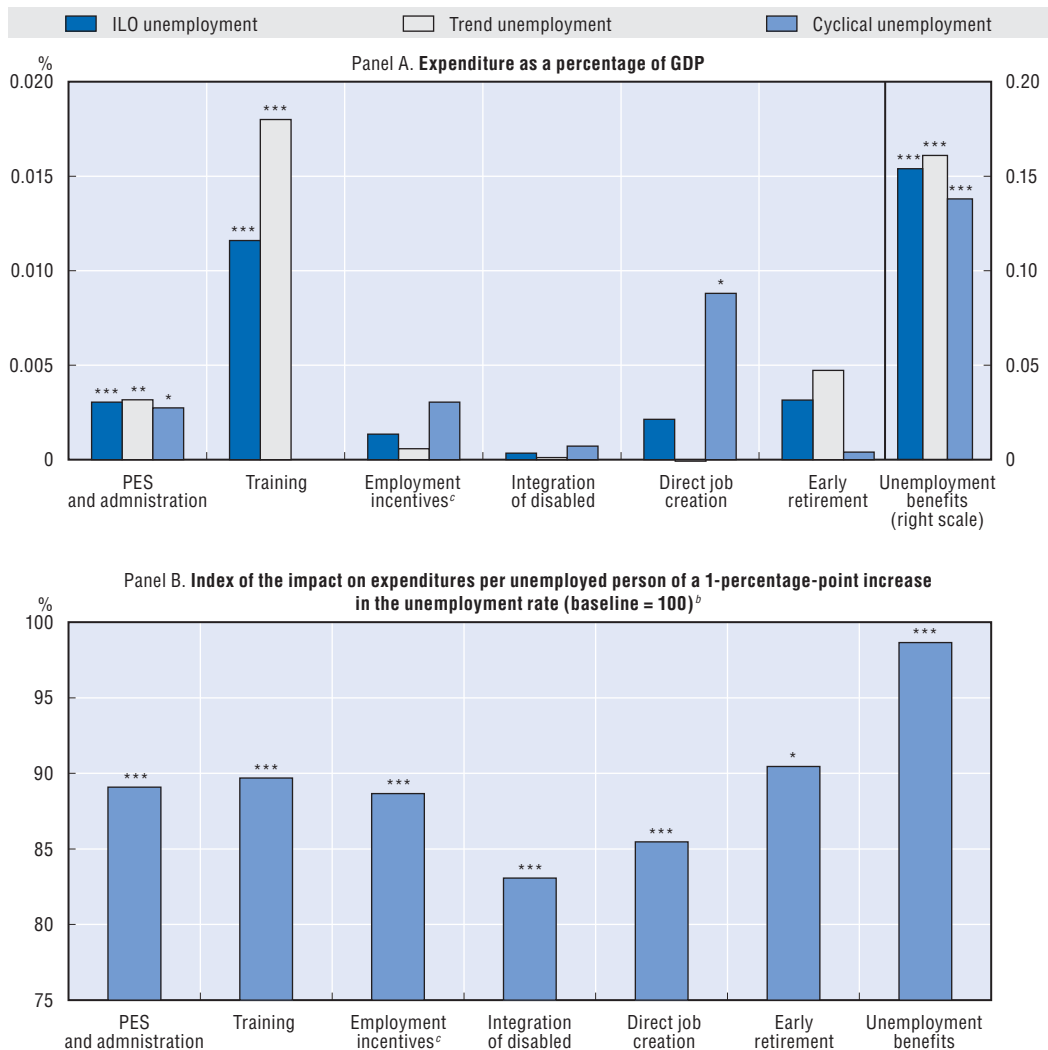
Source: OECD estimates based on the *OECD Labour Market Programmes Database* and *OECD Labour Forces Statistics Database*.

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(Figure 1.15). The lesser responsiveness of spending to increases in cyclical unemployment could reflect the shorter time period that is available to scale up spending. This factor is likely to be especially pertinent for active measures, such as training or job-search assistance, where capacity constraints may be an important barrier to rapid expansion of service offerings. In the case of passive spending, this difference might reflect a tendency for the effective coverage rate or generosity of

**Figure 1.16. Responsiveness of different categories of passive and active spending to changes in unemployment in OECD countries, 1985-2006**

Estimated percentage-point increase in spending (as a percentage of GDP) in response to a 1-percentage-point increase in the indicated unemployment rates<sup>a</sup>




\*, \*\*, \*\*\*: statistically significant at the 10%, 5% and 1% level, respectively.

a) OLS regression coefficients from unbalanced panel regressions which contain decadal dummies for the 1990s and 2000s and a full set of country dummies. Robust standard errors are used to assess statistical significance.

b) Index based on fitted values from unbalanced panel regressions relating expenditures per unemployed person (which are adjusted for GDP per capita) to the following dependent variables: the unemployment rate, decadal dummies for the 1990s and 2000s and a full set of country dummies. The index is normalised to 100 for an average OECD country in the 2000s decade and the OECD average unemployment rate for 2007. The values shown represent relative expenditures per unemployed person after a one-percentage-point increase in the unemployment rate. Statistical significance is reported for the regression coefficient of the unemployment rate using robust standard errors.

c) Combined expenditures for employment incentives, job rotation and job sharing, and start-up incentives.

Source: OECD estimates based on the OECD Labour Market Programmes Database and OECD Labour Force Statistics Database.

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unemployment benefits to drop in a recession. This could happen if the cyclical increase in unemployment durations results in a rising share of beneficiaries exhausting their benefit entitlements.

- Important differences are evident across the three country groupings (Figure 1.15). Perhaps most intriguingly, spending is actually more responsive to cyclical than to trend unemployment in the “other successful countries” grouping, a pattern that holds for both active and passive measures. This pattern could reflect the wider coverage of unemployment benefits in these countries, as well as the fact that a high proportion of the unemployed tends to be registered with the PES. However, the very large expansion of spending on labour market spending in several northern European countries during the recession of the 1990s and the subsequent decision to trim these schemes, may also play a role in explaining this finding.<sup>67</sup>
- Looking at the cyclical of more detailed programme categories reveals an interesting contrast between training and direct job-creation schemes (Figure 1.16, Panel A).<sup>68</sup> Expenditures on training have been totally unresponsive to cyclical unemployment – perhaps because it is difficult to expand the number of training slots quickly.<sup>69</sup> By contrast, spending on training is the category of active measures that has been most responsive to changes in trend unemployment. Direct job creation in the public sector shows the opposite pattern, growing when cyclical unemployment increases, but not when there is an increase in trend unemployment.
- Figure 1.16, Panel B presents an index of programme spending per unemployed person, which provides a direct measure of the extent to which spending increases fall short of being proportional to the increase in unemployment. Normalising the index at 100 when unemployment is set to the OECD average unemployment rate in 2007, the simulated values show the relative change in resources per unemployed person when the unemployment rate increases by 1 percentage point, taking into account the historically typical reaction of spending. The index value is always less than 100, indicating that per person resources for all major labour market policies do not rise in proportion to the increase in unemployment. This relative decline is quite sharp for active measures, but almost non-existent for unemployment benefits. The implication is that spending on active measures to assist re-employment declines sharply on a per unemployed person basis as unemployment rises, implying a need to ration them more tightly.

This section has shown that OECD countries have a range of labour market programmes in place to help ameliorate the social costs of a recession. Historically, expenditures on these programmes have been counter-cyclical, serving as an automatic stabiliser for the macro economy while providing some additional resources to meet the needs of the rising number of unemployed. However, resources per unemployed person decline when unemployment rises and this decline is particularly steep for active measures intended to facilitate the return to employment. The less-than-proportional response of programme resources raises concerns about the adequacy of the help available to job losers in a recession, particularly after a period during which a number of countries have invested heavily in developing activation regimes that have yet to be tested by a severe recession. If this pattern has persisted in the current downturn, it justifies concerns about possible gaps in safety nets for job losers while also implying that public employment services are facing difficult choices in deciding how to ration scarce resources across the rapidly growing population of unemployed persons who could potentially benefit from them. If resources are insufficient then the mutual-obligations ethos underpinning activation may be put at risk. These issues are taken up in Sections 4 and 5 below, but first this section concludes with an overview of policy responses that OECD countries have implemented in the early stages of the current

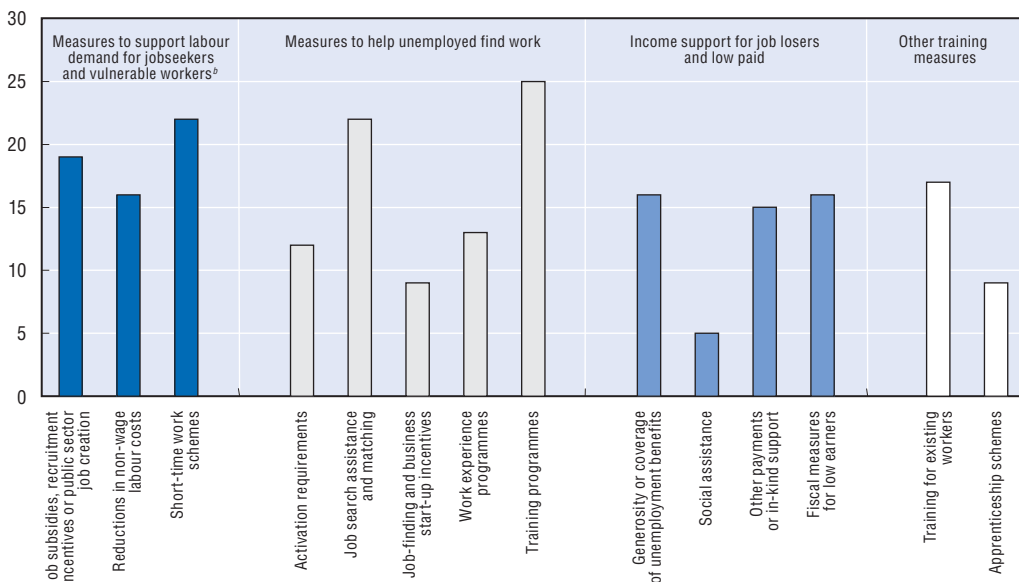
economic downturn. This preliminary inventory of policy responses suggests that governments may in fact be expanding resources to assist job losers more strongly this time.

### 3.3. Early responses to the jobs crisis

In order to obtain a comprehensive overview of the discretionary employment and social measures taken in response to the current economic slowdown, the OECD Secretariat collaborated with the European Commission to send a *questionnaire* to all member countries of both organisations in January 2009 asking them to provide information on the programmes in place or planned. Updates and clarifications of the initial questionnaire responses were then requested in May. The information collected for 29 OECD countries reveals that all of these countries have taken multiple discretionary measure to reinforce the assistance available to job losers or other workers whose well-being is threatened by the current downturn, and many have taken initiatives across a wide range of active and passive policies.<sup>70</sup> Figure 1.17 provides an overview of this activism which is all the more notable, because the questionnaire responses only refer to *discretionary* policy initiatives taken at the *national* level. In countries where the operation of labour market policies is highly decentralised or national funding automatically rises along with unemployment rates in a recession, the questionnaire may miss much of the total increase in public assistance that is being made available to job losers. Since the questionnaire only covers *public* policy initiatives in response to the economic downturn, it does not encompass initiatives taken via collective bargaining (*e.g.* to trade-off wage restraint or reduced hours against jobs).<sup>71</sup> Certain public policy initiatives, such as infrastructure projects and restructuring support for troubled firms and industries (*e.g.* the

Figure 1.17. **Discretionary changes in labour market policy in response to the economic downturn**

Number of OECD countries<sup>a</sup> that have taken different types of measures



a) Statistics based on 29 countries, Iceland being excluded.

b) Does not include measures to increase aggregate labour demand such as fiscal stimulus packages.

Source: Responses to OECD/EC questionnaire.

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involvement of the US federal government in reorganising Chrysler and General Motors), also fall outside the scope of the questionnaire, even though they are motivated in part by the desire to create or protect jobs.

The questionnaire responses identify a number of types of discretionary policy responses to the crisis that have been widespread, while also highlighting the diversity in country policy responses:

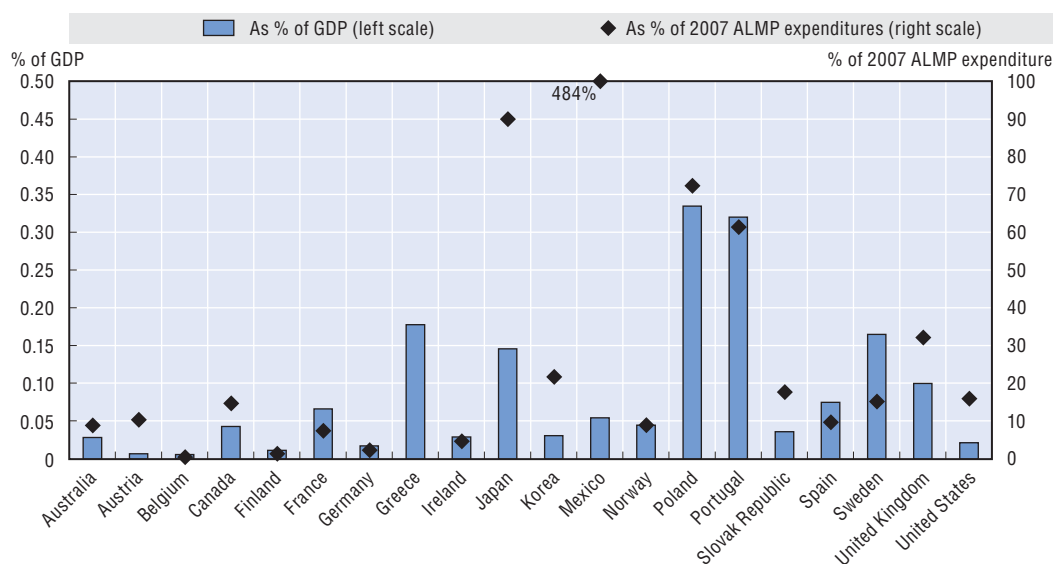
- A large majority of these countries (22) have taken measures to reinforce *income support* for job losers, through changes to unemployment benefits, social assistance or in-kind support. Sixteen countries plugged certain gaps in unemployment benefit coverage by extending eligibility to workers losing jobs that were of more modest duration or temporary (e.g. Finland, France and Japan) or part-time (e.g. the United States). Others have increased benefit generosity (e.g. Belgium, Greece and Turkey), maximum benefit durations (e.g. Canada, Japan and Portugal) or both (e.g. Finland and the United States). The Czech Republic and Poland combined an increase in benefit generosity with a reduction in benefit duration. In addition to measures reinforcing the protection offered by unemployment benefits, 17 countries expanded social assistance or in-kind support for job losers. In Mexico, where there are no unemployment benefits, the unemployed were granted increased access to funds in their individual retirement accounts, along with increased government contributions to these accounts, longer coverage for health and maternity benefits and temporary mortgage relief.
- All of the countries have taken at least one measure to reinforce ALMPs in response to the crisis and many have undertaken initiatives in numerous areas. This suggests that governments are concerned to expand the re-employment assistance available to job losers and generally believe that the best way to do so is to expand a variety of different services, rather than focussing on one or two measures. In most cases, however, the associated expansion in spending levels falls substantially short of what would be required to sustain per worker services at their pre-crisis levels (see discussion of spending below). Among the measures taken to reinforce ALMP offerings:
  - ❖ Most countries (22) have strengthened the *job-search assistance* available to the unemployed. Often, expanded job-search assistance is targeted to particular groups (e.g. former temporary workers in Belgium, older workers in Canada and young jobseekers in Australia) or regions facing high numbers of mass redundancies (e.g. establishment of mobility centres in the Netherlands). However, a number of countries have expanded the capacity of their public employment service to provide job-search assistance more generally, including by adding new staff (e.g. Germany, Korea and Norway). Italy and Poland have allowed private employment agencies to play an enlarged role in placing jobseekers. Perhaps surprisingly, only Korea has taken steps to relax activation requirements in the context of higher unemployment, reducing the frequency of interviews and reducing sanctions for not participating in training. By contrast, 11 countries have tightened *activation requirements* for the unemployed, which suggests a widespread commitment to sustaining an active approach to managing unemployment benefits. Typically, these countries have taken measures to intensify contact between beneficiaries and case workers which are focussed on developing and implementing personal activation plans, including by initiating this process more rapidly following dismissals (e.g. Australia, Denmark and

Finland), requiring more intensive job-search activity (e.g. the Czech Republic and Portugal) or extending the scope for sanctions (e.g. Italy, New Zealand, and Poland).

- ❖ Training schemes for the unemployed have been expanded in a large majority of countries (25). Very often the extra training slots are reserved for vulnerable groups. For instance, Canada is providing additional training funding for older unemployed persons, those residing in vulnerable communities and those not qualifying for unemployment insurance (e.g. self-employed and long-term unemployed). Similarly, 13 countries have introduced or expanded *work-experience* schemes. For example, Korea introduced a new youth internship programme for SMEs and the United States expanded funding for youth summer jobs, while Japan extended a trial employment programme for older unemployed persons and Ireland expanded a programme providing work experience in the community service sector to long-term unemployed. Support for training existing workers has been expanded in 17 countries, while nine have provided increased support to apprenticeship schemes. For example, Australia, Canada and France created financial incentives for firms to hire or retain apprentices and trainees. Redundant apprentices are being supported to complete their off-the-job training in Australia and Ireland.
- ❖ New subsidies to encourage *short-time working* schemes which avoid layoffs have been introduced in seven countries (Ireland, Mexico, the Netherlands and four central European countries), while existing schemes – some of which were largely dormant in recent years – have been reinforced in 14 countries, often leading to a rapid expansion in participation. For example, eligibility for short-time subsidies has been extended to new groups of workers (e.g. France and Germany now cover some temporary agency workers, while France also moved to cover some part-time and project workers) and participation has been made more attractive by increasing the maximum duration of the subsidies (e.g. Canada, Finland, Germany and Luxembourg), their generosity (e.g. Belgium, Korea and Turkey) or both (e.g. France). The introduction of subsidised training for workers on short-time work is a notable new tendency (eight countries including Austria and Switzerland), although training remains optional in most cases (the Czech Republic, Hungary and the Netherlands being exceptions). The new part-time unemployment benefit introduced in the Netherlands also includes a training component as well as another novel feature which requires employers to reimburse one-half of the benefit paid to participating employees if they are dismissed during the three months following short-time work.
- ❖ A variety of measures to support labour demand have also been implemented, including *reductions in non-wage labour costs* and new or expanded *job subsidies and public sector job-creation schemes*. Reductions in non-wage labour costs most often take the form of temporary reductions in employer social contributions applying to all workers (e.g. Germany, Japan and Mexico), but some of these reductions are permanent (e.g. Finland, New Zealand and Turkey) or are targeted on low-wage workers (e.g. Belgium, France and the Czech Republic).<sup>72</sup> In other cases the reductions in employer social contributions are limited to new hires, often newly hired workers from designated disadvantaged groups (e.g. youth and the long-term unemployed in Portugal) or targeted in other ways (e.g. on small firms in France). Most measures expanding job subsidies or public sector job creation are also targeted on disadvantaged groups or apprentices (e.g. the United Kingdom and the United States).


Most of the fiscal stimulus packages that countries have introduced (cf. Section 1) include labour market and social policy measures to cushion the negative effects of the economic downturn on workers and low-income households, including many of those reported in the questionnaire responses and discussed above. However, the *additional* funds for labour market programmes are rather limited in most cases. Still, there are a few exceptions. In particular, recent discretionary increases in spending correspond to an annual increase of between nearly 0.15% and nearly 0.45% of GDP in Greece, Japan, Poland, Portugal, Spain and Sweden (Figure 1.18). The coverage of these spending estimates approximates that of programme categories 1 to 7 in the OECD *Labour Market Policy Database* (see Table J in the Statistical Annex to this publication). Juxtaposing 2007 spending on these programmes with spending increases reveals that Japan, Mexico, Poland and Portugal are dramatically scaling up national funding for ALMPs, albeit from relatively low baselines (except in Portugal).

**Figure 1.18. Discretionary spending on active labour market programmes**  
Average annual planned additional expenditure in response to the economic downturn<sup>a</sup>



a) Average annual expenditure for 2008-10. Analysis limited to countries for which spending estimates could be obtained. Denmark and Switzerland not shown because ALMP expenditure automatically rises with unemployment in these countries, greatly limiting the need for discretionary increases.

Source: OECD calculations based on the OECD *Labour Market Programmes Database* and responses to OECD/EC questionnaire.

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It must be emphasised that the additional ALMP spending presented in Figure 1.18 relates exclusively to *discretionary* measures which were taken by national governments to increase *active* measures in response to the labour market impact of the current economic downturn. Accordingly, it takes no account of the large *automatic* and smaller discretionary increases in spending on *passive* measures, such as unemployment benefits, which are occurring in most countries.<sup>73</sup> Nor does it take account of the *automatic* increases in the budget for ALMP spending which are occurring in a few countries where funding automatically responds to changes in the level of unemployment. In Denmark and Switzerland, the national budget for ALMPs is adjusted according to the government's official unemployment forecasts and these funds are then transferred to local and regional

authorities to be spent. For example, the Swiss government currently projects that the national budget for ALMPs will be increased by 31% in 2009 and 34% in 2010 and the budget for regional placement offices will be increased by 15% each year in 2009 and 2010, based on its forecasted unemployment rates (rising from 2.6% in 2008 to 3.8% in 2009 and 5.5% in 2010). Australia is another country where ALMP budgets respond automatically to increases in unemployment, although the mechanism is different. The government enters into service agreements with private providers of ALMPs through Job Services Australia. These service providers are then paid according to the numbers and types of jobseekers registering with them for re-employment services and a predetermined fee schedule. Due to the demand-driven nature of the programme, and the predicted increase in unemployment, it is estimated that expenditure through Job Services Australia will increase to AUD 4.9 billion over the 2009-10 to 2011-12 financial years.<sup>74</sup> As is indicated in Figure 1.18, Australia has also implemented modest discretionary increases in ALMP spending which are additional to those happening automatically due to their contract-based funding system.

The ALMP spending data displayed in Figure 1.18 also exclude two types of discretionary policy measures which are playing an important role in supporting labour demand in a number of countries, namely, spending on large-scale temporary public works programmes and the revenue cost of broad cuts in employer social security contributions. Even though these measures are similar in many ways to certain ALMPs – public-sector direct job creation and employment subsidies, respectively – they are not counted as ALMP spending in the *OECD Labour Market Programmes Database*, which is used here as a baseline for assessing the percentage increase in ALMP spending and, hence, were not included in the analysis of how much spending on active programmes has been increased.<sup>75</sup> These two types of measures are now discussed briefly:

- *Large-scale temporary public works programmes* have been used by a number of governments to tackle rising unemployment in past recessions, notably by Nordic countries. The fiscal stimulus measures adopted by many OECD countries in response to the current downturn (cf. Section 1) – particularly their infrastructure investment components – are to varying extents viewed as public works projects that directly create jobs and the direct employment effect can be substantial. Spain set up a State Fund for Local Investment in Spanish municipalities in 2008 with a total budget of EUR 8 billion, which by 30 June 2009 had invested nearly EUR 5 billion and reported the creation of nearly 400 000 jobs. The effectiveness of public-sector direct job creation measures which are specifically targeted on providing employment experience for disadvantaged persons (e.g. the long-term unemployed) is discussed in Section 5 below.
- *Broad reductions of employer social security contributions* have been enacted by a narrow majority of OECD countries as one component of their fiscal stimulus package. In light of the widespread adoption of these measures and their potentially large impact on government revenues, it is important to know how effectively reductions in employer contributions support overall labour demand in the context of a steep economic downturn, in particular, whether they produce a significant additional employment impact beyond that attributable to the Keynesian multipliers associated with fiscal stimulus (i.e. as analysed in Section 1 above), due to the relative price effect associated with a general reduction in unit labour costs. As is discussed in Box 1.2, this is likely to be the case for *temporary* reductions that are implemented during a recession. The effectiveness of more narrowly targeted tax incentives for hiring is discussed further below.



### Box 1.2. **Broad reductions of employer social security contributions as a support to aggregate labour demand**

The short-run effectiveness of reductions in employers' social security contributions in generating new jobs depends on the responsiveness of labour demand to changes in unit labour costs (the short-run labour-demand elasticity). The figure below presents the estimates of the contemporaneous impact of changes in labour costs on labour demand over the past three decades, holding output fixed (see Annex 1.A7 in OECD, 2009e for an explanation of how these conditional elasticities were estimated). Two main findings emerge. First, the OECD average responsiveness of labour demand to changes in labour costs has more than doubled during the past 30 years. These estimates imply that a 1% reduction in the wage bill, as a result of a subsidy, would now result in a 0.6% increase in employment. Second, the sensitivity of labour demand to its cost tends to increase in contractions and fall in expansions. However, these cyclical effects are relatively small compared with the secular increase in the cost-responsiveness of labour demand. These findings suggest that the effectiveness of reductions in employer social security contributions in promoting labour demand in the short-term may have substantially increased during recent decades and, more tentatively, that their effectiveness may be enhanced during contractions.

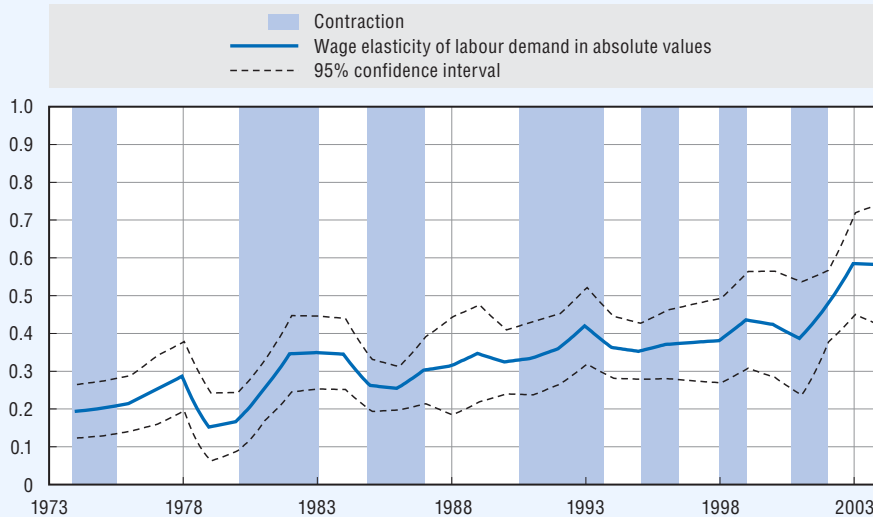
The conclusion that reductions in employers' contributions are likely to have a significantly larger impact on employment than is indicated by a simple multiplier analysis for a tax cut is, however, subject to important caveats. First, it should be borne in mind that these short-run elasticity estimates are subject to much uncertainty. Furthermore, choices about whether or not to use temporary cuts in social security contributions as a component of fiscal stimulus packages should be made in the context of assuring the long-run adequacy of funding for the associated benefits. Finally, the long-run effect of a reduction in employer social security contributions on equilibrium employment is likely to be much smaller, due to offsetting real wage adjustments. A "back-of-the-envelope" calculation suggests that a 1% reduction in unit labour costs, as a result of a reduction in employers' contributions, may increase employment by only 0.2% in the long-run.<sup>1</sup> This means that the cost per additional job created is 1.7 times average total compensation costs per job in the short-run and seven times average compensation in the long-run.<sup>2</sup> The low cost-effectiveness of these subsidies, particularly in the long-run, underlies the importance of ensuring that such reductions are temporary, when they are undertaken as an anti-recessionary measure, rather than being viewed as a structural reform to the tax system.

Reductions of employer contributions which are targeted on low-wage workers represent an important special case of broad reductions in employer contributions which may have important long-run benefits. Phelps (1994, 1997) advocated using graduated employer subsidies targeted on low-wage workers on the grounds that this would yield significant positive social externalities by lowering structural unemployment.<sup>3</sup> In the context of the current crisis, Edlin and Phelps (2009) argue that such measures represent an attractive alternative to stimulus spending by the government and several countries have introduced such measures, notably, Belgium, France and the Czech Republic.

### Box 1.2. Broad reductions of employer social security contributions as a support to aggregate labour demand (cont.)

#### The time-profile of the short-term elasticity of labour demand

Fixed effect estimates of dynamic labour demand conditional on output<sup>a</sup>



a) Estimates on  $t-2$  to  $t+2$  in manufacturing sector only.

Source: OECD estimates based on EUKLEMS Database. See OECD (2009e) Annex 1.A7 for further details.

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1. For reasonable levels of labour supply elasticities – Evers *et al.* (2008) suggest this could be 0.1 for men and 0.5 for women – a simple calculation suggests that most of the subsidy will result in higher wages in the long run, rather than higher employment. For the estimated long-term elasticity of labour demand of around -1.5 in 2003 (not reported), a 1% reduction in the wage bill, as a result of the subsidy, will increase employment by just 0.09% for men and 0.38% for women. On average, this amounts to about 0.2%. Wages, by contrast, increase by 0.94% and 0.75%, respectively (on average about 0.8%). These calculations are based on the assumption that labour markets clear in the long-run. For details, see Fullerton and Metcalf (2002).
2. The cost-effectiveness of reductions in employers' social security contributions can be assessed as follows: The total cost of the tax subsidy is given by the subsidy rate ( $s$ ) multiplied by the wage ( $W$ ) and the number of subsidised jobs ( $L$ ). Using the short-run demand elasticity estimate of 0.6, the subsidy ( $sWL$ ) creates  $0.6 * s * L$  additional jobs. The cost per additional job created in the short-run is thus:  $W/0.6$ , i.e. 1.7 times average total compensation costs per job. The analogous long-run calculation implies that the cost of an additional job rises sharply to about seven times average compensation per job. Moreover, the per job costs may be about four times as large for men as that for women (11 compared to three times per job costs) due to differences in their elasticity of labour supply.
3. The idea of graduating employer subsidies over the wage distribution is to prevent strong substitution effects between workforce groups which are close substitutes in production.

## 4. Making the most of income-support policies in a downturn

Most OECD countries operate extensive income-support programmes. Cash benefits provide safety nets for job losers and, more generally, for those whose resource situation is considered inadequate. With increasing unemployment and deteriorating incomes, these policies become even more important as safety nets for individual families and as macroeconomic stabilisers. Their capacity and effectiveness is, however, being severely tested by the current economic downturn.

This section considers the scope and generosity of existing income-support policies and asks whether, and how, support measures should be adapted to deal with the

challenges occasioned by a severe recession. While increasing joblessness creates political pressures for governments to act, it is in fact not self-evident that safety nets must be modified. Well-designed income-support policies cushion the impact of income losses for economically vulnerable groups, providing some degree of income security automatically. An increase in unemployment and deteriorating incomes therefore do not necessarily translate into a need for discretionary policy intervention.

But a severe downturn with far-reaching changes in labour market conditions and earnings opportunities can produce individual risks that existing income-support systems were not designed to address. In addition, large increases in the number of people facing such risks can expose structural deficiencies in safety-net policies that are less apparent when labour markets are tight. For instance, patterns of benefit reciprocity during earlier labour market downturns suggest that adequate employment-oriented safety nets are essential in order to avoid the very high long-term costs of expanding “inactive” programmes such as disability or early retirement benefits (see Carcillo and Grubb, 2006). More generally, it is critical to examine whether the balance of existing income-support measures provides an adequate degree of income security while defining credible pathways towards labour market re-integration.

Recent policy attention has mostly focussed on income support for the unemployed. A focus on this group is also suggested by the findings in Section 2 above which confirm that unemployment has been the most important driver of cyclical changes in total hours worked. The first part of the analysis below will therefore discuss *unemployment benefits*.

In addition, there are other types of transfer that can provide potentially crucial support for a broader group of individuals affected by weakening labour markets. Importantly, government transfers can play a role in keeping people in their jobs and making low-paid work more economically feasible for workers suffering earnings losses. *Partial unemployment benefits* and related *short-time working schemes* are designed to provide temporary income supplements for individuals facing working-hour reductions. Likewise, *in-work benefits* may be an effective redistribution instrument by cushioning income losses resulting from reduced working hours or wage concessions. They also encourage transitions into work for disadvantaged workers and may therefore be helpful in shortening unemployment spells and in supporting an equitable labour market recovery process.

Finally, it is essential to consider income-support measures that provide fall-back options for those not – or no longer – entitled to unemployment benefits, as well as for families on very low incomes more generally. Lower-tier transfers, such as social assistance or other *benefits “of last resort”*, can be expected to become a more critical element of income-support strategies as the recession adds to the ranks of groups who are particularly likely to draw on such safety-nets, including the long-term unemployed and non-standard workers faced with an extended period of joblessness.

#### **4.1. Income support for job losers**

Two essential functions of unemployment benefits are the provision of a degree of income maintenance during joblessness and facilitating effective job-search. While countries share these objectives, their balance – and the approaches used to achieve them – varies.

A simple way of summarising many of the relevant institutional details is by means of *benefit replacement rates*, which express net income of a beneficiary as percentages of net income in the previous job.<sup>76</sup> Unemployment benefits are the “first line of defence” for those experiencing a job loss. Table 1.6 shows benefits replacement rates at different stages during an unemployment spell for prime-age individuals (Annex Tables 1.A8.1 and 1.A8.2 in OECD, 2009e show net replacement rates for younger and older workers). Results are averages over different earnings levels and family situations and account for taxes and for family-related benefits that are typically available. They refer to 2007 and, thus, to a period before any adjustments were made in response to the current downturn. In order to

**Table 1.6. Generosity of unemployment benefits**  
Net replacement rates at different points during an unemployment spell, 2007<sup>a</sup>  
In percentage

	Year 1	Year 2	Year 3	Year 4	Year 5	Five-year average
Norway	72	72	72	72	72	72
Belgium	65	63	63	63	63	63
Austria	61	58	58	58	58	59
Denmark	68	68	68	68	9	56
Ireland	50	50	50	50	50	50
Portugal	79	79	56	24	3	48
Germany	64	48	42	36	36	45
France	67	64	31	31	31	45
Finland	60	58	33	33	33	43
Australia	42	42	42	42	42	42
Spain	69	65	25	25	13	39
New Zealand	38	38	38	38	38	38
Sweden	66	63	41	8	8	37
Iceland	57	54	54	8	8	36
United Kingdom	28	28	28	28	28	28
Netherlands	71	59	3	3	3	28
Switzerland	80	40	0	0	0	24
Luxembourg	87	8	8	8	8	24
Canada	52	14	14	14	14	22
Hungary	48	13	13	13	13	20
Poland	42	16	8	8	8	16
Czech Republic	33	11	11	11	11	15
Japan	45	3	3	3	3	11
Turkey	46	0	0	0	0	9
Slovak Republic	32	3	3	3	3	9
Greece	33	5	1	1	1	8
Italy	37	0	0	0	0	7
Korea	31	0	0	0	0	6
United States	28	0	0	0	0	6
<b>Median</b>	<b>52</b>	<b>40</b>	<b>25</b>	<b>13</b>	<b>9</b>	<b>28</b>

a) Countries are shown in descending order of the overall generosity measure (the five-year average). Calculations consider cash incomes (excluding, for instance, employer contributions to health or pension insurance for workers and in-kind transfers for the unemployed) as well as income taxes and mandatory social security contributions paid by employees. To focus on the role of unemployment benefits, they assume that no social assistance or housing-related benefits are available as income top-ups for low-income families (covered in Figure 1.19 below). Any entitlements to severance payments are also not accounted for. Net replacement rates are evaluated for a prime-age worker (aged 40) with a “long” and uninterrupted employment record. They are averages over 12-months, four different stylised family types (single and one-earner couple, with and without children) and two earnings levels (67% and 100% of average full-time wages). Due to benefit ceilings, net replacement rates are lower for individuals with above-average earnings. See OECD (2007a) for full details.

Source: OECD tax-benefit models ([www.oecd.org/els/social/workincentives](http://www.oecd.org/els/social/workincentives)).

StatLink  <http://dx.doi.org/10.1787/706364844714>

focus in the first instance on income security provided by unemployment benefits, income replacement rates refer to one-earner families and exclude housing benefits and social assistance (the role of these important benefits is discussed below).<sup>77</sup> Low replacement rates therefore do not necessarily imply that all families actually experience these income losses. Instead, they identify potential gaps in income security for the unemployed and, therefore, a need to draw heavily on savings, on support through minimum-income safety nets or on help from family members.

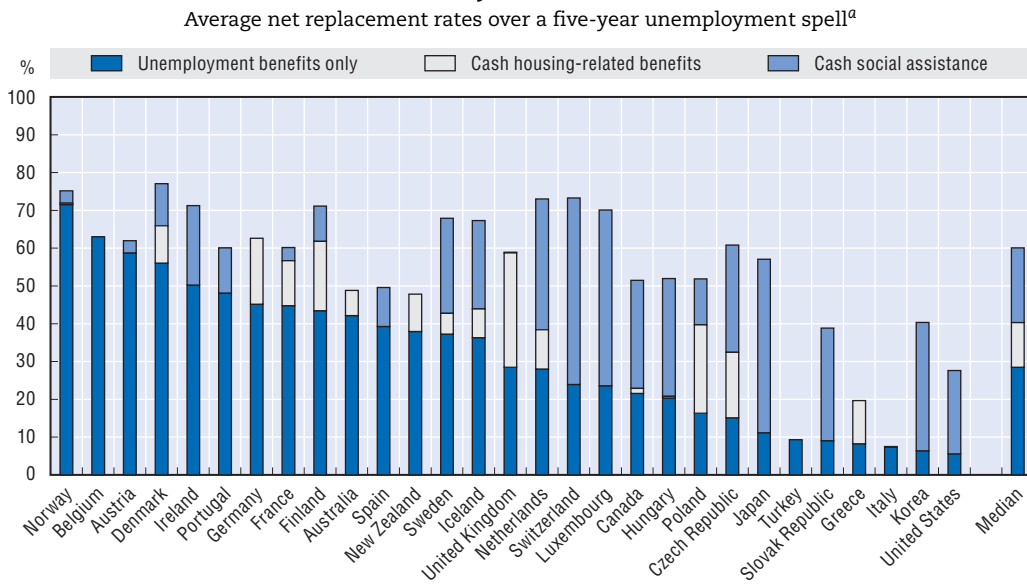
For prime-age workers entitled to unemployment benefits, net incomes during the first year of unemployment are above 60% in just under half of the countries. Income losses during the first year are smallest in Nordic and continental European countries. At the bottom of the table, low initial replacement rates for the Czech Republic, Greece, Italy, Korea, the Slovak Republic and the United States show that job-losers in these countries can be particularly hard-hit, with income losses for those not receiving any other support amounting to more than 60% during the first year of unemployment (for those losing employer-provided benefits, notably health insurance, the losses are larger still). Initial replacement rates for those receiving unemployment benefits only are also low in Australia, New Zealand and the United Kingdom. Because net replacement rates are shown as yearly averages, low values can be due to modest benefit levels, short durations (for instance, prior to federal extensions in 2008, the maximum benefit duration in a typical US state was 26 weeks) or both.

In countries operating UI benefits, net replacement rates typically decline during the unemployment spell. The gradient of the downward slope varies markedly, however. Long-term unemployed prime-age individuals in Italy, Korea, Turkey and the United States lose their entire benefit income after 12 months of unemployment or less. In several other countries, unemployment benefits are also no longer payable during the second year of unemployment, although families with children can be entitled to family benefits, which preserve a very small amount of benefit income (Canada, Hungary, Japan, Luxembourg, the Slovak Republic).

In part, the very large differences in benefit durations reflect the incidence of long-term unemployment, with possible causal links going in both directions. For instance, Table G in the Statistical Annex shows that fewer than 20% of jobseekers in Korea or the United States have been continuously unemployed for six months or longer, while more than two-thirds in Belgium or Germany have been unemployed for half a year or longer. But maximum benefit durations are also long in countries with short unemployment spells (Denmark, New Zealand) and *vice versa* (Italy, the Slovak Republic). For prime-age jobseekers, durations of insurance benefit entitlements are longest in Belgium (unlimited) and Denmark (48 months). But in a number of other countries, means-tested unemployment assistance provides continued (and usually lower) benefit entitlements once insurance benefits expire (Austria, Finland, France, Germany, Greece, Portugal, Spain). Four English-speaking countries operate unlimited means-tested unemployment assistance benefits (Australia, Ireland, New Zealand, the United Kingdom), resulting in a flat replacement-rate profile.<sup>78</sup>

In some of these countries, net incomes of jobseekers can be heavily influenced by the availability of housing benefits, as well as social assistance and other benefits of last resort. As shown in Figure 1.19, they are therefore an important component of the overall support package: Net replacement rates in Australia, New Zealand and the United Kingdom (as well

Figure 1.19. **Unemployment benefits are only one element of safety nets for job losers**



a) See notes to Table 1.6 for details on how these averages are calculated. Housing-related benefits are those available to families living in rented accommodation with rent plus other housing costs (e.g. utility bills) assumed to equal 20% of the average wage. In some countries, housing-related support is covered by social assistance payments instead. Social assistance in the United States also includes the value of a near-cash benefit (Food Stamps).

Source: OECD tax-benefit models ([www.oecd.org/els/social/workincentives](http://www.oecd.org/els/social/workincentives)).

StatLink <http://dx.doi.org/10.1787/706238714484>

as in a number of continental European countries) are often substantially higher for those in rented accommodation who are entitled to cash rent assistance. This highlights the possibly severe financial difficulties of those not entitled to such housing support (e.g. owner-occupiers who lose their job). Social assistance and other minimum-income or “welfare” transfers provide a fall-back option for people not or no longer receiving unemployment compensation. Income top-ups from social assistance transfers can be significant for those receiving them. But, as will be argued below, they often fail to reach large parts of the low-income population.

Do existing systems of unemployment compensation provide adequate safety nets during a severe economic downturn? It is obvious from Table 1.6 that policy designs differ widely across countries. While rising unemployment rates will put considerable strain on benefit systems in all countries, some of them are better placed than others to provide effective income support in a recession. Where benefit protection is patchy, governments should move quickly to make necessary adjustments to ease the negative impact of weakening labour markets on income security, while ensuring that such policy measures do not stifle recovery once economic activity regains momentum. One-off payments and ad-hoc increases in benefit amounts for selected groups are expensive and unlikely to be an effective response to the complex labour market changes brought about by the downturn. Instead, the first priority is to avoid large numbers of unprotected job losers by securing effective coverage. Among the main challenges are the following:

- *Soaring numbers of benefit applications:* Can support be scaled up quickly to meet the additional demand? In previous recessions, the number of unemployment benefit

claimants in OECD countries tended to rise very quickly early on during the downturn and then plateau at high levels, before ebbing slowly. With a similar profile emerging at the onset of the current downturn, the resulting jump in benefit applications has triggered substantial additional demands in terms of administrative and financial capacity. Ensuring the availability of the necessary resources is therefore a first priority in order to avoid service disruptions and delayed or reduced entitlements at a time when income support is most needed.

- *Longer unemployment spells:* As unemployment spells lengthen, beneficiaries are confronted with declining benefit payments or expiring entitlements in most countries. Such “threat points” reinforce job-search incentives and have been shown to improve job-finding rates, even before benefits are reduced. But as job vacancies dry up during a recession and demand-side restrictions become more binding, these incentives are less effective and concerns about the adequacy of income support for the growing number of longer-term unemployed become more pressing. In eastern Europe, Italy, Japan, Korea, the Slovak Republic, the United States and other countries where benefit durations are short, extensions will help to reduce the number of benefit stops experienced by jobseekers who are, in fact, available for work. Importantly, such measures should address the specific challenges of the downturn. In order to avoid delaying employment growth after the recession, credible commitments should therefore be made to keep them *temporary* (e.g. by tying them to a suitable labour market indicator, such as the vacancies-to-unemployment ratio). As was shown in Section 2 above, the extent and nature of recession-related labour market problems is likely to differ markedly between workforce groups. It may therefore be important to keep benefit durations suitably differentiated (for instance, Section 2 above shows that job-finding rates for young people are higher than the average for other age groups, but that the duration of unemployment spells for youthful job losers increases more strongly during a recession). Finally, extending benefit durations may be less urgent in the short term if effective and comprehensive minimum-income schemes provide a second layer of income support. Yet, with evidence consistently pointing towards substantial difficulties of moving from social assistance back into employment, there are good reasons for keeping job-ready unemployed people on unemployment benefits.
- *Increasing numbers of ineligible jobseekers:* The discussion above highlights country differences in terms of support available to those who are, in principle, eligible for unemployment benefits. But substantial shares of unemployed people do in fact not qualify for these benefits in the first place. In part, this is intended. For instance, governments may wish to maintain the link between contributions and benefit payouts and therefore exclude those with short or interrupted work histories (and sometimes those with very low earnings). But depending on entitlement conditions for unemployment benefits, growing shares of workers may remain unprotected if temporary work and other non-standard work patterns become more common.<sup>79</sup> They may be excluded by law (e.g. the self-employed in most countries, including the so-called “falsely” self-employed) or *de facto* because they are less likely to meet contribution requirements or satisfy other relevant eligibility criteria (e.g. temporary or part-time workers).<sup>80</sup> A lack of protection for these workers is of particular concern during the downturn because non-standard workers typically are more easily shed from the workforce and therefore likely to experience a disproportionate share of overall job losses. As job losses mount, any problems of non-coverage in unemployment insurance

are likely to become evident in countries with substantial proportions of non-standard workers. While the downturn will clearly highlight any existing gaps in unemployment protection, *ad hoc* changes to unemployment insurance rules, in the context of a recession, are unlikely to provide help for those without sufficient contributions who have already lost their job. More importantly, large shares of non-standard workers are the result of longer-term structural changes in the labour market. Rapid and isolated modifications of entitlement rules would preclude having a considered policy debate about the role of non-standard employment and its relationship to the social protection system more generally. A more promising short-run response would consist of ensuring the availability and adequacy of lower-tier assistance benefits, such as social assistance.

#### **4.2. Support for low-earning individuals – protecting workers and jobs?**

While rising joblessness is the main concern during a severe downturn, there is also likely to be an increased need for assistance for part-time and low-wage workers. Workers who escape being laid-off may, nonetheless, be compelled to accept wage concessions or a shortened work week, while job losers and labour market entrants will more often need to settle for new jobs offering lower wages or fewer hours than they could have obtained in a more robust labour market. Several different designs exist for providing income support to low-earnings individuals. They differ in terms of their distributional impacts and also create different incentives on the demand and supply sides of the labour market. For example, such schemes can be structured in a way that is intended to prevent or delay layoffs. Alternatively, benefits may be designed so as to raise re-employment probabilities of job losers.

In times of strong economic activity as well as during a recession, well-targeted transfers to low-earning workers can help strengthen their labour market attachment and reduce the incidence and severity of in-work poverty (Chapter 3). Yet, the balance of employment and redistributive effects of such transfers, and therefore their role in an overall income-support strategy, depends to a considerable extent on labour market conditions. When labour demand is strong, income supplements for low-earning individuals help to address an important supply-side barrier to higher employment. They strengthen employment among the target group by moderating any work disincentives that result from a combination of low wage levels and the operation of out-of-work benefits. However, positive employment effects alone do not explain the increased popularity of these measures. Instead, the attraction of well-designed in-work transfers is that they present a rare opportunity to escape the common trade-off between redistribution and employment. Given certain framework conditions, such as a relatively unequal earnings distribution, they direct support towards low-income families while improving work incentives at the same time (Immervoll and Pearson, 2009).

Labour supply constraints are less binding during a recession. Since much of unemployment is involuntary, the case for additional work incentives is less compelling. Instead, the attraction of in-work benefits during a downturn is that they provide income support to those affected by deteriorating earnings levels. Responding to falling product demand and possible cash-flow problems linked to tight credit markets, employers seek to reduce labour costs by scaling back production and increasing labour productivity. In-work support subsidises (low-paid) employment and can cushion some of the income loss resulting from reduced working hours. Since they make work more attractive relative to unemployment (the replacement ratio falls for those entitled to in-work support), they can



also facilitate wage moderation, stimulating labour demand in the medium term.<sup>81</sup> In short, when the labour market is weak, the balance of objectives associated with in-work support arguably shifts from employment creation towards redistribution and poverty avoidance – and from creating work incentives for jobless individuals to facilitating continued work attachment for those already in employment.

Maintaining (and re-establishing) links with the labour market is particularly important in the context of rising unemployment inflows and lengthening unemployment spells (cf. Section 2). It also provides welcome relief for unemployment benefits and related support services, which are likely to be pushed towards capacity limits by a severe economic downturn. With high pressures on out-of-work support and re-employment services at the onset of a recession, measures that limit inflows into full-time unemployment can be attractive even if unemployment is not prevented but only delayed. A more even spread of new unemployment spells reduces demands on safety nets, which can be critical for maintaining adequate income support and service effectiveness.

Because the objectives of in-work support are partly conditioned by the broad state of the labour market, some form of support for low-income workers may be desirable during an economic downturn, even in countries where the case for these benefits would otherwise not be particularly strong. For the same reason, countries that already have such programmes in place should consider whether adjusting relevant policy parameters, such as eligibility conditions, would make them more effective during the downturn and a subsequent recovery.

Support for low-paid workers can take a number of different forms:

- In response to the current downturn, several OECD countries have introduced or reinforced *partial unemployment benefits* available to workers facing involuntary working-hours reductions.<sup>82</sup> Like unemployment benefits, support is time-limited, and may be conditional on participation in other work-related activities, such as job-search or training. As part of broader *short-time working schemes* or *work-sharing arrangements*,<sup>83</sup> compensation for reduced working hours may be paid through the employer who, in turn, receives wage subsidies that are paid conditional on continued (partial) employment of existing workers (e.g. *chômage partiel* in France). On top of explicit transfers to the employer or employee, significant implicit transfers may be provided as well (for instance, continued accumulation of full-time entitlements in pension or unemployment insurance programmes). Countries differ in terms of the requirements imposed on employers which, in turn, is likely to lead to different, and often low, take-up rates across countries.<sup>84</sup> For instance, firms typically have to demonstrate the nature and extent of the difficulties they face, although during a severe recession, such requirements may not be enforced fully. There may also be other conditions, such as “no-layoff” agreements for the duration of the short-time working scheme (provisions typically exist that allow employers to replace individual workers). Employers may also be required to provide or arrange training during non-working hours (e.g. as recently introduced in the Czech Republic). An alternative to explicit requirements is to provide financial incentives for training (Austria). What is common to all these programmes is that they facilitate the temporary continuation of existing employment contracts and, hence, favour “old” jobs over “new” ones.<sup>85</sup>
- The much less common *wage insurance* schemes also operate in relation to a previous employment contract. But the crucial difference to partial unemployment benefits is

that, rather than maintaining existing contracts, they aim at encouraging re-employment in lower-paying jobs. They do this by compensating part of the difference in pay levels between the old and new jobs. Apart from smoothing incomes of those affected by earnings losses, the aim is to speed up re-employment by broadening people's job-search to encompass lower-paying jobs. By encouraging transitions into jobs where the initial match with workers' skills is partial, wage insurance can also act as a subsidy for on-the-job training. While an early demonstration project sponsored by the Canadian Government has attracted considerable attention (Bloom *et al.*, 1999), wage insurance programmes have not been rolled out on a large scale. One exception is the United States, where older full-time workers who have lost their previous job for a specified set of trade-related reasons have been covered under the Alternative Trade Adjustment Assistance for Older Workers (ATAA) since 2002.<sup>86</sup> They receive up to half of the earnings shortfall, along with some health-care related financial support. Like partial unemployment benefits, wage insurance schemes are subject to specific time limits (two years in the case of ATAA). But unlike partial out-of-work benefits, which are designed to cushion the earnings loss resulting from reduced working hours, wage insurance schemes are typically targeted towards displaced workers facing lower hourly wages in their new jobs.

- *In-work benefits* are paid independently of the existence (or the characteristics) of a previous job. For example, the UK Working Tax Credit, the US Earned Income Tax Credit, the New Zealand In-work Tax Credit, or the Belgian *Bonus de l'Emploi* are targeted to a well-defined groups of low-paid workers whether or not they have previously held a better-paid job. They are also paid to those returning to employment from an out-of-work spell, as well as to first-time entrants into the labour market. One can distinguish between permanent in-work benefits (payable as long as relevant conditions such as earnings, working hours and family situation are met) and those subject to a time limit (commonly targeted to those *entering* employment). In principle, in-work benefits can be paid to all workers with "low" earnings, regardless of whether they are due to limited working hours or low wage rates. But some countries seek to distinguish between "low effort" and "low ability" in an attempt to prevent benefits from being paid to individuals who choose to work reduced hours on a voluntary basis.<sup>87</sup> One consequence of targeting low wages, rather than low earnings, is that benefits provide less income security during a recession when working-hours reductions are typically involuntary.

While some form of in-work income support for low earnings appears to be particularly valuable in a steep downturn, it is not simple to assess the relative advantages of these three approaches to determining who is eligible for support and how large their benefit should be. Partial unemployment benefits and wage insurance are directly targeted on the income security concerns related to declining labour demand, since eligibility and benefit amounts are tied to earnings losses associated with involuntary hours reductions or layoffs. Indeed, they are best thought of as modified versions of traditional unemployment benefits, which seek to extend income support to additional workers experiencing earnings losses due to declines in labour demand, while also promoting higher employment by either providing employers with an increased incentive to reduce dismissals or job losers with an increased incentive to become re-employed. An alternative – or complementary – approach consists of providing support that is not tied to a particular employment contract or to previous work experience. In-work benefits that depend only on current work status and income (and possibly a number of family-related

characteristics) can support low-paid workers while side-stepping potential distortions between existing and new jobs. Unlike partial unemployment benefits, they also reach low-paid workers with marginal or intermittent employment, unemployed individuals taking up a new job, as well as new labour market entrants.

Due to the potentially broader coverage of in-work benefit (they are not conditional on contribution histories or previous work status), they can be more costly than partial unemployment benefits. But in-work benefits are typically more tightly targeted to low-income groups and are therefore more effective at reaching workers with the most acute needs for financial support. The appropriate targeting of in-work benefits, as well as their effectiveness, depends to a considerable extent on the number of “low-paid” jobs and on the distribution of earnings more generally.<sup>88</sup> Most OECD countries operating such benefits have therefore carefully customised the targeting mechanisms (Immervoll and Pearson, 2009). However, far-reaching changes in labour market conditions during and after the recession can be expected to alter the earnings distribution and, hence, the optimal degree of targeting. For instance, it is important to consider whether work requirements should be adapted to ensure that (temporary) part-time jobs qualify for in-work payments.

A second issue of programme design that is of particular relevance in the context of a severe recession concerns the *timing* of benefits payments. There are, for instance, good arguments for minimising delays between eligibility and benefit payments (tax refunds in the next year limit the effectiveness of in-work benefits as a safety-net for those experiencing earnings losses now). In addition, countries introducing or extending in-work benefits may consider doing so on a temporary basis. Time-limiting in-work benefits would, however, mainly be driven by budgetary considerations. As compared to partial unemployment benefits, there is a much smaller risk that permanently available in-work benefits would damage labour market dynamism.<sup>89</sup>

One of the main concerns that all forms of in-work support raise is that they can be viewed as supporting downward mobility, rather than placing the emphasis on keeping people in (or getting them into) “good” jobs. These concerns have some validity to the extent that in-work transfers lead some overqualified individuals to displace low-skilled workers, although so-called “trading down” during recessions also occurs in the absence of in-work support schemes. It is also important to recognise that these transfers primarily help to ease existing distortions favouring unemployment over low-paid work, rather than introducing distortions towards low-paid jobs. For an overall assessment of the desirability of in-work support, the issue of labour supply incentives is, in any case, likely to be less relevant during a recession when many workers face earnings losses independently of whether or not such programmes are available. In this context, measures (possibly time-limited) that direct support to low-paid workers are a valuable building block of employment-oriented safety-net policies and they may have an expanded role to play in a deep recession.

#### **4.3. Income support for those experiencing severe hardship**

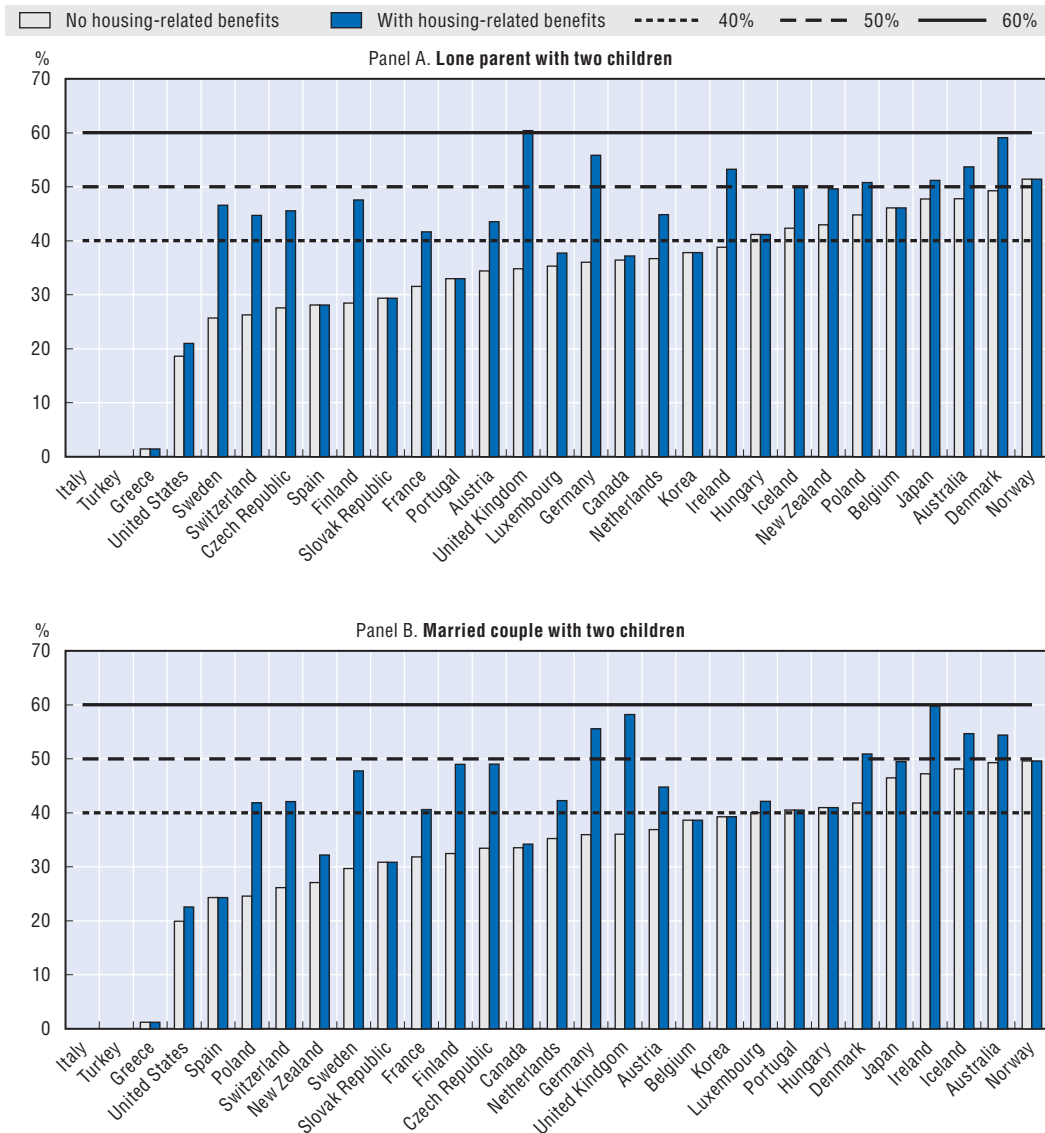
Social-assistance and similar minimum-income benefits can provide timely and targeted assistance to unemployed individuals with no other entitlements, as well as those with extremely low incomes more generally (including as a top-up to unemployment benefits in some countries). As benefits of “last resort”, they are essential planks of redistribution policies and therefore of particular relevance at a time when increasing numbers of families are faced with deteriorating incomes and much-reduced prospects for

sustainable self-sufficiency. In addition, an attraction of investing in minimum-income support in the context of an economic downturn is that tight targeting towards low-income groups ensures that public expenditures in this area readily translate into higher private spending.

Poverty alleviation is the primary objective of minimum-income benefits. But Figure 1.20 illustrates that, in all countries, families receiving these benefits require

Figure 1.20. **Net incomes of social assistance recipients in relation to alternative poverty lines, 2007<sup>a</sup>**

In percentage of median household income



a) Results show benefit entitlements for a family with two children aged 4 and 6 and no other income sources. They account for all relevant cash benefits (social assistance, lone-parent benefits, other family benefits, housing-related cash support as indicated) and income-related taxes and social contributions, where applicable. US results also include the value of a near-cash benefit (Food Stamps). Comparisons with median income levels are made on an equalised basis (equivalence scale is the square root of the household size). Median household incomes are for a year around 2005 expressed in 2007 prices.

Source: OECD tax-benefit models ([www.oecd.org/els/social/workincentives](http://www.oecd.org/els/social/workincentives)).

StatLink <http://dx.doi.org/10.1787/706265650677>

income from other sources in order to avoid high risks of falling into income poverty. In a slight majority of countries for which such calculations are available, net incomes of families without any other income sources are set above the lowest of the three commonly-used *relative* poverty lines (40% of median income), but this is only the case if housing-related assistance is available (light bars). For those who do not have access to cash housing support (dark bars), incomes are below all three poverty-cut-offs in most countries, with very substantial poverty gaps in some (there are no generally-applicable social assistance benefits in Greece, Italy and Turkey).

Sizable income poverty gaps are an important concern, more so if they go hand-in-hand with insufficient access to essential services such as healthcare (not accounted for in Figure 1.20). As more people draw on minimum-income safety nets in a recession, their effect on poverty rates and the overall income distribution becomes more apparent. The above results demonstrate that social assistance benefits by themselves are typically insufficient to ensure incomes close to the poverty line. But simply raising benefit levels is often not sufficient, nor should it arguably be the first priority when considering how to limit the impact of the downturn on the most vulnerable groups.

Instead, and similar to the discussion of unemployment benefits above, a necessary condition for minimum-income benefits to be effective is that they are *available and accessible*. Studies of non-take-up regularly find large shares of low-income families who do not appear to receive means-tested benefits to which they would be entitled (Hernanz *et al.*, 2004; Bargain *et al.*, 2007). Non-take-up rates are often close to or above 50% which very much inhibits the poverty-reducing power of these benefits. Although non-take-up may sometimes be a rational decision (those with small entitlements or short expected durations of low-income status may decide that applying is not worth the effort), evidence shows that barriers to receiving benefits can hit the poorest families in particular.<sup>90</sup>

A number of measures can help reduce these barriers. Clearly-defined legal entitlements are more transparent and create more certainty for the benefit claimant than “first-come-first-serve” systems whereby a pre-determined budget limits total benefit programme expenditure (causing possible shortfalls, especially during periods of rapidly rising benefit claims). Information campaigns can improve knowledge about available support measures, as can one-stop-shops which provide information about different types of programmes in one location. By creating a single contact point for claimants, one-stop-shops can also be one element of efforts to streamline the application process. Finally, organisational measures, such as safeguarding claimant anonymity or extending benefit agency opening hours, can limit the burden and stigma associated with claiming safety-net benefits.<sup>91</sup>

A closely related aspect of targeting and effective coverage is the set of *behavioural requirements* associated with benefit receipt. All minimum-income benefits impose at least some behavioural requirements on benefit recipients (such as regular confirmation of circumstances). As part of a welfare-to-work approach, a number of OECD countries have introduced or strengthened *work-related requirements* in recent years. One important question is whether such welfare-to-work measures are effective at a time when large numbers of benefit recipients are competing for a rapidly declining number of job vacancies. On the basis of on-going OECD work, it is possible to identify several issues that

are relevant when considering whether aspects of existing work-related behavioural requirements should be adapted in view of weaker labour markets:

- By definition, recipients of last-resort benefits generally have little other public income support to fall back on. Too strict an application of behavioural eligibility conditions could result in extremely low incomes for those excluded from benefit payments. Concerns about those potentially falling through the cracks' become more acute if potential beneficiaries fail to live up to their responsibilities, not because they are unwilling but because they are unable to comply.
- Existing evidence showing positive employment effects relates to periods of relatively strong labour markets.<sup>92</sup> When unemployment is high, welfare-to-work measures can be expected to be significantly less effective at putting welfare recipients back into work. In addition, they may even damage the prospects of more employable jobseekers, including unemployment benefit recipients, as job-search assistance and other activation measures are diverted from more to less employable benefit clients.
- The personal characteristics and labour market difficulties of social assistance recipients tend to be very heterogeneous. Claimants include those facing severe employment barriers, more job-ready individuals, as well as workers with irregular jobs, very low earnings or difficult family situations. As recent job losers (or unemployment benefit recipients) are added to this group, a significant number of social assistance recipients could work or have relatively recent work experience.
- Some work-related eligibility conditions are certainly more difficult to meet during a recession (e.g. to find work within a certain period of time), but others are not (e.g. providing evidence of job-search or participating in active labour market programmes). It is important to recognise that, where they exist, work-related requirements can take different forms.
- The experience of previous downturns shows that the long-term costs of entirely passive social transfers are very large. In recognition of these costs, several OECD countries have invested heavily in reforms creating active and activating social safety nets. Going back on these efforts carries the risk of creating a momentum towards long-term benefit recipiency and inactivity that would be very difficult to reverse once established and would create high costs in terms of both poverty levels and labour market performance lasting well beyond the current downturn.

Together, these considerations imply that there is arguably a need for policy responses in order to maintain credible welfare-to-work approaches during a recession. Adjustments are also needed in the way existing provisions, including work-related behavioural requirements, are administered. First, more resources are required in order to maintain the same level of service, as much as is feasible, for a rising number of benefit clients and, probably, longer benefit durations. Second, the administration of work-related requirements and work-support measures needs to be applied in a suitably differentiated and targeted manner that accounts for clients' needs and labour market prospect. This needs to be based on a detailed understanding of each client's characteristics and the particular difficulties they are facing. Because of the heterogeneity of social assistance recipients, these challenges are not new. But they become much more critical as the number and composition of social assistance clients changes and the competition for work intensifies. Finally, for groups with severe labour market difficulties, fewer job vacancies would suggest a shift in priorities away from direct re-integration into the open labour

market and towards maintaining and improving skills and job-readiness. Resource requirements for training programmes and subsidised employment, such as community service jobs, are likely to increase significantly as a result.

## 5. Making the most of policies to help the unemployed back into work in a downturn

### 5.1. Activation when labour market slack is high

While it is important to alleviate hardship through income support, it is equally important to encourage and assist jobseekers in finding new work and increasing their long-term employability. This is typically referred to as “activation”. The essence of activation is the principle of “mutual obligations” where, in return for paying benefits and offering a range of re-employment services, public employment agencies monitor benefit recipients’ compliance with behavioural eligibility requirements. Such requirements may relate to active job search or participation in training or employment programmes. The increased role of activation/mutual obligation strategies represents one of the main labour policy reforms in the OECD over the past decade. Previous OECD reports have described the components of an effective activation scheme in detail (OECD, 2005; Carcillo and Grubb, 2006), and such an approach is an integral element in the Reassessed OECD Jobs Strategy since it has contributed to better labour market outcomes in those countries which applied them effectively (OECD, 2006a). However, relatively little attention has been devoted to the question how activation regimes should be modulated to take into account the increased case-loads, more difficult labour market conditions and diverse profiles of jobseekers in a recession.

While it is not possible to provide a blueprint for the optimal modulation of activation policy in a recession, a number of key policy choices can be identified and some guidance provided for how they should be addressed:

- *To what extent should ALMPs be expanded to meet rising unemployment?* From a cost-benefit perspective, it is not clear to what extent ALMPs should be expanded so as to reduce how strongly expenditures per unemployed persons fall as unemployment rises. On the one hand, the immediate payoff to ALMPs in increased employment and earnings is likely to be depressed by the decline in available job opportunities (*e.g.* the marginal cost of helping jobseekers back into work is likely to increase) and this suggests less intensive use of these services. On the other hand, the marginal benefit from helping a jobseeker back into work may also increase in recessions given the greater expected duration of unemployment. Furthermore, there may be significant long-run benefits from keeping job losers engaged in the labour market or training during a recession. In light of these offsetting effects, it is difficult *a priori* to determine how recessions affect the economic returns to ALMP services of a given quality. However, there would appear to be strong grounds to conclude that the far less-than-proportional scaling-up of spending on active measures during past economic downturns (*cf.* Section 3.1) has resulted in an inefficiently large reduction in ALMP spending per unemployed person. To some extent, however, this may have reflected capacity constraints given the difficulty of quickly recruiting and training skilled case managers or expanding the number of training slots, while maintaining quality levels. Indeed, administering activation policies and targeting them effectively requires considerable institutional capacity and co-ordination which is difficult to achieve even during normal’ times when demands on benefit administrations

and case workers are not growing rapidly. Nonetheless, some expansion is desirable and governments should be proactive in maintaining, as much as possible, the capacity to provide adequate case management and re-employment services to job losers in a recession. It is also possible that increased reliance on private-sector employment service providers could enhance the speedy provision of activation services such as training in response to a cyclical downturn, subject to the service contracts being designed in a way which rewards good outcomes and minimises creaming and gaming (see OECD, 2005).<sup>93</sup> When scaling up activation services in a recession, it is important that the expansion be structured in such a way that they can be wound down as labour market conditions improve and do not create a pathway to extended dependency on unemployment benefits via a carousel effect, as occurred in Finland and Sweden in the 1990s (Calmfors *et al.*, 2001; OECD, 2005).<sup>94</sup>

- *How should the mix of services provided be adjusted in a recession?* This is partially a question of how rapidly a particular service can be scaled up, as already discussed. However, the mix of services should also be adjusted, as much as possible, to reflect changes in the relative effectiveness of different types of measures in an economic downturn. There is little or no rigorous evaluation evidence on this question, but several tendencies appear plausible *a priori*. First, it appears to be very important to prevent job losers in a recession from becoming disconnected from the labour market (both psychologically and more objectively). As a consequence, core elements of activation regimes, such as the drawing up of a personal re-employment plan, regular meetings with case managers and behavioural requirements to search actively for jobs should not be allowed to lapse, even if it is judged necessary to implement these measures in a somewhat diluted form (e.g. due to excess case-loads or potential demoralisation of jobseekers by requiring too-intensive application of job-search methods that could appear futile in a slack labour market). Second, public employment agencies may try to counteract the decline in labour demand through the more extensive use of subsidised employment programmes, which have proven a relatively effective way of getting people back into work, at least in normal times. However, in order to ensure their continued effectiveness during the downturn, public employment agencies may also have to raise the subsidy per job. Third, the lock-in effect of placing jobseekers in training and public-sector job-creation programmes is of less concern in a recession when there are relatively few job vacancies relative to the number of jobseekers. As a result, the opportunity cost of human capital investments is lower in a recession, suggesting it may be an opportune time to place increased emphasis on training, especially on longer forms of training. Similarly, public-sector job creation schemes might provide a useful, temporary backstop to activation regimes in a recession for the hard-to-place unemployed, particularly if it is deep and long.
- *How should the targeting of re-employment services across different groups of jobseekers be different in a recession?* The analysis in Section 2 showed that demographic groups that are typically at the margins of the labour market also bear the brunt of the increase in unemployment in a recession. Nonetheless, many previously stable workers are also made redundant and forced to search for a new job. Although the “work-first” ethos of activation regimes should be maintained for all job losers, in the sense that case managers and benefit recipients continue to organise their relationship around the development and pursuit of individual re-employment plans, it may nonetheless be desirable for the public employment service to shift its provisions of job-search



assistance toward a greater focus on the most employable job losers. In a recession, employers are aware that there are many qualified jobseekers and the public employment service could lose its credibility with employers if it places too much emphasis on referring difficult-to-place candidates to firms notifying the public authorities of job vacancies, except in cases where those candidates are especially well suited for the openings in question.<sup>95</sup> If this is done, it will be crucial to provide increased support in other forms to jobseekers from the groups who are relatively disadvantaged in the labour market and are receiving less intensive job-search assistance. This could include greater use of targeted hiring and work-experience subsidies, training and public sector job-creation schemes. When the rationing of ALMP services is severe, due to sharp declines in the number of PES staff and the amount of programme funding per jobseeker, it may be worth considering systematically randomising the allocation of some services in order to facilitate rigorous evaluation of these programmes. While randomisation is sometimes considered unethical, it may be the fairest way to ration participation in ALMPs in a context in which resources per jobseeker are very low and little is known about who would benefit most from particular measures.

Modulating activation policy in a recession is complex and is more likely to be effective if national initiatives to expand funding and set broad programme priorities are combined with considerable flexibility for local authorities and caseworkers to tailor the packages of re-employment services offered to jobseekers to conditions prevailing in the local labour market and that person's individual characteristics (OECD, 2009f). This suggests that adjustments in a recession of the mix of services offered and how they are rationed across benefit recipients should be driven in a bottom-up manner to a considerable extent. The remainder of this section provides a more detailed discussion of the role of selected ALMPs, including short-time working and hiring subsidies, public-sector job creation schemes and training, in the context of a deep recession.

## **5.2. Does short-time working represent a good way to reduce job losses?**

As was discussed above in connection with income-support measures, in-work support for low earnings can take the form of short-term working (STW) schemes. Along with providing income support for workers whose hours are cut during a recession, these schemes are intended to preserve jobs. More precisely, the aim is to avoid “excessive” layoffs, that is, cases where employers encountering temporary difficulties dismiss workers, even though the jobs in question would be viable in the long run. In principle, a well-designed STW subsidy can promote both equity and efficiency: i) equity, by sharing the burden of adjustments more equally across the workforce,<sup>96</sup> and ii) efficiency, by preventing transitory factors from destroying valuable job matches (see Box 1.3).

A number of OECD countries have been operating short-time working programmes (or “partial unemployment benefits schemes”) for several decades, many of which were established in the aftermath of the recessions in the 1970s and early 1980s. Nonetheless, relatively few evaluations have been conducted to assess how effectively STW subsidies preserve jobs and support employment more generally.<sup>97</sup> However, the available studies have highlighted a number of potential problems with short-time schemes:

- Deadweight and displacement effects are likely to be large for short-time work schemes, so that they contribute very little to increasing overall employment. Limiting eligibility to firms that are in financial difficulties is likely to reduce deadweight loss, but is unlikely to remove it entirely. Displacement effects arise when STW programmes end up

### Box 1.3. Are layoffs inefficiently high in a severe recession?

In part, the renewed interest in short-time work schemes and partial unemployment benefits reflects the belief that the current recession is characterised by “excessive” layoffs. This may be the case if the full economic cost of displacement is considerably higher in recessions (*e.g.* due to longer unemployment spells and their adverse impact on future careers), but employers do not bear an important share of these costs. However, it is very difficult to assess whether employers do, in fact, dismiss significant numbers of workers in a recession when it would have been socially efficient to have retained them. It has long been known that employers voluntarily engage in “labour hoarding” during recessions, that is, many firms maintain a larger workforce than is justified by current production requirements. Employers have a number of reasons to invest in labour hoarding, such as their desire to keep a trained workforce together so as to be able to profit fully when business conditions improve and the disincentives to dismissal which are created by employment protection rules (*e.g.* standards for severance compensation).

There are several reasons why the current downturn might be especially characterised by excessive layoffs and, hence, an emphasis on policies to encourage short-time working particularly apt:

- As a result of the credit crunch, firms having difficulty accessing working capital or facing unusually high interest rates may be unable to hoard labour in the usual manner. As discussed in Section 2 above, a number of studies have found that the cyclical sensitivity of employment is higher for firms which rely more heavily on external finance. If an unusually large number of employers are experiencing financial stress during the current slowdown, it is possible that many are being forced to dismiss workers they would like to retain, resulting in the dissipation of specific skills and other forms of “match capital” or imposing large externalities on the local community or the social protection system. Even if credit market conditions should lead to an inefficiently high level of layoffs in the current downturn, it is not clear that this problem is best addressed with short-time working policies. Policy measures that directly address credit constraints may be preferable. For example, Sweden has adopted a temporary provision allowing firms to defer social security contributions for a year, by paying an 8% interest charge and other countries have implemented schemes to ease access to credit for SMEs.
- In countries which have relaxed employment protection legislation (EPL) in recent years (see Venn, 2009), there may be an expanded scope to use short-time schemes as an instrument to discourage excess layoffs in recessions. Where EPL is too strict, labour market efficiency can be enhanced by relaxing it. However, doing so will cause employers to shed workers more quickly when product demand falls and the resulting level of layoffs could be considered excessive because it is above either the efficient level or the politically acceptable level. In either case, a temporary subsidy for short-time working represents a potentially attractive alternative to reversing EPL reform. Strengthening employment protection in a recession risks being counter-productive because it limits firms’ ability to respond to difficult business conditions. Stricter EPL would also discourage hiring and therefore impede labour market recovery. Short-time working policies can also create distortions by impeding efficient labour mobility, but the distortions are likely to be significantly smaller for two reasons. First, the impediment to efficient job destruction is likely to be less severe because the subsidy has only a limited duration. Second, and more important, short-time schemes are much less of an impediment to job creation, because firms hiring new workers do not need to factor in potential dismissal costs.

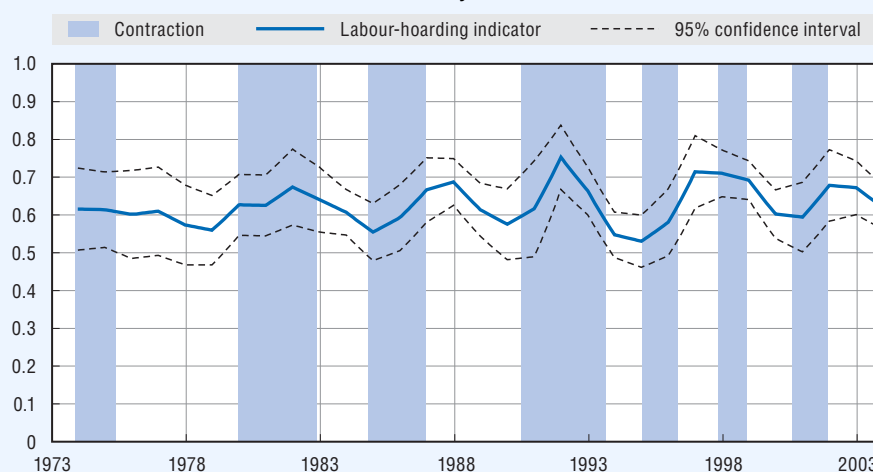
**Box 1.3. Are layoffs inefficiently high in a severe recession? (cont.)**

The question whether excessive layoffs are more of a concern in the current downturn than they were in past recessions can also be investigated empirically. To shed light on this question, it is useful to analyse whether recent labour market reforms have tended to reduce labour hoarding. One way to approach this issue is to examine how the speed with which labour demand responds to shocks in product demand has evolved over time, where adjustment speed may be considered an inverse measure of labour hoarding. The analysis is based on industry-level panel data (limited to manufacturing) for a large number of OECD countries over the period 1970-2005. For more details on the model and estimation methods, see Annex 1.A7 in OECD (2009e). Two main results emerge from the figure below.

- The time-profile of the labour-hoarding indicator is counter-cyclical, indicating that manufacturing firms do indeed engage in labour hoarding during economic downturns.
- There is no clear trend in labour hoarding over the past three decades. In other words, the results do not confirm the conjecture that a general trend towards weaker employment protection and the greater use of temporary contracts have changed labour-hoarding behaviour in the manufacturing sector.


The reasons why labour hoarding has not declined are not analysed here, but it is at least possible that the potential impact of easier adjustment on the extensive margin has been largely neutralised by simultaneous increases in flexibility along the intensive margin. That is, firms and workers may have become better at managing working-time adjustments. One driving factor of such a development may be that private work-sharing arrangements, such as part-time work and flexible working-time arrangements (e.g. annualisation and time banking), have become more common.

**The time-profile of labour hoarding**  
Fixed-effect estimates of dynamic labour demand<sup>a</sup>



a) Estimates on t-2 to t+2 in manufacturing sector only.

Source: OECD estimates based on EUKLEMS Database. See Annex 1.A7 in OECD (2009e) for further details.

StatLink  <http://dx.doi.org/10.1787/706286300248>

supporting unviable jobs. While STW programmes are typically designed with the intent that they only support jobs and workers affected by temporary reductions in labour demand, in practice, it is very difficult to assess *ex ante* whether economic difficulties are

indeed temporary and the jobs in question will be viable once the subsidy ends. Attempts to avoid supporting unviable jobs by requiring financially-troubled firms to guarantee that supported jobs will be preserved after the termination of the programme appear problematic. An alternative route may be not to impose any conditions on firms but instead rely on self-selection. In order to ensure that only viable jobs are supported, a new temporary scheme that was recently adopted in the Netherlands does not impose any conditions but requires employers to return half of the benefit paid to the employee if the employee loses his/her job during or in the three months following short-time work. However, the easiest way to limit displacement effects is to ensure that the duration of short-time working subsidies is limited, while sufficiently long to preserve jobs that are viable when the economy recovers.<sup>98</sup>

- A related limitation of short-time work subsidies in the past has been low participation in a number of countries. A low uptake of short-time work subsidies may reflect the role of specific design features intended to limit deadweight and displacement effects which have discouraged firms from participating (*e.g.* requirements to provide detailed documentation about current financial problems and future prospects and to share in the cost of compensating workers on short-time work). However, it appears that take-up has been very strong in a number of countries in the initial stages of the current downturn, including in France, Germany and the Netherlands. In part, this reflects measures taken by governments to expand eligibility to more firms or to make participation more attractive (*e.g.* measures to lower participation costs and expand benefits for participating employers).

Despite past experience with short-time work policies suggesting that they are difficult to operate effectively, they are receiving an unusual degree of emphasis in the current downturn with more than two-thirds of the OECD countries reporting either setting up new measures or reinforcing existing measures in response to the current downturn. Another notable tendency is that a substantial number of countries are requiring or encouraging the combination of short-time working with training.<sup>99</sup> This emphasis on saving existing jobs appears to be somewhat at odds with the conclusion that labour market policies should “protect workers not jobs” which has been emphasised in much recent analysis of employment policy – including that contained in the Reassessed OECD Jobs Strategy (OECD, 2006a).<sup>100</sup>

In sum, partial unemployment benefits and short-term working schemes are a potentially valuable tool for helping workers faced with substantial earnings losses due to involuntary hours reductions and reducing the extent of inefficient layoffs during a temporary deterioration of firm-specific business conditions or a more general, but short-lived, labour market downswing. The analysis earlier in this chapter has shown, however, that labour market weaknesses caused by severe recessions typically are not short-lived, and that they typically entail structural changes that require significant adjustments in terms of labour-force composition. There is therefore a trade-off between the immediate concern of supporting existing jobs, and the longer-term objective of facilitating the reallocation of jobs and workers toward the most productive firms and sectors (Chapter 2). Effective targeting of support to “viable” jobs is difficult, even more so in times of rapidly deteriorating markets when support is needed quickly. To avoid protecting the “wrong” jobs and impeding employment growth during a subsequent recovery, it is important to attach clear and credible time limits to these measures and to design the interventions in ways which encourage viable firms to self-select into them. Even with such measures in

place, there are likely to be many cases where jobs do not continue after the subsidy ends. There may still be some social benefit in such cases because delaying some of the upsurge in layoffs early in a recession may moderate the spike in unemployment inflows, giving the affected workers and the PES more time to prepare for a potentially difficult transition to new jobs.

### **5.3. An expanded role for using job subsidies to stimulate new hiring?**

In addition to subsidies that seek to preserve jobs at risk, there may also be an expanded role for hiring subsidies that concentrate on the creation of new jobs.<sup>101</sup> Such subsidies can be quite effective (Martin and Grubb, 2001). In certain cases, it may be possible to enhance their effectiveness through careful targeting on disadvantaged groups and stricter conditions for employers (Box 1.4 discusses a number of design issues that affect the effectiveness of such subsidies in more detail). However, even if the effectiveness of such measures to improve *net* employment is limited, they may still be desirable from an equity perspective if a more equal distribution of unemployment across the labour force emerges. Such an argument may be of particular relevance in recessions, when the chances of regaining employment after displacement are particularly low for disadvantaged groups, due to the large inflows of newly unemployed, including increased numbers of well-qualified job losers. Targeted recruitment subsidies may also be needed to keep ALMPs credible, at a time when the immediate returns to job-search assistance may be unusually low for harder-to-place jobseekers.

In the face of the current downturn, the large majority of OECD countries have expanded existing hiring subsidies or established new ones, typically targeted at specific vulnerable groups. While the number of additional subsidised jobs which will result from these new initiatives cannot be accurately gauged in most cases, it is likely to be small by comparison with the large increases in unemployment and long-term unemployment, as has also been the case in previous recessions (*cf.* Section 3.2). Moreover, given the increased competition for new jobs as a result of new inflows into unemployment simply expanding the potential number of subsidised jobs is unlikely to be enough to help all the target groups get back into work. The amount of the subsidy may also need to be increased for hiring subsidies to be effective in a steep downturn.

### **5.4. Public-sector direct job creation: a back-stop to keep activation credible?**

Direct job creation in the public sector is another tool for expanding employment opportunities for hard-to-place jobseekers which has a long history. While direct job creation may be considered as representing a 100% hiring subsidy from an accounting perspective, its implications are rather different from conventional marginal employment subsidies from a resource-allocation perspective, because the market mechanism no longer determines which jobs are created. Evaluation studies of direct job-creation programmes have generally been disappointing concluding, in particular, that “workfare” schemes do not much help participants to later find permanent employment in the private sector (Card *et al.*, 2009; Martin and Grubb, 2001). The lock-in effect created by these programmes tends to be strong and inhibits mobility into non-subsidised jobs because programme participation tends to reduce job search and the managers of these schemes typically have no incentive to help participants (*i.e.* their workforce) to find regular employment. In light of this disappointing experience, many countries moved away from direct job-creation schemes in recent decades, although they continue to represent an

#### Box 1.4. Making hiring subsidies more effective

The main advantage of hiring subsidies relative to the general reductions in employers' social-security contributions or "stock" subsidies more generally is that they tend to be more cost-effective. While stock subsidies may be relatively easy to implement and relatively effective in supporting employment in the short-run, at least as compared with the employment effects of other forms of fiscal stimulus, the associated employment gains come at a significant cost in lost tax revenues. The fact that the subsidy is paid for all jobs, including jobs that would have existed even in the absence of the subsidy, results in important deadweight losses. By exclusively concentrating on newly created jobs, hiring subsidies have the potential to be significantly more cost-effective. In certain cases, it may be possible to enhance their effectiveness further through the tighter targeting of disadvantaged groups and stricter conditions for employers:

- *Targeting* may be achieved directly by singling out disadvantaged work-force groups or struggling industries. Alternatively, it may be achieved indirectly through subsidy design features, such as caps per worker or per firm. Industry-based targeting is generally problematic as it is far from obvious how to determine which firms or industries deserve support and, in any case, such an approach is likely to raise concerns about protectionism. Direct targeting of disadvantaged workers may be effective in some cases, but also risks being counterproductive when it increases administrative burdens, reinforces negative stigma associated with disadvantaged groups and suffers from limited awareness among employers (Katz, 1998). In other cases, targeting may be achieved more effectively indirectly, for example, by placing ceilings on total firm or per worker subsidies. Ceilings on total subsidies per firm tend to favor small relative to large firms. A rationale for this form of targeting in the current downturn could be that small firms are more likely to be credit-constrained than large firms. Ceilings on subsidies per worker encourage low-skilled employment and part-time jobs (which might be considered a form of work-sharing).
- *Placing stricter conditions on employers* may help to reduce displacement effects associated with hiring subsidies. For example, hiring subsidies may result in "churning" when target-group workers are only hired for the duration of the subsidy and then replaced by other target workers. Alternatively, there may be "revolving-door effects", which refer to the situation in which firms use subsidised hires to replace existing workers. One way hiring subsidies could be made more effective is by making subsidies proportional to *net* employment changes, instead of *gross* hiring, thereby at the same time minimising the kind of deadweight effects that typically tend to be associated with stock subsidies and the displacement effects associated with gross hiring subsidies. Such net hiring subsidies are sometimes referred to as "marginal stock subsidies". Marginal stock subsidies, however, still provide incentives to outsource employment to newly established firms, as this would allow firms to reap the benefits over the entire workforce rather than just over the amount of net job creation. Knabe *et al.* (2006) propose the idea of "double marginal subsidisation," under which a firm hiring a new worker and raising employment above its reference level, receives subsidy payments for both the new worker and one incumbent worker. In principle, this strengthens incentives for net job creation, while reducing incentives for gaming the subsidy scheme via outsourcing. OECD (1982) concludes from the available evidence on the impact of marginal stock subsidies during the 1970s and early 1980s that they can be reasonably efficient devices to temporarily promote employment during a recovery.

important active labor-market policy measure in some countries. However, this generally negative assessment may be less applicable in the context of a severe recession, when it is particularly difficult to place disadvantaged jobseekers into regular jobs (Gregg and Layard, 2009).

Historically, direct job-creation schemes frequently have been scaled up strongly in recessions (cf. Section 3.2). Consistent with this pattern, a number of countries have announced expansions of public-sector job-creation programmes in response to the current downturn (e.g. Korea, Mexico, Spain). The main potential advantage of such measures in recessions is that temporary public-sector jobs may provide a useful way to help prevent hard-to-place job losers from becoming too disconnected from the labour market (both psychologically and more objectively) and, hence, could act as a backstop to activation, helping to maintain the credibility of this policy orientation in the context of severe labour market slack (Gregg and Layard, 2009). Good programme design may also help to reduce lock-in effects. One way of doing so may be to offer part-time work combined with job-search support and the obligation to look for work backed by the threat of moderate benefit sanctions (Gregg, 2009). Financial bonuses may also be offered to public sector employers and NGOs to motivate them to provide general training to programme participants and help them find regular employment in unsubsidised jobs. However, such programmes should always be temporary to guard against them becoming a disguised form of subsidised permanent unemployment (Martin and Grubb, 2001). In sum, a temporary expansion of direct job creation may be able to play a useful role in backstopping activation regimes through a period of labour market slack, but they appear to have limited value when labour market conditions are better, and hence should be shrunk as the recovery progresses.

### **5.5. Should training be expanded to make productive use of the increased time spent out of work?**

Training slots should be expanded in the context of rising numbers of job losers and longer unemployment durations, but it is unclear whether training spending per unemployed person should rise, even if sufficient funding could be obtained. Evaluation studies of vocational training programmes have shown that labour market returns are highly variable, not infrequently negative and low on average (see e.g. Grubb and Martin, 2001; OECD, 2005; Kluge, 2006; Card et al., 2009). Although some training programmes have generated important net benefits, it appears to be difficult to identify which workers will benefit from which types of training. Since vocational training – as opposed to short training in job-search skills – is also one of the more expensive ALMPs, activation regimes typically reserve long-term training for unemployment benefit recipients who remain unemployed beyond a certain threshold of time (e.g. one year or more), during which period they receive job-search assistance and develop a personalised action plan to reintegrate into employment. This strategy reserves training for the hardest-to-place individuals while also reinforcing job-search intensity prior to the activation period for jobseekers preferring re-employment to mandatory participation in training or another intensive ALMP.

There are several reasons to believe that the cost-benefit balance for offering training to job losers typically will be higher in a recession than when the labour market is less slack. In particular, the opportunity cost of the time required to train (the “lock-in effect”) is lower in a period when job vacancies are fewer and unemployment durations longer.

This advantage will be offset to some degree by a lower short-run labour market payoff to training, but the recent evaluation literature has emphasised that much of the impact of improved skills on wages only materialises slowly, suggesting that the overall benefits to training may not be strongly affected by labour market conditions at the time of the training (Card *et al.* 2009; OECD, 2005; Stenberg and Westerlund, 2008). A second reason why it may be useful to expand training in recessions is that economic downturns appear to be associated with accelerations of structural change, implying that an unusually large number of job losers may need to change industry or occupation to become re-employed and, hence, may be likely to benefit from training. All of these arguments suggest that it may also be desirable to place somewhat greater emphasis on more general training<sup>102</sup> or longer forms of training<sup>103</sup> during recessions.

More speculatively, there may also be some advantages to offering training relatively quickly to some workers losing their job in a recession, rather than always beginning with an extended period of intensive job search. The analysis in Section 2 shows that unemployment duration increases sharply in recessions, with the deterioration in job-search prospects being especially sharp for already disadvantaged workforce groups such as youth, the low-skilled, women and immigrants, suggesting that it may become easier to identify persons at a high risk of long-term unemployment. Furthermore, the motivational effect from delaying the activation period may be small for jobseekers who face a paucity of job offers, no matter how hard they search. Earlier access to training – along with other measures such as work-experience programmes – may also be valuable for this group as a way to reduce demoralisation and keep them engaged with the world of work.

While it appears to be advantageous to shift the ALMP mix toward greater use of training in a severe recession, there are also good reasons for some caution about moving too sharply toward a “train-first” strategy for hard-to-place jobseekers. Most fundamentally, there is relatively little evaluation evidence confirming that the returns to training are higher during recessions than during periods of growth.<sup>104</sup> Nor is there much evidence that it becomes easier to identify which recent job losers would benefit from intensive ALMPs (i.e. that “profiling” is more reliable in a recession).<sup>105</sup> A final reason for caution about moving too strongly to increase the number of training slots is that too rapid of an increase may compromise quality. Effective training programmes require a curriculum that is responsive to local labour market needs and results in a certificate or qualification that employers value.<sup>106</sup> Qualified instructors and adequate facilities – including often expensive equipment – are also required. Since it is likely to be difficult to set-up new training facilities quickly in a recession in many cases, it generally would be better to up-scale existing programmes, when feasible. Greater involvement of private-sector training providers is a possible way around these capacity constraints. If such an approach is adopted, careful monitoring of the quality and pertinence of any training supported with public funds would be essential.

### **5.6. Lessons for policy**

The overall challenge facing ALMP administrators is how to adapt the constellation of re-employment services offered to recipients of unemployment benefits and the behavioural requirements to which they are held, so as to foster as quick as possible re-integration of job losers into employment, while protecting the long-run integrity of the mutual-obligations ethos underlying activation regimes. Scaling up the availability of places in different labour market programmes is essential for improving both the short-



and long-term labour market prospects of benefit recipients and for maintaining the mutual-obligations ethos in the context of limited direct job opportunities. While maintaining core job search assistance for all jobseekers, it is also desirable to adapt to more difficult labour market conditions by shifting the programme mix toward somewhat greater emphasis on training, hiring subsidies and subsidised work experience, especially for harder-to-place jobseekers.

Many OECD governments have made major investments in establishing or perfecting activation regimes, including welfare-to-work initiatives, in recent years and they have achieved important economic and social benefits that should not be sacrificed. However, many of these systems are quite recent and, hence, not yet recession-tested. It will be quite a challenge to pilot them safely through this recession, but it is encouraging that many governments have moved promptly to reinforce their ALMP offerings in the early stages of the current downturn. It will be very important to evaluate how effectively these initiatives prove to be.

## **6. Reconciling measures to reduce the social costs of economic downturns with the need to support high labour supply in the long run**

Historic experience shows that inappropriate government responses to high cyclical unemployment can undermine labour supply in the long run, both quantitatively and qualitatively. For example, OECD governments have opened pathways onto early retirement and disability benefits in recessions, rather than providing older job losers and those with partial disabilities with re-employment assistance tailored to overcoming their particular barriers to finding a new job, leading to sometimes large and persistent quantitative reductions in labour supply. Youth, especially less skilled youth, also face particular difficulties in slack labour markets and often require particular assistance to avoid compromising their long-run career prospects. A more recent concern is that the labour market difficulties confronting immigrants during recessions may undermine the long-run potential of international migration to alleviate labour shortages in the context of population ageing.

### **6.1. How to avoid measures to ease access to early retirement or disability benefits?**

A number of OECD countries introduced early-retirement options in the wake of the crisis in the 1970s. The expectation that these measures would free up jobs for young people was not borne out in practice (OECD, 2006b). Even though this policy proved to be a failure, it took these countries a very long time to unwind these schemes.<sup>107</sup> Similarly, some OECD governments have eased access to disability benefits in recessions, in effect allowing labour market difficulties to become one of the criteria for entry, rather than exclusively medical criteria (OECD, 2009i). Although the intent was to help a particularly vulnerable group, there is now considerable evidence that the health status of workers with partial disabilities actually tends to deteriorate when they receive disability benefits, as compared to when they return to work (Chapter 4).

Both early retirement and easier disability access proved to be one-way streets, with virtually no workers offered these benefits returning to the labour force when the economy recovered. Despite disappointing results from easing access to early retirement and disability benefits, the precedents created proved difficult to reverse, increasing their long-run impacts in raising benefit dependency and undermining labour supply.

In light of this history, it is encouraging that none of the 29 countries responding to the OECD questionnaire reported taking such measures.<sup>108</sup> Nonetheless, it is likely that strong political pressures to take similar measures will emerge if labour markets fail to recover quickly. Rather than opening pathways to long-term dependency on social benefits and labour market exclusion, governments should direct their efforts toward reinforcing assistance for the unemployed and workers with health problems, potentially including vigorous temporary measures to increase labour demand for at-risk groups (e.g. reduced employer social security-contributions, promoting short-time work, subsidising hiring in the private sector and direct job creation in the public sector). Older job losers and those with partial disabilities need to be supported by these measures, rather than shunted into early retirement or disability programmes.

