# OECD Employment Outlook 2011

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**The OECD Employment Outlook**

*Provides an annual assessment of key labour market developments and prospects in member countries. In addition, each issue contains several chapters focusing on specific aspects of how labour markets function and the implications for policy in order to promote more and better jobs. Reference statistics are also included.*

*This year's edition of the OECD Employment Outlook is the joint work of staff of the Directorate for Employment, Labour and Social Affairs. It has benefited from contributions from national government delegates. The assessments of countries' labour market prospects do not necessarily correspond to those of the national authorities concerned.*

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# Acronyms and abbreviations

| | |
|---|---|
| **AETR** | Average Effective Tax Rate |
| **ALMPs** | Active labour market programmes |
| **ARRA** | American Recovery and Reinvestment Act |
| **AW** | Average wage |
| **CAD** | Canadian dollar |
| **CCT** | Cash Transfer Programme (Chile) |
| **CLT** | Consolidação das Leis do Trabalho (Brazil) |
| **CPS** | Current Population Survey (United States) |
| **CSG** | Child Support Grant (South Africa) |
| **CT** | Cash transfer |
| **ECHP** | European Community Household Panel |
| **EI** | Employment Insurance (Canada) |
| **EITC** | Earned Income Tax Credit (United States) |
| **EP** | Employment protection |
| **ESS** | European Social Survey |
| **ESWC** | European Survey of Working Conditions |
| **EUC** | Emergency unemployment compensation |
| **EULFS** | European Union Labour Force Survey |
| **FGTS** | Fundo de Garantia do Tempo de Serviço (Brazil) |
| **GDP** | Gross domestic product |
| **ISCED** | International Standard Classification on Education |
| **ISA** | Individual savings account |
| **ISCO** | International Standard Classification of Occupations |
| **ISSP** | International Social Survey Programme |
| **IUSA** | Individual unemployment saving account |
| **MISSOC** | Mutual Information System on Social Protection (European Commission) |
| **MPG** | Minimum pension guarantee |
| **NAIRU** | Non-accelerating inflation rate of unemployment |
| **NCP** | Non-contributory pension |
| **OAP** | Old Age Pension |
| **OOP** | Out-of-pocket payments |
| **PASIS** | Pensión Asistencial (Chile) |
| **PES** | Public employment service |
| **PIAAC** | Programme of International Assessment of Adult Competences |
| **PISA** | Programme for International Student Assessment |
| **PME** | Perquisa Mensal de Emprego (Brazil) |
| **RNFIL** | Recognition of non-formal and informal learning |
| **SA** | Social assistance |

| | |
|---|---|
| **SD** | Seguro Desemprego (Brazil) |
| **SNAP** | Supplemental Nutrition Assistance Programme (United States) |
| **SP** | Severance pay |
| **SP** | Social pension |
| **STW** | Short-time work |
| **TANF** | Temporary Assistance for Needy Families (United States) |
| **UA** | Unemployment assistance |
| **UB** | Unemployment benefits |
| **UI** | Unemployment insurance |
| **UR** | Unemployment rate |
| **ZAR** | South African Rand |

# Editorial

# Unfinished Business: Investing in Youth

*The recovery is stalling which is not good news for employment and unemployment prospects*

There are clear signs that the recovery is stalling and this is not good news for short-term employment and unemployment prospects. Even prior to the recent economic slowdown, job creation during the recovery was anaemic in some major OECD countries, notably the United States and Japan. As a result, the OECD unemployment rate had by July 2011 only fallen by 0.6 of a percentage point from its Great Recession high of 8.8% in October 2009. Thus, there were still 44.5 million unemployed people in the OECD area in July 2011, some 13.4 million more than prior to the crisis.

*Many countries have managed to maintain low unemployment rates but others have been hard hit*

At the same time, a striking feature of the Great Recession and subsequent recovery has been the large diversity in terms of labour market performance. At one extreme, seven OECD countries (Australia, Austria, Japan, Korea, Luxembourg, Norway, Switzerland) have all maintained unemployment rates in the 3½-5½% range; at the other end of the scale, six countries still had double-digit unemployment rates in July 2011 (Estonia, Greece, Ireland, Portugal, the Slovak Republic, Spain), and the US unemployment rate remained stubbornly high at over 9%. The stalling recovery is a major concern for the latter group of countries.

*Where unemployment has risen sharply, the main burdens have fallen on youth, temporary workers and the long-term unemployed*

In those countries where unemployment has increased significantly, the main losers have been youth (see below), temporary workers and the long-term unemployed (out of work for a year or more). Prolonged spells of unemployment are particularly damaging as they increase the risk of permanent labour market marginalisation as a result of skill depreciation and a loss of self-worth and motivation. Long-term unemployment is also associated with elevated risks of poverty, ill health and school failure for the children of the affected workers.

*Promoting stronger job growth is essential but broader measures to tackle structural labour market problems are also required*

Promoting job-rich economic growth must be the key response to dealing with long-term unemployment. However, it may not be sufficient alone to tackle the legacy of lost opportunities that occurred prior to the crisis when stronger economic conditions failed to durably reduce inequalities in both income and access to well-paid and productive jobs. Indeed, as documented in the OECD's forthcoming sequel to its 2008 report on *Growing Unequal?*, some of these inequalities even deepened further.

*Some young people are at high risk of becoming disconnected from the labour market and this risk was accentuated by the crisis*

In particular, more needs to be done to durably improve labour market outcomes for youth who were hit disproportionately hard by the recession (as documented in Chapter 1 of this volume). In the first quarter of 2011, the unemployment rate for young people (aged 15 to 24) was 17.3% in the OECD area compared with 7% for adults (aged 25 and over).

But these data on youth unemployment paint only part of the picture of the difficulties young people are facing in the labour market. More generally, youth who are neither in employment nor in education or training (the so-called NEET group) are a group at high risk of marginalisation and exclusion from the labour market, especially the longer they remain outside the world of work. In the 4th quarter of 2010, this group accounted for 12.6% of all youth aged 15-24 in the 30 OECD countries for which data are available, up from 10.6% in 2008. This represents 22.3 million young people, 14.6 million of whom were inactive and not studying, and 7.7 million of whom were unemployed.

In the context of a weak jobs recovery, a significant and growing proportion of youth, even among those who would have found jobs in good times, are at risk of prolonged unemployment or inactivity, with potentially long-term negative consequences for their careers, or so-called "scarring effects". These risks include long-term difficulty finding employment and persistent pay differentials with their peers. Young people leaving school in the coming years are more likely to struggle to find work than previous generations.

*Tackling youth exclusion from the labour market is a well-studied problem but with no easy solutions*

The problem of poor labour market outcomes for some groups of young people is nothing new and has been a preoccupation of governments for many years. Indeed, youth issues have been a recurring theme of the OECD's reflections on employment policy over the past 50 years.

What has become clear from this work is that there are no quick fixes to ensuring that all young people can get off to a good start in the labour market. Some countries are doing a better job than others but they all face the challenge of dealing with a hard-core of youth who risk being excluded from the labour market. Stronger job creation is a key part of the

solution but will not help all youth unless accompanied by other measures. The OECD's report in 2010, *Off to a Good Start? Jobs for Youth*, which summarised the key lessons from 16 country reviews, has highlighted a wealth of good practices to help youth to get a first foothold on the career ladder.

Essentially, a two-pronged approach is required to tackle, on the one hand, the underlying structural barriers to a better insertion of youth in the labour market and, on the other hand, the crisis-driven rise in the number of youth who are not in work or in school.

*Measures dealing with structural problems must be taken…*

First, policies must be put in place to overcome the long-term failure to give all youth a better start in the labour market. To start with, "preventative" measures must be taken to improve early childhood education and care, particularly for children from low-income families and disadvantaged backgrounds. To be fully effective, these measures need to be sustained through the period of compulsory schooling. This, in turn, will help minimise school drop outs.

These measures need to be complemented by efforts to achieve a better match between the skills youth acquire at school and those needed in the labour market. As documented in Chapter 4 in this volume, a considerable proportion of young workers are over-qualified for their jobs, although this proportion tends to decline with age. Reducing skills mismatch requires greater responsiveness of education systems to changing skill needs and a strengthening of educational choice through, for example, better opportunities for vocational education and training.

Finally, barriers to employment of youth also need to be removed. In particular, highly segmented labour markets, resulting from overly strict regulations on permanent employment contracts, can mean that short-term entry jobs fail to act as a stepping stone to more stable jobs and become instead dead-ends. If set too high relative to average wages, minimum wages may also act as a disincentive for employers to hiring low-skilled and inexperienced young people. Therefore, some countries have adopted lower sub-minimum wage rates for youth.

*… and despite fiscal pressures, it is crucial to maintain adequate resources for cost-effective measures to tackle the large rise in youth unemployment*

The second line of policy action needs to be directed at tackling the rise in youth joblessness that took place during the recent economic and financial crisis. As many countries are facing mounting pressures for fiscal consolidation, it is important that governments give priority to cost-effective interventions to improve youth labour market outcomes. Thus, policies should focus on the most disadvantaged, including the long-term unemployed and those at high risk of exclusion.

Job-search assistance programmes have been found to be the most cost-effective early intervention for young people who are assessed as ready to work. Temporary extensions of the social safety net can also be vital to prevent poverty among unemployed youth. As

documented in Chapter 3 in this volume, earnings volatility is particularly high among younger workers. Some countries have also introduced wage subsidies to encourage employers to hire low-skilled unemployed youth. However, in order to avoid the well-known deadweight effects entrenched in these subsidies (*i.e.* hirings that would have taken place without subsidies), these subsidies should be adequately targeted, for example on small and medium-size enterprises or on apprenticeship contracts. There may also be a need in many countries to expand opportunities for "study and work" programmes such as apprenticeships and other dual vocational education and training programmes.

Finally, more intensive, remedial, assistance should be targeted on those youth at greatest risk of social exclusion. While back-to-the-classroom strategies might prove counterproductive for them, training programmes taught outside traditional schools, combined with regular exposure to work experience and adult mentoring, are often better strategies for these disconnected young people.

*Investing in youth must be a key policy objective for achieving better long-term economic and social outcomes for all*

Investing in youth and giving them a better start in the world of work should be a key policy objective. Otherwise, there is a high risk of persistence or growth in the hard-core group of youth who are left behind, facing poor employment and earnings prospects. In a context of ageing populations, OECD economies and societies simply cannot afford the large economic and social costs that such an outcome would entail.

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*Chapter 1*

# Income Support for the Unemployed: How Well Has the Safety-Net Held Up During the "Great Recession"?

*Since reaching its post-war peak in late 2009, OECD-wide unemployment has declined only modestly and long-term unemployment has continued to rise. This chapter examines how well social safety-net systems in OECD countries have stood up to the "Great Recession" and asks what insights this experience has offered. The findings provide the basis for a better understanding of the operation of unemployment benefit schemes and "last resort" benefits, such as social assistance, during a deep recession. Potentially significant gaps in the safety net for the unemployed are identified and the advantages and disadvantages of taking crisis-related measures to raise benefit levels or expand coverage during a deep recession are weighed.*

## Key findings

The "Great Recession" of 2008-09 served as a tough "stress test" to the social safety-net in OECD countries. The recession drove unemployment rates sharply higher with an increasing number of the unemployed experiencing a year or more of joblessness. Indeed, in the OECD area as a whole:

- The unemployment rate increased from 5.7% in the first quarter of 2008 (its lowest level since the early 1980s) to a post-war peak of 8.7% in the fourth quarter of 2009.
- Despite nearly two years of GDP growth, the OECD-area unemployment rate in the first quarter of 2011 was still high at 8.3%, equivalent to 44.8 million persons unemployed. Unemployment is projected to return only slowly to its pre-crisis level.
- Although overall unemployment began to decline in 2010, long-term unemployment continued to rise into 2011.

The size of the unemployment surge varied sharply across OECD countries. Estonia, Ireland and Spain recorded the largest increases in the unemployment rate (ranging from 10 to 15 percentage points) in the OECD and the latter two countries have yet to see any labour market recovery. In contrast, a number of countries, including Germany, experienced only small and short-lived increases in unemployment. In the OECD area as a whole, the fall in employment during the crisis was sharpest for youth, the low-skilled and men.

The share of unemployed workers experiencing long spells of unemployment increased the most in countries where there was a large and protracted rise in the overall unemployment rate. Often, these were countries where the pool of the unemployed previously had been relatively fluid and few workers had been unemployed for as long as a year, such as Iceland and the United States. Many of the countries where unemployment increased most sharply spent a relatively low amount, prior to the recession, on unemployment benefits and programmes to help job seekers to move into new jobs. This raises concerns as to whether these countries were able to scale up those programmes adequately in a short period of time.

The income support system for the unemployed typically consists of two main tiers of income assistance. The first or higher tier consists largely of unemployment benefits (UB), which are intended to provide temporary income support for workers transitioning between two jobs. The second lower tier consists of social assistance (SA) and other "last-resort" benefits which are intended to ensure a basic income for the most vulnerable part of the population, potentially including unemployed persons who do not qualify for UB or have exhausted that entitlement. The effective co-ordination of these two tiers is key to cushioning the impact of unemployment on the well-being of workers and their families during a deep recession.

Both tiers of income assistance responded to the 2008-09 recession by delivering increased support to the unemployed, offsetting some of the decline in household income and helping to cushion the fall in aggregate demand. Indeed, on average, increased income

transfers to individuals and families, including unemployment and social assistance benefits, accounted for about 40% of the total increase in government expenditures during the crisis. Ireland, Spain and the United States saw some of the largest increases in government transfers to workers and families, in line with the very large increases in unemployment in these countries. Much of the increase in social benefit spending reflected automatic adjustments to rising unemployment and underemployment, but discretionary policy initiatives also played a role. Indeed, the majority of OECD countries took crisis-related measures to reinforce the safety net for the unemployed, for example by boosting UB generosity or expanding benefit coverage to previously ineligible groups, such as unemployed youth or persons laid off from temporary jobs. Despite these crisis measures, the safety-net spending response to the increase in unemployment as of 2009 was generally in line with the response during earlier recessions and spending rose less strongly in response to the decline in real GDP than in the past.

A comparison of 2007 and 2009 values of the OECD net replacement rates for job losers receiving unemployment benefits (*i.e.* disposable income when unemployed and receiving UB as a percentage of disposable income when employed full time at the national average wage) shows little or no increase in the majority of countries. This suggests that many of the crisis measures undertaken had little impact on benefit generosity. Modest increases in UB generosity were observed in about one-third of the countries, including Canada, Iceland, Ireland and Italy, while a large increase was registered in the United States due to the nearly fourfold increase in the maximum benefit entitlement period combined with a number of modest increases in benefit levels.

Receipt of first-tier unemployment benefits rose in all OECD countries, with the increase in the number of recipients averaging about 60% of the increase in the total number of unemployed people. The gap between the rise in joblessness and the increase in those receiving benefits tended to be narrower in countries enacting temporary extensions in benefit duration or which already operated an unemployment assistance programme that backstops the first-tier UB programme. This was particularly evident in Finland, Ireland, Portugal, Spain and the United States. Unemployed youth and other unemployed with little or no previous work experience, as well as the long-term unemployed, were less likely to receive unemployment benefits than other unemployed people.

The second tier of income assistance (largely SA) has not been as responsive to rising unemployment. Stringent means-testing is often applied to ensure that benefits serve the most vulnerable. As a result, typically self-supporting families who experience long-duration unemployment during a deep recession may encounter difficulties in accessing last-tier benefits or be obliged first to run down their savings or even sell their home, potentially jeopardising their long-term economic status.

This chapter's analysis suggests that there may be scope to improve the operation of income support systems for the unemployed during deep recessions when the risk of long periods of joblessness is unusually high. Probably the most important lesson from the "Great Recession" is that it is easier to provide appropriate income support to the unemployed during a deep recession if a well designed social protection system for workers (*i.e.* one which combines adequate benefit coverage and generosity with effective activation policies and an overall fiscal structure ensuring that work pays) is already in place before the downturn begins.

Several lessons also emerge for how governments should adjust income support programmes when labour market conditions deteriorate sharply. First, there may be a good case to raise the maximum duration of unemployment benefits temporarily during a recession, when it is unusually difficult to find work and families who are typically self-supporting may need income support for a longer period of time. This can be achieved either through *ad hoc* policy measures or automatic rules tying benefit duration to labour market conditions. Benefit duration extensions may be particularly appropriate in countries where benefit duration is normally low and unemployed workers have limited access to second-tier benefits. The potentially important role of SA and other second-tier benefits as a backstop to UB during a deep recession, also suggests that it is timely to reassess whether asset tests or other rules make it too difficult for the long-term unemployed to access these benefits in periods when labour market are depressed. However, any temporary or permanent moves to expand access to income-support benefits for the unemployed during a recession need to be assessed carefully in light of their potential to dull labour supply incentives and increase public spending.

## Introduction

The 2008-09 global recession is still casting a dark shadow on the labour markets of many OECD economies. Even though the economic recovery has been underway since the second quarter of 2009, unemployment rates remain high in many countries and are projected to decline only gradually (OECD, 2011a), while long-term unemployment was still rising into early 2011.[1] The persistence of high unemployment well into the recovery period is not uncommon following severe recessions,[2] but it may have long-lasting effects. And it raises special concerns at a time when many governments are moving towards fiscal consolidation and many of the temporary measures enacted to assist the unemployed during the recession are expiring (OECD, 2010a).

High unemployment in the wake of the "Great Recession" represents a difficult challenge for policy makers. One part of this challenge is the main focus of this chapter, namely, the need to assure adequate income support for the enlarged pool of unemployed workers, particularly those experiencing long periods of joblessness. While the need for income support clearly rises when the labour market is depressed, the ultimate goal is to reduce unemployment as quickly as possible. Accordingly, it is essential that income support to the unemployed be provided in a way that does not contribute to a persistent increase in benefit dependency, but instead helps benefit recipients find suitable work as quickly as possible (De Serres, *et al.*, 2011; OECD, 2009a).[3] While not analysed in this chapter, the recent surge in unemployment also requires policy makers to implement macroeconomic and structural policies to foster stronger employment growth, as well as active labour market programmes (ALMPs) which ensure that unemployed individuals are assisted to find the new jobs that are created during the recovery period and, when needed, can access the training they require to move into those jobs.[4]

Section 1 of this chapter provides an overview of the evolution of unemployment during the 2008-09 recession and the early recovery period, updating the analyses that were presented in the 2009 and 2010 editions of the *Employment Outlook*. It devotes particular attention to the growth of long-term unemployment. Large cross-country differences in how strongly falling output during the recession translated into higher joblessness have attracted extensive attention from researchers (OECD, 2010a). This chapter shows that this diversity across countries extends to the early recovery period as

well as to the rise in long-term unemployment in the OECD area. In many of the countries where the labour market has been hardest hit, spending on labour market programmes prior to the jobs crisis was relatively low. These countries may thus have had particular difficulties coping with the steep upsurge in unemployment.

The final three sections of this chapter examine the operation of income support systems for job losers and other unemployed persons, assessing how well they have stood up to the "Great Recession" and whether this experience has provided any new insights for the design and operation of these programmes. Section 2 describes the main features of the national systems of income support for the unemployed that were in place in OECD countries before the 2008-09 recession. The numerous permanent or temporary changes that countries made in response to the crisis in order to enhance benefit generosity or broaden coverage are also surveyed. Section 3 analyses how these income support systems responded to rising unemployment and longer jobless spells during the 2008-09 recession, both in terms of spending levels and the number of benefit recipients. Finally, Section 4 considers what lessons for the design and operation of income support systems for job losers and other unemployed people can be drawn from countries' experiences during the Great Recession.

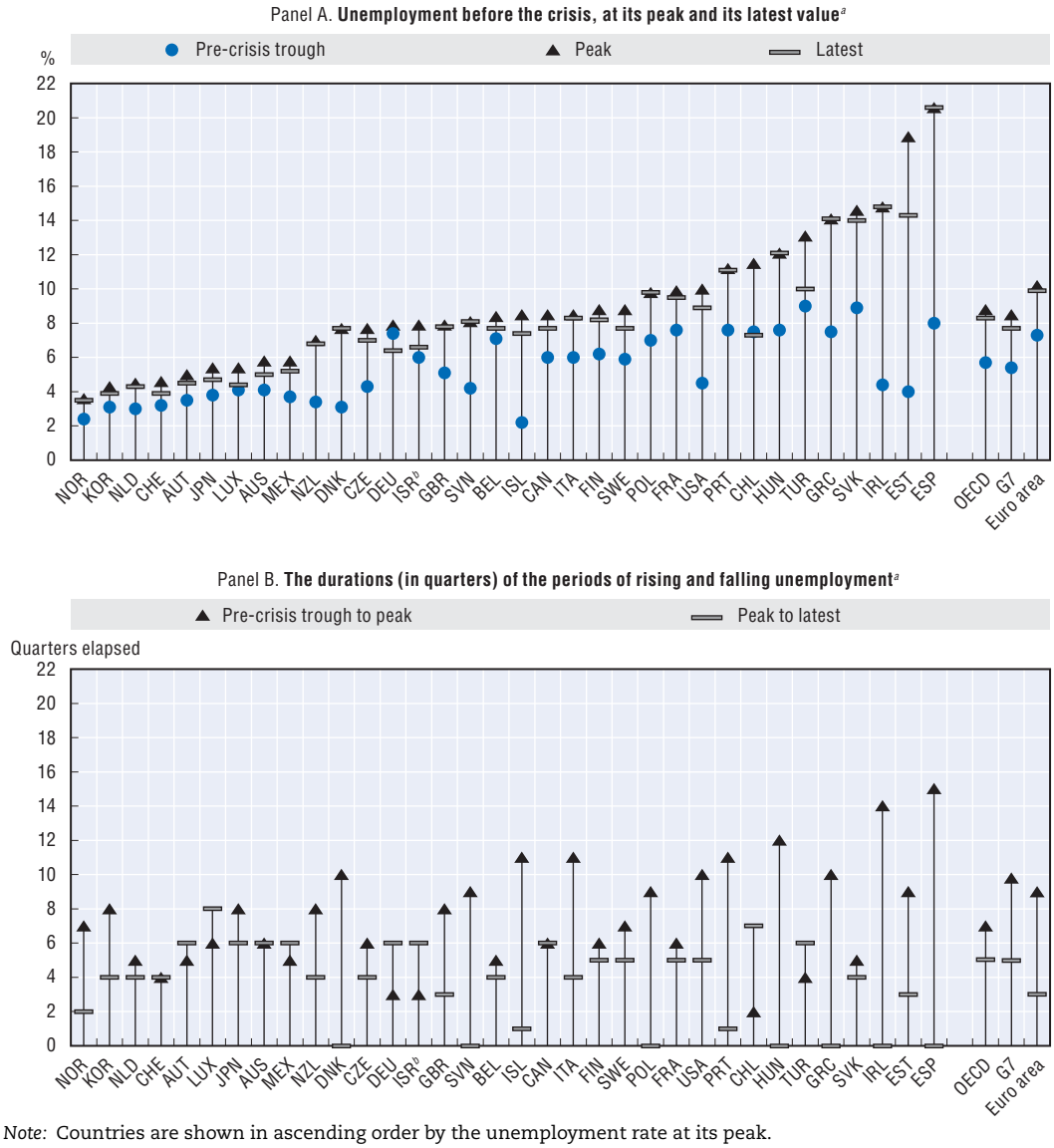
## 1. What was the impact of the "Great Recession" on OECD labour markets?

### *Overall labour market conditions*

The 2008-09 recession drove unemployment rates sharply higher in the OECD area and nearly two years of economic recovery has only reversed about one-fifth of that rise (Figure 1.1, Panel A). For the OECD area as a whole, the unemployment rate increased from 5.7% in the first quarter of 2008 (its recent low value) to a post-war high of 8.7% in the fourth quarter of 2009. This 3.1 percentage point increase corresponds to approximately 17 million additional jobless persons. Real GDP in the OECD area has been growing since the first quarter of 2009, but this growth was not sufficiently vigorous in most countries, until recently, to re-employ many of those workers. As a result, the OECD-area unemployment rate for the first quarter of 2011 was 8.3%, which corresponded to 44.8 million persons unemployed.[5] Approximately one-half of the 0.5 percentage-point decline in unemployment since the end of 2009 occurred between the final quarter of 2010 and the first quarter of 2011, suggesting that the pace of labour market recovery may be quickening.

The size of the surge in unemployment during the recession varied sharply across OECD countries, even among those that experienced similar reductions in real GDP (OECD, 2010a). There has also been considerable variation in how much unemployment has receded since reaching its recessionary peak, although most countries had seen little or no retreat until recently. Estonia, Ireland and Spain had the largest increases in unemployment (ranging from 10 to 15 percentage points) and the latter two have yet to see any labour market recovery, raising concerns that the currently very high unemployment rates could persist a long time.[6] Although not as hard hit, the unemployment rates in Greece, Iceland, the Slovak Republic and the United States rose by more than 5 percentage points during the "Great Recession", but have begun to ease in recent quarters except in the case of Greece. By contrast, a number of countries experienced only small increases in unemployment. Germany, in particular, saw a rise of only one-half a percentage point before unemployment resumed a declining trend that was evident before the recession, while five other countries saw increases of less than 1.5 percentage points. A few countries experienced moderate to large increases in unemployment, but have subsequently seen

Figure 1.1. **The labour market impact of the crisis and early recovery periods has differed greatly across countries**




*Note:* Countries are shown in ascending order by the unemployment rate at its peak.

*a)* Trough (peak) dates are defined as the start of the longest spell of consecutive increase (decrease) of the quarterly OECD harmonised unemployment rates since 2006 Q1. For the majority of the countries, the latest data are for 2011Q1. Annex Table 1.A1.1 in OECD (2011c) provides a full set of dates and data values.

*b)* Information on data for Israel: *http://dx.doi.org/10.1787/888932315602.*

*Source:* OECD calculations based on *OECD Main Economic Indicators Database.*

StatLink http://dx.doi.org/10.1787/888932479021

joblessness recede quite strongly so that it is now near its pre-crisis levels (*e.g.* Israel and Turkey) or even below it (Chile). Although Chile and Germany are the only two OECD countries where unemployment at the start of 2011 was below its pre-crisis level, the increase in unemployment was under 1 percentage point in seven other countries (Australia, Belgium, Israel, Japan, Korea, Luxembourg and Switzerland).

The length of time during which unemployment rose varied from less than four quarters in Chile, Israel and Germany to 14 and 15 quarters in Ireland and Spain respectively, and 12 in Hungary (Figure 1.1, Panel B).[7] Since the onset of the recession was

unusually synchronised – due to the broad impact of the seizing up of global financial markets in late 2008 and the steep fall in international trade that quickly followed – these differences mean that the number of quarters that have passed since unemployment peaked is also quite variable. No decline has yet been observed in seven countries, while the period of declining unemployment has reached eight quarters in Luxembourg, seven quarters in Chile and six quarters in Australia, Austria, Canada, Germany, Israel, Japan, Mexico and Turkey. At the beginning of 2011, unemployment had been receding from its peak value for at least a year in more than one-half of the OECD countries. However, unemployment had fallen only slowly in many cases, with only eight countries having seen a decrease of at least 1 percentage point (Chile, Estonia, Germany, Iceland, Israel, Sweden, Turkey and the United States).

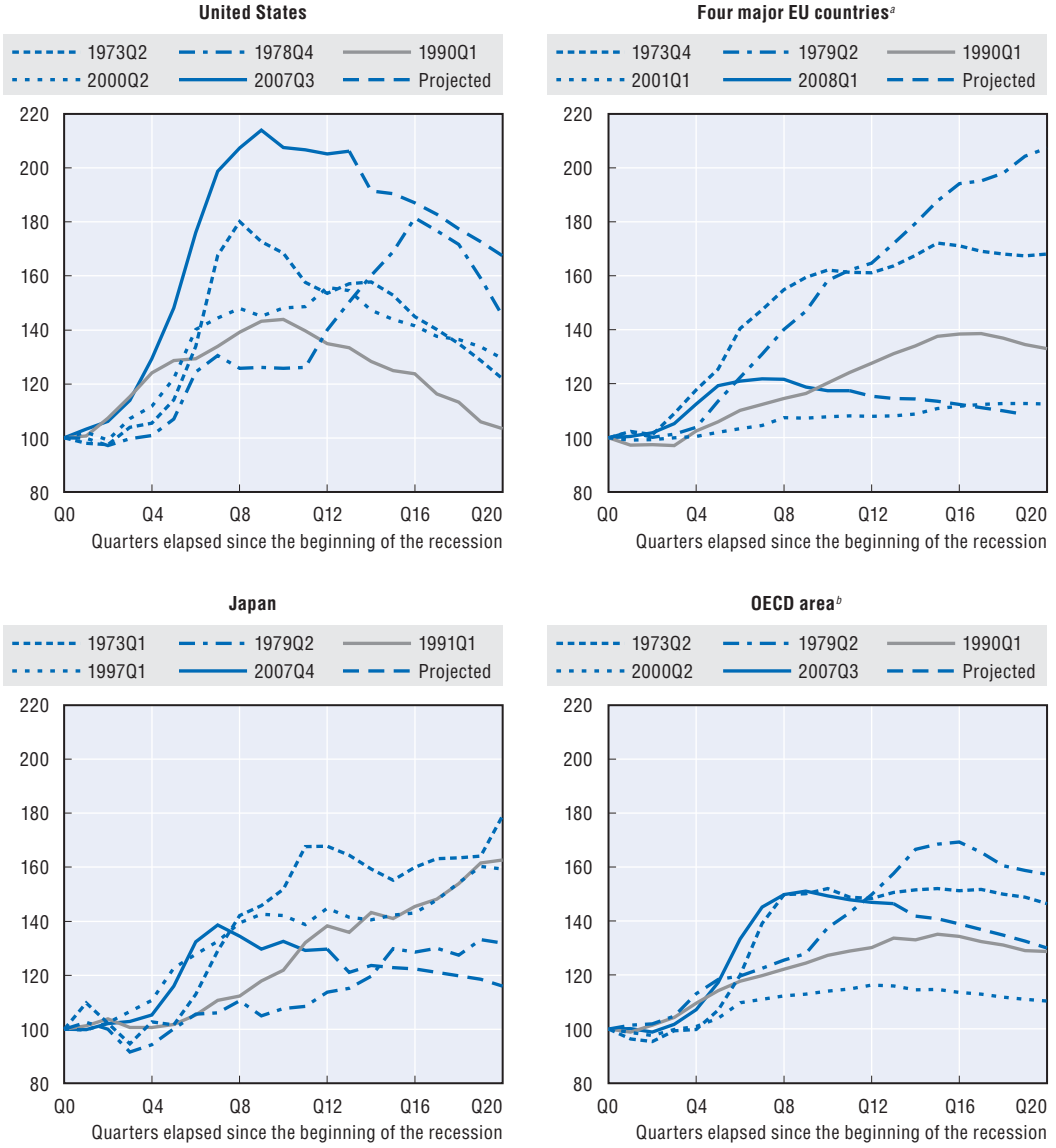
Now that the unemployment rate has begun receding from its peak, both for the OECD area as a whole and in most countries, it is possible to form a fairly clear idea of how the labour market impact of the "Great Recession" compares with that for previous post-war recessions. The proportional increase in the unemployment rate in the wake of the recent downturn was not too dissimilar to that for other large recessions since 1970 in most countries (Figure 1.2). The 114% increase in the unemployment rate in the United States was unprecedented for this period, as was also the case for the increases in joblessness seen in Iceland, Ireland and Spain. However, all other OECD countries had seen equivalent or larger proportionate increases in unemployment in one or more earlier post-war recessions [see Annex Table 1.A1.2 in OECD (2011c) for country level data]. Similarly, the 51% increase observed for the OECD area was well below the almost 70% increase seen in the early 1980s recession.[8]

One reason the increase in unemployment turned out to be within the range experienced during previous post-war recessions in most countries is that the very strong measures that governments took to stabilise financial markets, together with large fiscal stimulus packages and very expansionary monetary policy, reversed the very steep fall in output relatively quickly. While the resulting recovery has generally not been vigorous enough to generate strong employment growth until recently, the period of falling employment and, hence, rising unemployment was relatively short for such a deep recession. For example, the OECD unemployment rate rose for only nine quarters, as compared with 15 quarters in the recessions that began in 1973 and 1990, and 16 quarters in the recession that began in 1979 (Figure 1.2).[9] Another reason that the increase in unemployment has been smaller than was widely expected in quite a few countries is that employers went to unusual lengths to minimise layoffs when product demand fell (so-called "labour hoarding"). The effective use that a number of governments made of short-time working (STW) schemes to encourage hours reductions as an alternative to labour shedding helps to explain this pattern (Hijzen and Venn, 2011; OECD, 2010a).[10] Finally, it also appears that the progressive improvement of activation policies for recipients of unemployment and other income-replacement benefits that was achieved by a number of countries during the past two decades helped to dampen the increase in unemployment during the crisis (OECD, 2009a and 2009c). The Netherlands, Germany and the United Kingdom are examples of such countries.

Panel A of Figure 1.3 shows that the rise in unemployment during the 2008-09 recession exceeded the fall in real GDP in six countries, including most notably Spain and the United States, consistent with employers having shed labour very aggressively in these countries. By contrast, the fall in real GDP was significantly larger than the rise in

Figure 1.2. **Comparing unemployment rate trajectories during previous downturns and the "Great Recession"**

Index base 100 = unemployment rate at the preceding business-cycle peak (based on output gap), quarterly data




*a)* Aggregated unemployment of the following countries: France, Germany, Italy and the United Kingdom.
*b)* Results for a wider range of countries are shown in Annex Table 1.A1.2 in OECD (2011c).

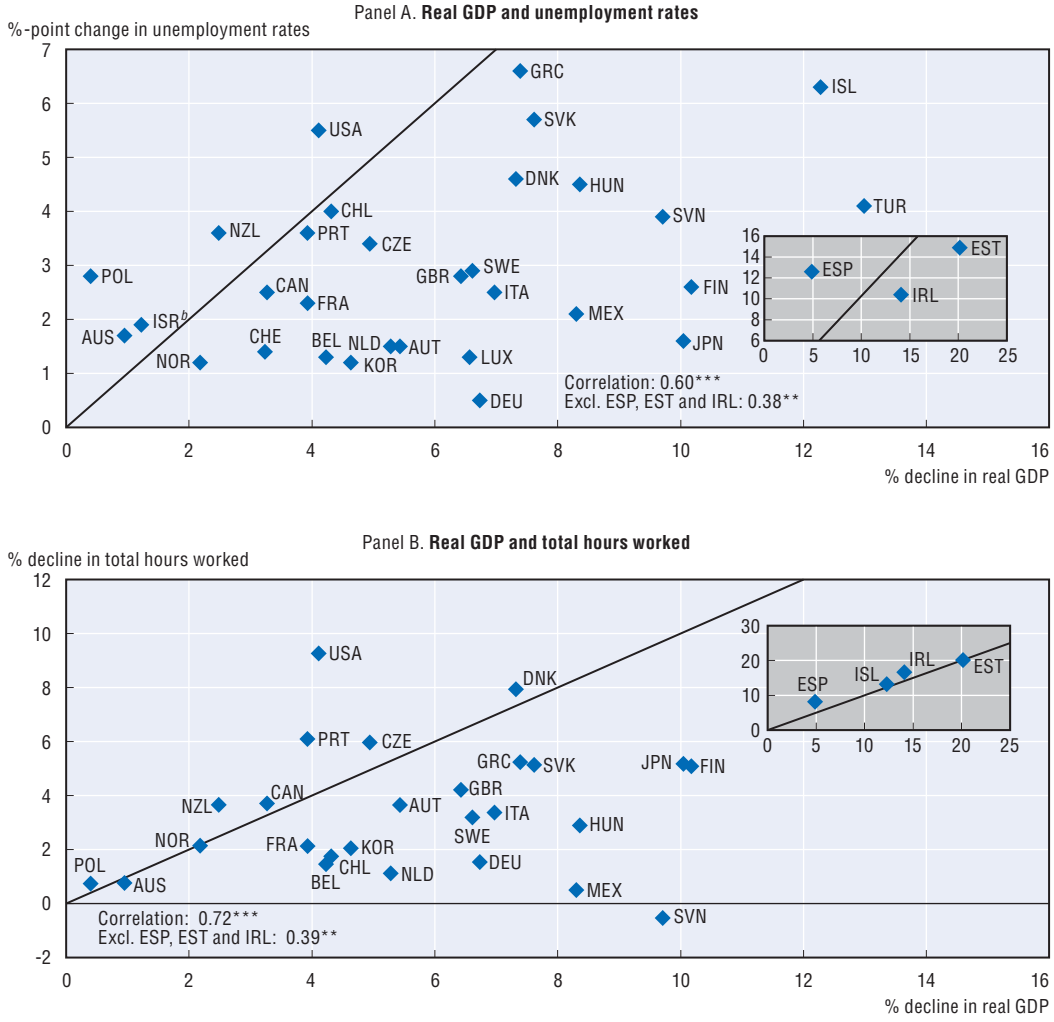
*Source:* OECD calculations based on the *OECD Economic Outlook Database*.

StatLink http://dx.doi.org/10.1787/888932479040

unemployment in a much larger number of OECD countries, including Germany and Japan, due to strong labour hoarding by firms.[11]

While labour hoarding helped to limit the impact of the crisis in raising unemployment in many countries, the cushioning impact on workers' earnings is likely to have been somewhat weaker. To the extent that employment falls by less than output during a recession, output per worker must also fall, whether due to a reduction in average hours per worker or lower hourly productivity. Lower labour productivity translates into

Figure 1.3. **The responsiveness of unemployment and hours to declining output varied considerably across OECD countries**[a]




*Note:* 45° lines shown for reference. In Panel A, this line corresponds to an Okun's coefficient value of one.

*a)* Cyclical impacts are calculated using separate dating for each series in each country: *i)* percentage-point increase from pre-crisis trough to peak for unemployment rates; and *ii)* percentage declines from pre-crisis peak to trough for real GDP and total hours worked.

*b)* Information on data for Israel: *http://dx.doi.org/10.1787/888932315602*.

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

*Source:* OECD calculations based on quarterly data from *OECD Main Economic Indicators* and *OECD Labour Force Statistics Databases*.

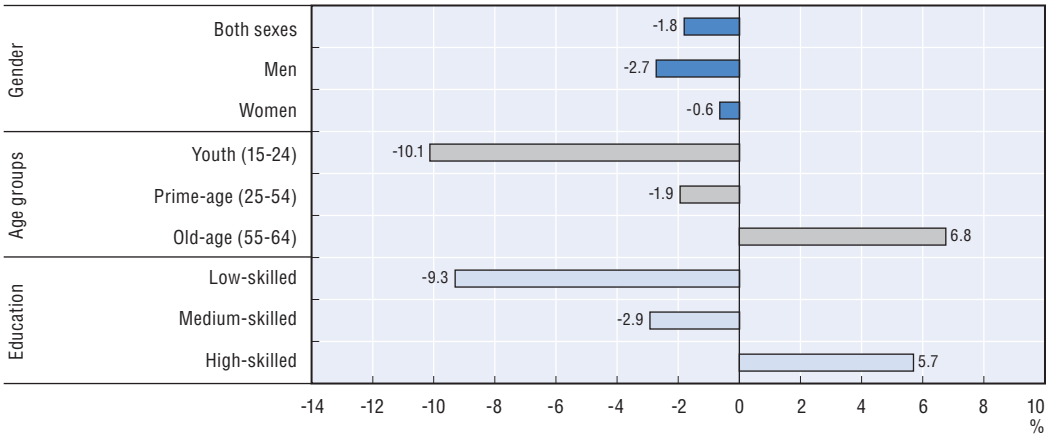
StatLink http://dx.doi.org/10.1787/888932479059

some combination of lower earnings and lower returns for other factors of production (including lower profits). Indeed, Panel B of Figure 1.3 shows that the decline in total hours with declining output was more uniform across countries. This reflects the fact that average hours per worker tended to fall more strongly with output in the countries where employment fell relatively little and lower hours are typically associated with lower pay. These patterns provide a useful reminder that the hardships experienced by workers during a recession are not limited to the higher risk of becoming jobless. Nonetheless, the analysis of income support in Sections 2 to 4 of this chapter will focus on the unemployed, both because their income replacement needs tend to be the most acute and because the largest part of the cyclical volatility of earnings is due to variation in employment, rather than to variation in average hours or pay rates (see Chapter 3 in this publication).

The fall in employment during the crisis has affected some workforce groups more strongly than others. Whereas overall employment in the OECD area was 1.8% lower in the fourth quarter of 2010 than three years earlier, employment for youth (15-24) fell 10.1% (see Figure 1.4). This sharp deterioration in labour market opportunities for youth is of particular concern because unemployment and other labour market difficulties encountered early in their working lives can jeopardise long-term career prospects (OECD, 2010c; Scarpetta *et al.*, 2010). OECD governments have implemented a number of crisis measures intended to help youth to weather the economic storm, both by providing additional opportunities for education and training, and by helping young workers to gain valuable work experience. However, it is not possible yet to assess how successful these measures have been in limiting "scarring" effects. Another concern related to unemployed youth is that they frequently do not qualify for unemployment benefits, but cannot always rely upon the economic support of their parents. Employment losses have also been much larger for low-skilled workers (9.3%) than for medium-skilled workers (2.9%), while employment has actually grown by 5.7% for high-skilled workers. Employment losses have also been larger for men than for women. A notable feature of the current cycle is that employment of older workers (aged 55-64) has risen by over 6.8% on average between 2007Q4 and 2010Q4.

Figure 1.4. **Falling employment has particularly affected youth, low-skilled and men**

Percentage change in employment, 2007Q4-2010Q4




*Note:* Data are not seasonally adjusted. OECD is the weighted average of the OECD countries excluding Chile and Israel. Australia, Japan and New Zealand are also excluded for statistics by educational attainment.

*Source:* OECD estimates based on national labour force surveys.

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Figure 1.5 shows that these differences in how employment have evolved during the crisis for different workforce groups are largely reflected in how much unemployment has risen for the different groups, since worsening labour market conditions generally have not resulted in large numbers of workers withdrawing from the labour force. For example, the overall employment rate for the working-age population declined by 2.2 percentage points and 86% of this jobs gap took the form of higher unemployment since the fall in the labour force participation rate was just 0.3 percentage points.[12] However, there are some interesting differences in how participation rates of different groups have evolved, with youth having been especially prone to withdraw from the labour market, while participation rates have risen for women and older workers. Rising participation for

Figure 1.5. **Falling employment largely took the form of rising unemployment, rather than labour force withdrawal, 2007Q4-2010Q4**

OECD-average percentage-point changes of the number of persons in different labour market statuses as shares of the working-age population[a]


*a)* The weighted average of 27 OECD countries (excluding Australia, Chile, Israel, Japan, Mexico, New Zealand and Switzerland). Data are not seasonally adjusted

*Source:* OECD estimates based on national labour force surveys.

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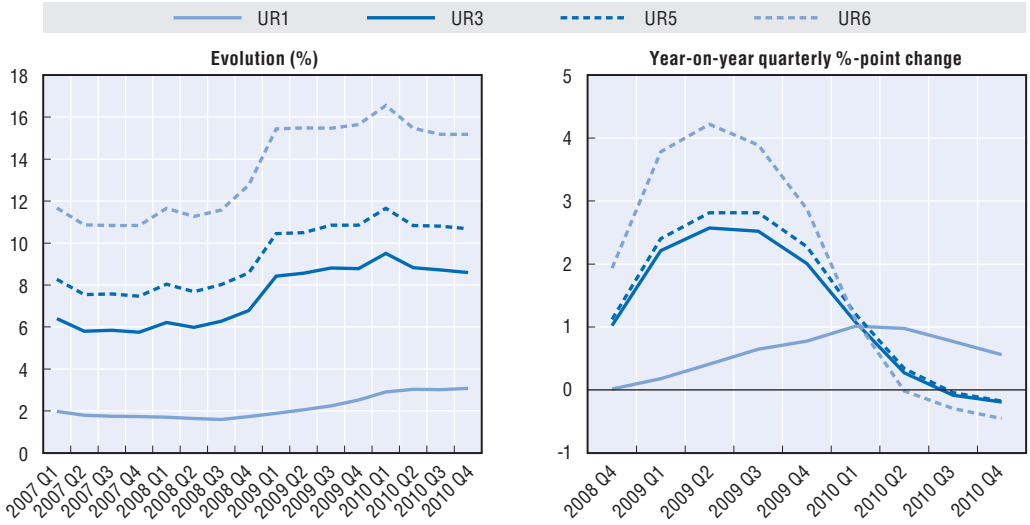
women may reflect an added-worker effect stimulated by high job losses among men, while the even larger increase in participation for older workers represents a marked break from earlier recessions when many countries saw a sharp rise in early retirement.[13] While the mild overall impact of the crisis on participation rates is encouraging, the large fall in participation rates for youth also raises concerns about how many in this group are acquiring additional human capital that will enhance their future employability and how many are at risk of progressively losing contact with the labour market.

Also a reflection of labour force participation rates having held up quite well overall, the number of discouraged workers and other persons marginally attached to the labour force has grown only about one half as rapidly as the number of unemployed persons (*cf.* the gap between UR5 and UR3 in Figure 1.6). An even broader measure of labour market slack also incorporates workers who are underemployed as they are unable to work as many hours as they would like (UR6) and it has risen almost as strongly as the conventional unemployment rate since 2007, due to a strong increase in the number of workers underemployed by low hours.[14] While these broader measures of labour market slack demonstrate how the labour market difficulties occasioned by the recession extend beyond those normally counted as unemployed, it is also useful to focus on the narrower group of persons who are long-term unemployed (defined here are persons who have been continuously jobless for at least one year). Not surprisingly in view of the dynamics of unemployment, Figure 1.6 shows that long-term unemployment (UR1) was substantially slower to begin increasing during the recession than overall unemployment and the broader measures of slack, but that the rise continued through 2010Q4, even after the other measures had peaked in 2010Q1. Since a high incidence of long-term unemployment raises particular policy concerns, the next sub-section examines its recent evolution in some detail.

Figure 1.6. **Unemployment rates and broader measures of labour market slack are receding slowly, but long-term unemployment continues to rise**

Alternative measures of labour market slack, OECD average, 2007Q4-2010Q4[a, b]




**UR:** Unemployment rate.

Alternative measures of labour market slack:

**UR1:** Unemployment for one or more years, as a percentage of the labour force.

**UR3:** ILO unemployment rate.

**UR5:** Unemployed plus persons marginally attached to the labour force, as percentage of the labour force plus persons marginally attached to the labour force.

**UR6:** Unemployed plus marginally attached to the labour force plus underemployed workers, as a percentage of the labour force plus persons marginally attached to the labour force.

**Persons marginally attached to the labour force:** Persons not in the labour force who did not look for work during the past four weeks, but who wish and are available to work. Discouraged workers are the subset of marginally attached workers who are not currently searching for a job because they believe none are available.

**Underemployed persons:** Are defined as full-time workers working less than a full week (during the survey reference week) for economic reasons plus part-time workers who wanted but could not find full-time work. In the United States, it refers to full-time workers working part-time between 1-34 hours during the survey reference week for economic reasons and part-time workers who could not find full-time work.

*a)* OECD is a weighted average for 29 OECD countries. Due to data availability, the OECD average excludes the following countries: Chile, Israel, Korea, Mexico and Switzerland. Results for individual countries are reported in Annex Figure 1.A1.1 in OECD (2011c).

*b)* The labour market slack measures displayed in this figure have not been adjusted for seasonal variation. As a result, the values for UR3 differ slightly from the seasonally-adjusted unemployment rates displayed in the other figures.

*Source:* OECD estimates based on the European Union Labour Force Survey (EULFS) for European countries and national labour force surveys for non-European countries.

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### *How much has long-term unemployment built up?*

The impact of a recessionary shock on unemployment durations is quite complicated since the unemployment *inflow rate* (*i.e.* the entry of newly unemployed persons as a percentage of total employment) rises even as the unemployment *outflow rate* (*i.e.* the proportion of the unemployed becoming re-employed or exiting the labour force) falls. While both changes tend to expand the pool of unemployed persons, they have offsetting effects on the distribution of ongoing unemployment spells by duration in the early stages of a recession: the jump in the inflow rate translates quickly into a rising number of low-duration unemployed, whereas the decline in the exit rate only slowly increases the number of long-term unemployed despite an immediate deterioration in the job-search prospects of the unemployed.[15] Ultimately, it is the exit rate that determines unemployment durations in steady-state, but the early stages of a recession are anything except a steady-state.

A picture of how the distribution of unemployment spell durations has evolved since 2007 in selected countries is provided in Figure 1.7 [and for more countries in Annex Figure 1.A1.3 in OECD (2011c)], where the overall unemployment rate is shown as a line and shading is used to show the composition of total unemployment by time spent unemployed. This figure shows that a large and sustained increase in the overall unemployment rate tends to be associated with a major increase in the number of workers experiencing long spells, albeit with some lag. However, there is also considerable variability concerning whether and how much the long-term share of total unemployment rises. Another pattern that emerges clearly is that the recent increase in the incidence of long-term unemployment has been particularly strong in several countries where the pool of the unemployed previously had been relatively fluid and few workers had been unemployed for as long as a year. The United States is one such country and Box 1.1 provides a longer historical perspective on the increase in long-term unemployment in that country.