## **6.2. How to help youth in their transition from school to work?**<sup>109</sup>

Even in good times, the youth unemployment rate is two to three times that of adults in many countries. Many youth have short spells of unemployment during their transition from school to work, but some – often those with low skills and from ethnic minorities – get trapped in unemployment or become disconnected from the labour market. As was shown in Section 2, an economic downturn sharply diminishes the labour market prospects of less qualified youth, including by greatly increasing their vulnerability to long-term unemployment. The key priority in the short-term should be to minimise the increase in the number of the hardcore group of youth experiencing long-term unemployment and inactivity (not associated with study) who are at risk of losing effective contact with the labour market and permanently compromising their employment prospects and earnings capacity. Temporarily relaxing eligibility requirements for unemployment benefits and active labour market programmes for young job losers (either directly through age-related requirements or indirectly by extending eligibility to job losers with temporary contracts and limited employment histories) may help if accompanied by the application of the mutual-obligations principle. It is also clear that decisive actions targeted on at-risk youth to minimise the chance that they will enter the labour market without any qualifications (e.g. subsidies for apprenticeship contracts for unskilled youth; promotion of second-chance schools, etc.) are even more critical in a downturn than when the economy is growing.

The current economic downturn may also be an opportune time to consider raising the school-leaving age (to say 18) in some OECD countries. Provided that it is accompanied by measures to diversify educational choices and focuses on the acquisition of a recognised qualification that is valued by employers, rather than simply spending more time in a class-room, this reform has proven effective in ensuring youth leave education with a minimum skill level. It is also important to ensure that out-of-school youth who are encountering difficulty in the labour market can access appropriate second-change schooling and apprenticeships (see Box 1.5), but also ALMP services. In many OECD countries, where access to ALMP is limited to recipients of unemployment benefits, this is difficult for many unemployed youth who, as noted above, often do not qualify for these benefits. It is essential that their access to appropriate job-search assistance, training and similar measures be assured even when they are not eligible for unemployment benefits. Otherwise, the risk that they will become isolated from the labour market is dangerously high.

### Box 1.5. Second-chance schools and apprenticeship systems

The current economic downturn could substantially increase the number of youth at risk of becoming disconnected from the labour market if no decisive action is taken. Unfortunately, the vast majority of evaluation studies shows that special ALMP measures targeted at disadvantaged youth generally have not been effective (Martin and Grubb, 2001; Card *et al.*, 2009). These disappointing results may reflect the fact that disconnected youth are a very heterogeneous group with very complex needs who typically must overcome multiple barriers, ranging from the lack of basic skills to behavioral and family difficulties, if they are to successfully integrate into the labour market. However, there have also been some encouraging results achieved by programmes focusing on second-chance schools and apprenticeship systems that may serve as a guide for government action.

- *Second-chance schools* can take many forms. A number of recent US studies have shown that *residential* programmes – where youth are taken away from their neighborhoods and given mentoring, work experience and remedial education – may be particularly effective in improving labour market outcomes. *Job Corps* is a notable example of such a programme in the United States (OECD, 2009c). It has been around for several decades and constitutes a crucial component of the federal policy package to improve employment outcomes among disadvantaged youth. The programme is open to low-income youth aged between 16-24 experiencing employment difficulties and participation is voluntary. *Job Corps* serves around 60 000 disadvantaged youth across 119 centres nationwide. Japan has recently adopted a number of new initiatives in response to the large increase of youth not in employment, education or training (NEET) since the early 1990s. Among these is a residential programme called *Independence Camp for Youth (Wakamono Jiritsujuku)*, which is targeted at young people who have been NEET for more than one year. The programme usually lasts three months during which time 20 participants live and work together. Participants are offered mentoring, basic training for vocational ability and communication skills, training and work experience, which is intended to promote self-confidence and motivation for work. In 2006, 704 young people completed this programme in 25 camps around the country and 401 among them found a job (as of six months after completion of the programme) (OECD, 2008d).
- *Apprenticeship systems* have played an effective role in facilitating school-to-work transitions in a number of OECD countries (Ryan, 2001). However, the current downturn has raised concerns that the number of available apprenticeships will fall relative to the number of school leavers, potentially compromising the longer-run career prospects of youth unable to find or retain an apprenticeship. Moreover, there are concerns that the burden of adjustment to the downturn falls disproportionately on apprentices as the costs to employers of terminating an apprenticeship prematurely are likely to be considerably less than that of terminating the contract of a regular worker. Indeed, the ratio of apprenticeships to employees is weakly pro-cyclical (Brunello, 2009). A number of OECD countries have adopted or announced temporary measures in order to bolster their apprenticeship systems to meet the challenges of the current downturn. These include expanding the number of apprenticeship places, as well as the provision of apprenticeship guarantees to certain groups of school leavers, the provision of bonus payments to employers for successfully completed apprenticeships, and the supply of off-the-job training opportunities to apprentices who have been made redundant.

### 6.3. How to help immigrants to continue to integrate?

Past experience has shown that immigrants are among those hardest hit in the labour market during a downturn (see Chapter 1 of OECD, 2009g). They are also at a higher risk, compared with native-born jobseekers, of experiencing worse employment outcomes when the recovery finally gets underway. Governments need to be vigilant to ensure that deteriorating immigrant labour market outcomes do not mortgage the possibility of further migration when growth resumes. Integration programmes need to be maintained, anti-discrimination measures reinforced and immigrants profit equally from ALMPs for the unemployed. If such steps are not taken, it will create barriers to migration playing the role expected of it in the context of ageing populations and in helping to fill labour shortages.<sup>110</sup>

## Conclusions

The world economy is facing the worst recession of the post-war period and unemployment is rising to unprecedented heights in many countries. Governments are intervening to avoid the financial and economic crisis becoming a fully-blown social crisis with scarring effects on vulnerable workers and low-income households. While unemployment benefits are automatically stepping in to sustain the incomes of many job losers, at least for some period of time, coverage of such benefits is weak in some OECD countries, not least because many of the newly unemployed come from the ranks of atypical jobs and fail to satisfy eligibility criteria. In a number of countries, some efforts have been made to extend the coverage and, in some cases, the maximum duration of benefits to provide a more effective safety net. This is encouraging although such measures need to be carefully implemented so as to minimise any adverse effects on work incentives.

Governments have also moved promptly to scale up resources for ALMPs so as to preserve activation and the mutual-obligations principle and ensure that disadvantaged jobseekers do not lose contact with the labour market and drift into inactivity. This represents an encouraging contrast to past deep recessions in many OECD countries when spending on active programmes in most countries did not increase significantly as cyclical unemployment surged. However, in many cases, the *additional* funds for labour market programmes are rather limited given the massive increases in unemployment. The contrast with past recessions is particularly encouraging with respect to older workers. In past recessions, large numbers of older job losers moved into early retirement and/or disability programmes. This policy choice proved to be very costly. It has not been widespread so far but it will be important that governments stay the course in not repeating it.

A more general lesson which can be drawn is that the measures taken to assist job losers in a recession should respect the basic principles often advocated in the broader context of the debate about the fiscal stimulus packages: that is, they should be *timely*, *targeted* and *temporary*. This chapter's analysis shows that there are additional reasons to emphasise these design principles (the "3 T's") in the measures taken to assist job losers in a recession, beyond those applying to fiscal stimulus generally. For example, it is doubly important that income and re-employment support be timely: a rapid expansion of these measures not only contributes to stabilising aggregate demand, but also assures that job losers receive help when they most need it. The rationale for careful targeting of these policies also goes beyond that emphasised in the macro-economic literature (namely, to

target a fiscal stimulus where it will have the greatest impact on aggregated demand). For distributional reasons, it is important that income support and re-employment support be targeted to the workers in greatest need. For efficiency reasons, it is also important that active labour market programmes target the jobseekers who can most benefit from each type of service. Finally, initiatives to provide additional income support in a recession – or to relax certain behavioural requirements associated with activation regimes – generally should be temporary since they would otherwise undermine efficient labour market functioning once the recovery begins. Nonetheless, it should not be excluded that the stress test provided by a recession sometimes will reveal the need for permanent structural reforms or create the political opportunity to enact a reform, which had previously been indentified but for which sufficient political support had been lacking.

A severe recession, such as that currently underway, also requires sufficiently *strong* policy responses. In general, OECD governments have responded vigorously to the downturn, pursuing very expansionary monetary and fiscal policies, while also taking sometimes unprecedented measures to stabilise financial markets. This chapter's analysis shows that similarly vigorous responses are required to scale up direct assistance to job losers and other workers caught up by the economic storm. It is encouraging that many governments have moved to strengthen safety nets for the unemployed and workers with low earnings, while also reinforcing activation regimes intended to assist workers to reintegrate into employment or increase their employability. However, there is a question mark in many countries over the scale of the expansion of ALMPs to date in the face of the steep hikes in unemployment. It will be important to monitor these initiatives closely and rigorously evaluate how successfully they have ameliorated the social costs of the downturn while helping to prepare the labour market for a strong recovery.

Finally, the current economic downturn underlies the importance of employment and social policies that are able to function effectively even in the face of an upsurge in unemployment and the other labour market disruptions characterising severe recessions. The guidelines for employment policy contained in the Reassessed OECD Jobs Strategy of 2006 emphasise the structural preconditions for strong employment performance in the long run, but do not provide detailed guidance for how employment and social policies should be modulated in a deep recession. The analysis in this chapter begins to fill that lacuna by highlighting the importance of finding effective ways to provide adequate income and re-employment support to job losers and other workers adversely affected by an economic downturn, without compromising the efficiency and adaptability of the labour market in the long run. However, the process of rethinking the implications of severe economic downturns for the optimal design of labour market policy is only just beginning.

## Notes

1. The material in this chapter reflects information available as of 13 July 2009.
2. See Bell and Blanchflower (2009) for a recent overview of the adverse impacts of high unemployment on well-being.
3. In 2007, the OECD unemployment rate was 5.7%, while 66% of the working-age population were employed.
4. While the annual harmonised OECD unemployment rate reached a trough in 2007 at 5.7%, seasonally-adjusted monthly unemployment rates indicate that the OECD average unemployment rate bottomed-out at 5.6% between November 2007 and February 2008.

5. There have been encouraging signs in recent months that financial conditions are normalising and growth in China and, perhaps, some other large emerging economies is rebounding. However, historical experience suggests that downturns that are associated with banking crises, such as the present one, tend to be deep and long-lasting (Claessens *et al.*, 2008; IMF, 2008; Reinhard and Rogoff, 2009). The fact that all regions in the global economy were affected by the crisis – along with the associated steep declines in international trade and FDI volumes – also adds to the uncertainty.
6. Recessions are dated as beginning in the first quarter following the peak quarterly output gap attained during the preceding economic expansion (Secretariat estimates).
7. However, the cumulative impact of the “double-dip” recessions of 1979 and 1981 was larger, pushing the unemployment rate up to 10.7% over a four-year period. US unemployment is currently projected to attain 9.9% by the end of 2010.
8. The lower the unemployment rate at the beginning of a recession, the larger is the proportionate increase – as charted in Figure 1.2 – corresponding to a given percentage-point increase in the unemployment rate. One reason the proportionate increase was so high for Japan in the early-1970s recession is that the initial unemployment rate was only 1.2%. By comparison, the unemployment rate at the beginning of the current downturn was 3.8%. In fact, the projected percentage-point increase of the Japanese unemployment rate in the current downturn is larger than was experienced in the early 1970s (2.0 versus 0.8 percentage points).
9. The cut-off data for the information reported in Figure 1.3, Panel A is 11 June 2009. The data reflect the impact of fiscal packages on fiscal balances and may not reflect all of the measures introduced to boost activity. In particular, recapitalisation operations in the financial sector and increases in public enterprise investment are not included.
10. Hungary, Ireland and Iceland have significantly tightened fiscal policy due to such concerns.
11. Australia and the United States are the only countries where the discretionary fiscal stimulus is expected to be larger than that provided by automatic stabilisers (OECD, 2009b).
12. A scatter plot juxtaposing the size of the fiscal stimulus and the strength of automatic stabilisers confirms that there is a strong negative relationship between the two (see Figure 1.A2.1 in OECD, 2009e).
13. Further details on the construction of these multipliers is presented in Annex 1.A2 in OECD (2009e).
14. The first set of output multipliers simply reflects the average GDP multipliers from the literature review, adapted to apply to a harmonised and somewhat more detailed taxonomy of spending and taxation categories, and the tendency for multipliers to be smaller in more open economies and larger in more closed economies. The second scenario adjusts these GDP multipliers downward to account for the possibility that the macro models reviewed do not fully account for the impact of international leakage in reducing fiscal multiplier effects (*i.e.* that some of the extra spending is for imports rather than domestically produced goods and services). The third scenario adds a second downward adjustment to account for the possibility that fiscal multipliers are smaller than normal in the current conjuncture, due to an unusually high propensity to save. Since these adjustments have little impact on cross-country differences in the relative size of GDP multipliers, Panel C of Figure 1.3 displays only the second (intermediate-sized) employment multipliers.
15. Employment elasticities are also likely to differ across countries, but it was not possible to obtain robust estimates of these differences.
16. The estimated jobs impact for the US in Figure 1.4 is lower than those obtained by the CEA (2009), using GDP multipliers from several forecasting models of the US economy.
17. Section 3 discusses policies to activate the unemployed during a recession in detail. The purpose of this section is simply to show that such an approach is not *a priori* misconceived.
18. These regression models were estimated for unbalanced panels of 20 OECD countries during 1994-2007. Models contained full sets of country and year dummies and were estimated by ordinary least squares (OLS). The reason that most of the simulations indicate that hirings exceed separations, even during a recession, is that the estimation sample weights Ireland and Spain relatively heavily and net employment growth was strongly positive during the estimation period in these two countries.

19. The NAIRU is the equilibrium unemployment rate consistent with a constant rate of inflation, while the excess of observed unemployment over the NAIRU provides a measure of cyclical unemployment (Gianella et al., 2008).
20. As might be expected, layoffs are counter-cyclical. However, the tendency for layoffs to rise with the level of cyclical unemployment is more than offset by the decline in the share of workers quitting their jobs in order to search for another one. If business-cycle conditions are instead proxied by net employment growth, the counter-cyclicality of layoffs dominates the pro-cyclicality of quits, so that the separation rate becomes moderately counter-cyclical. However, the cyclicality of the hiring rate is not much affected by this change.
21. As in Figure 1.5, these simulations are based on unbalanced panels of 20 OECD countries. However, the regressions in Figure 1.6 are based on quarterly data for the period 1970Q1 to 2008Q3. Models contained full sets of country and year dummies and were estimated by ordinary least squares (OLS).
22. The same pattern holds in the United States, although the absence of a sufficiently long time series on vacancies meant that this country was omitted from the regression analysis shown in Figure 1.6. According to BLS data, there were 1.7 unemployed persons per job vacancy when the current recession began in December 2007, but that ratio had risen to 5.4 by May 2009.
23. One confirmation that job-search competition becomes more intense in a recession is found in the heightened risk of long-term unemployment, as is analysed in detail in Section 2. Furthermore, the deterioration in job-search prospects is uneven across different groups in the workforce.
24. Lemieux and MacLeod (2000) show how supply-side hysteresis can result if a first experience of unemployment benefit receipt habituates individuals to recurrent reliance on benefits. It should be noted that a number of other policies, notably strict employment protection, can also lead to hysteresis effects in the labour market, as depicted by insider-outsider models (Lindbeck and Snower, 1988).
25. There is a particular risk of job loss leading to permanently higher benefit dependency when access to invalidity and disability benefits is loosened in response to a recession, since relatively few workers going onto these benefits return to employment (see Chapter 4).
26. The early stages of the current economic downturn had a clear sectoral dimension, reflecting its origins in the bursting of the property price bubbles and distressed financial markets, but the crisis rapidly spread to other sectors of the economy. This topic is analysed in Section 2 below.
27. See Bassanini and Duval (2006) and Gianella et al. (2008) and the many studies they cite.
28. Regressing the quarterly unemployment rate on the output gap and full sets of period and country dummies for an unbalanced panel of 18 OECD countries from 1970Q1 to 2008Q4 yields a highly significant coefficient of 0.58 and an R-square of 0.78.
29. Ideally, one would like to analyse business-cycle sensitivity in terms of total earnings, since this is a more comprehensive measure which captures changes in hourly wages as well as changes in total hours worked. Unfortunately, the internationally harmonised data on total earnings which are available are insufficient to undertake a disaggregated analysis of business-cycle sensitivity of the form presented here for total hours worked. Country-specific information suggests that reductions in pay are particularly widespread in Korea and Japan in the current recession. In Korea, a “grand social compromise” was signed on 23 February 2009 in which the management, labour, government and civic groups committed to a number of guidelines for surmounting the economic crisis and sharing the burden equitably. One of these guidelines states that trade unions and employers should negotiate wage concessions in exchange for employment retention. As of the end of March 2009, 422 concessionary negotiations and co-operation agreements had been signed by trade unions and management, up 191% from one year earlier (KOILAF, 2009). In Japan, the important role of annual bonuses in compensation is one reason why pay tends to be quite responsive to business-cycle conditions. OECD (2009a) projects that compensation of employees in Japan will decline by 3.1% in 2009.
30. The cyclical component of total hours is extracted using a Hodrick-Prescott filter.
31. The results are generally very similar when employment is used instead of total hours worked. They are also robust to the way the cyclical component is extracted from the data.
32. Note that the ability to hoard labour during a recession may also depend on access to credit. As a result, credit-constrained firms may be more cyclical in terms of employment, but less so in terms of average hours.

33. Various technological factors and product market structure are also likely to affect industry cyclicality (Petersen and Strongin, 1996). Similarly, firm size may have important implications for the business-cycle sensitivity of labour demand, although there is no consensus about the nature of this relationship. Moscarini and Postel-Vinay (2009) provide evidence that employment in large firms responds more strongly to changes in the business cycle than employment in small firms (including within the same industry). This finding is interpreted as reflecting a negative association between firm size and the incentive to hoard labour: being more productive and paying higher wages, large firms can more easily attract qualified new workers when the economy recovers. By contrast, Gertler and Gilchrist (1994) and Sharpe (1994) find that small firms are more sensitive to changes in the business cycle. They argue that small firms are more responsive to (negative) shocks because they are more credit-constrained.
34. These estimates are based on annual data for Australia, Japan, Korea, the United States and 15 EU countries for the period 1970-2005. Annex 1.A4 in OECD (2009e) identifies the data sources and describes the estimation methodology in detail.
35. By contrast, construction accounted for more than 20% of total employment growth in Spain in the 2000-05 period and the sector accounted for about 12% of total employment in 2005, while the sector accounted for almost 30% of total employment growth over the period 2000-05 in Ireland.
36. While construction and durable manufacturing still have the highest percentage employment losses in the United States, services industries account for one-half of the overall decline in employment. Perhaps surprisingly considering the origins of the crisis in the financial sector, employment losses in the financial services sector have been only a little above-average.
37. Turnover costs have at least two other implications for the way labour markets adjust to the business cycle. First, turnover costs reduce hiring and firing responses to changes in business cycle. The labor hoarding induced by turnover costs may moderate the immediate impact of an economic downturn on employment, but these costs may also hamper the recovery by discouraging hiring. Second, turnover costs affect the margin of adjustment by increasing the use of the intensive margin (working time) at the expense of the extensive margin (employment), as is discussed below.
38. These estimates are based on annual data for between 11 and 15 (mostly) EU countries typically for periods stretching from the early 1980s to 2005. Annex 1.A4 in OECD (2009e) identifies the data sources and describes the estimation methodology in detail.
39. These findings are broadly consistent with OECD (2008a). Gielen and Van Ours (2009) further show that the cyclicality of employment of young individuals is mostly related to employment inflows (e.g. school-to-work transitions) and that for older workers mostly to outflows from employment (e.g. early retirement).
40. Jaimovich et al. (2009) find little evidence that seniority rules account for a substantial part of the variation in business-cycle volatility across age groups in the United States and emphasise, instead, differences in labour market experience.
41. The higher level of firm-specific capital for more educated workers is also likely to increase the importance of adjustment on the intensive margin relative to that on the extensive margin. Results reported in Annex 1.A4 of OECD, 2009e) do not reveal significant differences across skill groups when business-cycle sensitivity is defined in terms of employment instead of total hours.
42. A number of previous studies have looked at the role of specific dimensions of workforce composition for business-cycle volatility. For example, Jaimovich and Siu (2009) argue that changes in the age composition of the workforce substantially reduced aggregate business-cycle volatility during the past 25 years in all the G7 countries. Davis and Kahn (2008) show that long-term sectoral shifts in the United States contributed to the decline in aggregate volatility during the period of the "Great Moderation", but also that it was not the principal cause.
43. The estimated effect of age composition (8%) is considerably smaller than that found in previous work by Jaimovich and Siu (2009) who find that age composition accounts for 20% to 30% of the decline in aggregate business-cycle volatility in the G7. This discrepancy may result from aggregation bias (i.e. the fact that the analysis here only distinguishes three age categories, whereas Jaimovich and Siu use seven).
44. The impact of the trend increase in the female share of total employment on aggregate volatility is negligible, because average volatility does not differ by gender (cf. Figure 1.9).
45. Short-time work schemes are being used by a majority of OECD countries in the current downturn. They are analysed at greater length in Section 5 below.



46. The decomposition analysis reported here, as in most parts of this section, implicitly assumes that adjustment is symmetric over the business cycle and occurs instantaneously. The symmetry assumption may be particularly questionable for youth and older workers. For more details on data sources and estimation methods, see respectively Annexes 1.A3 and 1.A4 in OECD (2009e).
47. Abraham and Houseman (1994) and Van Audenrode (1994) show that employment adjusts more slowly in European countries than in the United States, even when they achieve comparable levels of adjustment in total hours via variation in average hours per worker. They attribute this difference to the generosity of short-time compensation systems in Europe which provide flexibility to employers in the context of relatively strict employment-protection regulations.
48. In the Netherlands, the relative importance of working-time changes is likely to reflect the high incidence of part-time work. In Greece and Italy, this may reflect the combination of strict EPL, particularly on temporary work, low unemployment benefits and a comparatively generous short-time compensation scheme.
49. The large role of labour force participation in cyclical adjustment for youth may reflect the impact of labour market conditions on school enrolment choices, as well as weak incentives to register as unemployed since relatively few youth qualify for unemployment benefits. A possible explanation for the very limited role of hours adjustment for youth remaining employed may be due to their low turnover costs. However, it should be noted that Jaimovich *et al.* (2009) provide a somewhat different picture for US youth. Their findings suggest that movements in and out the labour force are relatively unimportant in explaining cyclical changes in hours per capita of youth.
50. The present analysis draws heavily on previous work by Elsby, Hobijn and Sahin (2008) while extending their work in three directions: i) by considering a larger number of countries; ii) by distinguishing between different workforce groups; and iii) by considering the role of employment and social policies for unemployment dynamics. As in most other recent studies, the decomposition of unemployment changes into changes in the inflow and outflow rates reported here relies on the assumption that unemployment is in *steady-state* (i.e. constant for given in- and outflow rates) and that current unemployment is only affected by contemporary changes in the in- and outflow rates. Annex 1.A5 of OECD (2009e) provides details on the measurement of unemployment flows and the decomposition of unemployment changes due to changes in the inflow and the outflow rate which underlie the results presented here.
51. The cross-country pattern across workforce groups is relatively stable except for the group of older workers.
52. The relatively low variation of unemployment inflows for youth may reflect the relative importance of quits for this age group – which tend to be pro-cyclical and hence to offset the recessionary increase in layoffs – while the particularly steep decline in unemployment outflows for this group may reflect difficulties youth face in competing with more experienced jobseekers in a depressed labour market. However, it may also reflect a greater tendency for young job losers to withdraw from the labour force during recessions (cf. Figure 1.11), often to return to education.
53. Annex 1.A5 in OECD (2009e) shows that average unemployment inflows and outflows are several times higher for youth than for adults and unemployment spells considerably shorter. The relatively high mobility of youth in and out of employment does not necessarily represent a problem. It may instead reflect the process of labour market exploration undertaken by new labour market participants which contributes to long-run labour market efficiency by improving match quality.
54. Shimer (2007) extends the analysis by focusing explicitly on employment-to-unemployment transitions, but does not find that this makes a major difference to the relative importance of in- and outflows in explaining changes in unemployment in the United States. Petrongolo and Pissarides (2008) show that accounting for transitions into inactivity is somewhat more important in the United Kingdom and Spain, but that outflows continue to dominate.
55. Section 1 notes that there is also evidence that the shock amplification is greater in more flexible labour markets, suggesting that unemployment flows might react more strongly immediately following a cyclical shock. However, the correlations in Table 1.4 suggest that any such amplification effect is more than offset by diminished shock persistence (i.e. the fact that the labour market re-equilibrates more quickly). The results reported in Chapter 2 also suggest that countries with higher average job and worker turnover may reap a long-term productivity advantage by more efficiently reallocating workers from lower to higher productivity jobs.
56. ALMP spending is normalised for GDP per capita. Spending values are averaged over the sample period to avoid endogeneity bias which could otherwise arise because annual ALMP spending per

unemployed person varies strongly with unemployment, creating a problem of reverse causation. In order to address this problem, one ideally would like to use an instrument that is correlated with ALMP spending per unemployed but not with unemployment. As such an instrument is not readily available, the alternative of averaging ALMP spending over time is used. This makes it possible to obtain consistent estimates of how the impact of average ALMP spending on unemployment flows changes over the business cycle, but not of the direct impact of ALMP spending on unemployment dynamics. However, the latter is of secondary interest in the present context.

57. The regression models also include the output gap as a control for business cycle conditions. Its coefficients indicate that unemployment outflows are strongly pro-cyclical (i.e. unemployment duration rises in recessions), unemployment inflows are weekly pro-cyclic for women and prime-age workers but a-cyclical for other workforce groups, and the unemployment rate is strongly countercyclical.
58. Using micro data for Norway, Roed and Zhang (2003) provide evidence that the disincentive effect of unemployment benefits on the job-finding rate is stronger in slack than in tight labour markets.
59. Previous micro-econometric evidence on the impact of ALMPs over the business cycle is mixed. Roed and Raaum (2006) find that ALMPs become less effective in recessions in Norway, whereas McVicar and Podivinsky (2008) find that the New Deal for youth is more effective when unemployment is high in the United Kingdom.
60. Appelqvist (2007) presents similar findings in the context of Finland with wage losses amounting to almost 10% for workers displaced in recessions and no wage losses for worker displaced in economic booms. Ruf (2008) analyses the role of signaling effects for the earnings losses of displacement over the business cycle by distinguishing between collective and individual dismissals using data for Switzerland. He finds that the earnings losses of collective dismissals are larger in recessions than in booms, mainly because of differences in the job-finding probability, but that earnings losses of individual dismissals may be larger in booms than in recessions due to the stronger negative signaling effect associated with such layoffs in good times.
61. Hijzen *et al.* (2009) show that wage losses upon re-employment in the United Kingdom are increasing in the duration of the non-employment spell following displacement.
62. These spending amounts are adjusted for differences in national living standards by a multiplicative adjustment factor equalling the ratio of per capita GDP in the United States to per capita GDP in the country in question (when expressed in USD PPP).
63. The discussion of income support in Section 4 devotes substantial attention to social assistance benefits since they are an important source of income support for job losers who either do not qualify for UI benefits, qualify for only a low level of UI benefits or remain unemployed sufficiently long to exhaust their entitlement to UI benefits.
64. Disability benefits and many programmes to assist the disabled are not included in the OECD *Labour Market Programmes Database*. See Chapter 4 for a detailed analysis of disability benefits.
65. This minimum was calculated excluding Mexico which does not have an unemployment benefits system.
66. The strength of this automatic stabiliser effect varies across OECD countries, as can be seen by comparing the estimates for the three country groupings in Figure 1.15. Interestingly, labour market programme spending provides essentially the same amount of automatic stabilisation in the market-reliant countries, as in the other successful countries, even though baseline spending in the latter countries is three times higher. By contrast, automatic stabilisation is significantly weaker in other OECD countries, indeed, it is completely lacking in their spending on active measures.
67. Calmfors *et al.* (2001) analyse the very large expansion and contraction of ALMPs during the 1990s in Sweden.
68. Annex 1.A6 in OECD (2009e) provides fuller information on the underlying regression models used in both panels of Figure 1.16.
69. Since Section 2 provided some suggestive evidence that the effectiveness of training may increase in a recession, there may be a significant payoff to making training supply more responsive to cyclical increases in unemployment.

70. Iceland did not respond to the questionnaire. OECD (2009d) analyses the questionnaire responses in greater detail, whereas the discussion here is limited to evoking several broad tendencies.
71. As was noted above, in Korea, the “grand social compact” negotiated in February 2009 committed trade unions and employers to negotiate such arrangements.
72. Rather than reducing employer social security contributions, Sweden offers the novel possibility to firms with financial problems to defer tax and social-security contributions for a limited period of time subject to an interest-rate charge. The intention of this measure is to directly address the challenges presented by the credit crunch by providing some respite to financially-constrained firms in the hope that this will prevent temporary layoffs. Making use of loans rather than subsidies is not only attractive from a fiscal point of view, but also helps to ensure that only credit-constrained firms benefit from this facility.
73. Automatic stabilisers are discussed in Section 1 above. In most cases, the questionnaire responses concerning discretionary changes to unemployment benefits did not provide estimates of the impact on annual spending for passive measures.
74. This corresponds to spending over the three-year period which commenced on 1 July 2009 and is 32% higher than was initially budgeted, in part, due to higher expected unemployment.
75. The rationale for excluding general public works programmes and broad reductions in employer contributions from the statistics on labour market programmes is that these measures are not targeted on the unemployed or other vulnerable workforce groups. As a result, they are conventionally classified as general spending and tax measures which can be taken to increase aggregate labour demand in an economic downturn. As such they were included in the analysis of fiscal stimulus packages analysed in Section 1. Since these measures were partly reflected in the questionnaire responses, they are included to some extent in Figure 1.17 and the accompanying commentary, but they have been excluded from Figure 1.18.
76. OECD (2007a) provides a detailed account of institutional parameters, including eligibility and qualifying conditions, as well as benefit amounts and durations. Updates of this information, as well as a benefit calculator, are also available on the Internet at [www.oecd.org/els/social/workincentives](http://www.oecd.org/els/social/workincentives).
77. Net replacement rates are higher for families where there is a second earner and the earnings loss is therefore only partial (likewise, they can be lower in households where more than one person is affected by unemployment). In many countries, means-tested social assistance programmes provide a fall-back option for those with no, or very low, entitlements to unemployment benefits. Net replacement rates for those entitled to (and also receiving) such minimum-income benefits can therefore be higher. To focus attention on the scope of unemployment benefits, it is, however, useful to exclude social assistance benefits in a first step.
78. In Ireland and the United Kingdom, a non-means-tested and flat-rate insurance benefit is available during an initial period of unemployment. For a family with no other incomes, the amounts of the insurance and assistance benefits are similar, however.
79. Although trends are far from uniform across OECD countries, the share of temporary employment in EU15 countries has increased by about 20% during the past decade (to 14.8% in 2007). Temporary work accounts for more than 20% of total employment in Poland and Portugal, while almost every third employment contract in Spain is non-permanent. Outside of Europe, Japan has seen a particularly strong expansion of non-standard forms of employment.
80. Among OECD countries in 2007, initial employment or contribution requirements were strictest in the Slovak Republic (three years), Turkey (600 working days) and the United Kingdom (two years), followed by Belgium, Poland and Spain (468, 365 and 360 working days, respectively), as well as Austria, Denmark, Germany, Italy, Sweden and Switzerland (all 12 months). On the other end of the spectrum, prime-age workers in nine countries satisfy both contribution and employment requirements with 6 months of full-time work or less (Canada, France, Greece, Iceland, Japan, Korea, Netherlands, Norway, United States). There are no employment or contribution conditions for (means-tested) unemployment benefits in Australia and New Zealand. In addition to work-history requirements, benefit rules may however stipulate other conditions which may preclude access to unemployment insurance for part-time workers, even if they have long and relatively stable work records. For instance, in a number of US States, minimum requirements on previous earnings can make part-time low-paid workers ineligible for unemployment insurance.
81. When labour markets do not fully clear (that is, when there is significant involuntary unemployment), models of “imperfect” labour markets are useful for thinking about how social

and fiscal policies affect wages and unemployment. Models that account for some degree of wage rigidity (due, for instance, to the existence of strong unions) suggest that both replacement rates and tax burdens exert a positive influence on wage levels and this is confirmed by a number of empirical studies (Hersoug, 1984; Holmlund and Kolm, 1995, Lockwood and Manning, 1993; Sorensen, 1997). Moreover, the wage-moderating effect of lower replacement rates is stronger during periods of high unemployment (Graafland and Huizinga, 1999).

82. In some countries, these benefits are extended versions of existing programmes aiming at reducing recurring work-force adjustment costs in seasonal industries, such as tourism or construction. Similar benefits that are not restricted to seasonal industries may also be available, on a case-by-case basis, to workers in firms that are demonstrably subject to difficult business conditions or are undergoing restructuring processes on a significant scale (e.g., *Transferkurzarbeitergeld* in Germany).
83. Short-time working programmes are often referred to as “work-sharing.” While short-time working programmes represent a form of work-sharing, this chapter uses the term short-time working in order to avoid confusion with work-sharing policies that seek to increase the number of jobs available based on mandated or collectively-negotiated reductions in standard working hours. Such policies were implemented in some European countries in the past, notably in France, in an attempt to combat structural unemployment. However, as national norms on standard working hours cannot be changed easily, work-sharing of this kind is unlikely to be an effective instrument to counteract cyclical increases in unemployment. For more on work-sharing policies of this kind, see Boeri et al. (2008).
84. The short-term constraints faced by firms in financial difficulty may be such that they prefer not to participate in these schemes in order to avoid the immediate costs that they involve, even though partial unemployment benefits subsidise short-time working arrangements and may therefore be beneficial to the firm in the longer term.
85. Benefits available to any part-time worker satisfying the relevant contribution and job-search requirements are less common. The (voluntary) unemployment insurance in Denmark pays benefits to part-time employed individuals who have lost, and are looking for, full-time employment. This benefit is also available to part-time workers whose part-time contract is entirely separate from the former full-time contract (e.g., with a new employer).
86. Topoleski (2008) provides a current summary of programme features. Baicker and Rehavi (2004) consider programme history and effects on re-employment and wages.
87. For instance, eligibility to the UK Working Tax Credit is subject to a minimum working-hours criterion. Entitlements to the Belgian *Bonus de l’Emploi* are based on hourly wage rates rather than earnings. This has the advantage that it does not favour part-time jobs, especially for second earners.
88. As a redistribution device, in-work benefits are particularly attractive in countries where earnings inequality is high, but less effective when earnings are more equally distributed. See, e.g., Immervoll et al. (2007).
89. In fact, since in-work benefits strengthen the incentives for working in low-paid jobs, they can be expected to support outflows from unemployment during a subsequent recovery. An issue that governments should monitor carefully, however, is whether targeted in-work support gives rise to so-called “low-wage traps.” As in-work benefits are ordinarily phased out above a certain earnings level, this may reduce incentives for working more or for advancing on the wage ladder via investing in training. During a labour market downturn with large numbers of individuals experiencing *involuntary* earnings losses, the high marginal effective tax rates associated with this targeting mechanism cushion income losses, and therefore become somewhat of a virtue. But steep benefit phase-outs at relatively low earnings levels could delay earnings growth once the labour market starts picking up.
90. For instance, earlier calculations for the United States show that full benefit take-up would have reduced the number of persons in extreme poverty by 70% (Zedlewski et al., 2002). Note that the extreme poverty threshold used in this study is 50% of the US federal poverty line, which, in turn, is much lower than the relative poverty thresholds shown in Figure 1.20.
91. In the United States, the continued steep increase in Food Stamps (now SNAP, Supplemental Nutrition Assistance Program) reciprocity numbers to over 11 million (serving a population of over 30 million) has, in part, been attributed to organisational changes along these lines (a further explanation put forward is the tightening of requirements for other types of welfare programmes).

92. For instance, a number of studies indicate that so-called 'work-first' measures appear to be good at increasing employment and reducing benefit dependency but are often ineffective in lifting the individuals concerned and their families out of poverty on a sustainable basis (Moffitt, 2008; Bolvig *et al.*, 2003; Cancian *et al.*, 2003). In an economy with sufficient demand for low-skilled workers, work-focussed behavioural requirements for social-assistance recipients can boost *earnings and employment*. But because of more demanding benefit eligibility criteria and the resulting drop in beneficiary numbers, they may do little to increase average incomes. By contrast, work-support measures, such as childcare support or in-work benefits, have been shown to have a more modest effect on employment, even if they are well-designed. But they are relatively effective at boosting income levels and reducing in-work poverty. Overall, this evidence therefore suggests synergies between "work-first" and "work-support" measures.
93. It is likely that many training vendors who work, at least in part, for private firms will have excess capacity in a recession. It would, of course, need to be verified that their training curricula were suited to the needs of the unemployed. Another way that excess capacity in the private sector can be tapped by the public employment service is illustrated by the secondment of job coaches from Dutch temporary employment agencies to WERKplan (ABN, 2009).
94. Carrousel effects refer to a situation where long-duration recipients of unemployment benefits are able to re-qualify themselves for another period of benefit receipt by participating in an ALMP. This can lead some individuals to continue cycling between active and passive programmes, even after economic growth has resumed.
95. The labour market may be sufficiently segmented so that many of the jobs suitable for vulnerable groups are unlikely to be filled by more mainstream workers, even in a recessionary period when there are many jobseekers for each vacancy.
96. The argument for equity gains is often illustrated by contrasting the fairer option of all employees in a firm temporarily working half-time with the less equitable option of half of those workers being dismissed. However, more complex distributional effects are also likely to occur. For example, the availability of a STW subsidy may sharpen insider-outsider segmentation of the labour market since it is likely primarily to enhance the job security of already relatively secure insiders.
97. The main challenge facing evaluation studies of short-time work programmes is to overcome the problem of selection bias that arises due to the fact that participating firms tend to be in poorer financial health than other firms, which could be used as a control group. If the selection pattern is not appropriately addressed, it may be falsely concluded that short-time work subsidies result in lower job stability and employment. Berkeley Planning Associates and Mathematica Policy Research, Inc. (1997) provide a comprehensive assessment of short-time compensation programmes in the United States, while Calavrezo *et al.* (2009) evaluate the French system of *chômage partiel*.
98. The difference in duration between France's *chômage partiel* and Italy's CIG, for example, is likely to explain in part why the use of short-time work schemes to deal with structural change has been much more widespread in Italy than in France (Mosley and Kruppe, 1996).
99. In the past, the use of short-time work for training purposes was not very important (Mosley and Kruppe, 1996). In some countries, this was explicitly excluded in an effort to prevent short-time work being used to finance training needs. In others, this option was not used intensively due to practical problems related to the planning of courses and the scheduling of training for persons who are active employees.
100. The case for combining moderate levels of employment protection with a battery of passive and active labour market policies is two-fold. First, such a system supports productivity growth and rising living standards by facilitating the process of creative destruction which presupposes a constant flow of jobs and workers from less to more productive firms (Chapter 2). Second, experience has shown that "flexicurity" systems, based on such an institutional set-up, can provide at least as much employment and earnings security for workers as institutional set-ups that emphasise strict employment protection, even though the latter frequently offer considerable security to some part of the workforce (OECD, 2004).
101. While employment subsidies may, in principle, be directed to either employers or to employees, in the context of a recession, one would expect the initial employment response to be substantially larger when the subsidy is directly directed towards employers.
102. Analysing labour market returns to upper secondary comprehensive adult education, Stenberg and Westerlund (2008) find significant net benefits for the long-term unemployed in Sweden, albeit only after five to seven years have passed.

103. Stephane and Pahnke (2008) provides evidence that longer training programmes have a greater payoff in the long-run, a consideration that weighs more heavily in a period of labour market slack.
104. One exception is Lechner and Wunsch (2006) who present evidence that the lock-in effect is less negative in recessions in Germany. They also find that the estimated effects of training are more positive in the long-run, the higher the level of unemployment at the start of the training programme. However, this latter effect appears to be relatively small.
105. While job-finding rates fall particularly sharply for certain disadvantaged groups in a recession, it is too simplistic to characterise them as being at the back of a long queue of job applicants and hence having essentially no prospect of finding a job. The labour market is likely to be sufficiently segmented that a considerable number of job openings suitable for disadvantaged job losers are unlikely to be filled by jobseekers with better qualifications and more work experience, even in a deep recession.
106. Reaching this objective requires tailor-made approaches in different labour market contexts, and a strong partnership approach between business and the public sector. The OECD and its Programme on Local Economic and Employment Development (LEED) has developed guidelines on these important aspects of labour market policy, adopted by labour ministers in Venice in April 2008.
107. Ebbinghaus (2006) provides a detailed description of these initiatives and the protracted, difficult and only partly successful process of unwinding them. Rege *et al.* (2005) show that Norwegian workers displaced by plant closings were significantly more likely than their non-displaced counterparts to be receiving disability pensions a few years later.
108. As part of its fiscal consolidation efforts, Ireland has announced a limited early retirement scheme for certain civil and public servants ([www.budget.gov.ie/2009SupApril09/en/downloads/Annex%20D%20-%20Incentivised%20Scheme%20of%20Early%20Retirement%20in%20the%20Public%20Service.pdf](http://www.budget.gov.ie/2009SupApril09/en/downloads/Annex%20D%20-%20Incentivised%20Scheme%20of%20Early%20Retirement%20in%20the%20Public%20Service.pdf)).
109. The OECD is conducting a multi-year thematic review, *Jobs for Youth*, which involves in-depth assessments of youth labour market outcomes and policy priorities in 16 countries (see OECD, 2007b-e, 2008c-h and 2009c). The more recent and forthcoming country reviews contain detailed recommendations on how to tackle youth unemployment problems in the context of the current economic downturn.
110. These issues were discussed in detail at the OECD High-Level Policy Forum on Migration in Paris on 29-30 June 2009 (OECD, 2009h).

## Bibliography

- ABN – Algemene Bond Uitzendondernemingen (2009), “Examples of Collaboration Between the Temporary Employment Agency Industry and Public Organisations”, Fact Sheet, Lijnden.
- Abraham, K.G. and S.N. Houseman (1994), “Does Employment Protection Inhibit Labor Market Flexibility? Lessons from Germany”, in R. Blank (ed.), *Social Protection vs. Economic Flexibility: Is there a Trade-Off?*, University of Chicago Press, Chicago.
- Amable, B., L. Demmou and D. Gatti (2007), “Employment Performance and Institutions: New Answers to an Old Question”, IZA Discussion Paper, No. 2731, Bonn.
- Appelqvist, J. (2007), “Wage and Earnings Losses of Displaced Workers in Finland”, Valtion taloudellinen tutkimuskeskus, Government Institute for Economic Research, Helsinki.
- Baicker, K. and M.M. Rehavi (2004), “Policy Watch. Trade Adjustment Assistance”, *Journal of Economic Perspectives*, Vol. 18, No. 2, pp. 239-55.
- Ball, L. (2009), “Hysteresis in Unemployment: Old and New Evidence”, NBER Working Paper, No. 14818, Cambridge, Mass.
- Bargain, O., H. Immervoll and H. Viitamäki (2007), “How Tight are Safety Nets in Nordic Countries? Evidence from Finnish Register Data”, IZA Discussion Paper, No. 3004, Bonn.
- Bassanini, A. and R. Duval (2006), “Employment Patterns in OECD countries: Reassessing the role of policies and institutions”, OECD Economics Department Working Paper, No. 486, OECD Publishing, Paris.
- Bell, D.N.F. and D.G. Blanchflower (2009), “What Should Be Done about Rising Unemployment in the UK?”, IZA Discussion Paper, No. 4040, Bonn.

- Berger, H. and S. Danninger (2006), "The Employment Effects of Labor and Product Markets Deregulation and Their Implications for Structural Reform", CESifo Working Paper No. 1709, CESifo, Munich.
- Berkeley Planning Associates and Mathematica Policy Research, Inc. (1997), "Evaluation of Short-time Compensation Programmes", Final Report, US Department of Labor.
- Bils, M. (1991), "Testing for Contracting Effects on Employment", *Quarterly Journal of Economics*, Vol. 106, No. 4, pp. 1129-1156.
- 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. 1-33.
- Bloom, H., S. Schwartz, S. Lui-Gurr and S.-W. Lee (1999), *Testing a Re-employment Incentive for Displaced Workers: The Earnings Supplement Project*, Social Research and Demonstration Corporation (SRDC), Ottawa.
- Boeri, T., G. Nicoletti and S. Scarpetta (2000), "Regulation and Labour Market Performance", CEPR Discussion Paper, No. 2420, London.
- Boeri, T., M. Burda and F. Kramarz (2008), *Working Hours and Job Sharing in the EU and USA. Are Europeans Lazy? Or Americans Crazy?*, Oxford University Press, Oxford.
- Bolvig, I., P. Jensen and M. Rosholm (2003), "The Employment Effects of Active Social Policy", IZA Discussion Paper, No. 736, Bonn.
- Braun, M. and B. Larrain (2005), "Finance and the Business Cycle: International, Inter-industry Evidence", *Journal of Finance*, Vol. 60, No. 3, pp. 1097-1128.
- Brunello, G. (2009), "The Effect of Economic Downturns on Apprenticeships and Initial Workplace Training: A Review of the Evidence", Paper prepared for the Education and Training Policy Division of the OECD, Paris.
- Burgess, S. and H. Turon (2005), "Unemployment Dynamics in Britain", *Economic Journal*, Vol. 115, pp. 423-448.
- Calavrezo, O., R. Duhautois and E. Walkowiak (2009), "The Short-Time Compensation Program in France : An Efficient Measure against Redundancies?", CEE Working Paper, forthcoming, Noisy-Le-Grand.
- Calmfors, L., A. Forslund and M. Hemström (2001), "Does active labour market policy work? Lessons from the Swedish experiences", *Swedish Economic Policy Review*, Vol. 85, pp. 61-124.
- Cancian, M., R. Haveman, D.R. Meyer and B. Wolfe (2003), "The Employment, Earnings, and Income of Single Mothers in Wisconsin Who Left Cash Assistance: Comparisons among Three Cohorts", Institute for Research on Poverty, Special Report No. 85, Madison.
- Carcillo, S. and D. Grubb, D. (2006), "From Inactivity to Work: The Role of Active Labour Market Policies", OECD Social, Employment and Migration Working Paper, No. 36, OECD Publishing, Paris.
- Card, D., J. Kluge and A. Weber (2009), "Active Labor Market Policy Evaluations: A Meta-Analysis," IZA Discussion Paper, No. 4002, Bonn.
- CEA – Council of Economic Advisors (2009), "Estimates of Job Creation from the American Recovery and Reinvestment Act of 2009", mimeo, [www.whitehouse.gov/administration/eop/cea/Estimate-of-Job-Creation](http://www.whitehouse.gov/administration/eop/cea/Estimate-of-Job-Creation).
- Claessens, S., M.A. Kose and M.E. Terrones (2008), "What Happens During Recessions, Crunches and Busts?", IMF Working Paper, No. 08-274, Washington.
- Couch, K.A. and R. Fairlie (2008), "Last Hired, First Fired? Black-white Unemployment and the Business Cycle", IZA Discussion Paper, No. 3713, Bonn.
- Darby, M.R., J. Haltiwanger and M. Plant (1986), "The Ins and Outs of Unemployment: The Ins Win", NBER Working paper, No. 1997, Cambridge, Mass.
- Davis, S.J. and J.A. Kahn (2008), "Interpreting the Great Moderation: Changes in the Volatility of Economic Activity at the Macro and Micro Levels", NBER Working Paper, No. 14048, Cambridge, Mass.
- Davis, S.J., R.J. Faberman and J. Haltiwanger (2006), "The Flow Approach to Labor Markets: New Data Sources and Micro-Macro Links", *Journal of Economic Perspectives*, Vol. 20, No. 3, pp. 3-26.
- Duval, R, J. Elmeskov and L. Vogel (2007), "Structural Policies and Economic Resilience to Shocks", OECD Economics Department Working Paper No. 567, OECD Publishing, Paris.

- Ebbinghaus, B. (2006), *Reforming Early Retirement in Europe, Japan and the USA*, Oxford University Press, Oxford.
- Edlin, A. and E. Phelps (2009), "Getting Serious about Job Creation: Part I", *The Economists Voice*, Vol. 6, No. 5. Available at [www.bepress.com/ev/vol6/iss5/art3](http://www.bepress.com/ev/vol6/iss5/art3).
- Ellwood, D. (1982), "Teenage Unemployment: Permanent Scars or Temporary Blemishes?", in R.B. Freeman and D.A. Wise (eds.), *The Youth Labor Market Problem: Its Nature, Causes and Consequences*, University of Chicago Press, Chicago.
- Elsby, M., B. Hobijn and A. Sahin (2008), "Unemployment Dynamics in the OECD", NBER Working Paper, No. 14617, Cambridge, Mass.
- Elsby, M., R. Michaels and G. Solon (2008), "The Ins and Outs of Cyclical Unemployment", *American Economic Journal: Macroeconomics*, forthcoming.
- Evers, M., R. de Mooij and D. van Vuuren (2008), "The Wage Elasticity of Labour Supply: A Synthesis of Empirical Estimates", *De Economist*, Vol. 156, No. 1, pp. 25-43.
- Fay, J.A. and J.L. Medoff (1983), "Labor and Output Over the Business Cycle: Some Direct Evidence", *American Economic Review*, Vol. 75, No. 4, pp. 638-655.
- Fiori, G., G. Nicoletti, S. Scarpetta and F. Schiantarelli (2007), "Employment Outcomes and the Interaction Between Product and Labor Market Deregulation: Are They Substitutes or Complements?", IZA Discussion Paper, No. 2770, Bonn.
- Fujita, S. and G. Ramey (2006), "The Cyclicity of Job Loss and Hiring", Working Paper No. 06-17, Federal Reserve Bank of Philadelphia.
- Fujita, S. and G. Ramey (2009), "The Cyclicity of Separation and Job Finding Rates", *International Economic Review*, Vol. 50, No. 2, pp. 415-430.
- Fullerton, D. and G.E. Metcalf (2002), "Tax Incidence", in A. J. Auerbach and M. Feldstein (eds.), *Handbook of Public Economics*, Vol. 4, No. 4, Chapter 26, Elsevier, Ed. 1, pp. 1787-1872.
- Gertler, M. and S. Gilchrist (1994), "Monetary Policy, Business Cycles, and the Behaviour of Small Manufacturing Firms", *Quarterly Journal of Economics*, Vol. 109, No. 2, pp. 309-340.
- Gianella, C., I. Koske, E. Rusticelli and O. Chatal (2008), "What Drives the NAIRU? Evidence from a Panel of OECD Countries", OECD Economics Department Working Paper, No. 649, OECD Publishing, Paris.
- Gielen, A. and J.C. Van Ours (2009), "Age-specific Cyclical Effects in Job Turnover and Labor Mobility", *Labour Economics*, Vol. 13, No. 4, pp. 493-504.
- Girouard, N. and C. André (2005), "Measuring Cyclically-Adjusted Budget Balances for OECD Countries", OECD Economics Department Working Paper, No. 434, OECD Publishing, Paris.
- Graafland, J.J. and F.H. Huizinga (1999), Taxes and Benefits in a Non-linear Wage Equation, *De Economist*, Vol. 147, No. 1, pp. 39-54.
- Gregg, P. (2009), "Job Guarantee: Evidence and Design", mimeo, University of Bristol.
- Gregg, P. and R. Layard (2009), "A Job Guarantee," mimeo, Center for Economic Performance, London School of Economics. Available at [http://cep.lse.ac.uk/textonly/\\_new/staff/layard/pdf/001JGProposal-16-03-09.pdf](http://cep.lse.ac.uk/textonly/_new/staff/layard/pdf/001JGProposal-16-03-09.pdf).
- Griffith, R., R. Harrison and G. Macartney (2007), "Product Market Reforms, Labour Market Institutions and Unemployment", *The Economic Journal*, Vol. 117, No. 519, pp. C142-C166(1), March.
- Hernanz, V., F. Malherbet and M. Pellizzari (2004), "Take-up of Welfare Benefits in OECD Countries: A Review of the Evidence", OECD Social Employment and Migration Working Paper, No. 17, OECD Publishing, Paris.
- Hersoug, T. (1984), "Union Wage Responses to Tax Changes", *Oxford Economic Papers*, Vol. 36, pp. 37-51.
- Hijzen, A., P. Wright and R. Upward (2009), "The Wage and Earnings Losses of Displaced Workers", *Journal of Human Resources*, forthcoming.
- Holmlund, B. and A.S. Kolm (1995), "Progressive Taxation, Wage Setting and Unemployment – Theory and Swedish Evidence", *Tax Reform Evaluation Report*, Vol. 15.
- Immervoll, H. and M. Pearson (2009), "A Good Time for Making Work Pay? Taking Stock of In-work Benefits and Related Measures Across the OECD", OECD Social, Employment and Migration Working Paper, No. 81, OECD Publishing, Paris.



- Immervoll, H., H.J. Kleven, C.T. Kreiner and E. Saez (2007), "Welfare Reform in European Countries: A Micro-simulation Analysis", *Economic Journal*, Vol. 117, No. 517, pp. 1-44.
- International Monetary Fund (2008), *World Economic Outlook*, IMF, Washington.
- Jacobson, L., R. LaLonde and D. Sullivan (1993), "Earnings Losses of Displaced Workers", *American Economic Review*, Vol. 83, pp. 685-709.
- Jaimovich, N. and H. Siu (2009), "The Young, the Old, and the Restless: Demographics and Business Cycle Volatility", *American Economic Review*, Vol. 99, No. 3, pp. 804-826.
- Jaimovich, N., S. Pruitt and H. Siu (2009), "The Demand for Youth: Implications for the Hours Volatility Puzzle", NBER Working Paper, No. 14697, Cambridge, Mass.
- Katz, L. (1998), "Wage Subsidies for the Disadvantaged," in R. Freeman and P. Gottschalk (eds.), *Generating Jobs: How to Increase Demand for Less-Skilled Workers*, Russell Sage, pp. 21-53.
- Kluve, J. (2006), "The Effectiveness of European Active Labor Market Policy", IZA Discussion Paper, No. 2018, Bonn.
- Knabe, A., R. Schoeb and J. Weimann (2006), "Marginal Employment Subsidization: A New Concept and a Re-Appraisal", *Kyklos*, Vol. 59, No. 4, pp. 557-577.
- KOILAF – Korea International Labour Foundation (2009), *Korea Labor Review*, Vol. 5, No. 25, Seoul.
- Kuhn, P. (ed.) (2002), *Losing Work, Moving on: International Perspectives on Worker Displacement*, W.E. Upjohn Institute.
- Layard, R. (1986), *How to Beat Unemployment*, Oxford University Press, Oxford.
- Lechner, M. and C. Wunsch (2006), "Are Training Programs More Effective When Unemployment Is High?", Universität St. Gallen Discussion Paper No. 2006-23, Department of Economics.
- Lemieux, T. and W.B. MacLeod (2000), "Supply-Side Hysteresis: The Case of the Canadian Unemployment Insurance System", *Journal of Public Economics*, Vol. 78, pp. 139-170.
- Lindbeck, A. and D.J. Snower (1988), *The Insider-Outsider Theory of Employment and Unemployment*, The MIT Press, Cambridge, Mass.
- Lindbeck, A. and D.J. Snower (2001), "Insiders versus Outsiders", *Journal of Economic Perspectives*, Vol. 15, No. 1, pp. 165-188.
- Lockwood, B. and A. Manning (1993), "Wage Setting and the Tax System. Theory and Evidence for the United Kingdom", *Journal of Public Economics*, Vol. 52, pp. 1-29.
- Machin, S. and A. Manning (1999), "The Causes and Consequences of Long-term Unemployment in Europe", in O.C. Ashenfelter and D. Card (eds.), *Handbook of Labor Economics*, Vol. 3C, North Holland.
- 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.
- McVicar, D. and J.M. Podivinsky (2008), "Does the Impact of Active Labor Market Programmes Depend on the State of the Labour Market? The Case of the UK New Deal for Young People", Mimeo, Queen's University Belfast.
- Moffitt, R. (2008), "Welfare Reform: The US Experience", IFAU Working Paper No. 2008:13, Uppsala.
- Moscarini, G. and F. Postel-Vinay (2009), "Large Employers Are More Cyclically Sensitive", NBER Working Paper, No. 14740, Cambridge, Mass.
- Mosley, H. and T. Kruppe (1996), "Short-time Work in Structural Adjustment: European Experience", *European Journal of Industrial Relations*, Vol. 2, No. 2, pp. 131-151.
- Nicoletti, G. and S. Scarpetta (2005), "Product Market Reforms and Employment in OECD Countries", OECD Economics Department Working Paper, No. 472, OECD Publishing, Paris.
- OECD (1982), *Marginal Employment Subsidies*, OECD Publishing, Paris.
- OECD (2003), *OECD Employment Outlook*, OECD Publishing, Paris.
- OECD (2004), *OECD Employment Outlook*, OECD Publishing, Paris.
- OECD (2005), *OECD Employment Outlook*, OECD Publishing, Paris.
- OECD (2006a), *OECD Employment Outlook*, OECD Publishing, Paris.
- OECD (2006b), *Live Longer, Work Longer*, OECD Publishing, Paris.

- OECD (2007a), *Benefits and Wages*, OECD Publishing, Paris. See [www.oecd.org/els/social/workincentives](http://www.oecd.org/els/social/workincentives).
- OECD (2007b), *Jobs for Youth/Des Emplois pour les Jeunes: Spain*, OECD Publishing, Paris.
- OECD (2007c), *Jobs for Youth/Des Emplois pour les Jeunes: Slovak Republic*, OECD Publishing, Paris.
- OECD (2007d), *Jobs for Youth/Des Emplois pour les Jeunes: Belgique*, OECD Publishing, Paris.
- OECD (2007e), *Jobs for Youth/Des Emplois pour les Jeunes: Korea*, OECD Publishing, Paris.
- OECD (2008a), *OECD Employment Outlook*, OECD Publishing, Paris.
- OECD (2008b), *Growing Unequal?*, OECD Publishing, Paris.
- OECD (2008c), *Jobs for Youth/Des Emplois pour les Jeunes: Norway*, OECD Publishing, Paris.
- OECD (2008d), *Jobs for Youth/Des Emplois pour les Jeunes: Japan*, OECD Publishing, Paris.
- OECD (2008e), *Jobs for Youth/Des Emplois pour les Jeunes: the Netherlands*, OECD Publishing, Paris.
- OECD (2008f), *Jobs for Youth/Des Emplois pour les Jeunes: New Zealand*, OECD Publishing, Paris.
- OECD (2008g), *Jobs for Youth/Des Emplois pour les Jeunes: Canada*, OECD Publishing, Paris.
- OECD (2008h), *Jobs for Youth/Des Emplois pour les Jeunes: the United Kingdom*, OECD Publishing, Paris.
- OECD (2009a), *OECD Economic Outlook*, No. 85, OECD Publishing, Paris.
- OECD (2009b), *Interim Economic Outlook*, OECD Publishing, Paris.
- OECD (2009c), *Jobs for Youth/Des Emplois pour les Jeunes: United States*, OECD Publishing, Paris, forthcoming.
- OECD (2009d), "Addressing the Labour Market Challenges of the Economic Downturn: A Summary of Country Responses to the OECD-EC Questionnaire", OECD Publishing, Paris [**can add a web link eventually?**].
- OECD (2009e), "The Jobs Crisis: What are the implications for Employment and Social Policy – Further Material", OECD Publishing, Paris. Available online only at [www.oecd.org/els/employment/outlook](http://www.oecd.org/els/employment/outlook).
- OECD (2009f), *Flexible Policy for More and Better Jobs*, OECD Publishing, Paris.
- OECD (2009g), *International Migration Outlook, SOPEMI 2009*, OECD Publishing, Paris.
- OECD (2009h), "Migration, Employment and Integration: Towards Responsive, Effective and Fair Migration Policies", Issues for discussion prepared for the OECD High-level Forum on Migration, Paris, 29-30 June 2009. Available online at [www.oecd.org/dataoecd/38/9/43124357.pdf](http://www.oecd.org/dataoecd/38/9/43124357.pdf).
- OECD (2009i), "Sickness, Disability and Work: Keeping on Track in the Economic Downturn", Background paper for the OECD High-Level Forum on Disability, Stockholm, 14-15 May 2009. Available online at [www.oecd.org/dataoecd/42/15/42699911.pdf](http://www.oecd.org/dataoecd/42/15/42699911.pdf).
- Oreopoulos, P., T. von Wachter and A. Heisz (2006), "The Short- and Long-Term Career Effects of Graduating in a Recession: Hysteresis and Heterogeneity in the Market for College Graduates", NBER Working Paper, No. 12159, Cambridge, Mass.
- Petersen, B. and S. Strongin (1996), "Why Are Some Industries more Cyclical than Others?", *Journal of Business and Economic Statistics*, Vol. 14, No. 2, pp. 189-198.
- Petrongolo, B. and C. Pissarides, (2008), "The Ins and Outs of European Unemployment", *American Economic Review*, Vol. 98, pp. 256-262.
- Phelps, E.S. (1994), "Low-Wage Employment Subsidies versus the Welfare State", *American Economic Review*, Vol. 84, No. 2, pp. 54-58.
- Phelps, E.S. (1997), *Rewarding Work: How to Restore Participation and Self-Support to Free Enterprise*, Harvard University Press, Cambridge, Mass.
- Rege, M., K. Telle and M. Votruba (2005), "The Effect of Plant Downsizing on Disability Pension Utilization", Discussion Paper No. 435, Statistics Norway, Research Department.
- Reinhart, C. and K. Rogoff (2009), "The Aftermath of Financial Crises", NBER Working Paper, No. 14656, Cambridge, Mass.
- Røed, K. and O. Raaum (2006), "Do Labour Market Programmes Speed up the Return to Work?", *Oxford Bulletin of Economics and Statistics*, Vol. 68, No. 5, pp. 541-568.
- Røed, K. and T. Zang (2003), "Does Unemployment Compensation Affect Unemployment Duration?", *The Economic Journal*, Vol. 113, pp. 190-206, January.

- Ryan, P. (2001), "The School-to-Work Transition: A Cross-National Perspective", *Journal of Economic Literature*, Vol. 39, No. 1, pp. 34-92.
- Sharpe, S.A. (1994), "Financial Market Imperfections, Firm Leverage, and the Cyclicity of Employment", *American Economic Review*, Vol. 84, No. 4, pp. 1060-1074.
- Shimer, R. (2005), "The Cyclicity of Hires, Separations, and Job-to-Job Transitions", *Federal Reserve Bank of St. Louis Review*, Vol. 87, No. 4, pp. 493-507, July-August.
- Shimer, R. (2007), "Reassessing the Ins and Outs of Unemployment", NBER Working Paper, No. 13421, Cambridge, Mass.
- Sorensen, P.B. (1997), "Public Finance Solutions to the European Unemployment Problem?", *Economic Policy*, Vol. 25.
- Stenberg, A. and O. Westerlund (2008), "Does Comprehensive Education Work for the Long-term Unemployed?", *Labour Economics*, Vol. 15, pp. 54-67.
- Stephane, G. and A. Pahnke (2008), "The Relative Effectiveness of Selected Active Labour Market Programmes and the Common Support Problem", IZA Discussion Paper No. 3767, Bonn, October.
- Stock, J. and Watson, M. (2002), "Has the Business Cycle Changed and Why?", *NBER Macroeconomics Annual 2002*, MIT Press, Cambridge, Mass.
- Topoleski, J.J. (2008), "Trade Adjustment Assistance for Workers (TAA) and Alternative Trade Adjustment Assistance for Older Workers (ATAA)", CRS Report for Congress No. RS22718, Congressional Research Service, Washington, DC.
- Van Audenrode, M. (1994), "Short-time Compensation, Job Security and Employment Contracts: Evidence from Selected OECD Countries", *Journal of Political Economy*, Vol. 102, No. 1, pp. 76-102.
- Venn, D. (2009), "Legislation, Collective Bargaining and Enforcement: Updating the OECD Employment Protection Indicators", OECD Social, Employment and Migration Working Paper, No. 89, OECD Publishing, Paris, June.
- Zedlewski, S.R., S. Giannarelli, J. Morton and L. Wheaton (2002), "Extreme Poverty Rising, Existing Government Programmes Could Do More", *New Federalism*, Series B, No. B-45, April.



## Chapter 2

# How Do Industry, Firm and Worker Characteristics Shape Job and Worker Flows?

*In all OECD countries, many new firms are created every year. At the same time, many existing firms expand, while others contract or even shut down. In the process, many jobs are created and workers are hired; even as many positions are suppressed and workers separate from their employers. The chapter presents stylised facts on gross job flows (i.e. job creation and destruction by firms) and gross worker flows (i.e. hirings and separations) drawing from internationally harmonised data. A wide range of empirical questions are investigated, as a prerequisite for assessing the role of policies in shaping job and worker flows. How large is the reallocation of jobs and workers? Which are the firms that create and destroy the most jobs? In which industries are hiring and dismissal rates largest? Who changes jobs most often? Are labour resources reallocated from the least to the most efficient firms? To address these questions, the chapter goes beyond aggregate data on job and worker flows by analysing industry-level and micro-data. Moreover, by stressing cross-country differences in labour flow patterns, the chapter underlines the potential role for country-specific policies and institutions.*

## Introduction

Market-based economies are characterised by a continuous reallocation of labour and other productive resources across firms and workers. New firms are created; existing firms expand, contract or shut down. A number of firms do not survive their first few years in the market, while other successful businesses develop rapidly (*e.g.* OECD, 2003a; and Bartelsman *et al.*, 2005). In the process, large numbers of jobs are created and destroyed. Some workers are hired to fill new positions and others to replace previous employees who have left existing jobs. Simultaneously, other workers are dismissed, either because of post suppressions or because their employers decide to replace them with different workers. Moreover, some workers quit their jobs, often because they have found a different job that better matches their skills and needs.

This continuous process of labour reallocation is largely driven by market forces, which create better business opportunities and destroy inefficient production activities. Indeed a growing body of evidence suggests that the firm entry and exit process, as well as the reallocation of resources from declining to expanding businesses, contributes significantly to productivity and output growth (*e.g.* Griliches and Regev, 1995; Foster *et al.*, 2001; and Bartelsman *et al.*, 2009). From the perspective of workers, labour reallocation is also a process through which better job opportunities are created and seized (*e.g.* Postel-Vinay and Robin, 2002; Connolly and Gottschalk, 2004; and Contini and Villosio, 2007). Continuous reallocation is therefore one of the engines of economic growth and welfare enhancement.

Notwithstanding these benefits, however, labour mobility involves costs. Opening and filling new vacancies is costly for firms. Searching for, and switching to, new jobs is also costly for workers, particularly when it was not their choice to separate from their previous job (*e.g.* OECD, 2003b, 2005). Other, less direct costs can be associated with mobility: for example, high quit rates might discourage the accumulation of firm-specific human capital and destroy stocks of corporate common competences. But these costs can be counterbalanced by additional benefits. From the perspective of firms, new recruits bring new skills that enlarge the firm's knowledge base and facilitate the adoption of new technologies. Similarly, the opportunities to change employers create incentives for workers to invest in general human capital. Nevertheless, the costs and benefits of mobility are not uniformly distributed across workers and labour reallocation has important distributional consequences.

Understanding how these flows are affected by policies and institutions, and assessing their consequences for economic performance are key questions for policy makers. However, the knowledge base for addressing these questions is still insufficient. With few specific exceptions (notably Haltiwanger *et al.*, 2006, on job flows), cross-country comparative evidence relies on the comparison of findings of national studies based on data constructed using different definitions and sources. In particular, there is essentially no study that simultaneously analyse internationally harmonised data on both job and worker flows for a large number of countries. As a necessary preliminary step to policy

analysis, this chapter focuses on collecting harmonised data on these flows and using these data to tease out a number of stylised facts concerning the process of labour reallocation in OECD countries.

How large is the reallocation of jobs and workers? Which are the firms that create and destroy more jobs? In which industry are dismissal rates larger? Which workers change jobs most often? Are labour resources reallocated from the least to the most efficient firms? These are some of the empirical questions that this chapter addresses. In order to do so, the chapter goes beyond aggregate data on job and worker flows by analysing disaggregated and micro-data along a number of different dimensions. Moreover, by stressing cross-country differences in labour flow patterns, the chapter underlines the potential role for country-specific policies and institutions. A more detailed analysis of the effects of specific policies and institutions as well as of the economic and welfare consequences of labour mobility is beyond the scope of the present chapter and is left for future editions of the *OECD Employment Outlook*.<sup>1</sup>

The chapter presents internationally harmonised measures of gross job flows (i.e. job creation and destruction by firms) and gross worker flows (i.e. hirings and separations). The analysis of both types of labour flows is insightful: job flows essentially reflect reallocation driven by labour demand (the expansion and contraction of employment by firms). By contrast, worker flows are the result of a mix of demand, supply and purely matching factors, which depend on both firm and worker characteristics. The chapter is therefore organised as follows. Section 1 examines the distribution of job and worker flows at the industry level, emphasizing similarities across countries and underscoring cross-country differences. Section 2 investigates the role of firm characteristics in determining job creation and destruction and highlights how country specificities shape these patterns. Section 3 looks at the impact of selected workers' characteristics on worker flows. Some concluding remarks are provided in the last section.

## Main findings

- In OECD countries, labour reallocation is large and exceeds substantially net employment changes, even at the industry level. Each year, more than 20% of jobs, on average, are created and/or destroyed, and around one-third of all workers are hired and/or separate from their employer. Labour reallocation across industries and net employment growth account for less than one fifth of these flows, implying that most labour reallocation occurs within industries.
- The use of new, internationally harmonised data, however, allows establishing that *job and worker flows are remarkably different across countries*: in countries such as the United States or the United Kingdom, annual job and worker reallocation are as large as 25% and 45%, respectively, of dependent employment. By contrast, in a number of continental European countries, less than 15% of jobs are created and/or destroyed and about 25% of all workers are hired or separate from their employer in a given year.
- Labour reallocation is greater in countries with relatively lax dismissal regulations and in countries with a high share of temporary workers. More generally, national differences in the regulation and the prevalence of fixed-term employment contracts or informal employment relationships appear to be closely associated with cross-country differences in job and worker reallocation rates.

- Despite the fact that worker reallocation is much larger than job reallocation, cross-country differences in hirings and separations are essentially due to cross-country differences in job creation and destruction, suggesting that *policies and institutions affecting firm employment growth patterns are key determinants of overall worker mobility.*
- *Job and worker flows are driven by a continuous process of labour reallocation and not necessarily by net employment growth.* Hirings and separations, as well as job creation and job destruction appear to be closely correlated across countries: in a given year, countries that create more jobs and where hirings are more frequent also destroy more jobs and workers quit or are dismissed more often.
- *Job and worker reallocation appear to be larger in expanding industries.* Job and worker flows vary significantly across industries, but cross-industry distributions are similar across countries. Job and worker flows tend to be larger in service industries than in manufacturing, although a few service industries are characterised by low labour turnover. Job destruction and quits vary somewhat less across industries than do job creation, hiring and dismissals, which appear to be particularly affected by cross-industry differences in the global evolution of product demand and industry life cycles.
- *Less productive firms appear to destroy more jobs and more productive firms to create more jobs,* in essentially all countries for which data are available. Therefore, from an accounting perspective, labour reallocation appears to positively contribute to productivity growth. In particular, the extent of the staff contraction in downsizing firms appears to be strongly negatively correlated with the firm's pre-contraction efficiency level. Labour and capital adjustments also appear to go hand-in-hand: employment growth (or firm expansion) tends to be larger in firms that are investing in new capital equipment.
- Which firms create or destroy more jobs? The process of *firm churning* through which newly created firms replace older and obsolete firms *accounts for roughly one-third of total job reallocation.* The remaining two-thirds is due to the process of expansion of successful incumbents at the expenses of inefficient, contracting firms. In particular, young firms create more jobs while older firms destroy more jobs, even if there is much cross-country heterogeneity in the relationship between firm age and job destruction: reallocation from older to younger firms is substantial in countries such as Japan, the United Kingdom or the United States; by contrast, downsizing is not related with firm age in France and Italy.
- Not surprisingly, *younger workers are the most mobile, but age profiles of worker flows appear to be affected by country-specific characteristics.* While hiring rates tend to decline with age in all countries, younger prime-age workers have much larger separation rates than their older counterparts in countries with relatively high mobility rates (such as Denmark and the United States) or in countries with a significantly larger share of youth in temporary contracts (such as France and Finland). Worker reallocation is also more important at the extremes of the skill distribution, likely reflecting structural changes in the demand for skills.

### 1. Job and worker flows in the business sector: How do they vary across countries and industries?

#### *Reallocation of jobs across industries is large...*

Since the mid-1990s, total employment of OECD economies has grown on average by about one half of a percentage point per year (see Chapter 1). But the employment growth



of industries has been uneven. Certain industries, notably in manufacturing, have tended to contract in most countries, while others (typically services) have expanded steadily, giving rise to a substantial reallocation of labour resources across industries. This continuous process of structural adjustment of OECD economies has been widely investigated in the economic literature, including OECD work (e.g. OECD, 2000, 2001, 2003a, 2006, 2007). When the business sector is decomposed into about 20 industries,<sup>2</sup> for example, the absolute net rate of industry employment change, be it positive or negative, was on average about 4% per year, depending on the period and countries considered.<sup>3</sup> As the corresponding average growth in the business sector was about 1 percentage point, this suggests that each year, on average, about 3% of jobs are destroyed in some industries, while an equal number of jobs are created in others. In other words, reallocation of labour resources across industries is three times as large as net aggregate employment growth.

Net employment changes at the industry level, however, hide much greater churning at the firm level. This section looks at the distribution across industries and countries of job reallocation – that is job creation and destruction by firms – and worker reallocation – hiring and separations of workers (see Box 2.1 for detailed definitions). For this purpose, internationally harmonised datasets on job and worker flows are used. Data on job flows by country and industries are from Haltiwanger *et al.* (2006) and Bartelsman (2008). Data from these two sources are constructed using the same protocol from either business registers or tax files and are therefore comparable (see also Bartelsman *et al.*, 2009) and refer to firms as units of observation.<sup>4</sup> Data on worker flows are derived from employment and job tenure figures obtained from individual micro-data available in national Labour Force Surveys. As the industry-level information of labour force survey data can be imprecise, these data are further harmonised on the basis of industry-level EU KLEMS employment data when possible,<sup>5</sup> in order to ensure comparability over time at the industry level (see Annex 2.A1 for more details). Hirings are directly derived from job tenure data (see Box 2.1), while separations are obtained as difference between hirings and employment growth. One important limitation of the data collected for this chapter is that job and worker flows are not always available for the same countries and years. As a consequence, these data are more suitable for comparisons of job flows and/or worker flows across countries than of flows within countries. Nevertheless, by and large, this section shows that the picture that emerges by comparing job flows across countries is similar to that obtained by the comparison of worker flows across countries. Therefore, job and worker flows are treated together in this section, in order to highlight the generality of the statements that are made.

### **1.1. Job and worker flows at the industry level**

*... but the turnover of jobs and workers within industries is much larger.*

On average, for the eleven countries for which comparable data for recent years are available,<sup>6</sup> average annual gross job reallocation – see Box 2.1, and Annex 2.A1 for data construction and sources – was about 22% of dependent employment in the business sector between 1997 and 2004 (Figure 2.1).<sup>7</sup> Of this, industry-level excess job reallocation – the difference between gross job reallocation and the absolute value of net employment growth of the industry – was on average about 18% of dependent employment, suggesting that about 9% of all jobs were destroyed in some firms but were offset by an equal number of jobs created in other firms within the same industry every year.<sup>8</sup> From an accounting perspective, this is almost three times as much as the number of jobs that were, on average, created or destroyed in each industry due to net employment growth and

### Box 2.1. Definitions and accounting identities

At the level of an individual production unit (the firm in this chapter), *gross job reallocation* (also commonly called gross job turnover, see for example Davis and Haltiwanger, 1992, 1999; Davis *et al.*, 1996; and OECD, 1996), is simply the absolute value of the net change in employment between two points in time. In this terminology, *job creation*, at the level of the individual firm, is equal to the net employment change, if the latter is positive, and zero otherwise. Conversely, *job destruction*, is equal to the absolute value of the net change, if the latter is negative, and zero otherwise. Job reallocation, job creation and job destruction are commonly called *gross job flows*, in order to differentiate them from the more familiar measures of net employment growth. Net and gross job flows coincide at the level of a single firm, but that is no longer the case when groups of firms are considered. For ease of style, the chapter often omits the qualifier “gross” when the context makes it clear that the flows being discussed are gross flows. Gross flows are defined so as to be non-negative. They are also defined so as to exclude job vacancies which remain unfilled or jobs that begin and end within the interval of observation (a year in this chapter). As employment is subject to short-term fluctuations (due for example to seasonal activity, temporary fluctuations in product demand or difficulties in filling vacancies after quits), the period of time over which these flows are measured is key. For example, the annual rates of job creation and destruction analysed in this chapter will tend to be smaller than the sum of flows that can be calculated at a higher frequency during the same year (*e.g.* the sum of quarterly flows for all the four quarters of a given year).

*Gross worker flows* reflect movements of workers into jobs (*hirings*) and out of jobs (*separations*) over a specified period of time. Because of data availability, this chapter adopts the definition of worker reallocation used by Davis and Haltiwanger (1999), which is based on the comparison of worker statuses at two different points in time. In this chapter, therefore, hirings are defined as the number of workers who are with the firm at time  $t$ , but were not with that employer at time  $t-1$ , and separations as the number of workers who were with the firm at  $t-1$ , but not at  $t$ . The following hypothetical example can illustrate the definitions of job and worker reallocation. Suppose a given firm has 95 employees at year  $t-1$  and 105 at  $t$ . During this period, ten people were hired to fill newly created posts. Suppose also that five other workers left the firm and were replaced by new recruits, another five workers were temporarily laid-off but re-called during the period and yet another five people were hired on fixed-term contracts that expired during the period and were not renewed. Job reallocation at the level of this firm (*i.e.* the absolute value of the net change in employment, as defined above) is equal to ten. By contrast, worker reallocation would be equal to twenty according to the definition adopted for this chapter (note, however, that other definitions would lead to different numbers, see *e.g.* Davis *et al.*, 2006).

At a greater level of aggregation (*e.g.* a group of firms with given characteristics, the industry, or the whole economy), job reallocation, job creation and job destruction can be obtained by simply adding up their values over all of the firms in the group being considered. Put it another way, job creation is the sum of employment growth at all entering and expanding firms, while job destruction is the total number of jobs lost at exiting and contracting firms. Note too that net employment growth for the group is simply the difference between job creation and job destruction, while job reallocation can also be calculated at the group level as the sum of job creation and destruction. Finally, it is useful to define *excess job reallocation* as the difference between total job reallocation and the absolute net change in total employment. This difference provides a measure of simultaneous and off-setting job creation and job destruction by different firms belonging to the same group. Excess reallocation thus represents the reallocation of labour resources between firms within the same group whereas the group's absolute net employment change provides a measure of reallocation across different groups of firms (*e.g.* different industries).

Worker flows are aggregated in an analogous manner, that is, by summing hirings and separations over all members of the specified group. As with job flows, for any group of job matches involving individuals with the same characteristics (*e.g.* a particular age or employed in a particular industry), *excess worker reallocation* can be defined as the difference between worker reallocation and the group's absolute net change in employment. This provides a useful measure of the number of job matches that are created and destroyed, over and above the minimum necessary to accommodate net employment growth. Excess worker reallocation, thus, reflects the reshuffling of workers and jobs within the same group.

### Box 2.1. Definitions and accounting identities (cont.)

At the industry or economy-wide level, it is in principle possible to compare job and worker flows: while absolute net employment growth and excess job reallocation represent the reallocation of labour resources across industries and between firms of the same industry, respectively, the difference between excess worker and job reallocation represents labour reallocation arising from firms churning workers through continuing jobs or employees quitting and being replaced on those jobs. These will be called *churning flows* hereafter, following Burgess *et al.* (2000). Albaek and Sorensen (1998) call their components *replacement hirings and separations*.

To summarise, at any level of aggregation, the following identities can be written:

- Net employment growth = difference between job creation and job destruction between time  $t-1$  and  $t$  = difference between hirings and separations between  $t-1$  and  $t$ .
- Total job reallocation = sum of job creation and job destruction between  $t-1$  and  $t$ .
- Total worker reallocation = sum of hirings and separations between  $t-1$  and  $t$ .
- Excess job reallocation = total job reallocation – abs(net employment growth).
- Excess worker reallocation = total worker reallocation – abs(net employment growth).
- Churning flows = excess worker reallocation – excess job reallocation.

Finally, consistent with the literature (see *e.g.* Davis and Haltiwanger, 1999), all labour market flow measures from  $t-1$  to  $t$  are expressed here as rates and are calculated by dividing the flow totals by the average of employment in  $t-1$  and  $t$ . In the hypothetical example above, the job reallocation rate is 10%, while the worker reallocation rate is 20%, in the definition adopted for this chapter (one-year transitions), and the churning rate is 10%.

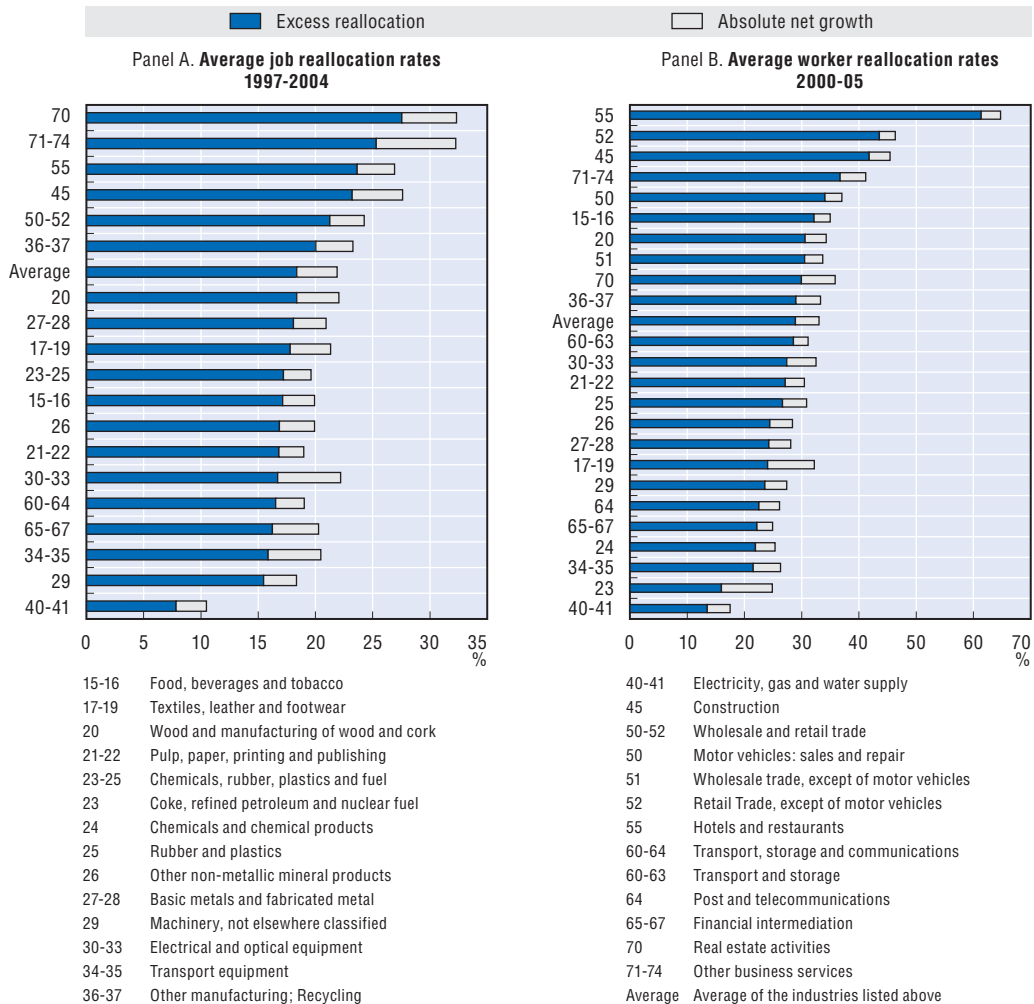
reallocation of labour resources across industries. Similar findings are reported by Haltiwanger *et al.* (2006), the only cross-country comparative study in the literature based on internationally harmonised data on job flows.

The turnover of workers is even greater than that of jobs. For the purpose of this chapter, internationally harmonised data on worker flows were constructed for 22 countries<sup>9</sup> (see above). From these data, it appears that annual worker reallocation (*i.e.* the sum of hirings and separations) averaged across industries, was about 33% of dependent employment during 2000-05 (Figure 2.1, Panel B). Of this, industry-level excess worker reallocation (*i.e.* the difference between total worker reallocation in each industry and the absolute value of industry-level net employment growth) was about 30% of dependent employment. This implies that, each year, on average about 15% of all job matches were destroyed but were offset by new matches with other firms and/or with other workers within the same industry.

Job and worker flows presented in Figure 2.1 cannot be directly compared since they refer to different countries and years. An additional reason for caution is that the two sets of flow estimates are based on different data sources: job flows are aggregated from firm-level data, whereas worker flows are obtained from labour force surveys (see Annex 2.A1). Nevertheless, by comparing job and worker flows for the same countries and industries and a limited number of years, one can obtain a rough measure of the degree of labour reallocation which is in excess of that required to accommodate gross job flows and, hence, arises from employers churning workers or workers quitting and being replaced without any change in the total employment of the firm (so-called “churning flows”, see Box 2.1). Internationally harmonised data on both job and worker flows have never been exploited so

Figure 2.1. **Job and worker reallocation rates vary by industry**

Average job and worker reallocation by industry, average percentage rates



Note: ISIC Rev. 3 codes for industries. Industries are ordered by excess job reallocation (Panel A) and excess worker reallocation (Panel B). Panel A based on data for: Brazil: 1998-2000; Estonia: 2003; Germany: 1997-98; Finland: 1997; Hungary: 1998-2000; Portugal: 1997; Mexico: 2000; Slovenia: 2002-03; Sweden: 1997-2003; United Kingdom: 1997-98; United States: 2001-04. Panel B based on data for: Czech Republic: 2002-05; Ireland: 2000-03; Norway: 2000-04; Poland: 2004-05; Slovak Republic: 2003-05; Switzerland: 2002-07; Turkey: 2007; United States, 2000, 2002 and 2004; other countries: 2000-05.

Source: OECD estimations. See Annex 2.A1.

StatLink <http://dx.doi.org/10.1787/706373850158>

far to investigate this issue. This chapter contributes to filling this gap by analysing such data for eight countries between 1997 and 2004 (Box 2.2).<sup>10</sup> It appears that, in each industry, on average, about one third of all hirings and separations (amounting to about 11% of dependent employment) can be attributed to the reallocation of workers within continuing jobs.

Gross job and worker flows appear to vary dramatically across industries (Figure 2.1). Excess job reallocation is as high as 28% in real estate services, possibly due to fluctuations in housing demand and the small size of firms in this industry and as low as 8% in the electricity, gas and water supply industry (likely due to the large and stable market share of big corporations in this industry). Put another way, between 4% and 14% of jobs, on average, are destroyed each year, while being offset by job creation at other firms in the

### Box 2.2. Comparing worker and job flows: Churning flows

Several country-specific studies, covering several market economies, compare job and worker flows using data from the same firm-level source (see among others Hamermesh *et al.*, 1996; Albaek and Sorensen, 1998; Abowd *et al.*, 1999; Burgess *et al.*, 2000; Hohti, 2000; Arai and Heyman, 2000; Haltiwanger and Vodopivec, 2002, 2003; Ilmakunnas and Maliranta, 2003; Golan *et al.*, 2006; Davis *et al.*, 2006; and Corseuil, 2008). These country studies find substantial churning flows – that is, large worker flows in excess of job flows (see Box 2.1). However, it is difficult to establish the extent to which the results of these studies can be compared across countries due to cross-country differences in definitions and survey structures. By contrast, job-flow data used for this chapter are comparable across countries insofar as they are aggregated from firm-level data based on the same protocol (see Annex 2.A1). The same occurs for worker-flow data, insofar as they are constructed from similar questions in labour force surveys. Therefore, with some caution, by comparing worker and job flows for the same countries, industries and years, it is possible to obtain a measure of churning flows that is roughly comparable across countries and industries.

How reliable are the figures obtained in this way? Estimates from Davis *et al.* (2006) can provide a good benchmark, insofar as they use data from the same enterprise survey and a definition of worker flows similar to that used in this chapter (except for being quarterly). They find that churning flows represented on average 46% of total worker flows in ten US states between 1998 and 2002. According to the data used in this chapter, aggregate US churning flows amounted to 33% of total US worker flows between 2002 and 2004. These two estimates do not appear too different when one takes into account the fact that the ratio of worker to job flows is likely to be larger in quarterly data and that worker flows can be seriously overestimated in enterprise surveys due to transcription and coding errors (by up to 15% in the United States, see Abowd and Vilhuber, 2005; Benedetto *et al.*, 2007). Nevertheless, the figures presented below must be taken with great caution, since they are based on data for only one or two years in the case of many countries.

The first figure below shows a decomposition of the worker reallocation rate into absolute net growth, excess job reallocation and churning rates. On average, 35% of total worker flows are due to churning, compared with 54% due to excess job reallocation and the remaining 11% due to net employment changes at the industry level. Workers employed in hotels and restaurants appear to experience by far the largest mobility due to a large proportion of churning flows (56% of total hirings and separations). Large churning flows appear also at the root of large total worker flows in construction, food processing, and trade. By contrast, in other manufacturing, real estate and other professional services, large total flows appear to be mainly due to large job flows. In fact, they appear at the bottom end of the distribution of the ratio of churning flows to total flows, where less than one-third of total flows stems from firms churning workers or employees quitting and being replaced. Interestingly, all low-mobility industries – mainly manufacturing – where average excess worker reallocation amounts to less than 25% of dependent employment can be found in this group.

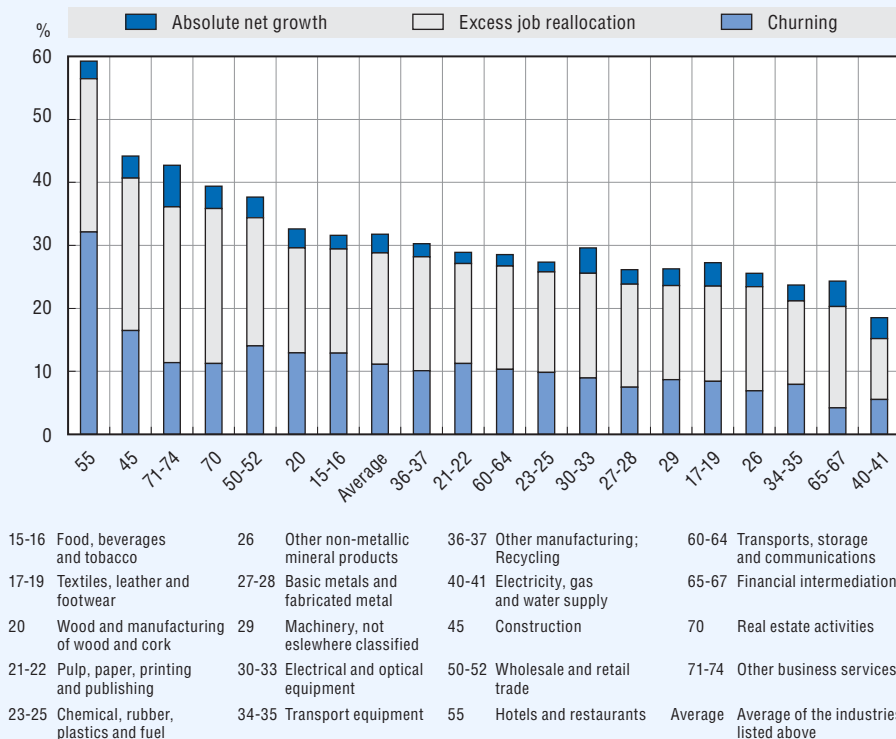
Do churning flows differ across countries? The second figure below presents an estimate of churning rates adjusted by industry composition – that is, the average churning flows that would be observed if each country had the same industrial structure as the average country – for the eight countries for which it can be computed. With the exception of Hungary, where churning flows amount to only 5.2% of dependent employment, average churning rates appear to vary little across countries, ranging from 12% to 16.8%. The little cross-country variation is also confirmed by a simple analysis of variance. While the industry dimension appears to account for 40% of total cross-country/cross-industry variance in churning rates, less than 8% of this variance appears to be explained by the country dimension. As a matter of comparison, the proportion of the total variation in job flows accounted for by the country dimension is more than four times as large, while the proportion explained by the cross-industry variation is similar.

Finally, and not surprisingly, job and worker flows are on average strongly correlated across countries. However, a simple regression of total worker reallocation on total job reallocation (including a constant) gives a coefficient of 0.98, insignificantly different from unity. In other words, a 1-percentage-point increase in job reallocation is associated with an equal increase of worker reallocation, with no increase in churning. This appears consistent with findings of Burgess *et al.* (2001) and Davis *et al.* (2006) who show that, at the firm level, average churning flows in the United States appear to be independent of job flows: firms' staff increases are obtained by increasing hiring without reducing separations and, *vice versa*, for staff contractions.

**Box 2.2. Comparing worker and job flows: Churning flows (cont.)**

**Decomposition of total worker reallocation in the non-farm business sector, 1997-2004**

Average industry rates, in percentage



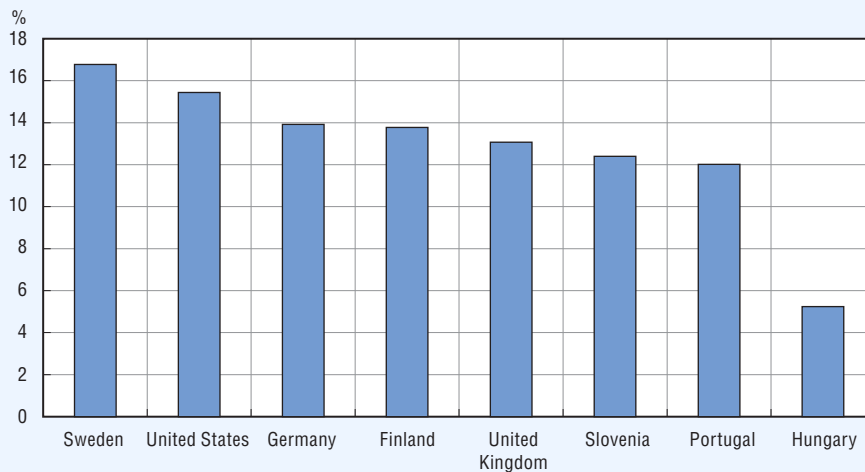
Note: Industries are ordered by excess worker reallocation. Based on: Germany: 1997-98; Finland: 1997; Hungary: 1998-2000; Portugal: 1997; Slovenia: 2002-03; Sweden: 1997-2003; United Kingdom: 1997-98; United States: 2002 and 2004.

Source: OECD estimations. See Annex 2.A1.

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**Adjusted churning rates, 1997-2004**

Average rates adjusted for industry composition, by country, in percentage



Note: The churning rate is equal to the number of hires and separations due to firms churning workers or employees quitting and being replaced as a percentage of total employment. Germany: 1997-98; Finland: 1997; Hungary: 1998-2000; Portugal: 1997; Slovenia: 2002-03; Sweden: 1997-2003; United Kingdom: 1997-98; United States: 2002 and 2004.

Source: OECD estimations. See Annex 2.A1.

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same industry. Similarly, excess worker reallocation varies on average between almost 62% in the hotels and restaurants industry (suggesting that more than 30% of job matches are destroyed and replaced in this industry each year)<sup>11</sup> and 14% in the electricity, gas and water supply industry.

### ***The distribution of job and worker flows is similar across countries...***

Industry distributions of job and worker reallocation rates appear also strongly correlated across countries. For all of them, the distribution of worker reallocation rates is significantly correlated with the average distribution presented in Figure 2.1 and, in all but four countries, the correlation coefficient is above 0.8.<sup>12</sup> Similar correlations are found for gross job flows, with the sole exception of the United Kingdom, consistent with previous findings in the literature (*e.g.* Micco and Pages, 2006; and Haltiwanger *et al.*, 2006). This suggests that industry-specific technological, organisational and demand characteristics, which do not vary much across countries, have a strong influence on the intensity of job and worker reallocation.

### ***... but there are strong cross-country differences in the overall level of job and worker reallocation...***

Does the cross-country similarity of job and worker flow distributions mean that country-specific policies can have only second-order effects on gross job and worker flows? This conclusion would be hasty. First, industry composition is endogenous, and possibly related to policies and institutions. Second, while industry distributions appear to be correlated, the overall level of reallocation flows does vary across countries. A simple analysis of variance shows that between 30% and 40% of the cross-country/cross-industry variation in job and worker reallocation rates is explained by their cross-country variation (Table 2.1). The finding that there is a significant country effect shaping both gross job and


**Table 2.1. Both country and industry characteristics appear to influence job and worker reallocation rates**

Analysis of variance of cross-country/cross-industry data on labour flows

	Country	Industry	Model
<b>Job flows</b>			
Gross job reallocation	38.0	40.1	72.5
	<i>20.83 (10)</i>	<i>12.20 (18)</i>	<i>14.19 (28)</i>
Excess job reallocation	39.0	39.4	72.4
	<i>21.33 (10)</i>	<i>11.98 (18)</i>	<i>14.15 (28)</i>
<b>Worker flows</b>			
Worker reallocation	35.0	45.7	82.1
	<i>41.37 (21)</i>	<i>49.31 (23)</i>	<i>46.33 (44)</i>
Excess worker reallocation	32.2	48.4	81.8
	<i>37.51 (21)</i>	<i>51.44 (23)</i>	<i>45.45 (44)</i>

Note: The table reports the percentage of the overall variance accounted for by countries, industries or the overall model (that is the percentage explained by the whole regression). F-statistics in italics (with degrees of freedom in parentheses). All components are significant at the 1% statistical level. As the percentage of the variance explained by each dimension depends on the number of its categories, F-statistics and the ratio of explained variance to the number of degrees of freedom provide information on the relative importance of each dimension. Total number of observations is 180 for gross job flows and 490 for worker flows.