Figure 1.7 also confirms that long-term unemployment builds up more slowly during the early stages of a recession than unemployment at shorter durations. As a result, the share of all unemployed who have been jobless for a year or more fell during the initial stages of the 2008-09 recession, when unemployment first began to rise, but eventually increased strongly in the sub-set of countries where the rise in unemployment has been large and sustained [see Annex Figure 1.A1.2 in OECD (2011c)]. Considering the OECD area as a whole, there was a four-quarter lag between the time when the OECD unemployment rate began to rise and the time when the relative incidence of long-term unemployment (*i.e.* the share of all unemployed that have been jobless for a year or longer) began to rise. However, this lag varied considerably from country to country and is probably affected by both national labour market institutions and practices, and the nature of the recessionary shock. Indeed, the size and duration of the upward shock to the unemployment rate appears to have been the key determinant of how sharply the risk that job losers will experience a long spell of unemployment has increased, since many of the countries seeing the sharpest rises in the relative incidence of long-term unemployment had been characterised by high labour market flows prior to the crisis.[16]

Having shown that the 2008-09 recession resulted in a large increase in the incidence of long-term unemployment in some countries and smaller increases in many others, it is interesting to see which workforce groups are bearing the brunt of these increases. Figure 1.8 provides information on how the incidence of long-term unemployment changed between the 4th quarters of 2007 and 2010 for the working-age population and groups defined by gender, age and educational level. The share of the overall working-age population who have been unemployed for a year or longer increased from 1.2 to 2.7%. The increase in long-term unemployment was significantly larger for men than for women (1.8 *versus* 1.1 percentage points) and larger for youth and for persons of prime working age (1 and 1.2 percentage points, respectively) than for older workers (0.4 percentage points). It is notable that the youth recorded a particularly large increase in long-term unemployment despite the relatively large drop in the participation rate for this age group, while rising participation rates for older workers did not translate into a higher rate of long-term unemployment. Another notable result is that long-term unemployment rose more sharply for medium-skilled workers (2 percentage points) than for both less and more educated workers.

While Figure 1.8 provides an overview of which workforce groups experienced the greatest increase in exposure to long-term unemployment, it does not provide clear guidance as to the demographic profile of the expanded pool of long-term unemployed,

Figure 1.7. **Evolution of unemployment rates by duration in selected countries,[a] 2007Q1 to 2010Q4**

Percentage of total labour force[b]

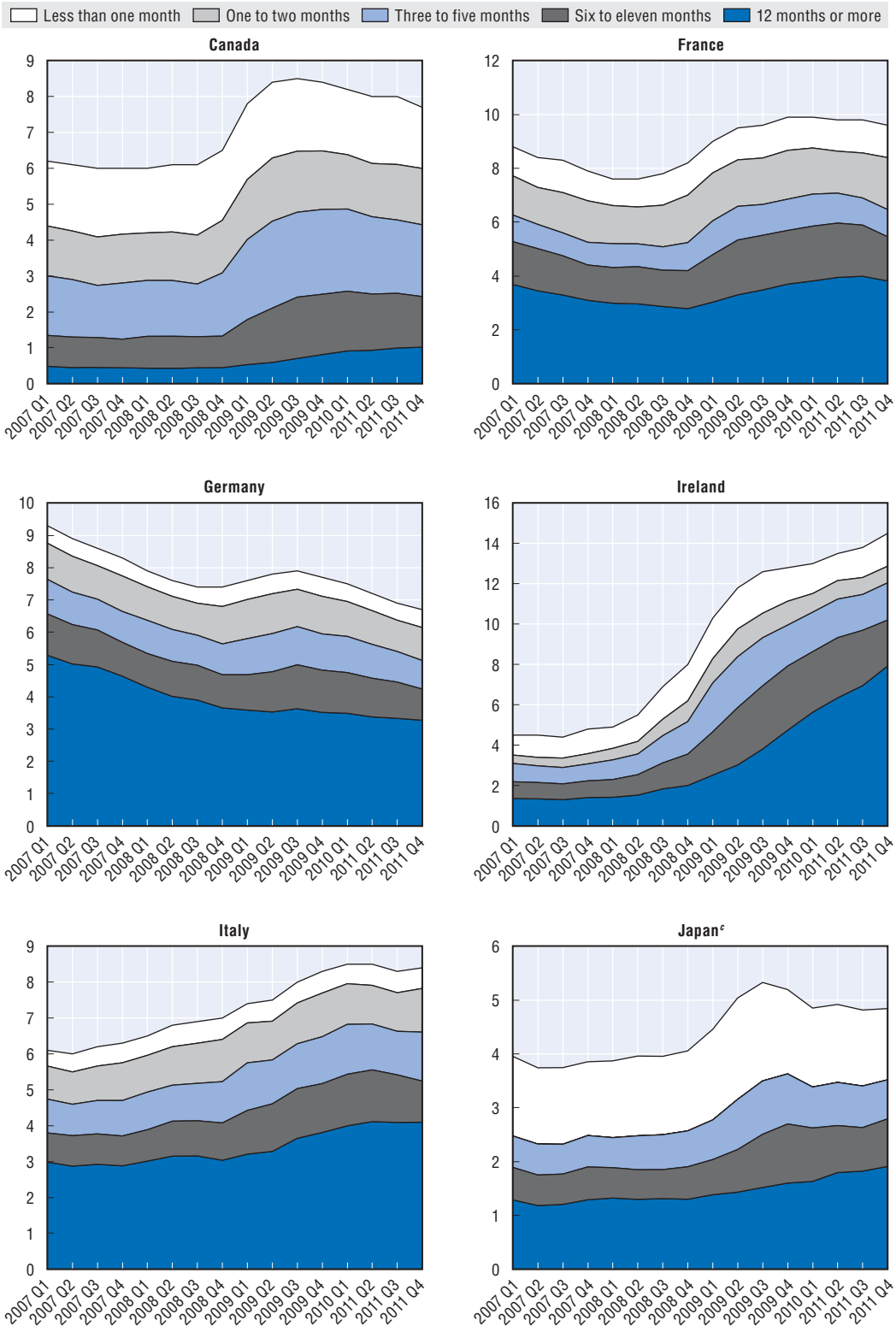


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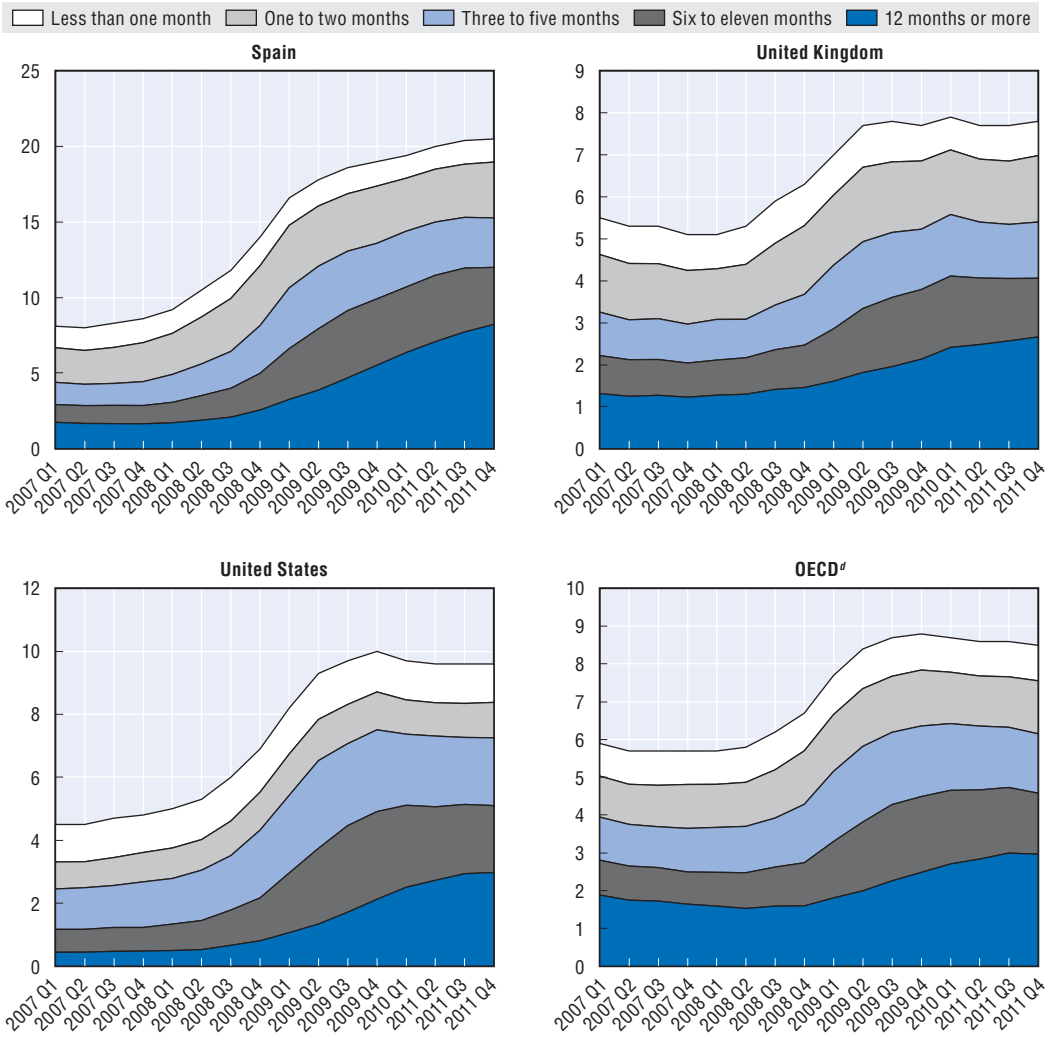
Figure 1.7. **Evolution of unemployment rates by duration in selected countries,[a] 2007Q1 to 2010Q4** *(cont.)*

Percentage of total labour force[b]




*a)* Results for more countries are shown in Annex Figure 1.A1.3 in OECD (2011c).

*b)* Series on unemployment by duration are not seasonally adjusted but are smoothed using three-quarter centered moving averages.

*c)* Unemployment duration less than one month refers to less than three months.

*d)* OECD is the weighted average of the following countries: Australia, Austria, Belgium, Canada, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Japan, Luxembourg, Mexico, the Netherlands, New Zealand, Norway, Poland, Portugal, the Slovak Republic, Slovenia, Spain, Sweden, Switzerland, Turkey, the United Kingdom, and the United States.

*Source:* OECD calculations based on *OECD Main Economic Indicators Database* for the unemployment rates and *OECD Labour Force Statistics Database* for the incidence of unemployment by duration.

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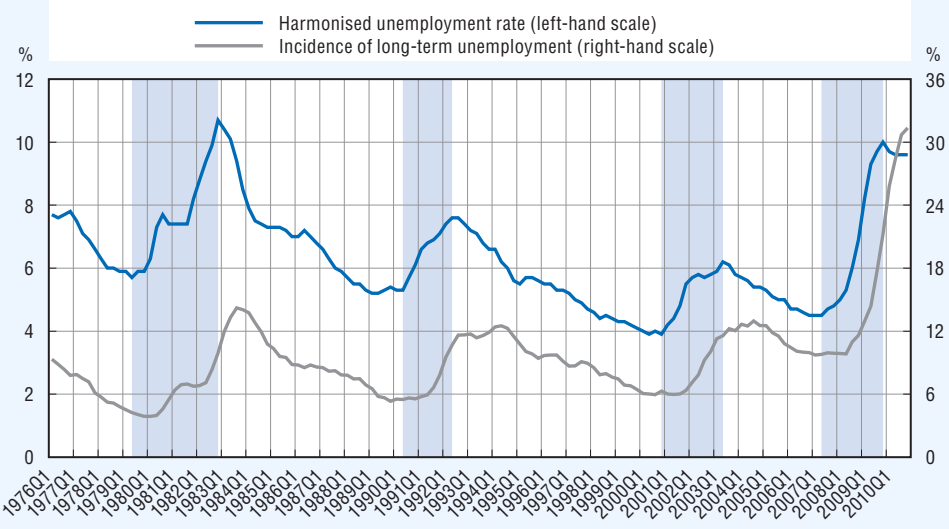
because it takes no account of the very different sizes of the different groups analysed. Annex Figure 1.A1.4 in OECD (2011c) shows that men accounted for the majority of the increase in the number of long-term unemployed persons in most OECD countries, as did prime-age and medium-skilled persons. However, some notable national exceptions emerge. For example, low-skilled workers accounted for more than half of the increase in long-term unemployment in Iceland and Spain (and 46% in Italy).

### Box 1.1. **A historical perspective on the dramatic increase in US long-term unemployment in the wake of the "Great Recession"**

The recent dramatic increase in long-term unemployment in the United States raises the question whether there are historical precedents for such a rise. The chart below shows that the post-crisis increase is unprecedented in recent decades. Even though the "double-dip" recession between 1979 and 1982 drove up the overall unemployment rate to approximately the same level as the "Great Recession" (peaks of 10.7% in 1982Q4 and 10% in 2009Q4), the share of the unemployed who were jobless for at least a year did not rise nearly so high (peaks of 14.2% and 31.4%, respectively). One factor contributing to the currently very high level of long-term unemployment is that it reflects a combination of a longer-run trend increase with the impact of the most recent recession. The trend effect is most easily detected by examining the troughs in the incidence of long-term unemployment that were observed in the economic expansions preceding the 1979-82, 1990-92, 2000-01 and 2007-09 recessions. These were respectively 3.9%, 5.3%, 6% and 9.7%, clearly indicative of an upward drift in the risk of long unemployment spells. However, the currently very high incidence of long-term unemployment also reflects an unprecedentedly large rise during the latest downturn: the 21.7 percentage points increase in the share of the unemployed who have been jobless for a year or longer is more than double the next largest recessionary rise in the period shown in the chart (*i.e.* the over 10 percentage-points increase between 1979 and 1983).

**Incidence of long-term unemployment and unemployment rate in the United States, 1976Q1 to 2010Q4**




*Source:* OECD calculations based on the Current Population Survey (CPS) basic files.

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Several factors appear to have played significant roles in causing these developments. As regards the trend increase, both the ageing of the workforce and the increase in labour force attachment among women appear to have made a contribution. The latter factor is illustrated by noting that the share of unemployed women who have been jobless more than a year used to be lower than the corresponding share for men, but this gender gap in the risk of long spells had largely closed by the time that the latest downturn began: the long-term incidence rate for women was 69% that for men when the 1979-82 recession began but 99% that for men when the 2007-09 recession began (Junankar, 2011). This

Box 1.1. **A historical perspective on the dramatic increase in US long-term unemployment in the wake of the "Great Recession"** *(cont.)*

convergence may reflect a declining tendency of female job losers with poor job-search prospects to withdraw from the labour force. It is still the case, however, that long-term unemployment has increased more strongly for men than for women during the recent recession, probably due in part to their disproportionate employment in the most cyclical industries (OECD, 2009a).

A number of researchers have recently analysed various factors that could account for the very sharp increase in US long-term unemployment during the recent recession, particularly the impact of the large extension in the maximum duration of UI benefit receipt. While an extension in UI duration during recessions is common practice in the United States, the extension observed during the 2008-09 recession was much more generous and might thus have had a larger impact on job search behavior, especially since it was combined with several measures to increase benefit generosity.* Aaronson *et al.* (2010) were perhaps the first to estimate this impact. Based on existing studies of the responsiveness of job search to benefit duration, these authors concluded that the extension of the maximum UI entitlement period accounts for 10-15% of the total increase in average unemployment duration since July 2008 which translates into a 0.7 percentage point rise in unemployment (as compared with an overall increase of 5.5 percentage points). Daly *et al.* (2011) obtain similar estimates (0.4 to 0.8 percentage points). Fujita (2010) obtains a significantly larger estimated effect (1.7 percentage points), but Kroft and Notowidigdo (2011) and Schmieder *et al.* (2011) both estimate a smaller effect (0.4-0.45 percentage points). While there is great uncertainty concerning the size of the impact of the UI benefit extensions, these studies suggest that it has played a role in lengthening unemployment spells, but is not the whole story.

* In the United States, the duration of UI benefits, usually limited to six months, has been extended to up to 99 weeks in some states. Benefit levels were also temporarily increased, as was the COBRA subsidy for health insurance premiums available to some groups of job losers, although most of these measures have already expired. (Section 2 discusses these policy changes in greater detail.)

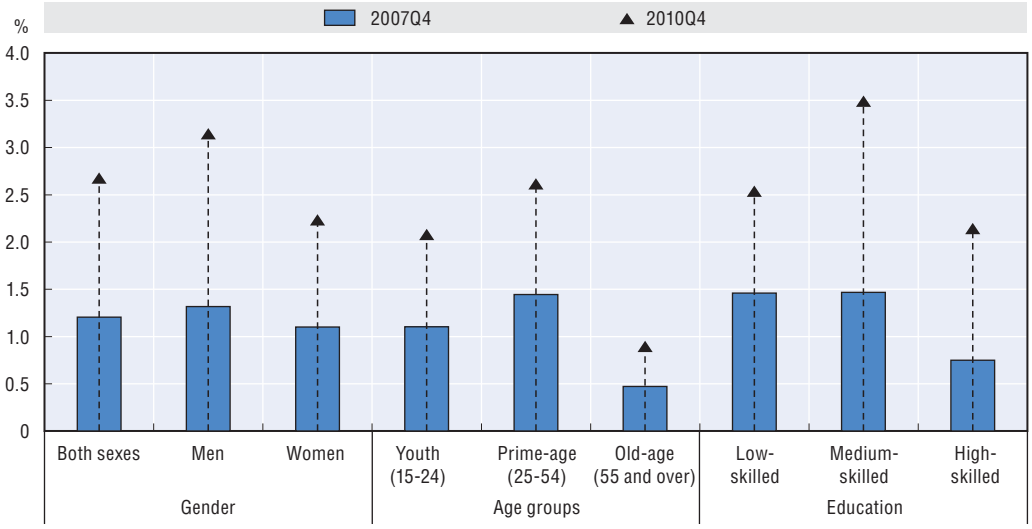
### *Do the resources available to help job losers measure up to the size of the challenge?*

The discussion above has shown that unemployment, including long-term unemployment, has increased significantly in the wake of the 2008-09 recession, albeit very unevenly across OECD countries. Since the number of unemployed requiring assistance has expanded much more sharply in some countries than in others, it is interesting to consider how well prepared the hardest-hit countries were on the cusp of the downturn. Figure 1.9 juxtaposes the recent increases in total and long-term unemployment with the levels of public spending on active and passive labour market programmes in 2007. Among the key findings:

- Of the 11 countries where the increase in the unemployment rate has been above the OECD average increase, seven spent less on labour market programmes in 2007 as a percentage of GDP than the OECD average. Several of the hardest hit countries were particularly low spenders, including Estonia, Greece, the Slovak Republic and the United States (all of which saw unemployment rise by more than 5 percentage points and also saw large increases in long-term unemployment). However, the three other countries where the rise in unemployment exceeded 5 percentage points spent somewhat more than an average amount on labour market programmes in 2007 (Ireland, Portugal and

Figure 1.8. **The risk of long-term unemployment rose most for men, youth and medium-skilled workers**

Persons unemployed a year or longer as a share of the working-age population, OECD average[a]




*a)* OECD is the weighted average of 27 OECD countries (excluding Australia, Chile, Israel, Japan, Mexico, New Zealand and Switzerland).

*Source:* OECD estimates based on national labour force surveys.

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Spain), while unemployment rose by 4.6 percentage points in Denmark, where spending was well above the OECD average.

- The tendency for the hardest hit countries to have invested relatively little in labour market programmes prior to the crisis is clear from average spending levels: labour market programme expenditures averaged 1.1% of GDP for the eleven countries experiencing an above-average increase in unemployment, as compared with 1.4% of GDP for the seventeen countries where the increase in unemployment was below the OECD average. Labour market spending in 2007 was even lower for the six countries where the unemployment rate increased by more than 5 percentage points, just 0.9% on average. The hardest-hit countries also tended to allocate a somewhat lower share of the labour market spending to active measures than countries where the labour market fared better during the recession. The active share of spending averaged 36% in the six hardest-hit countries, 39% in all twelve countries with an above-average rise in unemployment and 43% in countries where the increase in unemployment was below the OECD average.

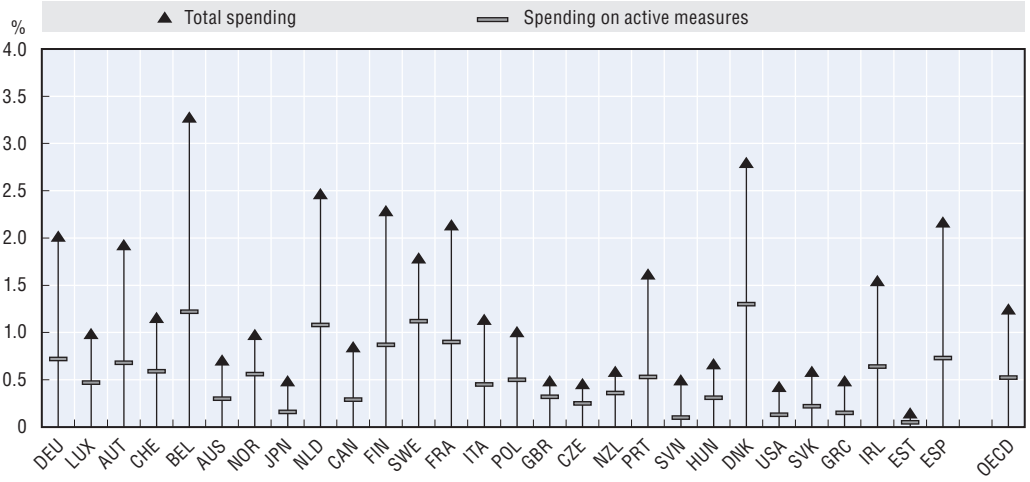
These patterns raise the concern that the hard-hit countries that entered the recession with relatively low spending on active and passive labour market programmes may have found it particularly difficult to scale up or supplement those programmes adequately in response to sharp increases in unemployment. The remainder of this chapter goes some distance towards answering this question, albeit largely for passive income support measures rather than active measures to help job losers back into jobs, because very little data on the operation of ALMPs during the crisis are yet available.[17]

Early in 2010, very few of the countries responding to an OECD questionnaire anticipated that the resources devoted to labour market policies would decline that year, while about equal numbers expected spending to remain at approximately the same level as in 2009 or to increase (OECD, 2010a). These anticipations probably reflected widespread

Figure 1.9. **Spending on labour market programmes was relatively low in 2007 in most countries where unemployment subsequently rose sharply**

Panel A. **Recession-induced increase in unemployment and long-term unemployment**
Percentage-point changes[a]


Panel B. **Labour market programme spending as a percentage of GDP, 2007**[b]




*Note:* Countries are shown in ascending order of the increase in the unemployment rate.

*a)* Changes measured from the pre-crisis trough of the seasonally-adjusted quarterly unemployment rate to the latest data (usually 2010Q4). Data on long-term unemployment is not seasonally adjusted, but is smoothed using three-quarter moving averages.

*b)* Data for Greece exclude spending on public employment services (PES).

*Source:* OECD calculations based on *OECD Main Economic Indicators Database* for the unemployment rate, national labour force surveys for the long-term unemployment, and *OECD Labour Market Programmes Database*.