Source: OECD estimates based on the country/industry sample reported in the notes to Figure 2.1.

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worker reallocation rates is in stark contrast with a common thrust of part of the literature, which, on the basis of anecdotal evidence or casual comparison of country-specific studies, argues that aggregate flows, and particularly gross job flows, are similar across countries (see for instance Pries and Rogerson, 2005; and Koeniger and Prat, 2007, and the literature cited therein).

How does labour reallocation vary across countries? Controlling for industry composition,<sup>13</sup> job flows appear to be greater in the United Kingdom, the United States, Brazil and Mexico, with excess job reallocation at or above 25% of dependent employment (Figure 2.2). By contrast excess job reallocation rates tend to be just below 15% in Germany, Slovenia and Sweden. These patterns are mirrored for worker flows: with total worker reallocation above 40% of dependent employment, English-speaking countries (Ireland, the United Kingdom and the United States) are at the top of the distribution, together with Denmark and countries that experienced strong employment growth during the period (such as Spain and Turkey). However, when job and worker flow data are compared for the same countries, industries and year, it emerges that churning flows vary little across countries (see Box 2.2) and that the cross-country variation in worker flows is essentially accounted for by the cross-country variation of job creation and job destruction. This finding suggests that policies and institutions affecting firm employment growth patterns are also key determinants of worker mobility.

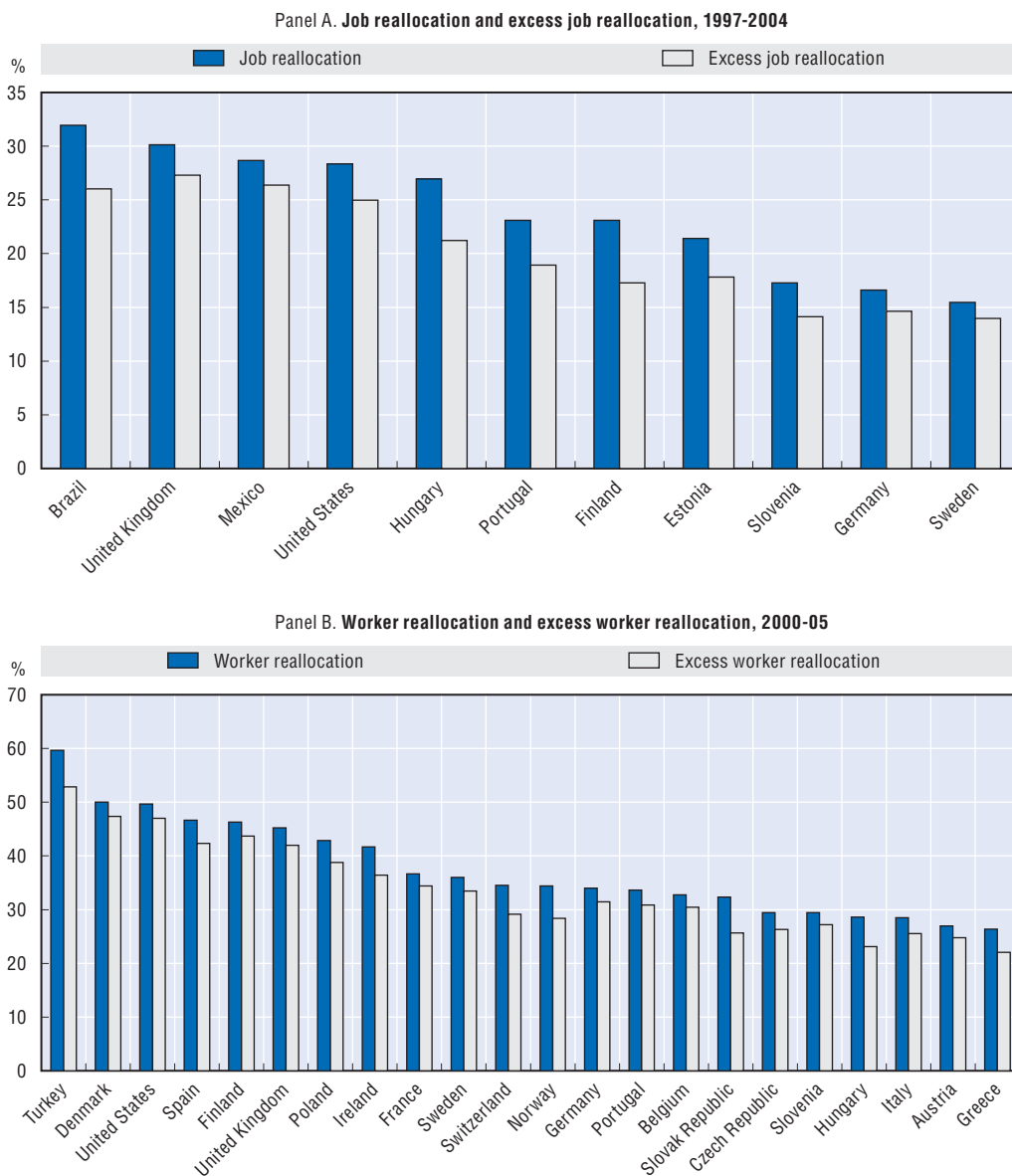
### *... which might be explained by institutional specificities*

What might explain the tendency for job and worker reallocation to be much larger in some countries than in others, even after controlling for industry composition? Not surprisingly, countries with a small share of temporary workers tend to have low worker reallocation. In particular countries with excess reallocation at or below 30% of dependent employment (see Figure 2.2) have all a share of temporary workers (adjusted for industry composition) at or below 11%, suggesting that the prevailing type of contract is one of the possible explanations.<sup>14</sup> But that is not the whole story. In fact, English-speaking countries, as well as Denmark and Turkey, all have low shares of temporary contracts and large reallocation rates. And a number of Mediterranean countries (Portugal, Spain and to some extent Greece) appear to have too little mobility compared with what one would expect by looking at their share of temporary contracts. Although a detailed analysis of this issue is beyond the scope of this chapter, it does not seem unlikely that reallocation rates in Denmark and Turkey are mainly related to the effectiveness of the Danish flexicurity system and the share of Turkish workers not covered by standard employment protection (see *e.g.* OECD, 2004, 2005, 2008a). Conversely, it is possible to make the conjecture that the position of English-speaking and most of the Mediterranean countries is somewhat related the degree of stringency of employment protection in these countries. In fact, among the countries for which adjusted data on worker reallocation are available, English-speaking countries appear to be at the bottom of the distribution of the OECD indicator of the stringency of employment protection and Greece, Portugal and Spain at the top.<sup>15</sup> This appears consistent with the literature on institutions and gross job flows, which, with few exceptions, tend to suggest a negative relationship between job reallocation and the degree of stringency of employment protection legislation (see Box 2.3).




Figure 2.2. **There are significant cross-country differences in job and worker reallocation rates across all industries**

Country averages of job and worker reallocation rates expressed in percentages and adjusted by industry composition



Note: Estimated average rates that would be observed in each country if it had the same industry composition of the average country. Job flows: Brazil: 1998-2000; Estonia: 2003; Germany: 1997-98; Finland: 1997; Hungary: 1998-2000; Portugal: 1997; Mexico: 2000; Slovenia: 2002-03; Sweden: 1997-2003; United Kingdom: 1997-98; United States: 2001-04. Worker flows: Czech Republic: 2002-05; Ireland: 2000-03; Norway: 2000-04; Poland: 2004-05; Slovak Republic: 2003-05; Switzerland: 2002-07; Turkey: 2007; United States, 2000, 2002 and 2004; other countries: 2000-05.

Source: OECD estimations. See Annex 2.A1.

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## 1.2. Looking inside job and worker reallocation

Job reallocation is defined as the sum of job creation and destruction, and worker reallocation as the sum of hires and separations. How do these components of gross flows co-vary so as to determine reallocation rates? For example, does a high rate of job creation

### Box 2.3. Empirical evidence on the link between employment protection and job flows

There is a large number of country-specific studies that investigate the impact of employment protection legislation and jurisprudence on job flows. Autor *et al.* (2007) study the impact of the adoption of wrongful-discharge protection norms by state courts in the United States on several performance variables constructed using establishment-level data. By using cross-state differences in the timing of adopting stricter job security provisions, they find a negative effect of these provisions on employment flows and firm entry. Using Italian firm-level data, Boeri and Jimeno (2005) exploit exemption clauses exonerating small firms from job security provisions within a difference-in-differences approach. Their estimates confirm a significant effect of employment protection on job turnover and job destruction in particular. Similar findings are obtained by Schivardi and Torrini (2008), using an Italian matched employer-employee dataset, and by Kugler and Pica (2008), who exploit an Italian reform that in 1990 increased firing restrictions for small firms. On the contrary, Bauer *et al.* (2007) do not find any significant effect of employment protection legislation on turnover using German matched employer-employee data. Exemptions from procedural requirements for dismissal are also found to have no impact on hiring or firing in exempted firms in Sweden (von Below and Thoursie, 2008) and Portugal (Martins, 2007). Finally, Venn (2009) analyses the impact on hirings of recent Australian and Turkish reforms of dismissal costs that apply differently to small and large firms, and report large negative effects on hirings in Turkey but limited impacts in Australia. Nevertheless, differences in the extent of the exemptions limit the comparability of these findings.

Few studies look at the impact of employment protection on job turnover from a multi-country perspective. Haltiwanger *et al.* (2006) and Micco and Pages (2006), use a difference-in-differences estimator on a cross-section of industry-level data for several OECD and non-OECD countries (16 and 18 countries, respectively). They find that the negative relationship between layoff costs and job flows is more negative in industries where US layoffs are larger. Similar results are found by Cingano *et al.* (2009), who apply a similar methodology on firm-level data for several European countries, and by Gomez-Salvador *et al.* (2004) who look at the impact of employment protection legislation using a more classical linear regression analysis based on European firm-level data and controlling for the effect of other labour market institutions. Finally, on the same data, Messina and Vallanti (2007) find that strict employment protection significantly dampens job destruction over the cycle with mild effects on job creation. The negative impact of employment protection on job turnover, job creation and job destruction is found to be larger in industries where total employment is contracting and where firms cannot achieve substantial reductions in employment levels purely by relying on voluntary quits.

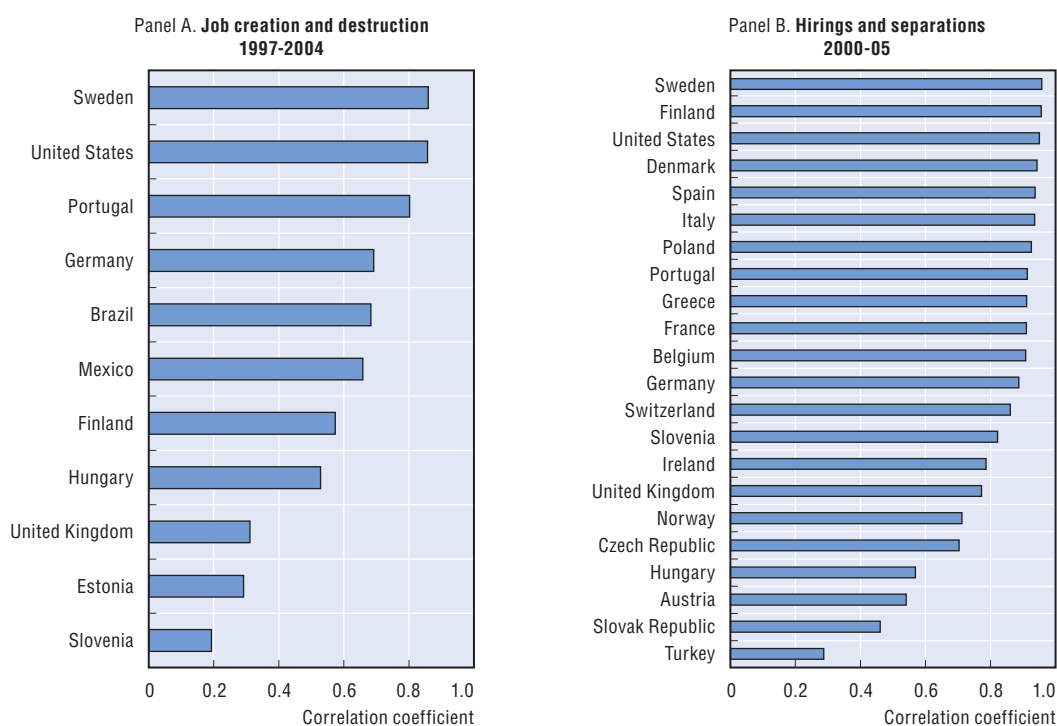
reflect strong economic growth and, hence, go hand-in-hand with low job destruction? Conversely, do job creation and destruction co-vary positively, because they reflect the process of resource reallocation in labour markets? Analogous questions can be posed concerning the relationship between hiring and separation rates. This section presents cross-country and cross-industry evidence on these questions.

#### **Industries that create more jobs also destroy more jobs**

Job creation and destruction rates appear to be part of the same economic process. Within countries, the cross-industry distributions of job creation and destruction rates are

Figure 2.3. **Job creation and destruction are positively correlated, as are hirings and separations**

Within-country/cross-industry correlations



Note: Correlations between country-specific industry rates. Panel A: Brazil: 1998-2000; Estonia: 2003; Germany: 1997-98; Finland: 1997; Hungary: 1998-2000; Portugal: 1997; Mexico: 2000; Slovenia: 2002-03; Sweden: 1997-2003; United Kingdom: 1997-98; United States: 2001-04. Panel B: Czech Republic: 2002-05; Ireland: 2000-03; Norway: 2000-04; Poland: 2004-05; Slovak Republic: 2003-05; Switzerland: 2002-07; Turkey: 2007; United States, 2000, 2002 and 2004; other countries: 2000-05.

Source: OECD estimations. See Annex 2.A1.

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positively correlated and this relationship is strong in most cases (Figure 2.3). Moreover, the correlation coefficient between hiring and separation rates is above 0.8 in two-thirds of the countries for which data are available and significant in all but one country (Turkey). Put another way, industries that create more jobs and hire more workers also destroy more jobs and are characterised by more separations. These correlations have often been observed in the literature (e.g. Davis *et al.*, 1996; and Coen-Pirani and Lee, 2007), and are consistent with a variety of theoretical explanations, including those related to the diffusion of demand and technological shocks in industries (e.g. Mortensen and Pissarides, 1994) and differences in life-cycle stages of industries (e.g. Jovanovic, 1982; and Klepper, 1996).<sup>16</sup>

### **Both countries and industries appear to influence creation and destruction of jobs and job-matches**

Not only are job creation and job destruction rates (as well as hiring and separation rates) highly correlated across industries, reflecting intrinsic differences in volatility of demand and technological shocks across industries, but their industry distributions are also quite similar across countries (see Bassanini and Marianna, 2009). However, cross-country correlations are always greater in the case of job creation and hirings than in the case of job destruction and separations, with the only exception of Brazil. Similarly,

industry-specific effects account for about 44% and 51% of the overall variability (across countries and industries) of job creation and hiring rates, respectively (Table 2.2), while they explain a much smaller part of overall variability in job destruction and separation rates (24% and 37%, respectively). This suggests that industry-specific factors, which apply to all countries, are more important drivers of the creation of jobs and job matches, than of job destruction and separations. For example, it is likely that rapid worldwide diffusion of technological and organisational changes across competitors in the globalised market and common evolution of global product demand shape the similarity of firms' job creation and hiring behaviours across countries.


**Table 2.2. Both country and industry characteristics influence the creation and destruction of jobs and job-matches**

Analysis of variance of cross-country/cross-industry data on job creation, job destruction, hirings and separations

	Country	Industry	Model
<b>Job flows</b>			
Job creation	30.9	43.8	69.5
	<i>15.32 (10)</i>	<i>12.04 (18)</i>	<i>12.30 (28)</i>
Job destruction	39.2	23.6	59.6
	<i>14.66 (10)</i>	<i>4.91 (18)</i>	<i>7.96 (28)</i>
<b>Worker flows</b>			
Hirings	32.4	51.4	85.2
	<i>46.31 (21)</i>	<i>67.04 (23)</i>	<i>58.06 (44)</i>
Separations	33.3	37.2	71.7
	<i>24.90 (21)</i>	<i>25.44 (23)</i>	<i>25.62 (44)</i>

Note: The table reports the percentage of the overall variance accounted for by countries, industries or the overall model (that is the percentage explained by the whole regression). F-statistics in italics (with degrees of freedom in parentheses). All components are significant at the 1% statistical level. As the percentage of the variance explained by each dimension depends on the number of its categories, F-statistics and the ratio of explained variance to the number of degrees of freedom provide information on the relative importance of each dimension. Total number of observations is 180 for gross job flows and 490 for worker flows.

Source: OECD estimates based on the country/industry sample reported in the notes to Figure 2.1.

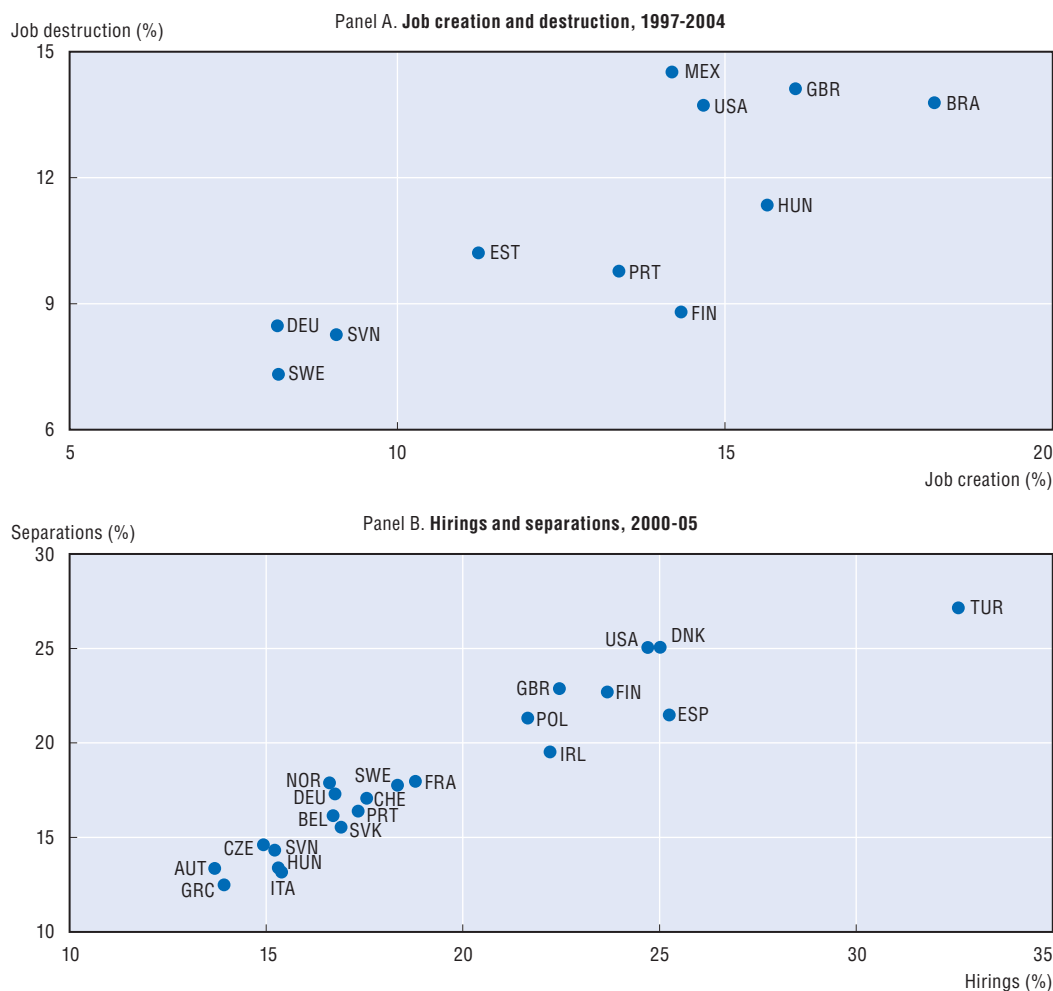
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By contrast, cross-country differences appear to be far more important in explaining job destruction and separations. The cross-country variation in job destruction and separation rates accounts for 39% and 33% of total variation, respectively (Table 2.2). Nevertheless, the portion of total variation in hirings and job creation that is explained by cross-country differences is almost identical. This suggests that both sets of labour flows are likely to be affected by country-specific policies and institutions.

Even after controlling for industry composition, the cross-country distributions of job creation and destruction rates appear to be positively correlated (Figure 2.4, Panel A). The same pattern holds for hirings and separations (Figure 2.4, Panel B). As a consequence this implies that there is no or limited correlation between aggregate job and worker reallocation and net employment growth. Not surprisingly, the ranking of countries in Figure 2.4 closely resembles the cross-country distribution of total and excess reallocation (see Figure 2.2). In countries with large informal sectors (Brazil, Mexico, Turkey), large shares of temporary workers (Finland, Poland, Spain) or relatively flexible regulations for open-ended contracts (Denmark, the United Kingdom, the United States) more than 14% of all jobs are destroyed annually and more than 20% of the employees separate, at least once, from their employer.

Figure 2.4. **Job creation and destruction are two sides of the same coin, as are hirings and separations**

Percentage rates adjusted by industry composition



Note: Adjusted rates are estimated average rates that would be observed in each country if it had the same industry composition of the average country. Panel A: Brazil: 1998-2000; Estonia: 2003; Germany: 1997-98; Finland: 1997; Hungary: 1998-2000; Portugal: 1997; Mexico: 2000; Slovenia: 2002-03; Sweden: 1997-2003; United Kingdom: 1997-98; United States: 2001-04. Panel B: Czech Republic: 2002-05; Ireland: 2000-03; Norway: 2000-04; Poland: 2004-05; Slovak Republic: 2003-05; Switzerland: 2002-07; Turkey: 2007; United States, 2000, 2002 and 2004 ; other countries: 2000-05.

Source: OECD estimations. See Annex 2.A1.

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However, this high rate of mobility out of jobs is matched by comparably high flows of newly-created jobs and new hires. By contrast, countries with both annual hiring and separation rates below 15% (such as Austria, the Czech Republic and Greece) have all low shares of temporary contracts or moderate-to-rigid dismissal regulations.

### 1.3. Dismissals

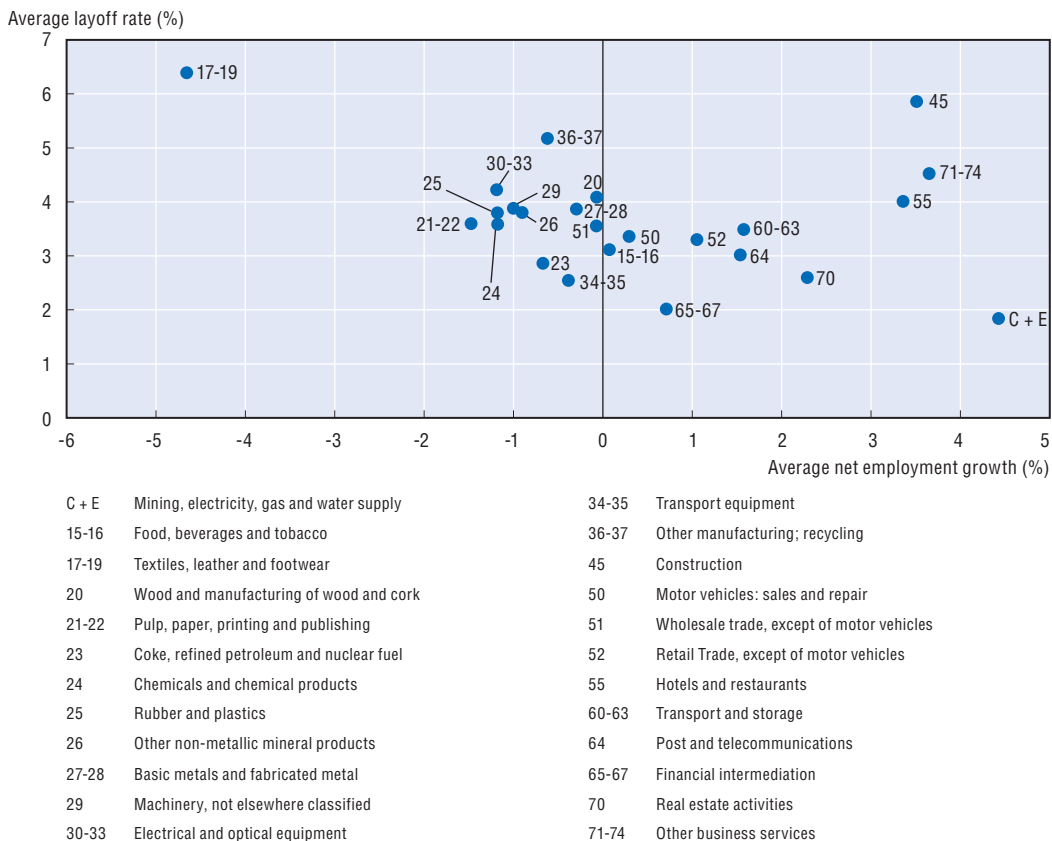
From the point of view of the worker, labour mobility may represent either a cost or an opportunity. When separations occur at the initiative of the employer, displaced workers often experience periods of joblessness as well as possible wage penalties and lower job security once they find another job (see for example, OECD, 2003b, 2005). However,

separations often occur at the initiative of the worker and their magnitude is indicative of the breadth of opportunities that workers face in the labour market. By contrast, dismissals less ambiguously reflect an involuntary change in status for the worker.

What is the share of dismissals in total separations? Answering this question is not easy because information on the reasons for separation is seldom collected by labour force surveys.<sup>17</sup> Roughly comparable industry-level data are available for five countries between 1995 and 2007.<sup>18</sup> Although available data do not correspond to the same countries and years as in Figure 2.1, a simple comparison with Figure 2.5 suggests that dismissals amount to no more than one fourth of total separations.<sup>19</sup> However, the proportion of dismissals in total separations varies significantly across industries and appears to be related to the employment growth rate of the industry. This is particularly the case if one excludes construction and a few service industries – hotels and restaurants and other business services – characterised by relatively high dismissal rates, but even higher separation rates.<sup>20</sup> In expanding industries, the average of dismissal rates, across countries for which data are available, is about 3% of total dependent employment, although with a large heterogeneity across industries. By contrast, in downsizing manufacturing industries

**Figure 2.5. Industry-level dismissal rates are greater than net employment contraction**

Average percentage rates, by industry, 1995-2007



Note: ISIC Rev. 3 codes for industries. Based on: France, 2006-07, Germany, 2003-07, the United Kingdom, 1997-2005, the United States, 1996-2006 (even years only).

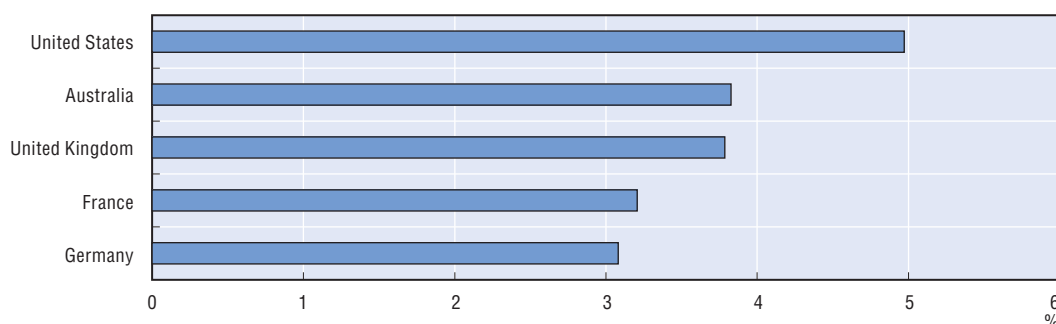
Source: OECD estimations. See Annex 2.A1.

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dismissal rates can be much larger. In particular, in textiles, more than 6% of employees are dismissed each year, on average. What is more, in downsizing industries, job-match destruction by dismissal is always far greater than net employment contraction.

The importance of industry-specific characteristics in shaping dismissal patterns should not hide the fact that there are also significant cross-country differences. Figure 2.6 shows average annual dismissal rates, by country, controlling for industry composition: dismissal rates range between about 3% of dependent employment in France and Germany to almost 5% in the United States.<sup>21</sup>

**Figure 2.6. Average dismissal rates vary by country**  
Percentage rates adjusted for industry composition, 1995-2007



Note: Adjusted dismissal rates are estimated average rates that would be observed in each country if it had the same industry composition as the average of France, Germany, the United Kingdom and the United States, Australia, 1995-2001; France, 2006-07; Germany, 2003-07; the United Kingdom, 1997-2005; the United States, 1996-2006 (even years only).

Source: OECD estimations. See Annex 2.A1.

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Overall, job creation, hirings, job destruction, separations and dismissals appear to be shaped by country-specific factors that are likely to be related, at least in part, to cross-country differences in labour market regulations and the prevalence of temporary employment contracts or informal employment relationships. Moreover, job destruction and separations vary somewhat less across industries than do job creation, hirings and dismissals, which appear to be particularly affected by cross-industry differences in the global evolution of product demand and industry life cycles. However, beyond the sector of activity, what are the characteristics of employers who create or destroy more jobs? Also, which types of worker are more mobile? Finally, do these characteristics differ across countries and how are they shaped by national policies and institutions? The next section will try to shed some light on the first (and, to some extent, the third) of these issues, while the third section will focus on workers' characteristics.

## 2. Labour market flows through the lenses of firms: Which firms create and destroy more jobs?

### 2.1. Entry, exit and continuers

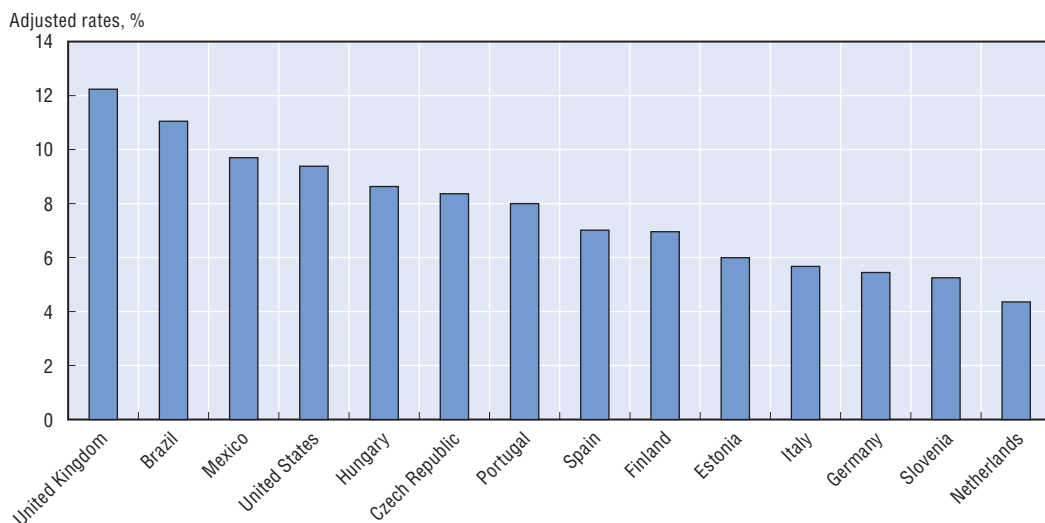
The job-flow statistics presented in the previous section do not distinguish between firm start-ups, shutdowns and reallocation involving ongoing firms – the latter term referring to incumbent firms that are active during the whole reference period, often called “continuers” or “continuing firms”. Distinguishing among these categories of firms is important because there is evidence that in OECD countries more than 10% of all firms

enter and more than 5% shut down their operations in an average year. Moreover, in most cases, less than 50% of entrants survive more than four years (see *e.g.* Bartelsman *et al.*, 2009). But even though firm churning is large, the average size of both entering and exiting firms is often very small,<sup>22</sup> and therefore firm churning typically accounts for only a limited share of gross job flows (see *e.g.* Haltiwanger *et al.*, 2006). On average, entry and exit of firms appear to account for about one-third of total job reallocation in the business sector. Cross-industry variation is also small: start-ups and shutdowns account for 29% to 36% of gross job reallocation in all industries, except in the energy and financial intermediation industries (21% and 26%, respectively).

Most of the main stylised facts discussed above as regards total job flows appear to hold also if attention is restricted to job creation and destruction by entry and exit. In particular: i) industry distributions of job creation and destruction rates by entry and exit are strongly correlated across countries; ii) industries that create more jobs by entry also destroy more jobs by exit in all countries and, at the industry-level, reallocation rates are positively correlated with net employment growth; iii) the cross-industry variation explains 47% of the total variance of job creation by entry and a much smaller proportion in the case of job destruction by exit; and iv) country-specific factors appear to have a similar role in explaining both job creation by firm entry and job destruction by firm exit (see Bassanini and Marianna, 2009). Adjusting for industry composition, reallocation by entry and exit is larger than 9% of dependent employment in Brazil, Mexico, the United Kingdom and the United States (Figure 2.7). At the other extreme less than 5% of all jobs are created or destroyed by entry in the Netherlands.<sup>23</sup>

Figure 2.7. **Job reallocation due to firm entry and exit varies by country**

Percentage rates adjusted by industry composition, 1997-2005



Note: Adjusted reallocation rates are estimated average rates of job creation and destruction by entry and exit to total dependent employment that would be observed in each country if it had the same industry composition as the average country. Brazil: 1998-2000; Czech republic: 2005; Estonia: 2003 and 2005; Finland: 1997 and 2005; Germany: 1997-98; Hungary: 1998-2000 and 2005; Italy: 2005; Portugal: 1997; Mexico: 2000; Netherlands: 2005; Slovenia: 2002-03; Spain: 2005; United Kingdom: 1998-2005; United States: 2001-04.

Source: OECD estimations. See Annex 2.A1.

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The same stylised facts also hold when attention is restricted to surviving incumbent firms (continuers). This is not surprising because the expansion and contraction of continuing firms account for a large share of gross job flows. There is one exception, however. The industry-level correlation between job creation and job destruction rates within countries is much smaller in the case of continuers. Indeed, this correlation is often insignificant, and is even negative for two countries.<sup>24</sup> This suggests that the reason why industries that create more jobs also destroy more jobs is essentially related to the fact that firm entry and exit rates are positively correlated across industries, as predicted by theories of firm learning and industry life cycles (see above). The next subsection digs deeper into this issue by looking at how this relationship changes if data are broken down by firm characteristics such as firm age and size.

## **2.2. Job creation and destruction conditional on firm survival: The role of firm age and size**

### **Age and size are key firm dimensions shaping job creation and destruction patterns**

Two key dimensions of a firm are strongly associated with the magnitude of its job flows: size and age (see *e.g.* Davis *et al.*, 1996). The importance of the size dimension has been particularly stressed for entrants and shutdowns: firm entry and exit – and the associated creation and destruction of jobs – are highly concentrated among small businesses, which is reflected in a negative relationship between job turnover (job creation and destruction) and firm size. However, a similar relationship appears to hold also for continuers (see *e.g.* Haltiwanger *et al.*, 2006). Similarly, young establishments create and destroy more jobs, according to several US studies (*e.g.* Davis *et al.*, 1996; and Faberman, 2003, 2007). The relationship between job destruction and age, nevertheless, appears to be essentially related to the fact that the probability of exiting declines as an establishment ages, suggesting that young firms follow a “up-or-out” pattern with very rapid net growth for survivors balanced by a very high exit rate (Acs *et al.*, 1999; Faberman, 2007; Haltiwanger *et al.*, 2008). Consistent with these findings, using data on continuing firms for 13 European countries, Gomez-Salvador *et al.* (2004), find no declining relationship, on average, between job destruction and firm age.

The effects of firm size and age on job reallocation have not been simultaneously studied before in a cross-country comparative perspective. Gomez-Salvador *et al.* (2004) is perhaps the only partial exception insofar it uses both broad firm age and size classes as controls in a European multi-country study of institutional determinants of gross job flows. Yet, no systematic analysis of these two dimensions is provided in their article. As firms are typically small at birth and then grow if they survive the initial harsh market test, there is a strong correlation between firm age and size, so that their effects on job flows could easily be confounded. Does the commonly-observed relationship between larger firm size and lower job reallocation simply reflect the fact that job creation declines with age? And, what is the relationship between firm age and job destruction, once the effect of size is controlled for? For this chapter, a new internationally harmonised database of firm-level micro-data for 11 OECD countries was constructed (see Annex 2.A1 for more detail on data construction).<sup>25</sup> This allows analysing these issues in some detail, even though empirical results must be treated with some caution since the analysis is restricted to firms with on average 20 or more employees due to data limitations (which will be termed medium and large firms hereafter).<sup>26</sup>

Firm age appears to be the most important determinant of job creation, at least excluding the smallest firms as well as shutdowns. When firms that have similar characteristics in terms of country, industry, firm size and age classes,<sup>27</sup> are grouped into

cells, it appears that age explains a substantially larger share of the overall variation in job creation and total job reallocation than does size (Table 2.3). The simple average difference between firms younger and older than 20 years accounts for about 21% of the total variance, in the case of job creation rates, and about 13% in the case of overall job reallocation. Variation across firm-size classes that is unrelated with age appears to play a smaller role. Only 4% of the variation of job reallocation by country, industry, size and age appears to be due to differences across the three firm-size classes considered here. One needs to be cautious before drawing general conclusions on the role of firm size, however, insofar as small firms (with less than 20 employees), are excluded from the analysis. As shown by Haltiwanger et al. (2006), including small firms would have resulted in much greater variance of job reallocation rates and, as a consequence, might have resulted in a larger share explained by firm size.

**Table 2.3. Firm age and countries play the most important roles in shaping job-flow patterns among continuers**

Analysis of variance of job-flow data for medium and large continuing firms across countries, industries, firm size classes and age classes

	Country	Industry	Size	Age	Model
Job reallocation	31.6 <i>80.14 (10)</i>	12.1 <i>15.40 (20)</i>	3.7 <i>46.77 (2)</i>	12.5 <i>317.57 (1)</i>	60.2 <i>46.30 (33)</i>
Job creation	26.1 <i>64.46 (10)</i>	12.1 <i>14.97 (20)</i>	2.4 <i>29.05 (2)</i>	20.7 <i>510.01 (1)</i>	59.0 <i>44.11 (33)</i>
Job destruction	25.7 <i>41.98 (10)</i>	11.5 <i>9.44 (20)</i>	1.1 <i>8.77 (2)</i>	1.6 <i>25.65 (1)</i>	38.3 <i>18.97 (33)</i>

Note: Underlying data are aggregated in cells by country, industry, firm size classes and firm age classes. The table reports the percentage of the overall variance accounted for by countries, industries or the overall model (that is the percentage explained by the whole regression). F-statistics in italics (with degrees of freedom in parentheses). All components are significant at the 1% statistical level. As the percentage of the variance explained by each dimension depends on the number of its categories, F-statistics and the ratio of explained variance to the number of degrees of freedom provide information on the relative importance of each dimension. Firm size is divided in three classes: 20-49 employees, 50-99 employees and 100 employees or more; firm age is divided in two classes: less than 20 years and 20 years or more. Firms with less than 20 employees are excluded. Data refer to continuers with published accounting data. Total number of observations is 1 044.

Source: OECD estimates. See Annex 2.A1.

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By contrast the age dimension appears to play a more limited role in the case of job destruction than for job creation (less than 2% of the variance in job destruction is explained by this dimension). This suggests that job destruction patterns of medium and large firms do not vary systematically with their age, at least conditional on their size. But does this result simply reflect cross-country differences in the relationship between age and job destruction? Furthermore, the patterns revealed in Table 2.3 might mask further composition effects. For instance, one might conjecture that, within each country, more dynamic geographical areas, where business opportunities are wider, create more jobs and are characterised by greater firm entry and, therefore, smaller firm size and younger firms. To what extent is the covariation between firm age and job creation simply due to regional disparities within countries? In order to answer these questions, for medium and large firms, Figure 2.8 presents average firm-level job creation and job destruction rates as a function of firm age, by country, controlling for detailed industry, geographical area and remaining size categories (see Box 2.4 for the methodology).

Figure 2.8. **Job creation declines with firm age in medium and large continuing firms, but no such pattern is found for job destruction**

Average percentage rates adjusted by firm-size, industry, region and year, by country, 2000-06

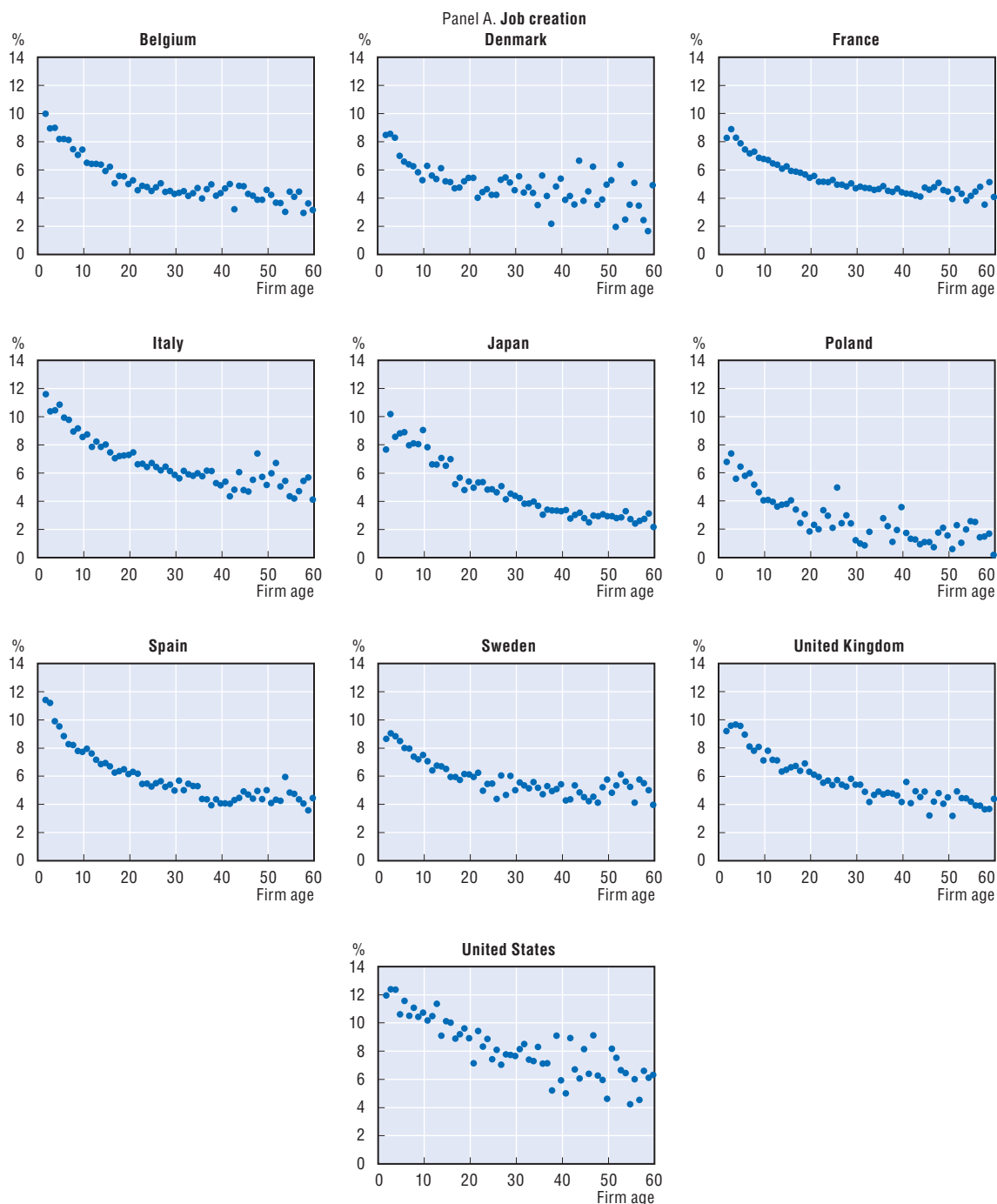
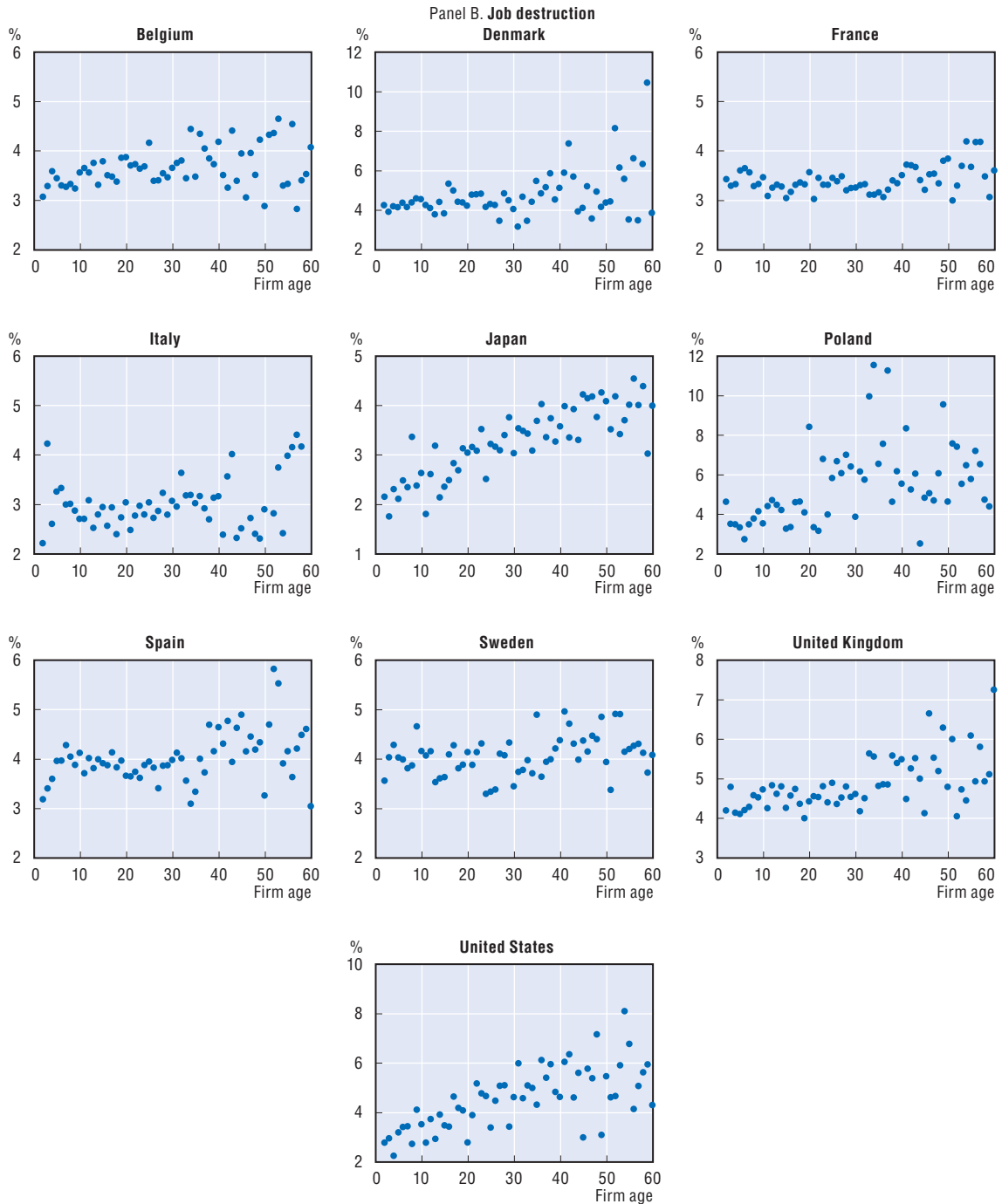


Figure 2.8. **Job creation declines with firm age in medium and large continuing firms, but no such pattern is found for job destruction (cont.)**

Average percentage rates adjusted by firm-size, industry, region and year, by country, 2000-06



Note: Firms with less than 20 employees or aged less than two years are excluded. Estimated adjusted rates are obtained on the basis of the procedure described in Box 2.4, and their precision, for each country varies as a function of the size of the sample. Precision also declines with age; therefore, rates for firms older than 60 years are not shown. Sample size by country (calendar years in parentheses): Belgium: 33 867 (2000-04); Denmark: 14 673 (2001-05); France: 116 152 (2000-04); Italy: 28 281 (2002-03); Japan: 26 669 (2004-06); Poland: 8 726 (2001-04); Spain: 93 306 (2001-04), Sweden: 31 700 (2000-05); the United Kingdom: 40 968 (2000-04); the United States: 14 482 (2005-06).

Source: OECD estimations. See Annex 2.A1.

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### Box 2.4. Firm-level analysis of job flows

For the purpose of this chapter, two types of firm-level analyses are implemented. First, standard regression analysis is used to identify, in a semi-parametric way, the relationship between job creation (job destruction) and firm age controlling for geographical areas, industries and size classes (or firm size controlling for areas, industries and age). More precisely, the following model is estimated through Ordinary Least Squares:

$$J_{ijgsat} = \alpha + \lambda_g D_g + \lambda_j D_j + \lambda_s D_s + \lambda_a D_a + \lambda_t D_t + \varepsilon_i$$

where  $J$  stands for the job-creation (job-destruction) rate, defined at the firm level  $i$ ,  $\alpha$  is a constant,  $\varepsilon$  is a standard error term and  $D$ s stand for a series of dummies (with coefficient  $\lambda$ s to be estimated), including for detailed geographical areas  $g$  (identified by the first two digits of the zip code, for about one hundred dummies per country), detailed industry  $j$  (two digits of the ISIC Rev. 3 classification), detailed firm-size class  $s$ , with the exclusion of firms with less than 20 employees (20-29 employees, 30-39 employees and so on with a range of ten employee for each class, up to 300 employees, then a range of 25 employees for each class up to 500, then 50 up to 700, then 100 up to 1 000, plus one category for 1 000 employees or more), firm age  $a$ , measured in years, and the calendar year  $t$ . The sum of firm-age coefficients is further constrained to be equal to the average job-creation (job-destruction) rate (or, in the case of the analysis of job flows as a function of firm size, the sum of firm size coefficients is imposed to be equal to the average rate). To the extent that the sample of firms is representative of the population of firms in a country, estimated coefficients on age dummies (or on firm-size classes) represent estimated average rates controlling for other co-variates. These coefficients are then plotted against age in Figure 2.8.

The distribution of firms in the Amadeus and Orbis datasets, however, does not match the economy-wide distribution of firms in the population. This is due to the fact that large firms and specific industries (such as the banking industry in the United States) are over-represented. For this reason, following Schwellnus and Arnold (2008), the sample of each country and year is stratified by firm-size classes and detailed industry, for which the actual distribution of firms is available – based on Eurostat's Structural Business Statistics for European countries, the Establishment and Enterprise Census for Japan and the OECD Firm-level database for the United States. Then firms are randomly drawn from each stratum, with the number of observations being calibrated to ensure that the distribution of firms in the sample matches the distribution of the population. In order to use the maximum available information, all available firms are drawn from the stratum that is the most under-represented in the raw data, according to the information available on the population of firms. From each other stratum, the number of firms in the sample is set at a level that keeps the ratio between the number of firms in the sample and in the population constant across strata. At the end of the sampling procedure, more than 350 000 firms are retained. Sample size by country is as follows: Belgium, 33 867; Denmark, 14 673; France, 116 152; Italy, 28 281; Japan, 26 669; Poland, 8 726; Spain, 93 306; Sweden, 31 700; the United Kingdom, 40 968; and the United States, 14 482.

Firm-level data are also used in the analysis of job reallocation and productivity (see the next subsection). In that analysis, firm-level net employment growth is considered, insofar as the sign of job reallocation matters. More precisely, as the objective of the analysis is to estimate the covariation of employment and productivity after controlling for firm heterogeneity, a simple SUR model is implemented: both productivity (or investment) measures and changes in log employment levels are simultaneously regressed on the covariates indicated above (that is fitting the same model as above but substituting log employment levels and productivity – or investment – for job creation rates in the above equation and jointly estimating the two equations). Then the correlation amongst residuals is examined. The same stratification and random sampling procedure as above is applied in order to ensure the representativeness of the sample (see Annex 2.A1 for more details).

In all countries for which data are available, job creation rates decline significantly with age, as shown in Figure 2.8. With the exceptions of Denmark, France, and Sweden, job creation rates decline by 6 percentage points or more between the second and the sixtieth year of firm life (conditional on survival and other characteristics). The decline of job creation, as the firm ages, appears to be steeper when the firm is young and then gradually flattens out. By contrast, job creation rates rise with firm age in some countries but, in general, the relationship is weaker and the curve is essentially horizontal in many others. The increase in job destruction with age is particularly steep in Japan, Poland and the United States. In these three countries, conditional on survival, and controlling for other characteristics, firms aged from 50 to 60 years tend to destroy, as a percentage of their own employment, twice as many jobs as firms about five years after birth. This relationship appears, on the contrary, particularly flat in France and Italy.

### ***Within industries, firms that create more jobs destroy fewer of them***

Cross-country differences in the relationship between age and job destruction are reflected in the cross-age correlation between job creation and job destruction rates, within each industry. More generally, within each industry and country, specific characteristics such as age determine the pattern of employment growth of each surviving firm. While industries that create more jobs destroy more jobs, in countries such as Denmark, Japan, Poland, the United Kingdom and the United States, the characteristics of firms that create more jobs are substantially different from those of firms that destroy more jobs and *vice versa* (at least once entrants, shutdowns and the smallest firms are excluded, see Figure 2.9). By contrast, in other countries, and particularly in France and Spain, there is no relationship between job creation and job destruction, while Belgium, Finland, Italy and Sweden are characterised by negative but insignificant correlations.

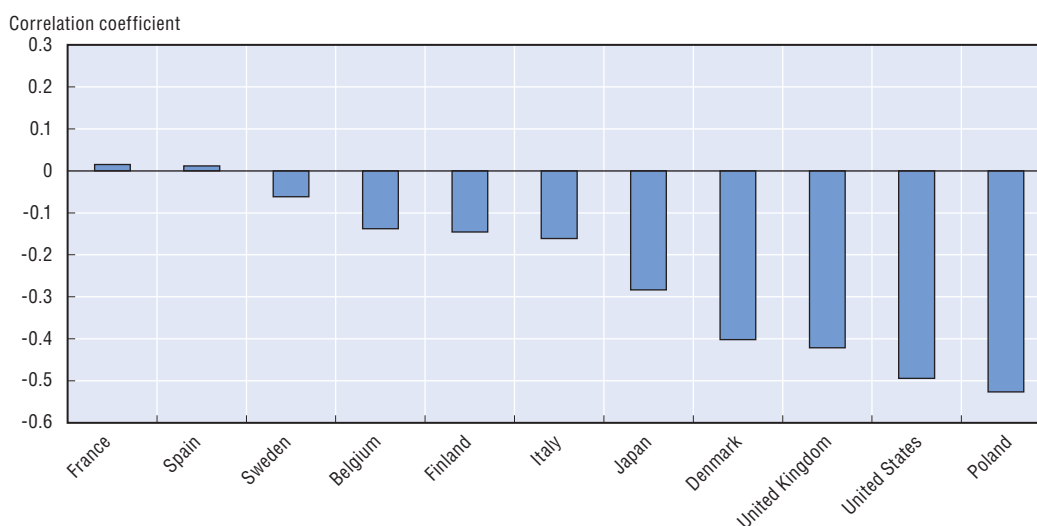
What explains the negative relationship between firm age and job destruction, or more generally between job creation and job destruction across groups of continuing firms characterised by different age, size and industry? One tentative interpretation of these negative correlations is that, while, as noticed above, entry and exit rates are mainly driven by the industry life cycle and the process of firm learning after birth (see above for references),<sup>28</sup> the dynamics of firm growth conditional on survival appears consistent with predictions of Schumpeterian growth theories (*e.g.* Aghion and Howitt, 1998). According to the latter, each firm enters the market with a new vintage of up-to-date technology that is, in general, only marginally improved during the firm's life. In this view, older firms are typically characterised by more obsolete technologies and tend to be replaced by younger, more efficient firms. To the extent that product markets are imperfectly competitive, firms with different degrees of efficiency will coexist in the market, but older (less efficient) firms will tend to lose market shares and, consequently, re-adjust the size of their staff. However, is there any evidence that labour resources are reallocated from inefficient to efficient firms? And, do we see this occurring in all market economies? The next subsection will look at the link between productivity and firm expansion and contraction.

### **2.3. Gross job reallocation and productivity**

Most studies have investigated the link between job reallocation and labour productivity using dynamic accounting decompositions, particularly in a single country, including studies for the United States, the United Kingdom, Canada and several developing economies (see *e.g.* Griliches and Regev, 1995; Haltiwanger, 1997; Foster *et al.*,


Figure 2.9. **The correlation between job creation and destruction rates across groups of firms is generally negative**

Groups defined on the basis of industry, firm-age and firm-size, by country, 2000-06



Note: Correlation coefficients among job creation and job destruction rates. Firm-level data are grouped into cells according to 21 industry characteristics, three firm-size classes and two firm-age classes. Firms with less than 20 employees are excluded. Belgium, 2000-04; Denmark, 2001-05; Finland, 2002-04; France, 2000-04; Italy, 2002-03; Japan, 2004-06; Poland, 2001-04; Spain, 2001-04; Sweden, 2000-05; the United Kingdom, 2000-04; and the United States, 2005-06.

Source: OECD estimations. See Annex 2.A1.

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2001; Disney et al., 2003; Aw et al., 2001; Baldwin and Gu, 2006). A few studies have investigated these issues using cross-country data (e.g. Brown and Earle, 2008; Bartelsman et al., 2009).<sup>29</sup> These studies typically decompose aggregate labour productivity growth into the contribution of firm entry and exit – which is positive if entrants are more productive than exiting firms – and, for continuers, the contribution of within-firm (within-plant) productivity growth at a given employment level and that due to job reallocation among continuing firms. The latter can be further decomposed into a *between effect* – which is positive if, on average, more productive firms create more jobs and destroy fewer jobs than less productive ones – and a *cross effect*, which is positive if, at the firm level, net employment growth is positively correlated with productivity growth. These studies tend to find large positive contributions from within-firm productivity growth independent of labour reallocation. Nonetheless, they usually find a positive contribution from firm entry and exit – implying that labour tends to be reallocated from less efficient exiters to more efficient entrants – and a positive between effect – meaning that labour tends to be reallocated from less to more efficient continuing firms. The policy conclusion of this strand of literature is that static allocative efficiency would be maximised if governments removed barriers to labour reallocation.

By contrast, the evidence on the cross effect is more mixed. In particular, downsizing firms appear to have above-average labour productivity growth. This pattern can be explained by different lags in factor adjustments (such as those resulting from quicker adjustment of the mobile factor – labour – with respect to the quasi-fixed factor – physical capital) or by the prevalence of strategically-defensive forms of downsizing: inefficient firms reduce the scale of their operation as they strive to restore their competitiveness. In the few studies that go

beyond labour productivity and measure efficiency by multi-factor productivity (MFP), however, this cross effect tends to be less negative (e.g. Brown and Earle, 2008).

Firms are, however, heterogeneous. Dynamic accounting decompositions show that labour tends to be reallocated from less to more efficient firms within a country or an industry. However, it cannot be excluded that this association is simply brought about by the correlation of both employment growth and productivity with other firms' characteristics, rather than a causal effect of greater efficiency on employment growth. For instance, firms in growing metropolitan areas may be more efficient and expand their employment faster than firms in depressed areas. If this were the case, the dynamism of a few geographical clusters, and the reallocation of labour among clusters with different degrees of dynamism, would be the engine of growth, justifying policy efforts to remove possible impediments to labour reallocation only when targeted at lifting geographical barriers to mobility.

This chapter contributes to shedding some light on the link between the performance of medium and large continuing firms and job reallocation by exploiting comparable cross-country micro-data. Specifically, the covariation of job reallocation and a number of performance measures is analysed, conditional on firm age, detailed firm-size classes, detailed geographical area, detailed industry and common time shocks (see Box 2.4). These data are available for a sufficiently large and representative number of firms in ten OECD countries. Table 2.4 shows firm-level correlations between residual employment growth and residual performance measures (that is between employment growth and performance measures that are not accounted for by the firm's characteristics indicated above) in each of these countries.

Firm-level employment changes appear to be correlated with the firm's efficiency level at the beginning of the period with few exceptions, even after controlling for firm heterogeneity. This holds whether efficiency is proxied by labour productivity – consistent with most of the literature on dynamic accounting decompositions – or is more appropriately measured by MFP. Interestingly, when the MFP measure is used, the correlations are stronger. Overall, these results confirm previous findings that the positive “between effect” usually found in decompositions is unlikely to be simply the outcome of firm-level heterogeneity. Job flows among continuers effectively reallocate labour resources from less efficient to more efficient firms. However, these findings should not lead to the conclusion that efficiency would be optimised by maximising labour reallocation, insofar as the analysis developed here does not allow making any statements on dynamic consequences of the degree of reallocation, for example on investments in match-specific human capital.

By undertaking a separate analysis for job-creating and job-destroying firms, it is possible to explore further the sources of the productivity-enhancing effect of job reallocation. Efficiency levels turn out to be particularly important for job destruction. Table 2.4 shows, in fact, that while, among declining firms, less efficient firms tend to experience greater job losses, among expanding firms more efficient firms do not create significantly more jobs, except in Italy and the United Kingdom. On the contrary, in a number of countries, expanding firms with higher labour productivity levels tend to display smaller rates of employment growth.

Consistent with the literature on dynamic accounting decompositions, moreover, employment and labour productivity growth appear to be negatively correlated, confirming the evidence on the cross effect discussed above. This correlation is rather widespread: not



**Table 2.4. The firm's efficiency levels and employment growth are positively correlated**

Residual correlation coefficients between employment growth and other performance variables

	Employment growth (all)	Employment growth (growing firms)	Employment growth (declining firms)	Employment growth (all)	Employment growth (growing firms)	Employment growth (declining firms)
	Labour productivity			Multi-factor productivity level		
Belgium	0.0155	-0.1107***	0.1252***	0.1082***	0.0242	0.1083***
Denmark	-0.1039***	-0.1052***	-0.0535*	0.1064***	0.0030	0.1934***
Finland	0.0492***	-0.0788***	0.1711***	0.0919***	-0.0132	0.1212***
France	0.0901***	-0.0086	0.2004***	0.1063***	0.0050	0.0994***
Italy	0.1244***	0.0418***	0.0167	0.1413***	0.0657***	0.0597***
Japan	0.0680***	0.0235	0.0977***	0.0517***	0.0216	0.0324
Poland	0.1150***	0.1041**	0.2469***	0.0340	0.0374	0.0973*
Spain	0.0404***	-0.0289***	0.1098***	0.0646***	0.0066	0.0110
Sweden	0.0978***	-0.0277***	0.1167***	0.1426***	0.0177	0.1356***
United Kingdom	0.0701***	0.0581***	0.1339***	0.1558***	0.0273**	0.1692***
	Labour productivity growth			Multi-factor productivity growth		
Belgium	-0.2052***	-0.1065***	-0.1460***	0.0100	0.0475***	0.0073
Denmark	-0.0782***	-0.0914***	-0.1404***	-0.0779***	0.0406	-0.1933***
Finland	-0.1556***	-0.1055***	-0.1629***	0.0441***	0.0273	-0.0272
France	-0.2170***	-0.1684***	-0.1953***	-0.0010	-0.0094*	0.0045
Italy	-0.1918***	-0.1389***	-0.2363***	0.0188***	0.0220**	-0.1265***
Japan	-0.3041***	-0.2706***	-0.2948***	0.0163	-0.0246	0.0178
Poland	-0.1978***	-0.3370***	-0.1187**	0.1067***	0.1893***	-0.1149**
Spain	-0.2614***	-0.2305***	-0.2242***	0.0176***	0.0075	-0.0101
Sweden	-0.1253***	-0.0988***	-0.0405***	-0.0585***	-0.0117	-0.0155
United Kingdom	-0.1336***	-0.0820***	-0.1449***	-0.0101	0.0455***	-0.0158
	Real investment rate					
Belgium	0.0843***	0.0395**	0.0410**			
Denmark	0.0962***	-0.0282	0.1559***			
Finland	0.1763***	0.1455***	0.1569***			
France	0.1083***	0.0880***	0.0945***			
Italy	0.0541***	0.0814***	-0.0240*			
Poland	-0.0107	0.0415	-0.1693***			
Spain	0.0654***	0.0665***	0.0358***			
Sweden	0.0984***	0.0798***	0.0754***			
United Kingdom	0.1776***	0.1862***	0.0984***			

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

Note: Size-weighted correlation coefficients among residuals from the employment growth and performance equations of Seemingly Unrelated Regressions (SUR) models including firm age, detailed firm-size classes, detailed geographical areas, detailed industry and common time dummies as co-variables. Growth rates are specified as changes of log variables. Productivity levels are lagged one year. Labour productivity is defined as value added per head. Firms with less than 20 employees are excluded. Data refer to continuing firms with published accounting data. Belgium, 2000-04; Denmark, 2001-05; Finland, 2002-04; France, 2000-04; Italy, 2002-03; Japan, 2004-06; Poland, 2001-04; Spain, 2001-04; Sweden, 2000-05; and the United Kingdom, 2000-04.

Source: OECD estimates. See Annex 2.A1.

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only does employment decline faster than output in downsizing firms, but also output grows less than employment in expanding firms. However, this occurs, in most cases, without any clear relationship between employment growth and efficiency growth – the latter measured by MFP growth. Conversely employment growth is unambiguously correlated with investment: fast-growing firms tend also to have greater investment rates.

This suggests that factor adjustments go hand-in-hand with limited effects on efficiency. As a consequence, the negative “cross effect” often found in productivity decompositions is possibly the outcome of slight differences in the timing of physical capital and labour adjustments.<sup>30</sup> In addition, in two countries (Denmark and Sweden), there is some evidence that defensive downsizing plays a key role: in these countries staff contractions tend to bring about significant increases in efficiency and real investment in physical capital appears smaller, the greater the extent of the staff contraction.<sup>31</sup>

Overall, in all countries, the contribution of both the *extensive margin* – firm entry and exit – and the *intensive margin* – growth and contraction of continuers – to job reallocation appear important. Firm age turns out to be a key determinant, at least for continuers: young firms create more jobs and older firms destroy more jobs, although cross-country differences are large. Nonetheless, country specificities matter also as regards the overall level of reallocation. Finally, in almost all countries for which data are available, job reallocation appears to enhance static efficiency in the sense that inefficient firms destroy more jobs and efficient ones create more jobs. In particular, for downsizing firms the extent of the staff contraction appears to be closely correlated with the firm’s pre-contraction efficiency level.

### 3. Labour flows as a source of opportunities and costs for workers: Which are the workers affected by greater mobility?

Firm characteristics are important determinants of job and worker flows. But there are significant differences in the exposure to mobility across workers. This section explores a set of workers’ characteristics associated with the patterns of worker flows across industries and countries.

#### *Hiring and separations are higher among women, young adults and low qualified workers in all countries*

In all countries, except Sweden, controlling for differences in the composition of employment by industry, age and educational attainment, hiring rates are higher for women than for men (Figure 2.10).<sup>32</sup> The same is also true for separations, with the exceptions of Austria, and Hungary. These hiring and separation patterns result in larger reallocation rates for women than for men. On average, almost 19% of female employees do not remain with the same employer in two consecutive years, against 17% for their male counterparts. More frequent spells of joblessness are likely to be a key factor in gender differences in reallocation rates. However, in some countries, these patterns can probably be explained also by the greater share of women having a fixed-term contract. In fact, gender differences in reallocation rates appear particularly large in Spain (more than 10 percentage points), the country with the largest share of temporary workers.

In most countries, worker mobility is concentrated among younger prime-age adults (aged from 25 to 34 years). More precisely, there is a strong negative correlation between workers’ age and hiring rates in all countries. Hiring rates for people aged between 25 and 34 years are above the country mean by at least 5 percentage points in ten out of 17 countries and particularly higher in Finland, France, Spain and the United States. They then decline with age as workers settle in their jobs and careers and gain experience and seniority. Similarly, separation rates also tend to decline with age, but the age profile is less steep and tends to become flatter above a certain age threshold in many countries. These patterns are not surprising and often observed in the literature (see *e.g.* Ryan, 2001). They are likely to

Figure 2.10. **Worker mobility is higher among women, young adults and low qualified workers**

Percentage rates adjusted by industry composition and other individual characteristics, 2000-05

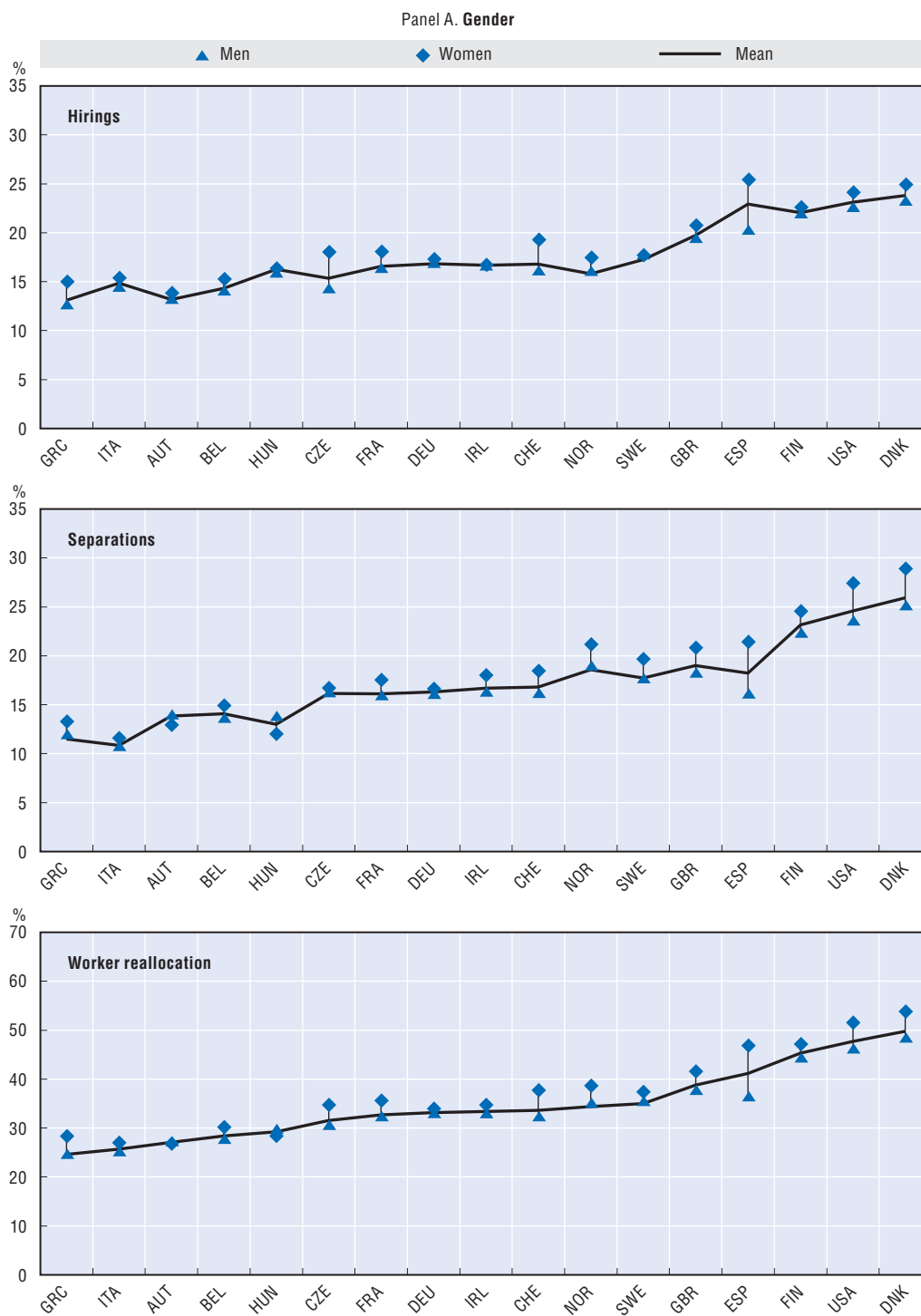


Figure 2.10. **Worker mobility is higher among women, young adults and low qualified workers** (cont.)

Percentage rates adjusted by industry composition and other individual characteristics, 2000-05

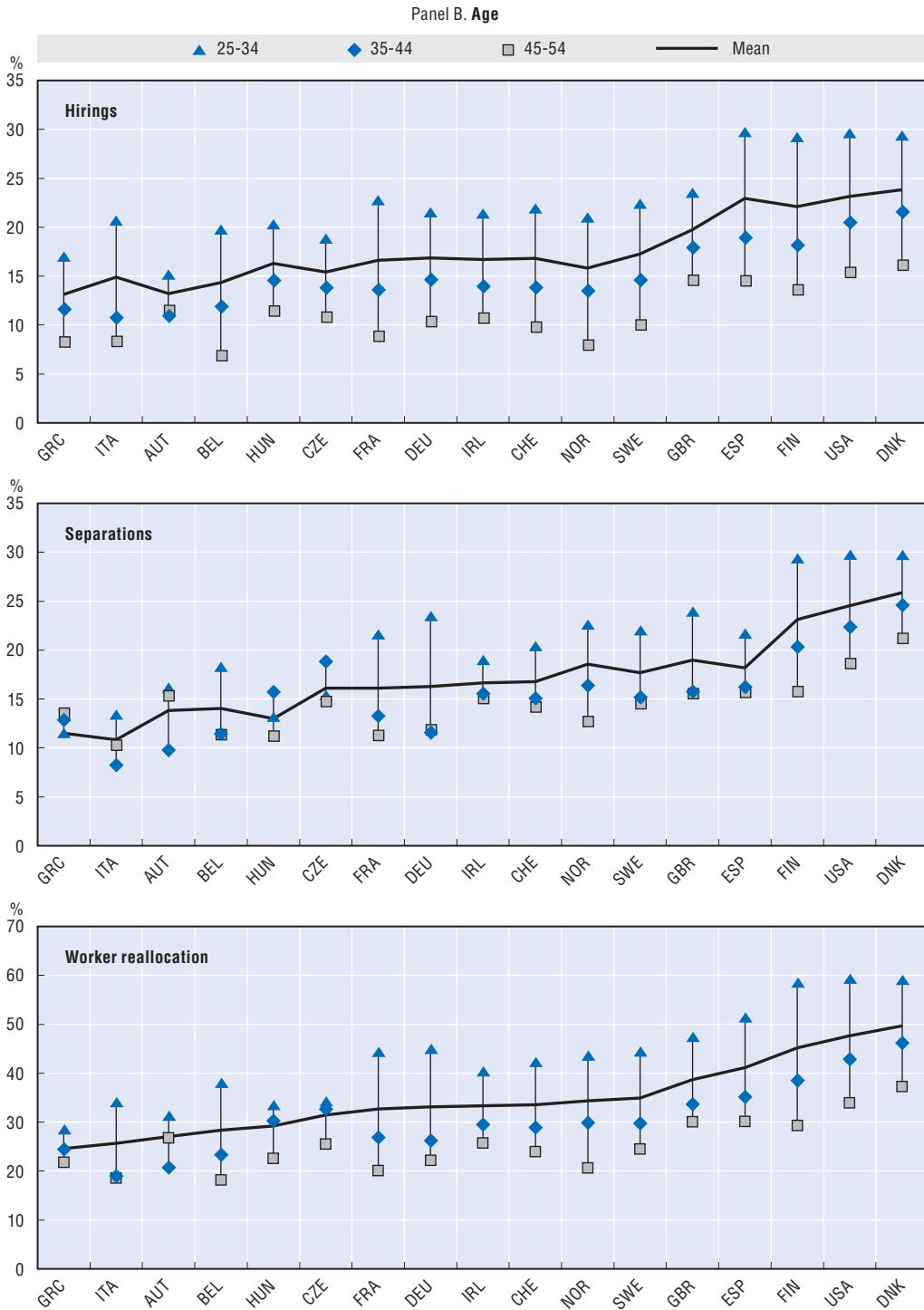
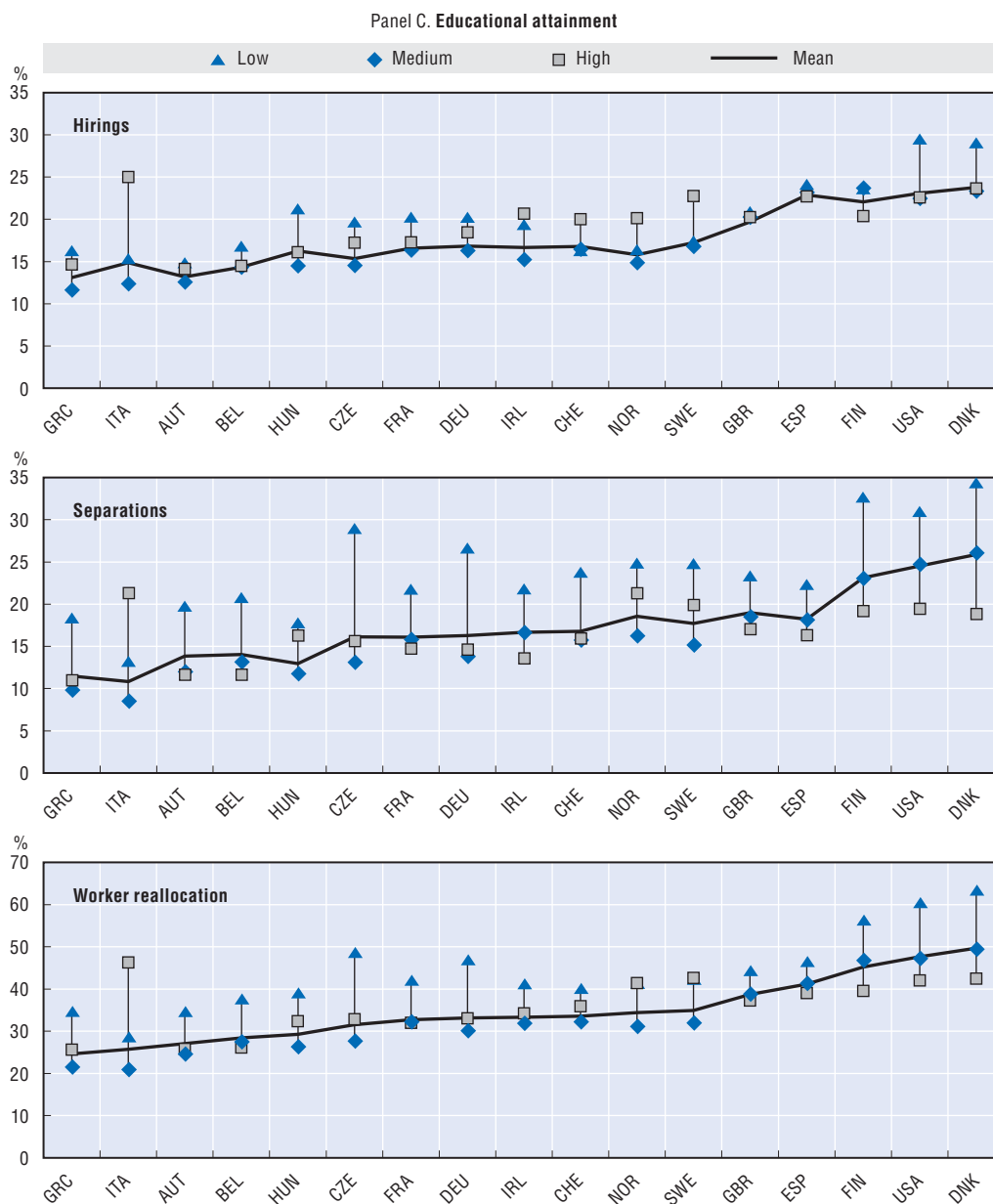


Figure 2.10. **Worker mobility is higher among women, young adults and low qualified workers** (cont.)

Percentage rates adjusted by industry composition and other individual characteristics, 2000-05



Note: Data are ranked in ascending order of worker reallocation rates. Reallocation rates are estimated average rates that would be observed in each country if it had the same industry composition and individual characteristics as the average country other than the characteristic of interest. The rates are based on 2002-05 for the Czech Republic; 2000-03 for Ireland; 2000-04, for Norway; 2004-05, for Poland; 2003-05 for the Slovak Republic; 2002-07 for Switzerland; 2007 for Turkey; and 2000, 2002 and 2004 for the United States.

Source: OECD estimations. See Annex 2.A1.

StatLink <http://dx.doi.org/10.1787/706662861371>

reflect two intertwined phenomena. On the one hand youth engage in “job-shopping” in the early stage of their career in order to find the job that best matches their skills. Better job opportunities in terms of pay and working conditions tend to drive youth job mobility, and job changes in their first years of work experience tend to have a positive impact on their future career paths of youth (Topel and Ward, 1992; Le Minez and Roux, 2002). On the other hand, in many countries, the share of youth labour flows that results from involuntary separations is not negligible: young workers are more often engaged in temporary jobs, as employers use fixed-term contracts to screen new recruits, but also to adjust to changing aggregate demand conditions (see *e.g.* Barlet *et al.*, 2007). Separations rates of younger adults appear particularly high, in comparison with those of more experienced workers, in Denmark, Finland, France, Germany, Norway and the United States.

Low-qualified workers – with less than upper secondary education – have consistently greater probability of separation than more qualified workers in all countries, except in Italy – where qualified youth are often older than 25 years at the time of their first entry in the labour market (see OECD, 2008b) – but there is no systematic relationship between separation hazards and education at higher educational attainment levels. By contrast, hiring varies less by skill levels, except in Denmark, Hungary and in the United States – where hiring rates are substantially higher in the case of low-skilled workers – and Italy, Norway and Sweden – where hiring rates are significantly larger for the most educated. These patterns suggest that structural changes in the demand for skills, leading to fewer labour market opportunities for low-educated workers, are reflected in greater separation rates for low-skilled workers than in reductions of hiring.<sup>33</sup> Structural changes in the demand for skills are also reflected in the relative high mobility of workers with more than upper secondary education. Overall, labour reallocation appears to be greater at the extremes of the skill distribution (that is, U-shaped), except in countries with the highest overall mobility (such as Finland, United States and Denmark) where it decreases monotonically as the level of educational attainment increases.

### ***Gender mobility differences are larger in low-mobility industries, while the opposite holds for age differences***

Looking at the distribution of reallocation rates across industries, it appears that hiring and separation rates of women are about 30% larger than those of men in manufacturing, where mobility rates are generally low, whereas the gender difference is smaller in services, where mobility rates are generally high (with gender differences often below 10%, if any, see Bassanini and Marianna, 2009). Hiring rates also decline with age in all industries and so do separation rates but their age profiles tend to become flatter as age increases. More precisely, separation rates vary little with age in low-worker-mobility sectors, particularly in manufacturing, except in declining sectors such as the textiles industries where younger adults separate more often than other adults from their employer. By contrast, in high-mobility sectors mostly in services, separation rates of young adults are higher, possibly as a result of the larger use of fixed-term positions in these industries, typically occupied by young workers.

Hiring rates of workers with different qualifications are similar across industries, albeit somewhat higher for high-qualified workers in some industries. In contrast, separation rates follow broadly two patterns depending on the industry. In high-mobility industries, more specifically in non-manufacturing, separation rates within each industry first decline markedly then remain flat as educational attainment increases. In other industries, they are greater at the extremes of the skill distribution.

## Conclusions

This chapter provides a number of stylised facts concerning reallocation of labour resources in OECD countries and some other market economies. Labour reallocation is substantial: each year a large number of jobs are created and/or destroyed, and a large number of workers are hired and/or separate from their employer. These gross labour flows are an order of magnitude larger than aggregate net employment changes. Job and worker reallocation within industries are also far larger than those associated with structural changes in the economy and the associated reallocation across industries. Job creation, hirings, job destruction and separations tend to be positively correlated across industries and to be larger in most service industries than in goods producing industries. By contrast, dismissals tend to be more frequent in declining manufacturing industries. Younger firms (including entrants) create more jobs, but job destruction rates among continuing firms tend to increase with firm age. There is also evidence that jobs are reallocated from inefficient to more productive firms, making an important contribution to productivity growth. Among different demographic groups, younger workers are the most mobile. Worker reallocation is also larger at the extremes of the skill distribution, possibly due to structural changes in the demand for skills.

Country specificities appear to account for a large share of total variation in both job and worker flows. This suggests that country-specific policies and institutions are likely to play an important role in determining the level of job and worker reallocation. Country-specific factors also appear to interact with a number of these characteristics, notably by affecting the way jobs are reallocated from older to younger firms, as well as the age profile of worker separations.

These results raise several questions that call for further investigation. Is there an optimal level of labour reallocation from both an efficiency and equity viewpoint? Which are the institutions and policies that affect the level of reallocation and how do they do so? Why are labour resources reallocated from older to younger firms in certain countries, but not in others? How do institutions affect the distribution of hirings and separations across groups of workers? How do institutions affect the share of dismissals within total separations and how does this share affect the level of insecurity borne by workers? What are the implications of different country patterns for employment and productivity growth? Building upon the stylised facts presented in this chapter and the concordant development of gross flows data that are harmonised across a number of countries, as well as the extension and update of OECD regulatory indicators, it would be possible to shed some light on these policy-relevant questions in next editions of the *Employment Outlook*.

## Notes

1. Also for this reason, labour mobility taking the form of inflows to, and outflows from, non-employment is not analysed in this chapter (for recent and more general discussion and analysis of this issue, see Petrongolo and Pissarides, 2008; Elsby *et al.*, 2008; Boeri and Garibaldi, 2009).
2. That is approximately the OECD STAN standard level of disaggregation, which is an intermediate level between one and two digits in the ISIC Rev. 3 classification.
3. See, for example, Figure 2.1 below and Timmer *et al.* (2007).
4. The firm is defined here (as well as in the studies referred to above) as “an organisational unit producing goods or services which benefits from a certain degree of autonomy in decision-making, especially for the allocation of its current resources”.

5. EU KLEMS is a large internationally harmonised database that contains industry-level data for most OECD countries (see O'Mahony and Timmer, 2009).
6. These include eight OECD countries (Finland, Germany, Hungary, Mexico, Portugal, Sweden, the United Kingdom, and the United States) two accession countries (Estonia and Slovenia) and one enhanced-engagement country (Brazil).
7. All the data used for this chapter refer to the non-farm business sector, except when indicated otherwise.
8. Excess job reallocation would be smaller if a finer industry disaggregation were employed. However, the literature has shown that excess reallocation remains large in comparison with net growth even within narrowly defined industries (see Davis and Haltiwanger, 1999). Put it another way, growing and contracting firms coexist in the same industry, no matter how narrowly the latter is defined.
9. These include 21 OECD countries (Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Norway, Poland, Portugal, Slovak Republic, Spain, Sweden, Switzerland, Turkey, the United Kingdom and the United States), plus one accession country (Slovenia).
10. As already noticed, country-specific figures presented in Box 2.2 must be taken with great caution, however, since they are based on data for only one or two years in the case of many countries.
11. This can easily be explained by the large share of seasonal workers and relatively bad working conditions in this industry.
12. See Bassanini and Marianna (2009). These correlations do not appear to be driven by specific outliers.
13. The analysis carried out above shows that looking at simple country-specific averages would be erroneous for two reasons: i) because in unadjusted aggregate data, given the importance of the cross-industry variation, countries that specialise in low-mobility industries would have low reallocation rates even if they had above-average reallocation rates in all industries; and ii) because data are not available for certain industries in certain countries – for instance, comparing unadjusted data, the United Kingdom would have much lower job reallocation rates, since job flows are available only in manufacturing for that country. As a consequence, all country rates presented in this chapter are adjusted by industry composition. See Annex 2.A1 for details on the adjustment method.
14. Adjusted shares of temporary workers by country are reported in Annex 2.A1. The discussion here is limited to worker flows due to the small number of countries for which gross job flow data are available.
15. Employment protection indicators are reported in Annex 2.A1. A more detailed analysis would be necessary to confirm the validity of this conjecture. In particular, the theoretical literature has also pointed out that product market regulation can have important effects on job flows, particularly through its effect on firm entry (e.g. Koeniger and Prat, 2007). Given the close correlation in the degree of stringency of product and labour market regulations, according to OECD indicators (see Conway *et al.*, 2005), it cannot be excluded that patterns in Figure 2.2 are also due to the effect of these regulations.
16. According to the first group of theories, positive or negative correlations can emerge depending on the degree of heterogeneity of shocks. Conversely, the second group of theories relates job creation and destruction patterns to differences in the breadth of business opportunities that are available in different industries depending on their life cycle. Mass entry of firms would occur in industries where technological opportunities are larger, together with a process of fast learning and competitive selection that would generate mass exit and shakeouts (for evidence, see for example, Klepper and Simons, 2005).
17. In most labour force surveys this question is asked only to people that are not in employment (but have previous employment experience).
18. Available layoff data used in this chapter come from enterprise surveys for two countries (France, 2006-07, and Germany, 2003-07) and labour force surveys for the other three (Australia, 1995-2001; the United Kingdom, 1997-2005; and the United States, 1996-2006, even years only). The precise definition and reference period differs across surveys and these differences are likely to overstate dismissals in Germany, France and, to a limited extent, the United Kingdom with respect to the United States (see Annex 2.A1). Data for Australia refer only to seven non-manufacturing industries. For this reason, Australia is excluded from unadjusted industry averages.



19. This does not imply, however, that the bulk of separations is voluntary: in order to avoid severance payments or higher taxes (in experience-rating systems), employers can, by modifying working conditions, induce workers to quit.
20. As already noted in the literature (e.g. Bassanini *et al.*, 2009), within-country cross-industry distributions of dismissal rates appear also closely correlated across countries: for each available country, the correlation between the industry distribution of dismissal rates for that country and the average industry distribution obtained excluding that country is never smaller than 0.44, significant at conventional statistical levels.
21. Unfortunately data are available for too few countries to make any general statement on the cross-country distribution of dismissals. However, it is suggestive to note that, within the five countries for which data are available, dismissals appear lower in countries that have more stringent regulations concerning individual and collective dismissals and *vice versa* for countries with less binding legislation (see Annex 2.A1).
22. According to Bartelsman *et al.* (2009), in all countries for which comparable data are available, the average size of entrants is never greater than 60% of the average incumbent, and in many OECD countries this figure is as low as 30%. The size of firms shutting down their business operations is often small too (see e.g. Brandt, 2004).
23. As usual, when computing job-reallocation rates for start-ups and shutdowns, total dependent employment of each industry is used at the denominator, in order to get meaningful economic figures.
24. Slovenia and the United Kingdom (see Bassanini and Marianna, 2009).
25. Data are from the August 2006 edition of the Amadeus dataset for European countries and the August 2008 edition of the Orbis dataset for the non-European countries. Both datasets are produced by Bureau van Dijk. Data used in this chapter refer to continuing firms with unconsolidated publicly-available published accounts data. See Annex 2.A1 for more detail on data construction.
26. Small firms are under-represented in the original micro-data. It seems therefore cautious to eliminate the smallest firms. The 20 employee threshold is somewhat arbitrary and is chosen only to be consistent with the size classes for which population weights can be constructed, drawing on the OECD Firm-level database, Eurostat's Structural Business Statistics and the Japanese Establishment and Enterprise Census.
27. Three size classes (20-49 employees, 50-99 employees and 100 employees or more), two age classes (less than 20 years, and 20 years or more – that is approximately less than the sample mean and more than the sample mean) and 21 industries (those used in Figure 2.1 plus mining) are considered here.
28. As suggested by the high correlation between firm entry and exit rates at the industry (as well as size and age) level (see above).
29. Most of these studies look also at the relationship between reallocation of output shares and multi-factor productivity growth, but they rarely look at job reallocation and multi-factor productivity growth.
30. For example, labour adjustments could prompt capital adjustments that might be however spread over a longer time period. Some caution must be exercised, nonetheless, in interpreting these results since annual productivity growth data might be plagued by large measurement error.
31. Although, when restricting the sample to declining firms, there is no significant relationship between the extent of downsizing and MFP growth in Sweden, downsizing firms appear to experience faster MFP growth than firms with stable or increasing employment in this country.
32. All figures in this section are adjusted for composition with respect to other characteristics. For example, Panel A in Figure 2.10 presents estimated patterns by country and gender that would occur in each country if it had the same structure in terms of industry, age and educational attainment as the average country. For the analysis of this section, workers' flows are aggregated into cells by country (17 countries, those in Figure 2.2 except Poland, Portugal, Slovak Republic, Slovenia and Turkey), industry (23 non-farm and non-mining business sectors, those in Figure 2.1, except the fuel industry), gender (men and women), age (prime-age adults aged 25-34, 35-44 and 45-54 years) and educational attainment (less than upper secondary, upper secondary and some post-secondary and tertiary levels). The age coverage is limited to prime-age adults in order to circumvent measurement errors due to small sample sizes for older workers and to avoid capturing the extreme variability in job hiring and separations amongst youths, due to part-time employment while studying.

33. This would suggest that churning rates might also be constant by skill level (see Box 2.2): firms might accommodate their demand for skills by increasing dismissals of workers with low educational attainment (without reducing hirings from this group) and increasing hirings of more-educated workers (without reducing separations).

## Bibliography

- Abowd, J. and L. Vilhuber (2005), "The Sensitivity of Economic Statistics to Coding Errors in Personal Identifiers", *Journal of Business and Economic Statistics*, Vol. 23, No. 2, pp. 133-152.
- Abowd, J., P. Corbell and F. Kramarz (1999), "The Entry and Exit of Workers and the Growth of Employment: An Analysis of French Establishments", *Review of Economics and Statistics*, Vol. 81, No. 2, pp. 170-187.
- Acs, Z.J., C. Armington and A. Robb (1999), "Measures of Job Flow Dynamics in the US Economy", CRIEFF Discussion Paper No. 9907.
- Aghion, P. and P. Howitt (1998), *Endogenous Growth Theory*, MIT Press, Cambridge, Mass.
- Albæk, K. and B. Sørensen (1998), "Worker flows and job flows in Danish manufacturing, 1980-1991", *Economic Journal*, Vol. 108, No. 451, pp. 1750-1771.
- Arai, M. and F. Heyman (2000), "Permanent and Temporary Labour: Job and Worker Flows in Sweden, 1989-1998", National Institute of Economic Research Working Paper No. 71.
- Australian Bureau of Statistics (1997), *Retrenchment and Redundancy*, ABS, Canberra.
- Australian Bureau of Statistics (2001), *Retrenchment and Redundancy*, ABS, Canberra.
- Autor, D., W.R. Kerr and A.D. Kugler (2007), "Do Employment Protections Reduce Productivity? Evidence from US States", *Economic Journal*, Vol. 117, pp. F189-F217.
- Aw, B.Y., X. Chen and M.J. Roberts (2001), "Firm-Level Evidence on Productivity Differentials and Turnover in Taiwanese Manufacturing", *Journal of Development Economics*, Vol. 66, No. 1, pp. 51-86.
- Baldwin, J.R. and W. Gu (2006), "Plant Turnover and Productivity Growth in Canadian Manufacturing", *Industrial and Corporate Change*, Vol. 15, No. 3, pp. 417-465.
- Barlet, M. et al. (2007), "Flux de main-d'oeuvre, flux d'emplois et internationalisation, in INSEE", *L'économie française, édition 2007*, INSEE, Paris.
- Bartelsman, E. (2008), "EU KLEMS DMD indicators: Sources and Methods", in M. O'Mahony et al., *EUKLEMS – Linked Data: Sources and Methods*, mimeo, University of Birmingham, [www.euklems.net/data/linked/euklems\\_linkeddata\\_sourcesandmethods\\_220708.pdf](http://www.euklems.net/data/linked/euklems_linkeddata_sourcesandmethods_220708.pdf).
- Bartelsman, E., J. Haltiwanger and S. Scarpetta (2009), "Measuring and Analyzing Cross-Country Differences in Firm Dynamics", in T. Dunne, J.B. Jensen and M.J. Roberts (eds.), *Producer Dynamics*, University of Chicago Press for the NBER, Chicago, Ill.
- Bartelsman, E., S. Scarpetta and F. Schivardi (2005), "Comparative Analysis of Firm Demographics and Survival: Evidence from Micro-level Sources in OECD Countries", *Industrial and Corporate Change*, Vol. 14, No. 3, pp. 365-391.
- Bassanini, A. and P. Marianna (2009), "Looking Inside the Perpetual-Motion Machine: Job and Worker Flows in OECD Countries", OECD Social, Employment and Migration Working Paper, OECD Publishing, Paris, forthcoming.
- Bassanini, A., L. Nunziata and D. Venn (2009), "Job Protection Legislation and Productivity Growth in OECD Countries", *Economic Policy*, Vol. 24, No. 58, pp. 349-402.
- Bauer, T., S. Bender and H. Bonin (2007), "Dismissal Protection and Worker Flows in Small Establishments", *Economica*, Vol. 74, pp. 804-821.
- Below, D. von and P. Thoursie (2008), "Last In, First Out? Estimating the Effect of Seniority Rules in Sweden", Institute for Labour Market Policy Evaluation Working Paper No. 2008:27.
- Benedetto, G., J. Lane, J. Haltiwanger and K. McKinney (2007), "Using Worker Flows to Measure Firm Dynamics", *Journal of Business and Economic Statistics*, Vol. 25, No. 3, pp. 299-313.
- Boeri, T. and P. Garibaldi (2009), "Beyond Eurosclerosis", *Economic Policy*, Vol. 24, No. 59, pp. 409-461.
- Boeri, T. and J. Jimeno (2005), "The Effects of Employment Protection: Learning from Variable Enforcement", *European Economic Review*, Vol. 49, pp. 2057-2077.