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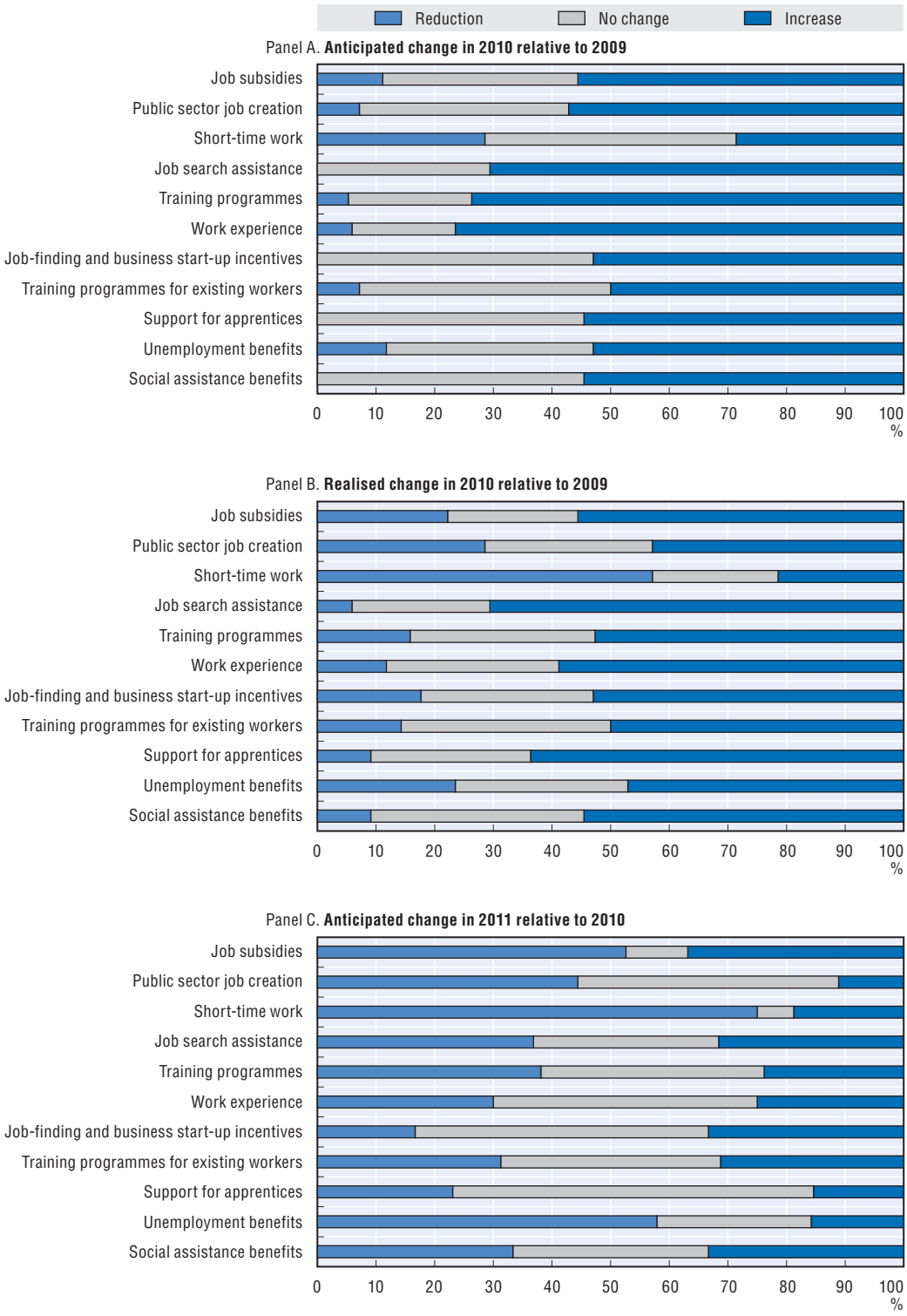
expectations that labour market conditions would remain difficult or even deteriorate further during 2010. Another reason that expenditures were expected to remain stable or increase is likely to have been the continuing operation of the numerous crisis measures that had been taken in late 2008 and early 2009 when unemployment surged (OECD, 2009b). Information collected in a new OECD questionnaire allows for a comparison between *anticipated* and *realised* spending during 2010 (Figure 1.10, Panels A and B).[18] Actual spending turned out to be lower than anticipated in a considerable number of countries. Lower than expected spending was especially common for short-time work (STW) schemes, but also

Figure 1.10. **Anticipated and realised changes in the resources devoted to labour market policy, 2009 to 2011**

Percentage of responses




*Source:* OECD calculations based on responses to OECD questionnaire: *Employment and Social Policies in the Economic Downturn and Early Recovery*.

StatLink http://dx.doi.org/10.1787/888932479192

quite common for spending on active and passive measures. These unanticipated declines in expenditures probably reflect in significant part the fact that unemployment rose less than had been expected in some countries, as well as the rapid decline in STW enrolments in countries such as Germany, where the economic recovery was relatively quick and strong. Lower than anticipated take-up of new or existing initiatives (or a slower unfolding of new initiatives than first foreseen) may also have been a factor.

Looking ahead, many countries anticipate stable or falling expenditures on labour market measures in 2011 as compared with 2010 (Figure 1.10, Panel C). Anticipated improvements in labour market conditions probably play a large role in explaining why one-half or more of the countries expect spending on unemployment and STW benefits, as well as job subsidies, to fall and significant minorities expect all other spending categories to fall. Two other factors that are likely to be contributing to expenditure declines are the expiration of temporary crisis measures (OECD, 2010a) and government-wide fiscal consolidation. It should be noted, however, that it is also the case that considerable numbers of countries still anticipate spending increases in most labour market policy areas. Indeed, approximately one-third of the responding countries are expecting to spend more on job subsidies, job-search assistance, job-finding and business start-up incentives, training for existing workers and social assistance in 2011. The striking cross-country differences in spending developments this year undoubtedly reflect the very different labour market developments discussed above, as well as differences in the fiscal space to support spending on labour market programmes.

This qualitative analysis of how the resources devoted to labour market programmes have evolved the past several years illustrates the counter-cyclical nature of these expenditures, but it does not allow any conclusions to be drawn about whether passive and active labour market measures were scaled up adequately during the 2008-09 recession, nor whether the spending that occurred was cost-effective.[19] Sections 2 to 4 of this chapter analyse the operation of unemployment and social assistance benefits during the crisis in much greater detail and draw some preliminary conclusions about what worked well and what could be improved in future downturns. An similar analysis for active labour market programmes will need to wait until more complete data on realised spending and enrolments become available.

## 2. What social safety nets were in place when the recession began and how have they changed?

Almost all OECD countries have social safety-net systems that are intended to cushion the impact of lost earnings on the living standards of workers and their families, but which also raise concerns about eroding labour supply incentives. This section focuses on the main components of the safety-net that the working-age population can be entitled to as a source of income support when they experience unemployment, including how their structure and generosity were changed in response to the recent downturn. While unemployment benefits and unemployment/social assistance are analysed in detail, a number of other public programmes that provide important help to workers to navigate a recession are outside the scope of this chapter. For example, in-work benefits, which can facilitate the transition back into the labour market or provide additional support to those already working, including those working fewer hours as a result of the crisis, are not analysed here as they mainly provide assistance to those in employment.[20] Active labour market programmes (ALMPs) that assist job losers to find new jobs are also an essential

part of the overall government response to reduce the costs workers bear in recessions, but are not analysed in this chapter (see OECD, 2009a, 2009b and 2010a for detailed discussions of ALMPs during a recession).

Despite significant differences in the magnitude and the structure of social safety-nets among OECD countries, they typically consist of two main tiers of income assistance for workers losing their jobs and other unemployed persons: unemployment/employment insurance programmes hereafter referred to as unemployment benefit programmes (UB), and social assistance programmes (SA). In addition, unemployment assistance programmes (UA) may provide an alternative to UB or complement it, often functioning as an intervening level of income support between the main higher and lower tier schemes. One of the issues below is how effectively the different tiers of income support for the unemployed function when a deep recession sharply increases the need for this type of assistance. It should be noted, however, that a few OECD countries, notably Australia and New Zealand, have a single-tier system of income support for the unemployed and, hence, these issues take a somewhat different form in those countries.

UB programmes constitute the first, higher tier of income assistance and serve two primary objectives. First, UB replaces temporarily a portion of lost earnings for eligible workers who become unemployed (*i.e.* consumption-smoothing) and, hence, the benefit level tends to be tied to the prior earnings level (up to a benefit ceiling). Second and from a macro perspective, UB programmes help to support aggregate demand during an economic downturn by acting as an automatic fiscal stabiliser (Chase, 2007). By their nature, UB programmes are very responsive to changes in labour market conditions and typically represent the first line of defence to alleviate the impact of a slack labour market on the living standards of job losers and their families. However, UB coverage is generally limited to job losers (excluding the self-employed)[21] who have made sufficient contributions to the insurance fund or have been employed for a minimum period of time prior to their dismissal, such that new labour market entrants, low-paid or intermittent workers and the self-employed may be less effectively covered (Immervoll, 2009).

Most OECD countries also have short-time work (STW) programmes or partial unemployment schemes, some of which are delivered as part of the unemployment benefit system. These programmes are meant to preserve employment and provide income support for workers with reduced hours as a result of temporarily low product demand, including during a general economic downturn. STW represented an important component of some countries' responses to the current crisis *(e.g.* Belgium, Germany, Italy and Japan). While these programmes lie outside of this chapter's analysis of income support for jobless persons, Box 1.2 provides a short discussion of STW and its role during the 2008-09 recession.

For those not, or no longer, eligible for UB programmes, the second and lower tier of income assistance typically consists of social assistance programmes that provide income support to households which do not have sufficient resources to support themselves (Adema, 2006). This type of programme is often referred to as a "last resort" programme since they tend to supplement any other type of income (from public or private sources) that an individual or household might have accumulated, received or be eligible for. Eligibility is generally determined according to specific needs taking into account living arrangements as well as available household income and assets. Social assistance benefits are typically determined with a view to providing a minimum level of resources and hence

### Box 1.2. **Preserving employment through short-time work (STW) schemes**

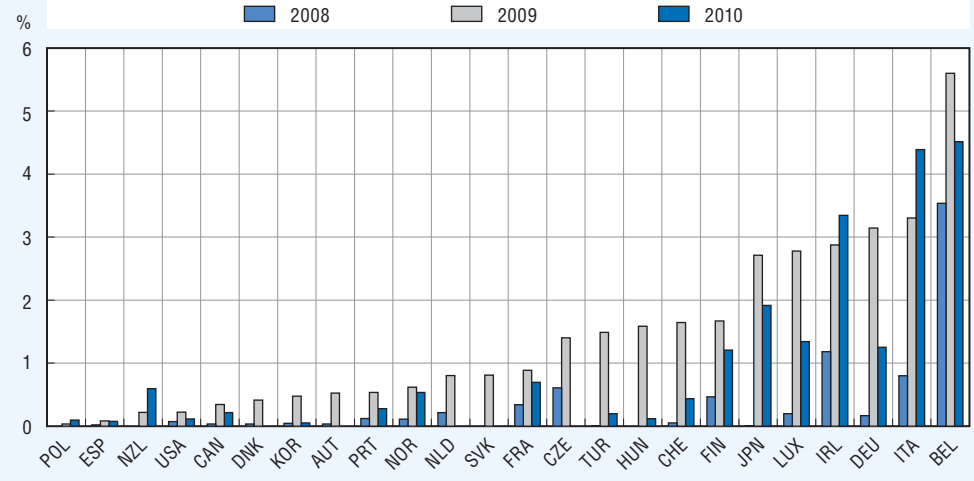
A reduction in the total number of hours worked can take the form of a reduction in the average working time per worker (*e.g.* cuts in overtime) and/or a reduction in the number of workers (*e.g.* layoffs). A reduction in the average working time per worker may be fairer and more efficient relative to a reduction in the number of workers because: i) the burden of adjustment is shared more equally across the workforce; and ii) transitory factors are prevented from destroying valuable job matches (OECD, 2009a). If employers can be encouraged to "hoard" labour during an economic crisis, that could also relieve some pressure on the public safety net for job losers.

For all of the above reasons, most OECD countries have a short-time work (STW) scheme, under which firms or workers receive a subsidy for temporary reductions in hours per worker, under certain conditions (*e.g.* a verifiable decline in product demand). These schemes serve two purposes. First, they aim to preserve jobs at firms experiencing temporarily low demand by encouraging work-sharing. Second, they provide income support to workers whose hours are reduced due to a shortened work week or temporary lay-offs. In the wake of the recent crisis, new STW schemes were introduced in Poland, the Netherlands, Hungary, the Czech Republic, the Slovak Republic, Mexico and New Zealand. In addition, many countries extended the coverage or generosity of existing schemes or relaxed eligibility or administrative requirements in order to encourage take-up.

As shown in the figure below, the average stock of participants in STW, as a share of all employees, increased significantly between 2007 and 2009. This increase was especially large in Belgium, Italy, Germany, Luxembourg and Japan. Hijzen and Venn (2011) analyse the operation of STW schemes during this period and provide evidence that they had an important impact in preserving jobs during the economic downturn, with the largest impacts in Germany and Japan. The positive impact, however, is typically limited to workers with permanent contracts, with the risk of further increasing labour market segmentation between workers.

**Average monthly STW take-up rate in selected years**

Percentage of total employees




*Note:* Countries shown in ascending order of the share of participants in short-time work schemes in 2009.

*Source:* Data based administrative data from the OECD-EC questionnaire and the *OECD Main Economic Indicators Database*.

StatLink http://dx.doi.org/10.1787/888932479496

Box 1.2. **Preserving employment through short-time work (STW) schemes** *(cont.)*

Historically, one of the main challenges in designing and operating STW programmes has been to ensure that the "labour hoarding" subsidy does not turn into a quasi-permanent payroll subsidy that impedes necessary structural change by subsidising jobs that are no longer competitive. While the jury is still out regarding the long-run impact of STW, preliminary evidence from the recent downturn suggests that carefully-designed STW programmes can play a significant role in reducing the number of out-of-work individuals having to rely solely on income assistance during a recession without becoming an impediment to efficiency-enhancing labour reallocation. Indeed, participation in STW started to fall in 2010 in most countries for which data are available. It is unclear at this stage how much of the fall in participation reflects improved economic conditions and how much the fact that many of the workers and firms taking up STW during the recession have now reached the maximum duration of the public subsidies available under these schemes (the median duration of schemes operating in 2009 was 12 months). The observed fall between 2009 and 2010 varies across countries and participation even continued to increase in Italy.

are not adjusted to reflect the previous earnings level of job losers. Moreover, SA benefits typically are not subject to explicit time limits,[22] but income- and asset-tests can be very tight (Immervoll, 2009).

A number of countries have what is typically referred to as unemployment assistance (UA) programmes. In Australia and New Zealand, income support to unemployed working-age individuals is provided through a single means-tested UA programme, regardless of one's previous working experience, as long as they meet the means-test. In other countries, UA operates as: the lower tier of income assistance *(e.g.* United Kingdom, Ireland and Germany); an often temporary middle tier of assistance for those typically not eligible to UB programmes and those exhausting their unemployment benefits *(e.g.* Estonia, Finland, Hungary, Portugal, Spain and Sweden); or a temporary, sometimes targeted, extension of the first tier of income assistance for those exhausting their unemployment benefits (Austria, France and Greece). Relative to UB programmes, unemployment assistance typically has lower benefit levels and, in some cases, can be supplemented by social assistance benefits. UA benefits are generally means-tested and set at a pre-determined level, so that the benefit amount is less dependent on previous earnings than are UB benefit levels. However, the means-testing is typically less strict than for social assistance benefits (Immervoll, 2009). In the empirical analysis below, unemployment benefit (UB) programmes refer to both unemployment/employment insurance programmes and unemployment assistance programmes which operate as the highest tier of income support for job losers. Social assistance programmes refer to pure social assistance plus those unemployment assistance programmes that operate as the lower tier of the income support system.

### *Unemployment benefit programmes*

Long spells of unemployment can have significant negative repercussions on individuals' and households' ability to meet their financial obligations and maintain their standard of living. Therefore, the level of benefits unemployed individuals may be entitled to and the potential length of benefit receipt are two key elements to consider when

examining the role played by UB programmes in mitigating the impact of the recession on individuals and their households.

Table 1.1 shows net (*i.e.* after-tax) replacement rates at different stages during an unemployment spell for prime-age individuals eligible for UB programmes. Results are averages over different earnings levels and family situations and account for taxes and for family-related benefits as of 2009.[23] These replacement rates provide a summary indication of benefit generosity in the first full year of the recession and thus capture the impact of most measures taken to reinforce UBs early in the recession, but not of subsequent developments.[24] Compensation for lost earnings is typically highest during the first year of an unemployment spell. On average across OECD countries, individuals receive more than half of what they earned prior to losing their jobs. In some countries, the level of support can decline markedly as the spell of unemployment extends into a second year (*e.g.* less than 10% of previous earnings in Luxembourg, Italy, Japan and Korea). This is mainly due to the exhaustion of temporary UB and the assumed ineligibility for social assistance and housing benefits, which will be analysed separately below. Similar drops can be observed in other countries when unemployment enters a third *(e.g.* Netherlands, Switzerland) or fourth year *(e.g.* Sweden, Iceland).

Figure 1.11 examines how the generosity of UB was affected by the changes in the level of UB benefits and their maximum duration that OECD countries made in response to the crisis. The average net replacement rate averaged over the first two years of an unemployment spell is displayed for 2007 and 2009. While the generosity of UB remained fairly steady between 2007 and 2009 in most countries, it increased significantly in some of them, especially in the United States. The benefit extension in the United States was particularly rapid and much more prolonged than in previous recessions, with benefit duration extended from 26 weeks in 2007 to up to 99 weeks in 2009, depending on the state. There was also a significant increase in UB benefit duration in Canada, where the automatic extension tied to rising unemployment rates was reinforced with a temporary five-week extension for all eligible workers and longer extensions for particular groups (*e.g.* up to an additional 20 weeks for long-tenured workers).[25] The main rationale for benefit extensions lies in preventing a rapid and drastic reduction in the level of income support received by job losers at a time when it is particularly difficult to find jobs, along with its value as a fiscal stimulus at a time when unemployment is high. UB extension can also reduce the share of the working-age population resorting to alternative public income-support schemes characterised by a higher risk of long-term benefit dependency and skill erosion, including SA, disability benefits and pension schemes (De Serres *et al.*, 2011; OECD, 2010d).

Other countries have increased the level of benefits as a proportion of the average wage, either via an explicit policy change *(e.g.* Greece, Italy, Belgium and Turkey) or due to automatic indexation of benefits *(e.g.* Iceland and Ireland). The net replacement rates in Figure 1.11 suggest that these increases have been quite modest. Other policy changes in response to the crises loosened eligibility criteria with a view to increasing coverage. For instance, changes in eligibility in Finland, France, Israel and Japan should have made it easier for temporary or irregular workers to access the highest tier of income assistance [see Annex Table 1.A1.6 in OECD (2011c) for full details]. However, the net replacement rates displayed in Figure 1.11 provide no information about the effectiveness of these measures in extending UB coverage.

Table 1.1. **Level of unemployment benefits by duration of the unemployment spell**

Net replacement rates at different points during an unemployment spell, percentage, 2009[a]

| | Year 1 | Year 2 | Year 3 | Year 4 | Year 5 | Five-year average |
|---|---|---|---|---|---|---|
| Belgium | 71.2 | 64.6 | 64.6 | 64.6 | 64.6 | 65.9 |
| Denmark | 72.6 | 73.4 | 73.4 | 73.4 | 9.7 | 60.5 |
| Austria | 61.8 | 58.7 | 58.7 | 58.7 | 58.7 | 59.3 |
| Ireland | 58.6 | 58.8 | 58.8 | 58.8 | 58.8 | 58.8 |
| Portugal | 79.3 | 78.9 | 55.7 | 38.9 | 4.7 | 51.5 |
| New Zealand | 50.8 | 50.8 | 50.8 | 50.8 | 50.8 | 50.8 |
| Australia | 49.1 | 49.1 | 49.1 | 49.1 | 49.1 | 49.1 |
| Germany | 64.9 | 49.4 | 43.3 | 37.1 | 37.1 | 46.4 |
| France | 67.3 | 67.3 | 30.0 | 30.0 | 30.0 | 44.9 |
| Finland | 60.1 | 57.8 | 32.5 | 32.5 | 32.5 | 43.0 |
| Iceland[b] | 66.9 | 64.4 | 64.4 | 8.9 | 8.9 | 42.7 |
| Sweden | 60.9 | 59.7 | 56.5 | 19.4 | 7.7 | 40.9 |
| Norway | 72.9 | 73.9 | 18.1 | 17.5 | 17.5 | 40.0 |
| Spain | 67.7 | 63.7 | 23.5 | 23.5 | 12.6 | 38.2 |
| United Kingdom | 33.0 | 32.6 | 32.6 | 32.6 | 32.6 | 32.7 |
| Netherlands | 72.6 | 61.0 | 5.3 | 5.3 | 5.3 | 29.9 |
| Canada | 61.9 | 15.5 | 15.5 | 15.5 | 15.5 | 24.8 |
| Luxembourg | 85.1 | 9.3 | 9.3 | 9.3 | 9.3 | 24.5 |
| Switzerland | 80.7 | 40.4 | 0.0 | 0.0 | 0.0 | 24.2 |
| Slovenia | 56.7 | 12.2 | 12.2 | 12.2 | 12.2 | 21.1 |
| Hungary | 45.9 | 12.9 | 12.9 | 12.9 | 12.9 | 19.5 |
| Greece | 53.2 | 10.1 | 4.4 | 4.4 | 4.4 | 15.3 |
| Estonia | 49.3 | 13.0 | 4.6 | 4.6 | 4.6 | 15.2 |
| Poland | 44.1 | 7.5 | 7.5 | 7.5 | 7.5 | 14.8 |
| Slovak Republic | 37.9 | 9.0 | 9.0 | 9.0 | 9.0 | 14.8 |
| Czech Republic | 29.7 | 8.8 | 8.8 | 8.8 | 8.8 | 13.0 |
| United States | 44.9 | 16.5 | 0.0 | 0.0 | 0.0 | 12.3 |
| Japan | 45.5 | 3.0 | 3.0 | 3.0 | 3.0 | 11.5 |
| Italy | 46.7 | 1.6 | 1.6 | 1.6 | 1.6 | 10.6 |
| Turkey | 45.3 | 0.0 | 0.0 | 0.0 | 0.0 | 9.1 |
| Korea | 30.4 | 0.6 | 0.6 | 0.6 | 0.6 | 6.6 |
| **Median** | **58.6** | **40.4** | **15.5** | **12.9** | **9.3** | **29.9** |

*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. 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 couples, 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.

*b)* Net replacement rates for Iceland do not include the retroactive extension in UB benefits from three to four years passed in December 2010.

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

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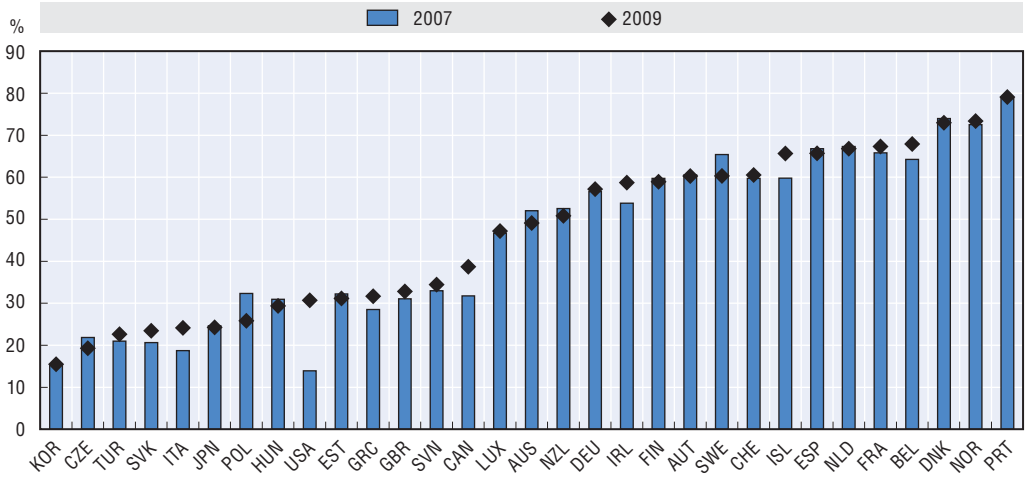
### *Social assistance programmes*

While social assistance is not necessarily targeted on the unemployed, it may provide needed support for workers who remain jobless after having exhausted their entitlements to UB programmes or other jobless persons who were not entitled to UB from the outset of their unemployment spell. Across the OECD, there is significant variation in the level of support provided under the lower tier of income assistance. These differences probably

Figure 1.11. **Impact of recent changes in the level and maximum duration of unemployment benefits on overall generosity**

Average net replacement rates for a two-year unemployment spell[a]




*Note:* Countries are shown in ascending order of the 2009 generosity measure (*i.e.* the two-year average net replacement rate).

*a)* 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. 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 24 months, four different stylised family types (single and one-earner couples, 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*).