- Brandt, N. (2004), "Business Dynamics in Europe", OECD STI Working Paper No. 2004/1, OECD Publishing, Paris.
- Brown, J.D. and J.S. Earle (2008), "Understanding the Contributions of Reallocation to Productivity Growth: Lessons from a Comparative Firm-Level Analysis", Upjohn Institute Staff Working Paper No. 08-141.
- Burgess, S., J. Lane and D. Stevens (2000), "Job Flows, Worker Flows and Churning", *Journal of Labor Economics*, Vol. 18, No. 3, pp. 473-502.
- Burgess, S., J. Lane and D. Stevens (2001), "Churning Dynamics: An Analysis of Hires and Separations at the Employer Level", *Labour Economics*, Vol. 8, pp. 1-14.
- Cingano, F., M. Leonardi, J. Messina and G. Pica (2009), "The Effect of Employment Protection Legislation and Financial Market Imperfections on Investment: Evidence from a Firm-Level Panel of EU countries", paper presented at the 49th Economic Policy panel meeting, Brussels, April 2009.
- Coen-Pirani, D. and Y. Lee (2007), "Job Flows across US States", mimeo, Federal Reserve Bank of Cleveland.
- Connolly, H. and P. Gottschalk (2004), "Wage Cuts as Investment in Future Wage Growth: Some Evidence", Boston College Working Papers in Economics No. 543.
- Contini, B. and C. Villosio (2007), "Worker Mobility, Displacement, Redeployment and Wage Dynamics in Italy", IZA Discussion Paper No. 2622, Bonn.
- Conway, P., V. Janod and G. Nicoletti (2005), "Product Market Regulation in OECD Countries: 1998 to 2003", OECD Economics Department Working Papers No. 419, OECD Publishing, Paris.
- Corseuil, C.H.L. (2008), "Testing the Connection between Job Creation and Workers Replacement", paper presented at the EALE Annual Conference, September 2008.
- Davis, S.J. and J. Haltiwanger (1992), "Gross Job Creation, Gross Job Destruction and Labor Reallocation", *Quarterly Journal of Economics*, Vol. 107, No. 3, pp. 819-863.
- Davis, S.J. and J. Haltiwanger (1999), "Gross Job Flows", in O. Ashenfelter and D. Card (eds.), *Handbook of Labor Economics*, Amsterdam: North-Holland.
- Davis, S.J., R.J. Faberman and J. Haltiwanger (2006), "The Flow Approach to Labor Markets: New Data Sources and Micro – Macro Links", *Journal of Economic Perspectives*, Vol. 20, No. 3, pp. 3-26.
- Davis, S.J., J. Haltiwanger and S. Schuh (1996), *Job Creation and Destruction*, MIT Press, Cambridge, Mass.
- Disney, R., J. Haskel and Y. Heden (2003), "Restructuring and Productivity Growth in UK Manufacturing", *Economic Journal*, Vol. 113, pp. 666-694.
- Elsby, M., B. Hoxby and A. Sahin (2008), "Unemployment Dynamics in the OECD", NBER Working Paper No. 14617.
- Faberman, R.J. (2003), "Job Flows and Establishment Characteristics: Variations across US Metropolitan Areas", William Davidson Institute Working Paper No. 609.
- Faberman, R.J. (2007), "The Relationship Between the Establishment Age Distribution and Urban Growth", Federal Reserve Bank of Philadelphia Working Paper No. 07-18.
- Foster, L., J. Haltiwanger and C.J. Krizan (2001), "Aggregate Productivity Growth: Lessons from Microeconomic Evidence", in E. Dean, M. Harper and C. Hulten (eds.), *New Developments in Productivity Analysis*, University of Chicago Press, Chicago.
- Golan, A., J. Lane and E. McEntarfer (2006), "The Dynamics of Worker Reallocation within and across Industries", *Economica*, Vol. 74, pp. 1-20.
- Gomez-Salvador, R., J. Messina and G. Vallanti (2004), "Gross Job Flows and Institutions in Europe", *Labour Economics*, Vol. 11, pp. 469-485.
- Griliches, Z. and H. Regev (1995), "Firm Productivity in Israeli Industry: 1979-1988", *Journal of Econometrics*, Vol. 65, pp. 175-203.
- Haltiwanger, J. (1997), "Measuring and Analyzing Aggregate Fluctuations: The Importance of Building from Micro-economic Evidence", *Saint Louis Federal Reserve Bank Economic Review*, January/February, pp. 35-85.
- Haltiwanger, J. and M. Vodopivec (2002), "Gross Worker and Job Flows in a Transition Economy: An Analysis of Estonia", *Labour Economics*, Vol. 9, No. 5, pp. 601-630.

- Haltiwanger, J. and M. Vodopivec (2003), "Worker Flows, Job Flows and Firm Wage Policies", *Economics of Transition*, Vol. 11, No. 2, pp. 253-290.
- Haltiwanger, J., R. Jarmin and J. Miranda (2008) "Business Formation and Dynamics by Business Age: Results from the New Business Dynamics Statistics", paper presented to the CAED annual conference, Budapest, April 2008.
- Haltiwanger, J., S. Scarpetta and H. Schweiger (2006) "Assessing Job Flows across Countries: The Role of Industry, Firm Size and Regulations", IZA Discussion Paper No. 2450, Bonn.
- Hamermesh, D., W. Hassink and J. Van Ours (1996), "New Facts about Factor Demand Dynamics: Employment, Jobs and Workers", *Annales d'Economie et Statistique*, Vol. 41/42, pp. 21-40.
- Hijzen, A., R. Upward and P. Wright (2007), "Job Creation, Job Destruction and the Role of Small Firms: Firm-Level Evidence for the UK", GEP Discussion Papers No. 07/01, University of Nottingham.
- Hohti, S. (2000), "Job Flows and Job Quality by Establishment Size in the Finnish Manufacturing Sector 1980-94", *Small Business Economics*, Vol. 15, pp. 265-281.
- Ilmakunnas, P. and M. Maliranta (2003), "The Turnover of Jobs and Workers in a Deep Recession: Evidence from the Finnish Business Sector", *International Journal of Manpower*, Vol. 24, No. 3, pp. 216-246.
- Jovanovic, B. (1982), "Selection and the Evolution of Industry", *Econometrica*, Vol. 50, pp. 649-670.
- Klepper, S. (1996), "Entry, Exit, Growth, and Innovation over the Product Life Cycle", *American Economic Review*, Vol. 86, No. 3, pp. 562-583.
- Klepper, S. and K.L. Simons (2005), "Industry Shakeouts and Technological Change", *International Journal of Industrial Organization*, Vol. 23, No. 1, pp. 23-43.
- Koeniger, W. and J. Prat (2007), "Employment Protection, Product Market Regulation and Firm Selection", *Economic Journal*, Vol. 117, pp. F302-F332.
- Kugler, A.D. and G. Pica (2008), "Effects of Employment Protection on Worker and Job Flows: Evidence from the 1990 Italian Reform", *Labour Economics*, Vol. 15, No. 1, pp. 78-95.
- Le Minez, S. and S. Roux (2002), "Les différences de carrières salariales à partir du premier emploi", *Économie et Statistique*, No. 351, pp. 31-64.
- Martins, P. (2007), "Dismissals for Cause: The Difference That Just Eight Paragraphs Can Make", IZA Discussion Paper No. 3112, Bonn.
- Messina, J. and G. Vallanti (2007), "Job Flow Dynamics and Firing Restrictions: Evidence from Europe", *Economic Journal*, Vol. 117, pp. F279-F301.
- Micco, A. and C. Pages (2006), "The Economic Effects of Employment Protection: Evidence from International Industry-Level Data", IZA Discussion Papers No. 2433, Bonn.
- Mortensen, D.T. and C. Pissarides (1994), "Job Creation and Job Destruction in the Theory of Unemployment", *Review of Economic Studies*, Vol. 61, No. 3, pp. 397-415.
- OECD (1996), *Employment Outlook*, OECD Publishing, Paris.
- OECD (2000), *Employment Outlook*, OECD Publishing, Paris.
- OECD (2001), *Employment Outlook*, OECD Publishing, Paris.
- OECD (2003a), *The Sources of Economic Growth in OECD Countries*, OECD Publishing, Paris.
- OECD (2003b), *Employment Outlook*, OECD Publishing, Paris.
- OECD (2004), *Employment Outlook*, OECD Publishing, Paris.
- OECD (2005), *Employment Outlook*, OECD Publishing, Paris.
- OECD (2006), *Employment Outlook*, OECD Publishing, Paris.
- OECD (2007), *Employment Outlook*, OECD Publishing, Paris.
- OECD (2008a), *Economic Survey of Turkey*, OECD Publishing, Paris.
- OECD (2008b), *Employment Outlook*, OECD Publishing, Paris.
- O'Mahony, M. and M. Timmer (2009), "Output, Input and Productivity Measures at the Industry Level: the EU KLEMS Database", *Economic Journal*, forthcoming.
- Petrongolo, B. and C. Pissarides (2008), "The Ins and Outs of European Unemployment", *American Economic Review Papers and Proceedings*, Vol. 98, No. 2, pp. 256-262.

- Postel-Vinay, F. and J.M. Robin (2002), "Equilibrium Wage Dispersion with Worker and Employer Heterogeneity", *Econometrica*, Vol. 70, No. 6, pp. 2295-2350.
- Pries, M. and R. Rogerson (2005), "Hiring Policies, Labor Market Institutions, and Labor Market Flows", *Journal of Political Economy*, Vol. 113, No. 4, pp. 811 – 839.
- Ryan, P. (2001), "The School-to-Work Transition: A Cross-National Perspective", *Journal of Economic Literature*, Vol. 39, pp. 34-92.
- Schivardi F. and R. Torrini (2008), "Identifying the Effects of Firing Restrictions Through Size-Contingent Differences in Regulation", *Labour Economics*, Vol. 15, No. 2.
- Schwellnus, C. and J. Arnold (2008), "Do Corporate Taxes Reduce Productivity and Investment at the Firm Level? Cross-country Evidence from the Amadeus Dataset", OECD Economics Department Working Paper No. 641, OECD Publishing, Paris.
- Timmer, M.P., M. O'Mahony and B. van Ark (2007), "EU KLEMS Growth and Productivity Accounts: An Overview", *International Productivity Monitor*, Vol. 14, pp. 71-85.
- Topel, R.H. and M.P. Ward (1992), "Job Mobility and the Careers of Young Men", *Quarterly Journal of Economics*, Vol. 107, pp. 439-479.
- Venn, D. (2009), "The Impact of Small-firm Exemptions from Employment Protection", OECD Social, Employment and Migration Working Paper, OECD Publishing, Paris, forthcoming.

## ANNEX 2.A1

*Sources and Definitions***Job flows and co-variates: Sources and definitions****Industry-level data**

Data on job flows by country and industries are from Bartelsman (2008), except for four countries (Brazil, Germany, Mexico and the United Kingdom) for which they are from Haltiwanger *et al.* (2006). Data from these two sources are constructed from business registers and tax files using the same protocol and are therefore comparable (see also Bartelsman *et al.*, 2009). Data refer to firms as unit of observation defined as “an organisational unit producing goods or services which benefits from a certain degree of autonomy in decision-making, especially for the allocation of its current resources”.

Although data are in principle available on an annual basis, period averages are used in order to maintain comparability with what is done with worker flow and micro-data. Data from the above-mentioned sources include information on entry, exit and continuers. However, they exclude, in a given year, job creation and destruction from continuing firms that will exit the following year (that are called “about-to-die” firms hereafter). As a consequence, job turnover of continuers is underestimated. However, using data from the Census Bureau for the United States, it is possible to evaluate this downward bias to no more than 10% in most industries in the United States. This results in an even smaller bias when the rate for all firms – startups, shutdowns and continuers – is computed, as in Section 1. The downward bias, however, appears to be far greater – up to 30% – in two industries (mining and telecommunications). These industries are therefore either excluded (mining) or aggregated with other industries (telecommunications) in all countries.

In the analysis of job creation and destruction by entry and exit, when no comparison with continuers is made, data for several countries for 2005 from the OECD Business Demographics database are added to the sample. In addition, for the United Kingdom, data from Hijzen *et al.* (2007), covering a longer period (1998-2005), are used. Although in principle more complete, to the extent that they do not exclude job turnover of “about-to-die” firms, these data are not comparable to the other sources mentioned above as regards continuers and cannot be used in the rest of the analysis.

**Firm-level data**

Firm-level data are from the August 2006 edition of the Amadeus database for European countries and the August 2008 edition of the Orbis database for the non-European countries. Both databases are produced by Bureau van Dijk. Data used in this

chapter refer to firms with unconsolidated publicly-available published account data. Limited financial account data are used for the United States, where there is no obligation for the firm to publish its accounts. As, in these data, it is not possible to identify firms' closures from firms that exit the sample for other reasons and very young firms are under-represented due to lags in the publication of accounts for start-ups, these data are suitable only for the analysis of continuing firms.

Implausibly large (or steadily constant) employment changes are filtered out. In order to do so the sample is restricted to firms-by-year observations where employment growth data are available also for either the preceding or the following year (a minimum of three consecutive employment data is therefore required for each firm). In addition, observations with one of the following characteristics are also excluded: i) no employment change in the current, preceding and following years (or with missing employment growth in one of these years and zero growth in the other two); ii) employment changes greater than 1 000 units and percentage log employment growth greater than 50%, both in absolute terms; and iii) absolute percentage log employment growth greater than 60%. Two other exclusion criteria are applied to observations with non-missing employment growth data in the current, preceding and following years: iv) percentage log employment growth greater than 30% and smaller than -20% in two consecutive years accompanied by changes in the wage bill with opposite sign; and v) percentage log employment growth greater than 40% and smaller than -30% in two consecutive years. Three additional exclusion criteria, which substitute for iv) and v) above, are applied at the extremes of a firm spell of non-missing employment data: vi) absolute percentage log employment growth greater than 50% and absolute changes in log employment growth greater than 80 percentage points in the current or following year; vii) percentage log employment growth greater than 30% and absolute changes in log employment growth greater than 30 percentage points in the current or following year and log employment growth 1.5 times greater than (or opposite sign of) wage bill growth in the current year; and viii) percentage log employment growth smaller than -20% and absolute changes in log employment growth greater than 30 percentage points in the current or following year and log employment growth 1.5 times greater than (or opposite sign of) wage bill growth in the current year. For each country, years with too few valid observations per industry are also excluded. As a consequence, data cover only: Belgium (2000-04), Denmark (2001-05), Finland (2002-04), France (2000-04), Italy (2002-03), Japan (2004-06), Poland (2001-04), Spain (2001-04), Sweden (2000-05), the United Kingdom (2000-04) and the United States (2005-06). Obviously these filters might introduce biases in measured job flows and the direction of the bias is unknown, *a priori*, but biases are likely to be larger in unadjusted data.

Population weights by firm size and detailed industry – obtained from Eurostat's Structural Business Statistics for European countries, the Establishment and Enterprise Census for Japan and the OECD Firm-level database for the United States – are used to obtain aggregate turnover rates. As small firms are under-represented in these data, firms with less than 20 employees, on average, are excluded. Aggregate data are also averaged across years, in order to smooth out fluctuations that can simply be the result of measurement error.

The analysis of job flows uses several other covariates including labour productivity (defined as real value added per employee), multi-factor productivity (unadjusted by factor quality, see Schwellnus and Arnold, 2008), investment rate (change in capital stock in real terms minus depreciation and divided by real value added), age (observation year minus date of incorporation), detailed geographical areas (codified through dummies corresponding to

the first two digits of the zip code) and industry (up to two-digit levels of the NACE classification). Specific filters are applied to eliminate implausible values in the case of productivity and investment data (following Schweltnus and Arnold, 2008).

The distribution of firms in the Amadeus and Orbis datasets, however, does not match the distribution of firms in the population. This is due to the fact that large firms and specific industries (such as the banking industry in the United States) are over-represented. For this reason, the sample of each country and year is stratified by firm size classes and detailed industry, for which the actual distribution of firms is available – based again on Eurostat’s Structural Business Statistics for European countries, the Establishment and Enterprise Census for Japan and the OECD Firm-level database for the United States. Then firms are randomly drawn from each stratum, with the number of observations being calibrated to ensure that the distribution of firms in the sample match the distribution of the population. In order to use the maximum available information, all available firms are drawn from the stratum that is the most under-represented in the raw data, according to the information available on the population of firms. From each other stratum, the number of firms in the sample is set at a level that keeps the ratio between the number of firms in the sample and in the population constant across strata.

## Worker flows: Sources and definitions

Data to estimate worker reallocation, hiring and separation rates among dependent employees (henceforth called employment) come from the European Labour Force Survey (EULFS) for European countries for the period 1997 to 2005, depending on countries and data availability, and the bi-annual January Displaced workers/Job tenure supplement of the Current Population Survey (CPS), for even years from 1996 to 2004, for the United States.

Employment, Hirings and Separations are reported at the OECD-STAN industry level of disaggregation, an intermediate level between one and two digits in the ISIC Rev. 3 classification, for 24 industries in the non-farm business sector. Data are further harmonised by using levels and annual growth rates by industry from EU-KLEMS for the countries for which the latter are available (see [www.euklems.net](http://www.euklems.net)). In Section 3, the data series are further broken down by gender, age – 15-24, 25-34, 35-44, 45-54, 55-64 years, and highest completed education levels – less than upper secondary (Low), upper secondary and some post-secondary (Medium), and tertiary level (High). At this level of disaggregation the fuel industry is excluded, due to its small size.

Annual hiring and separation rates are computed using the methodology explained below. However, in narrowly-defined industries they might vary considerably from year to year due to the small sample size (and the fact that the industry is typically not included in LFS sample designs). To filter out these, by and large, spurious movements, averages across years are calculated.

Hirings ( $H$ ) reflect movements into jobs and refer to a point in time and correspond to the number of dependent employees who have been working for their current employer for no more than the past 12 months including the survey reference week. Symmetrically, job stayers ( $JS$ ) are defined as those who have been working for more than one year with the same employers. Employment, excluding observations with missing tenure information ( $E\_T$ ), is defined as the sum of the two terms:

$$E\_T_{ijt} = H_{ijt} + JS_{ijt}$$



where  $i$  refers to countries,  $j$  to industries,  $t$  to years and  $m$  to worker characteristics such as gender, age and education. Separations reflect movements out of jobs in the past 12 months and are obtained by exploiting the basic accounting identity:

$$S_{ijtm} = H_{ijtm} - \Delta E_{ijtm} \quad (1)$$

However, adjustments are necessary because: i) missing tenure information and/or errors in the reporting of job tenure data might differ between two survey waves; and ii) employment movements at disaggregate industry level in LFS might differ from national account information. Let's see these adjustments in order.

First, an adjusted lagged value of  $E_{ijtm}$  (called  $LE_{ijtm}$  hereafter) is defined in such way that it is consistent over time with  $E_{ijtm}$  and with year-to-year employment changes resulting from LFS employment data without excluding observations with missing tenure ( $E$ ).

$$LE_{ijtm} = E_{ij(t-1)m} \frac{E_{ijtm}}{E_{ijtm}}$$

$LE_{ijtm}$  is further adjusted to account for cohort effects affecting beginning and end years of age groups to produce unbiased year-on-year employment changes by age group.

Second, the distribution of employment across worker groups is combined with industry-level employment from the March 2008 public release of EUKLEMS (denoted with  $E_K$ ). For countries for which EUKLEMS data are not available, it is set  $E_K = E$ . More precisely, an adjusted employment level that can be used in the accounting identity (1) is derived as follows:

$$E_{ijtm} \text{ corr} = E_{ijtm} \frac{E_{ijtm}}{E_{ijtm}}$$

Similarly, one-year lagged employment is calculated as follows:

$$LE_{ij(t-1)m} = LE_{ijtm} \frac{E_{ij(t-1)m}}{LE_{ijtm}}$$

Adjusted hirings, consistent with EU-KLEMS employment, are then derived from:

$$H_{ijtm} \text{ corr} = \frac{H_{ijtm}}{E_{ijtm}} E_{ijtm} \text{ corr}$$

Finally, hiring rates are obtained from:

$$HR_{ijtm} = \frac{H_{ijtm} \text{ corr}}{\frac{1}{2}(E_{ijtm} \text{ corr} + E_{ij(t-1)m} \text{ corr})}$$

Adjusted separations ( $S_{ijtm} \text{ corr}$ ) are derived from the following accounting identity:

$$E_{ijtm} \text{ corr} = E_{ij(t-1)m} \text{ corr} + H_{ijtm} \text{ corr} - S_{ijtm} \text{ corr}$$

Hence:

$$S_{ijtm} \text{ corr} = H_{ijtm} \text{ corr} - \Delta E_{ijtm} \text{ corr}$$

Finally, separation rates are obtained from:

$$SR_{ijtm} = \frac{S_{ijtm} \text{ corr}}{\frac{1}{2}(E_{ijtm} \text{ corr} + E_{ij(t-1)m} \text{ corr})}$$

## Dismissals: Sources and definitions

Data for dismissals come from country-specific sources:

**Australia:** *Source:* Australian Bureau of Statistics (1997, 2001), covering employment in the final year and dismissals in the same year and over the two preceding years. Dismissals are annualised by dividing the total amount by three.

**France:** *Source:* data extracted from the 2006-07 DMMO-EMMO surveys by the French Ministry of Labour (DARES). They include annual dismissals as well as employment at the start and end of the period. Original data collection in the DMMO-EMMO survey is, however, quarterly.

**Germany:** *Source:* data extracted by IAB from the 2003-07 waves of the IAB Establishment Panel and including dismissals over the first six month of each year and employment at the start and end of the period. Rates are annualised by multiplying them by two.

**The United Kingdom:** *Source:* directly computed from UK Quarterly Labour Force (waves 1997-2005). An individual is considered to have been laid off if he/she was made redundant in the period covered by the survey (a quarter). Only wage and salary employees in the private sector are considered. Employment data are constructed accordingly. Dismissal rates are annualised by multiplying them by four.

**The United States:** *Sources:* Bassanini *et al.* (2009) for 2004; updated using the same methodology and adapted industry mappings for the other years using various waves of CPS Displaced Workers Supplement (1996-2006, even years). An individual is considered to have been laid off if he/she lost his/her job in the most recent year covered by each survey, because of plant closing or moved, insufficient work, or position or shift abolished. Only wage and salary employees in the private-for-profit sector are considered.

For countries for which total employment is not available at the start of the period (Australia and the United States), denominators are adjusted by subtracting from each industry's end-of-period employment the corresponding rate of employment change reported in EUKLEMS (March 2008 public release) for that industry and country.

## Adjustments for industry-composition (or for composition by demographic characteristics)

When indicated in the text, country-level indicators are adjusted for industry-composition using the following procedure: first, employment shares of each industry are computed for each country and then averaged across countries; second, a weighted regression of the given indicator on industry and country dummies is estimated using frequency weights proportional to employment shares and imposing the constraint that the average of the coefficients of country dummies is equal to the global sample. Estimated coefficients of country dummies will then correspond to the adjusted indicators.

In Section 3 adjustments are made for both industry-composition and composition effects due to other demographic characteristics. The procedure, in this case is the same as above except that dummies by chosen characteristic and country (for example gender and country in Panel A of Figure 2.10) are used instead of country dummies and dummies by other characteristics and industry (for example age, educational attainment and industry in Panel A of Figure 2.10) replace industry dummies.

Country-level indicators adjusted for industry composition are computed for several job and worker flow measures as well as the share of workers with a temporary contract. Adjusted shares are reported in Table 2.A1.1 below together with OECD indicators of employment protection.

**Table 2.A1.1. Adjusted share of temporary workers and employment protection indicators, 2000-05**

	Share of temporary workers	Employment protection
Austria	7.64	2.27
Belgium	8.63	2.50
Canada	12.77	1.06
Czech republic	8.52	1.97
Denmark	7.36	1.90
Finland	16.37	2.13
France	14.03	2.88
Germany	11.40	2.44
Greece	10.94	3.14
Hungary	6.55	1.65
Ireland	4.21	1.25
Italy	9.72	2.48
Norway	7.24	2.61
Poland	18.98	1.97
Portugal	20.79	3.47
Spain	29.55	3.02
Slovak republic	4.93	1.96
Sweden	13.60	2.49
Switzerland	11.00	1.60
Turkey	10.65	3.43
United Kingdom	4.55	1.08
United States	n.a.	0.65

n.a.: Not available.

Source: OECD estimates from national Labour Force Surveys, EUKLEMS and OECD indicators of employment protection ([www.oecd.org/employment/protection](http://www.oecd.org/employment/protection)).

StatLink  <http://dx.doi.org/10.1787/706834618370>



## Chapter 3

# Is Work the Best Antidote to Poverty?

*Employment reduces considerably the poverty risk, but does not solve all problems. On average in the OECD area, 7% of individuals living in households with at least one worker are poor. And while in-work poverty is often related to insufficient work participation, resulting from very short part-time work or very short employment spells over the year, there are other important factors at work. In particular, poverty rates are higher for families with children. Thus, fighting in-work poverty requires implementing targeted policy responses. In this respect, social transfers play a key role, precisely because they can be targeted towards the most vulnerable households: on average in the OECD area, they reduce by almost half the rate of in-work poverty. Among these transfers, in-work benefit schemes can be particularly effective, if they are well conceived and combined with a binding minimum wage set – by law or collective agreements – to a moderate level. Conversely, since the risk of in-work poverty is much less related to hourly wage rates than it is with working time, employment duration or household composition, the minimum wage cannot constitute the main element of an effective strategy to alleviate in-work poverty.*

## Introduction

At the outset of the current economic downturn, a significant proportion of the working-age population consisted of individuals whose household income was below the poverty threshold. And many of them were living in a household where at least one person had a job, the so-called “working poor”. During the economic downturn, many more individuals of working age are likely to fall into poverty either because they will lose their job or work fewer hours.

Traditionally, when assessing labour market performance, the main focus has been on unemployment or employment rates. But the public debate has recently put an increasing emphasis on in-work poverty. For governments, the problems faced by the working poor and jobless people are two pieces of the same puzzle: how to secure for them a route towards economic self-sufficiency? From this perspective, the policy goal should be the same in both cases: creating more and better jobs. However, this is a particularly demanding objective since past experience suggests that more jobs do not necessarily mean better jobs. At the same time, governments also need to put in place a solid safety-net for those individuals with weak employment prospects, who may not succeed in finding a job that offers career prospects. With the ongoing severe economic downturn, these issues are becoming even more central.

This chapter first presents a brief overview of the poverty situation in the OECD countries (Section 1). In particular, it explores the link between labour market outcomes and poverty incidence among the working-age population, and then focuses on the working poor. These analyses are based on a relative concept of poverty: individuals whose household income does not support living conditions considered adequate in their country of residence are typically labelled as being in poverty, even if their physical subsistence needs can be met. On the policy side, the chapter provides an overview of what OECD countries do to alleviate in-work poverty (Section 2): in particular, it focuses on the minimum wage and social transfers, among which it highlights in-work benefit schemes. In the longer run, education and vocational training should also be part of the toolbox of policies to fight in-work poverty. However, such policy options fall beyond the scope of this chapter, which does not analyse the dynamic aspects of poverty.

## Main findings

- *The poverty rate among the working-age population varies greatly across OECD countries and is the main contributor to overall poverty headcounts. At 10% on average in the OECD area, the poverty rate among the working-age population is sizeable. It is particularly high in Mexico, Poland, Turkey and the United States, where it exceeds 16% of the working-age population, while it remains below 7% in the four Nordic countries, Austria, the Czech Republic and France. The risk of poverty is higher than the risk of unemployment among the population aged 15-64 in most OECD countries.*

- *Access to a job is a major factor limiting the poverty risk faced by households with a head of working age.* In virtually all countries, the poverty rate among jobless households is more than double the rate observed among working households. In the present economic downturn, poverty is therefore likely to increase in the OECD area as worsening global economic conditions are associated with large job losses in most member countries. This is especially the case in countries such as Australia, Canada, Ireland, Korea and the United States, where more than half of individuals living in jobless households are poor (against 37% on average in the OECD area).
- *However, in-work poverty risk is significant almost everywhere.* While employment reduces considerably the poverty risk, on average 7% of individuals living in households with at least one worker are poor in the OECD area. Consequently, the working poor account for more than 60% of all the poor of working age. This proportion increases to 80% in countries such as Greece, Iceland, Japan, Luxembourg, Mexico, Portugal and Turkey.
- *For most of the working poor, underemployment is the major problem.* The average intensity of work among the working poor differs sharply from that observed among the rest of the employed population. On average over the 21 European countries for which data are available, only slightly more than 20% of the working poor work full-time, full year-round and almost 70% of this group work six months or less during the year (in full-time equivalent months). By contrast, more than half of individuals living in a non-poor household work full-time over the full year.
- *For families with children and low earnings potentials, even full-time employment may not fully secure economic self-sufficiency.* On average, working full-time at the bottom of the wage ladder (i.e. at around 40% of the average wage) brings disposable incomes of two-earner couples with children to only 65% of the median income, while the incomes of lone parents in low-paid work remain at the poverty threshold or even below in most countries.
- *Net social transfers play a key role in reducing poverty among the working-age population.* On average, the rate of in-work poverty declines from 12% to 7% after net social transfers are taken into account (a 42% reduction). They also reduce substantially the poverty rate among jobless people from 84% to 38% (a 55% reduction). And overall, net social transfers cut the poverty rate almost by half among the working-age population. However, there are large differences across countries in the anti-poverty role of net social transfers. Consequently, the design of national transfer systems appears to be a key determinant of the OECD country ranking with respect to poverty rates.
- *However, when taking up a full-time job, low-wage workers see a large proportion of their gross earnings consumed by social contributions, income taxes and reduced social benefits.* For one-earner families, the so-called average effective tax rate varies on average from 70% to 80% of gross earnings (depending on household composition), benefits withdrawal being the key component of these high rates. And for couples with children, half of additional earnings are on average taxed away when the spouse takes up a full-time job. Here, the tax burden on labour incomes plays a dominant role, and for these families, a more progressive tax system would help to make full-time employment a more solid path towards economic self-sufficiency.
- *In-work benefit schemes may constitute a valuable policy response to in-work poverty problems.* Provided that they are well-targeted and generous enough, in-work benefits (IWBs) are a cost-effective redistribution instrument, especially as compared with more traditional redistribution policies that may entail large “efficiency losses” when they damage work

incentives. Since the poverty risk is strongly affected by household composition, IWBs that are mean-tested on family incomes can be better targeted toward the most vulnerable households than individual-based benefits. The effectiveness of IWB measures also depends on national contexts: in particular, they tend to be either ineffective or very expensive in countries with a narrow earnings distribution at the bottom of the wage ladder that prevents a proper targeting of these benefits.

- *The minimum wage may constitute a useful complement to IWB schemes, but taken in isolation, has a limited effectiveness in fighting in-work poverty as it is not well targeted.* In particular, it does not offer much support to the large majority of the working poor who cannot find a full-time job, and is not well suited to address other important factors underlying poverty risk, such as specific family situations. This notwithstanding, minimum wages can increase the effectiveness of IWB schemes: by providing a wage floor below which wages cannot fall, they help to achieve the intended redistribution to low-wage workers. The critical issue is to set the minimum wage to an *appropriate* level. Indeed, overly high minimum wages tend to compress the earnings distribution at the bottom of the wage ladder, so that IWBs are likely to become either very expensive or ineffective. Moreover, high minimum wages may have dis-employment effects, especially for some low-productivity workers. Therefore, they may increase out-of-work poverty, while reducing the risk of in-work poverty. Cutting payroll taxes at the bottom of the wage ladder helps mitigating this perverse effect, but such an anti-poverty policy tends to be very costly and potentially ineffective since the working poor represent only a small proportion of low-paid workers.

## 1. Taking the measure of in-work poverty

Poverty is a complex concept and several approaches exist for measuring its incidence, based on alternative criteria of what constitutes a situation of poverty for a given individual or household. Different measures of poverty provide widely different perspectives as to its prevalence, depth and evolution. This section provides a brief overview of alternative measures of poverty, including the *relative* measure used in this chapter. According to this measure, individuals are considered as poor if their available income is substantially lower than that of a typical person in their country of residence.

### 1.1. Alternative measures of poverty

The various existing measures of poverty are largely determined by two main choices: i) selecting a measurable entity, or metric, from which a situation of poverty can be inferred; and ii) selecting a threshold that separates what is poverty from what is not. In both cases, there are several alternatives.

The metric used can be “monetary” or “non-monetary”. It can also be “direct” or “indirect”, describing final living conditions of people or, rather, the means required to achieve those conditions. Indexes of *material deprivation* are sometimes used as a direct metric, while household income – the most commonly-used metric – is indirect. These two measures are related empirically, but the relationship between low income and deprivation is not very strong (OECD, 2008, Chapter 7; Boarini and Mira d’Ercole, 2006). Both measures have advantages and drawbacks and they should be seen as complements, not as substitutes. One drawback of the cash-income concept is that it does not account for the provision of in-kind benefits such as public health care, housing, childcare or education. Thus, it tends to overstate economic hardship in countries where such benefits are



relatively generous, and *vice versa*. For instance, in the absence of low-priced public childcare, the economic hardship faced by low-income households with young children will be underestimated (if private childcare expenses are not subsidised by specific public cash transfers). Income-based measures of poverty thus fail to capture the effect of any anti-poverty policies providing non-market benefits to low-income families (Blank, 2008a). By contrast, the concept of material deprivation does not suffer, in principle, from this kind of limitation since it is intended to directly measure hardship. However, this category of measures crucially depends on the set of deprivation items retained in the summary index of deprivation. In this respect, it is not clear-cut which types of deprivation are best suited to capture family economic hardship and how the various items selected should be weighed to deliver the most accurate measure of poverty. The limited comparability of deprivation indexes across countries is also an important concern, since available individual measures of deprivation often differ from one country to another.

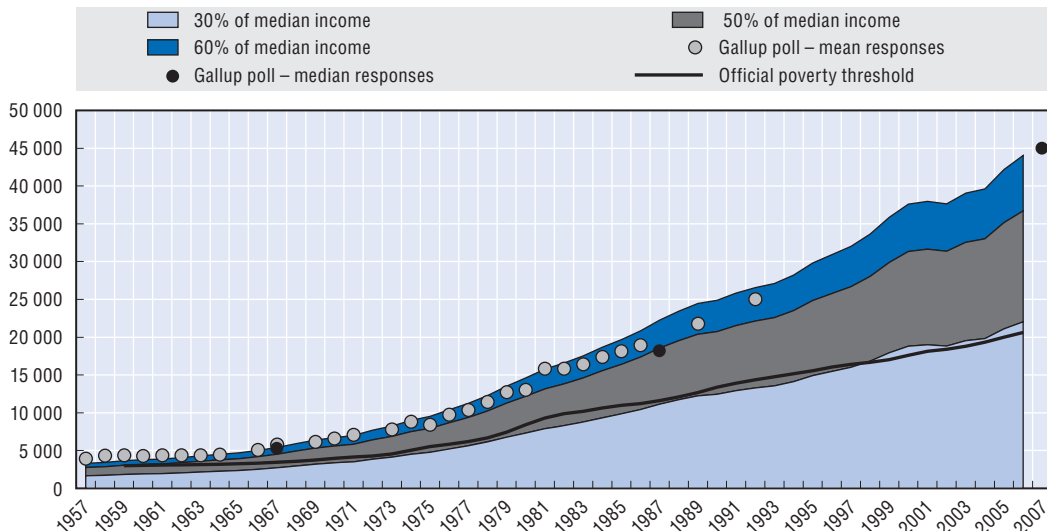
Whatever the metric used, comparisons across countries and over time are also greatly affected by whether the dividing line between the poor and the rest of the population is defined with respect to a *relative* or to an *absolute* standard of living. In this respect, national practice differs across OECD countries, reflecting, in part, subjective judgement about national “social preferences”. For example, the United States use an absolute measure of poverty: a family is classified as being in poverty if its money income (before taxes, EITC payments and in-kind benefits) falls below a subsistence food budget – the so-called official poverty line – that has been adjusted only for price inflation since the early 1960s. By contrast, most European countries rely on a relative measure: a household is labelled as being “at risk of poverty” if its disposable income falls below a threshold set at 60% of median income. Ireland and the United Kingdom (as regards child poverty issues) have recently adopted more comprehensive approaches that use together absolute and relative measures of poverty and also combine the income adequacy concept with material deprivation indexes.

The rationale for a relative measure is that, in developed nations, poverty is fundamentally about having the resources to fully participate in society (Blank and Greenberg, 2008). This is best measured in relation to the economic capacity of middle-income families. In this context, one strength of a relative measure is that it automatically adjusts with improvements in living standards, at least to the extent that median income is a rough measure of living standards. A common objection to a relative measure is that it primarily relates information about inequality, not about basic economic needs. Indeed, the incidence of poverty (*i.e.* the proportion of households whose disposable income is below a percentage of the median income) will not decrease until income inequality narrows in the bottom half of the income distribution. On the other hand, a growing body of research suggests that for wealthy nations, inequality and the relative position matter for well-being, even for people who have sufficient income to meet “basic needs” (Summers, 2008). Furthermore, public opinion research underlines that the so-called subjective poverty threshold, *i.e.* the public opinion on the necessary minimum “get-along” income, is more consistent over time with a relative standard of poverty than it is with an absolute standard. Indeed, the latter tends to fall well below the subjective line as average income per capita increases over time (Fremstad, 2008).

In the United States, according to the so-called Gallup polls, most people stated in 2007 that the minimum income needed to “get along” where they live was more than twice the current absolute poverty line, while this subjective poverty line was almost


identical to the official threshold in the early 1960s (see Figure 3.1). By contrast, median or average responses to the get-along question were in the range of 50-60% of the median income over the whole period. But, as noted by Blank (2008b), there are widely varying views about this: some will argue that this demonstrates the weakness of an absolute poverty line, while others will argue that this reflects progress achieved over time relative to a fixed income threshold. These arguments both have their own strengths, thereby reflecting the fact that the term poverty has no universally accepted meaning.<sup>1</sup>

Figure 3.1. **Alternative poverty measures in the United States for a family of four**  
Current dollars, 2007



Note: Gallup polls ask about the minimum amount of money a family of four would need to “get along in your local community”.

Source: Figure adapted from Blank (2008b), Figure 4. Gallup polls data are taken from Vaughan (1993) – as reported in Citro and Michael (1995), Table 2.4 – and Jones (2007). Median income and official poverty threshold are taken from the US Census Bureau.

StatLink  <http://dx.doi.org/10.1787/706845352273>

The main lesson that can be drawn from the above example is that any poverty measure must be clear about what it seeks to measure: different concepts lead to very different poverty thresholds and, therefore, to different outcomes as regards the incidence of poverty and its evolution. At a practical level, relative income-based measures of poverty have two major advantages for international comparison of poverty: i) the distribution of household cash incomes is available in all OECD countries; and ii) while international comparisons of economic hardship based on cash income can be biased because the cash income concept does not account for international differences in the provision of non-market benefits, relative measures of poverty allow to overcome, to some extent, these kinds of difficulties. For these reasons, the present chapter is based on such a relative income-based measure of poverty, as are most internationally comparative studies on poverty in developed countries.

More precisely, individuals whose household disposable income falls below half the median value of disposable incomes in their country (see Annex Table 3.A1.1) are classified as being in poverty. Annual household money income, after direct taxes and public cash transfers, is adjusted for family size on the basis of the so-called “square root equivalence

scale”, which divides household income by the square root of household size (this implies that, for instance, a household of four persons needs twice as much income as a person living alone). The resulting “equivalent” income measure is an estimate of potential consumption for each individual in a household and individuals are defined as being in poverty if their equivalent disposable income falls below 50% of the median of the distribution of equivalent disposable income in a country.<sup>2</sup> Then, the working-poor population is formed by all individuals living in a poor household where at least one adult has a job, at some point during the year (*i.e.* the working poor are defined with respect to a household concept, as opposed to an individual concept that would focus on the individual net income of workers).

In OECD member countries, most individuals who are poor according to this *relative* definition of poverty are not lacking the minimum resources required to satisfy “basic needs”. Rather, people are considered to be poor when they face a risk of social exclusion, in that their living conditions fall substantially below the typical standard of living in their country of residence. In this sense, the poverty rates presented in this chapter may constitute an upper-bound estimate of the poverty situation in OECD countries, especially for higher income countries. Indeed, this relative concept of poverty is probably more distant from a basic-needs concept in countries where per capita income is relatively high than it is in lower income countries. This must be borne in mind when making international comparisons of poverty (see Box 3.1).

**Box 3.1. To what extent does the choice of a particular benchmark affect cross-country comparisons?**

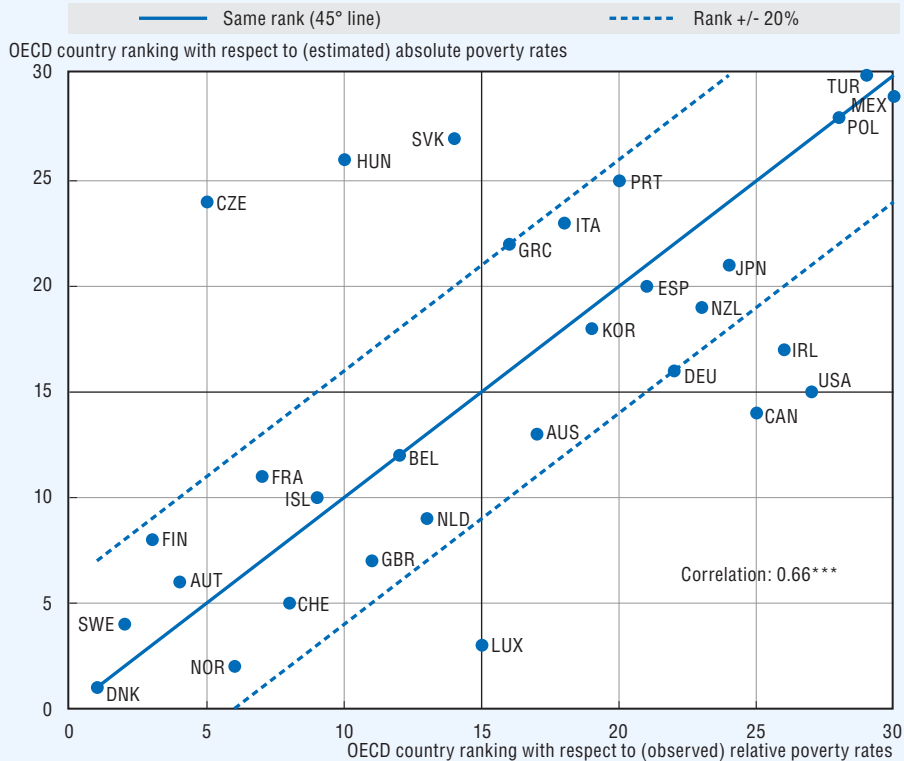
Within a single country, the choice between using an absolute or a relative benchmark to measure the incidence of poverty may lead to very different assessments of the severity of poverty: this comes out clearly from the above example, based on the US experience (see Figure 3.1). To what extent does the choice of a particular benchmark also affect cross-country comparisons? Since no cross-country comparable absolute measure of poverty exists, this remains an open question. In order to provide a tentative answer, the US official poverty threshold has been used to calculate an “absolute” poverty rate for each OECD countries (see figure below):\*

- Overall, the OECD country ranking with respect to poverty rates does not change dramatically when poverty situations are defined with respect to an absolute standard of living, as compared to a relative benchmark set to 50% of median income. The correlation between the two country rankings is relatively strong (and statistically significant) and the relative position of a majority of the countries shown changes by less 20%.
- However, the choice of an absolute benchmark improves the relative positions of Canada, Ireland, Luxembourg and the United States in the distribution of poverty rates across OECD countries markedly, while it has the opposite effect for the Czech Republic, Hungary and the Slovak Republic. In the first group of countries, large income differences – notably at the bottom half of the income distribution – lead to relatively high poverty rates by OECD standards when poverty situations are defined with respect to a relative benchmark. But the high living standards prevailing in these countries lead to relatively low poverty rates in international comparison when a common absolute benchmark is used for all OECD countries. Conversely, the second group of countries is characterised by a narrow distribution of households income and relatively low living standards.

**Box 3.1. To what extent does the choice of a particular benchmark affect cross-country comparisons? (cont.)**

**OECD country rankings with respect to poverty rates:  
Relative vs. absolute measures of poverty**

Mid-2000s



Source: OECD Questionnaire on Income Distribution.

StatLink <http://dx.doi.org/10.1787/707155700041>

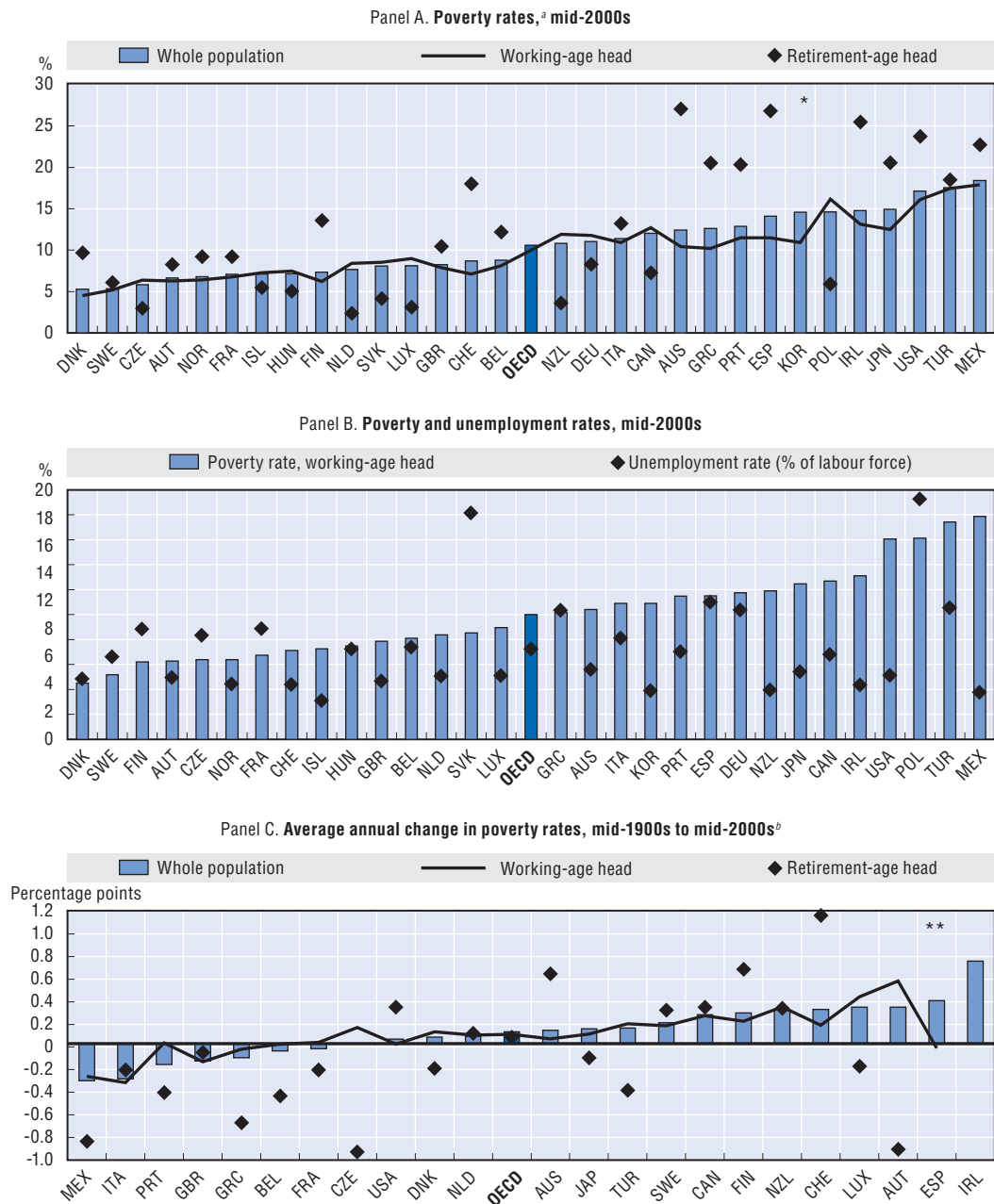
\* These results must be considered with caution, because the available dataset is not well suited for the calculation of absolute poverty rates. Indeed, its calculation relies on strong assumptions. First, the distribution of household income is available by deciles of disposable income only. Therefore, for each country, the absolute poverty rate is derived from the point where the US poverty line crosses the income distribution (expressed in USD adjusted for purchasing power parity), assuming that the population is linearly distributed within each decile of the income distribution. Second, the income distribution covers all types of household with a head of working age while the US poverty thresholds are defined for different types of household, depending on family composition. Thus, calculations are based on the US official threshold set for a person aged 20-65 and living alone and then, the corresponding absolute poverty rates are corrected, using as a correction factor, the ratio between the observed relative poverty rate and an estimated rate, calculated in the same way as was done for the absolute poverty rate.

**1.2. Poverty among the working-age population: good labour market performance helps to reduce poverty risk, but does not solve all problems**

*The risk of poverty among the working-age population varies greatly across countries and is the main contributor to overall poverty headcounts everywhere*

Poverty has increased over the past decade in a number of OECD countries and, on average in the mid-2000s, slightly more than one person in ten lived in a household with disposable income below 50% of the median income in the OECD area (Figure 3.2, Panel A).

Figure 3.2. Poverty in OECD countries




\* In Korea, the poverty rate for persons living in households with a retirement-age head is equal to 48.5%.

\*\* In Spain, the average annual change in poverty rate for persons living in households with a retirement-age head is equal to 3.4 percentage points.

- a) Percentage of individuals living in households with disposable income below 50% of the median income. Poverty rates are calculated for the whole population, persons living in households with a working-age head and persons living in households with a retirement-age head respectively.
- b) Data refer to changes from the mid-1990s to around 2000 for Austria, Belgium, the Czech Republic, Ireland, Portugal and Spain and to changes from 2000 to 2004 for Switzerland.

Source: Calculations based on OECD (2008), *Growing Unequal?*; OECD Database on Labour Force Statistics.

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However, cross-country differences in poverty rates are large: while the rate of poverty among the whole population does not exceed 8% in the four Nordic countries, Austria, the Czech Republic, France, Hungary, Iceland and the Netherlands (with a minimum of 5.3% in Denmark), it goes up to 14% or more in countries such as Ireland, Japan, Korea, Mexico, Poland, Spain, Turkey and the United States, reaching a maximum of 18% in Mexico.

In all countries, the poverty rate among the working-age population is the main driver of overall poverty headcounts. Individuals living in households with a head of working age face a double-digit poverty rate in half of the OECD countries. And to give an order of magnitude, the poverty risk is higher than the unemployment risk among the population aged 15-64 in most OECD countries (Figure 3.1, Panel B). In fact, the poverty rate among the working-age population was below the unemployment rate in the mid-2000s in only seven countries: Poland and the Slovak Republic where unemployment is particularly high; and the Czech Republic, Denmark, Finland, France and Sweden where poverty rates are relatively low. By contrast, the poverty rate was at least twice the unemployment rate in Canada, Ireland, Japan, Mexico, New Zealand and the United States, due to various combinations of high poverty rates by OECD standards and below-average unemployment rates.

In a number of countries where the poverty risk for the whole population is relatively high (namely, Australia, Greece, Portugal, Spain, Korea, Ireland and Japan), individuals living in households with a head of retirement-age face a poverty rate that exceeds 20%, making a significant contribution to the aggregate poverty rate. Conversely, the poverty rate among the retirement-age population is relatively low in virtually all countries where the overall poverty rate is below the OECD average. The cross-country correlation coefficient between the two rates equals 0.4, indicative of a common country effect across all age groups. While statistically significant, this coefficient is relatively weak. Furthermore, there is much more cross-country variability in poverty rates for the retirement-age population than for the working-age population. Poverty incidence also evolved differently over the past decade for these two age groups (Figure 3.2, Panel C). The poverty rate among the working-age population increased between the mid-1900s and the mid-2000s in a majority of countries, leading to an increase in the overall poverty rate in most cases. By contrast, the poverty rate among the retirement-age population has declined over the same period in many countries. Yet, this evolution has often been less favourable, or even unfavourable, in countries where the poverty rate among the working-age population has increased most strongly.

### ***Employment status is a major determinant of the poverty risk faced by households with a head of working age***

When averaged over the 30 OECD countries, poverty rates among the working-age population vary substantially across household types (Figure 3.3, Panel A). In particular, households with children always fare worse than their childless counterparts with a comparable employment status. Not surprisingly, jobless households face higher poverty rates than working households with identical family structure (the size of the gap between these two groups being impressive). Despite these differences, a significant risk of poverty exists in virtually all cases. Two-earner couples without children are in the most favourable situation, with an average poverty rate over the OECD countries of just 2.4%. But the risk of poverty increases significantly with the presence of children and especially in jobless households where on average it could reach almost 50%.

It is noteworthy, however, that poverty rates differ considerably across OECD countries for each type of household. In most cases, the difference between the highest and the lowest poverty rate over the 30 countries is at least twice the average rate. That said, the presence of children tends to increase poverty risk in virtually all countries, a pattern that is of particular concern since a number of studies have shown that poverty has detrimental effects on child development. On average 10.5% of individuals living in households with children are in poverty in the OECD area, 2 percentage points above the rate for childless households (Figure 3.3, Panel B). This difference goes up to more than 10 percentage points in Mexico, Poland and the United States, where households with children face a poverty rate more than 5 percentage points higher than the OECD average. By contrast, in countries with low overall poverty rates (as well as Korea), poverty is less of a problem among families with children than among childless households. For instance, in the four Nordic countries, the poverty rate among families with children never exceeds 4% and may be less than one-half the poverty rate observed among their childless counterparts.

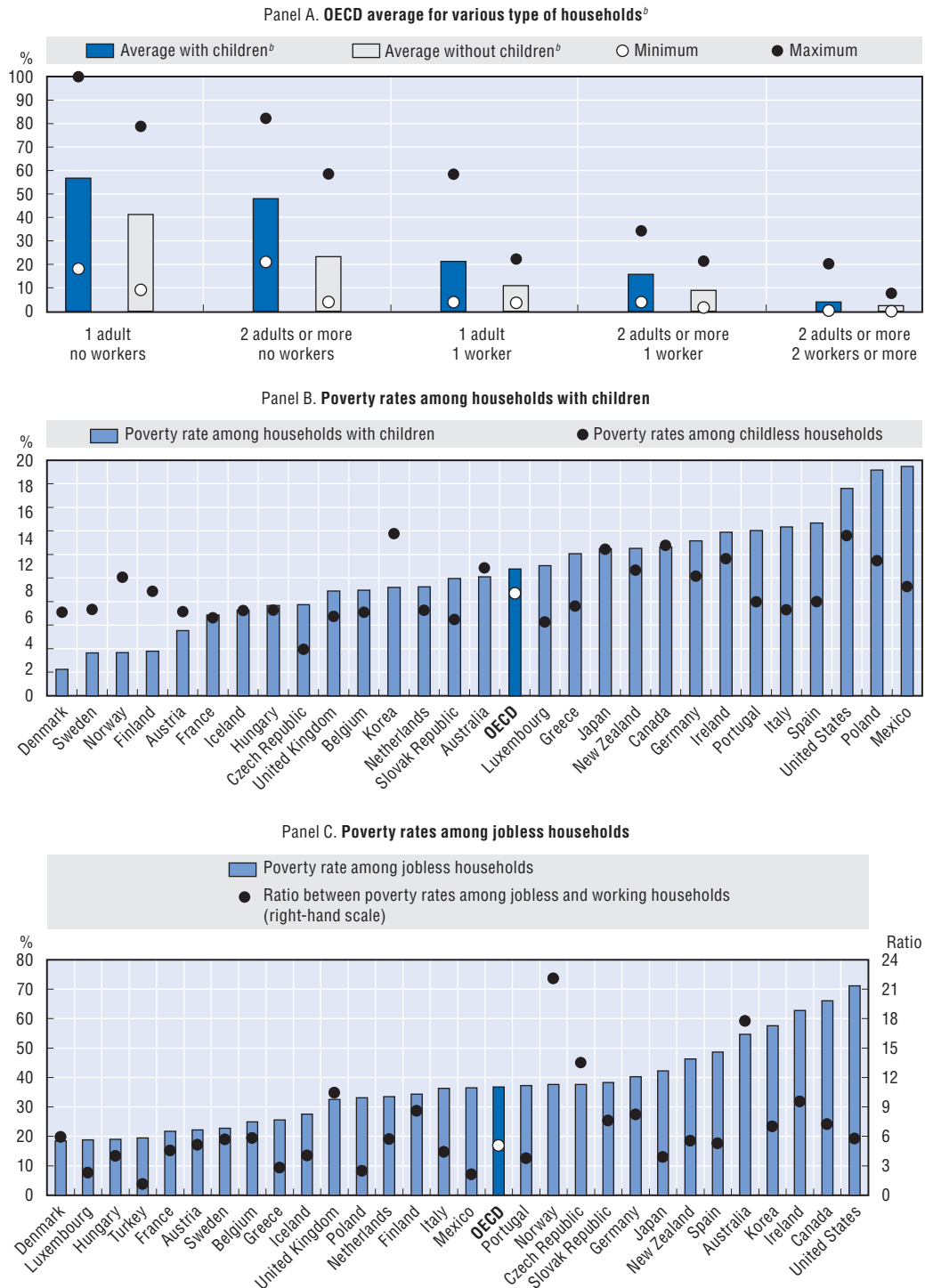
Differences in poverty rates are even larger when comparing jobless and working households (regardless of the presence of children). On average in the OECD area, 37% of individuals living in jobless households are poor, a proportion that is 5 times higher than that for households with at least one worker (Figure 3.3, Panel C). In virtually all countries, the poverty risk among jobless households is more than double the rate observed among working households and almost never falls below 20%. More than half of individuals living in jobless households are poor in five of the 30 member countries (Australia, Canada, Ireland, Korea and the United States). The ongoing economic downturn may thus have a particularly large impact on poverty in these countries, should unemployment increase as much as is now projected (see Chapter 1).

***But at the aggregate level, employment performances are not the main driver of cross-country differences in the overall poverty risk among the working-age population***

Since jobless people face a much higher poverty risk than the rest of the population in all countries, cross-country differences in aggregate poverty rates among the working-age population may reflect differences in overall labour market performances, along with differences in the extent to which countries have successfully implemented comprehensive strategies to fight poverty.<sup>3</sup> This section decomposes cross-country differences in overall poverty rates for the working-age population into these two types of national differences.

For the sake of simplicity and clarity, the decomposition presented in Figure 3.4 splits the working-age population into just two broad categories: i) households with at least one worker; and ii) jobless households.<sup>4</sup> With a few exception, labour market performance does not appear to be the main factor underlying cross-country differences in overall poverty. By contrast, the incidence of poverty *within* groups – working and jobless households – plays a predominant role. In all countries where the overall risk of poverty among the working-age population is relatively low (high) by OECD standards, the aggregate poverty rate would be higher (lower) if poverty rates for both working and jobless households were, instead, the same as those observed on average in the OECD area (Figure 3.4, Panel A). In fact, equalising poverty rates for these two groups to the OECD average would reduce dramatically the cross-country variance in aggregate poverty rates (the standard deviation would decrease from 4.7 to 1.4). By contrast, aggregate poverty rates among the working-age population would not change as much (nor as systematically) if all countries

Figure 3.3. **Poverty rates among the working-age population for various types of households,<sup>a</sup> mid 2000s**



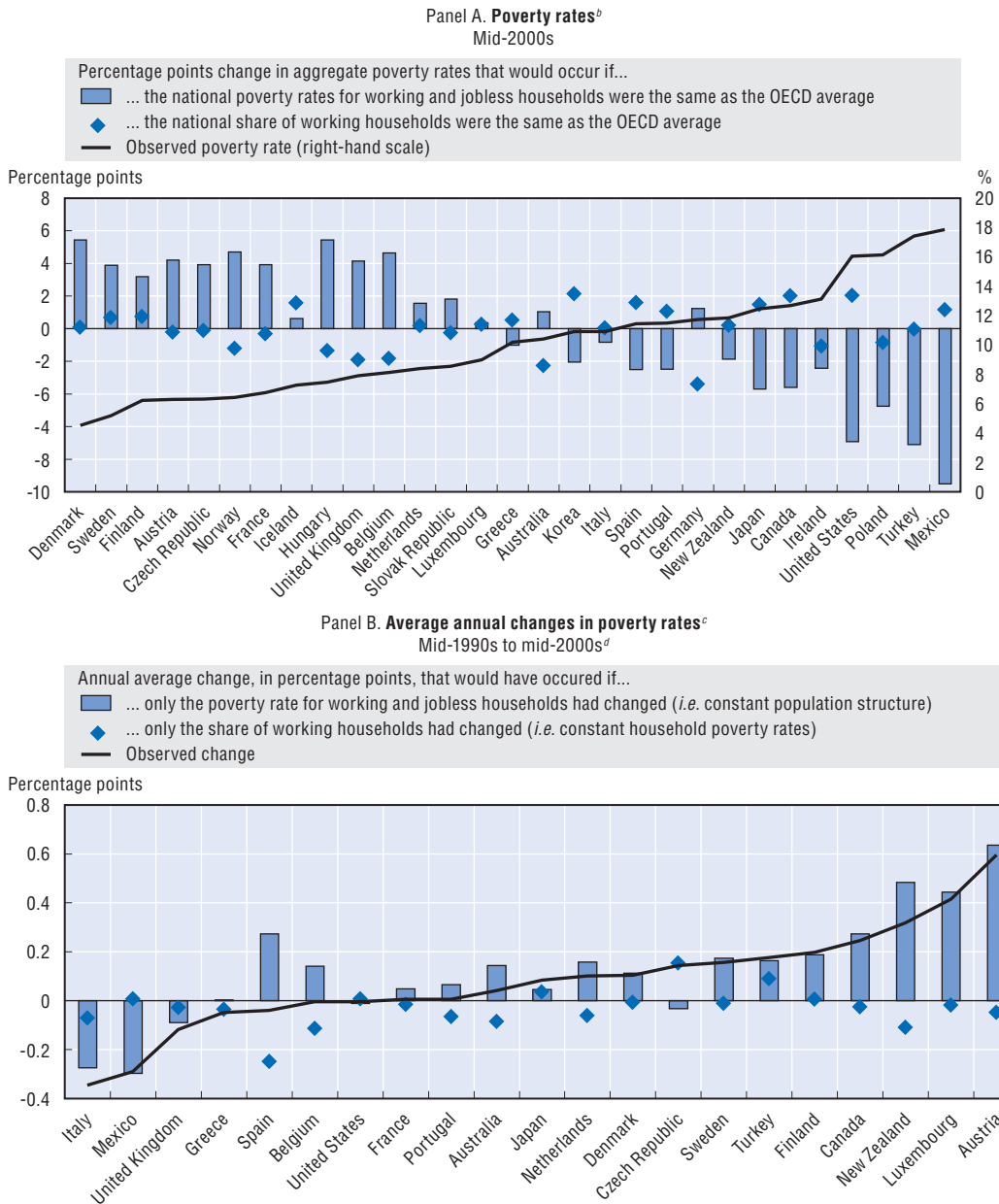
a) Among all individuals living in households with a head of working age, percentage of individuals living in households with disposable income below 50% of the median income.  
 b) OECD unweighted average.

Source: Calculation based on OECD (2008), *Growing Unequal?*.

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Figure 3.4. **Cross-country differences in poverty rates among households of working age<sup>a</sup>**



a) Population is split over households with at least one worker and jobless households.

b) Countries are ranked by increasing observed (aggregate) poverty rates.

Reading note: In Sweden, the aggregate poverty rate would be 4 percentage points higher than that observed, if the poverty rates for both jobless and working households were the same in this country as those observed on average in the OECD area. Sweden would also exhibit a slightly higher (by less than 1 percentage point) aggregate rate of poverty, if this country had exactly the same share of working households as that observed on average in the OECD area.

c) Countries are ranked by increasing observed change in (aggregate) poverty rates.

Reading note: In Spain, the aggregate poverty rate would have increased by more than 0.2 percentage point (on a yearly basis), if the share of working households had remained constant over the corresponding period. By contrast, the aggregate rate of poverty would have decreased by more than 0.2 percentage point (on a yearly basis), if the poverty rates for both jobless and working households had remained constant over the corresponding period.

d) Data refer to changes from the mid-1990s to around 2000 for Austria, Belgium, the Czech Republic, Portugal and Spain.

Source: OECD questionnaire on Income Distribution.

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had the same population structure as holds on average in the OECD area (the standard deviation of aggregate poverty rates would increase slightly from 4.1 to 4.4).

Likewise, changes in overall poverty rates over the past decade have been driven by changes in poverty rates at the household level, rather than by changes in population structure (Figure 3.4, Panel B). Changes in the share of working households among the population of working age had a relatively strong impact on poverty in only four of the 21 countries for which data are available: Australia, Belgium and Spain, where rising employment rates helped contain the rise or even led to a reduction of the poverty rate among the working-age population, and in the Czech Republic, where falling employment rates had the opposite effect.

Obviously, these simple decompositions do not imply that successful employment policies cannot be a powerful tool to fight poverty. Rather, they demonstrate that other important factors also determine poverty risk for working-age households. Interestingly, the same pattern emerges when looking at the correlation between poverty rates among the working-age population and employment rates (Table 3.1). Poverty rates tend to be lower in countries where a larger proportion of individuals of working age have a job and these correlation coefficients are highly significant in most cases. This confirms that good labour market performance, indeed, helps to reduce poverty risk. However, these coefficients are relatively small, suggesting that policies to fight poverty cannot rely entirely upon good labour market performance. Policies to achieve high employment rates need to be complemented with a solid safety-net for households containing only workers with a low earnings potential. In this respect, as the incidence of income-poverty is measured after net social transfers, this weak relationship between employment performance and overall poverty – in international comparison – may also indicate that countries differ in the generosity of social transfers granted to those individuals with weak employment prospects and who may not succeed at finding a good job (see *infra*).

Table 3.1. **Correlation coefficients between poverty rates and employment rates**

	Aggregate employment rate			Employment rates by household type			
	Basic	Variables purged from...		Basic	Variables purged from...		
		... country fixed effects	... country and time fixed effects		... household fixed effects	... household and country fixed effects	... household, country and time fixed effects
Poverty rates (after social transfers)	-0.16	0.00	-0.26*	-0.34***	-0.16***	-0.23***	-0.24***
Nb. of observations <sup>a</sup>	49	49	49	252	252	252	252

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

a) At the aggregate, these coefficients are established for 21 countries (Australia, Belgium, Canada, Czech Republic, Germany, Denmark, Spain, Finland, France, United Kingdom, Greece, Hungary, Italy, Japan, Mexico, Netherlands, Norway, New Zealand, Portugal, Sweden and United States) and three years (mid-1990s, 2000 and mid-2000s).

At the household level, these correlation coefficients are established for the same countries and years as previously, as well as for four types of household: one-adult households with/without children; two-adult households with/without children. For each type of household, the corresponding employment rate is calculated as the number of individuals leaving in households with a head of working age and at least one worker divided by the number of individuals living in the same type of households (regardless of the household employment situation). For two-adult households, individuals living in households with only one worker are given a weight equal to 0.5 in the numerator.

Source: OECD questionnaire on Income Distribution.

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### 1.3. In-work poverty risk is significant in virtually all countries

#### *The working poor constitute an important target population for anti-poverty policy in most OECD countries*

While employment considerably reduces the poverty risk, 7% of individuals living in households with at least one worker are poor on average in the OECD area, a proportion that has slightly increased over the past decade (Figure 3.5). As with overall poverty rates, cross-country differences of in-work poverty rates are sizeable. While in-work poverty rates are relatively low in the four Nordic countries, Australia, the Czech Republic and the United Kingdom – not exceeding 4% of the working population –, more than one in ten individuals living in households where at least one person has a job is poor in Japan, Mexico, Poland, Portugal, Turkey and the United States (Figure 3.5, Panel A). In-work poverty rates have also evolved very differently across countries since the mid-1990s. While the rate increased in more than half of the 24 countries analysed, Italy and Mexico achieved sharp declines and the OECD average increase was less than 1 percentage point per year (Figure 3.5, Panel B).

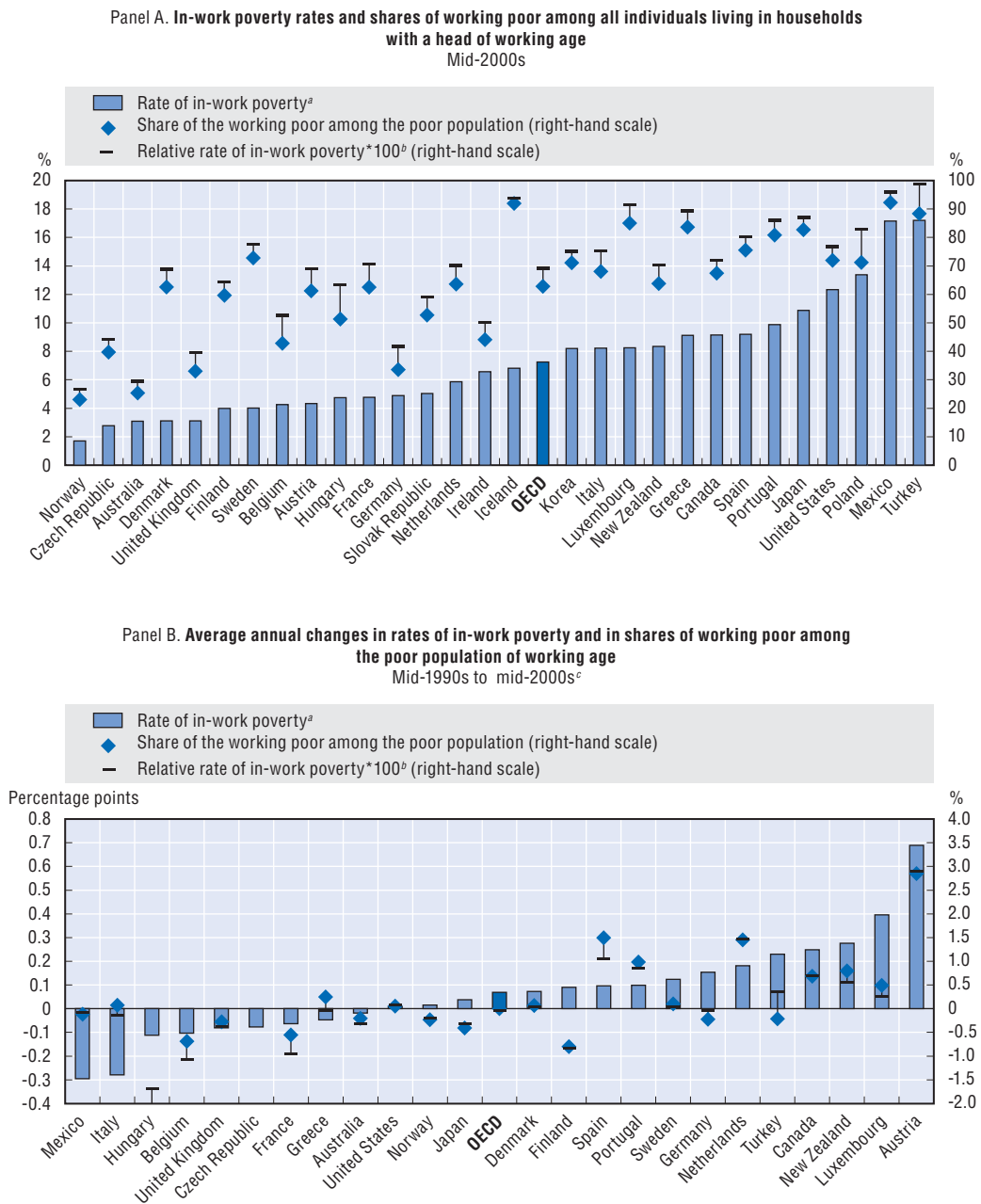
The working poor constitute an important target population for anti-poverty policy in most OECD countries. Working poor account for more than 60% of all working-age poor in the OECD area on average, and up to 80% in seven of the 29 countries for which data are available: Greece, Iceland, Japan, Luxembourg, Mexico, Portugal and Turkey (Figure 3.5, Panel A). These various proportions mirror the *relative risk* of in-work poverty observed in each country (i.e. the ratio between in-work and overall poverty rates), and may partly reflect the emphasis given to the specific problem of in-work poverty in national policy frameworks. These proportions are also correlated with in-work poverty rates *per se*, but the relationship is weaker. For instance, the share of working poor among the poor population of working age is essentially the same in New Zealand, Denmark or Finland, but the rate of in-work poverty is twice as high in New Zealand as in the latter two countries. Interestingly, compared with the rates of in-work poverty, these shares have been rather stable over the past decade and have even decreased in a number of countries (Figure 3.5, Panel B).

The in-work poverty risk also varies strongly according to family composition (Figure 3.6). Households with children tend to face much higher in-work poverty rates than their childless counterparts in virtually all countries, although this difference is much smaller for two-earner couples. The highest in-work poverty rates are observed either for lone parents (in a majority of countries) or for one-earner couples with children (notably, in Greece, Iceland, Italy, Poland, Portugal and Sweden). In one-third of OECD countries, in-work poverty rates among lone parents and/or one-earner couples with children exceed 20%. By contrast, the risk of in-work poverty is much lower for two-earner couples, for whom the rate of in-work poverty remains below 5% in virtually all countries (except in Japan and Turkey), irrespective of the presence of children.

#### *Work participation on both the extensive and intensive margin is part of the story*

On average, half of the working poor live in households where all adult members have a job (be they single persons or two-earner couples). This proportion varies substantially across countries and one-earner couples may account for more than two-thirds of the working poor in countries such as Australia, the Czech Republic, Greece, Italy, Poland, Portugal, the Slovak Republic and Spain (Annex Figure 3.A1.1, Panel A). But differences in this form of underemployment do not appear to be the main factor underlying cross-

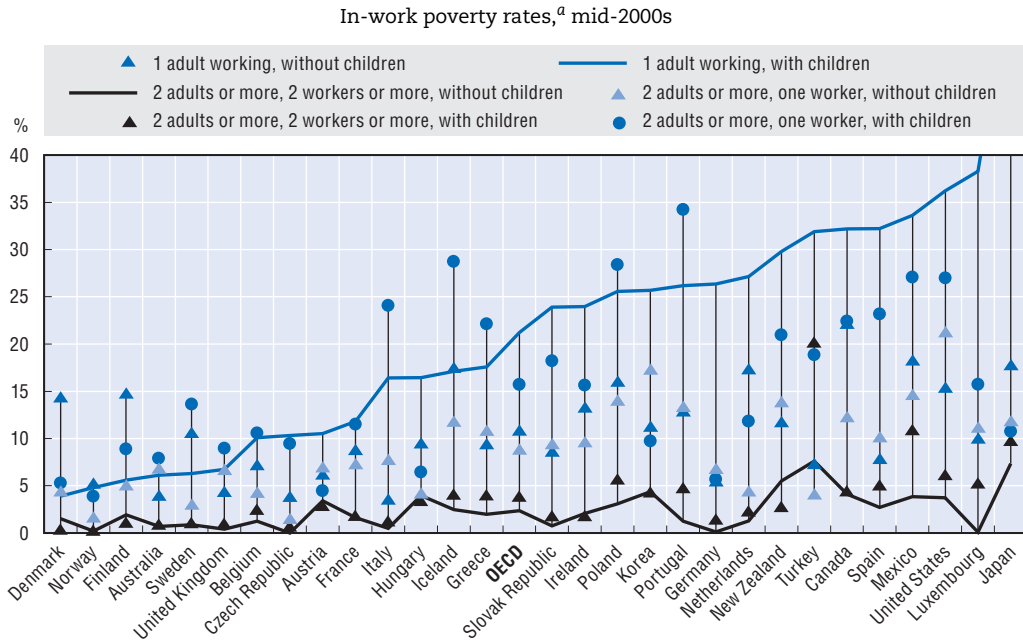
Figure 3.5. **In-work poverty in OECD countries**



- a) Percentage of individuals living in households with disposable income below 50% of the median income, among all individuals living in a given type of household with a head of working age and at least one worker.
  - b) Rate of in-work poverty divided by the overall poverty rate in households with a head of working age (multiplied by 100).
  - c) Data refer to changes from the mid-1990s to around 2000 for Austria, Belgium, the Czech Republic, Portugal and Spain.
- Source: OECD questionnaire on Income Distribution.


StatLink <http://dx.doi.org/10.1787/707003835334>

country differences in overall in-work poverty (Annex Figure 3.A1.1, Panel B). Once again, cross-country differences in the group-specific rates of poverty (for one-earner couples and for households where all adults have a job) explain most of the international differences in the overall rates.

Figure 3.6. **In-work poverty risk varies strongly according to family composition**

a) Among all individuals living in a given type of household (one adult with/without children; two adults, one/two workers, with/without children), percentage of individuals living in households with disposable income below 50% of the median income.

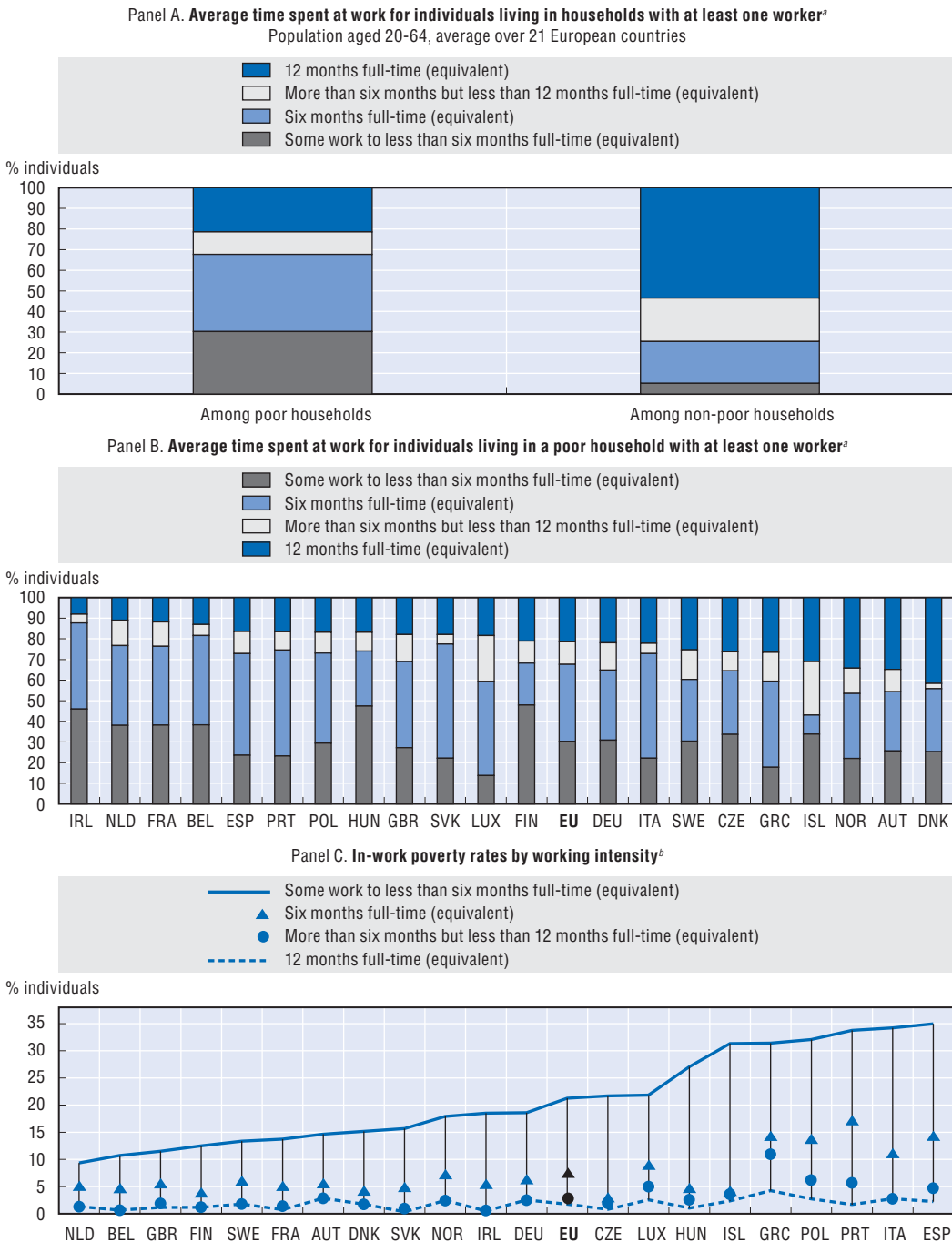
Source: OECD questionnaire on Income Distribution.

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This notwithstanding, who works and who does not provides only an incomplete picture of the extent of underemployment and its potential impact on in-work poverty. *Work participation on the intensive margin*, reflected in the number of months worked over the year and weekly hours worked while employed, is also a key determinant of working poverty. When taking into account this dimension, in addition to the fact that a number of individuals – living in a poor household where at least one adult has a job – do not work at all, the average intensity of work among the working poor differs sharply from that observed among the rest of the employed population.

Figure 3.7 reports the average number of months spent at work per household member aged 20-64. Among all persons living in a poor household, only slightly more than 20% work full-time and almost 70% of this group work on average six months or less over the year (in full-time equivalent months). By contrast, slightly more than 50% of individuals in non-poor households work full-time, and only 25% of them work on average six months or less over the year (Figure 3.7, Panel A). These are average figures for the 21 European countries for which data are available and the situation differs somewhat from one country to another. Nonetheless, underemployment on both the extensive and intensive margins appears to be a major determinant of in-work poverty in all countries (Figure 3.7, Panel B). Everywhere, more than half of the working poor work on average six months or less over the year (in full-time equivalent months).

Figure 3.7. **Average time spent at work over the year and corresponding rates of in-work poverty, 2006**



a) *Reading note, Panel A:* among all individuals aged 20-64 and living in a poor household with at least one worker, 30% live in households where the average time spent at work over the year, per member living in the household, is less than six months (in full-time equivalent months). The total number of hours spent at work by head and spouse (when relevant) has been computed for each household, and then, has been divided by the number of adults living in the household in question (head and spouse, when relevant, regardless of the employment status of the spouse), to obtain the average amount of hours worked per adult in each household. Calculations have been made separately for poor and non-poor households.

b) Among all individuals living in households with at least one worker, share of individuals with less than 50% of the median disposable income. The calculation is done separately by average time spent at work per individual as defined in note a).

Source: EU-SILC.

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The relationship between in-work poverty risk and working time is not linear: in a number of countries, the poverty risk does not increase dramatically as the average time spent at work per household member decreases, unless the latter becomes very short. On average over the 21 European countries, only 2% of full-time, year-round workers are poor, a proportion that rises slightly to 2.8% when the average time spent at work is less than 12 months but remains above the six full-time equivalent months. It then increases more sharply to 8% for people spending on average six months at work, going up to 20% and more when on average less than six months are spent in employment (Figure 3.7, Panel C). In-work poverty rates vary across countries, notably when the average employment duration over the year is short. Indeed, among people working on average less than six months, the rate of in-work poverty is below 15% in Austria, Belgium, Finland, France, the Netherlands, Sweden and the United Kingdom, but is more than twice as high in Greece, Iceland, Italy, Poland, Portugal and Spain.

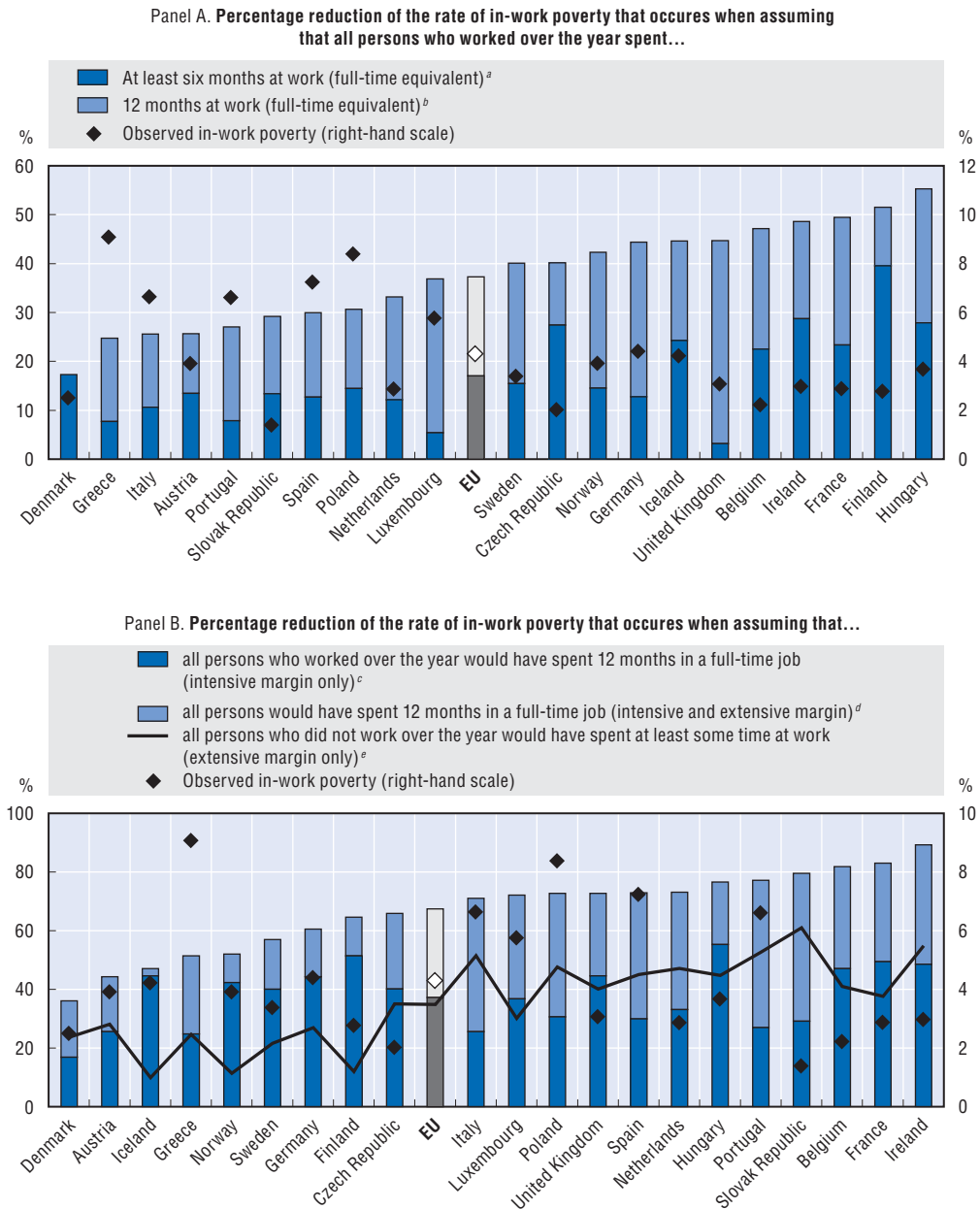
Work participation on the intensive margin has a substantial effect on the overall rate of in-work poverty observed in each country. A simple simulation suggests that if all persons working at some point during the year, spent at least six months at work (in full-time equivalent months), the rate of in-work poverty could be reduced by 17% on average over the 21 European countries, and by 37% if these persons worked full-time year-round (Figure 3.8, Panel A).<sup>5</sup> Also taking into account work participation on the extensive margin, by assuming that all jobless persons (living in a poor working household) instead work full-time year-round, would further reduce in-work poverty: increasing work participation on both the intensive and extensive margin would indeed reduce the rate of in-work poverty by 67% on average (Figure 3.8, Panel B).

Interestingly, in all cases, there is no clear relationship between the observed rate of in-work poverty and the potential reduction that could be achieved through increasing work participation. Put differently, the choice of a particular work criterion to identify who is sufficiently active in the labour market to be considered “at work” has a marked impact on the incidence of in-work poverty observed in each country, but does not affect much international differences in in-work poverty rates (see Annex Figure 3.A1.2).

To sum up, this descriptive analysis of poverty in OECD countries delivers two main messages:

- First, *employment plays a key role in reducing the risk of poverty in each country*: i) among the whole population of working age, jobless people face substantially higher poverty rates than the rest of the population; and ii) among the employed population, households whose head and spouse spend few months at work during the year are much more exposed to poverty than households with full-time workers.
- Second, *employment is not a panacea*, and there are other potentially important contributors to poverty headcounts in each country: i) in international comparison, there is no clear-cut relationship between labour market performances and poverty rates among the working-age population; and ii) cross-country differences in rates of in-work poverty are only partially explained by cross-country differences in work intensity of the working poor at the extensive and intensive margins.

Figure 3.8. **Work participation at the extensive and intensive margins and in-work poverty rates, 2006**



- a) Percentage reduction when applying the poverty rate for households working at least six months full-time equivalent (at least 12 months for two-earner couples) to households working less than six months full-time equivalent (less than 12 months for two-earner couples).
- b) The cumulated two bars show the percentage reduction when applying the poverty rate for households working 12 months full-time equivalent (24 months for two-earner couples) to households working less than 12 months full-time equivalent (24 months for two-earner couples).
- c) Percentage reduction when applying the poverty rate for households working 12 months full-time equivalent (24 months for two-earner couples) to households working less than 12 months full-time equivalent (24 months for two-earner couples).
- d) Percentage reduction when applying the poverty rate for single working 12 months full-time equivalent to single households working less than 12 months full-time equivalent and the poverty rate for two-earner couples working 24 months full-time equivalent to both one- and two-earner couples.
- e) Percentage reduction when applying the observed poverty rate for two-earner couples to one-earner couples.

Source: EU-SILC.

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## 2. Alleviating in-work poverty

To fight in-work poverty, OECD governments can directly act on low wages through setting a statutory minimum wage. Provided that employment spells over the year are long enough, such a wage floor may guarantee a minimum income to families with low earnings potentials. To some extent, out-of-work benefits also set a wage floor, since they indirectly determine the earnings level from which employment brings additional net incomes, so that there are financial incentives to work. More generally, the design of national social transfer systems, i.e. the generosity of out-of-work benefits, as well as the way earnings of low-income families and social transfers are combined, are key elements in the toolbox of policies to alleviate in-work poverty.<sup>6</sup>

### 2.1. Social transfers: A key component of policy packages to fight poverty

As seen in Section 1, poverty risk is strongly affected by a number of individual and household characteristics – including labour market participation and household composition – suggesting a *targeted* policy response is likely to be most effective. In fact, *net social transfers* – that is the combination of *gross cash public transfers* and *households taxes* – play a key role in reducing poverty among the working-age population in virtually all OECD countries, in considerable part because they can be effectively targeted.

#### **Net social transfers are a major determinant of the observed cross-country differences in poverty rates**

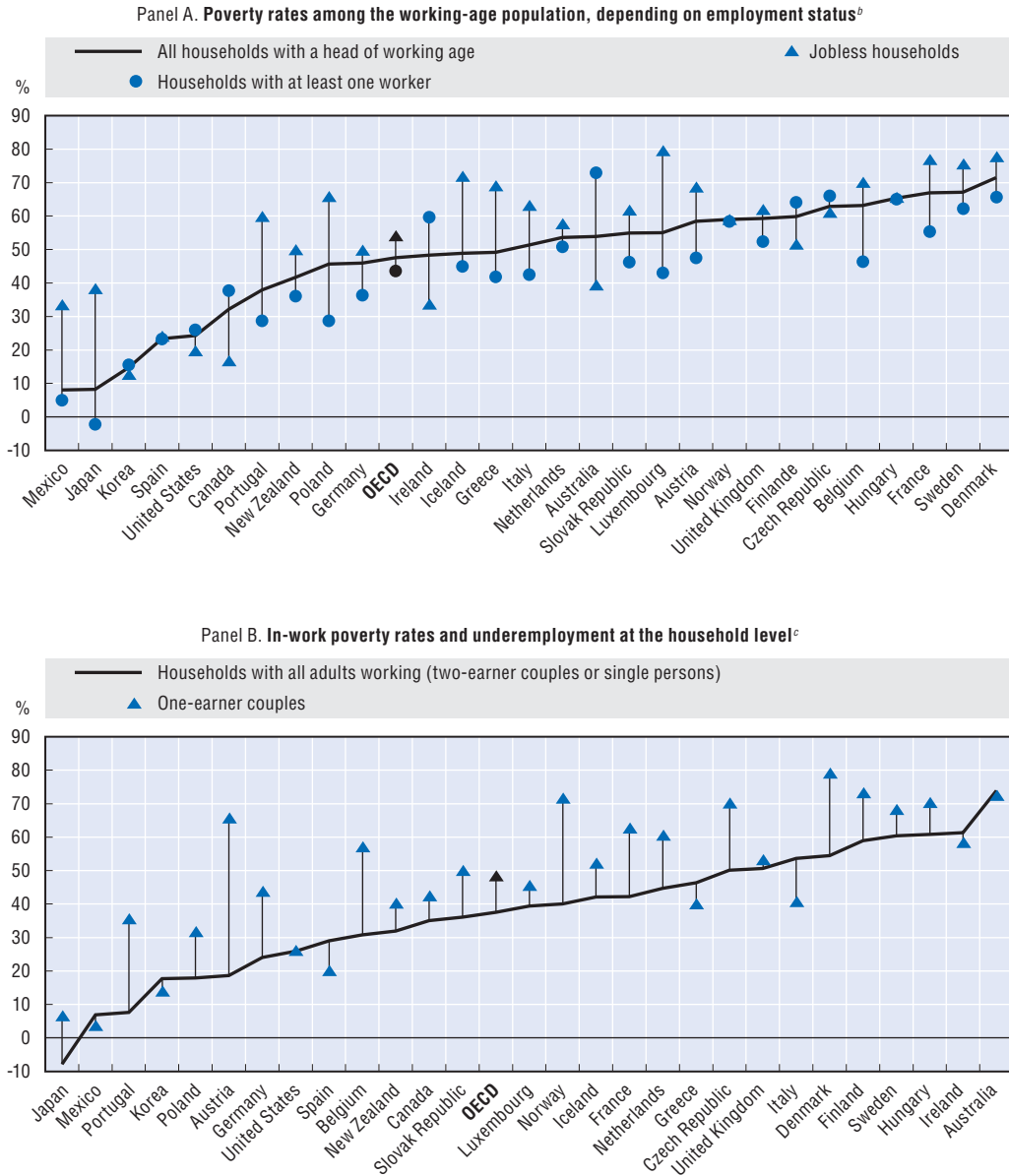
The effect of net social transfers can be measured by comparing poverty rates based on disposable income (i.e. the income concept used so far) with the incidence of poverty that would be observed in absence of gross transfers and households taxes. More precisely, poverty rates before net social transfers refer to the share of people with market income (i.e. pre-transfer/tax income) below 50% of household *disposable* income (see OECD, 2008, Chapters 4 and 5). Therefore, the difference between the poverty rates based on disposable and market income reflects both the size of net social transfers and the extent to which these are targeted to the poor. This difference measures a “first-order” effect of net social transfers on poverty, since it does not take into account the possible impact of these transfers on the distribution of market income itself.

On average over the 28 countries for which data are available, net social transfers cut the poverty rate by almost half among the working-age population (Figure 3.9, Panel A). There are large differences across countries, however. In countries such as Denmark, France and Sweden, the poverty rate among households with a head of working age falls by more than two-thirds after transfers, while in Canada, Japan, Korea, Mexico, Spain and the United States, the reduction achieved represents less than one-third of the poverty rate before social transfers.

On average, social transfers reduce the poverty rate among jobless people by slightly more than half, from 84% to 38% (see also Annex Figure 3.A1.3). By comparison, the average reduction achieved among households where at least one person is at work, while still sizeable, is smaller. The rate of in-work poverty declines from 12% to 7% after social transfers (a 44% reduction). Similarly, in virtually all countries, transfers are more effective in alleviating poverty among one-earner couples than among households where all adults are working. On average, the rate of in-work poverty is cut by 50% among the former, against slightly less than 40% among the latter (Figure 3.9, Panel B).

**Figure 3.9. By how much do net social transfers reduce poverty?**

Percentage reduction of poverty rates operated by net social transfers,<sup>a</sup> mid-2000s



- a) Difference between poverty rates before and after social transfers, as a percentage of the poverty rate before social transfers. The poverty rates before and after transfers are calculated on market-income and disposable income, respectively.
- b) The poverty rate is calculated as the percentage of individuals living in households with income below 50% of the median income for all individuals living in all households with a head of working age, individuals living in households with no workers, individuals living in households with at least one worker. Countries are ranked by increasing poverty rate for all households with a head of working age.
- c) The poverty rate is calculated as the percentage of individuals living in households with a head of working age and all members working (singles or two-earner couples), and individuals living in one-earner couples. Countries are ranked by increasing in-work poverty rate for households with all adults working.

Source: OECD questionnaire on Income Distribution.

StatLink <http://dx.doi.org/10.1787/707075848114>

Here again, the extent to which social transfers impact on the risk of poverty faced by these different categories of the population may vary substantially from one country to another:

- A small number of countries appear to place greater emphasis in their social transfer system on alleviating poverty for working households than for jobless households. This pattern is observed in Australia, Canada, Ireland, the United States and, to a lesser extent, the Czech Republic and Korea.
- In some other countries, including Hungary, Norway and Spain, the impact of social transfers on poverty rates is neutral towards these two groups.
- In a third group of countries, social transfers appear to be much more targeted towards jobless households than working households, reducing the poverty rate of the latter to a much lesser extent than that of the former. This pattern is observed in a relatively large group of countries, including Austria, Belgium, France, Greece, Iceland, Italy, Luxembourg, Mexico and Portugal. In Japan, transfers even slightly increase the poverty rate among working households.

As a result of this diversity, differences in national social transfer systems substantially affect cross-country comparison of poverty rates. This is especially true for people living in jobless households (Figure 3.10). In fact, the design of national transfer systems appears to be a key determinant of the OECD country rankings with respect to poverty rates. Indeed, the cross-country standard deviation of national poverty rates relative to the OECD average is always larger after social transfers than before. Furthermore, a number of countries end up above (below) the OECD average after social transfers, whereas they have the opposite position in the distribution of (relative) pre-transfer poverty rates. In most of the remaining countries, the size of the gap between national poverty rates and the OECD average rates after social transfers is mainly explained by those transfers and not by the pre-transfer position of these countries.

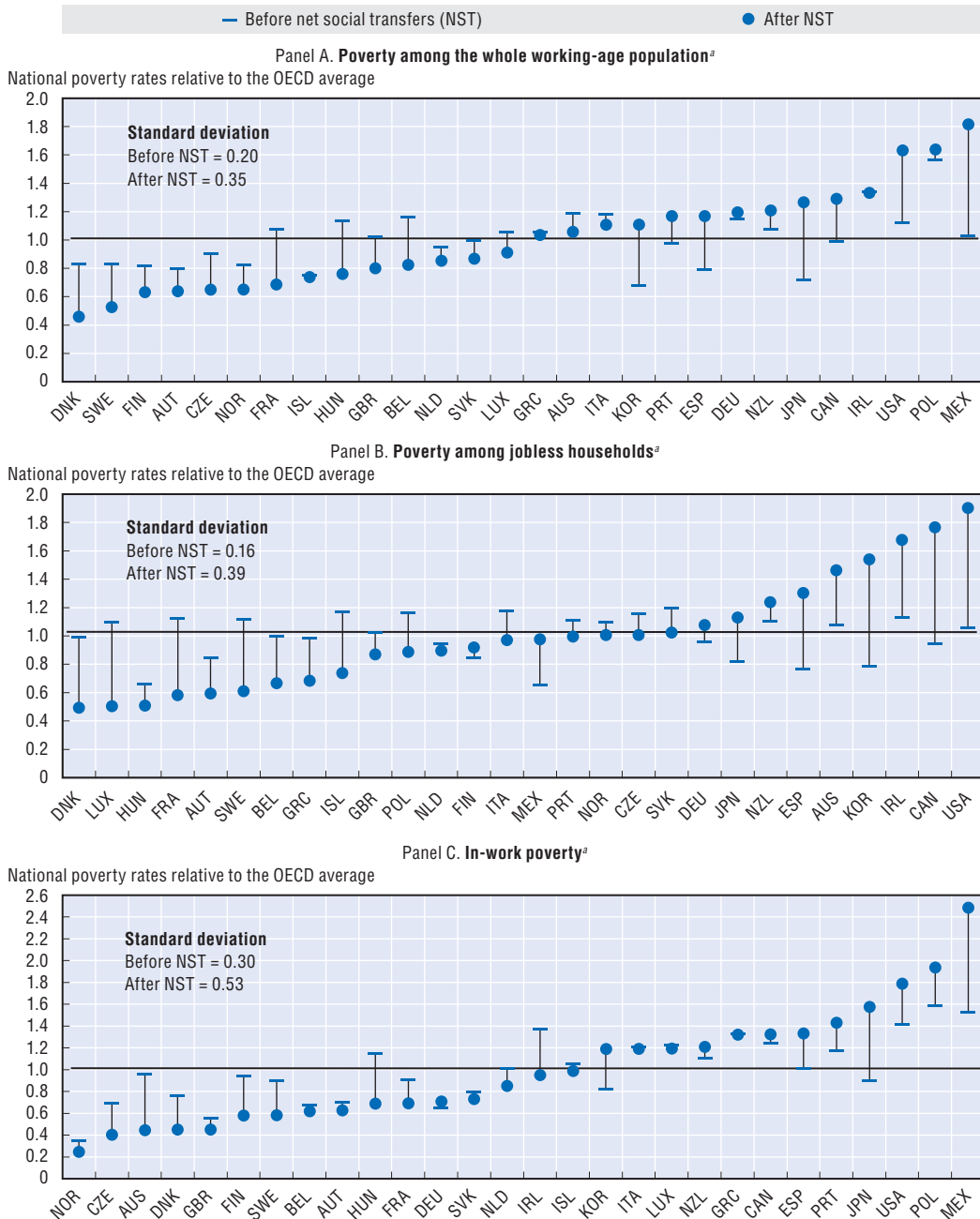
This pattern is particularly marked when looking at the relative poverty rates of people living in jobless households, but it also comes out rather clearly for the overall (relative) rate of poverty among the working-age population, and then more weakly for (relative) in-work poverty rates. Looking at the overall rate of poverty, taking into account social transfers – when measuring the incidence of income-poverty – deters a lot the relative position of Korea, Japan, Mexico, Spain and the United States, while it has the opposite effect in countries such as Belgium, Denmark, France and Hungary. Overall, social transfers markedly weaken the link between employment and the poverty rate observed among the whole working-age population. Poverty rates before transfers are indeed strongly linked to employment rates (Table 3.2), with the cross-country correlation coefficient often being more than twice as high as that observed between employment rates and poverty rates after social transfers.

### ***A closer look at the interaction between social transfers, employment and in-work poverty***

As noted above, social transfers play a key role in reducing poverty among jobless people, and to a lesser extent, among those who are working. In fact, the interaction between social transfers and employment is rather complex. First, generous out-of-work benefits may reduce financial rewards from working if they are not carefully designed. What matters is both the level of out-of-work benefits and the way they are withdrawn at the bottom-end of the wage

Figure 3.10. **How much do social transfers affect cross-country differences in poverty rates?**

National poverty rates relative to the OECD average, mid-2000s



a) Poverty rates before and after transfers are calculated on market income and disposable income, respectively. In both cases, poverty rates are calculated as the percentage of individuals living in households with income below 50% of the median income for all individuals living in all households with a head of working age (Panel A), individuals living in households with no workers (Panel B), individuals living in households with at least one worker (Panel C). Countries are ranked by increasing poverty rate after net social transfers.

Source: OECD questionnaire on Income Distribution.

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**Table 3.2. Correlation coefficients between employment rates and poverty rates among the working-age population, before and after social transfers**

Poverty rates	Employment rates		
	Basic	Variables purged from...	
		... household and country fixed effects	... household, country and time fixed effects
Poverty rates before social transfers	-0.59***	-0.70***	-0.69***
Poverty rates after social transfers	-0.34***	-0.23***	-0.24***
Nb. of observations <sup>a</sup>	252	252	252

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

a) See Table 3.1.

Source: OECD questionnaire on Income Distribution.

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ladder. Second, the role of social transfers is not limited to create or preserve incentives to work. They should also complement wage incomes of families with very low earnings potentials, so that full-time work is an effective route out poverty. Using the OECD tax and benefit models (see Box 3.2), this section reviews the key aspects of the tax and benefit position of low-income families who are making an effort to support themselves through work.

The amount of net social transfers granted to working households with low earnings potentials gives a first picture of the extent to which the latter contribute to improve living standards at the bottom of the income distribution (Figure 3.11).

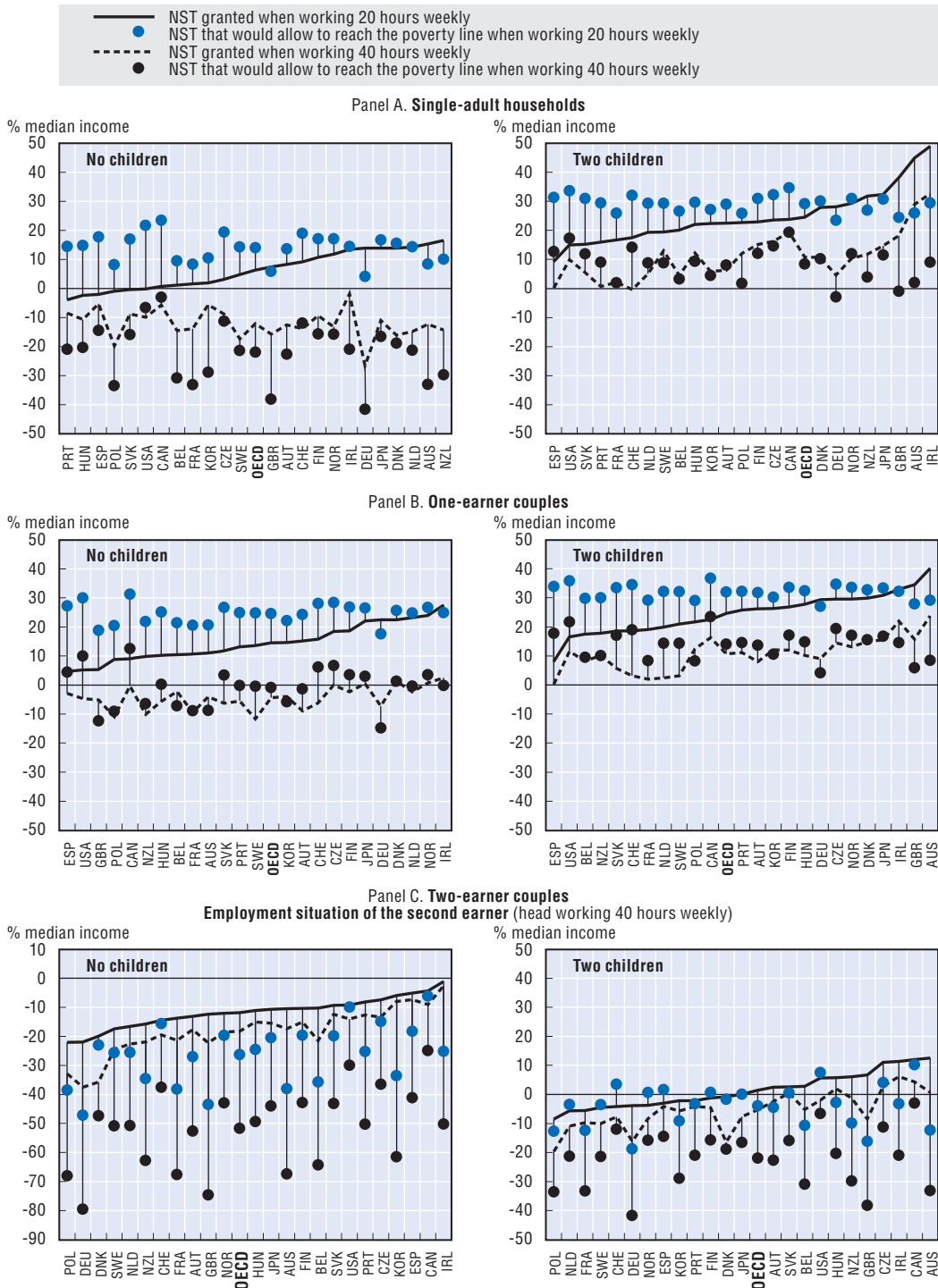
First, net social transfers can be *substantial* and appear to be *closely targeted* on the most vulnerable families. In all countries, the highest amounts are granted to households with children and containing only one worker employed in a part-time job (20 hours per week).

### Box 3.2. OECD tax and benefit models

OECD tax and benefit models allow one to assess the features and consequences of tax and benefit policies in 29 OECD countries. The models take into account all those complex legal rules concerning entitlement to benefits as well as tax obligations in different countries. The OECD models thus help assessing how taxes and social benefits affect incomes of different individuals in and out of work for different family types, various intensities of work (per week and per worker) and different earnings or previous earnings levels. Calculations take into account the income taxes and social security contributions due on earnings and benefits. Benefits such as unemployment benefits, social assistance, family benefits, housing benefits and in-work benefits are included in the calculations (for further details, see [www.oecd.org/els/social/workincentives](http://www.oecd.org/els/social/workincentives)). However, the models do not take account of behavioral responses to changes in tax and benefits.

All tax-benefit calculations presented in the present chapter refer to families with low earnings potentials, where head and spouse (when relevant) are paid an hourly wage equal to 40% of the average wage (or to the minimum wage if the latter is higher than 40% of the average wage). Full-time employment corresponds to 40 hours of work per week and per worker. When relevant, housing costs used to calculate housing benefits are assumed to be equal to 10% of the average wage. This is a rough approximation of housing costs, which are assumed to be much lower for low-income families than for a typical family that is assumed to pay around 20% of the average wage in housing costs in the baseline scenario of these models.

Figure 3.11. **Total amounts of net social transfers granted to households with low-wage workers, 2006**



NST: Net social transfers.

Note: The poverty threshold is set at 50% of the median equivalised income. See Box 3.2 for details on the OECD tax-benefit model assumptions.

Source: OECD tax-benefit models.

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On average over the 24 OECD countries for which data are available, net social transfers represent 25% of the median income for these families, that is, half of the income level needed to reach the poverty threshold. And while there are large differences across countries, the amount granted remains above 20% of the median income in almost two-thirds of the 24 countries. This notwithstanding, one half-time job at the bottom of the wage ladder allows families with two children to escape poverty in only few countries, with above-average net transfers: Australia, Germany, Ireland, and the United Kingdom, as well as Japan and New Zealand in the case of lone parents only. On average in the OECD area, half-time work brings net incomes of those families to around 45% of the median income (see also Annex Figure 3.A1.4). The average net income of childless households is slightly lower (at around 40%), reflecting the fact that in all countries, they are entitled to substantially lower amounts of net transfers.

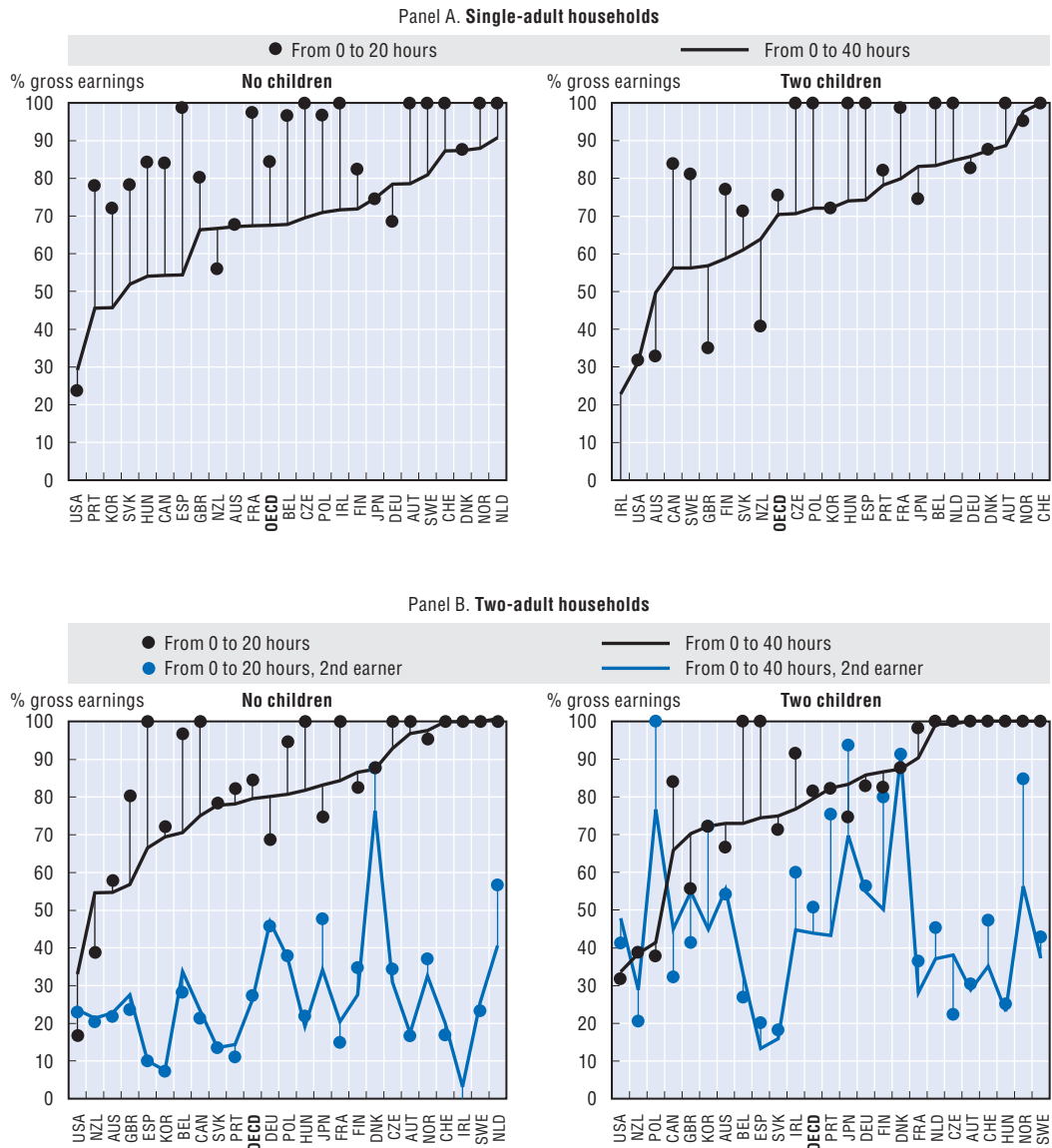
Second, net social transfers at the bottom of the wage distribution *decline rapidly* with earnings. For instance, they decrease from 25% to around 10% of the median income for households with two children when the total number of hours worked increases from 20 to 40 hours per week. And in virtually all countries, net social transfers become negative for childless households as soon as at least one person has a full-time job, and among families with children, when both spouses work full-time. For these families, the amount of taxes paid is larger than the benefits received even when the second earner works only half-time in almost half of the 24 OECD countries for which data are available.

As a result of this strong negative link of net social transfers with earnings, full-time work in a low-paid job does not allow one-earner families to escape poverty in many countries. The situation of lone parents is the most critical, since the full earnings potential is exploited. And for the latter, net social transfers are significantly above the amount needed to reach the poverty line in only four countries, namely Australia, Ireland, Germany and the United Kingdom, while they stand below that level in 14 out of the 24 countries. Moreover, although the net amount of taxes paid do not prevent the net income of families with two full-time earners to cross the poverty threshold, economic self-sufficiency is not always fully secured. In a number of cases, disposable incomes do not go far beyond – or even remain below – 60% of the median income, an income level at which the poverty threshold is commonly set in many European countries (see also Annex Figure 3.A1.4). Indeed, on average over the 24 countries for which data are available, working full-time in low-paid employment brings disposable incomes of two-earner couples with children to only 65% of the median income. By contrast, the average disposable income of their childless counterparts reaches 80% of the median income, thus being significantly above the poverty threshold.

For families with a low earnings potential, the financial payoff from work is not fully depicted by the level of disposable incomes that can be reached, although the latter remains the true determinant of the living conditions that can be achieved. Financial rewards from working also depend on the net amount of *additional* incomes brought by employment, as compared with the amount of transfers received by social assistance recipients. Figure 3.12 reports the *average effective tax rate* when taking up low-paid employment:


- When only one person in the household has a half-time or full-time job at the bottom of the wage ladder, financial rewards from work tend to be very low. On average over the 24 OECD countries, the proportion of gross earnings offset by reduced social benefits, social contributions or income taxes varies from 70% to 80% for these households. This means that only about 20% to 30% of those modest earnings add to available net income.

Figure 3.12. **Average effective tax rates for households with low earnings potentials, 2006**  
Reduction of net social transfers when moving from social assistance to employment, as a percentage of gross earnings



Note: See Box 3.2 for details on the OECD tax-benefit model assumptions.

Source: OECD tax-benefit models.

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- In virtually all countries, financial rewards from working are substantially higher for the second earner, with however a sizeable difference between childless households and families with children. On average over the 24 OECD countries, 50% of spouse gross earnings are taxed away when she takes up a half-time job, and 45% when she works full-time and there are children present in the household. By contrast, this rate remains slightly below 30% in both cases for childless households.

To sum up, there may be some room for reshaping national systems of benefits and taxes in a number of countries so as to provide further support to families with children. First, the standard of living (as measured by net incomes as a percentage of the median



equivalised income) that can be reached by working full-time in a low-paid job is substantially lower for families with children than for childless households. Second, among two-adult households, financial rewards from taking up a job for the spouse – as compared to income on social assistance – are substantially lower when there are children present in the household than they are for childless households. Moreover, the above results do not account for childcare and education costs, and the economic situation of families with children may be even more difficult than these estimates indicate in a number of countries (see OECD 2007). These two patterns of benefits and taxes may impair on the efficiency of whole system for at least two important reasons: i) in terms of labour market participation, women tend to react more strongly than men to financial incentives, notably when they have children (see Immervoll and Pearson, 2009); ii) in a longer-run perspective, strong inter-generational transmission of social and economic status implies that children living in poor or near-poor households are at an elevated risk of facing labour market difficulties in the future (OECD, 2009).

## **2.2. In-work benefit schemes can be an effective tool to fight in-work poverty**

Of course, increasing financial rewards from working at the bottom of the wage ladder could be done by reducing the level of benefits for jobless people. But this would in turn increase poverty among those who are unable to find a job, and would leave the situation of the working poor unchanged. Instead, a growing number of OECD countries have introduced in-work benefits (IWBs) or tax credits for individuals facing particular labour market challenges.

### ***Distributional properties of IWBs vary significantly from one scheme to another***

IWBs not only create additional financial rewards for seeking work, they also increase the payoff of remaining in work for recipients who already have a job. In other words, these schemes redistribute resources to low-income families who are making an effort to support themselves through work. Countries differ in the emphasis given to these different objectives – namely, redistribution vs. incentives to take up a new job – which is reflected in the way these schemes are designed (see Box 3.3).

Figure 3.13 reports the main distributional aspects of IWB schemes in 11 out of the 16 OECD countries where such in-work cash transfers are in place. It refers to households where all employed individuals work in a low-paid job, earning an hourly wage equal to 40% of the average wage (or to the minimum wage when the latter is higher than 40% of the average wage).

In all of the selected countries, permanent IWBs reach low-income families (Figure 3.13, Panel A). In most cases, benefit payments start well below the poverty threshold, at income levels (before IWBs) varying between 6-20% of the median income in the United States (depending on the presence of children) and 48% of the median income in the United Kingdom. In addition, the benefit amount reaches its maximum level around the poverty threshold in virtually all cases, except in France and the Netherlands where the highest amount of IWBs is granted when incomes (before IWBs) are close to, or even higher than 60% of the median income. The income levels where IWBs start and/or are maximum reflect the combination of two factors: i) the precise targeting of these schemes, notably in countries such as Ireland, New Zealand and the United Kingdom where requirements with respect to working time prevent a number of households from being entitled to IWBs; and

### Box 3.3. Key features of in-work benefit schemes

In 2006, more than half of all OECD countries operated employment-conditional cash transfers in one form or another: Australia, Belgium, Canada, Finland, France, Germany, Hungary, Ireland, Korea, Japan, the Netherlands, New Zealand, the Slovak Republic, Sweden, the United Kingdom and the United States. The main features of these various national schemes, their distributional properties and their potential employment effects are reviewed by Immervoll and Pearson (2009). To sum up, the design of IBW schemes can be described along two main dimensions:

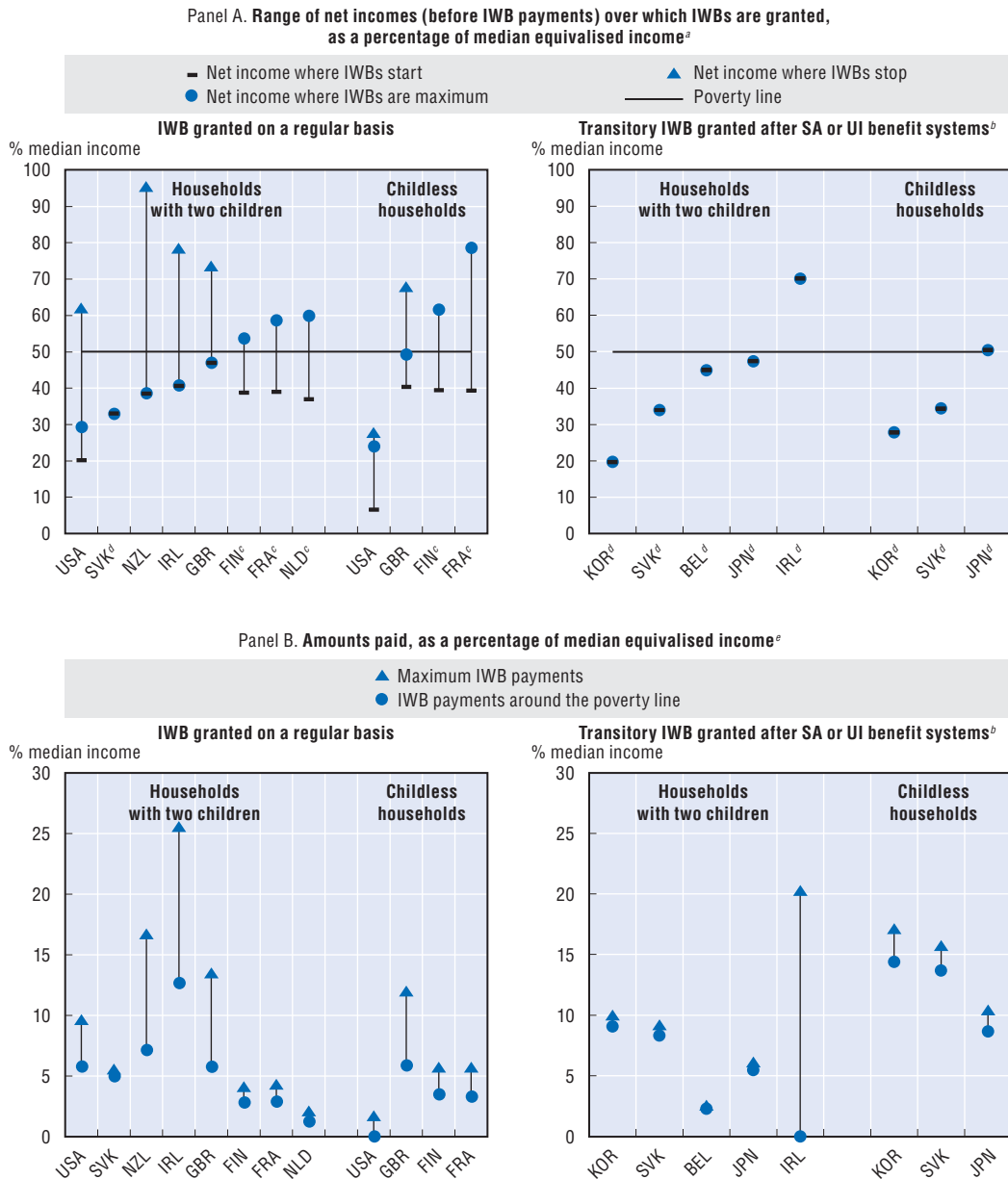
1. *The characteristics of the beneficiary population.* First, IWBs can be targeted towards *individual* low-paid workers or towards *low-income families*. In the first case, incomes are assessed individually for the benefit recipient, while they are assessed jointly for the couple or the family as a whole in the second case. And although there are overlaps between low-income households and low-paid employment, the resulting beneficiary populations may differ substantially. Only six OECD countries operate IWB schemes that are means-tested on family incomes: Canada, Ireland, New Zealand, the Slovak Republic, the United Kingdom and the United States. Second, in many countries, only families with children have access to IWBs. This reflects a particular concern for child poverty and child well-being (Whiteford and Adema, 2007; OECD, 2008). Third, in a small number of countries, benefits are only available to social-assistance recipients or unemployment-insurance recipients entering or re-entering employment. Australia, Belgium, Korea and Japan operate only this kind of IWB schemes (however, in Belgium, all low-wage workers benefit from reduced employees social security contributions).
2. *The benefit design.* First, the *generosity* of IWB payments depends on other components of redistribution policy and on institutional features of the social welfare system (e.g. the minimum wage, whether or not there are universal payments, family or housing benefits, etc.) and, consequently, varies substantially across countries. Second, the link between earnings levels and IWB amounts also differs from one scheme to another. Most IWBs are conditional upon the earnings level only and are *permanent*, i.e. paid for an indefinite period of time. They are phased in as earnings rise up to a threshold and then are gradually reduced over a range of income levels according to a *phasing-out rate*. There are two main variants on this basic design: i) in addition to the earnings level, IWBs can be also conditional upon a *minimum number of hours of work*. For instance, benefits are available to individuals working at least 16/30 hours per week in the United Kingdom (depending on the presence of children in the household), 19 hours in Ireland, and 20/30 hours in New Zealand (depending on the number of adults in the household). In these countries, there is no gradual phase-in, IWBs are highest for households with the lowest earned incomes; ii) IWBs that are restricted to previous recipients of out-of-work benefits are obviously *limited in duration*, and sometimes, are not income-dependent. For instance, in Japan and Korea, unemployed people who get a job rapidly are rewarded with a bonus calculated as a proportion of the amount of their unemployment insurance benefit entitlement that has not been used.

ii) the generosity of non-employment-conditional benefits received by households before IWB payments start. This latter aspect explains, for instance, why in the United States IWBs start at very different income levels for households with and without children.

Another major component of the targeting pattern is the overall range of incomes over which benefits are available, in that it determines the size of the recipient population and the fiscal cost of such schemes. In this respect, there are sizable differences between countries.

Figure 3.13. **How much do low-paid workers get from in-work benefit schemes?**


Households with at least one worker, earning 40% of average wage on an hourly basis, 2006



IWB: In-work benefits.

- Net incomes where IWBs start (stop) refer to the minimum (maximum) level of net incomes where IWBs start (stop) over two types of household: single persons and couples. Net incomes where IWBs are maximum refer to the average net incomes where IWBs are maximum over the same two types of households.
- Transitory benefits paid after a move from the unemployment insurance or social assistance systems can also be found in Australia, Canada, France, Netherlands and the United States, but they represent small amounts and/or are granted over a small range of incomes.
- The phasing-out of in-work benefits ends up after the income level that a family containing only low-wage workers (40% of AW) can reach.
- Lump-sum: In-work benefits remain constant after the income level shown in the above figure (i.e. the phasing-out starts after the maximum income level that a family containing only low-age workers can reach).
- Maximum amount over two types of household, namely single persons and couples. Amount around the poverty line: average over two types of household, namely single persons and couples.

Source: OECD tax-benefit models.

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In Finland, France, the Netherlands and the Slovak Republic, the phasing-out of IWBs ends up after the maximum level of income that a household containing only low-wage workers can reach (when working 120 hours per week), which is quite far above the median income in all of these four countries. By contrast, in Ireland, New Zealand, the United Kingdom and the United States, benefit payments end between 60% and 90% of the median income (except for childless households in the United States, where they stop much earlier). As a result, the maximum amounts of benefit are much more generous in these four countries, varying from 9% of the median income in the United States to as much as 25% of the median income in Ireland (for households with two children). And while benefit payments are smaller at the poverty threshold (essentially because households earnings are higher), they still make a difference and significantly help low-income families to reach this threshold. Likewise, IWBs that are only available to previous recipients of out-of-work benefits and for a limited duration tend to be quite generous (Figure 3.13, Panel B). On the other hand, in the four countries that operate regular IWB schemes over a large range of household incomes (Finland, France, the Netherlands and the Slovak Republic), the amounts granted remain below 5% of the median income. In these cases, the behavioural responses are unlikely to be very significant.

To *sum up*, the various IWB schemes effectively reach low-income families, be they individual-based or mean-tested on family incomes. But given budget constraints, programmes need to be tightly targeted for the benefit level to be generous enough to have a real impact on in-work poverty. In this respect, mean-tested IWBs have a major advantage: they make it easier to reach only low-income families, witnesses the Earned Income Tax Credit (EITC) in force in the United States, and to a lesser extent, IWBs available in Ireland, New Zealand and the United Kingdom. Requirements with respect to working time or previous employment status also allow a tighter targeting of IWB schemes. But in terms redistribution, these additional entitlement criteria have the major drawback of excluding a large proportion of the most disadvantaged families from the beneficiary population, while a number of median-income families may be eligible to the programme (in particular, when the benefits in question are not means-tested on family incomes). In fact, these eligibility conditions tend to shift IWBs away from redistribution, towards a work-incentive policy.

***Well-designed IWBs may be successful in reducing poverty, as well as a cost-effective redistribution instrument***

Strengthening work incentives is a key objective of IWB schemes and their effectiveness in redistributing resources towards the most disadvantaged working families also depends on their employment effect. In this respect, although means-tested benefits have more favourable distributional properties (*ex ante*), they tend to damage work incentives of other potential earners in the household. Individual-based IWBs avoid this adverse effect. Still, all these schemes may reduce financial incentives to move up the wage ladder and thus, to increase work intensity on the intensive margin (as well as, to invest in human capital). However, empirical evidence suggests that, provided that IWBs are large enough to create a sizeable difference between welfare income and work income, their overall effect on employment is positive although relatively small in most cases (see *e.g.* Blundell *et al.*, 2000; Blundell and Hoynes, 2004; Brewer *et al.*, 2006; Ellwood, 2000; Eissa and Hoynes, 2004; Grogger, 2003; Hotz and Scholz, 2003; Keane and Moffitt, 1998; Meyer and Rosenbaum, 2001; and Michalopoulos *et al.*, 2005). The positive effects of additional

employment outweigh the costs created by reduced incentives to work more, even in the case of mean-tested benefits. Consequently, such schemes can potentially have a marked impact on poverty.<sup>7</sup>

Moreover, compared to other redistribution policies, the efficiency cost of IWB schemes can be very small relative to the redistribution achieved. These schemes have often been assessed in terms of the cost “per job created”, which is generally high. But such cost assessments fail to fully account for the favourable distributional effects of IWB policies and a more comprehensive approach should also take into account the potential benefits associated with the reduction in inequality and in-work poverty. Using such an approach, some recent results point towards rather low overall costs “per dollar transferred”, especially as compared with more traditional redistribution policies, which may entail large “efficiency losses” if they strongly damage work incentives. For instance, Immervoll *et al.* (2007) suggest that the cost to taxpayers of redistributing one euro in the form of an in-work benefit can be as low as one euro, implying an efficiency cost close to zero. Because low-income workers tend to be more responsive to financial incentives than middle or high-income earners, there is a distinct possibility that the additional tax burden on higher-income earners is in fact relatively small if the savings from each additional job are large (out-of-work benefits are no longer payable). Nonetheless, a number of studies also indicate that the effectiveness of IWB-type policies varies substantially across countries.

### ***The effectiveness of IWBs also depends on other components of national redistribution policies***

A precise and well-conceived policy design is not enough for achieving an efficient targeting that would guarantee a meaningful degree of redistribution – i.e. a reduction of income disparities between working recipients and non-recipients – as well as increased work incentives at the bottom of the wage ladder. In this respect, the distribution of in-work earnings in the population, and particularly, the number of low-wage earners who are potential beneficiaries are critical aspects (see Immervoll and Pearson, 2009). A proper targeting of the benefits is less straightforward if income differences are quite small to begin with, but this also reduces the scope for financing IWBs in an effective way. In essence, many of those benefiting from the IWB payments are at the same time paying for its financing: they face higher tax burdens that partly offset the benefit payments.<sup>8</sup> Conversely, a highly dispersed income distribution makes it relatively easy to distinguish recipients of the IWB from higher-income groups contributing to the financing of the scheme. Moreover, the required revenue can then be raised by slowly increasing tax burdens over a wide income range. In such circumstances, IWB schemes can be a cost-effective tool to redistribute resources towards the most disadvantaged families (see Box 3.4). By contrast, IWBs are likely to be either very expensive or ineffective in countries where high out-of-work benefits or high minimum wages tend to compress the earnings distribution at the bottom of the wage ladder.

### ***2.3. Minimum wages alone are not the best instrument to fight in-work poverty, but they may constitute a useful complement to IWBs***

Since earnings from work are the most immediate determinant of in-work incomes, minimum wages are often seen as an important policy tool to fight in-work poverty. But as such, the weak targeting of minimum wages limits their effectiveness. In this respect, a number of studies suggest that a large proportion of the working poor would not benefit

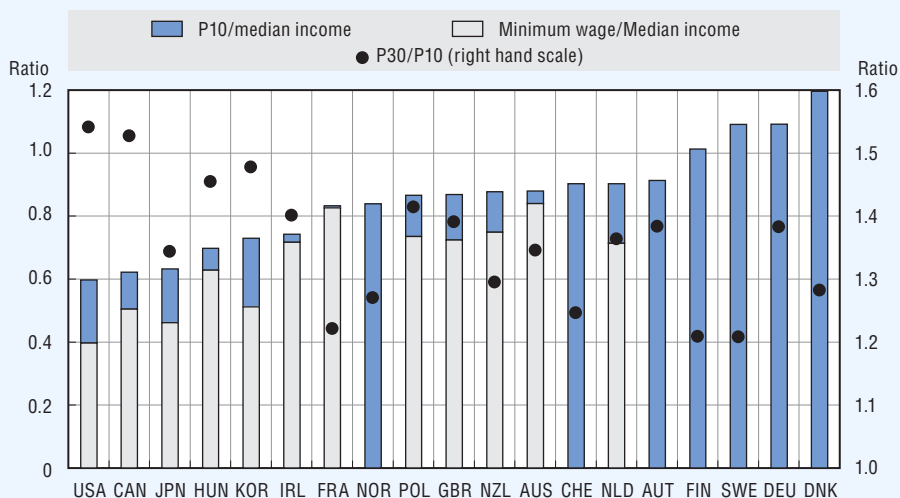
### Box 3.4. Effectiveness of IWBs and earnings distribution at the bottom of the wage ladder

The effectiveness of IWBs depends on a number of key aspects, including the tax system and the *ex ante* distribution of market earnings, itself shaped by a number of policy tools such as the minimum wage and non-employment benefits that directly or indirectly set a wage floor.

In a study comparing the effect of stylised IWBs in Germany, Sweden, the United Kingdom and the United States, Bassanini *et al.* (1999) suggest that such instruments are less suited for the Swedish or the German economy than for UK or US context. IWB programmes, where workers with higher earnings finance the tax credits for the low paid, produce better overall effects – both in terms of total labour supply, unemployment and welfare – in countries with wider earnings distribution and lower marginal taxes (*e.g.* the United States and the United Kingdom). By contrast, the combination of compressed earnings distribution, high reservation wages and high taxes on labour makes the introduction of IWBs costly in Germany, and especially in Sweden, with moderate (or even negative) overall labour supply effects. Likewise, considering the introduction of a simple IWB in 15 European countries, Immervoll *et al.* (2007) find that the cost-effectiveness of IWBs varies sharply across countries. Paying a 1-euro transfer to low-income workers would cost higher-income groups around 1 euro in the United Kingdom and even less than 1 euro in Ireland, both countries with relatively wide earnings distributions at the bottom of the wage-ladder. In other words, these results suggest that there is no “efficiency loss” associated with the IWB in these countries (and even an “efficiency gain” in Ireland). By contrast, in Finland and Sweden, both countries with compressed earnings distributions, the hypothetical 1-euro IWB would be very expensive, costing as much as 5 euros in Finland and 4 euros in Sweden.


Interestingly, in countries with relatively narrow earnings distribution at the bottom of the wage ladder, the ratio between very low wages – as measured by the first decile of the earnings distribution – and the median disposable income (for a single person without children) tends to be relatively high, meaning that these low wages may allow families with a very low earnings potential to reach an acceptable minimum standard of living (see the figure below). Therefore, this reduces the need for IWB type measures in these countries.

#### Earnings distribution at the bottom of the wage ladder, 2005<sup>a</sup>



a) P10 and P30: first and third deciles of the wage distribution, for full-time workers. In France, P10 and the minimum wage are equal. There is no statutory minimum wages in Austria, Denmark, Finland, Germany, Norway, Sweden and Switzerland. Data refer to 2004 for Germany.

Source: OECD Database on Earnings; OECD questionnaire on income distribution.

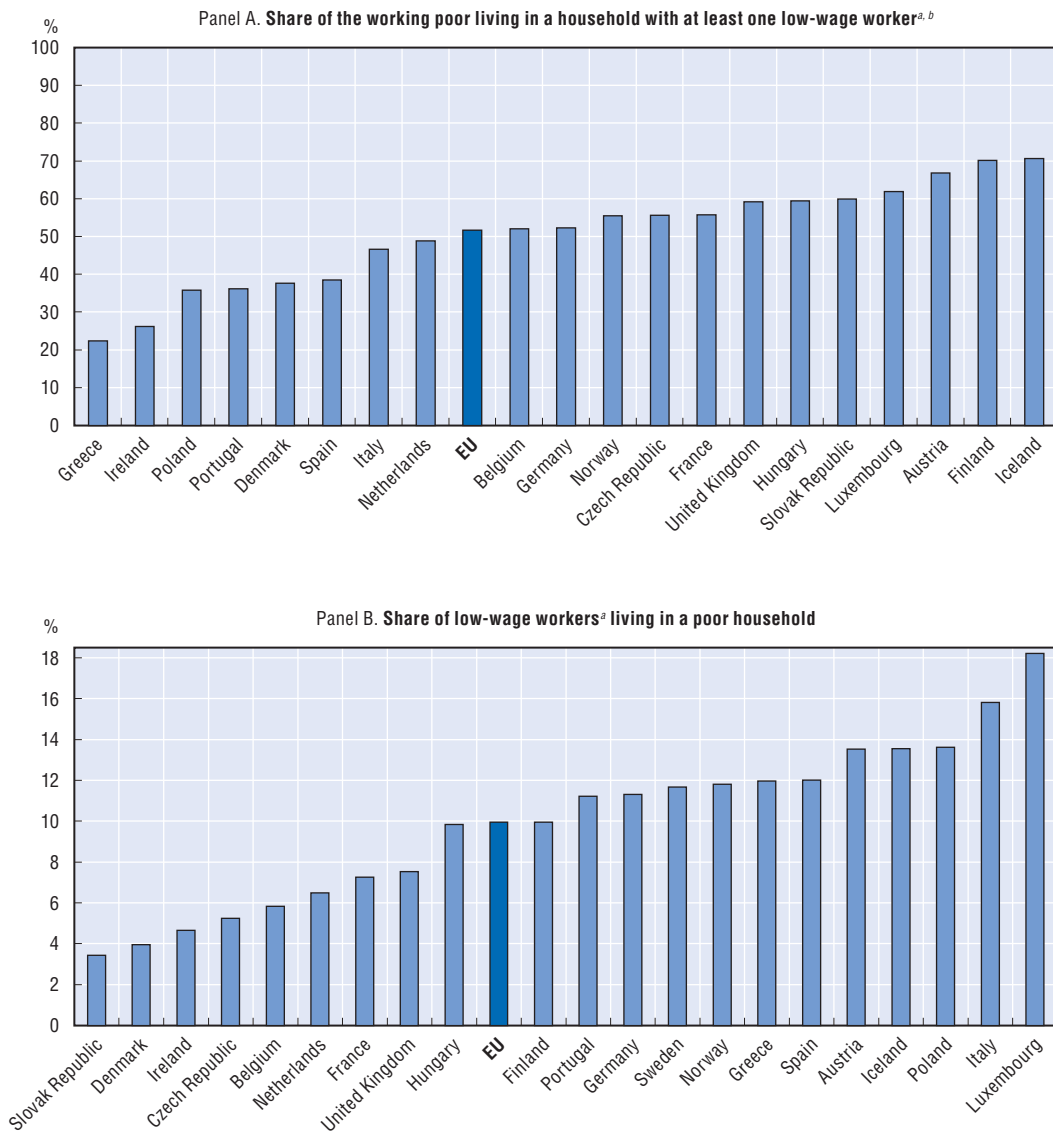
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from a minimum wage increase, because they already earn hourly wages above the minimum (e.g. Burkhauser and Sabia, 2008, for the United States; Sutherland, 2001, for the United Kingdom). More generally, the overlap between low-paid employment and in-work poverty is rather low. Indeed, only slightly more than half of the working poor live in households where there is at least one person employed in a low-paid job (on an hourly basis), on average over the 21 European countries for which data are available (Figure 3.14, Panel A). This proportion varies across countries, but never exceeds two-thirds of the targeted population.<sup>9</sup>

In addition, the minimum wage is a doubled-edge instrument. While setting a relatively high wage floor may reduce in-work poverty, this may also increase out-of-work poverty. Although there is no clear cut evidence of a strong disemployment effect at the aggregate level, possible disemployment effects among low-productivity groups, such as younger workers, should be taken into account when assessing the potential impact of the minimum wage on poverty, as these are the very groups that a binding wage floor is supposed to assist (see Neumark and Wascher, 2006; Immervoll and Pearson, 2009). In this context, a number of countries have reduced employer's social security contributions at the minimum-wage level in order to mitigate potential disemployment effects. However, from the *specific* perspective of fighting in-work poverty, such policies may entail large deadweight costs since a large majority of the beneficiaries of these fiscal measures are not poor. Indeed, the working poor represent a small share of all low-wage workers: on average over the 21 European countries for which data are available, less than one in ten low-wage workers lives in a poor household (Figure 3.14, Panel B).


Nonetheless, as with any other redistribution policy, a finding of negative employment effects does not mean that minimum wages is undesirable. The critical issue is to set the minimum wage to an *appropriate level*, so that disemployment effects remain small relative to the income gains of low-wage workers (those remaining in their jobs and those taking up work as a result of improved work incentives). Formalising this equity-efficiency trade-off, Lee and Saez (2008) show that a low minimum wage can be welfare-improving in spite of disemployment effects. Minimum wages may constitute a valuable instrument to address in-work poverty problems among households in which all working-age adults are employed *full-time* in a low-paid job. In this respect, it is noteworthy that in virtually all OECD countries where a statutory minimum wage exists, it is set high enough to prevent in-work poverty for most of these household types (see Immervoll and Pearson, 2009). Lone parents are often a notable exception, however. This reflects the fact that minimum wages are not designed to address specific family situations or specific employment conditions (such as part-time work). As a redistributive tool, this is the main limitation of minimum wages. And setting a very high wage floor would not help, since it could damage the employment prospects of the most vulnerable workers. All in all, minimum wages set a wage norm for regular workers with low earnings potentials, and this norm needs to be complemented by specific policy tools that can be accurately targeted to address specific situations.

In this respect, there are strong synergies between the minimum wage and IWBs. Provided that the minimum wage is set to a reasonable level, it can increase the effectiveness of IWB schemes (see Immervoll and Pearson, 2009). By preventing wage levels at the bottom from falling, they prevent employers from “pocketing” the value of IWBs by lowering wages.<sup>10</sup> Thus, combined with IWB schemes, minimum wages help to achieve the intended redistribution to low-wage workers. Second, the congruence of policy objectives means that minimum wages can to some extent be traded directly against reduced

Figure 3.14. **Overlap between in-work poverty and low-paid employment, 2006**

- a) Low-wage workers are defined as those with hourly wage below the lowest quintile threshold of the wage distribution.  
 b) Among all individuals living in a poor household with at least one worker, percentage of individuals living in a household with at least one low-wage worker.

Source: EU-SILC.

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IWB payments. As a result, overall expenditure on IWBs can be lower, as can the taxes needed to finance them. With minimum wages in place, the burden of supporting low-wage workers then falls to a larger extent on employers, as well as their customers and employees, and to a lesser extent on taxpayers financing government transfers. In particular, lower IWB levels mean that the steepness of benefit phase-outs can be reduced, which helps to limit the negative labour supply effects of high marginal tax rates associated with benefit tapers.



## Conclusion

Policies to fight poverty have to fulfil several objectives. They should provide adequate safety nets to individuals with weak employment prospects and who may experience recurrent spells of unemployment before finding a stable job, while also ensuring that it pays to work. They should also ensure that working full-time in low-paid employment allows achieving decent living conditions, without damaging demand for low-skilled workers.

Few OECD countries have been successful in addressing these multiple challenges. Poverty rates among jobless people are relatively high in many countries, and while full-time employment generally allows childless households to achieve adequate living conditions, this is often not the case for families with children. In a number of countries, disposable income of couples with children does not exceed 60% of the median income when both spouses are working full-time in low-paid employment. In the current economic downturn, where labour market conditions are worsening in most OECD countries, there are few margins for these families to remain above the poverty threshold, even if both spouses stay employed but face a reduction of hours worked. Moreover, the proportion of two-earner couples could decrease, notably among low-wage-earner families whose employment situation tends to be more sensitive to economic downturns. This would in turn increase in-work poverty in many countries, where one full-time job at the bottom of the wage ladder is not enough for the household to cross the poverty threshold.

And for lone parents working in low-pay employment, the situation is even more critical: full-time work and poverty coexists in many countries. For these families, employment constitutes a solid path towards economic self-sufficiency in only 3 countries: Australia, Ireland and the United Kingdom. In these countries, while out-of-work benefits are relatively generous by OECD standards, full-time work still brings substantial income gains, since average effective tax rates are not overly high. In Ireland and the United Kingdom, in-work benefit payments play a key role, adding significantly to available income of families with a low earnings potential. More generally, when they have a strong distributional component, in-work benefit schemes have the potential to be an effective anti-poverty tool, provided that they are well-designed. In economic downturns, they can become a major element of policy strategies to fight in-work poverty, through supplementing the incomes of low-wage workers facing a decrease in their working hours and earnings.

## Notes

1. Besides, when comparing the absolute poverty line with the relative threshold set at 30% of median income, changes over time have been quite similar. Therefore, given the current definition of the official poverty line in the United States, relative and absolute standards of poverty may become almost equivalent in practice, provided that the relative threshold is set at a sufficiently low percentage of median income.
2. It is noteworthy that several equivalence scales exist and when measuring the incidence of poverty, the choice of one particular scale may also affect the outcome (see [www.oecd.org/dataoecd/61/52/35411111.pdf](http://www.oecd.org/dataoecd/61/52/35411111.pdf)).
3. For instance, a country in which the poverty rate for each household type is close to the OECD average, but where there are relatively few jobless households, will have a relatively low aggregate poverty rate among the working-age population. This relatively low risk of poverty among the whole population would, however, reflect strong labour market performance, rather than effective anti-poverty policies, such as a well-designed system of social transfers. Similarly, a country with an average labour market performance, but particularly effective anti-poverty policies, might also achieve a below-average aggregate poverty rate among working-age households. In this case, however, poverty rates for different types of households would tend to be below the OECD average, whereas the mix of household types might be close to the OECD average.

4. However, the same results hold when splitting the working-age population over the ten types of households for which data are available, as might be expected because most of the variability in poverty rates across household types is related to employment status.
5. This is a rough upper-bound estimate of the potential reduction of the overall in-work poverty rate, since it is based upon the assumption that the rates of in-work poverty observed for higher intensity of work would not change even if a large number of persons would increase their intensity of work.
6. In the longer run, the policy goal should be to strengthen the employability and the earnings potential of those workers experiencing recurrent spells of poverty, notably through vocational training and other education programmes. Although potentially crucial, this kind of career development policies falls beyond the scope of this chapter.
7. For instance, Holt (2006) reports that, in 2003, the EITC lifted 4.4 million people living in low-income, working families out of poverty in the United States, more than one-half of them being children. And this scheme lifts more children out of poverty than any other social program or category of programs. Without it, the poverty rate among children would be 25% higher (Greenstein, 2005). Another study found that from 1995 through 1999, the EITC reduced the overall poverty rate by 1.5 percentage points, even though only about one-third of poor households qualify for the credit (Hoffman and Seidman, 2003). Besides, the total poverty gap – the aggregate difference between poor families' resources and the (official) poverty threshold – for families with children would have been 20% higher in 1999 without the EITC (Ziliak, 2004).
8. Indeed, if IWBs represent an additional transfer, i.e. if they are introduced without cutting back other benefits, then financing usually takes place by increasing tax burdens for higher-income groups.
9. Moreover, these figures give an upper-bound estimate of the share of working poor who would benefit from a minimum-wage increase or from the introduction of such a wage floor. While a minimum wage may put upward pressure on low wages above the minimum level, this diffusion effect is unlikely to affect all low-paid workers (Neumark et al., 2004).
10. Leigh (2003) suggests that a 10% increase in a state EITC was associated with a 4% drop in wages of high school dropouts and a 2% decline in wages for those with only a high school diploma. Another recent study concludes, however, that expansions to the EITC during the 1990s had little apparent effect on hourly wages near the bottom of the wage distribution (Eissa and Nichols, 2005).

## Bibliography

- Bassanini, A., J. Rasmussen and S. Scarpetta (1999), "The Economic Effects of Employment-Conditional Income Support Schemes for the Low-Paid", OECD Economics Department Working Papers No. 224, OECD Publishing, Paris.
- Blank, R. (2008a), "What Do the Recently-Released US Poverty Numbers Tell Us?", Testimony to the Joint Economic Committee Hearing entitled "Leave No Family Behind: How Can We Reduce the Rising Number of American Families Living in Poverty?", September 25.
- Blank, R. (2008b), "Presidential Address: How to Improve Poverty Measurement in the United States", *Journal of Policy Analysis and Management*, Vol. 27, No. 2, pp. 233-254.
- Blank, R. and M. Greenberg (2008), "Improving the Measurement of Poverty", Discussion Paper No. 2008-17, The Brookings Institution.
- Blundell, R., A. Duncan, J. McCrae and C. Meghir (2000), "The Labour Market Impact of the Working Families' Tax Credit", *Fiscal Studies*, Vol. 21, No. 1, pp. 75-104.
- Blundell, R. and H. Hoynes (2004), "Has In-work Benefit Reform Helped the Labour Market?", in R. Blundell, D. Card and R. Freeman (eds.), *Seeking a Premier League Economy*, University of Chicago Press, Chicago.
- Boarini, R. and M. Mira d'Ercole (2006), "Measures of Material Deprivation in OECD Countries OECD Social", OECD Social, Employment and Migration Working Paper No. 37, OECD Publishing, Paris.
- Brewer, M., A. Duncan, A. Shephard and M.J. Suárez (2006), "Did Working Families' Tax Credit Work? The Impact of In-work Support on Labour Supply in Great Britain", *Labour Economics*, Vol. 13, pp. 699-720.

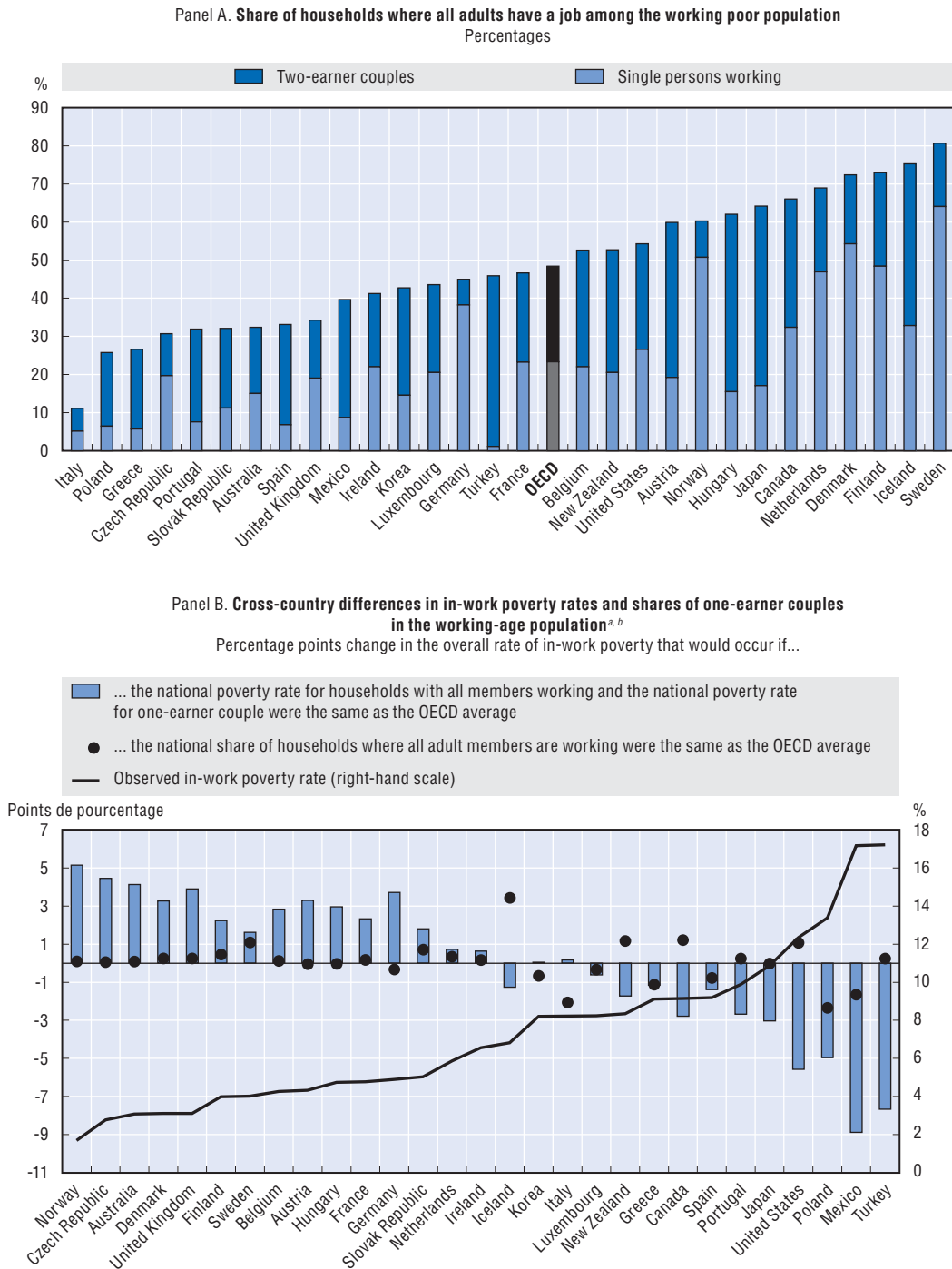
- Burkhauser, R. and J. Sabia (2008), "Good Intentions Are Not Enough: Why Raising New York's Minimum Wage Continues to be a Poor Way to Help the Working Poor", Employment Policies Institute, Washington DC.
- Citro, C. and R. Michael (eds.) (1995), *Measuring Poverty: A New Approach – Panel on Poverty and Family Assistance: Concepts, Information Needs, and Measurement Methods*, National Research Council, Washington DC.
- Eissa, N. and A. Nichols (2005), "Tax-Transfer Policy and Labor Market Outcomes", Paper prepared for 2005 AEA/NEA Joint Session, "Skills, Policy and Labor Market Outcomes across Demographic Groups" ([www.taxpolicycenter.org/UploadedPDF/411237\\_tax\\_transfer.pdf](http://www.taxpolicycenter.org/UploadedPDF/411237_tax_transfer.pdf)).
- Eissa, N. and H. Hoynes (2004), "Taxes and the Labour Market Participation of Married Couples: The Earned Income Tax Credit", *Journal of Public Economics*, Vol. 88, No. 9-10, pp. 1931-1958.
- Ellwood, D.T. (2000), "The Impact of the Earned Income Tax Credit and Social Policy on Work, Marriage, and Living Arrangements", *National Tax Journal*, Vol. LIII, No. 4, pp. 1063-10105.
- Fremstad, S. (2008), "Measuring Poverty and Economic Inclusion: The Current Poverty Measure, the NAS Alternative, and the Case for a Truly New Approach", Discussion Paper, Center for Economic and Policy Research, December.
- Greenstein, R. (2005), "The Earned Income Tax Credit: Boosting Employment, Aiding the Working Poor", Center on Budget and Policy Priorities, Washington.
- Grogger, J. (2003), "The Effects of Time Limits, the EITC, and Other Policy Changes on Welfare Use, Work, and Income among Female-headed Families", *Review of Economics and Statistics*, Vol. 85, No. 2, pp. 394-408.
- Hoffman, S. and L. Seidman (2003), "Helping Working Families: The Earned Income Tax Credit", W.E. Upjohn Institute for Employment Research, Kalamazoo, MI.
- Holt, S. (2006), "The Earned Income Tax Credit at Age 30: What We Know", *Research Brief*, The Brookings Institution.
- Hotz, V. and J. Scholz (2003), "The Earned Income Tax Credit", in R Moffitt (ed.), *Means-Tested Transfer Programs in the United States*, University of Chicago Press, Chicago.
- Immervoll, H. and M. Pearson (2009), "A Good Time for Making Work Pay? Taking Stock of In-Work Benefits and Related Measures across the OECD", OECD Social, Employment and Migration Working Papers No. 81, OECD Publishing, Paris.
- Immervoll, H., H. Kleven, C.T. Kreiner and E. Saez (2007), "Welfare Reform in Europe: A microsimulation analysis", *Economic Journal*, 117 (516), pp. 1-44. Also available as OECD Social, Employment and Migration Working Paper No. 28, OECD Publishing, Paris.
- Jones, J. (2007), "Family of Four Needs to Earn Average of \$52,000 to Get By", Gallup News Service, [www.gallup.com/poll/26467/Public%1eFamily%1eFour%1eNeeds%1eEarn%1eAverage%1e52000%1eGet.aspx](http://www.gallup.com/poll/26467/Public%1eFamily%1eFour%1eNeeds%1eEarn%1eAverage%1e52000%1eGet.aspx).
- Keane, M. and R. Moffitt (1998), "A Structural Model of Multiple Welfare Program Participation and Labor Supply", *International Economic Review*, Vol. 39, No. 3, pp. 553-589.
- Lee, D. and E. Saez (2008), "Optimal Minimum Wage Policy in Competitive Labor Markets", NBER Working Paper No. 14320, National Bureau of Economic Research, Cambridge, Mass.
- Leigh, A. (2003), "Who Benefits from the Earned Income Tax Credit? Incidence Among Recipients, Coworkers and Firms", Working Paper, Australian National University, School of Economics, <http://ssrn.com/abstract=473445> or DOI: 10.2139/ssrn.473445.
- Meyer, B. and D. Rosenbaum (2001), "Welfare, the Earned Income Tax Credit, and the Labour Supply of Single Mothers", *Quarterly Journal of Economics*, Vol. 116, No. 3.
- Michalopoulos, C., P.K. Robins and D. Card (2005), "When Financial Work Incentives Pay for Themselves: Evidence from a Randomized Social Experiment for Welfare Recipients", *Journal of Public Economics*, Vol. 89, pp. 5-29.
- Neumark, D. and W. Wascher (2006), "Minimum Wages And Employment: A Review Of Evidence from the New Minimum Wage Research", NBER Working Paper No. 12663, Cambridge, Mass.
- Neumark, D., M. Schweitzer and W. Wascher (2004), "Minimum Wage Effects Throughout the Wage Distribution", *Journal of Human Resources*, Vol. 39, No. 2, pp. 425-450.
- OECD (2007), *Benefits and Wages*, OECD Publishing, Paris.
- OECD (2008), *Growing Unequal?*, OECD Publishing, Paris.

- OECD (2009), "Intergenerational Social Mobility", document prepared by the Economics Department for the meeting of the Economic Policy Committee, OECD Publishing, Paris.
- Summers, L. (2008), "The Future of Global Capitalism", Keynote address to the Harvard Business School's Centennial Global Business Summit, October 14, [http://ksghome.harvard.edu/~lsummer/08.10.16\\_HBS\\_Global\\_Summit\\_Keynote.pdf](http://ksghome.harvard.edu/~lsummer/08.10.16_HBS_Global_Summit_Keynote.pdf).
- Sutherland, H. (2001), "The National Minimum Wage and In-work Poverty", Microsimulation Unit Discussion Paper No. MU0102, DAE Working Paper, Amalgamated Series No. 0111.
- Vaughan, D. (1993), "Exploring the Use of the Public's Views to Set Income Poverty Thresholds and Adjust them Over Time", *Social Security Bulletin*, Vol. 56, No. 2, pp. 22-46.
- Whiteford, P. and W. Adema (2007), "What Works Best in Reducing Child Poverty: A Benefit or Work Strategy?", OECD Social, Employment and Migration Working Papers No. 51. OECD Publishing, Paris.
- Ziliak, J. (2004), "Filling the Poverty Gap, Then and Now", Working Paper No. 2003-06, UK Center for Poverty Research, Lexington.

## ANNEX 3.A1

### *Figures and Tables*

Figure 3.A1.1. **Underemployment at the extensive margin and in-work poverty rates, mid-2000s**

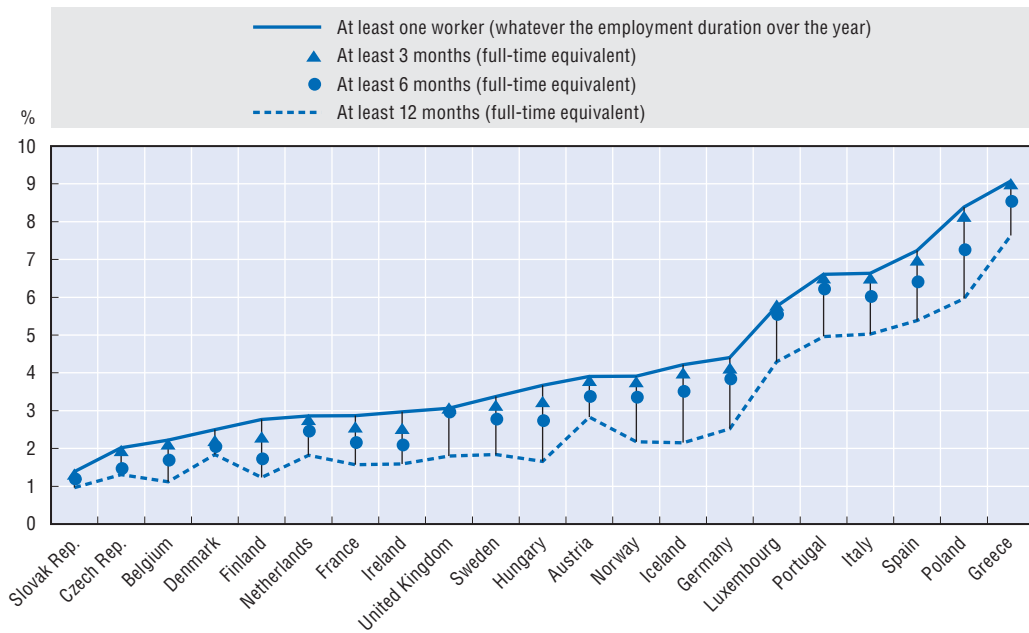


a) Population is split over households with all members working (singles or two-earner couples) and one-earner couples.  
 b) Countries are ranked by increasing observed (aggregate) in-work poverty rates.  
 Reading note: in Sweden, the aggregate in-work poverty rate would be 1.6 percentage points higher than that observed, if the poverty rates for both households with all members working and couples with one member working were the same in this country as those observed on average in the OECD area. Sweden would also exhibit a slightly higher (by 1 percentage point) aggregate rate of poverty, if this country had exactly the same share of households with all members working as that observed on average in the OECD area.

Source: OECD questionnaire on Income Distribution.

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Figure 3.A1.2. **Sensitivity of in-work poverty rates to the work criteria retained to identify the working population, 2006<sup>a</sup>**



a) Among all individuals aged 20-64 living in households with at least one worker, share of individuals with less than 50% of the median disposable income. The calculation is done separately for different total time spent at work in the household (number of hours spent at work by head and spouse, when relevant).

Source: EU-SILC.


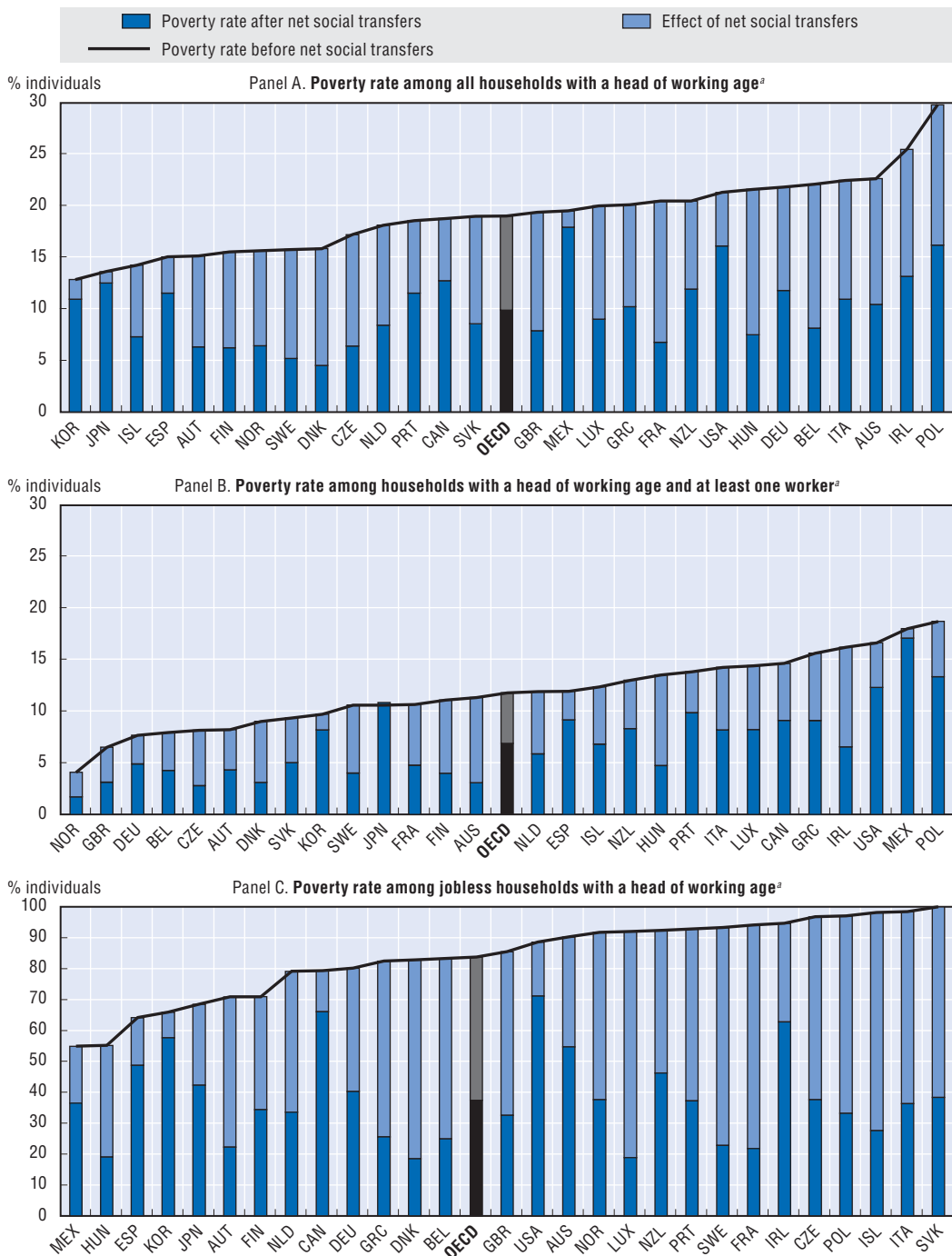
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Figure 3.A1.3. **By how much do social transfers reduce poverty?**



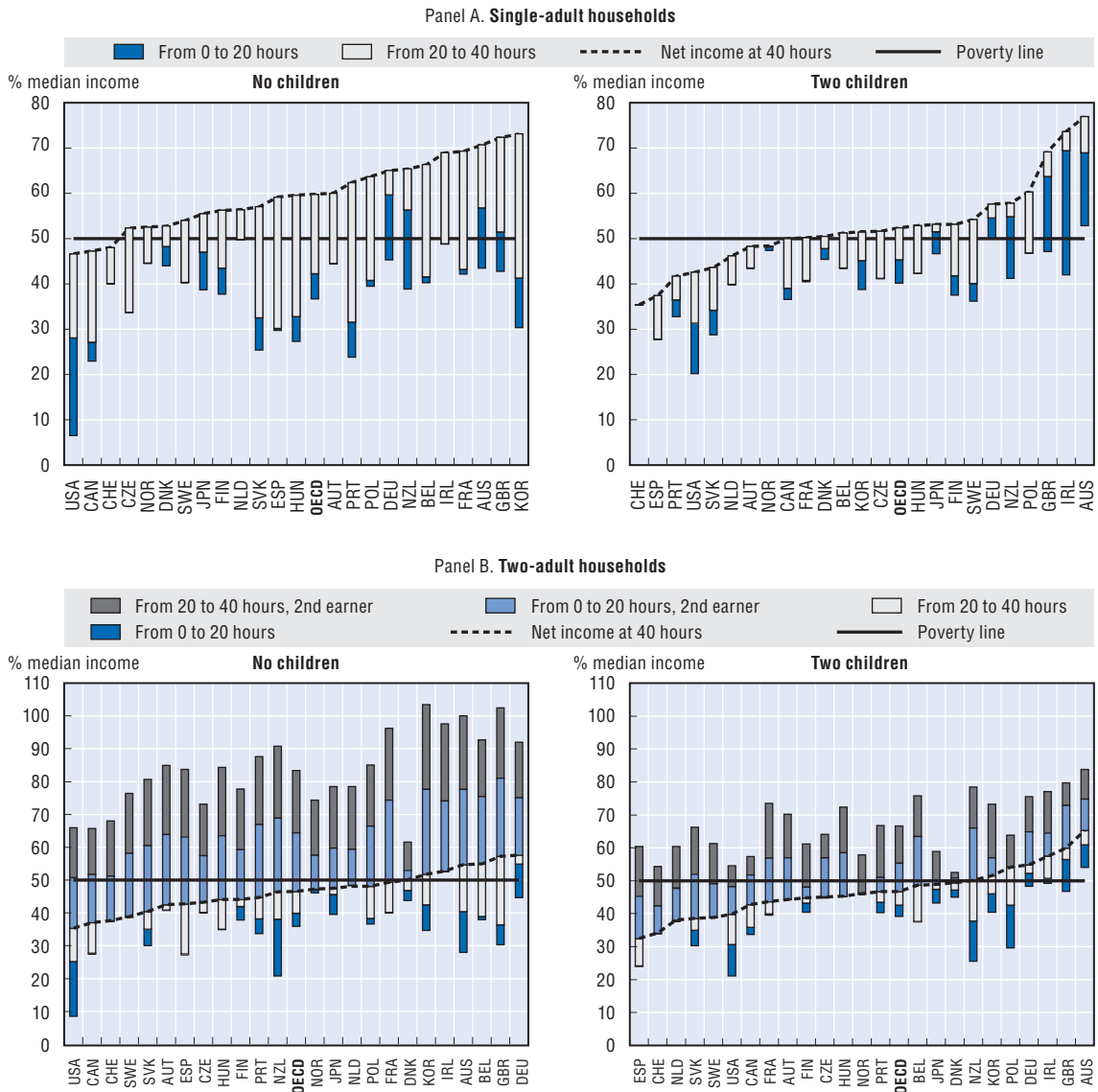
a) Poverty rates before and after transfers are calculated on market-income and disposable income, respectively. In both cases, poverty rates are calculated as the percentage of individuals living in households with income below 50% of the median income: for all individuals living in all households with a head of working age (Panel A); for individuals living in households with at least one worker (Panel B); for individuals living in households with no workers (Panel C).

Source: Calculations based on OECD (2008), *Growing Unequal?*

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Figure 3.A1.4. **Net incomes of households with a low earnings potential, 2006**  
 Individuals working in a low-paid job, earning 40% of the average wage on an hourly basis




Source: OECD tax-benefits models.

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Table 3.A1.1. **Low-income thresholds used in the analysis**  
2005 values

	Currency unit	In national currency 50% of median			
		Single without children	Single with two children	Couple without children	Couple with two children
Australia	AUD	14 770	25 582	20 888	29 540
Austria	EUR	9 964	17 258	14 091	19 927
Belgium	EUR	9 159	15 864	12 953	18 318
Canada	CAD	15 049	26 066	21 283	30 098
Czech Republic	CZK	76 733	132 905	108 516	153 465
Denmark	DKK	94 376	163 463	133 467	188 751
Finland	EUR	10 060	17 425	14 227	20 121
France	EUR	8 691	15 053	12 291	17 382
Germany	EUR	9 109	15 777	12 882	18 218
Greece	EUR	5 657	9 799	8 001	11 315
Hungary	HUF	544 482	943 071	770 014	1 088 964
Iceland	ISK (000)	1 045	1 810	1 478	2 090
Ireland	EUR	10 775	18 664	15 239	21 551
Italy	EUR	7 004	12 131	9 905	14 008
Japan	JPN (00)	14 975	25 937	21 178	29 950
Korea	KRW (000)	7 756	13 434	10 969	15 512
Luxembourg	EUR	16 171	28 010	22 870	32 343
Mexico	MXN	15 675	27 149	22 167	31 349
Netherlands	EUR	11 484	19 891	16 241	22 968
New Zealand	NZD	13 040	22 587	18 442	26 081
Norway	NOK	118 294	204 891	167 293	236 587
Poland	PLN	6 924	11 994	9 793	13 849
Portugal	EUR	4 197	7 270	5 936	8 394
Slovak Republic	SKK	67 213	116 416	95 053	134 426
Spain	EUR	6 345	10 989	8 973	12 690
Sweden	SEK	89 832	155 594	127 042	179 665
Switzerland	CHF	23 141	40 082	32 727	46 283
Turkey	TRY (000 000)	2 067	3 581	2 924	4 135
United Kingdom	GBP	7 038	12 190	9 953	14 075
United States	USD	13 495	23 374	19 085	26 990

Source: OECD questionnaire on Income Distribution.

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## Chapter 4

# Pathways onto (and off) Disability Benefits: Assessing the Role of Policy and Individual Circumstances

*This chapter presents new evidence on role of the personal and work-related factors for the entry to disability benefits and on policy developments in the area of sickness and disability across OECD countries. Disability benefit recipiency rates have increased most rapidly for women, young adults and individuals with mental health problems. However, the longitudinal analysis for individuals in four countries suggests that the probability to enter a disability benefit following an adverse health shock is only marginally higher for women and young adults than for other groups. Marked cross-country differences in the estimated results underlie the importance of taking a closer look at how national disability policies differ. Indeed, new OECD indicators of disability policy reveal a wide diversity in both the generosity aspect and the employment integration component of disability policy. At the same time, most countries have tightened access to benefits in the last decade while improving employment integration. This is a promising development because the chapter's analysis reveals that a more generous disability policy is associated with higher numbers of beneficiaries while more comprehensive employment and rehabilitation programmes are associated with lower recipiency rates.*

## Introduction

Too many workers leave the labour market permanently due to health problems. Indeed, expenditures on disability programmes in many OECD countries far exceed expenditures on other income-replacement programmes for working-age persons (such as unemployment benefits). In most countries, very little is known about the pathway leading from illness or accidents to long-term disability benefits. Similarly, little is known about the most typical routes off disability benefits (i.e. transitions back to work or on to other benefits), although evidence suggests that very few disability benefit recipients ever return to the labour market, even if they have a significant remaining work-capacity. In order to devise adequate policy responses to lower disability benefit caseloads, it is important to learn more about the factors that affect flows into, and out of, these benefits.

Explanations for the growing inflows into disability benefits have focused on how incentive structures within the welfare system may have created moral hazard issues. Benefit systems, through the combination of high generosity of benefits and lack of monitoring, may have eroded the willingness to work of individuals with health problems but with remaining work capacity (Marin *et al.*, 2004). In the past two decades, many OECD countries have enacted reforms addressing the incentive structure of the benefit system. But the success of the reforms in reducing both inflows and stocks of disability beneficiaries has been very different across countries.

There is only limited knowledge of how the characteristics of individuals who apply for disability benefits after an adverse health shock differ from those of persons who apply for other benefits or stay in employment. In this context, the aim of this chapter is two-fold: i) to analyse the characteristics of disability beneficiaries, and the different pathways onto and off benefit recipiency; and ii) to assess the responsiveness of disability benefit recipiency to economic conditions and policy changes in OECD countries. For that purpose the chapter uses two different types of data: i) micro-panel data, which allow for a better understanding of the impact of health status on the probability of receiving a disability benefit and how other personal and work-related characteristics reinforce or weaken this impact; and ii) aggregate data on beneficiaries to capture trends over time and differences across countries in recipiency rates. Although individual-level panel data are available for only four countries (Australia, Germany, Switzerland and the United Kingdom), these countries are sufficiently diverse in terms of labour market conditions and their disability benefit-systems to provide a good overview of the complex interactions of different factors.

The chapter is organized as follows. Section 1 documents the rise in disability recipiency in most OECD countries. Section 2 estimates the effect of individual characteristics on the probability of receiving disability benefits and on staying in employment after experiencing health problems. Section 3 provides a picture of the different pathways in and out of benefits. Finally, Section 4 describes recent disability policy changes across OECD countries and makes an attempt at assessing their effect on disability rolls, while controlling for economic conditions and other policy factors.

A concluding section discusses the implications of the empirical analysis for labour market, health and social security policies and indicates the main policy challenges.

## Main findings

- *The share of disability beneficiaries in the working-age population has increased over the past two decades in a large number of OECD countries. Beneficiaries tend to be concentrated among certain socio-demographic groups:*
  - ❖ Increases in beneficiary rates have been more pronounced among women, relatively younger age-groups, the low-skilled and individuals with mental and psychological problems.
  - ❖ Among individuals with prior work experience, disability beneficiaries also tend to be overrepresented among manual occupations, particularly low and semi-skilled production jobs, and non-standard employment.
- *Not surprisingly, an adverse health shock is often a key driver of the transition to disability. But certain groups face a higher probability to enter a disability benefit spell or a lower probability to stay in employment after experiencing health problems. The groups most prone to enter disability schemes or exit employment differ somewhat across the four countries analysed, pointing to possible country-specific differences in individual determinants and also features of the disability benefit system:*
  - ❖ The effect of health problems on the probability of entering disability benefit varies by age group and income. Women and young individuals suffer from a stronger than average impact of health shocks in some countries only, providing only a partial explanation for the recent rise of beneficiaries among these groups.
  - ❖ Similarly, the chances of remaining in employment after health problems are influenced by industry, occupation, working hours and the type of employment contract. For example, individuals having temporary contracts and working less than full-time hours are less likely to be employed once health shocks are taken into account.
- *Pathways onto disability benefits, persistence in disability benefits and outflow routes vary greatly across countries. Such variation points to cross-country differences in the labour market opportunities available to individuals suffering from health problems but also to differences in disability benefit systems, including labour market integration programmes for recipients.*
- *The main trend in disability policy across OECD countries in the past two decades has been to tighten access to benefits and to increase integration opportunities of people with disabilities through widening employment programmes and enhancing employment protection for workers with partial disabilities.*
- *However, the generosity of disability benefits and the associated employment integration measures vary significantly across OECD countries. On average, the Nordic countries and Switzerland offer the most generous compensation policies to persons with disabilities. The division across countries in terms of employment integration policies is less clear-cut and has changed more over time.*
- *Disability policies influence significantly the share of disability recipients. More generous disability and sickness benefits and easier access to benefits tend to be associated with higher disability beneficiary rates. At the same time, employment and rehabilitation programmes reduce disability benefit rates.*

## 1. Disability benefit trends: evolution and recipients' characteristics

### 1.1. Disability trends

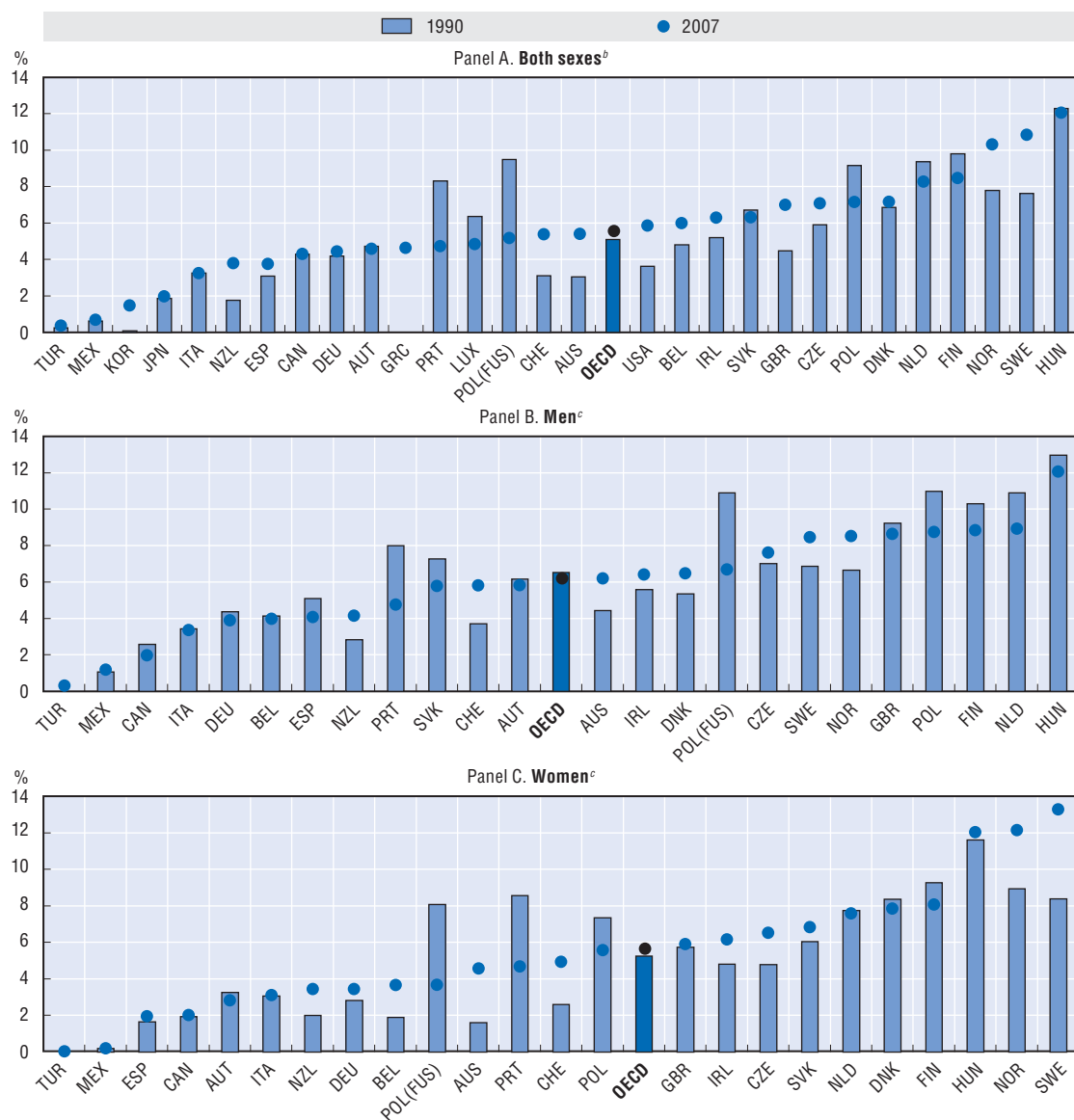
In the OECD countries, the share of the working-age population relying on disability benefits<sup>1</sup> as their main source of income has increased only moderately since 1990 (Figure 4.1). On average, about 6% of the working age population was on disability benefits in 2007 compared with 5% in 1990. The small increase in the OECD average masks substantial differences across countries with large increases in a number of countries but also significant falls in a few countries. Disability recipient rates range from as high as 10% or 12% in Norway and Hungary to below 1% in Turkey and Mexico in 2007. Nordic countries (Denmark, Finland, Norway and Sweden) and the Netherlands together with some central European countries (Hungary, Poland and the Czech Republic) have the highest recipiency rates within the OECD area. Finland and the Netherlands have experienced a decrease since 1990 while the United Kingdom, Sweden and Norway showed a marked increase.

Men are more likely to receive a disability benefit than women in a majority of countries but the highest growth in recipiency has occurred among women. Women's lower rates are partially driven by insufficient contributions to benefit systems which are contributions-based. In countries where schemes are universal such as Denmark, Norway and Sweden as opposed to linked to previous employment-related contributions, disability recipiency rates are much higher for women. In addition, countries having recorded large increases in disability benefit recipiency rates show a much larger growth among women. In Australia, the growth in female recipiency rates was more than 4 times as high as for male recipients and in Belgium female rates have doubled while those for men have decreased since 1990.

Similarly, while disability recipiency rates are highest among the older-age-groups, in most countries the increase over time has been larger among the young and prime-age groups (Figure 4.2). For instance, in Finland and Norway, people in the age group 50-64 are more than ten times as likely to receive a disability benefit as those in the age group 20-34. At the same time, beneficiary rates have decreased for the 50 to 64 age group in these two countries. Large increases in the age group 20-34 have occurred since 1990, in particular in Australia, Germany and Sweden. The Netherlands also recorded an increase among young men, while total rates declined. The Netherlands has now become an exception in that older individuals are less likely than the young and the prime-age group to be beneficiaries.

Mental and psychological problems represent around one-third of disability benefit inflows on average in OECD countries (Figure 4.3). This share has shown a massive increase in many countries for which data are available over the past decade. For instance, in Switzerland and Denmark the share of mental problems in disability inflows has grown from 25% to over 40%, and from 15% to 40% in Sweden. Shares of mental illness are systematically higher for younger and prime-age individuals, but particularly for the age group 20-34: at this age, up to 70% of inflows are for mental health reasons in Denmark, Finland and Sweden. It is also among this age group that inflows for mental health reasons have increased the most. Such pattern has raised questions about whether young people suffering from psychological problems should be granted permanent benefits or whether more efforts should be devoted to get them back into the labour market.

Figure 4.1. **Trends in disability benefit recipiency rates<sup>a</sup> in OECD countries, 1990-2007**  
Percentage of working-age population



a) Contributory and non-contributory pension in Panel A and contributory pension only in Panels B and C for Belgium and Spain. Ireland includes persons on illness benefit over two years and New Zealand and Sweden include persons on sickness benefit over two years. OECD unweighted average of countries shown except in Panels B and C for which Turkey is excluded. Differences in the number of countries covered in the three panels are explained by the non-availability of disaggregated data for some of the countries presented in Panel A.

b) Data refer to 1990 and 2007 except: 1994 for Greece; 1995 for Germany, Korea, Poland (Social Insurance Fund Data, FUS) and Spain; 1995-2006 for the Slovak Republic; 1996 for Belgium and Canada [contributory and non-contributory pensions, Canadian Pension Plan (CPP) and Quebec Pension Plan (QPP), and provincial social assistance]; 1999 for the Netherlands; 2000 for Hungary; 2000-06 for Italy; 2001 for Ireland; 2003-06 for Japan; 2005 for Luxembourg; and 2006 for Denmark, Turkey and the United States.

c) Data refer to 1990 and 2007 except: 1992 for Germany; 1995 for New Zealand and Poland (only FUS); 1995-2006 for the Slovak Republic; 1996 for Canada (CPP and QPP only); 1999 for the Netherlands; 1999-2005 for the United Kingdom; 2000 for Hungary; 2000-06 for Italy; 2001 for Ireland; 2004 for Poland; and 2006 for Turkey.

Source: Data provided by national authorities.


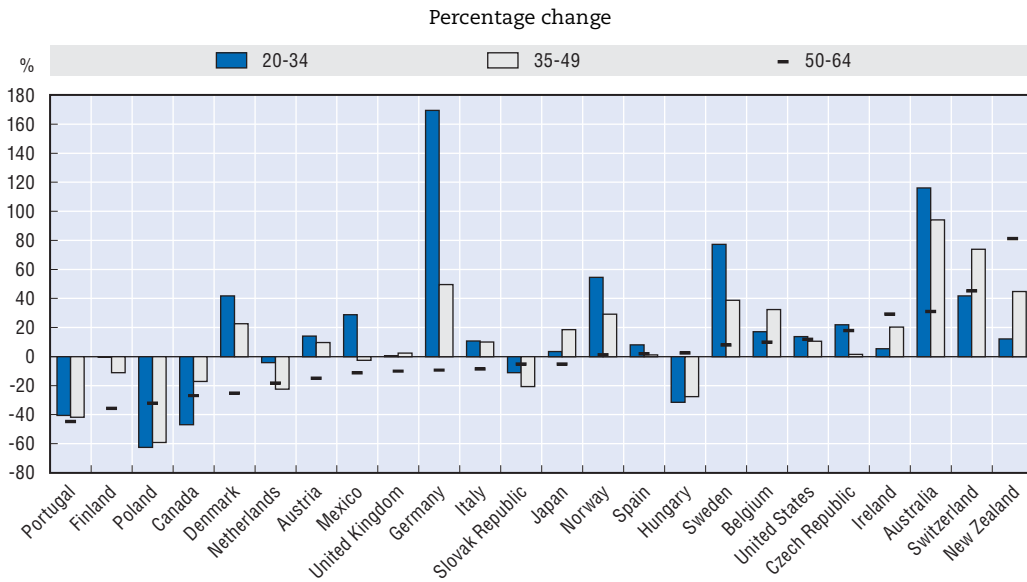

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Figure 4.2. **Change in disability benefit recipiency rates by age groups in OECD countries, 1990-2007<sup>a</sup>**



a) Figure based on 24 countries for which there are available data disaggregated by age groups. The specific years covered for every country are the following: 1990-2005 for Denmark; 1992-2007 for Switzerland; 1995-2006 for the Slovak Republic; 1995-2007 for Germany, New Zealand, Poland (FUS only) and Sweden; 1996-2007 for Canada (CPP and QPP only); 1999-2005 for the United Kingdom; 1999-2007 for the Netherlands; 2000-06 for Italy; 2000-07 for Hungary and the United States (SSDI only for the 18-64 group); 2001-07 for Ireland; 2003-06 for Japan; 2003-07 for Mexico; and 2005-07 for Spain.

Source: Data provided by national authorities.

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## 1.2. Who are the disability benefit recipients?

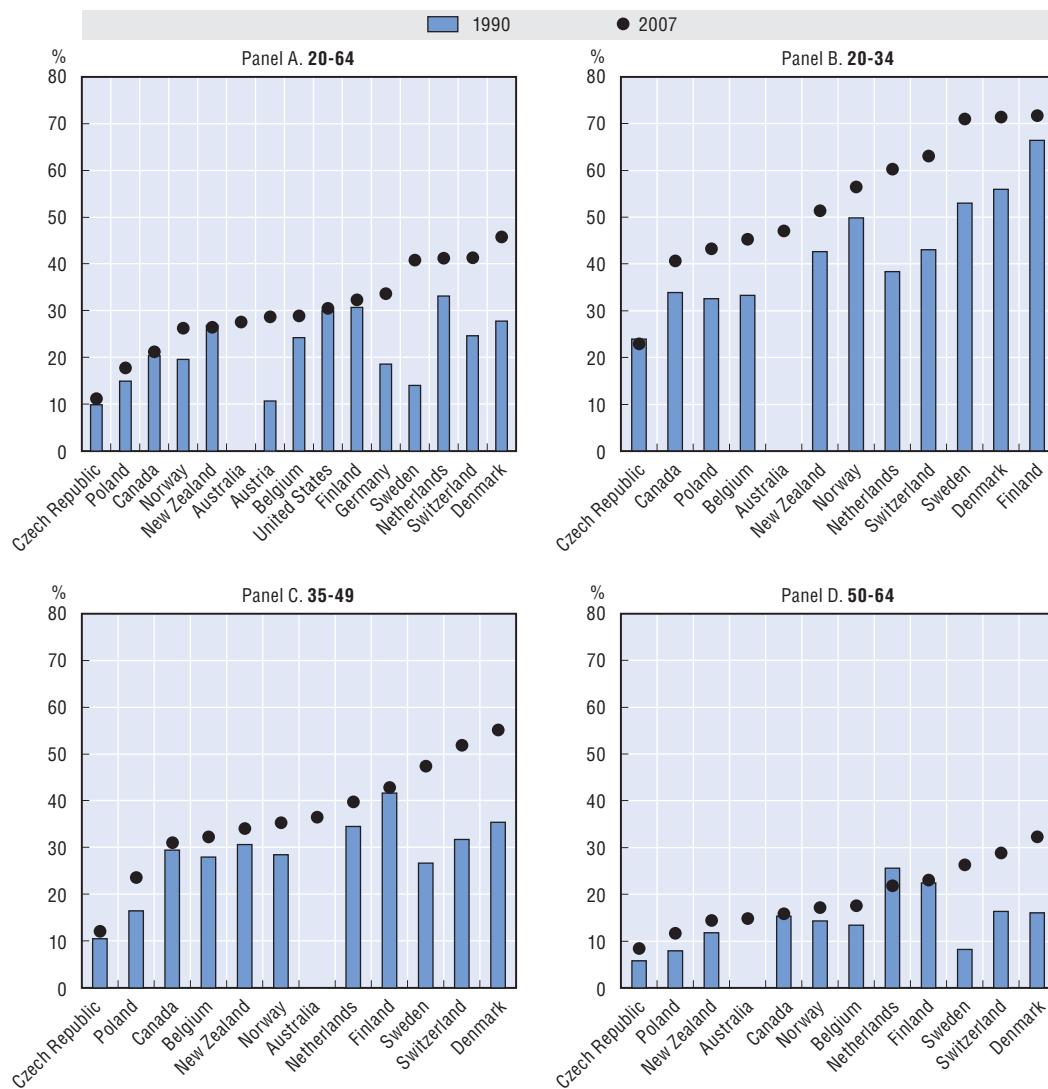
Evidence presented in the previous section provides a good picture of trends in disability rates, but leaves unanswered important questions related to personal characteristics and prior work experience of beneficiaries. For a more complete picture of benefit recipients, more should be known about their education level, their marital status and the types of jobs they held prior to moving to disability benefits. Administrative data on disability do not always allow analysing the role of the detailed characteristics on benefit recipiency. For that reason, individual level data are needed as they provide rich information on characteristics of beneficiaries and allow tracing beneficiaries' work history. Particular attention is paid to work characteristics as there is a belief that the working environment may have become more challenging than before (Parent-Thirion et al., 2007), making it more difficult for certain groups of the population, especially those with low skills and qualifications and those with weak links to the labour market, to stay in employment. At the same time, institutions and policies in the different countries may be contributing to different degrees to labour market withdrawal.