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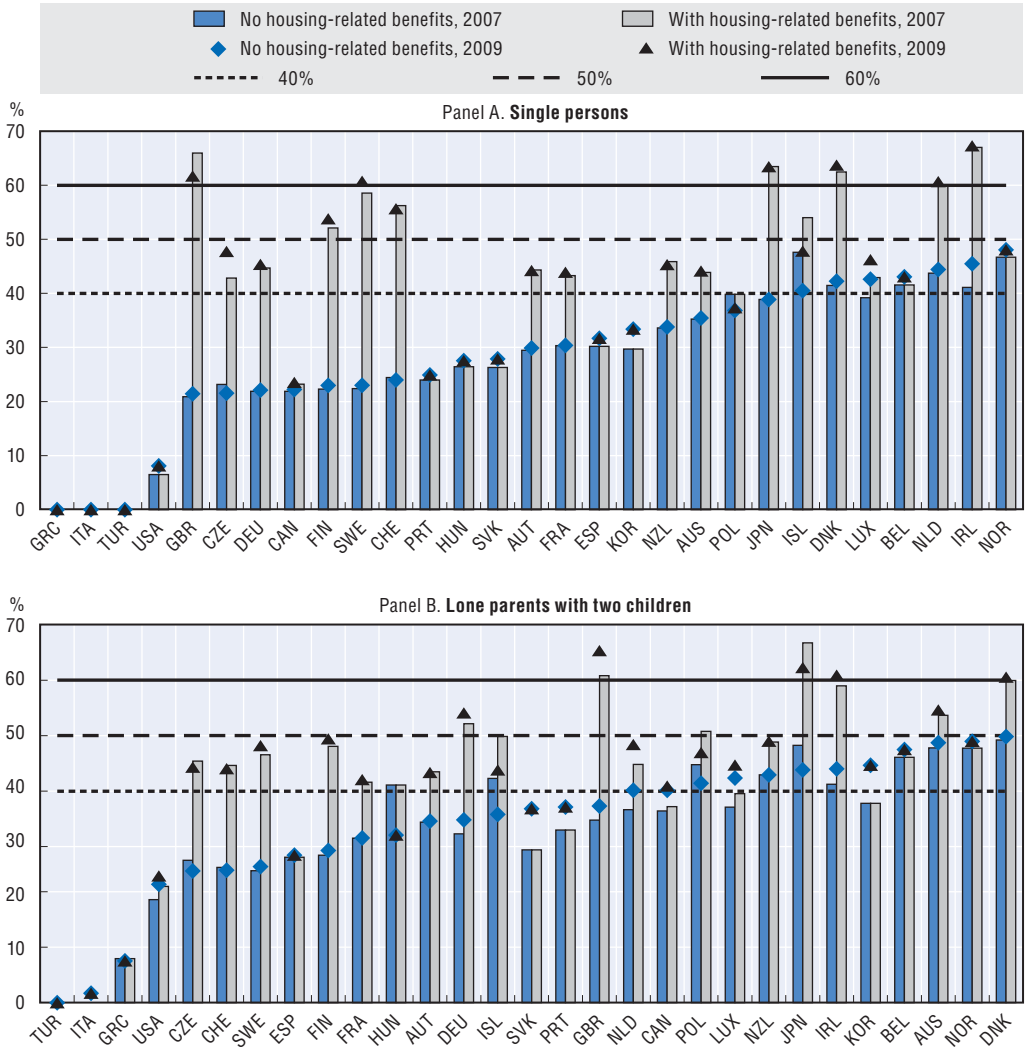
reflect, in part, different views on the respective roles of the state, the community and the family in supporting working-age individuals in need. In some countries, social assistance benefits are meant to prevent extreme hardship, while it is intended to minimise social exclusions elsewhere (Adema, 2006).

During a recession, concerns may arise about how quickly jobless workers exhausting eligibility to unemployment benefits can become entitled to social assistance, particularly when there is no other employed adult in the household. Concerns may also arise related to differences in the level of assistance provided by UB and SA, and the extent to which households need to "fall into poverty" before becoming eligible for social assistance.

For comparative purposes, Figure 1.12 shows the level of assistance under the lowest-tier of income assistance in relation to median equivalised household income (*i.e.* adjusted for household size), as well as alternative poverty lines determined as 40, 50 and 60% of median household income. The generosity of SA is assessed separately for single persons with and without children. From the figure, it is clear that benefits are often quite low compared with commonly-used definitions of relative poverty, especially when housing-related benefits are not included. Typically, the level of social assistance is lower for single individuals than for single parents. For instance, without accounting for housing subsidy, the level of support for single individuals does not exceed 30% of median income in about half of the OECD countries for which information is available compared with about ten countries in the case of single parents. This may reflect a general view that single

Figure 1.12. **Net income of social assistance recipients relative to median and alternative relative poverty lines,[a] 2007 and 2009**

Percentage of median household income




*Note:* Countries are shown in ascending order of the 2009 net income excluding housing-related benefits.

*a)* Results show benefit entitlements for single individuals with 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 "near-cash" benefits (Supplemental Nutrition Assistance Programme). Children are assumed to be aged four and six years. Comparisons with median income levels are made on an equivalised basis (equivalence scale is the square root of the household size). Median household income is based on data for a year around 2005 expressed in 2007 and 2009 prices.

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

StatLink http://dx.doi.org/10.1787/888932479230

individuals, especially when they are young, should rely on alternative sources of support such as their community or family at a time of need. It may also reflect countries' efforts to mitigate the impact of adult poverty on children. For those living in rented accommodation, available housing-related subsidies can play an important role in improving living standards. Greece, Italy and Turkey[26] have no or little social assistance for jobless working-age individuals and families at the national level.

Several countries have changed rules affecting the availability and the level of social assistance in response to the recent recession. Figure 1.12 shows the change between 2007 and 2009 in the level of benefits received by a typical single person and single-parent families eligible to social assistance.[27] For a number of countries, such as Canada, Germany, Ireland, Italy, Korea, Luxembourg, Netherlands, Portugal, Slovakia, the United Kingdom and the United States, the level of benefits went up slightly for single parents. In others, such as Japan, Poland and most notably Hungary, the level of benefits decreased between 2007 and 2009. In general, the level of benefits provided to singles also remained steady between 2007 and 2009, increasing slightly in Ireland, Korea, Luxembourg and the Czech Republic.

## 3. Were social safety nets responsive to rising unemployment during the recession?

In all OECD countries, albeit by a different magnitude, both tiers of income assistance have delivered increased support to the unemployed in response to the 2008-09 recession. This section attempts to provide a preliminary examination of this response. *First*, it examines trends in aggregate social spending compared with historical trends. *Second*, it takes a closer look at trends in the number of UB and SA recipients to identify groups at risk of not being caught by the safety net. *Finally*, it presents short case studies of the United States and Australia which analyse the responses of their safety-net systems to the downturn at the *household* level, with a focus on their distributional impacts.[28]

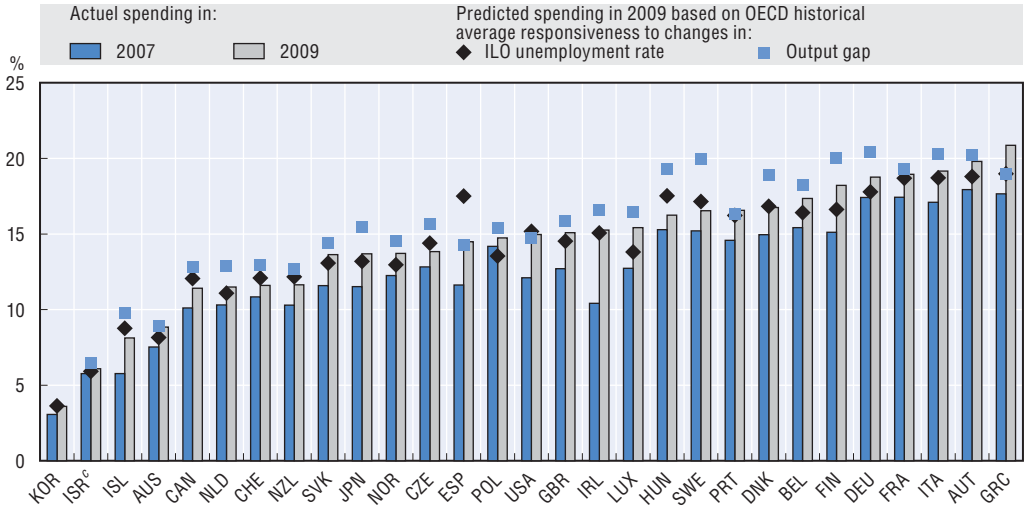
### *Changes in social spending from 2007 to 2009*

#### *Changes relative to historical patterns*

As is shown in Figure 1.13, spending on social benefits[29] increased as a share of GDP between 2007 and 2009 in all OECD countries, mainly reflecting a rise in the number of individuals eligible for income support. The unweighted average increase was a sizeable 1.9 percentage points, but this reflects both increased public spending and declining GDP. Ireland saw the sharpest increase in the benefit spending share which rose by nearly 5 percentage points, while the increase was close to 3 percentage points in Finland, Greece, Spain and the United States. With the exception of Finland, these are all countries where unemployment increased by more than 5 percentage points.

For comparison purposes, Figure 1.13 also shows predicted changes in social benefit spending from a downturn of the size experienced, based on the historical responsiveness of benefit spending to the business cycle between 1970 and 2007. In order to better identify the drivers of social spending during a recession, two alternative benchmarks are used to proxy the size of the downturn: *i)* the increase in the harmonised unemployment rate; and *ii)* the fall in the output gap.[30] The response of social benefit spending to the increase in unemployment during the recent recessions was generally quite close to what would have been predicted based on the average historical response elasticity among OECD countries. However, social benefit spending was significantly less responsive to the fall in the output gap than would have been expected based on historical patterns, with the simple forecasting model over-predicting 2009 spending in 24 of the 28 countries analysed.[31] This difference appears to reflect the combined impact of benefit entitlement being closely tied to changes in the unemployment rate, as is most evident for UB spending, while the recessionary rise in unemployment was surprisingly small given the size of the fall in GDP in a considerable number of OECD countries (*i.e.* Okun's coefficient values having been historically small, see OECD, 2010a).

Figure 1.13. **Change in social benefit spending[a] during the 2008-09 crisis compared with the average historical response in OECD countries[b]**




*Note:* Countries are shown in ascending order of the 2009 social benefits spending.

*a)* Social security benefits paid by general government as a percentage of GDP.

*b)* OECD-average response elasticities of spending on social benefits to changes in, respectively, the unemployment rate and the output gap were estimated by unbalanced panel regressions for 1970-2007 (see Annex Table 1.A1.7. in OECD, 2011c, for details). No predicted values based on the output gap are shown for Korea, because output gap data are not available.

*c)* Information on data for Israel: *http://dx.doi.org/10.1787/888932315602*.

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

StatLink http://dx.doi.org/10.1787/888932479249

There is considerable cross-country heterogeneity in these patterns, as would be expected given the important differences in national social protection systems, differences in the extent to which discretionary measures were taken to expand the coverage or generosity of the social benefits available to the unemployed, and the contrast between a few countries where employers shed employees in large numbers as GDP fell (most notably, Spain and the United States) and the larger number of countries where employers strongly hoarded labour (*e.g.* Germany and Japan). The following patterns emerge:

- Spain and the United States stand out in Figure 1.13 as the only countries where 2009 social spending predicted on the basis of the rise in unemployment exceeds the prediction based on the fall in the output gap, albeit by much more in Spain (where the Okun's coefficient value was just over 2) than in the United States (where the Okun's coefficient was just over 1).[32] Not surprisingly, Spain emerges as the one country where the rise in social spending was much smaller than would have been predicted by the rise in unemployment. The fact that employment losses in Spain fell heavily on temporary workers and low-skilled (and often foreign) workers in the construction sector probably helps to explain why social spending lagged the rise in unemployment so strongly.[33] In addition to Spain and the United States, only Greece and Portugal spent more on social spending in 2009 then would have been predicted based on the fall in the output gap. These two countries also saw employment losses that were unusually large relative to the fall in real GDP during the crisis.
- Many more OECD countries allocated about the same or more resources to social spending in 2009 as was predicted based on the increase in the unemployment rate, but about the

same or less than the predicted level based on the fall in the output gap. This is the case in Australia, Austria, Belgium, Finland, France, Germany, Ireland, Israel, Italy, Japan, Luxembourg, Netherlands, Norway, Poland, Slovak Republic and the United Kingdom. These tend to be countries where labour hoarding was unusually strong during the recession, so that the rise in unemployment was small relative to the fall in output.

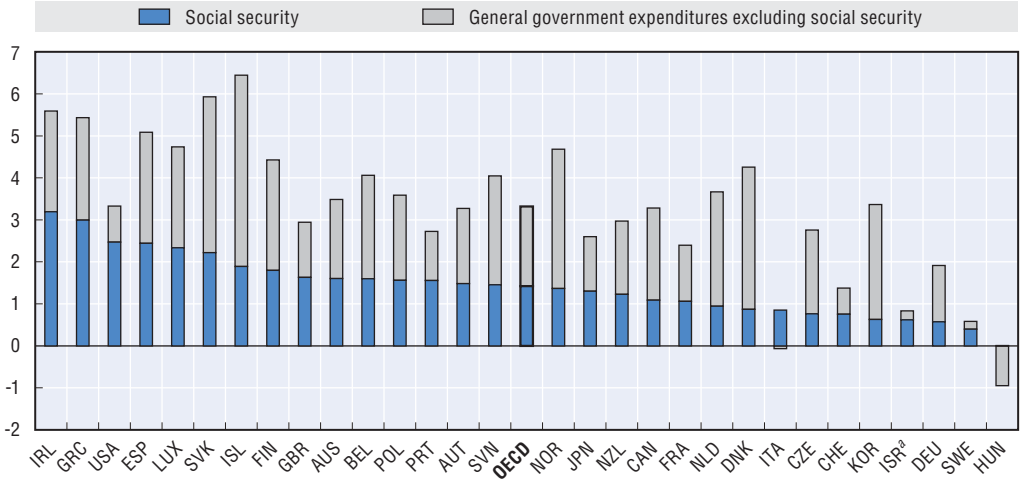
- Four countries significantly underspent relative to predictions based on actual changes in both the unemployment rate and the output gap, namely, the Czech Republic, Hungary, Iceland and Sweden. Underspending according to both criteria also occurred in Canada, Denmark, the Netherlands, New Zealand and Switzerland, but to a much lesser extent.
- Greece is the only country spending significantly more than the predicted level based on the development of both unemployment and the output gap. However, Portugal slightly overspent according to both criteria.

### *Changes in general government expenditures relative to overall changes in GDP*

The previous sub-section focused on changes in spending on social security benefits as a share of GDP. One of the drawbacks of focusing on this measure is that the ratio may increase as a result of a decline in GDP alone and not because of an increase in social security payments *per se*. As a complement to the previous analysis, Figure 1.14 examines the 2007-09 change in the absolute level of general government expenditures in real terms.[34] It disaggregates the change in general government expenditures into two components: general government social security benefits and general government expenditures other then social security benefits. This decomposition can shed some light on the stabilisation role of increased government expenditures in mitigating the impact of the economic crisis on aggregate demand.[35]

Figure 1.14. **Change in general government expenditures between 2007 and 2009**

Real absolute change relative to 2007 GDP levels




*Note:* Countries are shown in descending order of the change in social security spending.
*a)* Information on data for Israel: *http://dx.doi.org/10.1787/888932315602*.
*Source:* OECD estimates based on the *OECD Economic Outlook Database*.

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In all countries except Hungary, general government expenditures, including social security benefits, increased in real terms mitigating the decline in real GDP between 2007 and 2009 (Oh and Reis, 2011). In most OECD countries, real expenditures on social security

paid to persons and households increased in the range of 1-3% of 2007 GDP over this two-year period, while real general government expenditure increased in the range of 2.5-5%.[36] The increase in expenditures on social security represented, on average, about 40% of the total rise in government spending.

Changes in general government expenditures and especially social security payments during the crisis have been more in line with changes in labour market conditions than with changes in GDP. Figure 1.15 examines the association between the increase in general government expenditures and general government social security payments (relative to 2007 GDP levels) on the one hand, and changes in real GDP and total number of hours worked, on the other. Between 2007 and 2009, there was no significant correlation between the change in GDP and the changes in either total general government expenditures or social security benefits. By contrast, the correlation between the change in the total number of hours worked and the increase in general government social security payments was statistically significant at –0.46. On average across OECD countries, a 1% reduction in total hours worked translated into an increase in real government social security expenditures that was equivalent to about 0.1% of the level of GDP observed prior to the unemployment shock.

These associations vary by country. Countries such as Australia, Greece, Ireland, Poland and Spain have seen above-average increases in their level of real social security expenditures, given the size of their change in total hours worked, whereas countries such as the Czech Republic, Hungary, Germany and Sweden have seen below-average increases in their level of expenditures, given the size of their labour market shock. Still, it should be noted that not all changes in hours worked should necessarily trigger additional public support, such as in the case of workers no longer working overtime or where there has been an agreement between workers and firms to reduce hours outside of STW schemes.[37]

At a macroeconomic level, this preliminary analysis suggests that additional support to households during the 2008-09 recession was generally in line with government responses during previous economic downturns to changes in labour market conditions. However, this analysis provides no indication as to who benefitted from this increase, by how much and for how long. The following section will seek to shed some light on these questions, focussing particularly on the support directed to the unemployed.

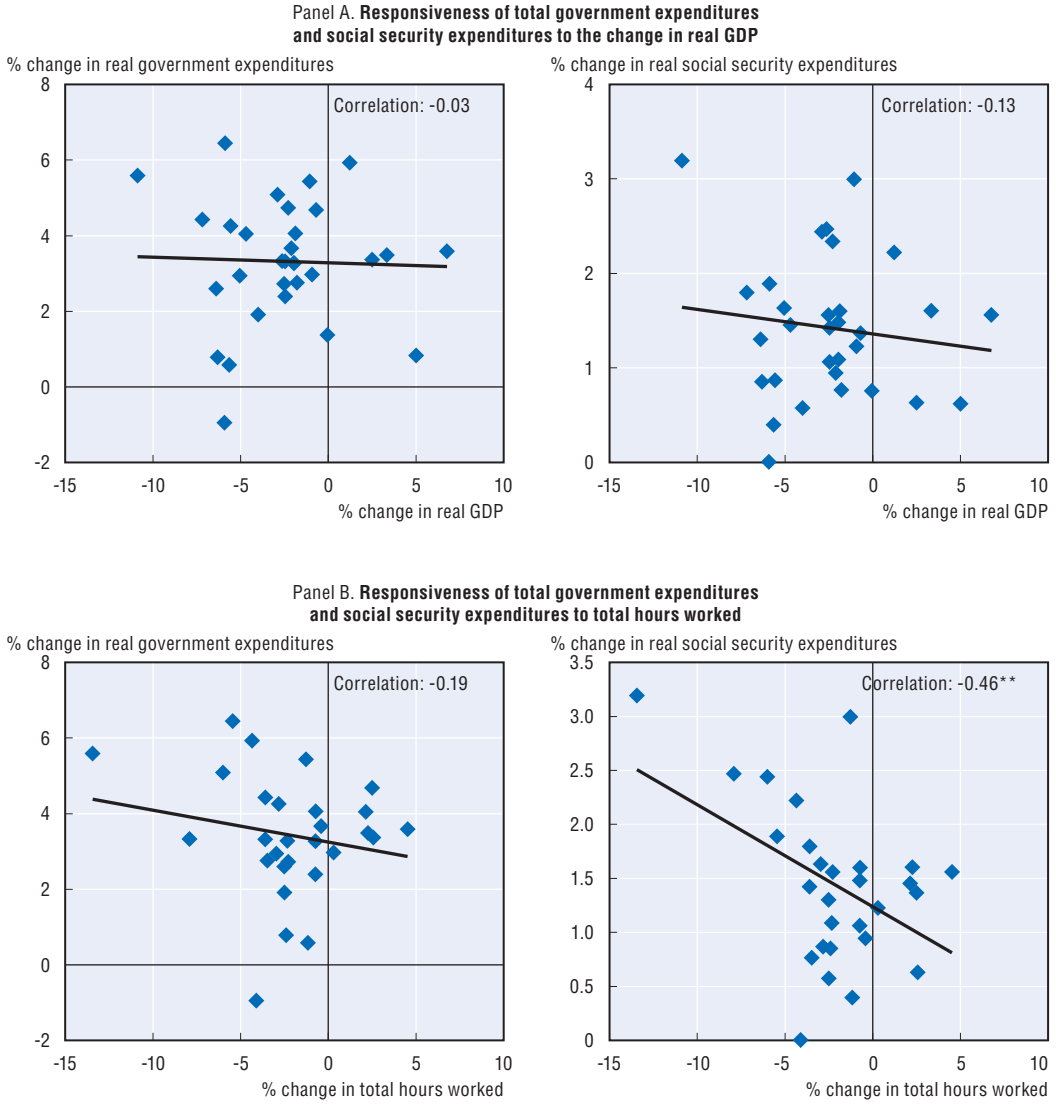
### *Receipt of unemployment benefits by job losers during the crisis and early recovery*

#### *How much did benefit receipt grow?*

In line with recent trends in the aggregate level of government transfers to persons and households (see above), the share of working-age individuals in receipt of unemployment benefits has gone up during the economic downturn in all OECD countries, especially in countries hard-hit by the "Great Recession". Administrative recipiency data on unemployment benefit programmes allow for gauging their relative importance as well as its recent growth during the economic downturn. Administrative records typically provide timely and accurate information on benefit receipt. Borrowing from the methodology used to calculate "benefit dependency rates" (Immervoll *et al.*, 2004), the number of unemployment benefit recipients are presented as a share of the working-age population. This is a different ratio than the typical "unemployment coverage ratio" whereby the number of unemployment benefit recipients is related to the total number of unemployed individuals.

Figure 1.15. **Responsiveness of real government expenditures to the impact of the recession on real GDP and total hours worked**

Percentage changes between 2007 and 2009




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

*Source:* *OECD Economic Outlook Database* and *OECD Labour Force Statistics*.

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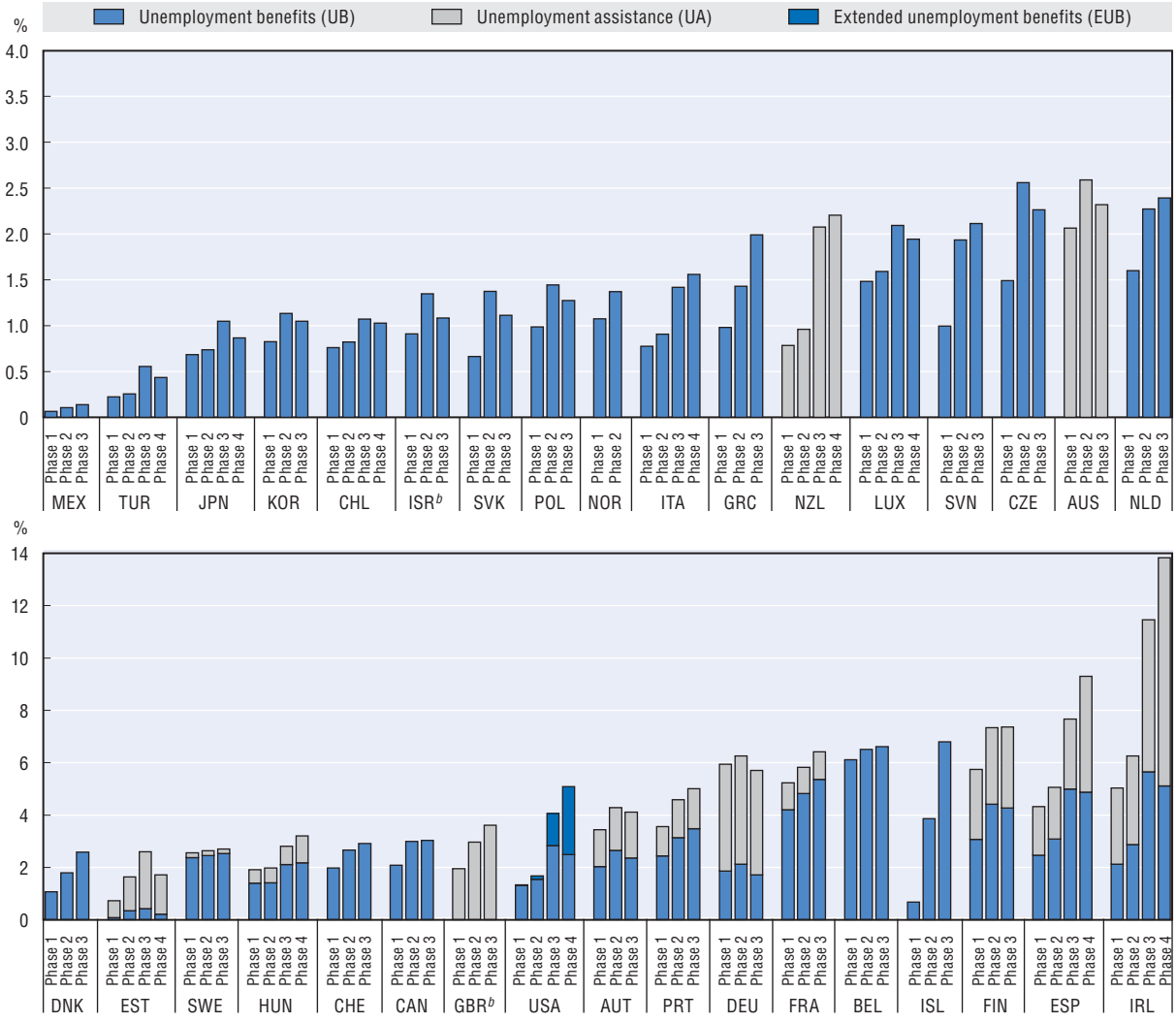
Benefit dependency ratios are more suitable for cross-country comparisons as this measure better recognises that some unemployment insurance programmes are more likely to provide benefits to individuals not classified as unemployed in labour force surveys. For example, some programmes may allow unemployment benefit recipients to combine benefits with work or provide benefits to inactive individuals. For the purposes of this section, where possible, unemployment assistance programmes as well as temporary extensions to UB are presented separately from standard first-tier UB, so as to highlight the separate contributions of each. Another reason for caution when combining data on UB and UA is that this can be a source of upward bias due to the possible double-counting of job losers in receipt of both unemployment insurance and unemployment assistance in the same year.[38]

At the onset of the crisis, less than 2% of the working-age population received unemployment benefits, including unemployment assistance, in most OECD countries (Figure 1.16). For a smaller group of countries, 4-6% of the working-age population was in receipt of unemployment benefits. This group included countries providing UA to a considerable number of unemployed persons *(e.g.* Finland, Germany and Ireland, as well as Spain on a temporary basis) and those with more comprehensive unemployment insurance programmes covering "longer" unemployment spells *(e.g.* Belgium, France, Portugal). That

Figure 1.16. **Changes in the number of unemployment benefit recipients as a share of the working-age population (15-64) as the crisis has unfolded**[a]




*Note:* Countries are shown in ascending order of Phase 3 values.