The analysis is performed for a selected group of countries (Australia, Germany, Switzerland and the United Kingdom), for which longitudinal surveys are available with sufficient information on health, demographics, work history and benefit status (see Annex 4.A1 for further details). The definition of disability benefits in this section is based on self-reported information on income sources for working-age individuals. Country-specificities in the type of disability-related benefits are taken into account in the definition of recipient status (Box 4.2). The schemes differ across countries because some



Figure 4.3. **Disability benefit inflows due to mental health problems have increased greatly and are most common at younger ages, 1990-2007<sup>a</sup>**

Share of mental health problems as a percentage of total inflows by age<sup>b</sup>



- a) 1992 for Switzerland; 1995 for Belgium, Germany and Poland; 1996 for New Zealand; 1999 for the Netherlands; 2000 for Denmark and Finland; 2001-06 for Canada (CPP&QPP only); 2005 for Norway; data for the United States refer to 2006 and do not account for the overlap in contributory (SSDI) and non-contributory (SSI) benefit receipt.
- b) Austria, Germany and the United States (ages 18-64): no age breakdown available.

Source: Data provided by national authorities.

StatLink  <http://dx.doi.org/10.1787/707615862243>

have universal coverage while others have means-tested benefits or a dual system with contribution-based benefits (earnings-related) together with non-contributory benefits. The countries chosen differ substantially in terms of labour market conditions and their disability benefit-systems, shedding light on how personal and work-related characteristics interact with macroeconomic conditions and policies. While this will provide relevant information on whether the determinants of disability differ depending on the type of benefit systems, the restricted set of countries will have implications for the generalisation of the results.

#### Box 4.1. **High reciprocity countries have seen very different trends since 1990**

This box presents details about the trends in a sample of high benefit reciprocity countries.

At the beginning of the 1990s, Norway had relatively high levels of disability reciprocity rates, at 8% of the population. It experienced a decline in rates over the 1990s. However, this trend was reversed at the end of the 1990s when growth resumed, leading to a reciprocity rate close to 11% of the population in 2007.

In Sweden, the number of newly granted disability benefits per year remained stable in the mid-1980s. It increased in 1992 and 1993 and then fell sharply during 1995-99 when the possibility for people aged 60-64 to be granted disability benefits for combined medical and labour market reasons was withdrawn. Between 1999 and 2004, the number of newly granted disability benefits rose again, peaking in 2004, but it slowed down during 2005 and 2006 following a fall in long-term sickness.

In the Netherlands, the number of beneficiaries grew continuously until 1993 where changes in definition of disability reduced the number of new awards (reassessment) by 7%. However, the slowdown was reversed at the end of the 1990s and the number on disability rolls reached the critical point of almost 1 million in 2002. Since then, the Netherlands has recorded a steady decrease in beneficiary rates as inflow rates have decreased sharply between 2001 and 2006 after a series of major reforms. At the same time, the Netherlands has recently witnessed a large increase in the number of benefit recipients who acquired a disability at a young age (the Wajong). The numbers have doubled between 2001 and 2006 and, currently, one in 20-18-year-olds eventually enters the Wajong benefit roll.

In Finland, the share of disability beneficiaries decreased from 10% to 8.5% in the late 1990s and remained stable since 2001. Inflows into disability benefits are related to changes in unemployment benefits and, more recently, also to pension reform. Wide use of unemployment benefits during the recession of the early to mid 1990s reduced the need to use sickness and disability benefits, while in the late 1990s and the early 2000s higher inflows into disability reflected a tighter administration of other benefits (notably through activation measures for social assistance beneficiaries) and the fact that special programmes were launched to help the long-term unemployed with health problems obtain a disability benefit (Gould, 2003).

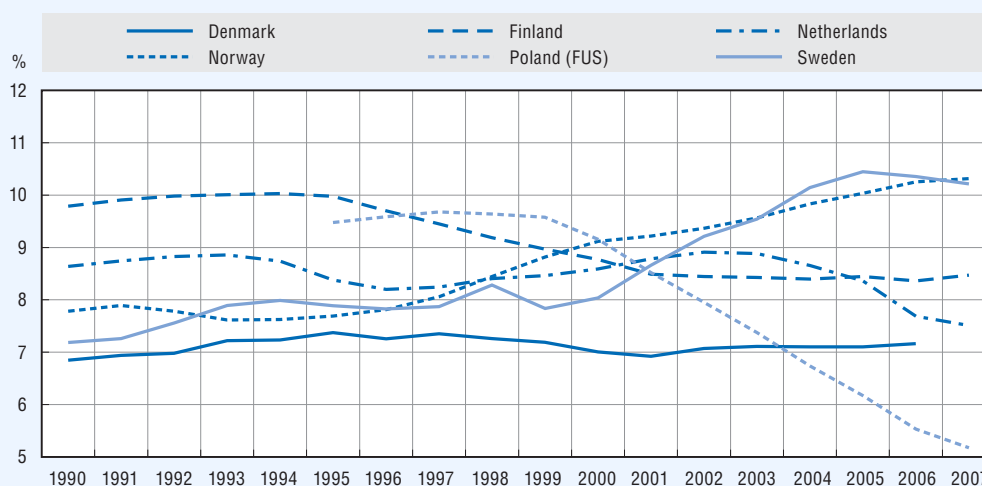
Poland experienced high rates of disability reciprocity throughout the 1995-07 period. After a fairly stable period between 1995 and 1999, the share of disability beneficiaries decreased substantially from 2000 and even more so in the period between 2004 and 2006. This drop coincides with the introduction of a new disability assessment procedure and a more restrictive access to permanent benefits (OECD, 2006). The evolution of disability reciprocity in Poland also reflects the specific circumstances of the transition to a market economy when for some workers it was particularly difficult to stay in the labour market.

In Denmark, the beneficiary rate has oscillated around 7% for the past 15 years. Inflows into disability benefits have remained constant in spite of several reforms, that directed a growing number of people with reduced work capacity to subsidised employment (flex jobs). Workers in flex-jobs have increased from 13 000 in 2003 to 41 500 in 2006. The number of individuals waiting for a flex-job increased from 1 400 to 12 700 in the same period.

### Box 4.1. High reciprocity countries have seen very different trends since 1990 (cont.)


#### Evolution of disability reciprocity rates for selected countries, 1990-2007

Percentage of persons aged 20-64<sup>a</sup>



a) Data for the Netherlands refer to individuals aged 15-64.

Source: Data provided by national authorities.

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In all four countries disability benefit recipients show very similar demographic characteristics (Figure 4.4). There are slightly more men among recipients and they are on average (six years) older than non-recipients, with beneficiaries in Germany being on average older than in the other three countries.<sup>2</sup> Among disability benefit recipients there is a higher share of separated/divorced individuals while widows are also overrepresented in all countries with the exception of the United Kingdom. In addition, the percentage of singles among beneficiaries is also more important than among non-beneficiaries in Australia and Switzerland. The large prevalence of widows in Germany might be driven by an age effect. The fact that Australia has the lowest percentage of married disability beneficiaries is associated with the strong means-tested nature of the system.

In Australia and Germany, virtually all individuals receiving benefits have previous work experience although slightly less than those not receiving it. A greater percentage has previously been unemployed (44% versus 32% in Australia and 40% versus 34% in Germany) and for a longer period (22 months versus nine months on average in Australia and 13 months versus seven months in Germany). Benefit recipients in Germany have substantially longer working experiences compared with non-recipients, which is possibly related to their older age.

There are more low-skilled individuals and from manual occupations among beneficiaries compared with the non-beneficiaries group in all countries but previous industry or firm types differ across countries. The high prevalence of low-skilled individuals among disability recipients in Australia and the United Kingdom may reflect the fact that benefits are means-tested. Part of these findings could also be linked to the well-established correlation between socio-economic status and health (Case *et al.*, 2005;

### Box 4.2. Types of disability-related benefits

This box describes the types of disability-related benefits in Australia, Germany, Switzerland and the United Kingdom, and their conditions of access and entitlement that apply.

#### Australia

*Sickness allowance.* There is a public, flat-rate and means-tested sickness allowance for residents over age 21 who have a sickness or injury preventing work, provided they have a job (or a place in education) to return to.

*Disability Support Pension.* Residents between age 16 and the statutory pension age are eligible for a disability benefit. If the assessed disability began before residing in Australia, the person must have ten years of residence in the country. Individuals must be assessed as not being able to work or be retrained for work for at least 15 hours per week within two years because of their illness, injury or disability (or permanently blind). These payments are household means and asset-tested (unless a person is blind). Veterans who are permanently blind or permanently unable to work and meeting the criteria of permanent incapacity to work are eligible for a *Service Pension*.

#### Germany

*Disability Pensions.* They cover all employees with a qualifying period of five years and compulsory contributions of three years in the last five years. The self-employed have access to disability pensions on a voluntary basis. The scheme distinguishes between total and reduced incapacity pension. The first is granted to insured persons who cannot work for at least three hours a day due to their sickness, whereas the second is granted to those who can work between three and less than six hours a day.

#### Switzerland

*Disability Insurance.* It covers all residents from age 18 onwards and those gainfully employed in the country, with a special benefit for those invalid from birth and before age 18 and those with less than one year of contributions. People not entitled to a second pillar disability benefit or only to a low one can be entitled to a means-tested, tax financed supplementary benefit.

#### United Kingdom

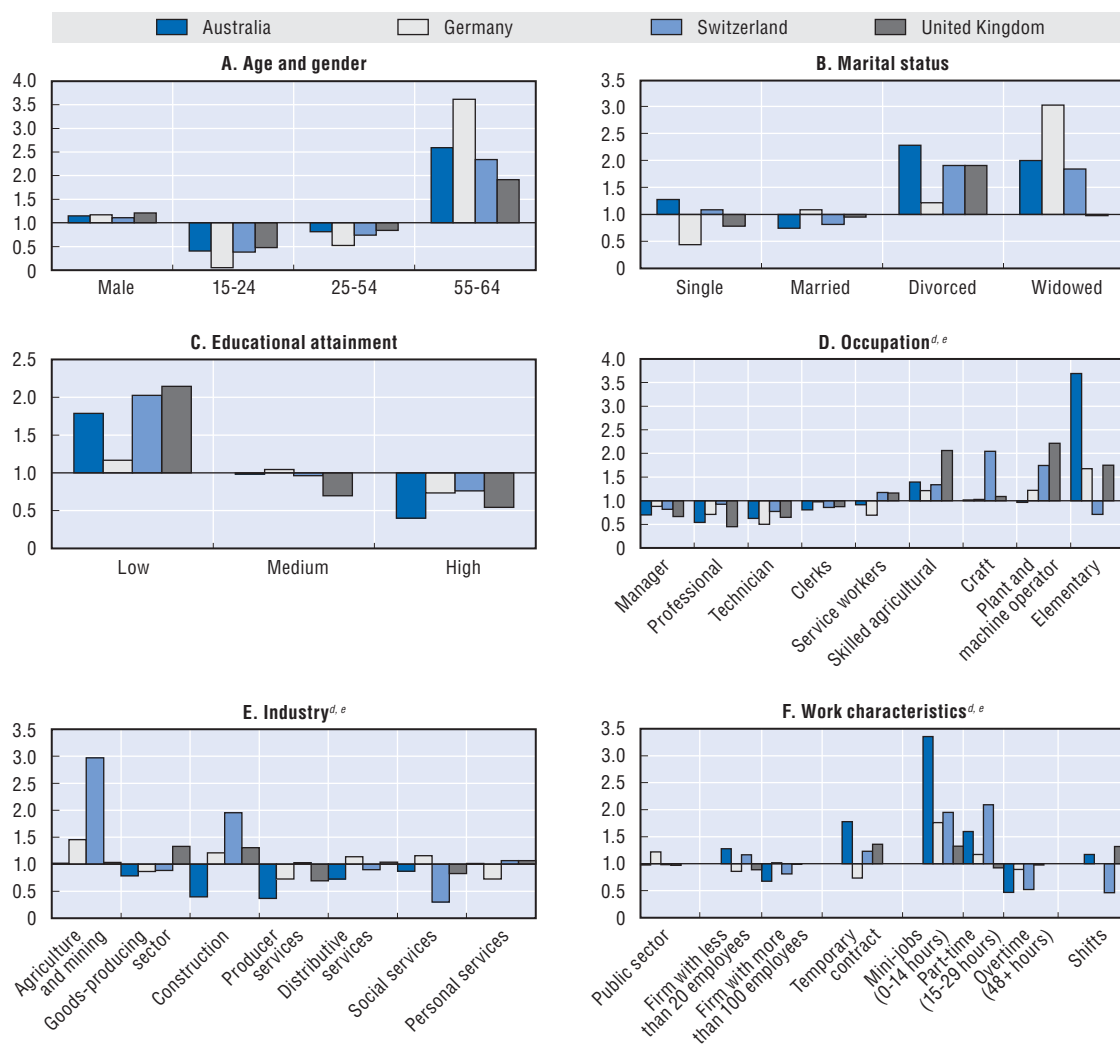
*Incapacity benefits.* They replaced Sickness Benefits and Invalidity Benefits from April 1995. People need to be ordinary residents of the UK and be assessed as incapable of working because of their illness following the personal capability assessment. Individuals must have paid enough contributions in the last three years before the claim. There are three rates of Incapacity Benefit, two short-term rates (the lower rate is paid for the first 28 weeks of sickness and the higher rate for weeks 29 to 52) and a long-term rate for people who have been sick for more than a year. The higher short-term rate and the long-term rate are treated as taxable income.

*Severe Disablement Allowance.* It was available to people under 65 and incapable of work, but whose National Insurance contributions were not enough to claim the long-term Incapacity Benefit. From April 2001, there have been no new claims to SDA. From this date, claimants under the age of 20 (or 25 if receiving training or education) may become entitled to Incapacity Benefit.

*Income support.* Individuals who do not qualify for incapacity benefit because they do not meet the means-testing or the contributions requirements may be eligible for income support and they may also receive a Disability Living Allowance if they have personal care and/or mobility needs as a result of severe disability and claim before age 65. Because the public disability benefit does not cover the entire population, like in Switzerland, many people with disability in the United Kingdom receive Income Support together with the Disability Living Allowance and it is therefore important to include such individuals as disability benefit recipients.

In the United Kingdom, contributory disability benefits are not means-tested, while non-contributory payments for those who do not fulfill the contribution requirements are. From October 2008, the Employment and Support Allowance (ESA) replaces Incapacity Benefit and Income Support for new applicants, paid because of an illness or disability.

Figure 4.4. **Demographic and work characteristics of disability benefit recipients**  
Relative prevalence (1 is the population-average benchmark)<sup>a, b, c</sup>



- a) Numbers presented are ratios between disability benefit recipients and non-recipients.
- b) Samples include persons present in at least three consecutive waves, not in full-time education, and aged 15-64 in Australia, Switzerland and the United Kingdom; 16-64 in Germany.
- c) The following years are considered for each country: 2001-07 for Australia; 1984-2006 for Germany; 2002-06 for Switzerland; and 1991-2006 for the United Kingdom.
- d) Work characteristics are based on the respondent's last job. Samples are therefore different in Panels D-F, as they comprise only individuals who had a job in the past.
- e) Three broad educational groupings were defined using ISCED. Occupational groupings were defined in terms of the nine one-digit occupations of the ISCO-88. Seven broad industry groupings were defined in terms of the 17 one-digit industries of the ISIC Rev. 3: agriculture and mining corresponds to industries A, B and C (i.e. agriculture, hunting and forestry; fishing; and mining and quarrying); goods-producing sector corresponds to industries D and E (i.e. manufacturing; and electricity, gas and water supply); construction corresponds to industry F (i.e. construction); producer services corresponds to industries J and K (i.e. financial intermediation; and real estate, renting and business activities); distributive services corresponds to industries G and I (i.e. wholesale and retail trade; repair of motor vehicles, motorcycles and personal and household goods; and transport, storage and communications); social services corresponds to industries L, M, N and Q (i.e. public administration and defence; compulsory social security; education; health and social work; and extra-territorial organisations and bodies); and personal services corresponds to industries H, O and P (i.e. hotels and restaurants; other community, social and personal service activities; and private households with employed persons).

Source: OECD estimates based on the HILDA for Australia, the GSOEP for Germany, the SHP for Switzerland and the BHPS for the United Kingdom.

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Smith, 1999). However, examining the sector in which beneficiaries previously worked, no common pattern is found across countries.

Other work characteristics appear to be important. In all four countries, beneficiaries are overrepresented in non-standard types of jobs. A majority of recipients were previously working part-time or in mini-jobs (1-14 hours of work) in all countries (only in mini-jobs in the United Kingdom), particularly in Australia and Switzerland. They were also more likely to have had temporary jobs in all four countries except Germany. They are overrepresented in shift work in the United Kingdom and Australia. The explanation for this phenomenon could be two-fold. On the one hand, it is likely that individuals experiencing health problems have to reduce their working hours or are found in more precarious employment situations. On the other hand, it is possible that individuals working part-time or in temporary jobs might be less likely to remain in employment or that their health is affected by this type of employment (OECD, 2008a) and thus they are more likely to enter a disability spell. Regression analysis in the next section will shed more light on this issue.

## 2. Individual and work characteristics determining labour market status

Personal characteristics and prior work experience are likely to determine the probability that an individual enters into disability benefits or continues to work after the onset of a health problem. This section first provides an analysis of annual transition probabilities into disability benefit. It then investigates how work and personal characteristics affect job retention after a health onset.

### 2.1. What affects entry to disability benefits?

Poor health is expected to raise the disutility of work and might even reduce the probability of returning to work, while also generating an entitlement to disability benefits. At the same time, it is often assumed that, at the aggregate level, worsening health status alone cannot explain the increase in the number of recipients in the countries studied (McVicar, 2008; Bound and Burkhauser, 1999; Faggio and Nickell, 2005; Autor and Duggan, 2003). The regression analysis in this section sheds more light on the role of health for different groups and the importance of previous activity status and work characteristics (see Box 4.3 and Annex 4.A1 for a description of the regression methods).

Experiencing a health problem increases the probability of receiving a disability benefit in all countries (Table 4.1, Panel A). This is true for past or present health shocks (including initial health status, when the individual is first observed in the survey). It should be noted, however, that health measures used in this analysis differ across countries. The selection of the health variable for each country is mainly driven by data availability. Health problems are defined as impediments in daily activities in Australia, Switzerland and the United Kingdom, and as at least one night of hospital stay in Germany. Additional estimates have been performed by instrumenting the health measure and to ensure a better comparability across countries. The results in this case are almost unchanged for the different socio-demographic characteristics. At the same time, the effect of health shocks is dramatically reduced, particularly in the case of Australia and the United Kingdom (see Table 4.A1.1 in the annex).

The results also confirm the descriptive analysis of benefit reciprocity in the previous section as the probability of receiving a disability benefit is lower for women and for the younger age groups, controlling for other observed characteristics and unobserved

**Box 4.3. Estimating the probability of labour market transitions**

A discrete-time event history model is used to analyze transitions between different states.

**Probability of entering disability benefit (Section 2.1)**

Transition into disability status is estimated using a complementary log-log model. This model is the discrete-time counterpart for an underlying continuous-time proportional hazard model and the hazard rate follows the expression:

$$h(t, X) = 1 - \exp[-\exp(X'_{it}\beta + H'_{it}\gamma + D(t) + u_i)]$$

or

$$\log(-\log[1 - h(t, X)]) = X'_{it}\beta + H'_{it}\gamma + D(t) + u_i$$

where the probability of a transition into receiving a disability benefit is a function of health ( $H$ ) and socio-demographic characteristics ( $X$ ), duration dependence ( $D$ ) and unobserved heterogeneity modeled using a normal distribution.

**Probability of being in employment (Section 2.2)**

A dynamic probit model is used for the analysis of employment. This model estimates the probability of being in employment as a function of previous employment status ( $d$ ), health ( $H$ ) and demographic characteristics as well as work characteristics ( $X$ ), controlling for initial conditions ( $\delta$ ):

$$\Pr(d_{it} = 1 | d_{it-1}, X_{it}, \delta_i) = \Phi(d_{it-1}\phi + X'_{it}\beta + H'_{it}\gamma + \delta_i)$$

Initial conditions are modelled using Wooldridge's approach as detailed in Annex 4.A1.

heterogeneity.<sup>3</sup> The effects of age are lower in the United Kingdom, showing that there is less of a gap between younger and older individuals in their chances of disability reciprocity. On the contrary, in Germany young individuals are much less likely to be on disability benefits as the characteristics of the disability benefit scheme are similar to those of early retirement. The number of children in the household matter in Australia and the United Kingdom as the total number of household members is taken into account for eligibility of means-tested benefits. Higher household income provides a protective effect since higher income is associated with a lower probability of disability benefit (except in the United Kingdom), although some differences exist across countries. There is no consistent impact across countries of previous work characteristics, occupation or sector of work on the probability of receiving a disability benefit once other individual characteristics and unobserved heterogeneity are taken into account.

The analysis of aggregate trends in disability reciprocity rates has shown large increases over time for many countries, particularly among some groups. It is therefore interesting to test whether particular groups suffer more from a health problem onset by including interaction terms in the regressions (Table 4.1, Panel B). For instance, if younger individuals or women are more susceptible to enter a disability spell after a health shock, a worsening of their health status in recent years could explain the growth in the number of young and female beneficiaries. The results show that the coefficient is not significant for gender, indicating that having a health problem does not increase the likelihood of receiving a disability benefit for women.<sup>4</sup> Only in Australia health shocks do have a worse impact for women.

Table 4.1. Probability of receiving a disability benefit: health and demographics matter

	Australia	Germany	Switzerland	United Kingdom
Panel A. Logit disability (coefficients reported) <sup>a, b, c</sup>				
Health problems <sup>d</sup>	1.989***	0.550***	0.830***	1.167***
Lagged health problems <sup>d</sup>	1.196***	0.575***	1.064***	1.174***
Health status (initial) <sup>d</sup>	0.381***	0.489***	0.693***	0.198***
Number of children in household (grouped)	-0.124*	-0.205	-0.157	-0.090*
<b>Household income quintile</b>				
2nd quintile	-0.045	-0.682***	0.509**	0.264***
3rd quintile	-0.489**	-0.339*	0.175	0.172
4th quintile	-1.536***	-0.466**	0.288	0.159
5th quintile	-1.260***	-0.545***	-0.779**	-0.144
Gender = female	-0.326**	-0.198	-0.876***	-0.937***
<b>Age</b>				
15-24	-0.891***	-3.880***	-1.958***	-0.638***
25-34	-0.716***	-2.883***	-1.383***	-0.485***
25-44	-0.663***	-2.333***	-0.828***	-0.230**
45-54	-0.365**	-1.045***	-0.549***	-0.151*
Foreign-born (ethnicity for the United Kingdom)	-0.057	-0.691***	0.003	-0.743**
<b>Marital status</b>				
Single	0.503***	0.617***	1.075***	0.426***
Separated/divorced	0.385**	0.307	0.793***	0.501***
Widowed	-0.728	0.256	0.387	0.097
<b>Educational attainment</b>				
Low-skilled	0.048	0.353*	0.099	0.340***
Medium-skilled	0.146	0.205	0.078	0.070
Ever unemployed	0.166	0.607***	..	0.073
<b>Observations</b>	<b>36 063</b>	<b>86 430</b>	<b>12 502</b>	<b>84 926</b>
Panel B. Interactions between health shocks and personal characteristics (coefficients reported) <sup>a, b, c</sup>				
Gender = female	0.639*	-0.221	0.449	0.262
<b>Age</b>				
15-24	1.060	-22.101	2.318**	0.684*
25-34	-0.086	0.339	0.614	1.258***
35-44	-0.032	0.998*	-0.415	0.612***
45-54	0.006	0.807**	0.327	0.651***
<b>Education attainment</b>				
Low-skilled	-0.045	-0.303	-0.013	-1.253***
Medium-skilled	-0.142	-0.258	0.107	-0.421
<b>Household income quintile</b>				
2nd quintile	0.307	0.022	0.158*	-0.188
3rd quintile	0.301	-0.053	-0.414	0.466*
4th quintile	1.148	-0.925*	0.509	1.034***
5th quintile	-0.817	-1.319**	0.065	1.011***

\*, \*\*, \*\*\* statistically significant at the 10%, 5%, 1% level, respectively.


a) Samples include persons present in at least three consecutive waves, not in full-time education, and aged 15-64 in Australia, Switzerland and the United Kingdom; 16-64 in Germany.

b) The following years are considered for each country: 2001-07 for Australia; 1994-2006 for Germany; 2002-06 for Switzerland; and 1991-2006 for the United Kingdom.

c) All regressions include regional dummy variables (except for Germany) and the following "initial" work characteristics: industry, occupation, type of contract, working hours, shift work, public sector and firm size. "Initial" in brackets indicates the value of the variable in question at the time the individual enters the survey. Initial health status also refers to health status the first period the individual is observed in the survey.

d) Health problems are defined as follows: one night of hospital stay in Germany; whether health is an impediment in daily activities in Australia, Switzerland and the United Kingdom.

Source: OECD estimates based on the HILDA for Australia, the GSOEP for Germany, the SHP for Switzerland and the BHPS for the United Kingdom.

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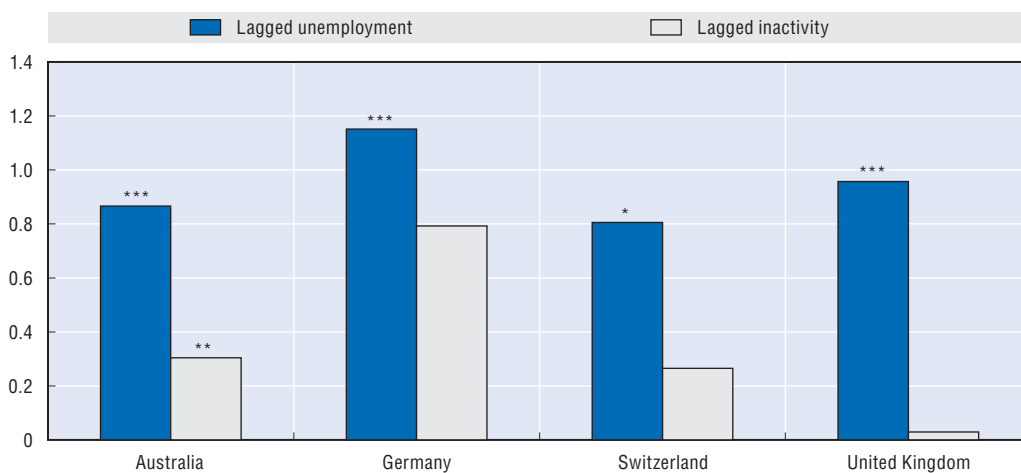


There are however some differential effects according to age, income and education. Surprisingly, the effect of a health shock is worse for higher incomes in the UK but in Germany individuals in the highest income quintiles experience a protective effect of income in case of a health problem. Low-educated individuals are less likely to enter disability benefits after a health shock only in the case of the United Kingdom. Younger individuals suffer more from the effect of health deterioration in Switzerland while in Germany it is prime-age individuals and in the United Kingdom both young and prime-age individuals.

Several studies have found that unemployment has a detrimental effect on health, particularly mental health (OECD, 2008a) and that unemployment spells could raise the probability of receiving a disability benefit because of health-deteriorating effects. At the same time, there is a possibility that a worsening in health conditions may lead to job loss and further onto inactivity. According to the analysis in this section, persons who have experienced at least one unemployment spell in their labour market history are more likely to be on disability benefits (Table 4.1, Panel A). Additionally a regression analysis testing the effects of lagged unemployment and other inactivity on disability status shows that indeed unemployment does increase the probability of benefit reciprocity while lagged inactivity does matter in Australia (Figure 4.5).

Figure 4.5. **Previous spells of unemployment or inactivity increase the probability of disability benefit reciprocity**

Coefficients from a disability probability model<sup>a, b, c</sup>



\*, \*\*, \*\*\* statistically significant at the 10%, 5%, 1% level, respectively.

- Reported coefficients are estimated from a logit model. They capture the effect of lagged unemployment and lagged inactivity on the probability of receiving a disability benefit. A positive coefficient means a higher probability of receiving a disability benefit.
- Samples include persons present in at least three consecutive waves, not in full-time education, and aged 15-64 in Australia, Switzerland and the United Kingdom; 16-64 in Germany. Samples have been restricted to individuals who were not on disability benefit in the previous year.
- The years considered for each country are given in note b) of Table 4.1 and the controls included in the regressions are the same as those in Table 4.1.

Source: OECD estimates based on the HILDA for Australia, the GSOEP for Germany, the SHP for Switzerland and the BHPS for the United Kingdom.

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## 2.2. Which groups are more likely to stay in employment following health problems?

In addition to estimating the probability of entering into disability benefits, it is also interesting to understand which individual and work characteristics provide a protective effect

for workers in promoting their likelihood to stay in employment after experiencing health problems. The regressions use a dynamic approach, controlling for previous employment (Table 4.2). The results also show that household income is not associated with a higher probability of staying in employment (with the exception of Germany). Lower education (medium education in Australia) decreases the chances of remaining in employment in the United Kingdom while the opposite is true in Switzerland. Other demographic characteristics differ greatly by country in their effect on employment retention. Being in a blue-collar occupation decreases employment probabilities in Germany and Switzerland and the same holds for temporary contract in all countries. Part-time work and/or mini-jobs also reduce the chances of employment in all countries except Germany. Industry does play a role in influencing employment probabilities in Switzerland and Germany.

From a policy perspective, an interesting question is to identify which types of workers are most affected by health shocks. This can be assessed by including interaction terms for employment characteristics and the onset of a health condition in the baseline regressions (Table 4.2, Panel B). Working in certain industries – mainly in personal services – appears to have a positive effect in terms of staying in employment after a health shock in all countries except Germany. On the other hand, blue-collar workers are less likely to remain at work after the onset of a health condition in the United Kingdom. Workers in elementary occupations are less likely to remain in employment after a health shock in Australia, while the reverse is true in Germany. Part-time workers and those in mini-jobs appear to suffer more from a health shock in Switzerland but the opposite effect is found in the UK. It does appear that in the latter, reduced hours helps to accommodate individuals with health problems. Other employment characteristics such as shift working, firm size and working in the public sector do not impact the effect of health shocks on employment except in the United Kingdom where health shocks decrease employment chances more for those working in large firms.

### 3. Pathways into and out of disability benefits

Do new disability benefit recipients come directly from employment or have they experienced some unemployment spell prior to receiving the benefit? What is the effect of health and other personal and work characteristics in the transitions from employment to disability, unemployment and other non-employment states? How transitory or persistent is benefit reciprocity? This section aims to answer these questions based on individual data.

#### 3.1. How does health affect transitions across different labour market states?

Immediately after the onset of a health shock, transitions out of employment increase in all countries but exit pathways are different (Figure 4.6). Persistence in employment is lowest in Australia and Germany<sup>5</sup> and highest in the United Kingdom. Exit to unemployment after a health problem is highest in Germany and lowest in the United Kingdom while entering a disability benefit or other type of inactivity directly is more likely in Australia. Compared to the situation where no health shock occurs, exit to unemployment is higher in relative terms in Australia and only slightly higher in Germany and Switzerland. Transition into early retirement is highest in Switzerland and the United Kingdom. Among those previously unemployed, the effect of a health onset is highest in Australia. Indeed, persistence into unemployment shows the greatest increase in Australia and transition from unemployment into disability is also highest in that country, followed by Germany. In Germany there are more individuals moving into other types of inactivity while transitions into retirement from unemployment double in the United Kingdom.

Table 4.2. **Work characteristics and health matter for employment retention**

	Australia	Germany	Switzerland	United Kingdom
Panel A. <b>Dynamic Probit employment (coefficients reported)</b> <sup>a, b, c</sup>				
<b>Lagged employment</b>	1.191***	1.021***	1.888***	2.151***
<b>Initial employment status</b>	0.447***	0.083**	0.320***	0.255***
<b>Health problems<sup>d</sup></b>	-0.377***	-0.225***	-0.341***	-0.348***
<b>Lagged health problems<sup>d</sup></b>	-0.428***	-0.051*	-0.321***	0.056*
<b>Number of children in household (grouped)</b>	0.100	0.002	0.043	0.013
<b>Household income quintile</b>				
2nd quintile	0.047	0.138***	-0.029	-0.005
3rd quintile	0.115	0.174***	0.018	0.056
4th quintile	0.069	0.209***	-0.093	0.075*
5th quintile	0.030	0.203***	-0.072	0.025
<b>Gender = female</b>	0.235***	0.104***	0.063	-0.084***
<b>Age</b>				
15-24	0.014	0.254***	0.892***	0.590***
25-34	0.321***	0.257***	0.483***	0.599***
25-44	0.311***	0.345***	0.285***	0.589***
45-54	0.235***	0.277***	0.412***	0.528***
<b>Foreign-born (ethnicity for the United Kingdom)</b>	0.218***	0.109	0.036	0.147
<b>Marital status</b>				
Single	-0.237***	0.080	-0.538***	-0.257***
Separated/divorced	-0.069	0.005	0.101	0.149
Widowed	-0.375**	-0.300**	-2.017**	0.046
<b>Educational attainment<sup>e</sup></b>				
Low-skilled	-0.079	-0.027	0.965**	-0.304***
Medium-skilled	-0.110*	-0.068	-0.021	-0.168**
<b>Industry<sup>e</sup></b>				
Agriculture and mining	0.003	0.112	0.263	-0.004
Construction	-0.016	-0.133**	-0.775**	0.086
Producer services	0.072	0.064	-0.685***	-0.031
Distributives services	0.033	0.129***	-0.590***	0.023
Social services	0.090	0.054	-0.561***	-0.081
Personal services	-0.167	0.142**	0.160	0.051
<b>Occupation<sup>e</sup></b>				
Blue collar workers	-0.153	-0.119***	-0.313***	0.096
Elementary occupations	-0.135	0.010	-0.226	0.050
<b>Type of contract</b>				
Temporary contract	-0.213***	-0.110***	-0.323**	-0.216***
<b>Weekly hours worked</b>				
Mini-jobs: 0 to 14 hours	-1.157***	-0.034	-0.391**	-0.165**
Part-time: 15 to 29 hours	-0.805***	0.022	-0.391**	-0.034
Overtime: more than 48 hours	-0.123	0.073**	0.001	-0.035
<b>Shift work</b>	-0.041	..	-0.025	-0.034
<b>Public sector</b>	0.082	0.017	-0.120	0.163**
<b>Firm size</b>				
Firm with less than 20 employees	-0.041	-0.127***	-0.082	0.054
Firm with more than 100 employees	-0.056	0.072*	-0.087	-0.050
<b>Observations</b>	<b>30 619</b>	<b>82 182</b>	<b>9 643</b>	<b>82 134</b>

Table 4.2. **Work characteristics and health matter for employment retention** (cont.)

	Australia	Germany	Switzerland	United Kingdom
<b>Panel B. Interactions health shocks and worker characteristics (coefficients reported)</b>				
<b>Industry<sup>e</sup></b>				
Agriculture and mining	0.243	0.151	-0.558	0.214
Construction	-0.012	-0.018	-0.567	0.346*
Producer services	0.295	0.021	-0.062	0.457***
Distributives services	0.323**	0.001	-0.306	0.316***
Social services	0.180	0.024	-0.154	0.370***
Personal services	0.570***	0.083	1.246***	0.417***
<b>Occupation<sup>e</sup></b>				
Blue collar workers	-0.182	-0.072	0.194	-0.174*
Elementary occupations	-0.221*	0.159*	0.033	0.125
<b>Weekly hours worked</b>				
Mini-jobs: 0 to 14 hours	0.031	0.131	-0.335*	0.344***
Part-time: 15 to 29 hours	0.188	-0.001	-0.371**	0.218**
Overtime: more than 48 hours	0.160	0.135*	-0.109	-0.038
<b>Type of contract</b>				
Temporary work	0.308***	0.091	0.023	0.485***
<b>Shift work</b>				
	0.000	..	0.167	0.046
<b>Public sector</b>				
	0.045	-0.064	0.093	-0.021
<b>Firm size</b>				
Firm with less than 20 employees	-0.139	0.059	0.043	0.163
Firm with more than 100 employees	-0.169	-0.004	0.101	-0.251**

\*, \*\*, \*\*\* statistically significant at the 10%, 5%, 1% level, respectively.

a) Samples include persons present in at least three consecutive waves, not in full-time education, and aged 15-64 in Australia, Switzerland and the United Kingdom; 16-64 in Germany.

b) The years considered for each country are presented in note b) of Table 4.1.

c) All regressions include regional dummy variables (except for Germany). All regressions also include the average values over the time period an individual is observed of all time-varying variables, i.e. number of children, age groups, marital status, region (except for Germany), occupation and industry dummy variables, temporary contract, hours of work, shift work (except for Germany), public sector employment, and employer size. Initial employment status refers to employment status the first period the individual is observed in the survey.

d) Health problems are defined as follows: one night of hospital stay in Germany; whether health is an impediment in daily activities in Australia, Switzerland and the United Kingdom.

e) See note e) of Figure 4.4 for definitions.

Source: OECD estimates based on the HILDA for Australia, the GSOEP for Germany, the SHP for Switzerland and the BHPS for the United Kingdom.

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Transition rates suggest different routes after a health problem and different policy challenges across countries. Australia has a high transition rate from employment directly into disability suggesting that particular attention should be paid to monitoring the sickness process of employed individuals. At the same time, in both Australia and Germany, the route to disability benefits via unemployment is also important with an important share of employed exiting to unemployment and later switching from unemployment to disability. In the United Kingdom instead, few individuals move into unemployment after a health shock but the direct route from unemployment to disability after the onset of bad health conditions appears important.

Persistence in disability increases greatly after a health problem while return to employment decreases sharply. The United Kingdom has the highest transition rate out of disability into employment and unemployment while Switzerland has the highest

persistence into the benefit with or without a health shock. This is partially driven by the fact that a share of those in sickness and disability-related benefits in the United Kingdom do not qualify for contributions-based benefits but are instead on income support payments.

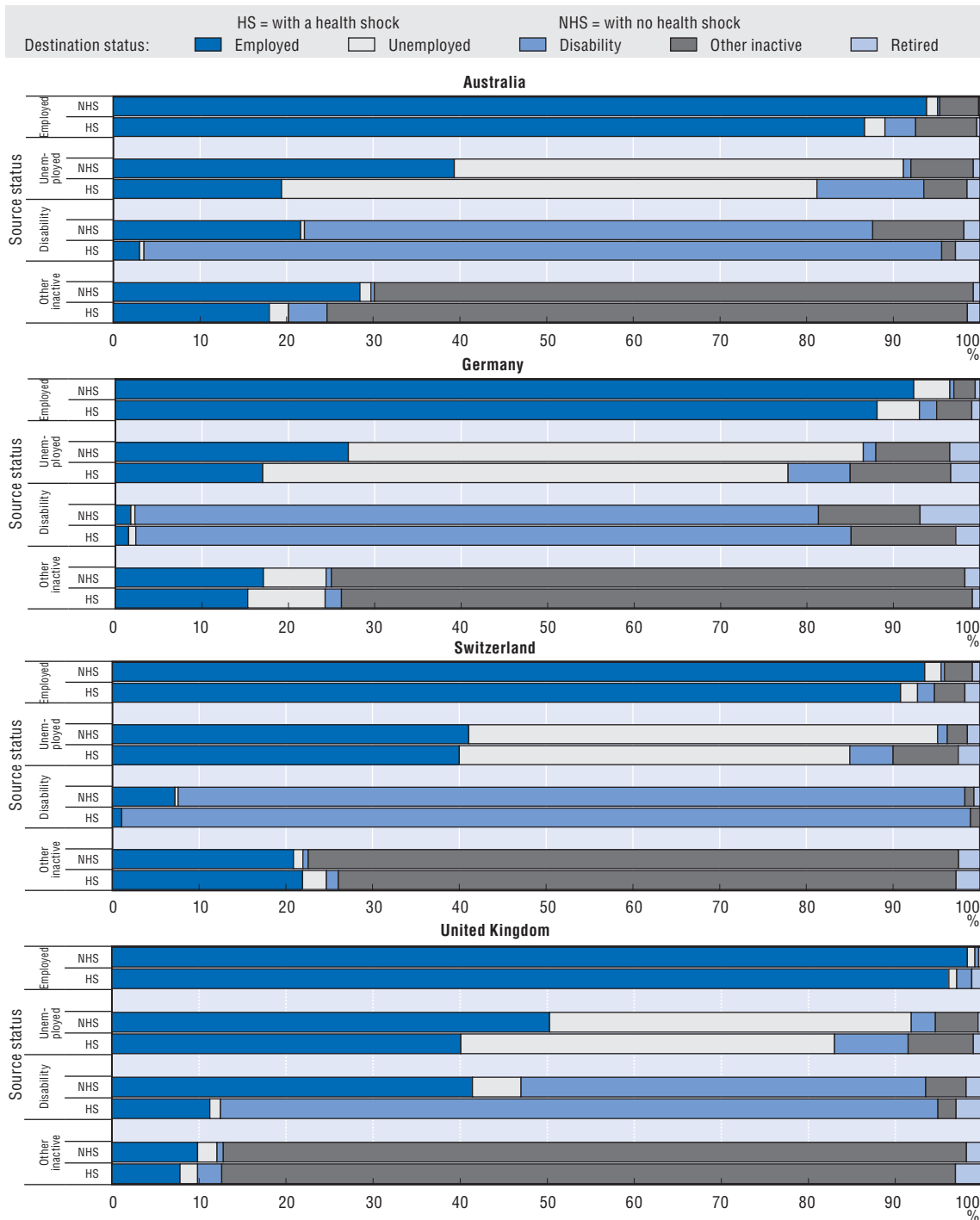
Health shocks and illnesses appear to have a temporary effect in Australia, Switzerland and the United Kingdom, since movements out of employment two and three years afterwards are not very different compared with the case where there is no health shock. More people stay in employment two and three years afterwards and transitions from unemployment or disability to employment increase sharply. In Germany, the effect of the health shock does not really fade away with time and a substantially higher proportion of those in employment move into other type of inactivity even three years after the health shock. This difference may be related to the different health measures used for Germany compared to the other three countries.

A multinomial regression (results reported in Table 4.A1.2) confirms the above finding for the four countries and provides additional information on personal and work characteristics that determine transitions from employment to other states. The probability of exits into disability, retirement and other non-working statuses increases with age, whereas low education attainment increases the likelihood of exit to all types of non-employment spells except to unemployment in Switzerland and to other types of inactivity in Germany. The effect of work characteristics in different pathways out of employment varies by country. Temporary contracts influence the probability of exiting employment mostly to inactivity (unemployment in Germany) and to disability for the United Kingdom. Working in mini-jobs (1-14 hours/week) increase the probability of exits into all types of non-employment in Australia and into inactivity in Germany. In Switzerland the hazard out of employment increases for mini-jobbers for exits to disability, retirement and other inactivity, while it decreases for exits to unemployment. Lower working hours does not influence negatively exit from employment in the United Kingdom.

### **3.2. Exits from disability benefits**

From a policy perspective, it is also important to understand whether disability benefit recipiency is a transitory state in an individual's life or whether exiting the benefits is unlikely or takes a long time to occur. High disability recipient rates stem in part from high persistence in benefit status and very low outflows. On average, outflows from disability benefits are very low and exit routes vary greatly across countries. Administrative data show that in most countries outflow is below 1% annually, the United Kingdom being one exception with rates of around 7% (OECD, 2003, 2007). Several possible explanations are found in the structure of the benefit system. In the United Kingdom, a regulated review procedure exists for reassessing the entitlement to benefits over time while benefits are *de facto* permanent in Switzerland and the same applied to Germany until 2001. In Australia and in the United Kingdom, the majority of disability beneficiaries move to employment while Germany has the lowest share of beneficiaries exiting to employment and the highest moving into retirement (Table 4.3). Excluding retirement, most disability beneficiaries in Germany end up being inactive and very few return to employment, compared with the other countries. This evidence for Germany is possibly associated to the higher average age of beneficiaries compared with the other countries. In all countries, employment appears to be less sustainable over time with more of the previous beneficiaries moving into unemployment or other types of inactivity.

Figure 4.6. Yearly labour force transitions after health shocks



- a) Samples include persons present in at least three consecutive waves, not in full-time education, and aged 15-64 in Australia, Switzerland and the United Kingdom; 16-64 in Germany.
- b) The years considered for each country are given in note b) of Table 4.1.
- c) Health shocks are defined as follows: health is an impediment in daily activities in Australia; at least one night of hospital stay in Germany; having an illness since last wave in Switzerland; and whether the person has some health problems or disabilities in the United Kingdom.

Source: OECD estimates based on the HILDA for Australia, the GSOEP for Germany, the SHP for Switzerland and the BHPS for the United Kingdom.

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Table 4.3. **Labour force status of previous disability beneficiaries**  
Percentage<sup>a, b, c</sup>


Panel A. Labour force status of disability beneficiaries who exit the benefit (excluding retirement)				Panel B. Labour force status of disability beneficiaries who exit the benefit			
	Australia	Germany	United Kingdom		Australia	Germany	United Kingdom
<b>1 year after benefit</b>				<b>1 year after benefit</b>			
Employed	60.7	12.8	79.6	Employed	52.9	9.3	65.0
Unemployed	10.3	3.0	9.6	Unemployed	9.0	2.2	7.9
Other inactive	29.0	84.2	10.7	Other inactive	25.5	27.0	8.8
				Retired	12.7	61.5	18.4
<b>2 years after benefit</b>				<b>2 years after benefit</b>			
Employed	48.8	11.1	66.1	Employed	36.5	6.9	45.3
Unemployed	6.1	3.4	13.3	Unemployed	4.6	2.1	9.1
Other inactive	45.1	85.6	20.7	Other inactive	33.8	37.9	14.2
				Retired	25.1	53.2	31.4
<b>3 years after benefit</b>				<b>3 years after benefit</b>			
Employed	40.7	10.4	61.2	Employed	22.4	5.5	35.0
Unemployed	5.4	3.8	11.7	Unemployed	3.0	2.1	6.7
Other inactive	53.9	85.8	27.1	Other inactive	29.6	46.6	15.5
				Retired	45.1	45.8	42.9

a) Samples include persons present in at least three consecutive waves, not in full-time education, and aged 15-64 in Australia and the United Kingdom; 16-64 in Germany.

b) The years considered for each country are given in note c) of Figure 4.4.

c) The numbers for Switzerland are not reported in the table because of the small number of observations which does not allow further disaggregation.

Source: OECD estimates based on the HILDA for Australia, the GSOEP for Germany and the BHPS for the United Kingdom.

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## 4. How have countries responded in the area of disability policy?

The analysis from the previous sections has shown that, although there are some common patterns in the characteristics of disability recipients and in the transitions in and out of disability, there remain significant differences across countries. This suggests that policy towards disability, including particular features of the disability benefit system, might have a significant impact on pathways in an out of benefits. In addition, different labour market conditions may also influence the take-up of disability benefits across countries. This section explores the characteristics of the benefit-system structure and integration policy for people with disability, together with how such factors influence disability benefit rates.

### 4.1. Disability policy indicators in OECD countries

This section describes changes in disability policy across a number of selected OECD countries during the period 1990 to 2007. Two policy indicators have been constructed (OECD, 2003). The first is an indicator of policies related to the compensation generosity of the system whereas the second captures the intensity of integration and activation measures for benefit recipients. The compensation indicator consists of ten sub-components and incorporates changes in the generosity of benefits, on the screening stringency which may have an impact on the availability of benefits as well as the duration of benefits (temporary *versus* permanent) among others. The integration indicator includes seven sub-components and captures the availability and in-built incentives for the take-up of vocational rehabilitation and work programmes (see Box 4.4 for further details). These two indicators capture a comprehensive selection of disability-related policies and allow for cross-country and over-time comparisons.

#### Box 4.4. Policy indicators

Two policy indicators are constructed: the first on compensation measures or benefit transfer programmes, and the second on employment or integration measures. These indicators were originally constructed for the *Transforming Disability into Ability* (OECD, 2003) for three years. They have been extended to cover the period between 1990 and 2007 and have been slightly modified for the purpose of the regression analysis. Each of the two indicators is composed of various sub-components. Each sub-component is measured according to a predefined quantitative and/or qualitative scale, resulting in a certain number of points, ranging from zero to five points for each sub-component. The points for each sub-component are added to obtain the overall score for each indicator; hence, each sub-component receives the same weight. Correlation and internal consistency tests have been performed and have revealed no particular problems with the chosen sub-components.

The compensation dimension is split into the following ten sub-components: i) *coverage*; ii) *minimum disability level* that open up benefit entitlement; iii) *disability level for full benefit*; iv) *maximum benefit level* (in terms of replacement rate for average earnings with a continuous work record); v) *permanence of benefits* (from strictly permanent to strictly temporary); vi) *medical assessment* (from exclusive responsibility of treating doctors to that of teams of insurance doctors); vii) *vocational assessment* (from strict own-occupation assessment to all jobs available); viii) *sickness benefit level* (distinguishing short- and long-term sickness absence); ix) *sickness benefit duration* (including the period of continued wage payment); and x) *sickness monitoring* (distinguishing from no checks on sickness absence to strict steps for monitoring and early intervention). In each of these sub-dimensions, a higher score means easier access, higher benefit levels, longer duration, etc.

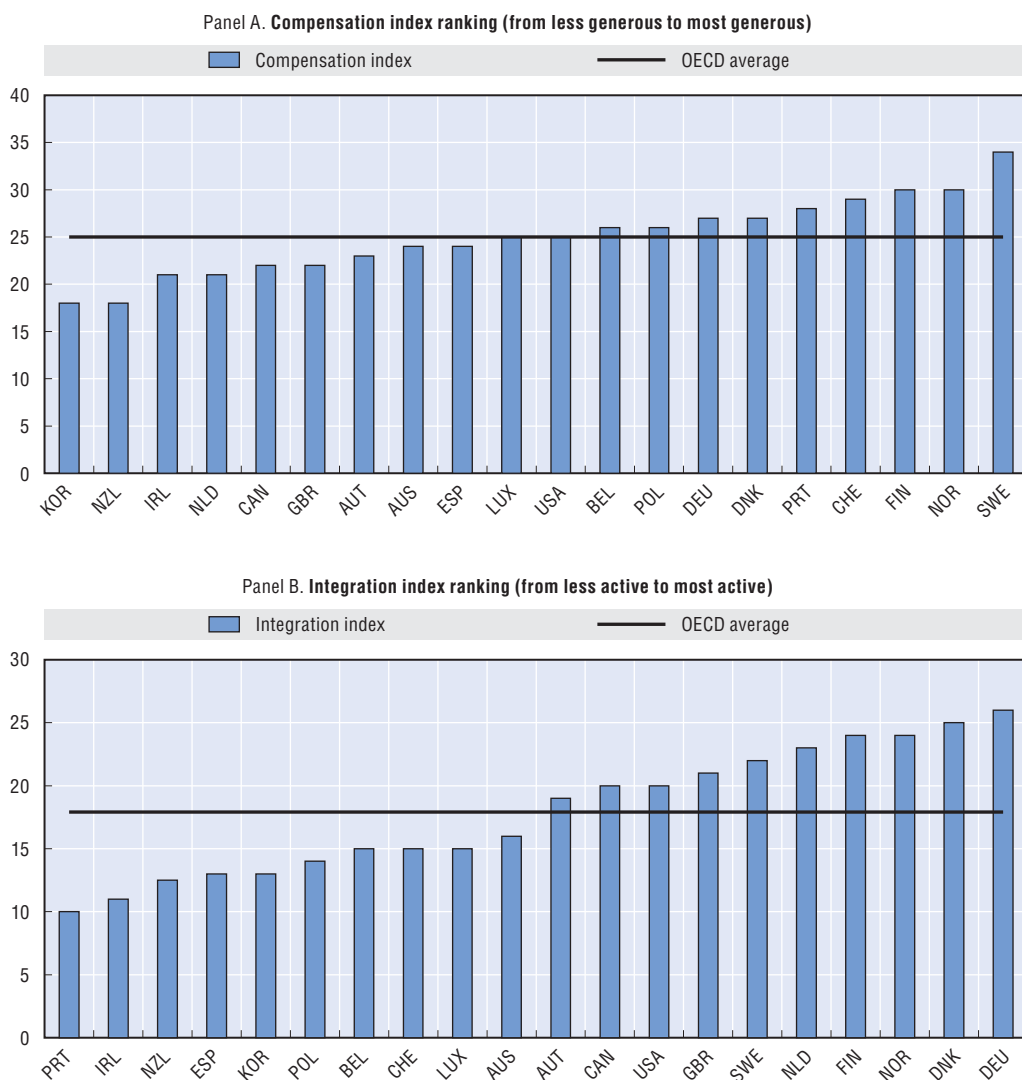
The integration dimension refers to the whole range of employment and rehabilitation measures, and distinguishes between the following seven sub-dimensions: i) *anti-discrimination legislation* covering employer responsibility for work retention and accommodation; ii) *supported employment programme* (extent, permanence and flexibility); iii) *subsidised employment*; iv) *sheltered employment sector* (extent and transitory nature); v) *vocational rehabilitation programme* (obligation and extent of spending); vi) *benefit suspension regulations* (from considerable duration to non-existent); and vii) *additional work incentives* (including possibilities to combine work and benefit receipt). In each of the sub-dimensions, a higher score indicates a more active approach.

The criteria for each sub-component are spelled out in detail in Annex 4.A2.

Figure 4.7 shows that there is significant variation across countries in both compensation and the integration indicators. Overall, the Nordic countries, together with Switzerland, rank highest in terms of the level of compensation policy. Many Anglo-Saxon countries and Korea are found at the other end of the compensation rank. The integration indicator shows less dispersion across countries but countries have a very different ranking than when looking at the compensation indicator. Some Nordic countries have high levels of integration policy, as do Germany. Among those with the lowest levels of integration policy are a diverse group of countries, including Ireland, New Zealand and Portugal.

The stance of policies has changed slightly between 1990 and 2007 in some countries, with Luxembourg and the Netherlands seeing large decreases in compensation levels (Figure 4.8). In addition, most efforts during the past two decades were directed at strengthening the integration component of disability while weakening its compensation aspect.



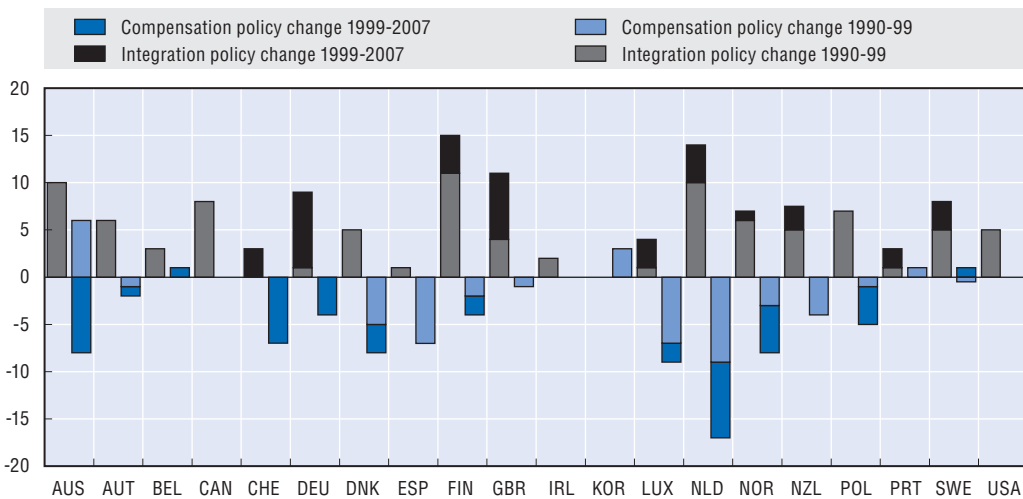
Figure 4.7. **Ranking of countries according to disability policy indicators, 2007**

Source: Secretariat estimates based on information from national authorities as well as OECD (2006, 2007 and 2008b), *Sickness, Disability and Work: Breaking the Barriers* (Vol. 1-3), Paris.


StatLink  <http://dx.doi.org/10.1787/707688534271>

In terms of integration policy, countries have tackled several aspects over time. Almost all countries have strengthened employers' obligations towards people with disability with the introduction of anti-discrimination legislation. Exceptions to this trend include Belgium, Denmark and Korea. In Finland, Norway and the Netherlands, employers obligations have increased substantially but the most important obligations for employers are found in Sweden where the Working Environment Act and the Anti-discrimination legislation impose accommodation obligations for employers without explicit differences between employees and new job applicants. Taking into account total financial responsibilities of the employers, the Netherlands scores high given the high cost of sickness benefits that have to be borne by employers but this element is also partially captured in the sickness sub-component (see below) while employers' responsibility focuses more on legal protection of workers with disabilities.

Figure 4.8. Changes in disability policies



Source: Secretariat estimates based on information from national authorities as well as OECD (2006, 2007 and 2008b), *Sickness, Disability and Work: Breaking the Barriers* (Vol. 1-3), Paris.

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A substantial number of countries have also increased the range of employment programmes available to people with disabilities. Many countries launched special supported programmes and wage-subsidies during the early 1990s. Norway, Poland and Sweden have improved the opportunities for sheltered employment substantially. Poland, for instance, has developed a large-scale labour market with sheltered work enterprises that receive a large subsidy and employ almost four in ten people with disability (OECD, 2006). Poland has also expanded greatly subsidized employment similarly to Belgium and Denmark. In the later, generous wage-subsidies are provided for people who cannot perform their work under normal conditions (OECD, 2008b). The advantageous conditions and the lack of monitoring led in the past to large increases in the number of people holding such jobs (the conditions have been modified recently). Another set of countries including Finland and Austria in particular have concentrated on improving access to supported employment. The Austrian supported employment programme was launched on a trial basis since 1992 and became fully operational in 1999. It includes job assistants to support the transition between the school or the vocational education and the job, as well as counseling and coaching for career planning and job interviews, and final support and follow-up in the company.

Other countries have focused on increasing rehabilitation options at an early stage or promoting work incentives for people on disability benefits by making it easier for them to work and/or earn more income while at work while combining it with benefits. The Netherlands has dramatically expanded vocational rehabilitation, which was optional and only for disability beneficiaries until 1997. Austria, Finland and Norway among others have followed the same. People with disabilities in Norway have access to a wide range of services and 85% of programmes offered to them are vocational rehabilitation measures (OECD, 2006). Promotion of work incentives has happened primarily in the Netherlands and the United Kingdom. The latter country has taken a more active approach towards providing work-incentives with the Disabled Person's Tax Credit, which started in 1999 and was merged into the Working Tax Credit in 2002. In addition, a new temporary earnings supplement was introduced stepwise in 2003: the Return-to-Work-Credit. Both constitute a wage top-up for people with disability in low-paid employment and were created

because, without such supplement an important number of benefit claimants will not benefit from a return to work. Yet, evidence suggests that take-up remains low (OECD, 2007). The new wage supplement for people with partial work capacity in the Netherlands (introduced in 2006) seems to be an effective tool for enhancing work incentives.

Which particular aspects of compensation have countries focused on? A majority of countries have chosen to tighten access to benefits through stringent assessment criteria, either in terms of medical criteria or vocational prerequisites or both. This is quite striking in the case of Spain, the Netherlands and the United Kingdom but also in other countries such as Luxembourg and Switzerland. In Spain, prior to 1997 the disability assessment was based mostly on information provided by general practitioners but, with the creation of the INSS (National Institute of Social Security), disability is assessed by the benefit administrators based on a medical assessment performed by their own INSS doctors (OECD, 2007). Switzerland did not go through such radical change but an increasing number of the assessments are performed by the recently created special regional medical services operated by the cantonal authorities (introduced with the fourth revision of disability insurance in 2004) instead of being done by the persons' general practitioner. In terms of vocational assessment, the Netherlands introduced radical changes in 1993 (and then further in 2006 with the new disability benefit introduced with the WIA (Labour Capacity Act) where work capacity loss needs to be at least 35% instead of 15%) when eligibility to benefits became only possible if a person could not do any job.

A group of countries (the Netherlands, Denmark, Spain and Switzerland) have modified different parts of their sickness policy, both in terms of duration and in terms of sickness monitoring. In the Netherlands, there has been a shift towards privatising sickness benefit management and providing incentives for employers towards promoting the retention and reintegration of sick employees since 1996. This began with the experience-rating of disability premiums, making employers responsible for the cost of disability and with the obligation to prevent workplace risks through the establishment of Occupational Health Service (OECD, 2008b). In 1998, employers were made responsible for paying wages during the first year of sickness (extended in 2004 to two years). In Denmark, municipalities have been given more and more incentives to monitor sickness absence. This was achieved through the central government lowering the reimbursement rate for municipalities in the case of long-term sickness absence and developing guidelines for follow-up.

Reforms have also affected the length of benefit recipiency and the level of disability required for benefit entitlement. In Austria and Poland disability benefits were *de facto* permanent but they became strictly temporary (except in the case of full disability in Austria) in 1996 and in 2005 respectively. Less stringent changes were also introduced in Finland and Norway. Australia and Luxembourg restricted the access to benefits for those with partially-reduced work capacity. Since 2006, eligibility to disability benefits in Australia is based on not being able to work at least 15 hours a week instead of 30 (OECD, 2007).

#### **4.2. The effect of policy changes on disability rolls**

Have the reforms successfully addressed high disability recipiency rates? This section sheds some light on the potential impact of different policy reforms in the disability system on disability recipient rates. The analysis describes multivariate correlations and should not necessarily be interpreted as causal because of data limitations (Box 4.5).

#### Box 4.5. Accounting for changes in disability rates

Longitudinal data for 19 OECD countries from 1990 to 2007 are used to assess the possible link between different disability policies on the one hand and disability rates on the other. The analysis uses a quasi-experimental set-up exploiting the different timing and nature of the reforms across countries.

The data for the annual number of disability benefit recipients is obtained from administrative records. Although the use of inflow into disability data (number of new annual recipients) would be more appropriate, the lack of such data for most countries in the period studied, dictated the use of stock data on disability recipiency rates. The caveat about stock data is that they are less responsive to labour market conditions and policy changes as they reflect, to a large extent, past inflows into disability and high persistence in disability. Additionally, the limited time coverage of the data prevents capturing the long-term evolution of disability policies and their long-term impact on disability outcomes. Besides, disability policy reforms are likely to affect the behavior of individuals only with lags, but available data do not really allow to capture these lagged effects on disability outcomes.

The following equation is estimated by population-weighted least squares on an unbalanced panel (standard errors are clustered at the country level):

$$DR_{it} = \alpha_i + U_{it}\chi + CP_{it}\beta + IP_{it}\vartheta + C_i + t + \varepsilon_{it}$$

where  $i$  and  $t$  refer to country  $i$  and time  $t$ . Disability rates ( $DR$ ) are modeled as a function of the two policy indicators discussed above, the compensation policy indicator ( $CP$ ) and the integration policy indicator ( $IP$ ), with some controls for economic conditions and demographic trends ( $U$ ). Pre-existing differences across countries are accounted for through the inclusion of country-fixed-effects ( $C$ ). Female labour participation rates, share of people aged 55 and above in the population and the share of employment in manufacturing are used as controls for economic conditions and demographic trends. In particular the share of jobs in manufacturing is used as a proxy for structural changes in the economy. GDP per capita is capturing a wealth effect. Gross replacement rates for unemployment are used as a crude measure of alternative benefit options (see Annex 4.A3 for a description of the data sources).

Labour market factors may play an important role in explaining changes in disability recipiency rates since decreases in work options or work options that are low paid are found to be a major explanation for lower participation rates for the low-skilled and higher applications to disability benefits (Autor and Duggan, 2003; Faggio and Nickell, 2005). Unfortunately, labour demand and alternative benefit options (e.g. early retirement) are not controlled for in this analysis because of the lack of appropriate indicators. Using unemployment rates could proxy for labour demand conditions, but it may also be capturing the effect of economic changes in addition to the relative attractiveness of unemployment *versus* disability benefits. Concerns about using time-series data for such analysis exist (Disney and Webb, 1991) and would be particularly problematic given the short time-span and the cross-country nature of the data.

Features of the benefit system play a major role in depressing labour force participation by reducing the willingness to work or to engage in job search not only for disability beneficiaries but also for current job holders with or without disability. Increased programme availability and generosity, measured by changes in the real value of benefits or the replacement rate, modify the relative advantage of working *versus* not working and

reduce the labour-force attachment. The results show that the overall compensation features of disability policy matter as they are positively related to the number of disability beneficiaries. The effect of compensation policy holds after controlling for a range of economic conditions, although it is significantly reduced.<sup>6</sup> At the same time, integration policy has a modest and non significant effect in reducing the percentage of disability recipients. One explanation for the insignificant effect of integration is that such policies may take longer to have an impact on disability rates, especially when the focus is on the stock of disability benefit recipients, as in the present analysis.

Table 4.4. **What explains changes in disability rates?**

Fixed-effect regression coefficients<sup>a, b, c</sup>

	I	II	III	IV	V
<b>Indicators</b>					
Compensation indicator	0.117***		0.081**		
Integration indicator	-0.007		-0.011		
<b>Economic conditions</b>					
GDP per capita			0.001***	0.001***	0.001***
Female labour force participation			0.054	0.082***	0.023
Share of persons aged 55 and more in population			0.057	0.282***	0.189***
Share of manufacturing			-0.150**	-0.145**	-0.151**
Gross replacement rate					-3.604*
<b>Detailed policy indicators</b>					
Benefit accessibility/generosity		0.134**		0.184***	0.185***
Medical and vocational assessment		0.004		-0.160***	-0.149***
Sickness indicator		0.136*		0.245***	0.211***
Anti-discrimination legislation		0.175**		0.172**	0.131*
Vocational rehabilitation programme		-0.384**		-0.239*	-0.216*
Sheltered/subsidised/supported		-0.159***		-0.115***	-0.117***
Incentives indicator		0.010		-0.125***	-0.152***
<b>Constant</b>	-0.102	0.684	-4.945	-10.002***	-3.806
<b>Observations</b>	330	330	300	300	277
<b>R-squared</b>	0.928	0.942	0.938	0.958	0.956

\*, \*\*, \*\*\* statistically significant at the 10%, 5%, 1% level, respectively.

- a) The dependent variable is annual disability rates in 19 OECD countries (Australia, Austria, Belgium, Canada, Denmark, Finland, Germany, Ireland, Korea, Luxembourg, the Netherlands, Norway, Poland, Portugal, Spain, Sweden, Switzerland, the United Kingdom and the United States) in the period 1990-2007. The following years are included for every country: 1994-2007 for Austria; 1990-2007, for Australia, Belgium, Denmark, Finland, the United Kingdom, Ireland, the Netherlands, Norway, Portugal and Sweden; 1996-2006 for Canada; 1996-2007 for Switzerland; 1995-2007 for Germany and Spain; 1995-2006 for Korea; 1990-2005 for Luxembourg; and 1990-2006 for the United States.
- b) The description of all the variables used in the regressions is provided in the Annex 4.A3. All regressions also include year and country dummies and are weighted by population. Differences in the sample size can be explained by the non-availability of certain economic indicators and gross replacement rates for some of the countries.
- c) The detailed policy indicators used in this table group the sub-components described in Annex 4.A2 into meaningful sub-indicators. Benefit accessibility/generosity includes coverage, minimum disability level, disability level for full benefit, maximum benefit level and permanence of benefits. Medical and vocational assessment includes those two components, whereas the sickness indicator includes sickness benefit level, sickness benefit duration and sickness monitoring. The choice of these sub-components is based on the low correlation that exists between them and the fact that they cover a broad range of elements.

Source: OECD estimates based on OECD Economic Outlook Database, OECD Labour Force Statistics, Labour Force Survey for Australia and OECD STAN Database for all other countries. Disability rates are based on Secretariat estimates based on information from national authorities as well as OECD (2006, 2007 and 2008b), *Sickness, Disability and Work: Breaking the Barriers* (Vol. 1-3), Paris.

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In terms of the specific characteristics of the compensation and integration policies, some aspects have a greater impact. It appears that accessibility to disability programmes and generosity are positively associated with disability rates. A more generous and lenient (in terms of sickness monitoring) sickness policy also contributes to higher disability levels. The way in which disability is assessed does not have the expected effect on the number of beneficiaries. This might be driven by the fact that changes in the assessment process take a long time to be implemented. Additionally, capturing the assessment process with a simplified scale is subject to measurement problems. With respect to integration, employment programmes and vocational rehabilitation have a substantial influence in decreasing the number of persons receiving a disability benefit. The promotion of work incentives also contributes to reduced levels of disability reciprocity rates. On the other hand, anti-discrimination legislation is associated with higher shares of recipients. Evidence from the effects of anti-discrimination legislation in other studies (mainly for the United States) shows mixed results in terms of employment outcomes of people with disability (DeLeire, 2000; Acemoglu and Angrist, 2001; Beegle and Stock, 2003; Jolls and Prescott, 2004). One plausible explanation is that such legislation, while protecting workers in existing employment, may hinder the hiring of workers with health problems. Adding gross replacement rates as a crude measure of alternative benefit options does not alter significantly the results. A more generous unemployment benefit is associated with lower disability rates.

The analysis has shown that some elements of disability policies are associated with a change in disability rates. However, it is difficult to fully account for disability trends since the decision to apply for disability benefit is not only a function of disability policy but it is also related to alternative programmes such as unemployment, early retirement and social assistance (Bound and Burkhauser, 1999). Ideally controls should be added to capture the alternative options open to potential disability benefit applicants. Unfortunately, an indicator of the availability and access of such measures, covering a large set of countries and the period studied is not available.

## Conclusion

A large number of OECD countries have seen substantial increases in the share of disability beneficiaries in the working-age population. Vulnerable groups such as women, young individuals and the low-skilled are more affected by this trend. Explanations have to be sought in terms of individual and work characteristics, on one hand, and the characteristics of the benefit systems, on the other. The evidence in this chapter shows that the effects of individual and work characteristics are diverse across countries, highlighting the importance of disability-related policies in understanding the common trends.

Many OECD countries have taken steps to improve employment opportunities for people with disabilities before they are considered for disability benefits and to promote work incentives for those already on benefits. They have also improved, in parallel, the gate-keeping aspects of the systems. At the same time, more needs to be done to support people at work because participation in employment programmes and, in some cases rehabilitation, remains voluntary. A few countries have moved into a direction where disability beneficiaries are offered personalized support and work-focused interviews right at the start of the process, but mandatory work-focused interviews are in place only in the United Kingdom.

Employers are also key players and labour demand conditions and employment opportunities for individuals with health problems play a major role in influencing their decision to enroll in disability benefits. In the past, there has been a temptation to use disability as a form of early retirement, particularly in the context of faltering labour demand. In addition, the difficulties countries are facing in the current economic downturn (see Chapter 1) may push them to stop reforms in the area of disability policy. Public employment services will face the daunting challenge of providing support to many more unemployed and they may concentrate first on the easy-to-place cases. This might have adverse effects on disability beneficiaries and persons with health problems whose employment opportunities are even lower in economic downturns.

## Notes

1. The population on disability benefits is based on the working-age population (generally 20 to 64) receiving disability benefits under contributory and non-contributory schemes. Where persons can receive more than one disability benefit, the overlap has been taken into account. For the United States, disability recipients numbers refer to the 18-64, but for the calculation of disability rates the population of 20-64 has been used for consistency matters across countries.
2. In Germany, Australia and Switzerland, there are no substantial age differences between men and women and across education groups, whereas in the UK low-skilled individuals and men are on average older.
3. The results are robust to sensitivity tests including different types of estimations and adding the following additional controls: house ownership, spouse characteristics (age, education, labour force status), parental characteristics when the respondent was a teenager and life events when available.
4. The results of separate regressions for men and women do show in addition that other variables have a different impact in the transition to a disability benefit by gender. This is the case for instance of marital status and the number of children which matter more for women.
5. Note that the definition of a health onset is different in Germany (previous hospitalisation instead of a limiting condition) and this may affect the comparability of the transitions.
6. Several sensitivity tests have been performed, based on disaggregated data by gender and age and excluding one country at a time. A first difference model produced unstable results because of the reduced sample size.

## Bibliography

- Acemoglu, D. and J.D. Angrist (2001), "Consequences of Employment Protection? The Case of Americans with Disabilities Act", *Journal of Political Economy*, Vol. 19, No. 5, pp. 915-950.
- Autor, D. and M.G. Duggan (2003), "The Rise in the Disability Rolls and the Decline in Unemployment", *Quarterly Journal of Economics*, Vol. 118, No. 1, pp. 157-206.
- Begle, K. and A. Stock (2003), "The Labour Market Effects of Disability Discrimination Laws", *Journal of Human Resources*, Vol. 38, pp. 806-859.
- Black, D., K. Daniel and S. Sanders (2002), "The Impact of Economic Conditions on Participation in Disability Programs: Evidence from the Coal Boom and Bust", *American Economic Review*, Vol. 92, No. 1, pp. 27-50.
- Bound, J. and R.V. Burkhauser (1999), "Economic Analysis of Transfer Programs Targeted on People with Disabilities", in O. Ashenfelter and D. Card (eds.), *Handbook of Labor Economics*, Vol. 3, No. 1, Chapter 51, Elsevier, pp. 3417-3528.
- Case, A., A. Fertig and C. Paxson (2005), "The Lasting Impact of Childhood Health and Circumstance", *Journal of Health Economics*, Vol. 24, No. 2, pp. 365-389.
- DeLeire, T. (2000), "The Wage and Employment Effects of the Americans with Disabilities Act", *Journal of Human Resources*, Vol. 35, No. 4, pp. 693-715.

- Disney, R. and S. Webb (1991), "Why Are There so Many Long Term Sick in Britain?", *The Economic Journal*, Vol. 101, pp. 252-262.
- Faggio, G. and S. Nickell (2005), "Inactivity among Prime Age Men in the UK", CEP Discussion Paper No. 673.
- Gould, R. (2003), "Disability Pensions in Finland", in C. Prinz (ed.), *European Disability Pension Policies*, European Centre Vienna, Ashgate, pp. 165-196.
- Jehoel-Gijsbers, G. (ed.) (2007), *Beter aan het werk. Trendrapportage ziekteverzuim, arbeidsongeschiktheid en werkhervatting*, Sociaal en Cultureel Planbureau, The Hague.
- Jolls, C. and J.J. Prescott (2004), "Disaggregating Employment Protection: The Case of Disability Discrimination", NBER Working Paper Series No. 10740, Cambridge, Mass.
- Marin, B., C. Prinz and M. Queisser (2004), *Transforming Disability Welfare Policies towards Work and Equal Opportunities*, Ashgate Pub Ltd.
- McVicar, D. (2008), "Why Have UK Disability Benefit Rolls Grown So Much?," *Journal of Economic Surveys*, Blackwell Publishing, Vol. 22, No. 1, pp. 114-139.
- OECD (2003), *Transforming Disability into Ability*, OECD Publishing, Paris.
- OECD (2006), *Sickness, Disability and Work (Vol. 1): Norway, Poland and Switzerland*, OECD Publishing, Paris.
- OECD (2007), *Sickness, Disability and Work (Vol. 2): Australia, Luxembourg, Spain and the United Kingdom*, OECD Publishing, Paris.
- OECD (2008a), *OECD Employment Outlook*, OECD Publishing, Paris.
- OECD (2008b), *Sickness, Disability and Work (Vol. 3): Denmark, Finland, Ireland and the Netherlands*, OECD Publishing, Paris.
- Parent-Thirion, A., E. Fernandez Macias, J. Hurley and G. Vermeylen (2007), *Fourth European Working Conditions Survey*, European Foundation for the Improvement of Living Conditions, Office for Official Publications of the European Communities, Luxembourg.
- Rupp, K. and D.C. Stapleton (1995), "Determinants of the Growth in the Social Security Administration's Disability Programs – An Overview", *Social Security Bulletin*, Vol. 58, No. 4, pp. 43-70.
- Smith, J.P. (1999), "Healthy Bodies and Thick Wallets: The Dual Relation between Health and Economic Status", *Journal of Economic Perspectives*, American Economic Association, Vol. 3, No. 2, pp. 145-166, Spring.
- Wooldridge, M. (2002), *Econometric Analysis of Cross Section and Panel Data*, MIT Press, Cambridge, Mass.



## ANNEX 4.A1

*Analysis of the Effects of Health on Labour Force Status***Data sources**

The following longitudinal household surveys are used for the analysis. All longitudinal datasets cover a wide range of subjects including personality traits, occupational and family biographies, employment, participation and professional, mobility, earnings and health. We construct complete labour market histories of the individuals. The labour market histories contain yearly information based on employment status (employed or non-employed) and the type of benefit individuals are receiving. Because the data come from surveys and not administrative sources, there might be cases of overlapping between disability benefit reciprocity and employment.

**British Household Panel Survey (BHPS) – United Kingdom**

The British Household Panel Survey<sup>1</sup> (BHPS) is a nationally representative household-based yearly survey which began in 1991, interviewing every adult member of sampled households. The wave 1 of the panel consists of some 5 500 households and 10 300 individuals. Additional samples of 1 500 households in both Scotland and Wales were added to the main sample in 1999, and in 2001 a sample of 2 000 households was added in Northern Ireland. These same individuals are re-interviewed each successive year and, if they split-off from original households to form new households, they are followed and all adult members of these households are also interviewed.

**German socio-economic Panel (GSOEP)**

The German Socio-economic Panel (GSOEP) is an on-going household-based yearly survey which began in 1984. The first wave consists of 5 921 households containing a total of 12 290 individual respondents who participated in “SOEP West”, containing only West Germany. In 1990, 2 179 households with 4 453 members were surveyed for the “SOEP East” sample.

**Household, Income, Labour Dynamics in Australia (HILDA)**

Household, Income, Labour Dynamics in Australia (HILDA) is an ongoing household-based panel survey funded by the Department of Families, Community Services and Indigenous Affairs. The survey started in 2001 and contains at the moment seven waves. The wave 1 of the panel consisted of 7 682 households and 19 914 individuals.

**Swiss Household Panel (SHP)**

The Swiss Household Panel<sup>2</sup> is an ongoing household panel designed to investigate trends in social dynamics among the Swiss population. The survey started in 1999 and is financed by the Swiss national science foundation, the Swiss federal statistical office and

the University of Neuchatel. It was designed from the start to be compatible with various national and international surveys. A national representative sample of households was selected containing around 5 000 households in 1999. Data are collected annually at both the household and the individual level.

## Estimation methods

A discrete-time event history model is used to analyze possible transitions to disability benefits. Logit specifications are used to parameterize the probabilities of transitions across the different labour market states.

The probability of entering a disability recipient state is estimated using the complementary log-log model where the hazard rate is:

$$h(t, X) = 1 - \exp[-\exp(X'_{it}\beta + H'_{it}\gamma + D(t) + u_i)]$$

or

$$\log(-\log[1 - h(t, X)]) = X'_{it}\beta + H'_{it}\gamma + D(t) + u_i$$

$X$  refers to certain socio-demographic characteristics including:

- Standard individual characteristics: age, gender, marital status, education, foreign nationality, or born abroad.
- Household characteristics: number of children, net household income.
- Work characteristics: controls for occupation (ISCO), controls for industry (ISIC), company size, private/public, contract duration, working hours (*e.g.* time of the day, shifts).

Health variables ( $H$ ) are country specific and include:

- Nights spent in hospital (Germany).
- Having a health limitation (Australia, Switzerland, the United Kingdom).

Individual heterogeneity  $u$  is controlled for and it is modelled according to a normal distribution. Sensitivity analysis are performed by estimating the model using a Gamma distribution.

Sensitivity analysis is performed to test the robustness of the results to the inclusion of additional variables. Such variables include additional controls for: house ownership, spouse characteristics (age, education and labour force status), parental characteristics when the respondent was aged 16 and life events if available. In addition, separate regressions were estimated by gender and age.

To deal with possible health endogeneity the individual's health stock variable is constructed assuming that health is defined by objective health measures:

$$\eta_{it} = Z'_{it}\alpha + v_{it}$$

Such health stock is not observed in the data but a self-reported health status measure is (as a categorical variable with five states). The latent health stock, using self-assessed health will be a function of true health stock and an error term. The latent health stock can then be estimated as a function of objective measures of health using an ordered probit:

$$H^*_{it} = Z'_{it}\alpha + [v_{it} + \varepsilon_{it}]$$

$$H^*_{it} = Z'_{it}\alpha + \omega_{it}$$

## Multinomial logit

The model also analyses multiple destination and is also estimated for transitions across five states as a multinomial logit instead of simple logit.

The labour force states are coded: employment, receiving unemployment benefits, receiving a disability benefit, retirement, or not working and not receiving a benefit. In each year the individual can move between the different labour market states.

Other personal characteristics and prior labour market experience may influence, along with health, transitions across labour market states. A multivariate analysis is performed to test for different factors influencing pathways to non-employment. The table below (Table 4.A1.1) provides relative risk ratio estimates from multinomial logit models of the probability of being unemployed, receiving a disability-related benefit, being retired on in other type of inactivity, relative to the probability of being in employment. These regressions test the robustness of the simple transitions, while controlling for other individual characteristics.

### Dynamic model

Dynamic random effects probit is used to estimated probability of employment after experiencing a health problem.

Dynamic estimation is used because of state dependence whereby the probability of currently being employed depends on past employment status. A dynamic panel probit is specified, where the probability of being employed for an individual  $i$  at time  $t$  conditional on the regressors and the individual effect is:

$$\Pr(d_{it} = 1 | d_{it-1}, X_{it}, \delta_i) = \Phi(d_{it-1}\phi + X'_{it}\beta + H'_{it}\gamma + \delta_i)$$

In estimating the dynamic model, the problem of initial conditions needs to be taken into account: an individual's disability status at the start of the panel is not randomly distributed and will be influenced by unobservable individual heterogeneity. Following Wooldridge (2002), the distribution of the individual effects is parameterised as a linear function of the initial employment status at the first wave of the panel and of the time means of the regressors, assuming that it has a conditional normal distribution:

$$\delta_i = c_0 + d'_{i0} \rho + \bar{X}'_i \nu + \xi_i$$

Therefore the probability of being employed based on the regressors and the individual effect becomes:

$$\Pr(d_{it} = 1 | d_{it-1}, X_{it}, \delta_i) = \Phi(d_{it-1}\phi + X'_{it}\beta + c_0 + d'_{i0} \rho + \bar{X}'_i \nu + \xi_i)$$

The dynamic random effects estimation relies on the assumption of strict exogeneity of the explanatory variables conditional on  $\delta_i$ . There might be a problem of reverse causality with current employment status affecting future health status. Because strict exogeneity is not guaranteed in this estimation as current employment status may affect future health problems, the model is estimated using pooled probit. Using a pooled dynamic probit model, consistent (yet inefficient) estimates are obtained because it only relies on contemporaneous exogeneity.

### Notes

1. The BHPS was obtained through the UK data archive ([www.data-archive.uk](http://www.data-archive.uk)).
2. This study has been realized using the data collected in the "Living in Switzerland" project, conducted by the Swiss Household Panel (SHF), which is based at the Swiss Foundation for Research in Social Sciences FORS, University of Lausanne. The project is financed by the Swiss National Science Foundation.

Table 4.A1.1. **Probability of receiving a disability benefit (instrumented health measures)**  
Logit disability (coefficients reported)<sup>a, b, c</sup>

	Australia	Germany	Switzerland	United Kingdom
<b>Health problems<sup>d</sup></b>	0.858***	0.388***	0.743***	0.554***
<b>Lagged health problems<sup>d</sup></b>	0.893***	0.387***	0.312*	0.485***
<b>Initial health status<sup>d</sup></b>	-0.025***	-0.001	0.716***	0.003
<b>Number of children in household (grouped)</b>	-0.199**	-0.163	-0.114	-0.096*
<b>Household income quintile</b>				
2nd quintile	-0.043	-0.652***	0.383	0.271***
3rd quintile	-0.426*	-0.301	0.191	0.172
4th quintile	-1.464***	-0.367*	0.230	0.104
5th quintile	-1.283***	-0.262	-0.758*	-0.193
<b>Gender = female</b>	-0.697***	-0.225	-0.859***	-1.119***
<b>Age</b>				
15-24	-0.754***	-3.113***	-1.393***	-0.601***
25-34	-0.650**	-2.279***	-0.949***	-0.337***
25-44	-0.300	-2.029***	-0.854***	-0.158
45-54	-0.349**	-0.971***	-0.524**	-0.137
<b>Foreign-born (ethnicity for the United Kingdom)</b>	-0.032	-0.815***	-0.116	0.708
<b>Marital status</b>				
Single	0.691***	0.551**	0.768***	0.485***
Separated/divorced	0.572**	0.382**	0.609***	0.467***
Widowed	-0.333	0.385	0.420	0.112
<b>Educational attainment<sup>e</sup></b>				
Low-skilled	-0.222	0.375*	0.261	0.443***
Medium-skilled	0.017	0.181	0.088	0.109
<b>Ever unemployed</b>	0.156	0.444***	..	0.054
<b>Industry<sup>e</sup> (initial)</b>				
Agriculture and mining	0.635	0.586*	1.386*	-0.484
Construction	-0.767	0.041	0.149	0.049
Producer services	0.068	-0.111	0.092	-0.110
Distributives services	-0.153	0.201	-0.082	0.278
Social services	-0.120	0.319	0.257	0.311
Personal services	0.050	0.039	-0.454	0.091
<b>Occupation<sup>e</sup> (initial)</b>				
Blue collar	0.148	0.057	0.392	0.821***
Elementary occupations	0.217	-0.392	-0.397	0.666***
<b>Type of contract (initial)</b>				
Temporary contract	-0.167	-0.054	-0.495	0.128
<b>Weekly hours worked (initial)</b>				
Mini-jobs: 0 to 14 hours	0.571	0.177	1.057***	-0.060
Part-time: 15 to 29 hours	0.588*	0.270	0.896***	0.167
Overtime: more than 48 hours	-0.661	-0.384*	-1.049*	-0.054
<b>Shift work (initial)</b>	-0.228	..	0.008	0.086
<b>Public sector (initial)</b>	-0.010	-0.024	-0.752**	0.174
<b>Firm size (initial)</b>				
Firm with less than 20 employees	0.042	-0.139	0.208	-0.046
Firm with more than 100 employees	0.297	0.155	0.170	0.135
<b>Observations</b>	<b>30 286</b>	<b>85 901</b>	<b>11 902</b>	<b>84 926</b>

\*, \*\*, \*\*\* statistically significant at the 10%, 5%, 1% level, respectively.

a) Samples include persons present in at least three consecutive waves, not in full-time education, and aged 15-64 in Australia, Switzerland and the United Kingdom; 16-64 in Germany.


b) The years considered for each country are given in note b) of Table 4.1.

c) All regressions include regional dummy variables (except for Germany). "Initial" in brackets indicates the value of the variable in question at the time the individual enters the survey. Initial health status also refers to health status the first period the individual is observed in the survey.

d) Health problems are constructed by instrumenting.

e) See note e) of Figure 4.4 for definitions.

Source: OECD estimates based on the HILDA for Australia, the GSOEP for Germany, the SHP for Switzerland and the BHPS for the United Kingdom.

StatLink  <http://dx.doi.org/10.1787/708053544054>

**Table 4.A1.2. Health influences exit to disability more than to other statuses**  
 Relative risk ratios from a multinomial Logit of labour market exits towards invalidity, unemployment, retirement or other inactivity<sup>a, b, c</sup>

	Australia	Germany	Switzerland	United Kingdom	Australia	Germany	Switzerland	United Kingdom
	Disability				Unemployment			
<b>Health variables</b>								
<b>Health problems<sup>d</sup></b>	7.948***	3.070***	4.695***	7.066***	2.004***	1.459***	1.566**	1.115
<b>Lagged health problems<sup>d</sup></b>	4.222***	3.025***	2.873***	3.414***	1.675***	1.327***	1.582**	1.089
<b>health status (initial)<sup>d</sup></b>	2.218***	1.816***	3.264***	1.445***	0.832	1.161*	0.946	1.173
<b>Number of children in household (grouped)</b>	0.865**	0.790**	1.005	0.893***	0.740***	1.104***	0.891	0.839***
<b>Household income</b>	0.244***	1.000***	0.962**	1.000***	0.280***	1.000***	0.986	1.000***
<b>Gender = female</b>	0.658***	0.802*	0.364	0.608***	0.842	1.162**	1.196	0.465***
<b>Age</b>								
15-24	0.025***	0.020***	0.028***	0.301***	0.159***	0.386***	0.444*	1.465**
25-34	0.096***	0.030***	0.108***	0.403***	0.110***	0.372***	1.007	1.132
25-44	0.156***	0.061***	0.262***	0.509***	0.162***	0.359***	0.853	1.096
45-54	0.305***	0.209***	0.357***	0.746***	0.293***	0.491***	0.596**	1.157
<b>Foreign-born (ethnicity for the United Kingdom)</b>	0.847	0.591***	0.937	0.797	1.017	1.575***	1.913***	1.083
<b>Marital status</b>								
Single	1.558**	1.149	4.614***	1.487***	1.821***	1.138*	2.625***	1.747***
Separated/divorced	1.283	0.635***	2.539***	1.619***	1.540***	1.102	2.407***	1.827***
Widowed	0.697	1.189	11.472***	0.961	0.420	1.020	5.389***	0.970
<b>Educational attainment<sup>e</sup></b>								
Low-skilled	1.669***	1.845***	2.370**	1.974***	1.543***	1.399***	1.055	1.656***
Medium-skilled	1.327	1.432***	1.398	1.160	1.627***	1.334***	1.042	1.023
<b>Weekly hours worked (initial)</b>								
Mini-jobs: 0 to 14 hours	1.966**	1.029	4.758***	0.691	1.514**	0.526***	0.548*	1.091
Part-time: 15 to 29 hours	1.614*	0.895	3.634***	0.800	1.097	1.092	1.765**	1.089
Overtime: more than 48 hours	0.629	0.841	0.228**	0.634**	0.525**	0.879*	0.989	0.553***
<b>Type of contract (initial)</b>								
Temporary contract	1.040	0.918	2.142	1.436**	1.683***	2.411***	3.788***	1.348**
<b>Shift work (initial)</b>	0.715	..	1.156	1.369***	1.238	..	1.581	0.935
<b>Public sector (initial)</b>	0.776	1.346**	0.487**	0.840	0.854	0.643***	0.436***	1.107
<b>Firm size (initial)</b>								
Firm with less than 20 employees	0.985	0.724**	1.500	0.985	0.925	1.072	1.097	0.812*
Firm with more than 100 employees	1.286	0.936	1.102	1.195	0.750	0.734***	0.754	0.880
<b>Observations</b>	35 686	86 553	12 502	84 926	35 686	86 553	12 502	84 926

Table 4.A1.2. **Health influences exit to disability more than to other statuses (cont.)**Relative risk ratios from a multinomial Logit of labour market exits towards invalidity, unemployment, retirement or other inactivity<sup>a, b, c</sup>

	Australia	Germany	Switzerland	United Kingdom	Australia	Germany	Switzerland	United Kingdom
	Other inactive				Retirement			
<b>Health</b>								
Health problems <sup>d</sup>	1.520***	3.635***	1.081	1.363***	1.940***	1.457***	1.084	1.493***
Lagged health problems <sup>d</sup>	1.317***	2.446***	1.246	1.215**	1.533***	1.575***	1.351	1.360***
Initial health status <sup>d</sup>	0.987	0.788**	1.023	0.831	0.994	1.021	0.955	1.128
<b>Number of children in household (grouped)</b>	1.307***	1.829***	1.037	1.315***	1.050	0.832	0.589***	0.330***
<b>Household income quintile</b>	0.485***	1.000***	0.959***	1.000***	0.216***	1.000***	0.977	1.000***
<b>Gender = female</b>	3.312***	6.842***	2.109***	8.194***	3.472***	1.408***	1.949**	18.818***
<b>Age</b>								
15-24	0.046***	1.360**	0.321***	0.523***	0.000***	0.014***	0.058***	0.000***
25-34	0.101***	1.013	0.517***	0.523***	0.000***	0.027***	0.018***	0.000***
25-44	0.120***	0.387***	0.404***	0.380***	0.004***	0.028***	0.062***	0.001***
45-54	0.213***	0.345***	0.468***	0.675***	0.000***	0.035***	0.085***	0.004***
<b>Foreign-born (ethnicity for the United Kingdom)</b>	1.153**	0.943	1.279	1.179	0.872	0.524***	1.407	0.507*
<b>Marital status</b>								
Single	0.547***	0.404***	0.381***	0.530***	0.900	0.753	0.613	1.196
Separated/divorced	0.518***	0.415***	0.371***	0.547***	0.677*	0.635***	1.338	0.918
Widowed	0.897	0.484***	0.922	1.332	2.346***	1.478**	78.848***	2.114***
<b>Educational attainment<sup>e</sup></b>								
Low-skilled	1.297***	1.043	2.109***	2.451***	2.430***	1.605***	1.838*	1.480***
Medium-skilled	1.045	1.042	2.082***	1.683***	1.345	1.131	1.388	1.104
<b>Weekly hours worked (initial)</b>								
Mini-jobs: 0 to 14 hours	1.456***	1.730***	2.346***	0.983	2.912***	0.559**	1.852*	1.043
Part-time: 15 to 29 hours	0.962	0.878	0.648*	1.384	1.355	0.824	1.962**	0.943
Overtime: more than 48 hours	1.170	0.726***	1.021	0.072***	0.500	0.909	0.285***	0.902
<b>Type of contract (initial)</b>								
Temporary contract	1.076	1.582***	2.653***	2.204**	1.388	1.860***	0.727	1.157
<b>Shift work (initial)</b>	1.168*	..	1.090	0.792	1.087	..	0.555	1.093
<b>Public sector (initial)</b>	1.031	0.846*	0.798	0.461*	1.065	1.078	0.667	0.980
<b>Firm size (initial)</b>								
Firm with less than 20 employees	1.060	1.120	1.172	0.838	1.492	1.092	0.948	1.247*
Firm with more than 100 employees	1.029	1.052	0.996	1.157	0.809	1.157	0.727	1.040
<b>Observations</b>	35 686	86 553	12 502	84 926	35 686	86 553	12 502	84 926

\*, \*\*, \*\*\* statistically significant at the 10%, 5%, 1% level, respectively.

a) Samples include persons present in at least three consecutive waves, not in full-time education, and aged 15-64 in Australia, Switzerland and the United Kingdom; 16-64 in Germany.

b) The years considered for each country are given in note b) of Table 4.1.

c) All regressions include regional dummy variables; control for employment experience and employment experience squared for Australia; a dummy variable for unemployment experience for Australia, and the United Kingdom; and industry and occupation dummy variables. Initial in brackets indicates the value of the variable in question the first time period the individual is observed.

d) Health problems are defined as follows: one night of hospital stay in Germany; whether health is an impediment in daily activities in Australia, Switzerland and the United Kingdom.

e) See note e) of Figure 4.4 for definitions.

Source: OECD estimates based on the HILDA for Australia, the GSOEP for Germany, the SHP for Switzerland and the BHPS for the United Kingdom.

StatLink  <http://dx.doi.org/10.1787/708053840276>

## ANNEX 4.A2

## Disability Policy Indicator

Dimension	5 points	4 points	3 points	2 points	1 point	0 point
<b>X. Compensation</b>						
X1. Coverage	Total population (residents)	All population except some groups	Labour force plus means-tested non-contrib. scheme	Labour force	Labour force for X years	Labour force for X years and in contributions in the last X years
X2. Minimum disability level	0-25% < 50%	26-40%	41-55%	56-70%	71-85%	86-100%
X3. Disability level for full benefit		50-61%	62-73%	74-85%	86-99%	100%
X4. Maximum benefit level	RR ≥ 75%, reasonable minimum	RR ≥ 75%, minimum not specified	75% > RR ≥ 50%, reasonable minimum	75% > RR ≥ 50%, minimum not specified	RR < 50%, reasonable minimum	RR < 50%, minimum not specified
X5. Permanence of benefits	Strictly permanent	<i>De facto</i> permanent	Self-reported review only	Regulated review procedure	Strictly temporary, unless fully (= 100%) disabled	Strictly temporary in all cases
X6. Medical assessment	Treating doctor exclusively	Treating doctor predominantly	Insurance doctor predominantly	Insurance doctor exclusively	Team of experts in the insurance	Insurance team and two-step procedure
X7. Vocational assessment	Strict own or usual occupation assessment	Reference is made to one's previous earnings	Own-occupation assessment for partial benefits	Current labour market conditions are taken into account	All jobs available taken into account, leniently applied	All jobs available taken into account, strictly applied
X8. Sickness benefit level	RR = 100% also for long-term sickness absence	RR = 100% (short-term) ≥ 75% (long-term) sickness absence	RR ≥ 75% (short-term) ≥ 50% (long-term) sickness absence	75% > RR ≥ 50% for any type of sickness absence	RR ≥ 50% (short-term) < 50% (long-term) sickness absence	RR < 50% also for short-term sickness absence
X9. Sickness benefit duration	Less than six months, significant wage payment period	Less than six months, short or no wage payment period	Six-twelve months, significant wage payment period	Six-twelve months, short or no wage payment period	One year or more, significant wage payment period	One year or more, short or no wage payment period
X10. Sickness monitoring	Lenient sickness certificate requirements	Sickness certificate and OHS with risk prevention	Frequent sickness certificates	Strict follow-up steps with early intervention, risk profiling but no sanctions if no compliance	Strict controls of sickness certificate with own assessment of illness if necessary	Strict follow-up steps with early intervention, risk profiling and sanctions if no compliance
<b>Y. Integration</b>						
Y1. Anti-discrimination legislation	Major obligations towards employees and new applicants	Major obligations towards employees, less for applicants	Some obligations towards employees and new applicants	Some obligations towards employees, none for applicants	No obligations at all, but dismissal protection	No obligations of any kind
Y2. Supported employment	Strong programme, permanent option	Strong programme, only time-limited	Intermediary, also permanent	Intermediary, only time-limited	Very limited programme	Not existent
Y3. Subsidised employment	Strong and flexible programme, with a permanent option	Strong and flexible programme, but time-limited	Intermediary, either permanent or flexible	Intermediary, neither permanent nor flexible	Very limited programme	Not existent
Y4. Sheltered employment	Strong focus, with significant transition rates	Strong focus, but largely permanent employment	Intermediary focus, with some "new" attempts	Intermediary focus, "traditional" programme	Very limited programme	Not existent
Y5. Vocational rehabilitation	Compulsory rehabilitation with large spending	Compulsory rehabilitation with low spending	Intermediary view, relatively large spending	Intermediary view, relatively low spending	Voluntary rehabilitation with large spending	Voluntary rehabilitation with low spending
Y6. Benefit suspension	Two years or more	At least one but less than two years	More than three but less than twelve months	Up to three months	Some, but not for disability benefits	None
Y7. Work incentives	Permanent in-work benefit provided	Benefit continued for a considerable (trial) period	Income beyond pre-disability level allowed	Income up to pre-disability level, also partial benefit	Income up to pre-disability level, no partial benefit	Some additional income allowed

## ANNEX 4.A3

## *The Effect of Disability Policy on Disability Rates*

### **Variables used in the econometric macro model**

**GDP per capita**

Source: OECD Economic Statistics.

**Share of female labour force participation rates**

Source: OECD Labour Force Statistics.

**Share of 55+**

Source: OECD Labour Force Statistics.

**Share of manufacturing**

Source: Labour Force Survey for Australia and OECD STAN Database for all other countries.

**Gross replacement rates**

Gross replacement rates (GRR) express gross unemployment benefit levels as a percentage of previous gross earnings. The index is the unweighted average of 18 GRRs: three household types (single, dependent spouse and spouse in work), three time periods (the first year, the second and third years, and the fourth and fifth years of unemployment), and two earnings levels (average earnings and two-thirds of this level). It is calculated for odd numbered years and has been interpolated for the remaining years.

Source: OECD Tax-Benefit Database.



## Statistical Annex

### Sources and definitions

Most of the statistics shown in these tables can also be found in two other (paper or electronic) publications and data repository, as follows:

- The annual edition of *OECD Labour Force Statistics, 1988-2008*;
- OECD.Stat, the OECD's central data warehouse ([www.oecd.org/els/employment/data](http://www.oecd.org/els/employment/data)), which contains both raw data and derived statistics.

These references, which include information on definitions, notes and sources used by member countries, contain longer time series and more detailed data by age group, gender, part-time employment, duration of unemployment, and other series than are shown in this annex, such as, temporary employment, employee job tenure, involuntary part-time employment, distribution of employment by weekly usual hours worked intervals, etc.

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 that are reported in the *OECD Economic Outlook* and shown in some charts and tables of Chapter 1 of this publication.

Interested users can refer to the on-line database ([www.oecd.org/els/employment/data](http://www.oecd.org/els/employment/data)), which contains data series on the labour market situation in OECD countries: 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, job tenure, etc. The on-line database contains a number of additional series on labour market performances 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;
- distribution of gross earnings of full-time workers by earnings decile and by sex to derive various measures of earnings dispersion;
- gross mean and median earnings of full-time workers by age group and gender;
- statutory minimum wages;
- public expenditure on labour market programmes, number of beneficiaries and inflows into the labour market;
- 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

### Major breaks in series

Table A: Breaks in series have been adjusted to ensure that standardized unemployment rates are consistent over time.

Tables B to E and Table G: Most of the breaks in series mentioned below occurred for any of the following reasons: changes in survey design, survey questionnaire, survey frequency and administration, revisions of data series based on updated population census results. These changes have affected the comparability over time of employment and/or unemployment levels and to a certain extent the ratios reported in the aforementioned tables:

- *Introduction of a continuous survey*: Austria (2003/2004), Belgium (1998/1999), Czech Republic (1996/1997), Denmark (1999/2000, quarterly continuous survey), Finland (1999/2000), France (2002/2003), Germany (2004/2005), Hungary (2002/2003), Iceland (2002/2003), Ireland (1996/1997/1998), Italy (2003/2004), Luxembourg (2002/2003), Netherlands (1999/2000, quarterly continuous survey), Norway (1995/1996), Poland (1998/1999/2000), Portugal (1997/1998), Slovak Republic (1997/1998), Spain (1998/1999), and United Kingdom (1991/1992).
- *Redesign of labour force survey*: Greece (1997/1998), Portugal (1997/1998), Slovak Republic (1998/1999), Spain (2004/2005), Turkey (1999/2000 – half-yearly to quarterly results). New survey in Mexico since 2005 (*Encuesta Nacional de Ocupación y Empleo – ENOE*) with a different questionnaire from that of the previous survey.
- *Change in the operational definition of unemployment regarding*:
  - ❖ active job search methods, in particular change from registration to contact with the public employment service: France (2002/2003), Spain (2000/2001).
  - ❖ work availability criteria changed from reference week to two weeks after the reference week to be consistent with the operational definition in other EU countries: Sweden (2004/2005).
  - ❖ persons on lay-off considered as employed instead of unemployed: Norway (2005/2006).
  - ❖ duration of active job search changed from one week to four weeks: Korea (1999/2000). This change occurred in June 2005 and data were revised since 2000 to take into account the new criteria.
  - ❖ other minor changes: Australia (2000/2001) and Poland (2003/2004).
- *Changes in the questionnaire with impact on employment and unemployment estimates*: Spain (2004/2005) and unemployment estimates: Sweden (2004/2005), Norway (2005/2006).
- *Change from seasonal to calendar quarters*: Slovak Republic (1999/2000) and the United Kingdom (2005/2006). However, there is no break in series between 2005 and 2006 for the United Kingdom as calendar-quarter based historical series are available since 1992.
- *Introduction of new EU-harmonised questionnaire*: Sweden (2004/2005).
- *Change in lower age limit from 16 to 15 years*: Norway (2005/2006). Moreover, since 2006, age is defined as completed years at the time of the reference week, instead of completed years at the end of the year, as earlier.
- *Inclusion of population controls based on Census results in the estimation process*: Spain (1995/1996), Turkey (2006/2007), United Kingdom (revised series 1992), United States (1999/2000).

Further explanations on breaks in series and their impact on employment and unemployment levels and on ratios can be found at: [www.oecd.org/els/employment/outlook](http://www.oecd.org/els/employment/outlook).

**Table A. Standardised unemployment rates in OECD countries**  
As a percentage of civilian labour force

	1990	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Australia	6.7	8.2	8.3	7.7	6.9	6.3	6.8	6.4	5.9	5.4	5.0	4.8	4.4	4.2
Austria	..	4.3	4.4	4.5	3.9	3.6	3.6	4.2	4.3	4.9	5.2	4.7	4.4	3.8
Belgium	6.6	9.6	9.2	9.3	8.5	6.9	6.6	7.5	8.2	8.4	8.5	8.2	7.5	7.0
Canada	8.1	9.6	9.1	8.3	7.6	6.8	7.2	7.7	7.6	7.2	6.8	6.3	6.0	6.1
Czech Republic	..	3.9	4.8	6.4	8.6	8.7	8.0	7.3	7.8	8.3	7.9	7.1	5.4	4.4
Denmark	7.2	6.3	5.2	4.9	5.1	4.3	4.5	4.6	5.4	5.5	4.8	3.9	3.8	3.4
Finland	3.2	14.9	12.7	11.4	10.3	9.6	9.1	9.1	9.1	8.9	8.3	7.7	6.8	6.4
France	8.4	11.5	11.4	11.0	10.4	9.0	8.3	8.6	9.0	9.2	9.3	9.2	8.3	7.8
Germany <sup>a</sup>	4.8	8.7	9.4	9.1	8.3	7.5	7.6	8.4	9.3	9.8	10.6	9.8	8.4	7.3
Greece	6.3	9.7	9.6	11.1	12.0	11.3	10.7	10.3	9.7	10.5	9.9	8.9	8.3	7.7
Hungary	..	9.6	9.0	8.4	6.9	6.4	5.7	5.8	5.9	6.1	7.2	7.4	7.3	7.8
Iceland	..	3.7	3.9	2.7	2.0	2.3	2.3	3.3	3.4	3.1	2.6	2.9	2.3	3.0
Ireland	13.4	11.7	9.9	7.6	5.7	4.3	4.0	4.5	4.7	4.5	4.4	4.5	4.6	6.3
Italy	8.9	11.2	11.3	11.4	11.0	10.2	9.1	8.6	8.5	8.1	7.7	6.8	6.1	6.8
Japan	2.1	3.4	3.4	4.1	4.7	4.7	5.0	5.4	5.3	4.7	4.4	4.1	3.9	4.0
Korea	2.4	2.0	2.6	7.0	6.6	4.4	4.0	3.3	3.6	3.7	3.7	3.5	3.2	3.2
Luxembourg	1.7	2.9	2.7	2.7	2.4	2.2	1.9	2.6	3.8	5.0	4.6	4.6	4.2	4.9
Mexico	2.7	5.5	3.7	3.2	2.5	2.5	2.8	3.0	3.4	3.9	3.6	3.6	3.7	4.0
Netherlands	5.9	6.0	4.9	3.8	3.2	2.8	2.2	2.8	3.7	4.6	4.7	3.9	3.2	2.8
New Zealand	8.0	6.3	6.8	7.7	7.0	6.1	5.4	5.3	4.8	4.0	3.8	3.8	3.7	4.2
Norway	5.8	4.8	3.9	3.1	3.0	3.2	3.4	3.7	4.2	4.3	4.5	3.4	2.5	2.5
Poland	..	14.1	10.9	10.2	13.4	16.2	18.3	19.9	19.7	19.0	17.8	13.9	9.6	7.2
Portugal	4.7	7.3	6.8	5.0	4.5	4.0	4.0	5.1	6.4	6.7	7.7	7.8	8.1	7.7
Slovak Republic	..	11.3	11.9	12.6	16.4	18.7	19.3	18.7	17.6	18.2	16.3	13.4	11.2	9.6
Spain	13.0	17.8	16.7	15.0	12.5	11.1	10.4	11.1	11.1	10.6	9.2	8.5	8.3	11.4
Sweden	1.7	9.5	9.9	8.2	6.7	5.6	4.9	4.9	5.6	6.3	7.3	7.0	6.2	6.2
Switzerland	..	3.9	4.2	3.5	3.0	2.6	2.6	3.2	4.3	4.4	4.4	4.0	3.6	3.5
Turkey	..	..	..	..	..	..	..	..	..	..	..	8.4	8.6	9.4
United Kingdom	6.9	7.9	6.8	6.1	5.9	5.4	5.0	5.1	5.0	4.7	4.8	5.4	5.3	5.6
United States	5.6	5.4	4.9	4.5	4.2	4.0	4.7	5.8	6.0	5.5	5.1	4.6	4.6	5.8
EU15 <sup>b</sup>	8.1	10.1	9.8	9.3	8.6	7.7	7.2	7.6	8.0	8.1	8.1	7.7	7.0	7.1
OECD Europe <sup>b</sup>	8.0	10.6	10.3	9.8	9.6	9.0	9.0	9.6	9.9	9.9	9.8	8.9	7.9	7.9
Total OECD <sup>b</sup>	6.1	7.2	6.9	6.8	6.7	6.2	6.5	7.1	7.3	7.1	6.8	6.2	5.7	6.0

Aggregates are computed using country weights.

a) For 1990, the data refer to western Germany; subsequent data concern the whole of Germany.

b) For above countries only.

Note: In so far as possible, the data have been adjusted to ensure comparability over time and to conform to the guidelines of the International Labour Office. All series are benchmarked to labour-force-survey-based estimates. In countries with annual surveys, monthly estimates are obtained by interpolation/extrapolation and by incorporating trends in administrative data, where available. The annual figures are then calculated by averaging the monthly estimates (for both unemployed and the labour force). For countries with monthly or quarterly surveys, the annual estimates are obtained by averaging the monthly or quarterly estimates, respectively. For several countries, the adjustment procedure used is similar to that of the Bureau of Labor Statistics, US Department of Labor. For EU countries, the procedures are similar to those used in deriving the Comparable Unemployment Rates of the Statistical Office of the European Communities (Eurostat). For a fuller description, please refer to the following URL: [www.oecd.org/std](http://www.oecd.org/std).

Source: OECD (2009), *OECD Main Economic Indicators*, OECD Publishing, Paris, May.

StatLink  <http://dx.doi.org/10.1787/708056830116>

**Table B. Employment/population ratios, activity and unemployment rates<sup>a</sup>**  
Persons aged 15-64 years (percentages)

	Employment/population ratio					Labour force participation rate					Unemployment rate							
	1994	2004	2005	2006	2007	2008	1994	2004	2005	2006	2007	2008	1994	2004	2005	2006	2007	2008
Australia	66.0	70.3	71.5	72.2	72.8	73.2	73.2	74.4	75.4	75.8	76.2	76.5	9.9	5.5	5.1	4.9	4.4	4.3
Austria	68.4	67.8	68.6	70.2	71.4	72.1	71.0	71.3	72.4	73.7	74.7	75.0	3.6	5.0	5.2	4.8	4.5	3.9
Belgium	55.7	60.5	61.0	60.4	61.6	62.0	61.7	65.3	66.4	65.9	66.7	66.3	9.7	7.4	8.1	8.4	7.7	6.4
Canada	67.0	72.5	72.5	72.9	73.6	73.7	74.9	78.2	77.8	77.9	78.4	78.6	10.5	7.3	6.8	6.3	6.1	6.2
Czech Republic	69.2	64.2	64.8	65.3	66.1	66.6	72.4	70.1	70.4	70.3	69.8	69.7	4.3	8.4	8.0	7.2	5.4	4.4
Denmark	72.4	76.0	75.5	76.9	77.3	78.4	78.8	80.2	79.4	80.1	80.3	80.9	8.1	5.3	4.9	4.0	3.6	3.1
Finland	60.7	67.8	68.5	69.6	70.5	71.9	72.7	74.4	74.8	75.4	75.7	76.7	16.5	8.9	8.4	7.7	6.9	6.3
France	58.4	63.1	63.2	63.3	64.0	64.6	66.6	69.3	69.4	69.4	69.5	69.7	12.4	8.9	8.9	8.8	8.0	7.4
Germany	64.5	65.0	65.5	67.2	69.0	70.2	70.5	72.6	73.8	75.0	75.6	75.9	8.5	10.4	11.3	10.4	8.7	7.6
Greece	54.1	59.6	60.3	61.0	61.5	62.2	59.5	66.5	66.8	67.0	67.0	67.2	9.1	10.4	9.8	8.9	8.2	7.3
Hungary	53.5	56.8	56.9	57.3	57.3	56.7	60.0	60.5	61.4	62.0	61.9	61.5	10.8	6.1	7.2	7.5	7.4	7.9
Iceland <sup>b</sup>	78.5	82.8	84.4	85.3	85.7	84.2	83.0	85.5	86.7	88.0	87.8	86.9	5.4	3.1	2.7	3.0	2.3	3.0
Ireland	51.9	65.4	67.1	68.2	69.0	68.1	61.1	68.5	70.2	71.4	72.3	71.9	15.1	4.5	4.4	4.5	4.6	5.3
Italy	51.5	57.4	57.5	58.4	58.7	58.7	58.0	62.5	62.4	62.7	62.5	63.0	11.1	8.1	7.8	6.9	6.2	6.8
Japan	69.3	68.7	69.3	70.0	70.7	70.7	71.4	72.2	72.6	73.1	73.6	73.8	3.0	4.9	4.6	4.3	4.1	4.2
Korea	62.8	63.6	63.7	63.8	63.9	63.8	64.4	66.1	66.3	66.2	66.2	66.0	2.6	3.8	3.9	3.6	3.4	3.3
Luxembourg	60.2	62.5	63.6	63.6	63.6	64.4	62.3	65.8	66.6	66.7	66.2	67.8	3.5	5.1	4.5	4.7	3.9	5.0
Mexico	58.7	59.9	59.6	61.0	61.1	59.9	61.4	62.2	61.9	63.0	63.3	62.2	4.4	3.8	3.6	3.3	3.5	3.7
Netherlands	63.9	71.8	71.9	73.2	74.8	76.1	68.6	75.6	75.8	76.4	77.5	78.4	6.8	5.0	5.1	4.2	3.5	3.0
New Zealand	68.0	73.5	74.6	75.2	75.4	74.9	74.1	76.6	77.5	78.1	78.3	78.2	8.2	4.0	3.8	3.8	3.7	4.2
Norway <sup>b</sup>	72.2	75.6	75.2	75.5	76.9	78.1	76.4	79.1	78.9	78.2	78.9	80.2	5.4	4.5	4.7	3.5	2.6	2.6
Poland	58.3	51.9	53.0	54.5	57.0	59.2	68.4	64.2	64.6	63.4	63.2	63.8	14.8	19.3	18.0	14.0	9.7	7.2
Portugal	64.0	67.8	67.5	67.9	67.8	68.2	69.0	72.9	73.4	73.9	74.1	74.2	7.2	7.0	8.1	8.1	8.5	8.1
Slovak Republic	59.8	57.0	57.7	59.4	60.7	62.3	69.3	69.7	68.9	68.5	68.2	68.9	13.7	18.2	16.2	13.3	11.0	9.6
Spain <sup>b</sup>	47.4	62.0	64.3	65.7	66.6	65.3	62.4	69.7	70.8	71.9	72.6	73.7	24.0	11.0	9.2	8.6	8.3	11.4
Sweden <sup>b</sup>	71.5	73.5	73.9	74.5	75.7	75.7	79.2	78.7	80.1	80.2	80.6	80.7	9.7	6.6	7.8	7.1	6.2	6.2
Switzerland	75.6	77.4	77.2	77.9	78.6	79.5	78.7	81.0	80.8	81.2	81.6	82.3	4.0	4.4	4.5	4.1	3.7	3.4
Turkey	52.4	46.1	45.9	45.9	44.6	44.9	57.5	51.5	51.3	51.1	49.8	50.6	8.8	10.6	10.5	10.1	10.5	11.2
United Kingdom <sup>b</sup>	68.7	72.7	72.6	72.5	72.3	72.7	76.0	76.2	76.2	76.7	76.3	76.8	9.7	4.7	4.7	5.4	5.3	5.4
United States <sup>b</sup>	72.0	71.2	71.5	72.0	71.8	70.9	76.7	75.4	75.4	75.5	75.3	75.3	6.2	5.6	5.1	4.7	4.7	5.8
EU15	59.9	64.9	65.4	66.2	67.0	67.4	67.5	70.7	71.2	71.8	72.1	72.5	11.2	8.2	8.2	7.8	7.1	7.1
EU19	59.9	63.5	64.0	64.9	65.8	66.4	67.5	69.9	70.4	70.8	71.0	71.4	11.3	9.2	9.1	8.4	7.3	7.1
OECD Europe	59.4	61.5	61.9	62.6	63.4	63.9	66.6	67.7	68.1	68.4	68.5	69.0	10.9	9.2	9.1	8.4	7.5	7.4
Total OECD	64.1	65.2	65.5	66.2	66.6	66.5	69.5	70.1	70.3	70.6	70.7	70.8	7.8	7.0	6.7	6.2	5.7	6.0

**Table B. Employment/population ratios, activity and unemployment rates<sup>a</sup> (cont.)**  
Men aged 15-64 years (percentages)

	Employment/population ratio					Labour force participation rate					Unemployment rate							
	1994	2004	2005	2006	2007	2008	1994	2004	2005	2006	2007	2008	1994	2004	2005	2006	2007	2008
Australia	75.0	77.6	78.5	78.8	79.6	79.6	83.5	82.0	82.6	82.8	83.0	83.0	10.2	5.4	5.0	4.8	4.1	4.0
Austria	78.0	74.9	75.4	76.9	78.4	78.5	80.7	78.5	79.3	80.4	81.7	81.4	3.2	4.6	5.0	4.4	4.0	3.6
Belgium	66.5	67.9	67.7	67.0	68.2	68.3	72.0	72.7	73.1	72.7	73.2	72.7	7.7	6.7	7.4	7.8	6.7	6.1
Canada	73.0	76.7	76.7	76.8	77.2	77.2	82.0	82.9	82.5	82.2	82.5	82.7	11.0	7.6	7.1	6.6	6.4	6.7
Czech Republic	77.5	72.4	73.3	73.7	74.8	75.4	80.4	77.9	78.4	78.2	78.1	78.1	3.6	7.1	6.5	5.9	4.3	3.5
Denmark	77.6	79.9	80.1	80.6	81.3	82.4	83.7	84.2	83.6	83.4	84.0	84.6	7.3	5.1	4.2	3.4	3.3	2.6
Finland	62.6	70.0	70.5	71.8	72.4	74.7	76.3	76.7	76.8	77.5	77.4	79.4	17.9	8.7	8.2	7.3	6.5	5.9
France	66.1	68.7	68.6	68.4	68.6	69.2	74.1	74.7	74.6	74.4	74.2	74.3	10.8	8.0	8.1	8.1	7.5	6.9
Germany	74.0	70.8	71.4	72.8	74.7	75.9	79.8	79.2	80.6	81.4	81.8	82.1	7.2	10.7	11.5	10.5	8.6	7.5
Greece	72.2	74.0	74.5	74.6	74.9	75.4	77.0	79.1	79.2	79.1	78.9	79.2	6.2	6.5	5.9	5.7	5.0	4.8
Hungary	59.6	63.1	63.1	63.8	64.0	63.0	67.8	67.2	67.9	68.7	69.0	68.3	12.1	6.1	7.0	7.2	7.2	7.7
Iceland <sup>b</sup>	82.4	86.2	87.4	88.7	89.5	87.8	86.8	89.1	89.8	91.4	91.6	90.9	5.1	3.3	2.7	3.0	2.3	3.4
Ireland	64.8	75.1	76.2	77.4	77.4	75.6	76.2	79.1	80.0	81.2	81.4	80.7	15.0	5.0	4.7	4.7	4.9	6.3
Italy	67.8	69.7	69.7	70.5	70.7	70.3	74.2	74.5	74.4	74.6	74.4	74.4	8.6	6.4	6.3	5.5	5.0	5.6
Japan	81.9	80.0	80.4	81.0	81.7	81.6	84.4	84.2	84.4	84.8	85.2	85.2	2.9	5.1	4.7	4.4	4.1	4.3
Korea	76.3	75.2	75.0	74.6	74.7	74.4	78.6	78.3	78.2	77.7	77.6	77.3	2.9	4.0	4.1	4.0	3.8	3.7
Luxembourg	74.9	72.8	73.3	72.6	72.8	72.8	77.3	75.6	76.0	75.3	76.0	76.0	3.0	3.7	3.5	3.6	4.2	4.3
Mexico	82.9	81.0	80.2	81.6	80.9	80.7	86.4	83.7	83.1	84.2	83.7	83.5	4.1	3.2	3.5	3.1	3.3	3.4
Netherlands	74.9	79.3	78.9	79.9	81.0	81.9	79.6	83.3	82.9	83.0	83.6	84.2	5.9	4.8	4.8	3.8	3.1	2.8
New Zealand	76.2	80.8	81.5	82.1	82.1	81.0	83.4	83.8	84.4	85.1	85.0	84.5	8.6	3.6	3.5	3.6	3.4	4.1
Norway <sup>b</sup>	76.8	78.4	78.3	78.6	79.7	80.6	81.6	82.5	82.3	81.4	81.8	82.9	6.0	4.9	4.9	3.5	2.6	2.8
Poland	64.9	57.4	59.0	60.9	63.6	66.3	75.0	70.4	71.0	70.1	70.0	70.9	13.4	18.5	16.9	13.1	9.1	6.5
Portugal	73.5	74.1	73.4	73.9	73.9	74.0	78.4	79.0	79.0	79.5	79.4	79.5	6.3	6.2	7.1	7.0	7.0	6.9
Slovak Republic	67.2	63.2	64.6	67.0	68.4	70.0	77.6	76.5	76.4	76.3	75.8	76.4	13.3	17.4	15.4	12.2	9.8	8.4
Spain <sup>b</sup>	63.3	74.9	76.4	77.3	77.4	74.6	78.5	81.6	82.2	82.5	82.7	83.0	19.4	8.2	7.1	6.4	6.4	10.1
Sweden <sup>b</sup>	72.2	75.0	75.9	76.8	78.0	78.1	81.3	80.7	82.5	82.6	82.9	83.1	11.1	7.0	7.9	7.0	5.9	5.9
Switzerland	86.3	84.5	83.9	84.7	85.6	85.4	89.5	88.0	87.4	87.8	88.2	88.0	3.6	4.0	4.0	3.5	3.0	2.9
Turkey	74.6	67.9	68.2	68.0	66.8	66.6	82.0	76.1	76.2	75.5	74.4	74.8	9.0	10.8	10.5	9.9	10.2	11.0
United Kingdom <sup>b</sup>	75.3	78.9	78.8	78.4	78.4	78.5	85.1	83.1	83.0	83.2	83.1	83.4	11.5	5.0	5.1	5.8	5.6	5.8
United States <sup>b</sup>	79.0	77.2	77.6	78.1	77.8	76.4	84.3	81.9	81.8	81.9	81.7	81.4	6.2	5.7	5.1	4.7	4.8	6.2
EU15	70.5	72.8	73.1	73.7	74.4	74.4	78.4	78.7	79.1	79.4	79.5	79.7	10.0	7.5	7.6	7.2	6.4	6.6
EU19	69.9	71.1	71.6	72.3	73.1	73.4	77.9	77.7	78.1	78.3	78.3	78.6	10.2	8.4	8.4	7.7	6.6	6.6
OECD Europe	70.7	71.0	71.4	71.9	72.6	72.8	78.5	77.7	78.0	78.1	78.0	78.3	9.9	8.6	8.5	7.8	7.0	7.0
Total OECD	75.4	74.8	75.1	75.7	76.0	75.7	81.4	80.2	80.3	80.5	80.4	80.5	7.4	6.7	6.5	6.0	5.6	6.0

**Table B. Employment/population ratios, activity and unemployment rates<sup>a</sup> (cont.)**  
Women aged 15-64 years (percentages)

	Employment/population ratio					Labour force participation rate					Unemployment rate							
	1994	2004	2005	2006	2007	2008	1994	2004	2005	2006	2007	2008	1994	2004	2005	2006	2007	2008
Australia	56.9	63.0	64.6	65.5	66.1	66.7	62.8	66.7	68.2	68.9	69.5	69.9	9.5	5.6	5.3	5.0	4.8	4.6
Austria	58.9	60.7	62.0	63.5	64.4	65.8	61.3	64.2	65.6	67.0	67.8	68.6	4.0	5.4	5.5	5.3	5.1	4.2
Belgium	44.8	53.0	54.1	53.6	54.9	55.7	51.2	57.7	59.5	58.9	60.2	59.7	12.5	8.3	9.0	9.0	8.8	6.7
Canada	61.1	68.4	68.3	69.0	70.1	70.1	67.8	73.4	73.1	73.5	74.3	74.4	9.8	6.9	6.5	6.1	5.7	5.7
Czech Republic	61.0	56.0	56.3	56.8	57.3	57.6	64.4	62.2	62.4	62.3	61.5	61.0	5.2	10.0	9.8	8.9	6.8	5.7
Denmark	67.1	72.0	70.8	73.2	73.3	74.4	73.8	76.1	75.1	76.7	76.4	77.3	9.0	5.5	5.6	4.6	4.1	3.7
Finland	58.7	65.5	66.5	67.3	68.5	69.0	69.1	72.0	72.9	73.2	73.9	74.0	14.9	9.0	8.7	8.1	7.3	6.8
France	50.8	57.7	58.0	58.2	59.4	60.1	59.3	64.0	64.3	64.5	65.0	65.2	14.4	9.9	9.8	9.7	8.6	7.9
Germany	54.7	59.2	59.6	61.4	63.2	64.3	60.9	65.8	66.9	68.5	69.4	69.7	10.1	10.1	11.0	10.3	8.9	7.7
Greece	37.1	45.5	46.2	47.5	48.1	49.0	43.2	54.1	54.6	55.0	55.1	55.1	14.0	16.0	15.3	13.5	12.8	11.1
Hungary	47.8	50.7	51.0	51.2	50.9	50.6	52.7	54.0	55.1	55.5	55.1	55.0	9.3	6.1	7.5	7.9	7.7	8.1
Iceland <sup>d</sup>	74.6	79.4	81.2	81.6	81.7	80.3	79.1	81.8	83.4	84.2	83.6	82.5	5.7	3.0	2.7	3.1	2.4	2.6
Ireland	38.9	55.6	57.9	58.7	60.3	60.5	45.8	57.8	60.2	61.3	63.0	63.0	15.2	3.8	3.9	4.2	4.3	3.9
Italy	35.4	45.2	45.3	46.3	46.6	47.2	41.9	50.6	50.4	50.8	50.7	51.6	15.5	10.6	10.1	8.8	7.9	8.6
Japan	56.5	57.4	58.1	58.8	59.5	59.7	58.3	60.2	60.8	61.3	61.9	62.2	3.1	4.7	4.4	4.1	3.9	4.0
Korea	49.8	52.2	52.5	53.1	53.2	53.2	50.8	54.1	54.5	54.8	54.8	54.7	2.0	3.5	3.6	3.1	2.8	2.8
Luxembourg	44.9	51.9	53.7	54.6	54.5	55.8	47.0	55.8	57.0	58.2	56.5	59.4	4.3	7.1	5.8	6.3	3.5	6.1
Mexico	36.2	40.9	41.6	42.9	43.6	41.4	38.1	43.0	43.2	44.5	45.3	43.3	4.9	4.8	3.7	3.6	3.8	4.3
Netherlands	52.6	64.1	64.8	66.4	68.5	70.2	57.3	67.7	68.6	69.6	71.4	72.6	8.1	5.2	5.5	4.6	4.0	3.2
New Zealand	59.9	66.5	68.0	68.4	69.0	69.0	64.9	69.6	70.8	71.4	71.8	72.0	7.7	4.5	4.1	4.1	3.9	4.2
Norway <sup>b</sup>	67.5	72.7	72.0	72.3	74.0	75.4	70.9	75.7	75.4	74.8	75.9	77.4	4.8	3.9	4.4	3.4	2.5	2.5
Poland	51.9	46.4	47.0	48.2	50.6	52.4	62.1	58.2	58.3	56.8	56.5	57.0	16.4	20.2	19.4	15.1	10.4	8.0
Portugal	55.0	61.7	61.7	62.0	61.9	62.5	60.0	67.0	67.9	68.4	68.8	68.9	8.3	8.0	9.2	9.5	10.1	9.4
Slovak Republic	52.6	50.9	50.9	51.9	53.0	54.6	61.2	62.9	61.5	60.9	60.7	61.4	14.1	19.1	17.2	14.7	12.6	11.1
Spain <sup>b</sup>	31.5	49.0	51.9	54.0	55.5	55.7	46.3	57.7	59.1	61.1	62.3	64.1	31.8	15.1	12.2	11.6	10.9	13.1
Sweden <sup>b</sup>	70.7	71.8	71.8	72.1	73.2	73.2	77.0	76.6	77.7	77.7	78.2	78.2	8.2	6.2	7.6	7.2	6.4	6.4
Switzerland	64.9	70.3	70.4	71.1	71.6	73.5	68.0	73.9	74.3	74.7	75.0	76.6	4.4	4.8	5.2	4.8	4.6	4.0
Turkey	30.4	24.3	23.7	23.8	22.8	23.5	33.2	27.0	26.5	26.7	25.7	26.7	8.3	10.0	10.6	10.6	11.3	11.9
United Kingdom <sup>b</sup>	62.1	66.6	66.7	66.8	66.3	66.9	67.1	69.6	69.6	70.3	69.8	70.2	7.4	4.3	4.2	5.0	4.9	4.8
United States <sup>b</sup>	65.2	65.4	65.6	66.1	65.9	65.5	69.4	69.2	69.2	69.3	69.1	69.3	6.1	5.5	5.2	4.7	4.6	5.5
EU15	49.3	57.0	57.7	58.7	59.6	60.4	56.5	62.8	63.4	64.3	64.7	65.3	12.7	9.1	9.0	8.6	7.9	7.6
EU19	49.9	55.8	56.4	57.5	58.5	59.3	57.2	62.1	62.7	63.3	63.6	64.2	12.8	10.1	10.0	9.2	8.1	7.7
OECD Europe	48.0	52.1	52.5	53.3	54.2	55.0	54.8	57.8	58.2	58.7	59.0	59.7	12.3	9.9	9.9	9.2	8.2	7.8
Total OECD	52.9	55.7	56.1	56.9	57.5	57.5	57.8	60.1	60.4	60.8	61.1	61.3	8.4	7.3	7.0	6.5	6.0	6.2

Aggregates are computed using country weights.

a) Ratios refer to persons aged 15 to 64 years who are in employment or in the labour force divided by the working age population, or in unemployment divided by the labour force.

b) Refers to persons aged 16 to 64. For Norway up to 2005.

Source: OECD database on Labour Force Statistics (see URLs at the beginning of the annex). For Belgium, Denmark, Greece and Luxembourg data are from the European Union Labour Force Survey. <http://dx.doi.org/10.1787/708072701475>

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						
	1994	2005	2006	2007	2008	1994	2005	2006	2007	2008	1994	2005	2006	2007	2008
Australia	17.1	10.7	10.0	9.4	8.9	7.6	3.9	3.7	3.4	3.4	9.5	3.4	3.2	2.7	2.6
Labour force participation rates	70.7	70.8	70.9	70.8	70.6	79.7	81.9	82.3	82.8	83.1	44.8	55.4	57.3	58.2	58.9
Employment/population ratios	58.6	63.3	63.7	64.1	64.3	73.6	78.8	79.2	80.0	80.3	40.5	53.5	55.5	56.6	57.4
Austria	5.0	10.3	9.1	8.7	8.1	3.3	4.4	4.1	3.8	3.3	3.4	3.6	3.5	3.0	2.1
Labour force participation rates	62.3	59.2	59.4	60.8	60.8	82.5	86.4	87.1	87.4	87.3	29.4	33.0	36.8	39.8	41.9
Employment/population ratios	59.2	53.1	54.0	55.5	55.9	79.8	82.6	83.5	84.0	84.4	28.4	31.8	35.5	38.6	41.0
Belgium	21.8	19.9	18.9	19.2	14.3	8.4	7.2	7.5	6.8	5.8	4.9	4.4	5.4	3.8	3.8
Labour force participation rates	35.2	33.2	32.3	33.1	31.4	79.9	84.4	84.5	85.1	85.5	23.5	33.5	32.2	35.2	34.1
Employment/population ratios	27.5	26.6	26.2	26.8	26.9	73.1	78.3	78.2	79.3	80.5	22.4	32.1	30.4	33.8	32.8
Canada	15.9	12.4	11.6	11.2	11.6	9.4	5.8	5.3	5.1	5.1	9.2	5.4	5.2	5.0	5.5
Labour force participation rates	63.9	65.9	66.4	67.0	67.4	83.3	86.3	86.2	86.6	86.7	48.1	57.9	58.7	60.1	60.8
Employment/population ratios	53.8	57.8	58.7	59.5	59.6	75.5	81.3	81.6	82.2	82.3	43.6	54.8	55.6	57.1	57.5
Czech Republic	8.7	19.3	17.5	10.7	9.9	3.4	7.1	6.4	4.9	4.0	3.5	5.2	5.3	4.6	3.9
Labour force participation rates	52.0	33.9	33.5	31.9	31.1	89.3	88.3	88.1	87.8	87.3	33.5	47.0	47.7	48.2	49.5
Employment/population ratios	47.5	27.3	27.7	28.5	28.1	86.3	82.0	82.5	83.5	83.8	32.3	44.6	45.2	46.0	47.6
Denmark	10.2	7.9	7.6	7.2	7.2	7.8	4.2	3.3	2.7	2.3	6.5	4.9	3.7	4.2	2.6
Labour force participation rates	69.1	67.2	69.0	72.6	73.8	87.2	87.7	88.4	88.5	89.9	53.7	62.9	63.2	61.3	59.2
Employment/population ratios	62.1	62.0	63.7	67.4	68.5	80.5	83.9	85.5	86.1	87.9	50.2	59.8	60.9	58.7	57.7
Finland	31.2	18.9	17.6	15.7	14.8	14.1	6.9	6.1	5.3	4.8	19.0	6.9	6.7	6.5	5.5
Labour force participation rates	46.3	51.9	53.6	55.0	58.3	87.1	87.8	87.8	88.0	88.6	41.3	56.4	58.4	58.8	59.7
Employment/population ratios	31.9	42.1	44.1	46.4	49.6	74.9	81.7	82.5	83.3	84.4	33.5	52.6	54.5	55.0	56.4
France	27.5	20.2	21.3	18.7	18.1	11.2	7.8	7.6	6.9	6.3	7.0	5.2	5.7	5.1	4.6
Labour force participation rates	30.4	36.7	36.7	37.0	37.5	85.9	87.6	87.8	88.2	88.8	35.9	40.9	40.5	40.4	40.1
Employment/population ratios	22.0	29.3	28.9	30.1	30.7	76.3	80.7	81.2	82.1	83.2	33.4	38.7	38.1	38.3	38.2
Germany	8.2	15.2	13.6	11.7	10.4	8.1	10.4	9.6	8.0	7.0	11.6	12.7	12.4	10.3	8.5
Labour force participation rates	56.0	50.2	50.9	52.0	52.7	82.9	86.4	87.1	87.2	87.0	40.6	52.1	54.9	57.2	58.7
Employment/population ratios	51.4	42.6	44.0	45.9	47.2	76.2	77.4	78.8	80.3	81.0	35.9	45.5	48.1	51.3	53.8
Greece	27.7	25.3	24.5	22.0	20.6	7.0	8.9	8.0	7.6	6.8	3.1	3.4	3.6	3.4	3.1
Labour force participation rates	36.9	33.9	32.5	31.0	30.3	73.7	81.6	81.9	82.0	82.1	40.7	43.1	44.0	43.6	44.3
Employment/population ratios	26.7	25.3	24.5	24.2	24.0	68.6	74.3	75.3	75.7	76.6	39.5	41.6	42.4	42.1	42.9
Hungary	20.9	19.4	19.1	18.0	19.9	9.3	6.4	6.8	6.8	7.1	7.0	3.9	3.9	4.2	5.0
Labour force participation rates	39.0	27.1	26.8	25.6	25.0	79.0	78.8	79.6	80.0	80.1	18.3	34.3	34.9	34.5	33.1
Employment/population ratios	30.8	21.8	21.7	21.0	20.0	71.7	73.7	74.2	74.6	74.4	17.0	33.0	33.6	33.1	31.4

**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			
	1994		2005		2006		2007		2008		1994		2005		2006		2007		2008	
	1994	2005	2006	2007	2008	1994	2005	2006	2007	2008	1994	2005	2006	2007	2008	1994	2005	2006	2007	2008
Iceland <sup>a</sup>	11.5	7.2	8.4	7.2	8.2	4.2	1.7	1.9	1.3	2.0	3.8	1.5	1.6	0.9	1.6	3.8	1.5	1.6	0.9	1.6
Labour force participation rates	58.5	77.1	79.5	80.1	78.6	91.3	89.7	90.9	90.6	89.9	88.1	86.1	86.3	85.7	84.7	88.1	86.1	86.3	85.7	84.7
Employment/population ratios	51.7	71.6	72.9	74.3	72.1	87.5	88.2	89.1	89.4	88.1	84.7	84.8	84.9	84.9	83.3	84.7	84.8	84.9	84.9	83.3
Unemployment rates	24.2	8.3	8.3	8.7	10.5	13.4	3.7	3.9	4.1	4.6	8.5	3.0	2.4	2.6	3.0	8.5	3.0	2.4	2.6	3.0
Labour force participation rates	44.2	50.6	52.8	53.4	51.6	72.4	80.8	81.3	82.1	81.8	43.2	53.3	54.7	55.5	55.6	43.2	53.3	54.7	55.5	55.6
Employment/population ratios	33.5	46.4	48.4	48.8	46.1	62.7	77.8	78.2	78.8	78.0	39.5	51.7	53.4	54.1	53.9	39.5	51.7	53.4	54.1	53.9
Unemployment rates	30.5	24.0	21.6	20.3	21.3	8.2	6.7	5.9	5.3	6.0	3.4	3.5	2.9	2.4	3.1	3.4	3.5	2.9	2.4	3.1
Labour force participation rates	40.7	33.5	32.5	30.9	30.9	71.7	77.4	77.8	77.6	78.1	30.4	32.6	33.4	34.6	35.5	30.4	32.6	33.4	34.6	35.5
Employment/population ratios	28.3	25.5	25.5	24.7	24.4	65.8	72.2	73.3	73.5	73.5	29.4	31.4	32.5	33.8	34.4	29.4	31.4	32.5	33.8	34.4
Unemployment rates	5.5	8.6	8.0	7.7	7.2	2.4	4.2	3.9	3.7	3.9	3.5	4.1	3.9	3.4	3.6	3.5	4.1	3.9	3.4	3.6
Labour force participation rates	47.6	44.8	45.0	44.9	44.6	81.4	82.5	82.8	83.3	83.4	66.1	66.6	67.3	68.4	68.8	66.1	66.6	67.3	68.4	68.8
Employment/population ratios	45.0	40.9	41.4	41.4	41.4	79.5	79.0	79.6	80.2	80.2	63.7	63.9	64.7	66.1	66.3	63.7	63.9	64.7	66.1	66.3
Unemployment rates	7.2	10.2	10.0	8.8	9.3	1.9	3.4	3.2	3.1	3.0	0.6	2.5	2.3	2.2	2.0	0.6	2.5	2.3	2.2	2.0
Labour force participation rates	37.2	33.3	30.2	28.2	26.3	75.1	76.0	76.3	76.4	76.6	63.3	60.2	60.7	62.0	61.8	63.3	60.2	60.7	62.0	61.8
Employment/population ratios	34.5	29.9	27.2	25.7	23.8	73.6	73.4	73.9	74.0	74.2	62.9	58.7	59.3	60.6	60.6	62.9	58.7	59.3	60.6	60.6
Unemployment rates	7.9	13.7	16.2	14.9	13.5	3.0	3.9	4.1	3.4	4.7	0.7	2.1	1.4	0.3	0.9	0.7	2.1	1.4	0.3	0.9
Labour force participation rates	46.5	28.8	27.8	26.3	30.3	75.8	83.9	84.5	83.7	84.1	23.3	32.4	33.6	33.5	38.6	23.3	32.4	33.6	33.5	38.6
Employment/population ratios	42.8	24.9	23.3	22.4	26.2	73.5	80.7	81.0	80.9	80.2	23.2	31.7	33.2	33.4	38.3	23.2	31.7	33.2	33.4	38.3
Unemployment rates	7.1	6.6	6.2	6.7	6.5	3.3	2.8	2.5	2.7	2.9	1.9	2.1	1.7	1.6	2.2	1.9	2.1	1.7	1.6	2.2
Labour force participation rates	54.1	46.8	47.8	47.4	52.0	67.2	70.7	71.7	72.3	69.6	53.5	53.7	55.9	55.6	48.1	53.5	53.7	55.9	55.6	48.1
Employment/population ratios	50.3	43.7	44.8	44.2	48.6	65.0	68.8	69.9	70.3	67.5	52.4	52.6	55.0	54.7	47.1	52.4	52.6	55.0	54.7	47.1
Unemployment rates	10.2	8.8	6.9	6.3	5.6	6.3	4.4	3.5	2.7	2.2	3.5	4.7	4.4	4.2	3.7	3.5	4.7	4.4	4.2	3.7
Labour force participation rates	61.7	70.4	70.5	72.8	73.3	78.7	85.5	86.2	86.8	87.7	30.0	46.1	47.7	50.4	52.7	30.0	46.1	47.7	50.4	52.7
Employment/population ratios	55.4	64.2	65.7	68.2	69.2	73.7	81.8	83.1	84.5	85.7	29.0	44.0	45.6	48.3	50.7	29.0	44.0	45.6	48.3	50.7
Unemployment rates	15.0	9.4	9.6	9.7	11.0	6.6	2.7	2.6	2.5	2.8	4.7	1.9	2.0	1.4	2.0	4.7	1.9	2.0	1.4	2.0
Labour force participation rates	66.5	62.8	65.0	65.0	63.5	81.5	84.2	84.3	84.3	84.6	49.7	71.0	71.8	73.1	73.3	49.7	71.0	71.8	73.1	73.3
Employment/population ratios	56.5	56.9	58.8	58.7	56.5	76.2	82.0	82.1	82.2	82.2	47.3	69.7	70.4	72.0	71.9	47.3	69.7	70.4	72.0	71.9
Unemployment rates	12.6	12.0	8.6	7.3	7.5	4.5	4.0	2.9	1.9	2.0	2.6	1.7	1.1	1.0	1.0	2.6	1.7	1.1	1.0	1.0
Labour force participation rates	55.4	60.2	58.1	59.4	62.7	85.1	86.6	87.0	87.5	88.5	63.3	68.8	68.2	69.7	70.0	63.3	68.8	68.2	69.7	70.0
Employment/population ratios	48.4	52.9	53.1	55.1	58.0	81.3	83.2	84.4	85.8	86.8	61.6	67.6	67.4	69.0	69.3	61.6	67.6	67.4	69.0	69.3
Unemployment rates	32.6	37.8	29.8	21.7	17.3	12.8	16.0	12.2	8.4	6.1	7.0	11.2	8.5	6.8	5.3	7.0	11.2	8.5	6.8	5.3
Labour force participation rates	41.5	33.5	34.2	33.0	33.1	84.7	82.8	81.7	81.7	82.5	37.0	32.8	30.7	31.8	33.3	37.0	32.8	30.7	31.8	33.3
Employment/population ratios	28.0	20.9	24.0	25.8	27.3	73.8	69.5	71.8	74.9	77.5	34.4	29.1	28.1	29.7	31.6	34.4	29.1	28.1	29.7	31.6



**Table C. Employment/population ratios, activity and unemployment rates by selected age groups (cont.)**  
Both sexes (percentages)

	55 to 64														
	15 to 24				25 to 54				55 to 64						
	1994	2005	2006	2007	2008	1994	2005	2006	2007	2008	1994	2005	2006	2007	2008
Portugal	14.1	16.1	16.2	16.6	16.4	6.0	7.3	7.3	7.8	7.3	4.0	6.2	6.3	6.5	6.6
Labour force participation rates	47.2	43.0	42.7	41.9	41.6	83.8	87.1	87.7	87.8	88.0	47.9	53.8	53.4	54.4	54.4
Employment/population ratios	40.5	36.1	35.8	34.9	34.7	78.7	80.8	81.3	81.0	81.6	45.9	50.5	50.1	50.9	50.8
Slovak Republic	27.3	29.9	26.6	20.1	18.9	11.0	14.4	11.8	10.1	8.8	9.0	13.3	9.7	8.1	6.5
Labour force participation rates	47.3	36.5	35.1	34.5	32.3	88.0	87.9	87.5	86.8	87.8	23.5	35.1	36.8	38.8	42.0
Employment/population ratios	34.4	25.6	25.7	27.6	26.2	78.4	75.3	77.2	78.0	80.1	21.3	30.4	33.2	35.7	39.3
Spain <sup>a</sup>	49.4	19.7	17.9	18.2	24.6	20.9	8.0	7.5	7.2	10.2	12.4	6.1	5.7	5.9	7.3
Labour force participation rates	42.9	52.1	52.7	52.4	52.5	73.9	80.9	82.0	82.8	83.8	37.3	45.9	46.8	47.4	49.2
Employment/population ratios	28.3	41.9	43.3	42.9	39.5	58.4	74.4	75.8	76.8	75.3	32.7	43.1	44.1	44.6	45.6
Sweden <sup>a</sup>	22.7	22.3	21.3	18.9	19.4	8.1	6.2	5.3	4.4	4.3	6.9	4.5	4.4	3.9	3.8
Labour force participation rates	53.5	54.7	56.0	57.1	56.9	89.2	89.5	89.4	90.0	90.4	66.5	72.8	73.0	73.0	73.0
Employment/population ratios	41.3	42.5	44.0	46.3	45.9	81.9	83.9	84.7	86.1	86.5	61.9	69.6	69.8	70.1	70.3
Switzerland	5.8	8.8	7.7	7.1	7.0	3.6	3.8	3.5	3.1	2.9	4.1	3.7	3.0	3.1	2.6
Labour force participation rates	64.0	65.6	68.6	67.4	67.1	86.2	88.5	88.3	88.9	89.8	63.7	67.6	67.8	69.3	70.2
Employment/population ratios	60.3	59.9	63.3	62.6	62.4	83.2	85.1	85.2	86.1	87.2	61.1	65.1	65.7	67.2	68.4
Turkey	16.0	19.3	18.7	20.0	20.5	6.2	8.7	8.4	8.5	9.4	2.3	3.4	3.8	4.3	5.1
Labour force participation rates	51.2	38.7	37.9	37.7	38.1	63.7	59.3	59.2	58.2	59.0	41.8	31.9	31.3	28.3	28.9
Employment/population ratios	43.0	31.2	30.8	30.2	30.3	59.8	54.1	54.2	53.2	53.5	40.8	30.8	30.1	27.1	27.4
United Kingdom <sup>a</sup>	16.1	12.2	13.9	14.4	14.1	8.2	3.4	4.1	3.7	3.9	9.1	2.6	2.9	3.3	2.8
Labour force participation rates	70.1	66.7	66.6	65.3	65.6	83.4	84.0	84.6	84.5	84.9	52.1	58.2	59.1	59.3	59.9
Employment/population ratios	58.8	58.6	57.3	55.9	56.4	76.5	81.1	81.2	81.3	81.6	47.4	56.7	57.4	57.4	58.2
United States <sup>a</sup>	12.5	11.3	10.5	10.5	12.8	5.0	4.1	3.8	3.7	4.8	4.1	3.3	3.0	3.1	3.7
Labour force participation rates	66.4	60.8	60.6	59.4	58.8	83.4	82.8	82.9	83.0	83.1	56.8	62.9	63.7	63.8	64.5
Employment/population ratios	58.1	53.9	54.2	53.1	51.2	79.2	79.3	79.8	79.9	79.1	54.4	60.8	61.8	61.8	62.1
EU15	20.8	16.4	15.8	14.8	14.9	9.7	7.2	6.8	6.1	6.2	8.4	6.3	6.3	5.7	5.2
Labour force participation rates	49.2	48.5	48.7	48.8	49.2	80.5	84.0	84.6	84.7	85.1	39.4	47.1	48.2	49.1	49.9
Employment/population ratios	39.0	40.5	41.0	41.6	41.9	72.7	77.9	78.8	79.6	79.9	36.1	44.1	45.2	46.4	47.3
EU19	21.4	18.3	17.1	15.3	15.1	9.8	8.0	7.3	6.3	6.2	8.2	6.6	6.3	5.7	5.2
Labour force participation rates	48.3	45.9	46.0	46.0	46.3	81.1	83.9	84.3	84.5	84.9	38.4	45.6	46.4	47.3	48.0
Employment/population ratios	38.0	37.5	38.1	38.9	39.3	73.1	77.2	78.1	79.1	79.6	35.3	42.6	43.4	44.6	45.5
OECD Europe	20.1	18.2	17.1	15.7	15.6	9.4	8.0	7.3	6.4	6.4	7.6	6.3	6.0	5.5	5.0
Labour force participation rates	49.1	45.0	45.0	44.9	45.4	79.4	80.7	81.0	81.2	81.7	39.2	45.1	45.7	46.3	47.0
Employment/population ratios	39.2	36.8	37.3	37.9	38.3	72.0	74.3	75.1	76.0	76.4	36.2	42.3	43.0	43.8	44.7
Total OECD	14.3	13.3	12.4	11.9	12.4	6.7	5.8	5.4	4.9	5.2	5.4	4.6	4.3	4.0	4.1
Labour force participation rates	53.3	49.7	49.7	49.4	49.9	79.8	80.6	80.9	81.1	81.1	48.7	54.3	55.2	55.7	55.9
Employment/population ratios	45.7	43.1	43.6	43.5	43.7	74.5	75.9	76.6	77.1	76.9	46.1	51.9	52.8	53.5	53.6

Table C. Employment/population ratios, activity and unemployment rates by selected age groups (cont.)

		Men (percentages)					55 to 64									
		15 to 24			25 to 54											
		1994	2005	2006	2007	2008	1994	2005	2006	2007	2008	1994	2005	2006	2007	2008
Australia	Unemployment rates	17.7	10.9	10.5	9.5	9.1	7.8	3.7	3.4	2.9	2.9	11.4	3.7	3.6	2.8	3.0
	Labour force participation rates	73.0	72.0	72.1	71.8	71.7	91.6	90.3	90.3	90.8	90.9	61.7	66.2	67.3	67.7	67.7
	Employment/population ratios	60.1	64.2	64.5	65.0	65.2	84.4	87.0	87.2	88.1	88.3	54.7	63.8	64.9	65.8	65.7
	Unemployment rates	4.7	10.7	8.8	8.3	7.9	2.9	4.0	3.6	3.3	3.1	3.8	4.1	4.3	2.9	1.8
Austria	Labour force participation rates	65.3	63.6	63.9	65.0	64.6	93.1	92.8	93.2	93.7	93.0	41.3	43.1	47.3	51.3	52.8
	Employment/population ratios	62.3	56.8	58.2	59.6	59.5	90.4	89.1	89.9	90.6	90.2	39.8	41.3	45.3	49.8	51.8
	Unemployment rates	20.5	20.6	18.4	16.2	14.8	6.4	6.3	7.0	6.2	5.4	4.5	4.4	4.7	2.8	3.5
	Labour force participation rates	37.3	34.8	35.9	35.2	34.4	92.1	91.8	91.9	92.6	92.2	34.5	43.2	40.1	42.2	42.8
Canada	Employment/population ratios	29.7	27.6	29.3	29.5	29.3	86.2	86.0	85.4	86.8	87.2	33.0	41.3	38.3	41.0	41.3
	Unemployment rates	17.9	14.2	12.9	12.3	13.1	9.6	5.8	5.4	5.3	5.4	9.7	5.4	5.3	5.2	5.8
	Labour force participation rates	65.9	66.1	66.5	67.4	67.8	91.2	91.5	91.1	91.1	91.5	59.5	66.7	66.3	67.1	67.2
	Employment/population ratios	54.1	56.7	57.9	59.1	58.9	82.5	86.1	86.2	86.2	86.6	53.7	63.1	62.8	63.6	63.3
Czech Republic	Unemployment rates	7.9	19.4	16.6	10.6	9.8	2.5	5.3	4.7	3.5	2.8	3.5	4.5	5.1	4.5	3.5
	Labour force participation rates	59.9	38.7	37.7	36.7	35.9	95.3	94.8	94.8	95.0	94.8	49.0	62.2	62.7	62.4	64.2
	Employment/population ratios	55.2	31.2	31.4	32.8	32.3	92.9	89.8	90.4	91.7	92.1	47.3	59.4	59.5	59.6	61.9
	Unemployment rates	10.2	6.1	7.6	7.5	6.1	6.7	3.7	2.6	2.3	1.8	6.3	4.8	3.4	3.5	2.5
Denmark	Labour force participation rates	72.1	70.6	68.2	73.8	74.2	91.9	91.1	91.6	92.3	93.4	63.8	70.2	70.5	66.9	65.8
	Employment/population ratios	64.8	66.3	63.0	68.3	69.7	85.7	87.7	89.2	90.2	91.8	59.8	66.8	68.1	64.6	64.2
	Unemployment rates	31.5	18.4	16.9	14.8	13.7	15.5	6.5	5.6	4.8	4.3	20.4	7.2	6.7	6.9	5.7
	Labour force participation rates	51.2	53.6	56.3	56.3	62.6	90.2	90.3	90.3	90.3	91.3	43.9	56.5	58.7	59.2	60.5
Finland	Employment/population ratios	35.1	43.7	46.7	47.9	54.0	76.2	84.4	85.2	85.9	87.3	35.0	52.5	54.8	55.1	57.0
	Unemployment rates	24.1	19.2	20.1	18.0	18.2	9.6	6.8	6.7	6.3	5.6	7.2	5.3	5.9	5.3	4.9
	Labour force participation rates	33.2	40.3	40.3	40.1	40.8	95.1	94.0	94.2	94.2	94.5	42.1	43.9	43.1	42.8	42.6
	Employment/population ratios	25.2	32.5	32.2	32.9	33.4	85.9	87.6	87.9	88.3	89.1	39.1	41.6	40.5	40.5	40.5
Germany	Unemployment rates	8.2	16.1	14.3	12.2	10.7	6.5	10.6	9.6	7.8	6.9	10.5	12.6	12.0	9.7	8.1
	Labour force participation rates	58.8	53.5	54.0	54.9	55.6	92.9	93.6	93.8	93.8	93.5	53.1	61.3	63.7	65.8	67.2
	Employment/population ratios	53.9	44.9	46.3	48.2	49.7	86.8	83.7	84.8	86.4	87.1	47.5	53.6	56.1	59.4	61.7
	Unemployment rates	19.8	17.5	17.3	14.1	15.1	4.8	5.2	4.9	4.6	4.2	3.3	3.1	3.2	2.9	2.9
Greece	Labour force participation rates	41.8	37.1	36.4	34.4	34.0	94.5	94.7	94.6	94.5	94.7	60.1	60.7	61.2	60.3	60.9
	Employment/population ratios	33.5	30.6	30.1	29.6	28.8	90.0	89.8	89.9	90.1	90.8	58.1	58.8	59.3	58.6	59.1
	Unemployment rates	24.6	19.7	18.6	17.6	19.1	10.2	6.0	6.4	6.5	6.9	6.8	4.3	4.0	4.5	5.0
	Labour force participation rates	42.7	30.3	30.1	29.3	28.6	86.9	85.5	86.5	86.9	87.0	28.4	42.4	43.2	43.6	40.5
Hungary	Employment/population ratios	32.2	24.4	24.5	24.2	23.2	78.0	80.3	81.0	81.3	81.0	26.5	40.6	41.4	41.7	38.5

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						
	1994	2005	2006	2007	2008	1994	2005	2006	2007	2008	1994	2005	2006	2007	2008
Iceland <sup>a</sup>	13.0	8.5	9.2	8.0	9.0	3.5	1.6	1.8	1.2	2.2	3.8	0.9	1.5	0.9	2.5
Labour force participation rates	57.9	75.2	77.6	80.0	77.4	96.1	94.3	95.8	95.3	95.0	95.9	90.1	90.6	90.4	90.9
Employment/population ratios	50.4	68.8	70.4	73.6	70.5	92.7	92.8	94.1	94.2	92.9	92.3	89.3	89.3	89.6	88.7
Unemployment rates	25.4	9.2	8.8	9.3	13.1	13.4	4.1	4.1	4.3	5.5	8.6	3.1	2.6	2.7	3.6
Labour force participation rates	48.7	53.4	57.2	56.9	54.2	91.3	92.1	92.2	91.8	91.6	64.9	67.8	68.4	70.0	68.4
Employment/population ratios	36.3	48.5	52.2	51.6	47.1	79.0	88.3	88.4	87.9	86.5	59.3	65.7	66.6	68.1	66.0
Unemployment rates	26.9	21.5	19.1	18.2	18.9	6.1	5.1	4.5	4.0	4.7	3.4	3.6	2.8	2.6	3.2
Labour force participation rates	46.9	38.1	37.8	36.1	35.9	90.8	91.2	91.3	91.0	91.0	48.1	44.3	45.0	46.3	47.0
Employment/population ratios	34.5	29.9	30.6	29.6	29.1	85.3	86.6	87.2	87.3	86.7	46.5	42.7	43.7	45.1	45.5
Unemployment rates	5.6	9.9	8.8	8.3	7.9	2.0	4.0	3.9	3.6	3.8	4.5	5.0	4.5	4.1	4.3
Labour force participation rates	48.0	44.5	44.7	45.1	44.5	97.5	96.0	96.1	96.3	96.3	85.0	83.1	83.8	84.9	85.1
Employment/population ratios	45.4	40.1	40.8	41.3	41.0	95.5	92.1	92.4	92.8	92.6	81.2	78.9	80.0	81.5	81.4
Unemployment rates	9.2	12.2	11.7	11.4	11.5	2.5	3.7	3.6	3.6	3.5	0.9	3.1	3.0	2.7	2.6
Labour force participation rates	31.8	26.7	24.3	23.1	21.0	94.6	91.3	90.8	90.5	90.5	79.2	74.5	74.9	76.8	76.3
Employment/population ratios	28.9	23.5	21.4	20.5	18.5	92.3	87.9	87.5	87.3	87.3	78.5	72.2	72.6	74.7	74.3
Unemployment rates	8.5	11.7	17.0	17.3	14.3	2.5	2.9	2.7	3.3	3.7	0.4	2.9	0.5	0.5	0.8
Labour force participation rates	47.9	32.1	30.6	35.5	35.1	94.9	95.5	95.3	94.5	93.9	33.6	39.4	38.9	39.7	44.5
Employment/population ratios	43.8	28.4	25.4	29.4	30.1	92.6	92.8	92.7	91.4	90.5	33.5	38.3	38.7	39.5	44.2
Unemployment rates	6.5	6.1	5.4	6.2	6.2	3.2	2.8	2.5	2.5	2.6	2.0	2.5	1.8	2.0	2.2
Labour force participation rates	72.6	61.3	62.6	61.7	61.8	96.1	95.1	95.5	95.3	95.1	82.4	79.3	82.1	80.9	80.0
Employment/population ratios	67.9	57.6	59.2	57.8	57.9	93.0	92.5	93.1	92.9	92.5	80.7	77.3	80.6	79.2	78.2
Unemployment rates	10.9	8.6	6.5	5.9	5.7	5.2	4.0	3.1	2.1	1.9	2.7	4.9	4.6	4.5	4.0
Labour force participation rates	62.6	70.6	71.4	72.9	73.8	92.3	93.3	93.4	93.3	93.8	41.8	57.7	58.1	60.9	62.7
Employment/population ratios	55.8	64.5	66.8	68.6	69.6	87.5	89.6	90.5	91.3	92.0	40.7	54.8	55.4	58.2	60.2
Unemployment rates	15.6	9.1	9.3	9.6	11.4	7.0	2.4	2.4	2.2	2.6	5.4	1.8	1.8	1.5	2.3
Labour force participation rates	70.4	65.6	67.8	67.3	66.0	92.3	92.5	92.4	92.3	92.0	62.8	79.7	81.4	82.2	81.9
Employment/population ratios	59.4	59.6	61.5	60.8	58.5	85.8	90.3	90.2	90.3	89.6	59.4	78.3	79.9	81.0	80.1
Unemployment rates	13.1	12.5	8.6	7.9	8.2	5.0	4.2	3.1	1.9	2.0	3.1	2.1	1.3	1.1	1.1
Labour force participation rates	57.8	61.0	58.2	58.6	62.9	90.6	90.1	90.6	90.9	91.4	71.5	74.6	74.1	74.7	75.0
Employment/population ratios	50.2	53.3	53.2	54.0	57.7	86.0	86.3	87.8	89.2	89.5	69.3	73.1	73.2	73.9	74.2
Unemployment rates	30.8	36.7	28.3	20.0	15.2	11.3	14.5	11.2	7.8	5.4	7.5	12.6	9.8	7.4	5.8
Labour force participation rates	45.2	37.2	37.5	36.5	36.5	90.9	88.9	88.2	87.9	88.8	46.7	43.4	42.6	44.8	46.8
Employment/population ratios	31.3	23.6	26.9	29.2	31.0	80.6	76.0	78.3	81.1	84.0	43.2	37.9	38.4	41.4	44.1

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				
		1994	2005	2006	2007	2008	1994	2005	2006	2007	2008	1994	2005	2006	2007	2008
		Portugal	12.3	13.7	14.5	13.5	13.4	5.0	6.2	5.8	6.1	6.0	5.0	6.9	7.3	7.1
Labour force participation rates	51.6	46.9	46.6	45.3	44.4	93.6	92.5	92.9	92.8	93.2	63.6	62.4	62.7	63.0	63.0	
Employment/population ratios	45.2	40.5	39.8	39.2	38.5	88.9	86.7	87.4	87.2	87.6	60.4	58.1	58.2	58.6	58.5	
Unemployment rates	28.0	30.7	26.3	20.3	18.1	10.4	13.2	10.4	8.6	7.5	8.1	13.1	9.8	7.7	5.5	
Slovak Republic	52.7	40.6	39.3	38.7	37.7	95.0	93.8	93.8	93.0	93.4	40.9	55.1	55.3	56.9	60.0	
Labour force participation rates	38.0	28.1	29.0	30.9	30.8	85.1	81.4	84.1	85.0	86.4	37.6	47.9	49.9	52.6	56.7	
Employment/population ratios	37.4	16.7	15.0	15.2	23.7	16.4	5.9	5.4	5.4	8.9	13.3	5.4	4.8	4.9	6.4	
Unemployment rates	55.0	57.2	57.1	57.2	56.6	93.1	92.4	92.5	92.6	92.6	56.6	63.2	63.5	63.1	65.1	
Labour force participation rates	34.4	47.7	48.6	48.5	43.2	77.8	86.9	87.6	87.6	84.4	49.1	59.7	60.4	60.0	60.9	
Employment/population ratios	25.3	23.0	21.1	18.4	19.2	9.3	6.2	5.1	4.1	4.0	8.5	5.4	4.9	4.3	4.1	
Unemployment rates	53.5	53.9	55.2	56.5	56.7	91.3	92.4	92.5	92.9	93.1	70.5	76.4	76.2	76.4	76.7	
Labour force participation rates	40.0	41.5	43.5	46.1	45.9	82.8	86.6	87.7	89.0	89.4	64.5	72.2	72.4	73.1	73.6	
Employment/population ratios	5.4	8.5	7.9	6.8	6.7	3.1	3.2	2.7	2.3	2.2	4.6	3.7	2.8	2.6	2.5	
Unemployment rates	63.2	66.6	70.1	70.2	68.1	98.2	95.6	95.5	95.8	95.9	82.9	77.8	77.1	78.4	78.9	
Labour force participation rates	59.8	60.9	64.6	65.4	63.6	95.2	92.6	92.9	93.6	93.7	79.1	74.9	74.9	76.4	77.0	
Employment/population ratios	17.5	19.3	18.2	19.6	20.1	6.2	8.9	8.5	8.5	9.3	3.0	4.5	4.9	5.4	6.6	
Unemployment rates	67.2	52.9	52.0	51.6	51.7	93.7	89.4	88.6	88.1	88.5	59.5	47.4	46.3	42.9	43.8	
Labour force participation rates	55.5	42.7	42.6	41.5	41.3	87.9	81.4	81.1	80.7	80.2	57.7	45.3	44.0	40.5	40.9	
Employment/population ratios	19.2	13.7	15.8	16.0	16.0	9.7	3.6	4.2	3.7	4.1	11.6	3.3	3.3	4.1	3.4	
Unemployment rates	75.1	70.0	69.1	68.2	68.5	92.9	91.0	91.7	91.6	91.7	64.0	67.9	68.3	68.9	70.1	
Labour force participation rates	60.7	60.4	58.1	57.3	57.5	83.9	87.7	87.8	88.3	87.9	56.6	65.7	66.0	66.1	67.7	
Employment/population ratios	13.2	12.4	11.2	11.6	14.4	4.9	3.9	3.6	3.7	5.0	4.4	3.3	3.0	3.2	3.7	
Unemployment rates	70.3	62.9	63.3	61.5	61.0	91.7	90.5	90.6	90.9	90.5	65.5	69.3	69.6	69.6	70.4	
Labour force participation rates	61.0	55.2	56.2	54.4	52.3	87.2	86.9	87.3	87.5	86.0	62.6	67.0	67.5	67.4	67.7	
Employment/population ratios	19.8	16.0	15.5	14.4	15.1	8.5	6.4	6.0	5.4	5.6	8.7	6.4	6.1	5.5	5.2	
Unemployment rates	53.3	51.9	52.0	52.0	52.5	92.8	92.5	92.8	92.8	92.8	52.5	56.8	57.4	58.2	59.1	
Labour force participation rates	42.7	43.6	44.0	44.5	44.6	85.0	86.6	87.2	87.8	87.6	48.0	53.2	53.9	55.0	56.0	
Employment/population ratios	20.5	18.0	16.7	14.8	15.1	8.6	7.1	6.5	5.6	5.6	8.5	6.7	6.3	5.6	5.1	
Unemployment rates	52.5	49.4	49.4	49.3	49.7	92.6	92.1	92.3	92.3	92.4	51.3	55.6	56.1	57.0	57.8	
Labour force participation rates	41.7	40.5	41.1	42.0	42.2	84.6	85.6	86.3	87.2	87.3	47.0	51.9	52.6	53.8	54.9	
Employment/population ratios	19.6	18.0	16.7	15.4	15.7	8.2	7.3	6.7	5.8	5.9	7.9	6.4	6.1	5.5	5.1	
Unemployment rates	55.1	50.3	50.2	50.1	50.4	92.8	91.8	91.8	91.8	91.9	52.5	55.5	55.9	56.4	57.2	
Labour force participation rates	44.3	41.3	41.8	42.3	42.5	85.2	85.1	85.7	86.4	86.5	48.4	51.9	52.5	53.3	54.3	
Employment/population ratios	14.4	13.7	12.6	12.1	13.0	6.1	5.5	5.0	4.6	5.0	5.9	4.9	4.5	4.2	4.3	
Unemployment rates	59.0	54.2	54.4	53.9	53.9	93.3	92.1	92.2	92.2	92.2	62.7	65.6	66.1	66.6	67.0	
Labour force participation rates	50.6	46.8	47.6	47.4	46.9	87.6	87.1	87.5	88.0	87.5	59.0	62.4	63.1	63.8	64.1	
Employment/population ratios																

Table C. Employment/population ratios, activity and unemployment rates by selected age groups (cont.)

		Women (percentages)					55 to 64									
		15 to 24			25 to 54		55 to 64									
		1994	2005	2006	2007	2008	1994	2005	2006	2007	2008	1994	2005	2006	2007	2008
Australia	Unemployment rates	16.4	10.4	9.5	9.2	8.6	7.3	4.1	4.0	3.9	3.9	5.5	2.9	2.8	2.6	2.0
	Labour force participation rates	68.3	69.6	69.5	69.7	69.4	67.7	73.7	74.3	74.8	75.4	27.7	44.5	47.3	48.7	50.1
Austria	Employment/population ratios	57.1	62.3	62.9	63.3	63.4	62.8	70.6	71.3	71.9	72.5	26.2	43.2	46.0	47.4	49.1
	Unemployment rates	5.2	9.9	9.3	9.1	8.2	3.8	4.9	4.8	4.5	3.6	2.7	2.6	2.3	3.1	2.5
Belgium	Labour force participation rates	59.2	54.8	55.1	56.7	56.9	71.6	79.9	80.9	81.1	81.5	18.4	23.5	26.9	28.9	31.6
	Employment/population ratios	56.1	49.4	49.9	51.5	52.2	68.9	76.0	77.0	77.5	78.6	17.9	22.9	26.3	28.0	30.8
Canada	Unemployment rates	33.0	19.1	19.5	22.6	13.8	11.2	8.2	8.1	7.5	6.2	5.9	4.2	6.6	5.4	4.2
	Labour force participation rates	33.0	31.5	28.6	31.0	28.3	67.2	76.8	77.0	77.5	78.7	13.2	24.0	24.3	28.3	25.5
Czech Republic	Employment/population ratios	25.3	25.5	23.0	24.0	24.4	59.7	70.5	70.8	71.6	73.8	12.4	23.0	22.7	26.8	24.4
	Unemployment rates	13.7	10.6	10.3	10.0	10.0	9.0	5.7	5.2	4.7	4.8	8.4	5.3	5.1	4.9	5.1
Denmark	Labour force participation rates	61.9	65.8	66.4	66.5	67.0	75.4	81.1	81.3	82.1	82.0	36.9	49.4	51.4	53.3	54.6
	Employment/population ratios	53.4	58.8	59.5	59.8	60.3	68.6	76.5	77.1	78.2	78.0	33.8	46.8	48.7	50.7	51.8
Finland	Unemployment rates	9.8	19.1	18.6	11.0	9.9	4.4	9.3	8.3	6.7	5.4	3.7	6.3	5.6	4.8	4.6
	Labour force participation rates	43.7	28.8	29.1	26.9	26.1	83.2	81.6	81.3	80.3	79.6	20.0	33.1	34.0	35.2	36.1
France	Employment/population ratios	39.4	23.3	23.7	23.9	23.5	79.6	73.9	74.5	74.9	75.2	19.3	31.0	32.1	33.5	34.4
	Unemployment rates	10.2	9.8	7.6	6.8	8.4	9.0	4.9	4.1	3.2	2.8	6.7	5.1	4.0	5.2	2.7
Germany	Labour force participation rates	65.9	63.9	69.8	71.4	73.5	82.7	84.1	85.1	84.6	86.3	43.1	55.7	55.8	55.7	52.8
	Employment/population ratios	59.1	57.6	64.5	66.5	67.3	75.2	80.0	81.7	81.8	83.9	40.2	52.9	53.5	52.9	51.4
Greece	Unemployment rates	30.7	19.4	18.4	16.8	16.2	12.5	7.3	6.6	5.8	5.4	17.5	6.5	6.6	6.0	5.3
	Labour force participation rates	41.1	50.2	50.8	53.7	53.7	84.0	85.2	85.3	85.6	85.9	38.9	56.4	58.1	58.3	59.0
Hungary	Employment/population ratios	28.5	40.4	41.4	44.7	45.0	73.5	79.0	79.7	80.7	81.3	32.1	52.7	54.3	54.8	55.8
	Unemployment rates	31.7	21.5	22.9	19.6	18.0	13.1	8.9	8.5	7.7	7.1	6.6	5.2	5.6	4.9	4.4
Ireland	Labour force participation rates	27.6	33.0	33.0	33.8	34.1	76.7	81.3	81.7	82.4	83.2	30.1	37.9	38.0	38.0	37.7
	Employment/population ratios	18.8	25.9	25.4	27.2	28.0	66.7	74.0	74.7	76.1	77.3	28.1	36.0	35.9	36.2	36.0
Japan	Unemployment rates	8.3	14.0	12.6	11.1	10.0	10.1	10.2	9.5	8.1	7.2	13.5	13.0	13.0	11.2	8.9
	Labour force participation rates	53.0	46.7	47.6	49.0	49.5	72.6	79.1	80.3	80.6	80.5	28.3	43.2	46.3	48.9	50.6
Korea	Employment/population ratios	48.6	40.1	41.6	43.5	44.5	65.3	71.0	72.6	74.0	74.7	24.5	37.6	40.3	43.4	46.0
	Unemployment rates	36.9	34.7	33.9	32.1	27.7	10.7	14.2	12.3	11.8	10.4	2.6	4.0	4.4	4.4	3.6
Lithuania	Labour force participation rates	32.6	30.6	28.5	27.6	26.5	53.9	68.3	69.1	69.3	69.4	23.0	26.9	28.0	28.0	28.7
	Employment/population ratios	20.6	20.0	18.8	18.8	19.2	48.1	58.6	60.6	61.1	62.2	22.4	25.8	26.7	26.8	27.7
Netherlands	Unemployment rates	16.5	19.1	19.8	18.6	20.9	8.1	6.9	7.2	7.2	7.4	7.2	3.5	3.9	3.9	5.1
	Labour force participation rates	35.3	23.8	23.4	21.8	21.3	71.5	72.2	72.9	73.2	73.3	10.2	27.7	28.2	27.3	27.0
New Zealand	Employment/population ratios	29.5	19.3	18.8	17.8	16.8	65.7	67.2	67.6	67.9	67.9	9.4	26.8	27.1	26.2	25.7

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						
		1994	2005	2006	2007	2008	1994	2005	2006	2007	2008	1994	2005	2006	2007	2008
Iceland <sup>a</sup>	Unemployment rates	10.1	6.0	7.5	6.3	7.5	5.0	1.8	2.1	1.6	1.7	3.8	2.2	1.7	0.9	0.6
	Labour force participation rates	59.1	79.2	81.7	80.1	79.9	86.3	85.1	85.6	85.4	84.4	80.5	81.9	81.7	80.7	78.1
Ireland	Employment/population ratios	53.1	74.5	75.6	75.0	73.9	82.0	83.5	83.8	84.1	82.9	77.4	80.2	80.3	80.0	77.6
	Unemployment rates	22.5	7.2	7.7	7.9	7.6	13.4	3.2	3.6	3.7	3.4	8.1	2.7	2.1	2.5	2.1
Italy	Labour force participation rates	39.6	47.7	48.2	49.8	48.9	53.6	69.3	70.2	72.2	71.9	21.5	38.4	40.8	40.8	42.5
	Employment/population ratios	30.6	44.3	44.4	45.9	45.2	46.5	67.1	67.7	69.5	69.4	19.7	37.4	40.0	39.8	41.6
Japan	Unemployment rates	36.5	27.4	25.3	23.3	24.7	11.8	9.0	7.8	7.1	7.7	3.4	3.2	2.9	2.1	2.9
	Labour force participation rates	34.4	28.7	26.9	25.5	25.7	52.6	63.6	64.3	64.1	65.2	14.2	21.5	22.5	23.5	24.7
Korea	Employment/population ratios	21.8	20.8	20.1	19.5	19.4	46.3	57.9	59.3	59.6	60.2	13.7	20.8	21.9	23.0	24.0
	Unemployment rates	5.3	7.4	7.2	7.1	6.6	2.8	4.4	3.9	3.9	4.0	1.9	2.7	2.8	2.4	2.6
Luxembourg	Labour force participation rates	47.1	45.0	45.3	44.7	44.7	65.3	68.8	69.3	70.1	70.3	48.1	50.8	51.5	52.5	53.1
	Employment/population ratios	44.6	41.7	42.0	41.5	41.8	63.4	65.7	66.6	67.4	67.5	47.2	49.4	50.1	51.2	51.7
Mexico	Unemployment rates	6.0	9.0	9.0	7.1	8.0	1.0	2.9	2.5	2.4	2.4	0.2	1.6	1.2	1.4	1.1
	Labour force participation rates	41.8	39.0	35.5	32.7	31.1	54.8	60.4	61.5	62.0	62.3	49.5	46.5	47.0	47.6	47.9
Netherlands	Employment/population ratios	39.3	35.5	32.3	30.4	28.6	54.2	58.6	60.0	60.5	60.8	49.4	45.7	46.4	46.9	47.4
	Unemployment rates	7.2	16.2	15.2	9.7	12.5	3.9	5.3	5.8	3.5	6.0	1.2	0.9	2.5	0.0	1.2
New Zealand	Labour force participation rates	45.0	25.5	25.0	16.8	25.3	55.7	72.2	73.8	72.9	74.2	13.4	25.1	28.5	27.4	32.5
	Employment/population ratios	41.8	21.3	21.2	15.2	22.2	53.5	68.4	69.5	70.4	69.7	13.2	24.9	27.8	27.4	32.1
Norway <sup>a</sup>	Unemployment rates	8.3	7.4	7.4	7.5	6.8	3.5	2.8	2.6	3.1	3.4	1.6	1.1	1.3	0.6	1.8
	Labour force participation rates	35.8	33.3	34.3	34.1	42.7	41.3	50.0	51.3	52.6	47.4	25.8	30.7	32.2	32.9	20.3
Poland	Employment/population ratios	32.8	30.8	31.8	31.5	39.8	39.8	48.6	50.0	51.0	45.8	25.4	30.4	31.8	32.7	20.0
	Unemployment rates	9.4	9.0	7.3	6.7	5.5	7.8	4.9	4.1	3.4	2.6	5.2	4.2	4.1	3.7	3.4
Norway <sup>a</sup>	Labour force participation rates	60.7	70.1	69.6	72.6	72.7	64.5	77.6	78.9	80.3	81.6	18.5	34.4	37.2	39.8	42.5
	Employment/population ratios	55.0	63.8	64.5	67.7	68.7	59.4	73.8	75.7	77.6	79.5	17.5	33.0	35.6	38.3	41.1
Poland	Unemployment rates	14.3	9.8	10.0	9.8	10.6	6.0	3.0	2.9	2.9	3.1	3.6	1.9	2.2	1.3	1.7
	Labour force participation rates	62.6	59.9	62.2	62.6	60.9	71.1	76.4	76.7	76.8	77.6	36.7	62.5	62.3	64.1	64.9
Poland	Employment/population ratios	53.7	54.1	55.9	56.4	54.4	66.9	74.1	74.4	74.6	75.2	35.4	61.3	61.0	63.3	63.8
	Unemployment rates	12.1	11.5	8.7	6.6	6.8	3.8	3.8	2.8	2.0	1.8	1.9	1.3	1.0	0.8	0.9
Poland	Labour force participation rates	53.0	59.4	58.1	60.3	62.5	79.4	83.0	83.4	84.0	85.6	55.4	62.9	62.2	64.6	64.9
	Employment/population ratios	46.6	52.5	53.0	56.3	58.3	76.4	79.9	81.0	82.3	84.0	54.3	62.1	61.6	64.0	64.3
Poland	Unemployment rates	34.7	39.2	31.6	23.8	19.9	14.5	17.7	13.4	9.1	6.8	6.4	9.0	6.2	5.7	4.4
	Labour force participation rates	37.9	29.8	30.7	29.3	29.6	78.6	76.7	75.4	75.6	76.3	28.7	23.5	20.3	20.6	21.6
Poland	Employment/population ratios	24.8	18.1	21.0	22.4	23.7	67.2	63.1	65.3	68.8	71.0	26.8	21.4	19.0	19.4	20.7

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				
	1994	2005	2006	2007	2008	1994	2005	2006	2007	2008	1994	2005	2006	2007	2008
Portugal	16.3	19.1	18.4	20.3	20.2	7.2	8.5	9.0	9.6	8.6	2.4	5.3	5.2	5.8	5.8
Labour force participation rates	42.6	38.8	38.7	38.4	38.6	74.4	81.8	82.7	82.8	82.9	34.2	46.1	45.1	46.7	46.6
Employment/population ratios	35.7	31.4	31.6	30.6	30.8	69.0	74.9	75.3	74.9	75.8	33.4	43.7	42.8	44.0	43.9
Slovak Republic	26.5	28.8	27.0	19.9	19.9	11.6	15.7	13.5	11.9	10.3	12.3	13.8	9.4	9.1	8.5
Labour force participation rates	41.8	32.3	30.6	30.1	26.8	81.1	82.1	81.2	80.5	82.2	9.2	18.2	21.0	23.3	26.5
Employment/population ratios	30.7	23.0	22.3	24.1	21.5	71.7	69.1	70.2	71.0	73.7	8.0	15.7	19.0	21.2	24.2
Spain <sup>a</sup>	50.1	23.5	21.6	21.9	25.8	28.6	10.9	10.5	9.7	11.8	9.9	7.5	7.4	7.7	8.9
Labour force participation rates	43.7	46.8	48.1	47.4	48.1	54.6	69.0	71.2	72.7	74.7	19.4	29.6	31.0	32.5	34.2
Employment/population ratios	21.8	35.8	37.7	37.0	35.7	39.0	61.5	63.7	65.6	65.9	17.5	27.4	28.7	30.0	31.1
Sweden <sup>a</sup>	19.9	21.6	21.5	19.5	19.6	6.8	6.3	5.5	4.7	4.7	5.2	3.4	3.8	3.5	3.4
Labour force participation rates	53.4	55.6	56.8	57.8	57.1	86.9	86.5	86.2	87.1	87.5	62.6	69.2	69.8	69.6	69.3
Employment/population ratios	42.7	43.6	44.6	46.5	45.9	81.1	81.1	81.5	83.0	83.5	59.3	66.9	67.1	67.2	66.9
Switzerland	6.1	9.1	7.5	7.4	7.4	4.2	4.6	4.5	4.1	3.6	3.2	3.7	3.3	3.8	2.7
Labour force participation rates	64.8	64.7	67.0	64.5	66.1	74.1	81.3	81.2	81.9	83.6	47.2	57.7	58.6	60.3	61.6
Employment/population ratios	60.8	58.8	62.0	59.7	61.2	70.9	77.5	77.6	78.5	80.6	45.7	55.6	56.6	58.1	60.0
Turkey	13.4	19.3	19.8	20.8	21.3	6.0	8.2	8.2	8.8	9.6	0.7	0.5	0.8	1.1	1.3
Labour force participation rates	35.8	25.1	24.6	24.4	25.1	33.1	28.5	29.0	28.0	29.3	24.8	17.0	16.8	14.8	15.0
Employment/population ratios	31.0	20.2	19.8	19.3	19.8	31.1	26.2	26.6	25.6	26.5	24.6	16.9	16.6	14.6	14.8
United Kingdom <sup>a</sup>	12.6	10.6	11.8	12.7	12.0	6.4	3.2	3.9	3.7	3.7	5.3	1.7	2.4	2.2	2.0
Labour force participation rates	65.1	63.5	64.1	62.5	62.6	74.1	77.2	77.9	77.6	78.3	40.7	48.9	50.2	50.1	50.0
Employment/population ratios	56.9	56.7	56.5	54.6	55.1	69.3	74.7	74.9	74.7	75.4	38.5	48.1	49.0	49.0	49.0
United States <sup>a</sup>	11.6	10.1	9.7	9.4	11.2	5.0	4.4	3.9	3.8	4.6	3.9	3.3	2.9	3.0	3.7
Labour force participation rates	62.5	58.6	57.9	57.2	56.5	75.3	75.3	75.5	75.4	75.8	48.9	57.0	58.2	58.3	59.1
Employment/population ratios	55.3	52.6	52.3	51.8	50.2	71.5	72.0	72.5	72.5	72.3	47.0	55.1	56.5	56.6	57.0
EU15	21.9	16.8	16.1	15.3	14.8	11.4	8.2	7.8	7.0	6.9	7.9	6.2	6.4	5.8	5.2
Labour force participation rates	45.1	44.9	45.2	45.5	45.8	68.0	75.4	76.3	76.7	77.4	27.0	37.8	39.2	40.4	41.1
Employment/population ratios	35.2	37.4	37.9	38.5	39.0	60.3	69.2	70.4	71.3	72.1	24.9	35.5	36.7	38.0	38.9
EU19	22.5	18.6	17.6	15.9	15.2	11.4	9.1	8.3	7.3	6.9	7.7	6.4	6.4	5.8	5.2
Labour force participation rates	44.1	42.3	42.5	42.5	42.8	69.5	75.6	76.3	76.6	77.4	26.4	36.1	37.1	38.1	38.7
Employment/population ratios	34.2	34.4	35.0	35.7	36.3	61.6	68.8	70.0	71.1	72.0	24.3	33.8	34.7	35.9	36.7
OECD Europe	20.8	18.4	17.5	16.1	15.6	10.9	8.9	8.2	7.2	6.9	7.0	6.0	6.0	5.5	4.9
Labour force participation rates	43.0	39.5	39.6	39.7	40.2	66.0	69.6	70.2	70.6	71.3	26.8	35.2	36.1	36.8	37.4
Employment/population ratios	34.0	32.2	32.7	33.3	33.9	58.8	63.4	64.4	65.5	66.4	24.9	33.1	33.9	34.8	35.6
Total OECD	14.3	12.8	12.3	11.6	11.7	7.5	6.4	5.8	5.3	5.5	4.6	4.1	4.0	3.7	3.8
Labour force participation rates	47.6	45.1	45.1	44.8	46.0	66.4	69.3	69.8	70.2	70.2	35.7	43.7	44.8	45.5	45.4
Employment/population ratios	40.8	39.3	39.5	39.6	40.6	61.5	64.9	65.8	66.5	66.4	34.0	41.9	43.0	43.8	43.7

Aggregates are computed using country weights.

a) Age group 15-24 refers to 16-24. For Norway up to 2005.

Source: OECD database on Labour Force Statistics (see URLs at the beginning of the annex). For Belgium, Denmark, Greece and Luxembourg, data are from the European Union Labour Force Survey. [StatLink !\[\]\(83f22ed94ec5517769dd76d702c6bfd8\_img.jpg\) http://dx.doi.org/10.1787/708143782077](http://dx.doi.org/10.1787/708143782077)

**Table D. Employment/population ratios, activity and unemployment rates by educational attainment, 2007**  
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	5.1	3.0	2.2	4.7	2.5	2.0	5.4	3.8
Labour force participation rates	67.3	83.0	86.7	80.2	90.1	93.0	57.4	72.8	81.3
Employment/population ratios	63.9	80.5	84.8	76.4	87.8	91.2	54.3	70.0	79.3
Austria	7.4	3.3	2.4	7.6	2.9	1.9	7.2	3.7	3.1
Labour force participation rates	62.5	79.5	88.9	74.5	85.5	91.9	56.3	72.8	84.7
Employment/population ratios	57.9	76.9	86.8	68.8	83.0	90.1	52.2	70.1	82.2
Belgium	11.3	6.2	3.3	9.8	4.9	3.3	13.7	7.9	3.3
Labour force participation rates	56.2	79.1	87.8	68.6	86.3	91.2	43.7	71.1	84.7
Employment/population ratios	49.8	74.2	84.9	61.9	82.0	88.2	37.7	65.5	81.9
Canada	9.5	5.4	3.9	9.6	5.6	3.9	8.8	5.2	3.8
Labour force participation rates	63.3	80.9	86.2	73.2	86.7	90.0	51.5	74.3	83.0
Employment/population ratios	57.3	76.5	82.9	66.2	81.8	86.5	47.0	70.4	79.9
Czech Republic	19.1	4.3	1.5	19.3	3.1	1.5	18.9	5.9	1.5
Labour force participation rates	56.4	79.5	86.6	69.7	88.0	92.8	50.0	70.5	79.1
Employment/population ratios	45.7	76.1	85.2	56.3	85.2	91.4	40.6	66.4	77.9
Denmark	4.2	2.5	2.9	3.4	2.0	2.9	5.1	3.2	3.0
Labour force participation rates	69.5	84.7	90.5	77.7	87.2	92.9	62.1	81.7	88.3
Employment/population ratios	66.6	82.5	87.8	75.1	85.4	90.3	58.9	79.1	85.7
Finland	8.9	6.1	3.6	8.3	5.5	3.3	9.7	6.9	3.8
Labour force participation rates	64.4	81.1	88.4	68.4	83.7	90.5	59.2	78.1	86.7
Employment/population ratios	58.6	76.2	85.2	62.7	79.1	87.5	53.5	72.8	83.4
France	10.2	5.9	4.9	9.8	5.0	4.8	10.7	7.1	4.9
Labour force participation rates	64.6	80.6	87.8	72.3	84.8	91.3	57.8	75.9	84.7
Employment/population ratios	58.0	75.8	83.5	65.2	80.5	87.0	51.6	70.5	80.5
Germany	18.0	8.3	3.8	19.5	8.2	3.4	16.6	8.3	4.5
Labour force participation rates	66.6	81.1	88.9	81.3	87.2	92.2	56.7	75.1	84.4
Employment/population ratios	54.6	74.4	85.5	65.5	80.0	89.1	47.3	68.9	80.6
Greece	7.1	8.0	5.8	4.5	4.3	4.1	12.1	12.7	7.9
Labour force participation rates	64.5	75.7	88.0	83.6	90.3	90.5	44.5	62.9	85.2
Employment/population ratios	59.9	69.6	82.9	79.8	86.4	86.8	39.1	54.9	78.5
Hungary	16.0	5.9	2.6	16.9	5.4	2.2	15.1	6.4	2.9
Labour force participation rates	45.8	74.6	82.5	57.0	81.2	88.5	38.4	67.3	77.8
Employment/population ratios	38.5	70.2	80.4	47.3	76.8	86.5	32.6	62.9	75.6
Iceland	3.5	3.4	2.2	<sup>a</sup>	<sup>a</sup>	<sup>a</sup>	<sup>a</sup>	<sup>a</sup>	<sup>a</sup>
Labour force participation rates	83.4	86.1	90.6	88.6	91.5	93.3	78.4	78.7	88.2
Employment/population ratios	80.5	83.2	88.6	85.8	89.2	91.8	75.5	74.9	85.7



Table D. Employment/population ratios, activity and unemployment rates by educational attainment, 2007 (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
Ireland	6.1	3.5	2.3	6.4	3.5	2.3	5.5	3.6	2.3
Labour force participation rates	62.5	79.9	88.7	78.2	92.3	93.6	43.1	67.9	84.5
Employment/population ratios	58.7	77.1	86.7	73.1	89.0	91.4	40.8	65.5	82.5
Italy	6.3	4.1	4.2	5.0	3.0	3.1	9.1	5.6	5.2
Labour force participation rates	56.4	77.7	83.7	75.4	86.9	89.2	37.0	68.3	79.1
Employment/population ratios	52.8	74.5	80.2	71.7	84.3	86.5	33.6	64.5	74.9
Japan	<i>b</i>	4.2	2.9	<i>b</i>	4.4	2.8	<i>b</i>	3.8	3.2
Labour force participation rates	<i>b</i>	77.6	82.4	<i>b</i>	92.2	96.0	<i>b</i>	63.6	68.3
Employment/population ratios	<i>b</i>	74.3	80.0	<i>b</i>	88.2	93.3	<i>b</i>	61.2	66.1
Korea	2.4	3.3	2.9	3.3	3.8	3.1	1.6	2.5	2.6
Labour force participation rates	67.6	73.1	79.5	81.1	88.1	91.9	58.9	57.9	62.8
Employment/population ratios	66.0	70.7	77.2	78.4	84.8	89.0	58.0	56.5	61.2
Luxembourg	4.1	2.8	3.0	3.8	2.3	2.6	4.6	3.6	3.4
Labour force participation rates	65.0	76.1	87.1	78.7	84.3	90.3	53.8	67.2	83.6
Employment/population ratios	62.3	73.9	84.5	75.7	82.4	87.9	51.4	64.8	80.8
Mexico	2.2	2.7	3.8	2.2	2.5	3.4	2.3	2.9	4.5
Labour force participation rates	64.5	76.0	86.3	92.3	95.0	94.6	42.1	60.8	76.0
Employment/population ratios	63.0	73.9	83.1	90.2	92.6	91.4	41.1	59.1	72.6
Netherlands	4.0	2.7	1.8	3.3	2.3	1.7	4.9	3.2	1.8
Labour force participation rates	64.5	82.5	89.3	80.3	87.9	91.6	51.4	76.9	86.7
Employment/population ratios	61.9	80.3	87.7	77.6	85.9	90.0	48.9	74.4	85.1
New Zealand	2.9	1.9	2.2	2.8	1.5	2.0	3.0	2.6	2.3
Labour force participation rates	73.6	86.4	85.7	82.8	93.1	93.2	65.6	76.8	79.9
Employment/population ratios	71.4	84.8	83.8	80.4	91.7	91.3	63.7	74.8	78.1
Norway	3.3	1.3	1.4	3.5	1.2	1.5	3.2	1.4	1.2
Labour force participation rates	68.5	85.2	91.7	75.0	88.5	93.8	61.8	80.9	89.9
Employment/population ratios	66.3	84.0	90.4	72.4	87.5	92.4	59.9	79.8	88.8
Poland	15.5	8.7	3.8	15.1	7.8	3.3	16.0	9.9	4.3
Labour force participation rates	48.6	71.5	87.8	61.0	80.1	91.3	37.6	62.3	85.3
Employment/population ratios	41.0	65.2	84.5	51.8	73.9	88.3	31.6	56.1	81.7
Portugal	8.0	6.8	6.6	6.5	5.9	5.1	9.8	7.8	7.6
Labour force participation rates	77.8	85.7	92.0	85.7	87.6	94.1	69.6	83.8	90.7
Employment/population ratios	71.6	79.8	85.9	80.1	82.5	89.3	62.8	77.3	83.7
Slovak Republic	41.3	8.5	3.3	42.9	7.2	2.5	40.0	10.2	4.1
Labour force participation rates	40.3	79.9	87.0	51.8	88.5	91.9	34.4	70.9	82.4
Employment/population ratios	23.7	73.2	84.1	29.5	82.1	89.7	20.6	63.7	79.0

**Table D. Employment/population ratios, activity and unemployment rates by educational attainment, 2007 (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
	Spain	9.0	6.8	4.8	6.5	5.0	3.8	13.3	9.2
Labour force participation rates	66.5	81.9	88.6	83.1	90.1	92.7	49.4	73.4	84.7
Employment/population ratios	60.5	76.3	84.4	77.7	85.6	89.1	42.8	66.6	79.7
Sweden	7.0	4.2	3.4	6.0	3.9	3.8	8.7	4.7	3.1
Labour force participation rates	71.6	86.8	91.6	78.7	90.3	92.8	62.3	82.8	90.7
Employment/population ratios	66.6	83.1	88.6	74.0	86.8	89.3	56.9	79.0	88.0
Switzerland	6.7	3.0	2.1	5.0	2.3	1.8	8.0	3.7	2.7
Labour force participation rates	70.7	83.6	91.9	82.6	91.0	95.3	63.6	77.4	86.2
Employment/population ratios	66.0	81.1	90.0	78.5	88.8	93.6	58.6	74.5	83.9
Turkey	8.2	8.8	6.9	8.8	7.2	5.4	5.8	16.1	9.9
Labour force participation rates	53.0	68.4	81.2	81.6	88.5	87.6	23.2	33.6	70.5
Employment/population ratios	48.7	62.4	75.6	74.4	82.1	82.9	21.8	28.2	63.5
United Kingdom	6.5	3.9	2.3	6.8	3.9	2.4	6.2	4.0	2.1
Labour force participation rates	69.4	84.3	89.9	78.0	88.2	92.0	61.3	79.0	87.7
Employment/population ratios	64.9	80.9	87.8	72.7	84.8	89.8	57.5	75.9	85.8
United States	8.5	4.5	2.1	8.4	5.1	2.2	8.5	3.9	2.1
Labour force participation rates	63.7	77.1	85.1	75.6	83.9	91.1	49.6	70.4	79.8
Employment/population ratios	58.3	73.6	83.3	69.2	79.7	89.1	45.4	67.6	78.1
EU19	11.1	5.4	3.5	10.6	4.5	3.0	12.0	6.5	3.9
Labour force participation rates	61.7	80.1	88.2	73.9	86.9	91.6	51.0	73.1	84.8
Employment/population ratios	55.4	75.8	85.1	66.7	82.9	88.9	45.3	68.4	81.4
Total OECD	9.0	4.8	3.3	8.9	4.2	3.0	9.8	5.9	3.8
Labour force participation rates	63.7	80.0	87.4	76.4	88.0	92.0	52.4	71.2	82.6
Employment/population ratios	58.4	76.2	84.5	70.3	84.3	89.4	47.8	67.2	79.5

Aggregates are computed using country weights.

a) Below reliability thresholds.

b) Included in upper secondary education.