*a)* The phases of the job crisis have been grouped into 12-month periods, so as to avoid possible distortions from seasonal variation in benefit recipiency. The (up to) four phases shown in the chart are defined separately for each country as follows: Phase 1 – the 12-month period centred around the trough in the OECD harmonised unemployment rate ("crisis onset"); Phase 2 – first 12 months after the on-set of the crisis; Phase 3 – between 13 and 24 months after the on-set of the crisis; Phase 4 – more than two years after the on-set of the crisis. Countries shown in ascending order of the share of UB and/or UA recipients during Phase 3.

*b)* Information on data for Israel: *http://dx.doi.org/10.1787/888932315602*. For the United Kingdom, results reflect the total number of beneficiaries under the Jobseeker's Allowance (contribution and income-based).

*Source:* OECD estimates based on Administrative data and national quarterly labour force surveys.

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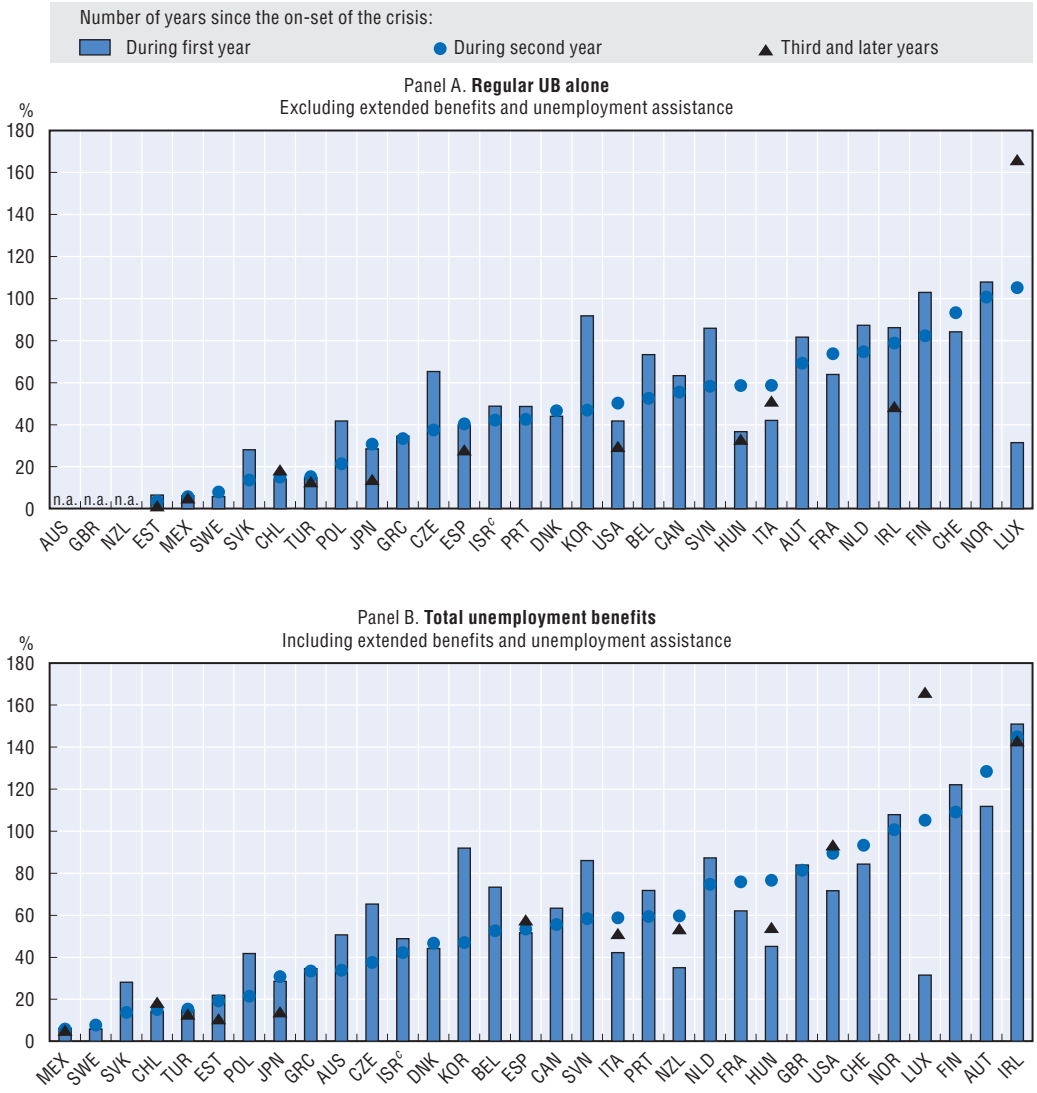
said, the share of the working-age population in receipt of unemployment benefits also reflected labour market conditions prior to the crisis (*e.g.* low unemployment rates in Australia, Denmark, the Netherlands and New Zealand). Following the onset of the crisis, the share of the population in receipt of unemployment benefits has increased in all countries for which data are available, but the magnitude of the increase and its time profile differ from country to country. For countries such as Estonia, Ireland, New Zealand, Spain and the United States, where the crisis and its impact on the labour market has been particularly deep and long, the share of the working-age population in receipt of unemployment benefits has more than doubled.[39] By contrast, the increase was marginal in Mexico, Japan, Poland and Sweden, although Sweden had a significant increase in unemployment. In 13 of the 34 OECD countries, the number of UB recipients has already begun to decline from its post-crisis peak, but the recipiency rates remain significantly higher than before the crisis in most countries and Germany is the only country where the rise has been totally reversed.

The link between deteriorating labour market conditions and increasing benefit recipiency is examined more closely in Figure 1.17, which compares the change in the number of unemployment benefit recipients with the change in the number of unemployed persons, both measured relative to pre-crisis levels.[40] This provides a rough indication of *marginal coverage*, *i.e.* the extent to which expanding benefit recipiency kept pace with the growth of unemployment. Panel A of Figure 1.17 shows that the increase in the number of UB recipients typically did not match the increase in the number of the unemployed, potentially leaving an important share of the "newly" unemployed to rely on family or community support and/or the lower tier of income assistance. In a number of countries, the extent to which the expansion in beneficiaries matched the increase in unemployment was relatively higher during the second year of the crisis than during the first year. This is the case in Chile, France, Hungary, Japan, Luxembourg and the United States as part of its "regular" UB programme. This suggests that at the outset of the crisis, dismissed workers *(e.g.* self-employed or working on a temporary/intermittent basis) were less likely to have sufficient previous work experience in a recent period to qualify for UB than were workers dismissed at a later point in the crisis.

The time-limited nature of unemployment benefits in most countries has meant that the extent to which the expansion in beneficiaries matches the increase in the number of unemployed has tended to fall in the third and later years of the crisis, in countries where labour market recovery has, until recently, lagged. For instance, labour market conditions in Ireland, Spain and the United States have been slack for close to three years. For all three countries, "regular" unemployment insurance programmes lost pace with the number of unemployed as the crisis extended into its third year, thereby potentially leaving an increasing share of unemployed with no assistance. That being said, as shown in the Panel B of Figure 1.17, unemployment benefit extensions introduced in the United States and unemployment assistance benefits in Ireland and Spain have played a significant role in allowing their systems to keep up with growing number of unemployed over time. It should be noted, however, that a rise in the share of the working-age population transiting from unemployment to inactivity as the crisis unfolded also may have contributed to the apparent success of regular unemployment benefit programmes in covering the growth in unemployment in a number of countries.[41] As for Figure 1.16, the inclusion of unemployment assistance in Panel B of Figure 1.17 can also be a source of upward bias due to possible double-counting.

Figure 1.17. **Change in the number of unemployment benefit recipients as a percentage of the change in the number of unemployed persons**[a, b]




n.a: Not applicable.

*a)* Changes calculated with respect to values at the time of the onset of the crisis, as defined in the note *a)* to Figure 1.16 (*cf.* Phase 1).

*b)* Countries shown in ascending order of the change between the second year of the crisis and its onset.

*c)* Information on data for Israel: *http://dx.doi.org/10.1787/888932315602*.

*Source:* OECD estimates based on Administrative data and *OECD Main Economic Indicators Database*.

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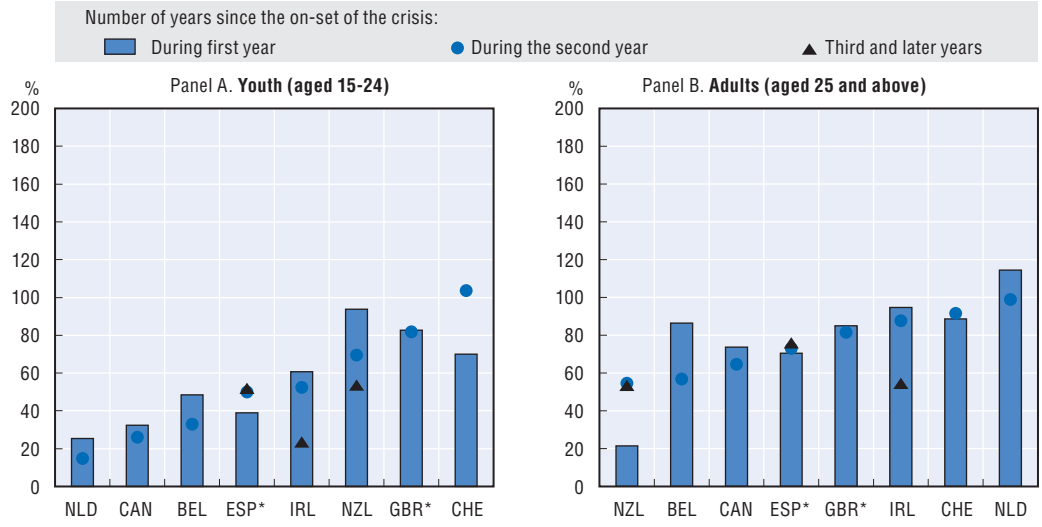
In the case of Ireland (as well as Finland), the addition of unemployment assistance results in the rise in the number of total beneficiaries outpacing the increase in unemployment. This mainly reflects the fact that both of these programmes also serve as the lower tier of income assistance for *all* unemployed and newly inactive persons. In contrast, in some countries, the increase in unemployment beneficiaries since the outset of the crisis represents less than 40% of the rise in the number of unemployed, especially as slack labour market conditions extended into a second year.[42] This suggests that for these countries the first tier of income assistance, while responsive to the change in labour

market conditions, has played a relatively smaller role in mitigating the impact of the crisis on job losers. This may have arisen as a result of a lengthening of the average unemployment spell beyond the duration of benefit receipt of these programmes (typically 3-12 months), as well as a potential "mismatch" between the type of workers typically eligible for these insurance schemes and the workers who have been affected by job loss during the recent crisis.

For instance, the increase in unemployment beneficiaries compared with the number of unemployed is typically lower for the youth than adults (see Figure 1.18). This pattern is especially evident in Canada, Ireland, the Netherlands and Spain. In contrast, the increase is higher for youth than adults in New Zealand and about the same across age groups in the United Kingdom. This likely reflects the design and structure of the unemployment benefit systems in these countries, where UB is provided through a single means-tested unemployment assistance programme, regardless of prior work experience or status as a worker.

Figure 1.18. **Change in the number of unemployment benefit recipients as a percentage of the change in the number of unemployed persons, by age groups**[a]

Regular unemployment benefit programmes (excluding extended benefits and unemployment assistance)




*Note:* Countries are shown in ascending order of the relative change in the number of UB recipients during the second year.
* Unemployment benefit and unemployment assistance recipients instead of unemployment benefit recipients only.
*a)* Changes calculated with respect to values at the time of the onset of the crisis, as defined in the note *a)* to Figure 1.16 (*cf.* Phase 1).

*Source:* OECD estimates based on Administrative data and OECD *Main Economic Indicators Database*.

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Some caution is required when interpreting the comparisons between the growth in unemployment benefit recipients and unemployment since the beginning of the crisis. For instance, not all unemployment benefit recipients are necessarily unemployed, because some beneficiaries may combine unemployment benefits with earnings from part-time or occasional work or others may simply become inactive because of the lack of labour market opportunities. Similarly, unemployed youth may prefer to return to full-time education and training or stay in school longer rather than look for work. Still, recent trends suggest that, on average among OECD countries, about 40% of the newly

unemployed during the crisis did not receive any support from the highest tier of income assistance. The following section aims to identify potential groups of unemployed individuals who are more at risk of not benefitting from that tier.

### *Who's at risk of being missed by the first tier of income assistance?*

Demographic characteristics and past labour market experience play an important role in determining one's eligibility for unemployment benefits. For a number of countries, labour force surveys can be used to examine individuals in receipt of unemployment benefits. Labour force survey data provide information on some key socio-economic characteristics of benefit recipients which are typically not available in administrative data sources, but have limits of their own. Most importantly, information pertaining to benefit recipiency in labour force surveys is often subject to underreporting bias and misclassification (Immervoll, 2004). For this reason, the section below focuses on the distribution of benefit recipients, instead of the absolute level of benefit recipiency, according to various characteristics. While underreporting and misclassification may bias both the absolute level and the distribution of benefit recipiency, the impact on the distribution of benefits is likely to be smaller.

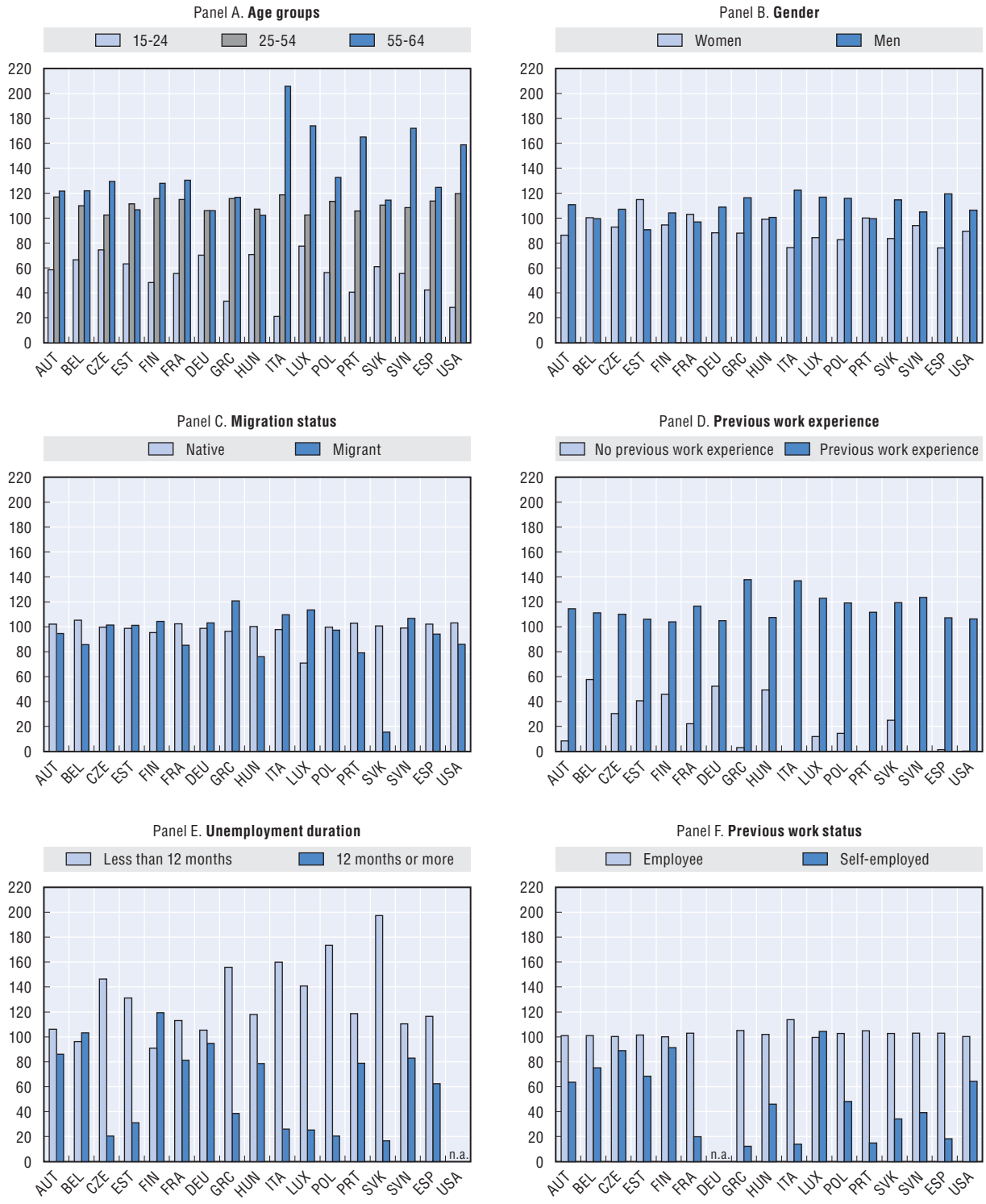
Figure 1.19 shows the normalised ratio of the number of unemployment benefit recipients to the number of unemployed, with the average ratio for the total working-age population being set equal to 100. This is akin to calculating the likelihood of benefit receipt for sub-groups of unemployed persons with particular demographic and labour market characteristics relative to the average. For the purposes of this section, the distribution of benefit recipiency is shown according to gender, age and migrant status, as well as according to the work experience and work status before becoming unemployed, and the length of time unemployed.

Among OECD countries for which the information is available, the normalised ratios typically reflect the structure and design features of the highest tier of income assistance for job losers. For instance, individuals with no or relatively weaker attachment to the labour market are less likely to benefit from unemployment insurance programmes by design. As shown in Panel A of Figure 1.19, the likelihood of receiving unemployment benefits conditional on being unemployed tends to increase with age in most OECD countries. In all countries, the ratio for those aged between 15 and 24 is below average and in some cases the ratio can be less than one-half the average ratio (*e.g.* Greece, Italy, Portugal, Spain and the United States).

As shown in Panel B of Figure 1.19, the ratio is significantly higher for men than women in Austria, Germany, Greece, Italy, Luxembourg, Poland, the Slovak Republic and Spain. This may reflect labour market structure as well as the type of work generally undertaken by women. For example, women may be more likely to work in intermittent, temporary or part-time jobs. In contrast, in Belgium, France, Hungary and Portugal the ratio of benefit recipients to unemployed is roughly the same for men and women. Similarly, as shown in Panel C, variations in benefit recipiency by immigration status are relatively small (with the exception of the Slovak Republic). This may reflect the fact that migration status has been determined according to country of birth. This means that the group of persons identified as migrants is very diverse as regards how long they have been living in their country of residence, their country of origin and their socio-economic background. For example, a recent study of immigrant welfare receipt across Europe

Figure 1.19. **Differences across workforce groups in the ratio of UB recipients to the number of unemployed persons in 2009**

Ratio for all unemployed = 100




n.a.: Not available.

*Source:* OECD estimates based on the European Union Labour Force Survey (EULFS) and the Current Population Survey (CPS), March Supplement.

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concludes that benefit receipt is sometimes very different for migrants from another European Union country than those from a non-EU country (Barret and Maître, 2011).

Generally, UB programmes are designed to cover job losers who have made sufficient contributions to the insurance fund or have been employed for a minimum period of time prior to losing their job. As such, as shown in Panel D of Figure 1.19, the likelihood of an unemployed individual with no previous work experience receiving unemployment benefits is slim in most countries for which data are available. Belgium, Germany, Estonia and Hungary are exceptions, albeit benefit recipiency among those without work experience is still 40-60% lower than the average. This may reflect less stringent eligibility rules with respect to prior work experience under their UI programme, as well as the role played by complementary unemployment assistance programmes for those exhausting their unemployment insurance benefits or those not eligible for insurance benefits from the outset of their unemployment spell.

Benefit recipiency also differs according to the duration of the unemployment spell of individuals (Panel E of Figure 1.19). In countries where UI programmes cover relatively "longer" unemployment spells, such as Austria, Belgium, France, Portugal, Slovenia (for older workers), being unemployed for more than one year does not significantly reduce one's likelihood of being in receipt of unemployment benefits. In contrast, in countries with UB programmes which provide assistance over relatively shorter unemployment spells, such as Estonia, Italy, Luxembourg and Poland, the likelihood of being in receipt of unemployment benefits is low once an unemployment spell lingers into a second year or longer.

Similarly, the work status of a job loser prior to their dismissal also affects their likelihood to qualify for unemployment benefits. As shown in Panel F of Figure 1.19, the likelihood of qualifying for benefits is generally higher for employees than for self-employed individuals, especially in France, Greece, Italy, Portugal and Spain.[43] Indeed, self-employed individuals are not eligible for unemployment programmes in a number of countries, mainly due to conceptual and practical considerations including the difficulty of distinguishing periods of employment from periods of unemployment and identifying reasons for separation (O'Leary and Wandner, 1997). This is the case in, for instance, Canada (except for self-employed fishers), Greece, France, Israel, Italy, Japan, Korea, Norway, Portugal, Switzerland and the United States. In other countries, such as the Czech Republic, Finland, Hungary, Sweden, Slovenia and the Slovak Republic, self-employed workers can voluntarily opt in to public unemployment insurance coverage subject to certain conditions. Lastly, unemployment assistance programmes designed to provide assistance – on a temporary or indefinite basis – to those not eligible for unemployment benefits from the outset of their unemployment spells can also support previously self-employed individuals. Such programmes are in place in Australia, Estonia, Ireland, Finland, Germany, Hungary, New Zealand, Spain and Sweden.

Preliminary findings suggest that a non-negligible share of the unemployed has not benefitted from the first tier of income assistance and may have had to rely on the lower tier of income assistance (*i.e.* social assistance) if their families lacked sufficient alternative sources of income such as the earnings of other adults in the household. These individuals are disproportionately young, have no or little work experience or have been unemployed for a relatively long period of time. Ineligibility for unemployment benefits does not necessarily mean that they have to rely on the lower tier of income assistance. A number of coping strategies allow households to mitigate the impact of a temporary loss of

earnings. Still, for a number of individuals social assistance represents their sole or primary source of income, at least for some period of time. The following section will take a closer look at vulnerable households that potentially would have been more likely to have to rely on the lower tier of income assistance and how well these differences in vulnerability align with recent trends in social assistance caseloads.

### *Recent trends in social assistance benefit recipiency*

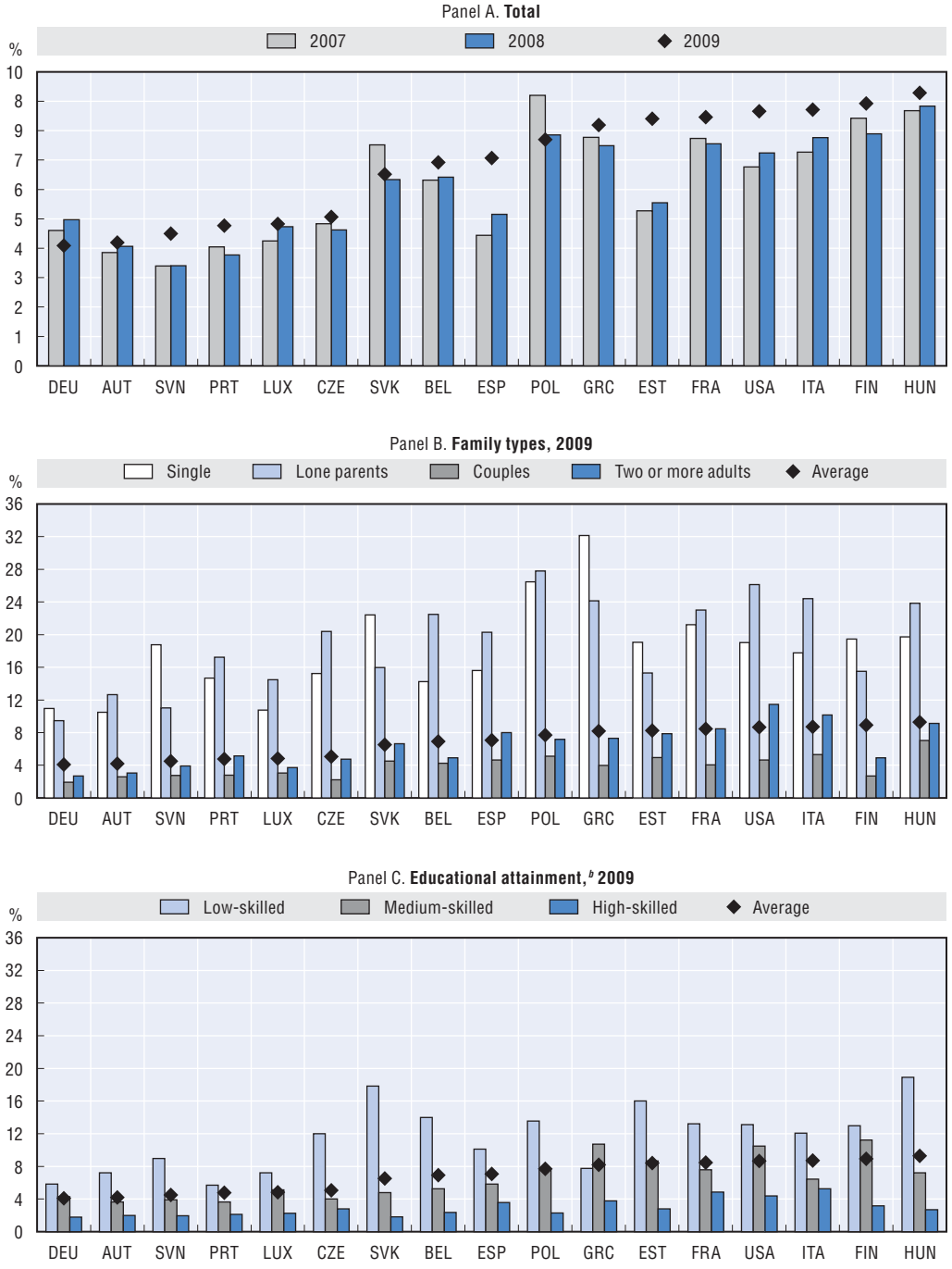
By design, support provided under the first tier of income assistance concentrates primarily on the individual earnings losses of job losers rather than on the situation of households and families. In contrast, assistance provided to the unemployed during a recession under the last tier of income assistance concentrates on the family situation of jobless individuals and takes into account that families typically share resources. Family support can take many forms such as unemployed youth returning to the parental home or a jobless individual living with a spouse who is still working (OECD, 2011b). Therefore, the degree of hardship arising from lost earnings can vary significantly across jobless individuals and SA schemes are intended to take these differences into account when determining benefit eligibility.