Source: OECD (2009), Education at a Glance – OECD Indicators, OECD Publishing, Paris, September.

**Table E. Incidence and composition of part-time employment<sup>a</sup>**  
Percentages

	Part-time employment as a proportion of total employment									
	Men					Women				
	1994	2005	2006	2007	2008	1994	2005	2006	2007	2008
Australia <sup>b</sup>	..	12.0	12.2	12.3	12.3	..	38.7	38.2	37.7	37.7
Austria	..	4.6	5.4	5.2	6.4	..	29.4	31.4	31.5	30.9
Belgium	4.4	6.2	6.7	6.3	5.9	30.0	33.4	34.7	32.9	33.8
Canada	10.8	10.8	10.9	11.0	11.3	28.8	26.9	26.2	26.1	26.4
Czech Republic	2.1	1.6	1.6	1.7	1.7	5.6	5.5	5.6	5.9	5.8
Denmark	9.8	11.8	11.4	12.4	12.9	26.2	24.4	25.6	23.9	23.7
Finland	6.5	7.9	8.1	8.2	8.2	11.5	14.8	14.9	15.5	15.1
France	5.3	5.2	5.2	5.0	5.2	24.5	23.0	22.6	23.1	22.7
Germany	3.0	7.4	7.6	7.9	8.2	28.0	39.4	39.1	39.2	38.6
Greece	5.0	3.0	4.0	4.1	4.2	13.1	11.1	12.9	13.6	13.4
Hungary	..	1.8	1.5	1.6	2.0	..	5.0	4.2	4.2	4.3
Iceland	9.2	7.3	7.6	8.0	8.0	37.9	26.6	26.0	25.4	23.6
Ireland	6.4	7.1	7.7	7.6	8.2	25.5	35.0	34.9	35.6	36.0
Italy	4.2	5.1	5.3	5.4	6.6	20.6	29.2	29.4	29.9	31.0
Japan <sup>c</sup>	7.5	8.8	8.5	9.2	9.9	26.9	31.7	31.3	32.6	33.2
Korea <sup>d</sup>	2.9	6.5	6.3	6.3	6.5	6.8	12.5	12.3	12.5	13.2
Luxembourg	1.9	1.6	1.5	1.3	1.8	25.7	30.7	27.2	27.5	27.3
Mexico	..	..	..	..	..	..	..	..	..	..
Netherlands	11.3	15.3	15.8	16.2	16.2	54.5	60.9	59.7	60.0	59.9
New Zealand	9.0	10.2	10.1	11.2	11.6	36.1	35.3	34.5	34.7	35.0
Norway	7.7	10.0	10.6	10.5	10.9	37.7	32.9	32.9	31.6	30.8
Poland	..	7.1	6.5	6.0	5.3	..	17.4	16.3	15.0	14.1
Portugal	4.9	5.9	5.9	6.3	5.7	15.2	14.4	13.2	14.3	14.3
Slovak Republic	1.3	1.4	1.3	1.2	1.5	4.4	4.1	4.1	4.4	4.1
Spain	2.4	4.0	3.9	3.8	3.8	14.3	22.1	21.4	20.9	21.1
Sweden	7.1	8.5	8.4	9.5	9.6	24.9	19.0	19.0	19.7	19.6
Switzerland <sup>b</sup>	6.8	8.0	8.8	8.7	9.0	44.9	45.7	45.7	45.6	45.9
Turkey	4.9	3.2	4.4	4.6	4.6	18.5	13.4	17.8	19.2	19.2
United Kingdom	7.0	9.8	9.9	9.8	10.2	41.2	39.1	38.7	38.4	37.7
United States <sup>e</sup>	8.5	7.8	7.8	7.2	7.5	20.4	18.3	17.8	17.1	17.0
EU15	5.0	7.0	7.1	7.2	7.5	28.3	31.8	31.6	31.7	31.5
EU19	4.8	6.7	6.8	6.8	7.0	27.1	29.2	29.0	28.9	28.7
OECD Europe	4.9	6.3	6.5	6.6	6.8	27.0	28.6	28.6	28.7	28.5
Total OECD	5.1	7.3	7.4	7.4	7.7	19.7	25.3	25.1	25.3	25.3

Table E. Incidence and composition of part-time employment<sup>a</sup> (cont.)

Percentages

	Part-time employment as a proportion of total employment					Women's share in part-time employment				
	1994	2005	2006	2007	2008	1994	2005	2006	2007	2008
Australia <sup>b</sup>	..	24.0	23.9	23.7	23.8	..	72.3	72.0	71.5	71.7
Austria	..	16.0	17.3	17.2	17.6	..	84.4	83.1	83.5	80.4
Belgium	14.6	18.5	19.3	18.3	18.7	81.8	81.7	81.1	81.2	82.9
Canada	18.9	18.3	18.1	18.2	18.4	68.9	68.6	68.1	68.0	67.8
Czech Republic	3.6	3.3	3.3	3.5	3.5	67.7	72.8	72.8	72.3	72.1
Denmark	17.3	17.6	18.1	17.7	18.0	69.4	63.8	66.2	62.8	61.7
Finland	8.9	11.2	11.4	11.7	11.5	62.8	63.6	62.9	63.7	63.0
France	13.8	13.4	13.3	13.4	13.4	78.6	79.2	78.8	80.3	79.5
Germany	13.5	21.8	22.0	22.2	22.1	87.1	81.4	81.2	80.7	79.9
Greece	7.8	6.1	7.5	7.8	7.8	59.1	69.5	67.0	67.9	67.4
Hungary	..	3.2	2.7	2.8	3.1	..	70.4	70.5	68.6	64.7
Iceland	22.6	16.4	16.0	15.9	15.1	78.3	76.2	74.2	72.7	71.2
Ireland	13.5	19.6	19.9	20.3	21.0	70.3	80.2	78.7	79.6	79.0
Italy	10.0	14.6	14.9	15.1	16.3	72.6	79.0	78.4	78.5	75.8
Japan <sup>c</sup>	15.4	18.3	18.0	18.9	19.6	71.1	71.8	72.4	71.5	70.4
Korea <sup>d</sup>	4.5	9.0	8.8	8.9	9.3	61.3	57.9	58.5	58.9	59.0
Luxembourg	10.7	13.9	12.7	12.7	12.7	88.6	93.2	93.1	94.2	91.9
Mexico	..	..	..	..	..	..	..	..	..	..
Netherlands	28.9	35.7	35.5	36.1	36.1	76.8	76.3	75.5	75.4	75.5
New Zealand	21.0	21.7	21.3	22.0	22.4	76.1	74.8	74.4	72.6	72.3
Norway	21.5	20.8	21.1	20.4	20.3	80.6	74.6	73.5	72.9	71.7
Poland	..	11.7	10.8	10.1	9.3	..	66.5	67.0	67.0	68.1
Portugal	9.5	9.8	9.3	10.0	9.7	71.3	67.9	65.8	66.1	68.5
Slovak Republic	2.7	2.6	2.5	2.6	2.7	72.0	69.2	70.0	74.0	67.1
Spain	6.4	11.3	11.1	10.9	11.1	75.5	78.9	79.3	79.8	80.6
Sweden	15.8	13.5	13.4	14.4	14.4	76.8	67.1	67.3	65.0	64.6
Switzerland <sup>b</sup>	23.2	25.1	25.5	25.4	25.9	83.3	82.6	81.2	81.3	81.2
Turkey	8.8	5.8	7.9	8.4	8.4	61.0	59.4	58.6	59.7	59.7
United Kingdom	22.4	23.4	23.3	23.0	22.9	82.7	77.4	77.2	77.0	76.1
United States <sup>e</sup>	14.2	12.8	12.6	12.0	12.2	68.4	68.4	67.8	68.8	68.1
EU15	14.6	17.9	18.0	18.1	18.3	80.1	78.4	78.0	78.0	77.2
EU19	14.1	16.6	16.6	16.6	16.7	79.9	77.7	77.4	77.4	76.7
OECD Europe	13.8	15.7	16.0	16.1	16.1	78.7	77.1	76.5	76.6	75.9
Total OECD	11.3	15.2	15.2	15.3	15.5	74.1	73.1	72.9	73.0	72.4

Aggregates are computed using country weights.

- 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) Part-time employment based on hours worked at all jobs.
- c) Series of part-time workers working less than 30 weekly actual hours available only since 2000. This series replaces previous series on part-time work of less than 35 weekly actual hours. Figures estimated for 1994 by backdating the series on part-time work of less than 30 hours prior to 2000 in line with the trend observed in the series of part-time work of less than 35 hours.
- d) Data are based on actual hours worked.
- e) Data are for wage and salary workers only.

Source 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", OECD Labour Market and Social Policy Occasional Paper No. 22, OECD Publishing, Paris, available on Internet ([www.oecd.org/els/workingpapers](http://www.oecd.org/els/workingpapers)).


StatLink  <http://dx.doi.org/10.1787/708177688626>

Table F. **Average annual hours actually worked per person in employment<sup>a</sup>**

	1979	1983	1994	2003	2004	2005	2006	2007	2008
<b>Total employment</b>									
Australia	1 823	1 774	1 807	1 734	1 740	1 727	1 717	1 717	1 721
Austria	..	..	..	1 658	1 663	1 652	1 644	1 630	1 631
Belgium	..	1 670	1 554	1 575	1 549	1 565	1 566	1 560	1 568
Canada	1 825	1 768	1 762	1 734	1 752	1 738	1 738	1 735	1 727
Czech Republic	..	..	2 043	1 972	1 986	2 002	1 997	1 985	1 992
Denmark <sup>b</sup>	1 636	1 638	1 548	1 577	1 579	1 579	1 585	1 599	1 610
Finland <sup>c</sup>	..	1 809	1 777	1 669	1 688	1 666	1 660	1 651	1 664
Finland <sup>d</sup>	1 869	1 823	1 775	1 720	1 724	1 718	1 714	1 710	1 728
France <sup>b</sup>	1 868	1 749	1 675	1 533	1 561	1 559	1 536	1 553	1 542
Germany	..	..	1 547	1 439	1 442	1 434	1 432	1 433	1 432
Western Germany	1 770	1 705	1 515	1 422	1 426	1 419	1 417	1 421	1 421
Greece <sup>e</sup>	..	2 194	2 133	2 116	2 064	2 081	2 150	2 122	2 120
Hungary <sup>b</sup>	..	2 112	2 032	1 998	1 998	1 997	1 993	1 988	1 988
Iceland <sup>b</sup>	1 875	1 860	1 813	1 807	1 810	1 794	1 795	1 807	1 807
Ireland	..	1 981	1 883	1 671	1 668	1 654	1 642	1 631	1 601
Italy	..	1 876	1 857	1 826	1 826	1 819	1 815	1 817	1 802
Japan	2 126	2 095	1 898	1 799	1 787	1 775	1 784	1 785	1 772
Korea	..	2 923	2 651	2 434	2 404	2 364	2 357	2 316	..
Luxembourg	..	1 778	1 709	1 630	1 586	1 570	1 580	1 515	1 555
Mexico	..	..	..	1 857	1 849	1 909	1 883	1 871	1 893
Netherlands	..	..	1 384	1 363	1 362	1 375	1 389	1 390	1 389
New Zealand	..	..	1 849	1 813	1 827	1 810	1 787	1 771	1 753
Norway	1 580	1 553	1 505	1 399	1 417	1 420	1 414	1 417	1 422
Poland	..	..	..	1 984	1 983	1 994	1 985	1 976	1 969
Portugal	..	..	1 838	1 742	1 763	1 752	1 757	1 727	1 745
Slovak Republic	..	..	1 852	1 678	1 733	1 768	1 773	1 776	1 769
Spain <sup>b</sup>	1 930	1 825	1 733	1 706	1 690	1 668	1 653	1 635	1 627
Sweden	1 530	1 532	1 635	1 582	1 605	1 605	1 599	1 615	1 625
Switzerland	..	..	1 725	1 643	1 673	1 667	1 652	1 643	1 643
Turkey	1 964	1 935	1 886	1 943	1 918	..	..	..	..
United Kingdom	1 819	1 717	1 740	1 677	1 672	1 676	1 671	1 673	1 653
United States	1 828	1 820	1 836	1 800	1 802	1 800	1 801	1 798	1 792

Table F. **Average annual hours actually worked per person in employment<sup>a</sup>** (cont.)

	1979	1983	1994	2003	2004	2005	2006	2007	2008
<b>Dependent employment</b>									
Austria	..	..	..	1 482	1 532	1 488	1 480	1 487	1 483
Belgium	..	1 563	1 452	1 449	1 441	1 450	1 454	1 454	1 469
Canada	1 791	1 743	1 746	1 727	1 744	1 735	1 734	1 731	1 725
Czech Republic	..	..	1 974	1 882	1 900	1 923	1 922	1 914	1 923
Denmark <sup>b</sup>	1 600	1 614	1 524	1 540	1 544	1 548	1 555	1 569	1 576
Finland <sup>c</sup>	..	..	1 670	1 596	1 622	1 605	1 600	1 594	1 610
France <sup>d</sup>	1 710	1 608	1 563	1 439	1 466	1 459	1 465	1 457	1 461
Germany	..	..	1 474	1 360	1 364	1 354	1 351	1 354	1 352
Western Germany	1 689	1 621	1 435	1 341	1 347	1 338	1 336	1 341	1 341
Greece	..	1 735	1 792	1 812	1 803	1 811	1 796	1 782	1 803
Hungary	..	1 829	1 759	1 777	1 807	1 803	1 799	1 778	1 786
Iceland	..	..	1 774	1 782	1 823	1 816	1 813	1 822	..
Ireland	..	1 702	1 652	1 576	1 570	1 562	1 560	1 544	1 522
Japan <sup>f</sup>	2 114	2 098	1 904	1 846	1 840	1 829	1 842	1 850	1 836
Japan <sup>g</sup>	..	..	1 910	1 828	1 816	1 802	1 811	1 808	1 792
Korea <sup>h</sup>	..	2 734	2 471	2 390	2 380	2 351	2 302	2 266	..
Korea <sup>g</sup>	..	2 714	2 453	2 395	2 378	2 366	2 341	2 294	..
Luxembourg	..	1 637	1 598	1 555	1 535	1 524	1 555	1 513	1 544
Mexico	..	..	..	1 908	1 919	1 970	1 944	1 933	1 960
Netherlands <sup>b</sup>	1 591	1 530	1 388	1 309	1 309	1 301	1 300	1 297	1 301
New Zealand	..	..	1 772	1 758	1 787	1 777	1 760	1 751	1 731
Poland	..	..	..	1 956	1 957	1 970	1 958	1 953	1 940
Portugal	..	..	1 690	1 677	1 690	1 680	1 694	1 674	1 686
Spain <sup>i</sup>	1 844	1 750	1 666	1 667	1 654	1 640	1 630	1 627	1 619
United Kingdom	1 757	1 659	1 700	1 658	1 652	1 658	1 652	1 660	1 638
United States	1 828	1 827	1 839	1 800	1 803	1 801	1 802	1 799	1 797

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 workers.

b) Data for the year 2008 are estimates.

c) Data estimated from the Labour Force Survey.

d) Data estimated from national accounts.

e) Data for the years 2007 and 2008 are estimates.


f) Data refer to establishments with 30 or more regular employees.

g) Data refer to establishments with five or more regular employees.

h) Data refer to establishments with ten or more regular employees.

i) Data for the years 2006 to 2008 are estimates.

*Source and definitions:* The series on annual hours actually worked per person in total employment presented in this table for all 30 OECD countries are consistent with the series retained for the calculation of productivity measures in the *OECD Productivity database* ([www.oecd.org/statistics/productivity/compendium](http://www.oecd.org/statistics/productivity/compendium)). However, there may be some differences for some countries given that the main purpose of the latter database is to report data series on labour input (i.e. total hours worked) and also because the updating of databases occur at different moment of the year. Hours actually worked per person in employment are according to National Accounts concepts for 16 countries: Austria, Canada, Denmark, Finland, France, Germany, Greece, Hungary, Italy, Korea, Norway, the Slovak Republic, Spain, Sweden, Switzerland and Turkey. Secretariat estimates for Belgium, Ireland, Luxembourg, the Netherlands (for total employment only) and Portugal for annual hours worked based on the European Labour Force Survey. For the remaining countries, the sources and methodologies are the same as those presented in the previous edition of the *OECD Employment Outlook*, as are estimates reported for dependent employment for 23 countries. Country specific notes can be found at: [www.oecd.org/els/employment/outlook](http://www.oecd.org/els/employment/outlook).

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**Table G. Incidence of long-term unemployment<sup>a, b, c, d, e</sup>**  
As a percentage of total unemployment

	1994		2005		2006		2007		2008	
	6 months and over	12 months and over	6 months and over	12 months and over	6 months and over	12 months and over	6 months and over	12 months and over	6 months and over	12 months and over
Australia	52.6	36.1	30.6	18.3	30.8	18.1	27.1	15.4	26.7	14.9
Austria	31.8	18.4	43.2	25.3	44.2	27.3	44.2	26.8	42.3	24.2
Belgium	75.2	58.3	68.3	51.6	69.0	55.6	68.1	50.0	68.3	52.6
Canada	32.7	17.9	17.2	9.6	16.0	8.7	14.8	7.5	14.7	7.1
Czech Republic	41.9	22.3	72.7	53.6	75.0	55.2	71.6	53.4	69.4	50.2
Denmark	54.0	32.1	43.8	25.9	33.7	20.4	29.5	18.2	26.5	16.1
Finland	..	..	41.8	24.9	39.7	24.8	37.9	23.0	31.5	18.2
France	61.7	38.5	60.4	41.4	61.0	42.2	58.5	40.4	55.6	37.9
Germany	63.8	44.3	70.9	54.1	73.1	57.3	71.3	56.6	68.9	53.4
Greece	72.8	50.5	72.6	53.7	75.2	55.6	68.2	50.3	66.4	49.6
Hungary	62.6	41.3	68.5	46.0	68.3	46.1	69.1	47.6	69.2	47.6
Iceland <sup>f</sup>	(32.2)	(15.1)	(21.7)	(13.3)	(13.6)	(7.3)	(11.1)	(8.0)	(7.4)	(4.1)
Ireland	80.7	64.3	52.6	34.3	53.2	34.3	50.1	30.3	48.2	29.4
Italy	79.5	61.5	67.7	52.2	68.5	52.9	65.4	49.9	62.3	47.5
Japan	36.1	17.5	49.1	33.3	48.1	33.0	48.2	32.0	46.9	33.3
Korea	20.7	5.4	11.6	0.8	11.3	1.1	11.7	0.6	9.7	2.7
Luxembourg <sup>f</sup>	(54.7)	(29.6)	(51.1)	(26.4)	(50.1)	(29.5)	(55.4)	(34.5)	(63.3)	(38.6)
Mexico	..	..	6.8	2.3	6.2	2.5	5.4	2.7	4.2	1.7
Netherlands	77.5	49.4	59.9	40.1	62.7	45.2	59.1	41.7	52.5	36.3
New Zealand	50.4	32.7	21.5	9.4	20.0	7.1	16.7	5.7	14.5	4.4
Norway	43.7	28.8	25.3	9.5	32.3	14.1	25.1	8.5	18.4	6.0
Poland	65.2	40.4	71.6	52.2	69.1	50.4	64.3	45.9	46.7	29.0
Portugal	57.2	43.4	69.3	48.6	70.5	51.8	67.6	47.3	67.5	48.3
Slovak Republic	63.9	42.6	81.4	68.1	84.3	73.1	82.3	70.8	78.7	66.1
Spain	73.4	56.2	47.7	32.6	44.4	29.5	42.6	27.6	40.2	23.8
Sweden	46.7	25.7	..	..	..	..	27.3	13.0	25.9	12.4
Switzerland	50.1	29.0	59.1	39.0	58.6	39.1	56.6	40.8	49.3	34.3
Turkey	68.9	45.9	55.6	39.6	51.4	35.8	46.3	30.3	42.6	26.9
United Kingdom	63.4	45.4	38.2	22.3	40.8	22.1	41.5	24.5	43.0	25.5
United States	20.3	12.2	19.6	11.8	17.6	10.0	17.6	10.0	19.7	10.6
EU15	67.6	48.4	61.2	44.1	61.4	44.7	58.1	41.9	54.9	38.6
EU19	66.9	47.0	63.8	46.3	63.4	46.3	59.7	43.2	55.2	38.7
OECD Europe	66.9	46.7	62.6	45.2	61.7	44.8	57.8	41.3	53.2	36.8
Total OECD	52.6	35.5	46.9	32.8	45.9	32.1	42.4	29.1	38.9	25.9

Table G. **Incidence of long-term unemployment among men**<sup>a, b, c, d, e</sup> (cont.)  
As a percentage of male unemployment

	1994		2005		2006		2007		2008	
	6 months and over	12 months and over	6 months and over	12 months and over	6 months and over	12 months and over	6 months and over	12 months and over	6 months and over	12 months and over
Australia	56.9	39.9	34.2	20.7	33.5	20.5	27.6	16.3	27.6	15.7
Austria	30.8	18.4	42.9	25.6	46.2	29.5	43.9	26.6	43.5	25.8
Belgium	72.4	53.4	65.7	50.4	68.1	54.7	67.7	49.1	66.7	49.9
Canada	34.5	19.5	17.8	10.1	16.1	9.1	15.7	8.4	15.9	7.9
Czech Republic	40.4	21.7	71.9	52.9	72.7	53.9	70.5	51.7	69.4	50.4
Denmark	52.1	31.9	49.3	29.7	36.3	20.7	29.2	18.4	30.7	19.0
Finland	..	..	44.9	27.9	42.3	28.0	41.0	26.5	33.6	20.1
France	60.3	37.4	58.8	40.5	60.9	42.8	58.5	40.6	57.0	39.3
Germany	60.4	41.2	70.1	53.7	72.8	57.8	71.6	57.5	69.1	54.0
Greece	65.8	41.3	64.5	43.1	72.4	48.1	61.4	42.1	62.0	42.8
Hungary	65.0	43.6	69.5	47.8	68.5	47.1	69.1	47.3	69.5	48.8
Iceland <sup>f</sup>	(29.7)	(14.0)	(17.5)	(10.5)	(15.4)	(9.2)	(11.2)	(9.5)	(5.7)	(4.0)
Ireland	83.0	68.5	60.0	42.4	59.2	40.8	54.9	36.0	52.6	33.2
Italy	77.4	59.6	66.2	50.5	66.2	50.8	64.3	47.3	60.3	44.9
Japan	40.2	21.4	56.3	40.3	55.5	40.9	55.7	40.3	54.2	39.9
Korea	22.8	6.4	12.9	1.0	12.2	1.2	13.9	0.7	12.9	3.7
Luxembourg <sup>f</sup>	(59.6)	(33.8)	(53.3)	(33.8)	(53.7)	(34.4)	(61.4)	(39.3)	(63.3)	(42.7)
Mexico	..	..	6.1	2.2	6.3	2.7	5.3	3.0	4.1	1.6
Netherlands	74.3	50.0	63.8	44.7	64.3	46.8	61.5	43.9	52.7	38.3
New Zealand	55.7	37.2	24.3	12.6	21.9	8.8	18.3	6.1	16.3	5.5
Norway	43.5	28.1	27.0	10.4	35.9	16.8	26.7	9.9	18.6	6.0
Poland	61.8	36.8	70.4	51.3	68.3	49.0	64.1	45.8	44.3	27.3
Portugal	54.2	42.3	66.5	47.1	68.0	50.3	66.5	48.2	66.8	49.9
Slovak Republic	63.8	41.7	81.0	68.7	84.3	73.9	82.8	72.3	77.7	65.6
Spain	68.5	49.5	42.9	28.2	40.3	25.9	38.3	23.9	35.3	18.8
Sweden	50.0	29.1	..	..	..	..	29.9	14.5	27.2	13.5
Switzerland	47.4	22.9	58.8	37.1	54.4	35.0	55.9	37.9	43.1	27.3
Turkey	66.8	43.7	53.0	36.9	48.6	32.6	42.7	27.0	39.7	24.0
United Kingdom	68.6	51.2	43.1	26.0	46.2	27.4	46.6	29.3	47.7	30.5
United States	22.2	13.9	20.7	12.6	18.6	10.7	18.2	10.7	20.1	10.9
EU15	66.0	46.9	60.5	43.6	61.5	45.2	58.4	42.3	54.6	38.3
EU19	65.3	45.4	63.0	45.8	63.3	46.5	59.9	43.5	54.7	38.3
OECD Europe	65.2	45.0	61.1	44.1	60.6	43.9	56.6	40.3	51.5	35.3
Total OECD	52.0	34.9	46.7	32.7	45.9	32.3	42.1	29.1	38.4	25.4



Table G. **Incidence of long-term unemployment among women<sup>a, b, c, d, e</sup>** (cont.)  
As a percentage of female unemployment

	1994		2005		2006		2007		2008	
	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	46.3	30.5	26.6	15.4	27.8	15.4	26.5	14.4	25.7	13.9
Austria	33.1	18.5	43.5	24.9	42.1	25.1	44.5	27.1	41.2	22.6
Belgium	77.7	62.6	71.0	52.7	70.0	56.5	68.5	51.0	70.2	55.7
Canada	30.1	15.6	16.4	9.1	15.9	8.3	13.7	6.3	13.1	6.1
Czech Republic	43.1	22.8	73.4	54.2	77.0	56.3	72.5	54.7	69.4	50.0
Denmark	55.8	32.4	39.1	22.7	31.6	20.2	29.9	17.9	23.3	13.9
Finland	..	..	38.6	21.9	37.2	21.8	34.9	19.5	29.5	16.2
France	63.1	39.5	61.8	42.3	61.1	41.7	58.5	40.1	54.3	36.5
Germany	67.1	47.2	72.0	54.5	73.6	56.6	70.9	55.6	68.7	52.7
Greece	78.0	57.2	77.2	59.6	77.0	60.1	72.1	54.9	69.2	53.8
Hungary	58.9	37.6	67.5	44.1	68.2	45.1	69.0	47.9	68.8	46.3
Iceland <sup>f</sup>	(34.9)	(16.3)	(26.9)	(16.6)	(11.7)	(5.3)	(10.9)	(5.7)	(10.2)	(4.1)
Ireland	76.8	57.4	40.4	21.1	44.0	24.5	42.7	21.9	39.1	21.7
Italy	81.5	63.3	69.1	53.8	70.7	54.8	66.4	52.3	64.1	49.9
Japan	30.5	12.2	38.3	22.6	36.8	20.8	36.7	19.4	36.2	23.8
Korea	16.1	3.2	9.3	0.4	9.6	0.9	7.4	0.3	1.6	0.4
Luxembourg <sup>f</sup>	(48.9)	(24.6)	(49.4)	(20.5)	(47.6)	(26.0)	(45.7)	(26.6)	(63.2)	(34.8)
Mexico	..	..	7.8	2.6	6.1	2.3	5.4	2.3	4.3	1.8
Netherlands	80.9	48.7	55.6	35.0	61.1	43.6	56.8	39.8	52.4	34.4
New Zealand	42.8	26.2	18.7	6.2	18.1	5.5	15.2	5.4	12.4	3.2
Norway	43.9	29.8	23.2	8.5	28.1	11.1	23.2	6.9	18.2	6.0
Poland	68.4	43.8	72.9	53.1	70.0	52.0	64.5	46.0	49.0	30.8
Portugal	60.1	44.3	72.0	49.9	72.7	53.3	68.5	46.7	68.1	46.9
Slovak Republic	64.1	43.5	82.0	67.4	84.3	72.3	81.9	69.4	79.6	66.6
Spain	78.4	63.0	51.4	36.0	47.5	32.2	45.9	30.5	45.3	28.9
Sweden	41.8	20.5	..	..	..	..	24.6	11.4	24.5	11.3
Switzerland	53.0	35.4	59.4	40.7	62.2	42.6	57.1	43.0	54.5	39.9
Turkey	74.7	51.9	63.1	47.4	58.6	44.2	55.8	38.9	50.1	34.4
United Kingdom	53.3	33.9	31.1	16.9	33.3	14.8	34.6	18.1	36.2	18.4
United States	18.1	10.2	18.4	10.8	16.5	9.2	16.8	9.0	19.3	10.3
EU15	69.4	50.0	61.9	44.6	61.3	44.1	57.8	41.6	55.4	39.0
EU19	68.7	48.7	64.6	46.8	63.5	46.1	59.5	43.0	55.8	39.1
OECD Europe	68.8	48.6	64.2	46.6	63.0	45.8	59.1	42.5	55.1	38.6
Total OECD	53.2	36.2	47.1	32.8	45.9	32.0	42.7	29.1	39.5	26.5

Aggregates are computed using country weights.

- 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 OECD 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 Australia, 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): Austria, March, and since 2004 all weeks of the first quarter; Belgium, April, and since 1999 all weeks of the second quarter; Denmark, April-May and since 1999 all weeks of the second quarter; Finland, spring between 1995 and 1998, and averages of monthly figures since 1999; France, March and since 2003 all weeks of the first quarter; Germany, April, and since 2005 all weeks of the second quarter; Greece, all weeks of the second quarter; Iceland, April and since 2003 all weeks of the second quarter; Ireland, May and since 1998 all weeks of the second quarter; Italy, April and since 2004 all weeks of the second quarter; Japan, February; Luxembourg, April and since 2003 all weeks of the year; Mexico, April; the Netherlands, March-June and since 2000 all weeks of the second quarter; Portugal, all weeks of the second quarter; Switzerland, second quarter; and the United Kingdom, all weeks of the second quarter.
- 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. Data for Hungary refer to persons aged 15-74, for Norway to persons aged 16-74 until 2006 and 15-74 thereafter and for Sweden to persons aged 16-64 prior to 2007 and 16-74 thereafter.
- e) Persons for whom no duration of unemployment was specified are excluded.
- f) Data in brackets are based on small sample sizes and, therefore, must be treated with care.

Source: OECD database on Labour Force Statistics (see URLs at the beginning of the annex).


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Table H. Earnings dispersion,<sup>a</sup> gender wage gap<sup>b</sup> and incidence of low pay<sup>c</sup>

	Ratio of						Gender wage gap (%)		Incidence of low pay (%)	
	9th to 1st earnings deciles		9th to 5th earnings deciles		5th to 1st earnings deciles					
	1997	2007	1997	2007	1997	2007	1997	2007	1997	2007
Australia	2.95	3.31	1.82	1.94	1.62	1.71	15	15	12.4	16.0
Austria	..	3.37	..	1.93	..	1.75	23	22	..	16.2
Belgium	2.39	2.43	1.70	1.74	1.41	1.39	15	10	..	6.3
Canada	3.53	3.75	1.76	1.87	2.00	1.98	25	21	21.9	22.0
Czech Republic	2.77	3.11	1.68	1.80	1.65	1.72	21	20	14.6	16.8
Denmark	2.44	2.69	1.68	1.74	1.45	1.55	13	9	7.7	12.0
Finland	2.38	2.55	1.69	1.76	1.41	1.45	21	21	4.6	7.9
France	3.06	2.91	1.92	1.98	1.59	1.47	10	12	..	..
Germany	2.87	3.26	1.83	1.73	1.56	1.89	24	23	12.1	17.5
Hungary	4.17	4.56	2.17	2.34	1.92	1.94	18	0	21.9	23.1
Ireland	3.93	3.78	2.02	2.03	1.95	1.86	22	18	20.4	21.7
Japan	3.01	3.06	1.85	1.86	1.63	1.65	37	32	15.2	15.4
Korea <sup>d</sup>	3.72	4.74	1.92	2.27	1.93	2.08	41	38	22.9	25.6
Netherlands	2.82	2.91	1.72	1.76	1.64	1.65	22	17	14.6	..
New Zealand	2.72	2.94	1.71	1.84	1.59	1.60	13	7	15.4	12.9
Norway	1.95	2.11	1.42	1.47	1.37	1.44	..	..	..	..
Poland	3.54	4.21	2.00	2.16	1.76	1.95	18	10	18.6	23.5
Spain	4.22	3.53	2.10	2.14	2.01	1.65	29	17	15.2	16.2
Sweden	2.21	2.31	1.61	1.67	1.38	1.38	17	15	5.7	6.4
Switzerland	2.41	2.65	1.60	1.81	1.51	1.47	25	19	..	..
United Kingdom <sup>d</sup>	3.42	3.59	1.86	1.98	1.84	1.81	26	21	20.5	20.5
United States	4.62	4.85	2.20	2.31	2.10	2.11	24	20	24.9	24.5
OECD22 <sup>e</sup>	3.08	3.30	1.83	1.92	1.67	1.70	21	18	15.3	16.8

- a) Earnings dispersion is measured by the ratio of 9th to 1st deciles limits of earnings, 9th to 5th deciles and 5th to 1st deciles. Data refer to 1995 (instead of 1997) for Spain and to 1999 for Belgium. They refer to 2002 (instead of 2007) for Norway and Spain; to 2004 for Poland and Sweden; to 2005 for France, Germany and the Netherlands; and to 2006 for Belgium and Hungary.
- b) The gender wage gap is unadjusted and is calculated as the difference between median earnings of men and women relative to median earnings of men. Data refer to 1996 (instead of 1997) for Hungary and to 1999 for Belgium. They refer to 2004 (instead of 2007) for Poland and Sweden; to 2005 for France, Germany and the Netherlands; and to 2006 for Belgium and Hungary.
- c) The incidence of low pay refers to the share of workers earning less than two-thirds of median earnings. Data refer to 1995 (instead of 1997) for Spain and to 1999 for Belgium. They refer to 2002 (instead of 2007) for Spain; to 2004 for Poland and Sweden; to 2005 for Germany; and to 2006 for Belgium and Hungary.
- d) Data for 1997 refer to estimations based on *new-to-old series* splicing. For Korea, there is a break in series in 2000, and data were spliced from new-to-old series on 2000 data. For the United Kingdom, there are breaks in series in 1997, 2004 and 2006; in each case, data were spliced from new-to-old series on 2006 data, then 2004 and finally 1997.
- e) Unweighted average for countries shown in the table.
- f) Estimates of earnings used in the calculations refer to gross earnings of full-time wage and salary workers. Further information on the national data sources and earnings concepts used in the calculations can be found at: [www.oecd.org/els/employment/outlook](http://www.oecd.org/els/employment/outlook).

Source: OECD database on Earnings Distribution.

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**Table I. Average annual wages in the total economy**  
Average gross annual wages per full-time and full-year equivalent dependent employee in the total economy<sup>a</sup>

	Level of average wages in 2007 in current USD	Level of average wages in 2007 in USD PPPs	Average annual growth rates of real average wages <sup>b</sup> (%)			
			1990-1995	1995-2000	2000-2005	2006-2007
Australia	51 781	42 019	1.0	2.1	1.2	1.1
Austria	46 072	38 632	1.2	0.6	0.9	-0.1
Belgium	51 190	40 591	2.1	1.3	0.3	-0.1
Canada	43 973	38 245	-0.2	2.0	1.1	2.6
Czech Republic	13 527	18 300	5.9	3.0	5.1	3.5
Denmark	63 731	39 143	0.8	1.6	2.0	0.3
Finland	45 350	31 211	-0.1	1.4	2.4	1.3
France	45 167	35 430	1.1	1.3	1.4	1.0
Germany	43 056	35 292	2.1	0.8	0.3	0.0
Greece	28 424	26 929	3.2	2.4	2.8	2.2
Hungary	14 788	18 922	5.1	0.3	7.0	0.2
Ireland	64 556	44 013	2.5	2.2	2.7	3.2
Italy	36 021	29 198	-0.7	0.8	0.3	0.1
Japan	36 270	31 773	1.3	0.5	0.3	-0.4
Korea	25 882	27 586	4.8	0.1	2.1	1.7
Luxembourg	66 035	49 663	1.9	1.2	1.1	1.9
Netherlands	51 866	42 514	0.3	0.0	0.4	3.3
Norway	66 075	40 177	1.2	2.2	3.2	6.0
Poland	11 658	15 446	3.0	5.0	1.0	0.9
Portugal	21 175	21 161	1.1	2.6	0.3	1.0
Slovak Republic	11 486	15 393	6.7	5.3	3.4	6.1
Spain	31 661	28 871	1.9	-0.5	-0.1	0.2
Sweden	46 570	33 586	-0.3	3.3	1.4	3.7
Switzerland	64 170	42 980	1.0	0.9	1.1	0.3
United Kingdom	53 114	40 825	1.0	2.6	1.6	1.4
United States	49 486	49 486	1.0	2.9	0.4	1.0
OECD Europe <sup>c</sup>	42 156	33 850	1.4	1.4	1.0	1.0
EU15 <sup>c</sup>	43 710	34 978	1.1	1.2	0.8	0.8
EU19 <sup>c</sup>	41 287	33 551	1.4	1.4	1.0	0.9
Total OECD <sup>c</sup>	43 973	39 701	1.3	1.9	0.7	0.9

a) Average annual wages per full-time equivalent dependent employee are obtained by dividing the National Accounts based total wage bill by the average number of employees in the total economy, which is then multiplied by the ratio of average usual weekly hours per full-time employee to average usual weekly hours for all employees. For more details, see: [www.oecd.org/els/employment/outlook](http://www.oecd.org/els/employment/outlook).

b) Average annual wages are deflated by a price deflator for private final consumption expenditures.

c) Aggregates are computed on the basis of 2005 GDP weights expressed in 2005 purchasing power parities and include the countries shown.

Source: OECD estimates based on OECD National Accounts database and OECD (2008), OECD Economic Outlook, No. 84, OECD Publishing, Paris, December.

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Table J. Public expenditure and participant stocks in labour market programmes in OECD countries<sup>d</sup>

Programme categories and sub-categories	Australia <sup>b</sup>			Austria			Belgium			Canada <sup>f</sup>		
	Public expenditure as a percentage of GDP		Participant stocks as a percentage of the labour force	Public expenditure as a percentage of GDP		Participant stocks as a percentage of the labour force	Public expenditure as a percentage of GDP		Participant stocks as a percentage of the labour force	Public expenditure as a percentage of GDP		Participant stocks as a percentage of the labour force
	2005-06	2006-07	2007-08	2005	2006	2007	2005	2006	2007	2005-06	2006-07	2007-08
<b>1. PES and administration<sup>a</sup></b>	<b>0.21</b>	<b>0.19</b>	<b>0.17</b>	<b>0.17</b>	<b>0.17</b>	<b>0.16</b>	<b>0.21</b>	<b>0.21</b>	<b>0.22</b>	<b>0.16</b>	<b>0.15</b>	<b>0.14</b>
of which: 1.1. Placement and related services <sup>a</sup>	0.13	0.12	0.11	0.07	0.08	0.08	0.09	0.08	0.09	0.04 <sup>m</sup>	0.04 <sup>m</sup>	0.04 <sup>m</sup>
1.2. Benefit administration <sup>a</sup>	0.04	0.03	0.03	0.02 <sup>g</sup>	0.02 <sup>g</sup>	0.02 <sup>g</sup>	0.11 <sup>i</sup>	0.10 <sup>i</sup>	0.10 <sup>i</sup>	0.04	0.03	0.03
<b>2. Training</b>	<b>0.01<sup>c</sup></b>	<b>0.01<sup>c</sup></b>	<b>0.01<sup>c</sup></b>	<b>0.33<sup>f</sup></b>	<b>0.40<sup>f</sup></b>	<b>0.37<sup>f</sup></b>	<b>1.89<sup>g</sup></b>	<b>2.18<sup>g</sup></b>	<b>2.29<sup>g</sup></b>	<b>0.08</b>	<b>0.08</b>	<b>0.08</b>
2.1. Institutional training	0.01	0.01	0.01	0.25	0.31	0.27	2.85	3.37	3.00	0.20	0.18	0.18
2.2. Workplace training	-	-	-	0.03	0.03	0.02	0.34	0.18	0.15	-	-	-
2.3. Alternate training	-	-	-	-	-	-	-	-	-	-	-	-
2.4. Special support for apprenticeship <sup>a</sup>	-	-	-	0.02	0.04	0.06	0.31	0.57	0.76	-	-	-
<b>4. Employment incentives<sup>a</sup></b>	<b>0.01</b>	<b>0.01</b>	<b>0.01</b>	<b>0.05</b>	<b>0.06</b>	<b>0.06</b>	<b>1.11</b>	<b>1.48</b>	<b>1.25</b>	<b>0.31<sup>i</sup></b>	<b>0.36<sup>i</sup></b>	<b>0.42<sup>i</sup></b>
4.1. Recruitment incentives	0.01	0.01	0.01	0.04	0.04	0.04	0.35	0.40	0.38	0.24	0.30	0.37
4.2. Employment maintenance incentives	-	-	-	0.02	0.01	0.02	0.77	1.08	0.88	-	-	-
<b>5. Supported employment and rehabilitation</b>	<b>0.05</b>	<b>0.05</b>	<b>0.06</b>	<b>0.04</b>	<b>0.04</b>	<b>0.03</b>	<b>0.04</b>	<b>0.04</b>	<b>0.03</b>	<b>0.12</b>	<b>0.12</b>	<b>0.13</b>
5.1. Supported employment	0.04	0.04	0.04	0.04	0.04	0.03	-	-	-	0.09	0.11	0.11
5.2. Rehabilitation	0.01	0.02	0.02	-	-	-	-	-	-	-	0.01	0.01
<b>6. Direct job creation</b>	<b>0.08<sup>c</sup></b>	<b>0.07<sup>c</sup></b>	<b>0.05<sup>c</sup></b>	<b>0.04</b>	<b>0.04</b>	<b>0.04</b>	<b>0.14</b>	<b>0.18</b>	<b>0.19</b>	<b>0.34</b>	<b>0.35</b>	<b>0.34</b>
6.1. Start-up incentives	0.01	0.01	0.01	0.01	0.01	0.01	0.06	0.05	0.06	-	-	-
<b>8. Out-of-work income maintenance and support<sup>h</sup></b>	<b>0.56</b>	<b>0.50</b>	<b>0.42</b>	<b>1.23</b>	<b>1.14</b>	<b>1.02</b>	<b>5.67</b>	<b>5.21</b>	<b>4.80</b>	<b>1.49</b>	<b>1.39</b>	<b>1.25</b>
8.1. Full unemployment benefits	0.56 <sup>d</sup>	0.50 <sup>d</sup>	0.42 <sup>d</sup>	1.09	1.01	0.90	5.60	5.16	4.74	1.29	1.23	1.10
of which: Unemployment insurance	-	-	-	0.67	0.62	0.55	3.21	2.93	2.72	1.29	1.23	1.10
8.2, 8.3. Partial and part-time unemployment benefits	-	-	-	0.01	0.01	0.01	0.07	0.05	0.06	0.14	0.13	0.11
8.4, 8.5. Redundancy and bankruptcy compensation	0.01	0.01	0.01	0.13	0.13	0.11	-	-	-	0.06	0.04	0.03
<b>9. Early retirement<sup>h</sup></b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>0.28</b>	<b>0.25</b>	<b>0.22</b>	<b>1.57</b>	<b>1.45</b>	<b>1.33</b>	<b>0.84<sup>k</sup></b>	<b>0.79<sup>k</sup></b>	<b>0.75<sup>k</sup></b>
<b>TOTAL (1-9)</b>	<b>0.94</b>	<b>0.85</b>	<b>0.74</b>	<b>2.14</b>	<b>2.11</b>	<b>1.93</b>	<b>3.52</b>	<b>3.40</b>	<b>3.29</b>	<b>3.52</b>	<b>3.40</b>	<b>3.29</b>
Active measures (1-7)	0.38	0.34	0.32	0.63	0.71	0.68	1.19	1.22	1.30	1.19	1.22	1.30
of which: Categories 2-7 only	0.17	0.15	0.14	0.46	0.54	0.51	3.23 <sup>b</sup>	3.93 <sup>b</sup>	3.84 <sup>b</sup>	0.97	1.02	1.08
Passive measures (8-9)	0.56	0.50	0.42	1.51	1.40	1.25	7.24	6.86	6.13	2.33	2.18	2.00

a) See the introductory note about scope and comparability at [www.oecd.org/els/employment/outlook](http://www.oecd.org/els/employment/outlook). Sub-categories 1.1 and 1.2 refer only to separately-identified spending. Active and passive participant stocks should not be added (some people appear in both).

b) Fiscal years starting on July 1st.

c) Income support payments to participants in Training (Category 2) and Work for the Dole (Category 6) are usually unemployment benefits, reported in Category 8. Payments to participants in measures for Indigenous Australians (CDEP) are reported in Category 6.

d) Includes Mature Age, Partner Allowances (benefit only) and Youth Allowances. Excludes Widow Allowances.

e) Staff costs of the unemployment insurance service.

f) Includes Employment Foundations established by enterprises in cases of large-scale manpower reductions, which have not been allocated across sub-categories.

g) Adjustments for double-counting (relevant in cases of simultaneous participation in two or more programmes e.g. the budget for training centres and training subsistence allowances) are applied to database totals for the main categories (e.g. 2. Training or 8. Out-of-work income maintenance and support), but not to sub-category data.

h) Participant stocks for Category 5 "Supported employment and rehabilitation" are not included.

i) Includes administration costs of union and auxiliary benefit payment organisations.

j) Includes the income guarantee allowance for part-time workers. This resembles regular unemployment benefit paid at a reduced rate in the case of part-time work or part-time earnings. It has not been allocated across sub-categories. Includes the "titres services" programme, which is only partly targeted on the unemployed.

k) Data are revised from those previously published with the inclusion of benefits for older unemployed exempt from job-search requirements.

l) Fiscal years starting on April 1st.

m) Employment Assistance Service.

n) Includes the Aboriginal Human Resources Development Agreements, which have not been allocated across the main categories.

o) Participant stocks for Category 5.2 "Rehabilitation" are not included.

Table J. Public expenditure and participant stocks in labour market programmes in OECD countries<sup>a</sup> (cont.)

Programme categories and sub-categories	Czech Republic						Denmark						Finland						France					
	Public expenditure as a percentage of GDP			Participant stocks as a percentage of the labour force			Public expenditure as a percentage of GDP			Participant stocks as a percentage of the labour force			Public expenditure as a percentage of GDP			Participant stocks as a percentage of the labour force			Public expenditure as a percentage of GDP			Participant stocks as a percentage of the labour force		
	2005	2006	2007	2005	2006	2007	2005	2006	2007	2005	2006	2007	2005	2006	2007	2005	2006	2007	2005	2006	2007	2005	2006	2007
<b>1. PES and administration<sup>a</sup></b>	<b>0.13</b>	<b>0.13</b>	<b>0.13</b>				<b>0.32</b>	<b>0.30</b>	<b>0.28</b>				<b>0.18</b>	<b>0.17</b>	<b>0.16</b>				<b>0.23</b>	<b>0.24</b>	<b>0.22</b>			
of which: 1.1. Placement and related services <sup>a</sup>	0.04	0.04	0.04				0.05	0.06	0.06				0.10	0.10	0.10				0.16	0.17	0.15			
1.2. Benefit administration <sup>a</sup>	..	..	..				0.16 <sup>b</sup>	0.14 <sup>b</sup>	0.14 <sup>b</sup>				0.05 <sup>d</sup>	0.05 <sup>d</sup>	0.04 <sup>d</sup>				0.08	0.07	0.07			
<b>2. Training</b>	<b>0.01</b>	<b>0.01</b>	<b>0.01</b>	<b>0.12</b>	<b>0.14</b>	<b>0.14</b>	<b>0.50</b>	<b>0.43</b>	<b>0.33</b>	<b>1.69</b>	<b>1.51</b>	<b>1.84</b>	<b>0.37</b>	<b>0.37</b>	<b>0.37</b>	<b>1.85</b>	<b>1.83</b>	<b>1.86</b>	<b>0.29<sup>e</sup></b>	<b>0.29<sup>e</sup></b>	<b>0.27<sup>e</sup></b>	<b>1.99</b>	<b>1.98</b>	<b>2.05</b>
2.1. Institutional training	0.01	0.01	0.01	0.12	0.14	0.14	0.49 <sup>c</sup>	0.41 <sup>c</sup>	0.31 <sup>c</sup>	1.46	1.23	1.49	0.29	0.30	0.30	1.17	1.16	1.20	0.13	0.11	0.09	0.89	0.84	0.85
2.2. Workplace training	-	-	-	-	-	-	-	-	-	-	-	-	0.06	0.06	0.06	0.51	0.52	0.48	-	-	-	-	-	-
2.3. Alternate training	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2.4. Special support for apprenticeship <sup>a</sup>	-	-	-	-	-	-	0.02	0.02	0.03	0.23	0.28	0.35	0.02	0.01	0.02	0.17	0.15	0.18	0.07	0.08	0.08	1.00	1.03	1.09
<b>4. Employment incentives<sup>a</sup></b>	<b>0.04</b>	<b>0.03</b>	<b>0.02</b>	<b>0.45</b>	<b>0.32</b>	<b>0.25</b>	<b>0.25</b>	<b>0.21</b>	<b>0.13</b>	<b>1.09</b>	<b>0.91</b>	<b>0.76</b>	<b>0.16<sup>b</sup></b>	<b>0.15<sup>b</sup></b>	<b>0.14<sup>b</sup></b>	<b>0.99<sup>b</sup></b>	<b>0.87<sup>b</sup></b>	<b>0.89<sup>b</sup></b>	<b>0.12</b>	<b>0.12</b>	<b>0.13</b>	<b>1.89</b>	<b>1.97</b>	<b>1.89</b>
4.1. Recruitment incentives	0.04	0.03	0.02	0.41	0.29	0.23	0.25	0.21	0.13	1.09	0.91	0.76	0.11	0.10	0.08	0.73	0.59	0.60	0.12	0.12	0.13	1.89	1.97	1.89
4.2. Employment maintenance incentives	-	-	-	0.04	0.03	0.02	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>5. Supported employment and rehabilitation</b>	<b>0.03</b>	<b>0.05</b>	<b>0.07</b>	<b>0.31</b>	<b>0.40</b>	<b>0.51</b>	<b>0.51</b>	<b>0.58</b>	<b>0.56</b>	<b>2.22</b>	<b>2.32</b>	<b>2.15</b>	<b>0.10</b>	<b>0.10</b>	<b>0.09</b>	<b>0.32</b>	<b>0.33</b>	<b>0.31</b>	<b>0.07</b>	<b>0.07</b>	<b>0.07</b>	<b>0.47</b>	<b>0.47</b>	<b>0.50</b>
5.1. Supported employment	0.03	0.05	0.07	0.31	0.40	0.51	0.27	0.36	0.38	1.46	1.63	1.68	0.02	0.02	0.02	0.11	0.13	0.12	0.07	0.07	0.07	0.47	0.47	0.50
5.2. Rehabilitation	-	-	-	-	-	-	0.24	0.22	0.18	0.75	0.69	0.46	0.08	0.07	0.07	0.20	0.20	0.20	-	-	-	-	-	-
<b>6. Direct job creation</b>	<b>0.03</b>	<b>0.03</b>	<b>0.02</b>	<b>0.18</b>	<b>0.18</b>	<b>0.14</b>	-	-	-	-	-	-	<b>0.07</b>	<b>0.09</b>	<b>0.08</b>	<b>0.36</b>	<b>0.50</b>	<b>0.51</b>	<b>0.18</b>	<b>0.20</b>	<b>0.20</b>	<b>0.97</b>	<b>1.01</b>	<b>1.29</b>
<b>7. Start-up incentives</b>	-	-	-	<b>0.11</b>	<b>0.08</b>	<b>0.07</b>	-	-	-	-	-	-	<b>0.02</b>	<b>0.02</b>	<b>0.02</b>	<b>0.14</b>	<b>0.16</b>	<b>0.17</b>	<b>0.01</b>	<b>0.01</b>	<b>0.03</b>	<b>0.24</b>	<b>0.28</b>	<b>0.37</b>
<b>8. Out-of-work income maintenance and support<sup>a</sup></b>	<b>0.24</b>	<b>0.23</b>	<b>0.20</b>	<b>2.88</b>	<b>2.57</b>	<b>2.24</b>	<b>1.67</b>	<b>1.30</b>	<b>0.98</b>	<b>5.92</b>	<b>4.71</b>	<b>3.56</b>	<b>1.47</b>	<b>1.29</b>	<b>1.05</b>	<b>9.64</b>	<b>8.82</b>	<b>7.20</b>	<b>1.53</b>	<b>1.34</b>	<b>1.20</b>	<b>9.38</b>	<b>8.98</b>	<b>7.90</b>
8.1. Full unemployment benefits	0.24	0.23	0.20	2.68	2.57	2.24	1.65 <sup>d</sup>	1.28 <sup>d</sup>	0.96 <sup>d</sup>	5.92	4.71	3.56	1.35	1.18	0.96	8.51	7.58	6.30	1.53	1.34	1.20	9.37	8.97	7.89
of which: Unemployment insurance	0.24	0.23	0.20	2.68	2.57	2.24	1.32 <sup>e</sup>	0.98 <sup>e</sup>	0.69 <sup>e</sup>	4.68	3.55	2.46	0.85	0.75	0.63	4.00	3.56	3.06	1.38	1.18	1.05	7.82	7.42	6.39
8.2, 8.3. Partial and part-time unemployment benefits	-	-	-	-	-	-	-	-	-	-	-	-	0.11	0.10	0.08	1.12	1.04	0.91	-	-	-	0.01	0.01	0.01
8.4, 8.5. Redundancy and bankruptcy compensation	-	-	-	-	-	-	0.02	0.01	0.02	-	-	-	0.01	0.01	0.01	-	-	-	<b>0.06</b>	<b>0.05</b>	<b>0.04</b>	<b>0.39</b>	<b>0.29</b>	<b>0.27</b>
<b>9. Early retirement<sup>a</sup></b>	-	-	-	-	-	-	<b>0.67<sup>f</sup></b>	<b>0.57<sup>f</sup></b>	<b>0.52<sup>f</sup></b>	<b>2.59</b>	<b>2.24</b>	<b>2.11</b>	<b>0.44</b>	<b>0.40</b>	<b>0.38</b>	<b>1.80</b>	<b>1.71</b>	<b>1.69</b>	<b>0.06</b>	<b>0.05</b>	<b>0.04</b>	<b>0.39</b>	<b>0.29</b>	<b>0.27</b>
<b>TOTAL (1-9)</b>	<b>0.49</b>	<b>0.49</b>	<b>0.46</b>				<b>3.92</b>	<b>3.38</b>	<b>2.81</b>				<b>2.79</b>	<b>2.58</b>	<b>2.28</b>				<b>2.48</b>	<b>2.30</b>	<b>2.16</b>			
Active measures (1-7)	0.25	0.26	0.25				1.58	1.52	1.31				0.89	0.89	0.86				0.89	0.92	0.92			
of which: Categories 2-7 only	0.12	0.13	0.12	1.16	1.13	1.12	1.26	1.22	1.02	5.00	4.74	4.75	0.71	0.72	0.70	3.66	3.69	3.74	0.66	0.68	0.69	5.55	5.71	6.09
Passive measures (8-9)	0.24	0.23	0.20	2.68	2.57	2.24	2.34	1.86	1.50	8.51	6.95	5.67	1.90	1.69	1.43	11.44	10.33	8.90	1.58	1.38	1.24	9.77	9.27	8.17

a) See the introductory note about scope and comparability at [www.oecd.org/els/employment/outlook](http://www.oecd.org/els/employment/outlook). Sub-categories 1.1 and 1.2 refer only to separately-identified spending. Active and passive participant stocks should not be added (some people appear in both).

b) Three-quarters of the administration costs of independent unemployment insurance funds (the last quarter concerns administration of benefits outside the scope of this database), which provide some placement-related services.

c) Includes income support paid to participants in "Specially arranged activation", but not the corresponding services.

d) Includes social assistance benefits paid to unemployed but not inactive recipients.

e) Includes part-time and partial benefits.

f) Early retirement benefits (*efterløn*) only when paid to recipients who entered the scheme from unemployment.

g) Includes the administration costs of independent unemployment insurance funds.

h) The totals shown for Category 4 include non-zero spending on Eurostat Category 3 "Job rotation and sharing" in Finland, Germany, Italy, Spain and Sweden.

i) Includes training allowances which have not been allocated across sub-categories.

Table J. Public expenditure and participant stocks in labour market programmes in OECD countries<sup>a</sup> (cont.)

Programme categories and sub-categories	Germany			Greece			Hungary			Ireland		
	Public expenditure as a percentage of GDP			Public expenditure as a percentage of GDP			Public expenditure as a percentage of GDP			Public expenditure as a percentage of GDP		
	2005	2006	2007	2005	2006	2007	2005	2006	2007	2005	2006	2007
<b>1. PES and administration<sup>a</sup></b>	<b>0.29</b>	<b>0.27</b>	<b>0.27</b>	..	..	..	<b>0.09</b>	<b>0.09</b>	<b>0.08</b>	<b>0.12<sup>f</sup></b>	<b>0.12<sup>f</sup></b>	<b>0.12<sup>f</sup></b>
of which: 1.1. Placement and related services <sup>a</sup>	0.13	0.13	0.15	0.01	0.03	..	..	..	..	0.04	0.04	0.04
1.2. Benefit administration <sup>a</sup>	0.06	0.05	0.04	..	..	..	..	..	..	0.03 <sup>g</sup>	0.03 <sup>g</sup>	0.03 <sup>g</sup>
<b>2. Training</b>	<b>0.25</b>	<b>0.31<sup>b</sup></b>	<b>0.28<sup>b</sup></b>	<b>0.04</b>	<b>0.05</b>	..	<b>0.04</b>	<b>0.06</b>	<b>0.06</b>	<b>0.24<sup>h</sup></b>	<b>0.24<sup>h</sup></b>	<b>0.25<sup>h</sup></b>
2.1. Institutional training	0.15	0.21	0.18	0.01	0.01	..	0.04	0.06	0.06	0.34	0.33	0.32
2.2. Workplace training	..	..	..	..	..	..	..	..	..	..	..	..
2.3. Alternate training	..	..	..	0.03	0.03	..	..	..	..	0.07	0.07	0.08
2.4. Special support for apprenticeship <sup>a</sup>	0.06	0.06	0.06	..	..	..	..	..	..	..	..	..
<b>4. Employment incentives<sup>a</sup></b>	<b>0.05<sup>c</sup></b>	<b>0.06<sup>c</sup></b>	<b>0.06<sup>c</sup></b>	<b>0.02</b>	<b>0.06</b>	..	<b>0.10</b>	<b>0.08</b>	<b>0.10</b>	<b>0.08</b>	<b>0.03</b>	<b>0.04</b>
4.1. Recruitment incentives	0.05	0.06	0.06	0.02	0.06	..	0.09	0.08	0.10	0.77	0.78	0.67
4.2. Employment maintenance incentives	..	..	..	..	..	..	0.01	0.01	..	0.10	0.05	0.09
<b>5. Supported employment and rehabilitation</b>	<b>0.12</b>	<b>0.01<sup>b</sup></b>	<b>0.01<sup>b</sup></b>	..	..	..	..	..	..	..	..	..
5.1. Supported employment	0.01	0.01	0.01	..	..	..	..	..	..	..	..	..
5.2. Rehabilitation	0.11	.. <sup>b</sup>	.. <sup>b</sup>	..	..	..	..	..	..	..	..	..
<b>6. Direct job creation</b>	<b>0.08</b>	<b>0.09</b>	<b>0.07</b>	..	..	..	<b>0.06</b>	<b>0.05</b>	<b>0.04</b>	<b>0.39</b>	<b>0.40</b>	<b>0.39</b>
<b>7. Start-up incentives</b>	<b>0.09</b>	<b>0.12</b>	<b>0.08</b>	..	..	..	..	..	..	..	..	..
<b>8. Out-of-work income maintenance and support<sup>a</sup></b>	<b>2.29<sup>d</sup></b>	<b>2.04<sup>d</sup></b>	<b>1.57<sup>d</sup></b>	<b>0.40</b>	<b>0.38</b>	..	<b>0.38</b>	<b>0.35</b>	<b>0.36</b>	<b>3.08</b>	<b>3.35</b>	<b>3.27</b>
8.1. Full unemployment benefits	2.20	1.98	1.52	16.34	16.47 <sup>e</sup>	15.15 <sup>e</sup>	0.35	0.35	0.36	3.08	3.35	3.27
of which: Unemployment insurance	1.20	0.99	0.70	4.21	3.48	2.59	0.34	0.33	0.36	2.66	2.12	2.23
8.2, 8.3. Partial and part-time unemployment benefits	0.04	0.03	0.02	0.48	0.33	0.16	..	..	..	..	..	..
8.4, 8.5. Redundancy and bankruptcy compensation	0.05	0.04	0.03	..	..	..	..	..	..	..	..	..
<b>9. Early retirement<sup>a</sup></b>	<b>0.05</b>	<b>0.05</b>	<b>0.06</b>	<b>0.22</b>	<b>0.25</b>	<b>0.25</b>	..	..	..	<b>0.13</b>	<b>0.12</b>	..
<b>TOTAL (1-9)</b>	<b>3.23</b>	<b>2.95</b>	<b>2.40</b>	..	..	..	<b>0.69</b>	<b>0.64</b>	<b>0.65</b>	<b>1.46</b>	<b>1.46</b>	<b>1.53</b>
Active measures (1-7)	0.88	0.85	0.77	..	..	..	0.30	0.28	0.29	0.63	0.61	0.62
of which: Categories 2-7 only	0.59	0.58	0.50	0.06	0.14	..	0.20	0.19	0.21	1.70	1.64	1.51
Passive measures (8-9)	2.34	2.09	1.63	0.40	0.38	..	0.39	0.36	0.36	3.21	3.47	3.27

a) See the introductory note about scope and comparability at [www.oecd.org/els/employment/outlook](http://www.oecd.org/els/employment/outlook). Sub-categories 1.1 and 1.2 refer only to separately-identified spending. Active and passive participant stocks should not be added (some people appear in both).  
 b) Starting 2006, expenditure on rehabilitation has been reallocated, mainly to Category 2.  
 c) The totals shown for Category 4 include non-zero spending on Eurostat Category 3 'Job rotation and sharing' in Finland, Germany, Italy, Spain and Sweden.  
 d) About half the unemployment benefit recipients (mainly recipients of the assistance benefit, ALG II) are not registered unemployed: of these, the majority are economically inactive, and others are ALMP participants or have monthly earnings above 400 euros.  
 e) The totals shown for Category 8 include an adjustment for double-counting of participants.  
 f) Category 1 includes the Local Employment Service, Job Clubs, and the overheads, pension and staff costs of the employment and training organisation FÁS, except for Training Services (which are allocated to Category 2) and Services to Business.  
 g) Secretariat estimate based on the ratio of benefit administration costs to benefits paid for a wider range of benefits (as reported in annual reports of DSFA, the social affairs ministry).  
 h) Includes the Local Training Initiative and Specialist Training Providers programmes which have not been allocated across sub-categories.

Table J. Public expenditure and participant stocks in labour market programmes in OECD countries<sup>a</sup> (cont.)

Programme categories and sub-categories	Italy			Japan <sup>f</sup>			Korea			Luxembourg			Mexico		
	Public expenditure as a percentage of GDP			Participant stocks as a percentage of the labour force			Public expenditure as a percentage of GDP			Participant stocks as a percentage of the labour force			Public expenditure as a percentage of GDP		
	2005	2006	2007	2005	2006	2007	2005-06	2006-07	2007-08	2005	2006	2007	2005	2006	2007
<b>1. PES and administration<sup>a</sup></b>	<b>0.09</b>	<b>0.09</b>	<b>0.09</b>				<b>0.19</b>	<b>0.14</b>	<b>0.12</b>	<b>0.03</b>	<b>0.03</b>	<b>0.03</b>	<b>0.05</b>	<b>0.04</b>	<b>0.05</b>
of which: 1.1. Placement and related services <sup>a</sup>	0.01	0.01	0.01				0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.02	0.02
1.2. Benefit administration <sup>a</sup>	0.05 <sup>b</sup>	0.05 <sup>b</sup>	0.05 <sup>b</sup>												
<b>2. Training</b>	<b>0.20</b>	<b>0.18</b>	<b>0.18</b>				<b>0.04</b>	<b>0.04</b>	<b>0.03</b>	<b>0.04</b>	<b>0.05</b>	<b>0.06</b>	<b>0.12</b>	<b>0.12</b>	<b>0.10</b>
2.1. Institutional training	–	0.01	–				0.04 <sup>g</sup>	0.03 <sup>g</sup>	0.03 <sup>g</sup>	0.04 <sup>h</sup>	0.04 <sup>h</sup>	0.04 <sup>h</sup>	0.02	0.01	0.01
2.2. Workplace training	0.01	0.01	0.01	0.30	0.23	0.28	–	–	–	–	–	–	0.08	0.09	0.07
2.3. Alternate training	–	0.01	0.01	–	–	–	–	–	–	–	–	–	0.01	0.02	0.02
2.4. Special support for apprenticeship <sup>a</sup>	0.15 <sup>c</sup>	0.13 <sup>c</sup>	0.13 <sup>c</sup>	2.15	2.26	2.44	–	–	–	0.01	0.01	0.01	0.01	0.01	0.01
<b>4. Employment incentives<sup>a</sup></b>	<b>0.21<sup>d</sup></b>	<b>0.18<sup>d</sup></b>	<b>0.15<sup>d</sup></b>	<b>2.84<sup>d</sup></b>	<b>2.68<sup>d</sup></b>	<b>2.55<sup>d</sup></b>	<b>0.02</b>	<b>0.01</b>	<b>0.01</b>	<b>0.02</b>	<b>0.03</b>	<b>0.03</b>	<b>0.19<sup>d</sup></b>	<b>0.20<sup>d</sup></b>	<b>0.22<sup>d</sup></b>
4.1. Recruitment incentives	0.21 <sup>e</sup>	0.18 <sup>e</sup>	0.15 <sup>e</sup>	2.77	2.61	2.47	0.02	0.01	0.01	0.02	0.03	0.03	0.02	0.02	0.02
4.2. Employment maintenance incentives	–	–	–	–	–	–	–	–	–	–	–	–	0.03	0.05	0.06
<b>5. Supported employment and rehabilitation</b>	–	–	–	–	–	–	–	–	–	<b>0.02</b>	–	–	<b>0.01</b>	<b>0.01</b>	<b>0.01</b>
5.1. Supported employment	–	–	–	–	–	–	–	–	–	0.02	–	–	0.01	0.01	0.01
5.2. Rehabilitation	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
<b>6. Direct job creation</b>	<b>0.01</b>	<b>0.01</b>	<b>0.01</b>	<b>0.18</b>	<b>0.14</b>	<b>0.11</b>	–	–	–	–	<b>0.01</b>	<b>0.01</b>	<b>0.13<sup>f</sup></b>	<b>0.10<sup>f</sup></b>	<b>0.10<sup>f</sup></b>
<b>7. Start-up incentives</b>	<b>0.05</b>	<b>0.04</b>	<b>0.03</b>	<b>0.04</b>	<b>0.03</b>	–	–	–	–	<b>0.01</b>	–	–	–	–	–
<b>8. Out-of-work income maintenance and support<sup>a</sup></b>	<b>0.72</b>	<b>0.68</b>	<b>0.62</b>	<b>2.85</b>	<b>2.71</b>	<b>2.62</b>	<b>0.43</b>	<b>0.40</b>	<b>0.33</b>	<b>0.22</b>	<b>0.24</b>	<b>0.27</b>	<b>0.46</b>	<b>0.42</b>	<b>0.38</b>
8.1. Full unemployment benefits	0.61	0.58	0.54	2.27	2.17	2.20	0.43	0.40	0.32	0.22	0.24	0.27	0.40	0.35	0.34
of which: Unemployment insurance	0.53	0.51	0.49	2.22	2.13	2.17	–	–	–	0.22	0.24	0.27	–	–	–
8.2, 8.3. Partial and part-time unemployment benefits	0.11	0.11	0.09	0.58	0.54	0.42	–	–	–	–	–	–	0.03	0.04	0.01
8.4, 8.5. Redundancy and bankruptcy compensation	–	–	–	–	–	–	–	–	–	–	–	–	0.03	0.02	0.02
<b>9. Early retirement<sup>a</sup></b>	<b>0.10</b>	<b>0.11</b>	<b>0.09</b>	<b>0.39</b>	<b>0.32</b>	<b>0.28</b>	–	–	–	–	–	–	<b>0.19</b>	<b>0.17</b>	<b>0.16</b>
<b>TOTAL (1-9)</b>	<b>1.38</b>	<b>1.29</b>	<b>1.17</b>				<b>0.66</b>	<b>0.59</b>	<b>0.49</b>	<b>0.34</b>	<b>0.37</b>	<b>0.41</b>	<b>1.15</b>	<b>1.07</b>	<b>1.02</b>
Active measures (1-7)	0.57	0.50	0.46				0.25	0.19	0.16	0.13	0.13	0.14	0.50	0.48	0.48
of which: Categories 2-7 only	0.48	0.41	0.37	5.52	5.35	5.40	0.06	0.05	0.05	0.10	0.10	0.11	0.45	0.44	0.44
Passive measures (8-9)	0.81	0.79	0.71	3.24	3.03	2.90	0.43	0.40	0.33	0.22	0.24	0.27	0.65	0.59	0.54

- a) See the introductory note about scope and comparability at [www.oecd.org/els/employment/outlook](http://www.oecd.org/els/employment/outlook). Sub-categories 1.1 and 1.2 refer only to separately-identified spending. Active and passive participant stocks should not be added (some people appear in both).
- b) Secretariat estimate based on data for total administration costs and human resources administering income support payments within the National Social Security Institute (reported in INPS General Accounts and Annual Report 2005).
- c) Mainly exemptions from employer social security contributions, not restricted to the unemployed or those at risk. "Training post compulsory education and post diploma" is included in Category 2 but not in this sub-category.
- d) The totals shown for Category 4 include non-zero spending on Eurostat Category 3 "job rotation and sharing" in Finland, Germany, Italy, Spain and Sweden.
- e) Much spending in this category refers to tax relief for firms that have increased total employment and for the conversion of temporary contracts into permanent ones, not otherwise conditional on employment status.
- f) Fiscal years starting on April 1st.
- g) Includes education and training allowances, but not unemployment benefits paid to programme participants.
- h) Refers to expenditure on training programmes for the unemployed. In the case of mixed programmes, an estimated share of expenditure relating to training for employed workers is not included.
- i) Includes the Reemployment bonus and Measures of professional (re)integration of disabled workers which have not been allocated across sub-categories.
- j) Includes Secretariat estimates in Category 6 for "Special measures".
- k) 0.002% of GDP.
- l) Includes a number of programmes not allocated across sub-categories.

Table J. Public expenditure and participant stocks in labour market programmes in OECD countries<sup>a</sup> (cont.)

Programme categories and sub-categories	Netherlands			New Zealand <sup>g</sup>			Norway			Poland					
	Public expenditure as a percentage of GDP		Participant stocks as a percentage of the labour force	Public expenditure as a percentage of GDP		Participant stocks as a percentage of the labour force	Public expenditure as a percentage of GDP		Participant stocks as a percentage of the labour force	Public expenditure as a percentage of GDP		Participant stocks as a percentage of the labour force			
	2005	2006	2007	2005-06	2006-07	2007-08	2005-06	2006-07	2007-08	2005	2006	2007	2005	2006	2007
<b>1. PES and administration<sup>a</sup></b>	<b>0.48</b>	<b>0.46</b>	<b>0.41</b>												
of which: 1.1. Placement and related services <sup>a</sup>	0.24 <sup>b</sup>	0.26 <sup>b</sup>	0.24 <sup>b</sup>	0.11	0.11	0.11	0.12	0.12	0.11	0.05	0.06	0.05	0.07	0.09	0.10
1.2. Benefit administration <sup>a</sup>	0.23	0.19	0.17	0.07	0.07	0.07	0.02 <sup>k</sup>	0.01 <sup>k</sup>	0.01 <sup>k</sup>	0.02 <sup>k</sup>	0.01 <sup>k</sup>	0.01 <sup>k</sup>	0.02 <sup>k</sup>	0.02 <sup>k</sup>	0.01 <sup>k</sup>
<b>2. Training</b>	<b>0.13<sup>b, c</sup></b>	<b>0.11<sup>b, c</sup></b>	<b>0.10<sup>b, c</sup></b>	<b>1.63</b>	<b>1.54</b>	<b>1.38</b>	<b>1.09</b>	<b>1.12</b>	<b>1.18</b>	<b>0.37</b>	<b>0.26</b>	<b>0.23</b>	<b>1.64</b>	<b>1.42</b>	<b>1.28</b>
2.1. Institutional training	0.06	0.05	0.04	0.44	0.44	0.42	0.26	0.24	0.24	0.35 <sup>/</sup>	0.25 <sup>/</sup>	0.22 <sup>/</sup>	1.42	1.25	1.13
2.2. Workplace training	-	-	-	0.07	0.05	0.04	0.01	-	-	0.02	0.01	0.01	0.22	0.17	0.15
2.3. Alternate training	0.03	0.02	0.01	0.47	0.41	0.13	0.10	0.11	0.10	0.10	0.11	0.10	0.83	0.87	0.94
2.4. Special support for apprenticeship <sup>a</sup>	0.04 <sup>d</sup>	0.03 <sup>d</sup>	0.04 <sup>d</sup>	0.90	0.88	1.02	-	-	-	-	-	-	-	-	-
<b>4. Employment incentives<sup>a</sup></b>	<b>0.02<sup>e</sup></b>	<b>-<sup>e</sup></b>	<b>-<sup>e</sup></b>	<b>0.30</b>	<b>0.07</b>	<b>0.01</b>	<b>0.02</b>	<b>0.02</b>	<b>0.01</b>	<b>0.02</b>	<b>0.02</b>	<b>0.03</b>	<b>0.23</b>	<b>0.19</b>	<b>0.20</b>
4.1. Recruitment incentives	0.02	-	-	0.30	0.07	0.01	0.02	0.02	0.01	0.02	0.02	0.03	0.23	0.19	0.20
4.2. Employment maintenance incentives	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>5. Supported employment and rehabilitation</b>	<b>0.53</b>	<b>0.49</b>	<b>0.47</b>	<b>1.79</b>	<b>1.72</b>	<b>1.80</b>	<b>1.35</b>	<b>1.21</b>	<b>1.13</b>	<b>0.14</b>	<b>0.13</b>	<b>0.14</b>	<b>0.47</b>	<b>0.52</b>	<b>0.55</b>
5.1 Supported employment	0.43	0.42	0.41	1.19	1.18	1.17	0.73	0.68	0.65	0.12	0.11	0.13	0.39	0.45	0.49
5.2 Rehabilitation	-	-	-	-	-	-	0.62	0.53	0.47	0.03	0.02	0.02	0.08	0.07	0.07
<b>6. Direct job creation</b>	<b>0.15<sup>e</sup></b>	<b>0.12<sup>e</sup></b>	<b>0.11<sup>f</sup></b>	<b>0.48</b>	<b>0.46</b>	<b>0.41</b>	<b>0.01</b>	<b>0.01</b>	<b>0.01</b>	<b>0.07</b>	<b>0.05</b>	<b>0.05</b>	<b>0.33</b>	<b>0.31</b>	<b>0.27</b>
<b>7. Start-up incentives</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>8.57</b>	<b>7.82</b>	<b>6.38</b>	<b>1.90</b>	<b>1.11</b>	<b>0.85</b>	<b>0.72<sup>m</sup></b>	<b>0.50<sup>m</sup></b>	<b>0.42<sup>m</sup></b>	<b>4.36</b>	<b>2.89</b>	<b>2.05</b>
<b>8. Out-of-work income maintenance and support<sup>a</sup></b>	<b>2.01<sup>f</sup></b>	<b>1.70<sup>f</sup></b>	<b>1.39<sup>f</sup></b>	<b>8.57</b>	<b>7.82</b>	<b>6.38</b>	<b>1.90</b>	<b>1.11</b>	<b>0.85</b>	<b>0.57</b>	<b>0.43</b>	<b>0.36</b>	<b>4.36</b>	<b>2.89</b>	<b>2.05</b>
8.1. Full unemployment benefits	2.01 <sup>f</sup>	1.70 <sup>f</sup>	1.39 <sup>f</sup>	8.57	7.82	6.38	1.90	1.11	0.85	0.57	0.43	0.36	4.36	2.89	2.05
of which: Unemployment insurance	1.06	0.89	0.67	4.34	3.71	2.93	-	-	-	0.35	0.21	0.14	3.22	2.01	1.30
8.2. 8.3. Partial and part-time unemployment benefits	-	-	-	-	-	-	-	-	-	0.10	0.06	0.06	-	-	-
8.4. 8.5. Redundancy and bankruptcy compensation	-	-	-	-	-	-	-	-	-	0.05	0.01	-	-	-	-
<b>9. Early retirement<sup>g</sup></b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>0.82</b>	<b>0.72</b>	<b>0.58</b>	<b>1.45</b>	<b>1.08</b>	<b>0.97</b>	<b>0.74</b>	<b>0.58</b>	<b>0.56</b>	<b>2.68</b>	<b>2.46</b>	<b>2.32</b>
<b>TOTAL (1-9)</b>	<b>3.31</b>	<b>2.89</b>	<b>2.49</b>	<b>3.31</b>	<b>2.89</b>	<b>2.49</b>	<b>1.45</b>	<b>1.08</b>	<b>0.97</b>	<b>1.45</b>	<b>1.08</b>	<b>0.97</b>	<b>1.45</b>	<b>1.08</b>	<b>0.97</b>
Active measures (1-7)	1.30	1.19	1.09	0.39	0.38	0.35	0.74	0.58	0.56	0.74	0.58	0.56	0.42	0.45	0.50
of which: Categories 2-7 only	0.82	0.73	0.68	4.20 <sup>b</sup>	3.79 <sup>b</sup>	3.61 <sup>b</sup>	2.44 <sup>/</sup>	2.32 <sup>/</sup>	2.30 <sup>/</sup>	0.62	0.47	0.45	2.68	2.46	2.32
Passive measures (8-9)	2.01	1.70	1.39	8.57	7.82	6.38	1.90	1.11	0.85	0.72	0.50	0.42	4.36	2.89	2.05

a) See the introductory note about scope and comparability at [www.oecd.org/els/employment/outlook](http://www.oecd.org/els/employment/outlook). Sub-categories 1.1 and 1.2 refer only to separately-identified spending. Active and passive participant stocks should not be added (some people appear in both).

b) "Comprehensive reintegration/flexible reintegration" is mainly included in Category 1.1.

c) Unemployment benefits paid to participants in training are included.

d) Employer tax reductions payable for every apprentice who does not earn more than 130% of the minimum wage.

e) Wage cost subsidies component of "Flexible reintegration budget for municipalities" measure is allocated to Category 6 in order to improve time-series consistency.

f) Includes social assistance benefits paid to inactive individuals as well as unemployed recipients.

g) Fiscal years starting on July 1st.

h) Includes training benefits (often paid to participants in alternate training, Category 2.3) and Training Incentive Allowance which covers course fees and related expenses, but not unemployment benefits which are paid to many other participants.

i) Excludes training benefits and includes unemployment benefits paid to participants in active programmes.

j) Participant stocks for Categories 4 "Employment incentives", 6 "Direct job creation" and 7 "Start-up incentives" are not included.

k) Includes the administration costs of rehabilitation benefits.

l) Mainly rehabilitation benefits paid to participants in education in regular schools.

m) Includes rehabilitation benefits paid in between rehabilitation measures, but excludes unemployment and rehabilitation.

n) Participants in some measures in Category 5.1 "Supported employment" are not included.



Table J. Public expenditure and participant stocks in labour market programmes in OECD countries<sup>a</sup> (cont.)

Programme categories and sub-categories	Portugal			Slovak Republic			Spain <sup>d</sup>			Sweden		
	Public expenditure as a percentage of GDP		Participant stocks as a percentage of the labour force	Public expenditure as a percentage of GDP		Participant stocks as a percentage of the labour force	Public expenditure as a percentage of GDP		Participant stocks as a percentage of the labour force	Public expenditure as a percentage of GDP		Participant stocks as a percentage of the labour force
	2005	2006	2007	2005	2006	2007	2005	2006	2007	2005	2006	2007
<b>1. PES and administration<sup>a</sup></b>	<b>0.18</b>	<b>0.15</b>	<b>0.14</b>									
of which: 1.1. Placement and related services <sup>a</sup>	0.04	0.03	0.03									
1.2. Benefit administration <sup>a</sup>	0.03 <sup>b</sup>	0.03 <sup>b</sup>	0.02 <sup>b</sup>									
<b>2. Training</b>	<b>0.29</b>	<b>0.26</b>	<b>0.20</b>	<b>0.92</b>	<b>0.86</b>	<b>0.81</b>						
2.1. Institutional training	0.17	0.15	0.11	0.39	0.38	0.37						
2.2. Workplace training	0.04	0.04	0.04	0.16	0.17	0.17						
2.3. Alternate training	-	-	-	-	-	-						
2.4. Special support for apprenticeship <sup>a</sup>	0.08	0.07	0.05	0.36	0.30	0.26						
<b>4. Employment incentives<sup>a</sup></b>	<b>0.16</b>	<b>0.13</b>	<b>0.12</b>	<b>1.56</b>	<b>1.42</b>	<b>1.39</b>	<b>0.59</b>	<b>0.53</b>	<b>0.32</b>	<b>0.30<sup>e</sup></b>	<b>0.33<sup>e</sup></b>	<b>0.33<sup>e</sup></b>
4.1. Recruitment incentives	0.15	0.12	0.12	1.49	1.36	1.34	0.03	0.02	0.02	0.24 <sup>f</sup>	0.25 <sup>f</sup>	0.24 <sup>f</sup>
4.2. Employment maintenance incentives	-	-	-	-	-	-	-	-	-	0.06	0.07	0.08
<b>5. Supported employment and rehabilitation</b>	<b>0.04</b>	<b>0.04</b>	<b>0.04</b>	<b>0.10</b>	<b>0.10</b>	<b>0.11</b>	<b>0.01</b>	<b>0.01</b>	<b>0.01</b>	<b>0.02</b>	<b>0.02</b>	<b>0.02</b>
5.1. Supported employment	-	-	-	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
5.2. Rehabilitation	0.04	0.04	0.04	0.09	0.09	0.10	-	-	-	-	-	-
<b>6. Direct job creation</b>	<b>0.03</b>	<b>0.03</b>	<b>0.02</b>	<b>0.38</b>	<b>0.38</b>	<b>0.40</b>	<b>0.06</b>	<b>0.05</b>	<b>0.04</b>	<b>0.02</b>	<b>0.08</b>	<b>0.08</b>
<b>7. Start-up incentives</b>	-	-	-	<b>0.11</b>	<b>0.08</b>	<b>0.08</b>	<b>0.05</b>	<b>0.04</b>	<b>0.04</b>	<b>0.06</b>	<b>0.08</b>	<b>0.09</b>
<b>8. Out-of-work income maintenance and support<sup>a</sup></b>	<b>1.19</b>	<b>1.12</b>	<b>0.99</b>	<b>5.49</b>	<b>5.47</b>	<b>5.12</b>	<b>1.46</b>	<b>3.68</b>	<b>3.12</b>	<b>1.42</b>	<b>1.39</b>	<b>1.41</b>
8.1. Full unemployment benefits	1.16	1.09	0.95	5.45	5.42	4.85	0.17	0.12	0.10	1.39	1.36	1.37
of which: Unemployment insurance	0.96	0.89	0.75	4.14	4.10	3.52	0.17	0.12	0.10	1.04	1.02	1.04
8.2, 8.3. Partial and part-time unemployment benefits	-	-	0.01	0.03	0.05	0.08	-	-	-	0.01	-	-
8.4, 8.5. Redundancy and bankruptcy compensation	0.03	0.03	0.03	-	-	0.19	0.01	-	-	0.02	0.03	0.03
<b>9. Early retirement<sup>a</sup></b>	<b>0.13</b>	<b>0.11</b>	<b>0.10</b>	<b>0.22</b>	<b>0.37</b>	<b>0.52</b>	<b>0.09</b>	<b>0.22</b>	<b>0.26</b>	<b>0.03</b>	<b>0.04</b>	<b>0.04</b>
<b>TOTAL (1-9)</b>	<b>2.01</b>	<b>1.84</b>	<b>1.82</b>									
Active measures (1-7)	0.69	0.61	0.53									
of which: Categories 2-7 only	0.52	0.46	0.39	3.07	2.84	2.79	0.17	0.14	0.12	0.65	0.67	0.68
Passive measures (8-9)	1.32	1.23	1.09	5.71	5.84	5.64	0.27 <sup>c</sup>	0.34 <sup>c</sup>	0.36 <sup>c</sup>	1.45	1.43	1.45

a) See the introductory note about scope and comparability at [www.oecd.org/els/employment/outlook](http://www.oecd.org/els/employment/outlook). Sub-categories 1.1 and 1.2 refer only to separately-identified spending. Active and passive participant stocks should not be added (some people appear in both).

b) Secretariat estimate based on the ratio of benefit administration costs to benefits paid (2.1%) for a wider range of benefits (reported in IGFSS, Conta da Seguranca Social 2007).

c) Does not include social assistance, which is the form of income support received by the majority of registered unemployed.

d) Categories 1 to 7 include expenditure by the autonomous communities and municipalities (additional data published by Eurostat).

e) The totals shown for Category 4 include non-zero spending on Eurostat Category 3 "Job rotation and sharing" in Finland, Germany, Italy, Spain and Sweden.

f) Includes an employer subsidy for the conversion of temporary contracts into permanent contracts, not otherwise conditional on employment status.

g) Participant stock data do not include participants in municipal programmes.

h) Administration costs of independent unemployment insurance funds.

i) Includes income support paid to participants in "Activities within counselling, guidance and placement services" but not the corresponding services (which are in Category 1). This expenditure is not allocated across sub-categories.

j) Includes "basic insurance" which is not a contribution-based benefit.

Table J. Public expenditure and participant stocks in labour market programmes in OECD countries<sup>a</sup> (cont.)

Programme categories and sub-categories	Switzerland						United Kingdom <sup>d</sup>						United States <sup>f</sup>						OECD unweighted average <sup>f</sup>					
	Public expenditure as a percentage of GDP		Participant stocks as a percentage of the labour force		Public expenditure as a percentage of GDP		Participant stocks as a percentage of the labour force		Public expenditure as a percentage of GDP		Participant stocks as a percentage of the labour force		Public expenditure as a percentage of GDP		Participant stocks as a percentage of the labour force		Public expenditure as a percentage of GDP		Participant stocks as a percentage of the labour force					
	2005	2006	2007	2005	2006	2007	2005-06	2006-07	2007-08	2005-06	2006-07	2007-08	2005-06	2006-07	2007-08	2005	2006	2007	2005	2006	2007			
<b>1. PES and administration<sup>a</sup></b>	<b>0.13</b>	<b>0.13</b>	<b>0.12</b>																					
of which: 1.1. Placement and related services <sup>a</sup>	...	...	...																					
1.2. Benefit administration <sup>a</sup>	0.04	0.04	0.04																					
<b>2. Training</b>	<b>0.28</b>	<b>0.23</b>	<b>0.19</b>	<b>0.91</b>	<b>0.77</b>	<b>0.64</b>	<b>0.03</b>	<b>0.02</b>	<b>0.02</b>	<b>0.15</b>	<b>0.13</b>	<b>0.07</b>	<b>0.05</b>	<b>0.05</b>	<b>0.04</b>	<b>0.17</b>	<b>0.16</b>	<b>0.14</b>	<b>1.15</b>	<b>1.23</b>	<b>1.19</b>			
2.1. Institutional training	0.27	0.22	0.18	0.88	0.74	0.62	0.01	0.02	0.02	0.09	0.12	0.07	0.02	0.02	0.02	0.11	0.11	0.09	0.80	0.81	0.79			
2.2. Workplace training	0.01	0.01	0.01	0.04	0.04	0.03	-	-	-	-	-	-	-	-	-	0.01	0.01	0.01	0.17	0.16	0.14			
2.3. Alternate training	-	-	-	-	-	-	0.01	-	-	0.06	-	-	0.02	0.02	0.02	0.01	0.01	0.01	0.09	0.08	0.08			
2.4. Special support for apprenticeship <sup>a</sup>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.02	0.02	0.02	0.29	0.31	0.34			
<b>4. Employment incentives<sup>a</sup></b>	<b>0.08</b>	<b>0.08</b>	<b>0.06</b>	<b>0.68</b>	<b>0.66</b>	<b>0.56</b>	<b>0.01</b>	<b>0.01</b>	<b>0.01</b>	<b>0.11</b>	<b>0.14</b>	<b>0.14</b>	-	-	-	<b>0.10</b>	<b>0.10</b>	<b>0.10</b>	<b>1.67</b>	<b>1.63</b>	<b>1.83</b>			
4.1. Recruitment incentives	0.08 <sup>b</sup>	0.08 <sup>b</sup>	0.06 <sup>b</sup>	0.68	0.66	0.56	0.01	0.01	0.01	0.11	0.14	0.14	-	-	-	0.08	0.08	0.08	1.35	1.30	1.38			
4.2. Employment maintenance incentives	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.00	0.01	0.01	0.13	0.16	0.25			
<b>5. Supported employment and rehabilitation</b>	<b>0.24</b>	<b>0.23</b>	<b>0.22</b>	<b>0.87</b>	<b>0.87</b>	<b>0.88</b>	<b>0.01</b>	<b>0.01</b>	<b>0.01</b>	<b>0.02</b>	<b>0.02</b>	<b>0.06</b>	<b>0.03</b>	<b>0.03</b>	<b>0.03</b>	<b>0.09</b>	<b>0.09</b>	<b>0.09</b>	<b>0.55</b>	<b>0.55</b>	<b>0.56</b>			
5.1. Supported employment	0.24	0.23	0.22	0.87	0.87	0.88	0.01	0.01	0.01	0.02	0.02	0.06	0.03	0.03	0.03	0.06	0.07	0.07	0.37	0.40	0.42			
5.2. Rehabilitation	-	-	-	-	-	-	-	-	-	-	-	-	0.03	0.03	0.03	0.02	0.02	0.01	0.11	0.09	0.09			
<b>6. Direct job creation</b>	-	-	-	-	-	-	-	-	-	-	-	-	<b>0.01</b>	<b>0.01</b>	<b>0.01</b>	<b>0.06</b>	<b>0.06</b>	<b>0.05</b>	<b>0.64</b>	<b>0.66</b>	<b>0.58</b>			
<b>7. Start-up incentives</b>	<b>0.01</b>	<b>0.01</b>	<b>0.01</b>	<b>0.02</b>	<b>0.02</b>	<b>0.01</b>	-	-	-	-	-	-	-	-	-	<b>0.01</b>	<b>0.02</b>	<b>0.01</b>	<b>0.13</b>	<b>0.17</b>	<b>0.18</b>			
<b>8. Out-of-work income maintenance and support<sup>a</sup></b>	<b>0.91</b>	<b>0.75</b>	<b>0.57</b>	<b>3.62</b>	<b>3.13</b>	<b>2.49</b>	<b>0.19</b>	<b>0.19</b>	<b>0.16</b>	<b>2.98</b>	<b>3.19</b>	<b>2.78</b>	<b>0.24</b>	<b>0.24</b>	<b>0.31</b>	<b>0.83</b>	<b>0.74</b>	<b>0.64</b>	<b>5.90</b>	<b>5.59</b>	<b>4.98</b>			
8.1. Full unemployment benefits	0.88 <sup>c</sup>	0.73 <sup>c</sup>	0.57 <sup>c</sup>	3.39	3.01	2.44	0.19	0.19	0.16	2.98	3.19	2.78	0.24	0.24	0.31	0.78	0.69	0.60	5.46	5.18	4.63			
8.1. Unemployment insurance	0.83	0.68	0.52	3.39	3.01	2.44	-	-	-	-	-	-	0.24	0.24	0.30	0.56	0.49	0.42	3.67	3.42	2.95			
8.2, 8.3. Partial and part-time unemployment benefits	0.03	0.02	0.01	0.21	0.11	0.03	-	-	-	-	-	-	-	-	-	0.03	0.03	0.02	0.43	0.40	0.34			
8.4, 8.5. Redundancy and bankruptcy compensation	-	-	-	0.02	0.02	0.02	-	-	-	-	-	-	-	-	-	0.02	0.02	0.01	0.00	0.00	0.01			
<b>9. Early retirement<sup>a</sup></b>	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<b>0.12</b>	<b>0.12</b>	<b>0.11</b>	<b>0.82</b>	<b>0.81</b>	<b>0.76</b>			
TOTAL (1-9)	1.66	1.42	1.17				0.63	0.51	0.48				0.38	0.38	0.43	1.59	1.47	1.32						
Active measures (1-7)	0.75	0.67	0.60				0.44	0.33	0.32				0.13 <sup>b</sup>	0.13 <sup>b</sup>	0.13 <sup>b</sup>	0.62	0.59	0.56						
of which: Categories 2-7 only	0.62	0.54	0.48	2.48	2.31	2.10	0.05	0.04	0.05	0.23	0.30	0.29	0.10 <sup>b</sup>	0.10 <sup>b</sup>	0.10 <sup>b</sup>	0.44	0.43	0.40	4.00	4.20	4.28			
Passive measures (8-9)	0.91	0.75	0.57	3.62	3.13	2.49	0.19	0.19	0.16	2.98	3.19	2.78	0.24	0.24	0.31	0.95	0.86	0.75	6.68	6.36	5.71			

a) See the introductory note about scope and comparability at [www.oecd.org/els/employment/outline](http://www.oecd.org/els/employment/outline). Sub-categories 1.1 and 1.2 refer only to separately-identified spending. Active and passive participant stocks should not be added (some people appear in both).

b) Mainly the "intermediate earnings" programme, which resembles partial unemployment benefits paid subject to an earnings taper.

c) Excludes unemployment benefits paid to participants in active programmes.

d) Coverage of expenditure and participants in Northern Ireland is incomplete. Fiscal years starting on April 1st.

e) Includes the administration of benefits (ISA) and other benefits for persons of working age (incapacity benefit, income support and certain supplementary benefits), although only ISA is included in Category 8.

f) Fiscal years starting on October 1st.

g) Mainly costs of running unemployment insurance offices. Also includes various national activities such as information, research and evaluation.

h) Includes TANF work-related activities (estimated as 0.02% of GDP). Other TANF expenditure (0.20% of GDP) on child care, transport, family and social work, etc., administration and cash benefits is not included.

i) Estimates. For Greece 2006 data are used for 2007. For some years and countries, expenditure by sub-categories is estimated by applying the shares in the corresponding category calculated for countries with non-missing data. The coverage of sub-categories Placement and related services (1.1) and Benefit administration (1.2) is erratic hence only non-missing data are taken into account. Participant data are average values for countries with non-missing data for the particular sub-category, category or total.

Source: For EU countries and Norway, Eurostat (2009), *Labour Market Policy: 2009 edition* and detailed underlying data supplied to OECD by Eurostat with certain Secretariat adjustments. For other countries: OECD database on Labour Market Programmes.

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### Labour market outcomes – Australia

	Unit	1998	2007	2008	2008 OECD total
Unemployment rate	% of labour force	7.8	4.4	4.3	6.0
Youth unemployment rate	% of youth labour force (15-24)	14.6	9.4	8.9	12.4
Long-term unemployment (12 months and over)	% of total unemployment	29.7	15.4	14.9	25.9
Employment rate	% of working age population	67.9	72.8	73.2	66.5
Employment rate of women	% of female population (15-64)	59.6	66.1	66.7	57.5
Employment rate of older workers	% of population aged 55-64	43.9	56.6	57.4	53.6
Temporary employment	% of dependent employment	4.6	..	..	12.3
Part-time employment	% of total employment	..	23.7	23.8	15.5
Average annual working time	Hours per worker	1 788	1 717	1 721	1 766
Average annual wage	2007 USD PPPs	37 020	42 019	..	..
Growth of real GDP	% change from previous year	5.1	4.2	2.3	0.8
Employment growth	% change from previous year	1.7	2.9	2.1	0.7
Wage growth	% change from previous year	1.8	1.1	..	..

### Labour market policies and institutions – Australia

	Unit (earlier, latest years)	Earlier year	Latest year	Latest year OECD total
<b>Public expenditure on labour market policies</b>				
Active measures	% of GDP (1998, 2007)	0.4	0.3	0.6
Passive measures	% of GDP (1998, 2007)	1.1	0.4	0.8
Ratio of minimum to median wage	Ratio (1999, 2007)	0.60	0.54	0.46
<b>Employment protection (EP)</b>				
Overall EP strictness	Scale 0-6 (1998, 2008)	1.5	1.4	2.1
EP strictness for regular employment	Scale 0-6 (1998, 2008)	1.5	1.4	2.1
EP strictness for temporary employment	Scale 0-6 (1998, 2008)	0.9	0.9	1.8
Additional requirements for collective dismissals	Scale 0-6 (1998, 2008)	2.9	2.9	3.0
<b>Labour taxes (for a single person without children)</b>				
At 100% of the average wage	% of labour costs (2000, 2008)	30.6	26.9	37.4
At 67% of the average wage	% of labour costs (2000, 2008)	25.4	21.9	33.5
Unemployment benefits	% of previous earnings (1997, 2007)	26.5	20.2	24.7
Union membership	% of employees (1997, 2007)	29.6	18.5	..

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