As a result and through the operation of stringent means-testing (*e.g.* income and assets tests), the lower tier of income assistance is typically less sensitive to a change in labour market conditions than the higher tier. For instance, targeting rules generally result in job losers having to first tap into their savings and, in some cases, to dispose of a portion of their non-financial assets before becoming eligible for social assistance. In addition, eligibility generally depends on the labour market and income situation of other household members. As such, social assistance caseloads are likely to be mainly affected by changes in the number of persons living in jobless households who are not in receipt of unemployment benefits.[44]

As shown in Panel A of Figure 1.20, the share of inactive or unemployed individuals not in receipt of unemployment benefits and living in jobless households increased in most countries in 2009 relative to both 2007 and 2008 levels. The increase was particularly sharp in Estonia, Spain and the United States. This mainly reflects the severity and length of the crisis in these countries. Among the family types considered in Panel B, individuals in a couple relationship are the least likely to live in a no earner-household not in receipt of unemployment benefits. This reflects the role of dual-earner couples in stabilising household income when unemployment rises during a recession. Indeed, the sustained growth of women's labour-force participation over recent decades and its rising resilience during economic downturns has reinforced many families' abilities to cushion earnings losses (OECD, 20011b). One-adult households, whether unattached individuals or lone parents, are typically three to four times more likely to fall into a vulnerable income situation as a result of not working. This reflects the lesser ability of one-adult households to mitigate income losses arising from unemployment, for example by temporarily relying on a spouse's or parent's income during an unemployment spell, thereby making them more likely to have to rely on the lower tier of income assistance.

Similarly, the share of individuals living in no-earner households and not in receipt of unemployment benefits is higher for those with relatively low skills (Panel C). This suggest that these individuals may face additional barriers to participating in the labour market and potentially be more likely to occupy precarious jobs (*e.g.* intermittent, temporary or

Figure 1.20. **Share of working-age individuals[a] living in no-earner households and not in receipt of unemployment benefits**




*Note:* Countries are shown in ascending order of the share in 2009.

*a)* For the purpose of this figure, working-age individuals are persons between 15 and 54 years of age, because a significant share of jobless individuals in the 55 to 64 age group are retired.

*b)* Low-skilled refers to less than upper secondary education; medium-skilled refers to upper secondary education; and high-skilled refers to more than upper secondary.

*Source:* OECD estimates based on the European Union Labour Force Survey (EULFS) and the Current Population Survey (CPS), March Supplement.

StatLink http://dx.doi.org/10.1787/888932479382

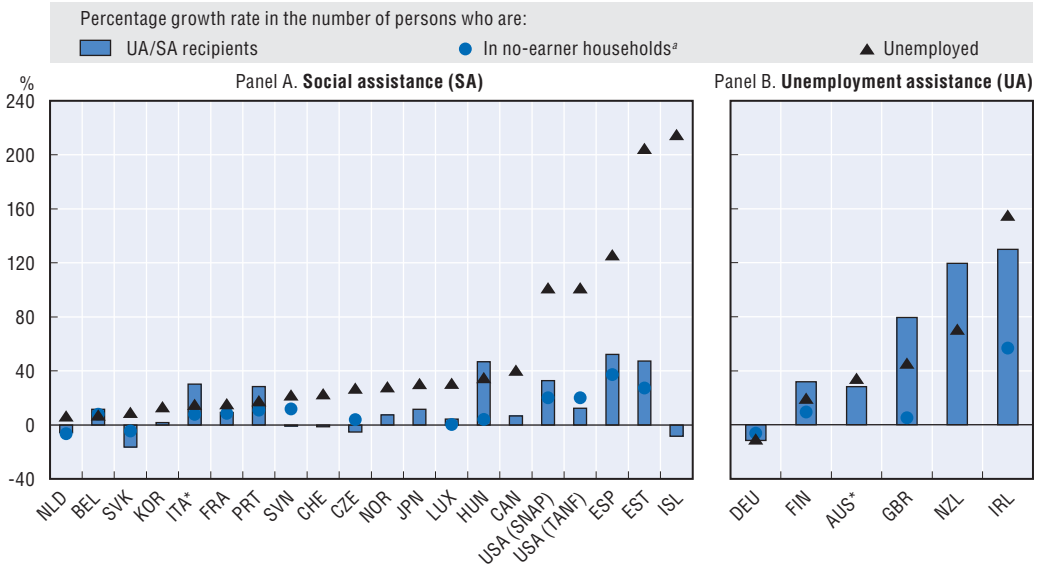
part-time) which are often more sensitive to changing economic conditions, thereby leaving them more at risk of not being entitled to benefits under the first tier of income assistance.

A simple analysis comparing the growth in social assistance caseloads during 2007-09 with the growth in the number of working-age persons living in jobless households not receiving UB/UA suggests that social assistance programmes play a significant role in supporting the most vulnerable job losers, but only reach a small share of the expanded pool of unemployed persons during a recession (Figure 1.21, Panel A). However, strong conclusions cannot be drawn because data are only available through 2009 before the strongest test of the efficacy of SA in backstopping UB had arrived in most countries. Even in 2009, the growth in social assistance caseloads was substantially lower than the growth in the number of potential workers in jobless households not receiving unemployment benefits in several of these countries, including the Czech Republic and the United States (as regards Temporary Assistance for Needy Families). This pattern may reflect particularly stringent eligibility criteria for households to become eligible for SA. In contrast, the growth of social assistance caseloads in Estonia, Hungary, Italy, Portugal and Spain, as well as the number of Food Stamps recipients in the United States, actually exceeded the growth in the number of working-age persons in jobless households not receiving unemployment benefits. This may reflect less stringent means-testing *(e.g.* higher or no maximum asset thresholds), as well as the greater severity of the impact of the downturn on individual job losers and their families.

Similar data for unemployment assistance recipiency are reported in Panel B of Figure 1.21, albeit only for six countries. In these countries, changes in UA benefit recipiency were more closely aligned with changes in the number of unemployed persons than with changes in the number of adults in jobless households. This pattern is consistent with UA means-testing rules typically being less stringent than those for SA, such that its receipt is not so tightly limited to the neediest households. As a result, UA programmes provide broader coverage to the expanded pool of unemployed workers during a recession than does SA. These differences probably also reflect the relatively large non-take-up rate of social assistance benefits, which may arise because of the perceived stigma associated with receiving social assistance as well as administrative practices that may be deemed too intrusive (Bargain *et al.*, 2010).

The analysis in this section confirms that lower-tier income assistance programmes are typically targeted towards the most vulnerable job losers. During a non-recessionary period, this allocation of benefits may be viewed as desirable or optimal since benefits are effectively targeted to the most economically disadvantaged households and the risk of benefit dependency is contained. However, too-stringent targeting by the lower tier of income assistance may leave an increasing share of negatively-impacted households with no or little additional support following an unexpected reduction in earnings during a recessionary period when long-term unemployment rises sharply. This risk is likely to be greatest for childless households and in countries where the first-tier UB system has relatively low coverage or short duration of benefits. An insufficiently responsive SA system may raise equity concerns, but it also raises the risk that workers experiencing long-term unemployment during a deep recession will drift onto other income replacement benefits, such as disability benefits (see Box 1.3), that are characterised by very low exit rates, even when labour market conditions are good.

Figure 1.21. **Change in the number of social/unemployment assistance benefit recipients as a percentage of the changes in the number of working-age persons living in jobless households and the number of unemployed, in selected countries, 2007-09**




*Note:* Countries are shown in ascending order of the growth rate in unemployment.
SA: Social assistance; SNAP: Supplemental Nutrition Assistance Programme (former Food Stamps); TANF: Temporary Assistance for Needy Families; UA: Unemployment Assistance; UI: Unemployment Insurance.
* Comparison between 2008 and 2009 for Australia and Italy.
*a)* Growth in SA in Panel A is compared with the growth in the total number of working-age persons (aged 15-54) living in no-earner households not in receipt of UI/UA benefits, while growth in UA in Panel B is compared with the growth in the number of working-age persons (aged 15-54) living in no-earner household.

*Source:* OECD calculations based on data provided by the national authorities, the European Union Labour Force Survey (EULFS) and the Current Population Survey (CPS) March Supplement, for the data on no-earner households; and the OECD *Main Economic Indicators* for the harmonised unemployment data.

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### *The distributional impact of both tiers of income assistance: A first look for two countries*

This section uses micro-level data for individual households in order to analyse more precisely the effectiveness of income safety nets in mitigating the impact of lost earnings on household incomes. Unfortunately, the most recent income data available at the household level for the majority of OECD countries are for the reference year 2008 and hence cannot be used to assess the performance of income support programmes during the Great Recession.[45] However, 2009 data are available for two countries: Current Population Survey (CPS) data for the United States and Household Income and Labour Dynamics in Australia (HILDA) survey for Australia. While the labour market shock has been significantly larger and more persistent in the United States than in Australia, these two countries follow distinctive approaches in targeting income assistance to job losers setting the stage for an interesting case study.

The recession caused large losses in earnings and other forms of market income in the *United States*. Figure 1.22 analyses the effectiveness of the tax/transfer system in cushioning these income losses at different points in the income distribution. The analysis is restricted to persons living in households headed by working-age individuals and hence vulnerable to earnings losses due to unemployment. The shares of the market income lost

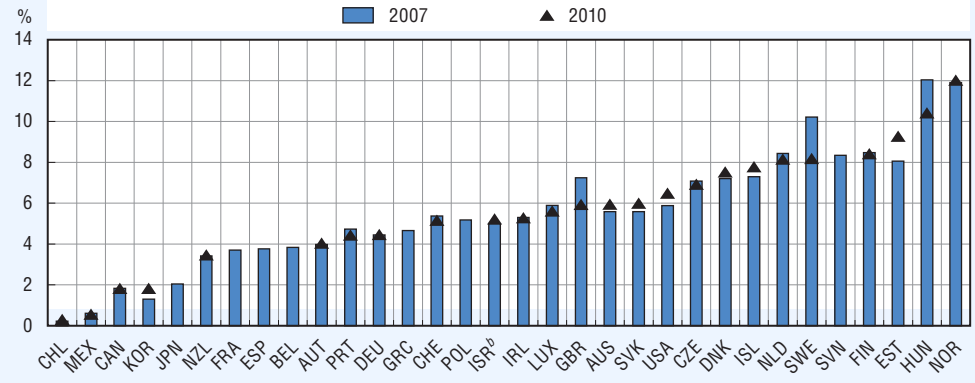
## Box 1.3. **Impact of the crisis on recent trends in disability benefit caseloads**

Disability benefits are an important component of the social safety-net for working-age individuals, but they are intended to address health risks, not labour market difficulties resulting from an economic downturn. On average in OECD countries, close to 6% of the population aged between 20 and 65 received a disability benefit in 2007, at a fiscal cost of 1.2% of GDP, or about twice as much as the spending on unemployment benefits, prior to the crisis (OECD, 2010d). Given its size and the fact that exit rates for disability benefits are very low, it is important not to loosen the medical criteria for accessing these benefits in response to a recession-induced increase in unemployment.

### Recent trends in disability benefit caseloads

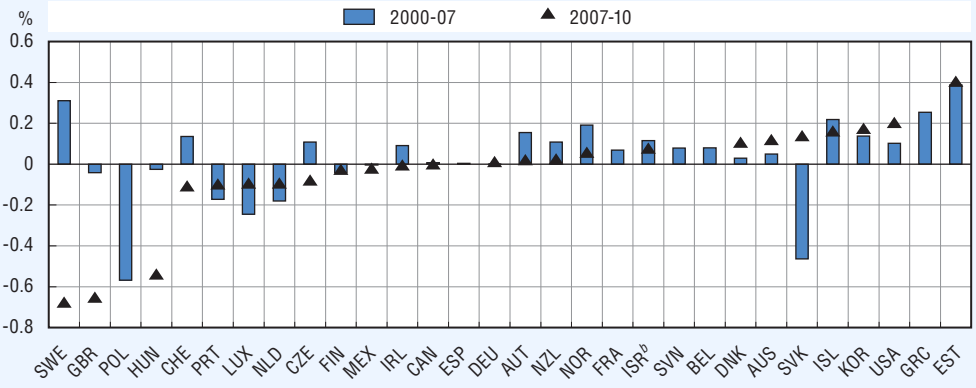
Panel A. **Disability benefits recipiency rates, 2007 and 2010**[a]

Percentage of population aged 20-64




Panel B. **Annual average growth of disability recipiency rates, 2000-07**[c] **and 2007-10**[d]

Percentage




*Note:* Countries are shown in ascending order of the 2010 recipiency rate in Panel A and the 2007-10 growth in recipiency in Panel B.

*a)* 2009 for the Czech Republic, Germany, Finland, Mexico, Norway, New Zealand, Switzerland and the United Kingdom.

*b)* Information on data for Israel: *http://dx.doi.org/10.1787/888932315602*.

*c)* 1999-2007 for Mexico and 2001-07 for Estonia.

*d)* 2007-09 for the Czech Republic, Germany, Finland, Mexico, Norway, New Zealand, Switzerland and the United Kingdom.

*Source:* OECD estimates based on administrative data.

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Box 1.3. **Impact of the crisis on recent trends in disability benefit caseloads** *(cont.)*

In a number of countries, disability benefit recipiency rates have tended to increase following the upsurge in unemployment during past recessions, because disability benefits served to some extent as an alternative to unemployment benefits, particularly for the long-term unemployed (Rupp and Stapleton, 1996; Autor and Duggan, 2003; Bratsberg *et al.*, 2010). Past experience has also shown that people on disability benefits are much less likely to return to work, even once economic recovery is well under way, than comparable people receiving unemployment benefits. A shift from unemployment to disability benefits is thus to be avoided, except in cases when it is justified on medical grounds (Kemp *et al.*, 2006; OECD, 2003b and 2010d). Panel A in the chart above shows that the share of the population in receipt of disability benefits ranges from less than 1% in Mexico and Chili to about 12% in Norway. Recipiency rates for 2009 or 2010 are comparable to those observed in 2007 in most countries, suggesting that the "Great Recession" has not yet resulted in jump in disability rolls. Looking at benefit recipiency rates alone may be misleading over such a short period, because changes to disability benefit rolls tend to evolve gradually over time. Panel B provides a better gauge of the risk by focusing on inflows into disability. The annual percentage-point increase in the recipiency rate *prior* to the crisis (2000 to 2007) is compared to the growth rate observed *after* the onset of the crisis (2007 to 2009 or 2010 depending on latest information available).

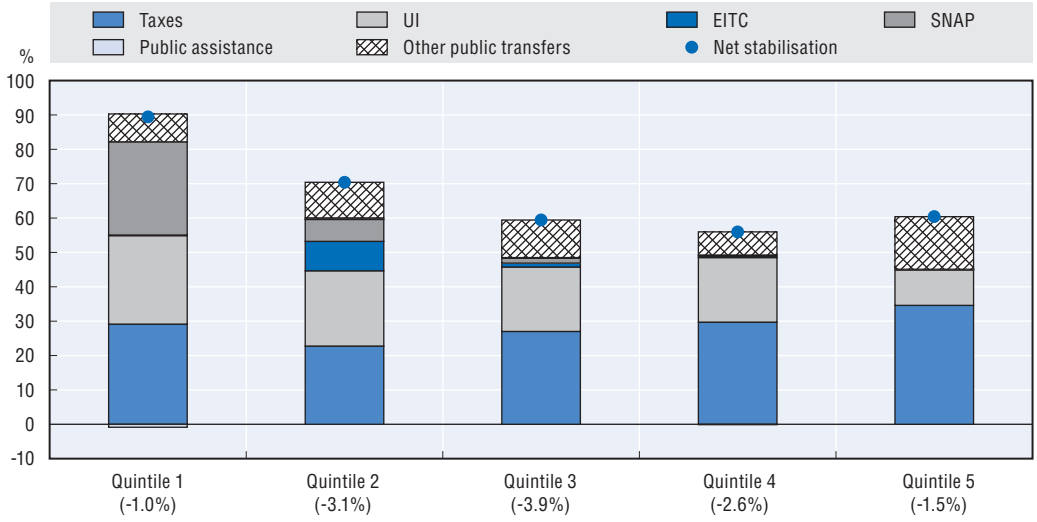
While it is too early to draw definitive conclusions, these data suggest that recipiency rates have started trending upward since the onset of the crisis in Denmark, Australia, Slovak Republic, Korea and the United States, and are continuing to increase in Estonia, Iceland, Israel and Norway. That being said, factors other than the business cycle may also affect these recent trends in beneficiary numbers, making it difficult to discern the impact of the recent upsurge in unemployment. These factors include population ageing, since disability prevalence increases with age (OECD, 2010d), and disability benefit reforms. For instance, just prior to the onset of the crisis, Sweden, United Kingdom, Hungary and Switzerland all implemented structural reforms that have resulted in a downward trend in their recipiency rates.

between 2007 and 2009 that were off-set by decreases in taxes paid and increases in the receipt of benefits from the main public transfer programmes targeted to working-age individuals are shown separately for each of the quintiles of the distribution of adjusted disposable income (*i.e.* household incomes adjusted for family size). The share of lost income that was compensated by the tax/transfer system was largest at the bottom of the income scale and smallest between the middle and top of the income scale: ranging from an 89% off-set for the first quintile to about 60% for households in the third, fourth and fifth quintiles. Despite the strong cushioning role played by the fiscal system, average real disposable incomes fell significantly for households in all five quintiles (see the numbers in parenthesis below each quintile in Figure 1.22). Relative to 2007 average disposable income, the decrease was relatively low for households in the 1st and 5th quintiles and highest for those in the 3rd quintile.

Among the public transfer programmes analysed, unemployment insurance played the largest role in compensating for lost income across all quintiles. For those at the low end of the income scale, the Supplemental Nutrition Assistance programme (formerly known as Food Stamps) also played an important role, while public assistance programmes *(e.g.* Temporary Assistance for Needy Families) played a marginal one.[46] Interestingly, the impact of the earned

Figure 1.22. **Share of 2007-09 losses in real market income in the United States that were compensated by reduced taxes and increased transfers, by main transfer programmes**[a]

Persons living in households headed by working-age individuals (18 to 65), by income quintiles, 2007 price levels




*a)* Income is deflated and equivalised using the square root of the household size. Values within parenthesis below the quintile labels are the change in real adjusted disposable income in 2009 relatively to 2007.

*Source:* OECD estimates based on the Current Population Survey (CPS), March Supplement.

StatLink http://dx.doi.org/10.1787/888932479420

income tax credit (EITC) is marginal for those in the first quintile, but significant for households in the second and (to a lesser degree) third quintiles. This suggests that, as a result of the crisis, a greater share of working-age individuals became eligible for the EITC between 2007 and 2009, due to relatively lower earnings as well as temporary changes to the EITC applying in 2009.[47] Overall, the impact of the tax/transfer system prevented poverty from increasing in 2009 relative to 2007 (Sherman, 2011), despite the large increase in unemployment.

Given the shallow and short economic downturns experienced in *Australia*, a similar analysis examining the share of lost income compensated by either a decrease in taxes paid and/or by an increase in the main public transfers targeted to working-age individuals would not be meaningful. Indeed, average adjusted income increased in real terms in most quintiles between 2007 and 2009. It remains of interest, however, to compare the distributions of UB across income quintiles in the United States and Australia, both before and after the downturn. In Australia, about 70% of UB benefits (NewStart and Youth Allowance) are targeted to the lowest two quintiles. By contrast, the distribution of UB benefits in the United States exhibits a hump-shaped pattern, such that about 70% of benefits are targeted to the second, third and fourth quintiles, while the first and fifth quintiles receive proportionally less. In both countries, the distributions of UB have not changed significantly as a result of the economic downturn. The distribution of social assistance benefits is similar in both Australia and the United States with the bulk of benefits being allocated towards the first two quintiles. In the wake of the 2008-09 crisis, the distribution of last tier income assistance in the United States has changed slightly with an increased share of these benefits going to the second and third quintiles. This change mainly reflects the impact of temporary changes to the Supplemental Nutrition Assistance Programme (SNAP).

Table 1.2. **Distribution of UB/UA and social assistance benefits across quintiles in Australia and the United States**

Percentage of total spending (2007 price levels) by income quintiles, householder aged 18 to 65

| | Quintile 1 | Quintile 2 | Quintile 3 | Quintile 4 | Quintile 5 | Total |
|---|---|---|---|---|---|---|
| | Panel A. **Australia** | | | | | |
| **Before downturn (2008)** | | | | | | |
| NewStart and Youth Allowances | 47 | 24 | 15 | 8 | 6 | 100 |
| Parenting payments (single and partnered), widow, partner and sickness allowances | 51 | 30 | 11 | 5 | 2 | 100 |
| **Year 2009** | | | | | | |
| NewStart and Youth Allowances | 43 | 26 | 13 | 10 | 8 | 100 |
| Parenting payments (single and partnered), widow, partner and sickness allowances | 53 | 30 | 10 | 6 | 1 | 100 |
| | Panel B. **United States** | | | | | |
| **Before crisis (2007)** | | | | | | |
| Unemployment insurance | 11 | 21 | 25 | 25 | 18 | 100 |
| Public assistance and SNAP | 77 | 18 | 4 | 1 | 0 | 100 |
| **Year 2009** | | | | | | |
| Unemployment insurance | 11 | 22 | 26 | 24 | 17 | 100 |
| Public assistance and SNAP | 68 | 24 | 7 | 1 | 0 | 100 |

*Source:* OECD estimates based on the Household Income and Labour Dynamics in Australia (HILDA) for Australia and the Current Population Survey (CPS), March Supplement for the United States.

StatLink http://dx.doi.org/10.1787/888932480294

### *Comparisons of approaches*

While limited to two countries, this analysis provides an interesting comparison of two distinctive approaches to the design of income assistance for job losers. Like the majority of OECD countries, the United States has a two-tiered income assistance system for the unemployed, consisting of a temporary higher tier of income assistance for eligible job losers and a lower tier targeted at those in financial hardship. The first tier of income assistance is a public insurance programme covering the risk of temporary earnings loss with benefit receipt being triggered by involuntary job loss and benefit levels reflecting prior work history and pay level. Neither eligibility nor benefit levels depend on other income received at the family/household level. In Australia, there is only a single means-tested unemployment assistance programme for all unemployed working-age individuals. The programme supports job losers for an indefinite period of time, as long as eligibility criteria are met. Neither benefit receipt nor benefit level depend on prior work history, and benefits are generally income-tested. Benefits may be withheld or paid at a reduced rate if assets exceed specified value limits.[48]

Both approaches have their advantages and drawbacks. In countries with a two-tiered programme of income assistance, such as the United States, the first tier tends to be very responsive to changing labour market conditions and to provide relatively high benefit levels, especially during the early stages of unemployment spells. However, this setup can create equity concerns because unemployed individuals with strong labour market attachment are entitled to relatively high benefit under the first tier, while other unemployed people are only entitled to lower levels of benefit under the second tier, at best.

A single tier of income assistance, such as is in place in Australia, provides for a more uniform treatment of all unemployed persons while targeting benefits to those who need them the most. On the other hand, relatively lower levels of benefits are typically provided, especially during the initial stage of an unemployment spell, because many job losers tend

not to be immediately entitled to benefits as a result of the means-test. These programmes can also raise concerns over work incentives for the spouse of an eligible recipient, because means-testing typically applies at the family or household level.

The two-tiered approach illustrated by the United States can be seen as better meeting the objective of consumption-smoothing because the first-tier UB system covers most job losers with steady work histories and provides benefits that are graduated to previous earnings levels. While the single-tier approach illustrated by the Australian system does not provide such broad support to smooth consumption, it does target benefits to unemployed persons with low family incomes. These families are more likely to be liquidity constrained than other families containing unemployed persons and thus benefit more from income benefits that allow them to avoid inefficiently sharp drops in consumption levels (Chetty, 2008). A more targeted approach may also provide a larger fiscal multiplier, because it targets a greater share of benefits to those with the lowest levels of family resources and possibly also the highest propensities to consume. This latter advantage could be off-set, however, if means testing also results in a lower level of benefit spending.

Although limited to two national case studies, this analysis highlights the inherent trade-offs that arise in choosing how many tiers of income assistance to offer, as well as benefit levels, duration, coverage and eligibility criteria for each tier. In some countries, the challenge to find the right design can also be complicated by institutional factors, such as different tiers of income assistance falling under the responsibility of different levels of government. Societal views on the respective roles of government, communities and families in providing needed assistance to the unemployed and inactive will also influence programme design choices.

## 4. What has the "Great Recession" taught us about income support for the unemployed in deep recessions?

Section 3 has analysed the extent to which the different systems of income assistance for job losers and other unemployed persons expanded in response to the 2008-09 recession. At least in a qualitative sense, both tiers of income assistance have been scaled-up in line with their respective roles, with unemployment benefits playing the lead role in supporting job losers, especially workers with steadier jobs living in middle-income families, and social assistance programmes ensuring a basic floor of assistance for those with no other sources of income. However, the responses of the two tiers of income support for the unemployed to deteriorating labour market conditions also suggest increased risks of both economic hardship and excessive benefit dependency during a deep recession. The fact that unemployment grew significantly more than benefit recipiency suggests that some of the unemployed may be "falling between the cracks", with youth and the long-term unemployed being of particular concern. At the same time, an increasing number of persons are remaining on income benefits for extended periods of time raising the concern that they are not engaged in effective job search and may be at risk of becoming progressively disconnected from the labour market.

While the basic logic of income support systems is the same in good and bad economic times, there may be grounds for adjusting certain policy settings in the context of a depressed labour market. In order to shed light on this question, this section first revisits the perennial issue of how best to balance benefit generosity and work incentives, including whether business cycle conditions should be taken into account. It then examines whether unemployment benefit duration should vary with business cycle conditions, increasing as labour market conditions deteriorate and then decreasing as the labour market recovers. The

final issue discussed is whether means-testing under social assistance should be relaxed in order to provide a basic floor of income assistance that is more responsive to changing labour market conditions. Since a full picture of the operation of income support systems during the "Great Recession" is not yet available, this section seeks to highlight issues that require further study, rather than to reach definitive policy conclusions.

### *Higher redistribution versus stronger work incentives – What is the right balance?*

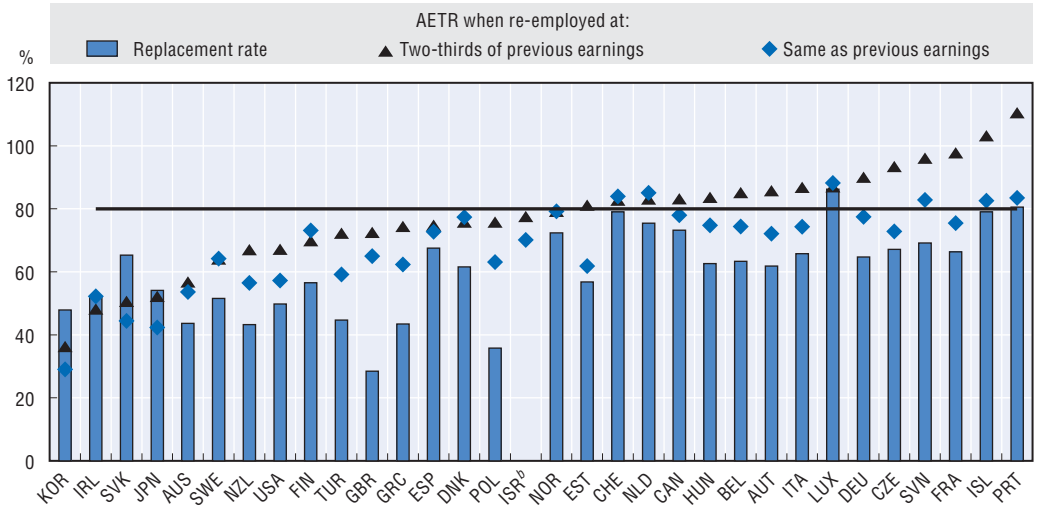
One of the perennial issues that arise in setting the level of income assistance – both unemployment benefits and social assistance – is how best to strike the balance between benefit generosity and financial incentives to seek work. As described in Section 2, there is significant variation across OECD countries in the generosity of income support provided by both the higher and lower tiers of income assistance, illustrative of how different countries have opted for different solutions to this dilemma. The challenge to balance benefit adequacy with work incentives is not fundamentally different when labour markets are depressed during a deep recession, but it is possible that the optimal balance might be somewhat different than in periods when labour demand is more buoyant. More generous income support is attractive in the context of a downturn in so far as it further alleviates the economic hardship of individuals and families following the loss of employment income, at a time when they are particularly likely to be liquidity constrained (Bender *et al.,* 2010). More generous unemployment benefits may also strengthen automatic stabilisers during a downturn. These potential advantages need to be balanced against the risk that too generous income support for job seekers will dull job search incentives and thus exacerbate the risk of long term unemployment. This would have short run costs in the form of lower GDP and higher public spending, while also increasing the risk of hysteresis effects in unemployment (*e.g.* due to a deterioration in human capital while jobless).

Figure 1.23 illustrates how the risk of setting "unemployment traps" for job losers tends to rise with benefit generosity, especially for those whose re-entry wage is likely to be lower than their wage prior to becoming unemployed. However, it also shows that it is possible to partially decouple benefit generosity from disincentives to become re-employed.[49] Net replacement rates for job losers who were previously average-wage workers and qualify for first-tier UBs are juxtaposed with average effective tax rates (AETRs) corresponding to a return to work in jobs paying either the same average wage or only two-thirds as much. These AETRs provide a gauge of the financial returns to taking up work for an average stable worker who has just become unemployed.[50] Among the key findings:

- Recipients of unemployment benefits who become re-employed in a new job paying the same wage they previously received face AETRs in the range between 60 and 80% in most countries (*i.e.* the increase in take-home pay ranges between 20% or 40%), while the (unweighted) average AETR is 68%. The cross-country correlation between the UB net replacement rate and the AETR is 0.68, indicating that there is quite a strong association between more generous benefits and weaker financial incentives to accept a job. However, other features of the fiscal system, such as in-work benefits, also affect AETRs.
- Accepting a job with lower pay than on the prior job usually results in higher average effective tax rates. The AETR for becoming re-employed at two-thirds of the prior wage is 80% or higher in nearly one-half of the countries and the (unweighted) average rate rises to 77%. The cross-country correlation between the UB net replacement rate and the AETR falls to 0.59, indicating the greater importance of the full constellation of fiscal

Figure 1.23. **Incentives to re-enter employment: the transition from unemployment benefits to work, 2009**

Average effective tax rate (AETR) and net replacement rate for an average wage (AW) worker[a]




*Note:* Countries are shown in ascending order of the AETR for re-employment at two-thirds of the previous wage.

*a)* The net replacement rates displayed correspond to the situation of a worker who has just become unemployed and receives unemployment benefits (following any waiting period) based on previous earnings equal to full-time employment at the average wage (AW), while the average effective tax rates (AETRs) refer to that person becoming re-employed full-time at two different hourly earnings levels: the AW and two-thirds the AW. No social assistance "top-ups" are assumed to be available in either the in-work or out-of-work situation. Any income taxes payable on unemployment benefits are determined in relation to annualised benefit values (*i.e.* monthly values multiplied by 12) even if the maximum benefit duration is shorter than 12 months. Following the transition into employment, in-work benefits that depend on the transition are assumed to be available. The replacement and tax rates displayed are averages across three household types: single individuals and one-earner couples with and without children. When present, children are assumed to be aged four and six years and neither childcare benefits nor childcare costs are considered.

*b)* Information on data for Israel: *http://dx.doi.org/10.1787/888932315602*.

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

StatLink http://dx.doi.org/10.1787/888932479439

policies in determining the net returns to accepting a low-paid job. For example, in-work benefits and personal income tax exemptions tend to matter more for low-paid workers.

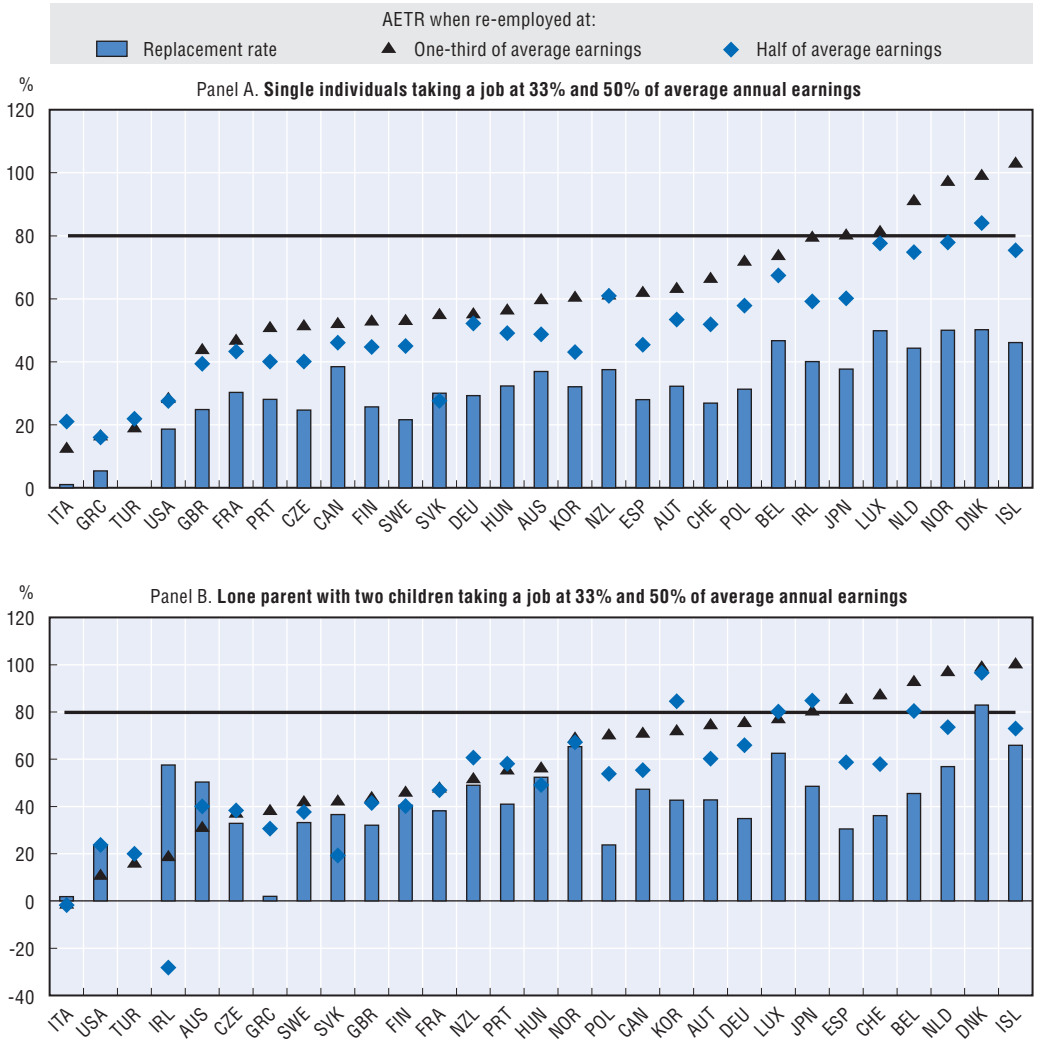
- These relatively high AETRs apply only so long as the worker remains entitled to unemployment benefits. The disincentive to seek work associated with more generous benefits is thus likely to be of greatest concern in countries where the maximum entitlement duration for unemployment benefits is long.

Work disincentives can also be high for unemployed persons who are not eligible for first-tier benefits but are receiving the lower tier of income assistance. This will often be the case if they are only able to access low-paying jobs, since much of the (modest) gross earnings from their new job is offset by reduced income support and increased income or payroll taxes. Figure 1.24 shows the schedule of average effective tax rates (AETRs) facing single individuals receiving SA, when they take a job paying either one-third or one-half of the average earnings of a full-time worker.[51] These AETRs are juxtaposed with a (net) replacement rate defined as disposable income when unemployed and receiving social assistance as a percentage of disposable income when working full time at the average wage. Among the key findings:

- Last-tier assistance benefits tend to be low relative to the net earnings of an average worker, averaging 31% for single individuals without children and 41% for single

Figure 1.24. **Incentives to work: the transition from social assistance to work, 2009**

Average effective tax rate (AETR) and net replacement rate for an unemployed worker not qualifying for unemployment benefits[a, b]




*Note:* Countries are shown in ascending order of the AETR for re-employment at one-third of average earnings.

*a)* The net replacement rate is defined as disposable income when unemployed and receiving social assistance as a percentage of disposable income when working full at the average wage (AW). It is assumed that the person is not entitled to unemployment benefits (*e.g.* because this entitlements has expired).

*b)* Average effective tax rates (AETRs) correspond to two scenarios for becoming re-employed at relatively low levels of earnings. These AETRs correspond to the situation of a person who moves from being unemployed and receiving social assistance to becoming re-employed and earning either 33% or 50% of the amount that an AW worker would earn on a full-time basis. In-work benefits that depend on the transition into work are included, but housing subsidies are excluded. When children are present they are assumed to be aged 4 and 6 years old and neither childcare benefits nor childcare costs are considered.

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

StatLink http://dx.doi.org/10.1787/888932479458

individuals with children. This is much lower than the 60% average replacement rate offered by first-tier unemployment benefits to qualifying job losers (see Figure 1.23 above).

- Even though SA benefits tend to be quite low, the AETR associated with moving to a low-paid job can be quite high, although they tend to be somewhat lower than those faced by UB recipients. As with UB, the problem of low financial returns to accepting a

job eases as earnings levels on the new job rise because the claw back of benefits ceases to play such a large role.

- Replacement rates and AETRs vary greatly across the countries analysed. For a small group of countries, which typically provide relatively high minimum level of income assistance to those not working, AETRs of 80% or more occur implying that the net return to work is relatively low, potentially translating into long spells of social assistance receipt.
- Relatively high average effective tax rates typically arise from complex interactions between the tax and benefit structure, which can include numerous components. This means that there typically is no simple fix to high effective tax rates, but also that there is some scope to decouple benefit generosity from work disincentives. Countries such as Belgium, Canada, France, Sweden, the United Kingdom and the United States have introduced broad in-work benefits with a view to encouraging the transition from welfare to work, while also providing additional support to those already working in low-paid jobs.[52]
- The results for lone parents in Panel B suggest that it is sometimes possible to make progress on both the work incentives and higher redistribution fronts. While Australia, Ireland and New Zealand provide benefit levels that are comparable to those observed in Belgium, Japan and the Netherlands, the average effective tax rates are significantly lower for the former group of countries.

Financial incentives are not the only factor affecting the return-to-work decision of benefit recipients. Active labour market policies, including job-search requirements and work-availability obligations that are backed up by regular monitoring and benefit sanctions can help offset the financial disincentives otherwise resulting from the receipt of income support benefits (OECD, 2009c). Indeed, staying on benefits is not an option in some countries, particularly during non-recessionary periods. Other factors encouraging a return to work may include financial commitments *(e.g.* a mortgage), stigma associated with inactivity and long-term considerations about earnings and career prospects which may lead an unemployed person to accept a job even when the short-term consequence is a fall in family income (OECD, 2007b). Various features of the labour market, such as the existence of a minimum wage and its level, the role of collective agreements in determining wage levels or the relative importance of more precarious types of job contracts, can also have an important impact of incentives to transit from UB or SA to work.

The relevance of financial incentives to work may be somewhat lower when labour market demand is slack during a recession, although evidence on this question is very limited. Several recent studies have concluded that the impact of unemployment benefits in lengthening jobless spells and raising the aggregate unemployment is smaller during a recession, largely due to weaker job search externalities ("congestion effects"). For example, Kroft *et al.* (2011) find that the elasticity of the duration of unemployment with respect to the replacement rate for UI in the United States falls as the unemployment rate rises. Similarly, Schmieder *et al.* (2011) conclude that lengthening the duration of UI benefits has a smaller effect during a recession. Both of these papers also conclude that the optimal generosity of UI rises in a recession, because its role in smoothing consumption for unemployed workers who are liquidity constrained becomes more important. However, this evidence must be viewed as very preliminary and weighed against the much more extensive evidence supporting a link between permanent increases in benefit generosity and duration, and increases in the equilibrium unemployment rate associated with a stable rate of inflation (the so-called "NAIRU") (De Serres *et al.*, 2011). The latter concern highlights the importance of getting the

structure of financial incentives right and combining the receipt of benefits with effective measures to activate the recipients back to employment throughout the business cycle.

### *Should benefit duration vary over the business cycle?*

The severity of the 2008-09 crisis in some countries created pressures for governments to extend maximum durations for the receipt of regular UB, so that the level of income support offered would better reflect the difficult labour market conditions confronting job seekers and better support aggregate demand (Shierholz and Mishel, 2010). The resulting *ad hoc* changes to duration raise the questions whether it is desirable for benefit duration to be adjusted as business cycle conditions vary and, if so, whether this should be done in a more systematic manner (Moyen and Stähler, 2009).[53]

Canada, Iceland, Israel and the United States provide recent examples of adjusting UB programme parameters in response to changing labour market conditions. In Canada, both the number of hours required to qualify for regular benefits as well as regular employment insurance (EI) benefit duration automatically vary based on the unemployment rate in the region where unemployed individuals live (there are 58 economic regions across Canada). Building on the automatic features of the regular EI benefit programme, a discretionary choice was made to temporarily extend EI benefit duration for long-tenured workers in 2009 and 2010.[54] In Israel, benefit coverage was temporarily extended through a reduced qualifying period (*i.e.* having worked nine out of the last 18 months instead of 12 out of 18 months) conditional on the national unemployment rate exceeding 7.5%. The extension was triggered as of June 2009 and ended in February 2010 when the national unemployment rate dropped below 7.5%. In December 2010, Iceland temporarily increased UB duration, retroactively lengthening the period of benefit entitlement from three to four years for workers who had claimed after end-April 2008 and those claiming before 30 June 2011 (Central Bank of Iceland, 2011). In the United States, under the extended benefits (EB) programmes, some states have laws that automatically extend unemployment insurance (UI) benefit duration when the unemployment rate is above a certain level. In addition, the emergency unemployment compensation (EUC) programme, which began in July 2008, is divided in four tiers, which provides for varying UI benefit extensions based on the unemployment rate in the state where unemployed individuals live (National Employment Law Project, 2010). Extensions under the EUC programme are discretionary, rather than automatic, and have been modified (and even briefly expired) several times since 2008.

Under the premise that one of the objectives of UB programmes is to smooth consumption during a typical job-search period, there is a rationale for extending benefit duration during recessionary periods when unemployment spells typically are longer, such that benefit exhaustion rates remain roughly in line with the rates observed during non-recessionary times, especially for programmes with relatively short durations, and then returning to normal duration limits as the labour market recovers (Schmieder *et al.*, 2011; Woodbury and Rubin, 1997). Temporary benefit extensions during a recession can also be viewed as a potentially effective way to reduce the risk of labour force withdrawals that may imply long-run dependence on disability benefits or other social protection schemes, where few beneficiaries return to work even after labour demand picks up again (De Serres *et al.*, 2011; OECD, 2010d). Lastly, duration extensions would further support otherwise weak aggregate demand, thereby acting as an economic stabiliser.

Raising benefit durations during a recession also has potential drawbacks. In particular, longer benefit periods could incite benefit recipients to slow their transition

back into employment (see *e.g.* Aaronson *et al.*, 2010; Bender *et al.*, 2010; Chetty, 2008; Daly *et al.* 2011; Fujita, 2011; OECD, 2006a). To mitigate this negative impact, job-search monitoring and activations measures ideally would be scaled-up alongside the temporary benefit extensions. However, it is unclear how feasible this would be in practice. Especially in countries with relatively short UB duration, where short duration can be viewed as the main system feature relied upon to encourage a rapid transition back into the employment, scaling up job-search monitoring and activations measures to be more akin to those used with UB systems of relatively long duration is likely to be difficult or even impossible to achieve in the short run.

This suggests that an apparent paradox, namely, that UB extensions during recessions appear to be most *apropos* in countries where the normal benefit duration is low, but these also tend to be the countries where it would be most difficult to scale up activation measures. However, a longer period of benefit receipt need not necessarily be associated with a flat level of compensation over time. For instance, extensions could be designed to provide relatively higher compensation levels during the early stages of an unemployment spell and lower compensation levels during the later stages or be set to decline with the length of an unemployment spell, a feature that some have highlighted as optimal for the design of a unemployment insurance system (Shavell and Weiss, 1979; Hopenhayn and Nicolini, 1997; Kiley, 2003).

As in Canada and the United States, changing benefit duration at the sub-national level can serve as a means to target benefits to the regional labour markets that are most affected by an economic downturn (*e.g.* Southern Ontario in Canada and the State of Michigan in the United States in the current downturn).[55] However such mechanisms also tend to result in a more generous benefit system in persistently lagging regions and it can be argued that there are more efficient ways to mitigate persistent regional economic disparities. Regional differentiation of benefit duration can also raise equity concerns if it is deemed to be too redistributive towards areas with relatively weaker labour markets (Mendelsohn and Medow, 2010). At the individual level, it could be considered unfair that displaced workers with similar work experience can be entitled to different levels of compensation, simply because of their different places of residence and regional differentiation of benefit duration could also reduce incentives to migrate from lagging to booming areas, especially in non-recessionary times.[56]

Linking benefit duration to labour market conditions also raises a number of practical policy questions about how it should be activated, including whether changes should be adopted on an *ad hoc* or automatic basis. If one accepts that benefit duration should be linked with changes in labour market conditions, relying on *ad hoc*/discretionary extensions instead of automatic ones can appear sub-optimal, since an automatic response is likely to offer a more timely, predictable, and transparent method of adjusting programme rules to changing labour market conditions (Woodbury and Rubin, 1997). However, automatic rules also have their drawbacks, since it is not easy to specify an optimal rule (see below). Political considerations may also argue for *ad hoc* adjustments because discretionary changes can be seen as visible evidence that governments are reacting to help workers at a time of need. However, political considerations also suggest that discretionary changes can be subject to unpredictable delays and that it may be difficult to reverse discretionary extensions of benefit duration as labour market conditions improve.

The relative merits of automatic *versus ad hoc*/discretionary extensions are likely to depend on the standard duration of UB receipt. For programmes with relatively long UB duration period *(e.g.* more than two years), there is little rationale for automatically increasing benefit duration at the beginning of a recession. At that point, it is difficult to predict how labour market conditions will evolve in the medium term when excessive benefit exhaustion rates are likely to become a problem should the downturn be deep and long. A relatively long benefit duration period also means that there is more time to assess the severity of a crisis, before deciding whether to adjust policy, making discretionary measures more attractive. In countries where the normal benefit duration period is relatively short *(e.g.* less than one year) discretionary extensions are less likely to provide for a timely response to changing circumstances. It may take some time, at the political level, to recognise changing labour market conditions and to pass the necessary legislation to implement a policy change, potentially leaving the first wave of individuals impacted by the crisis with relatively less generous coverage relative to later waves. In this context, an automatic response may offer more timely and predictable assistance to job losers.

The introduction of a temporary extension, whether automatic or discretionary, also raises the question of its window of application and more specifically whether the extension would apply to new UB claimers only or also to existing claimants or even exhausters. Iceland provides a good example of retroactive temporary extensions mainly applying to existing UB recipients who had lost their jobs at the worst of the crisis and thereby were more likely to have suffered from long-term unemployment. The first benefit duration extension introduced in the United States under the Emergency Unemployment Compensation in June 2008 also applied retroactively to recent exhausters (Isaacs and Whittaker, 2011).

An automatic mechanism inherently involves determining trigger points for changes to benefit duration. Triggers should be based on readily-available and timely information on the state of labour markets and as neutral to changes in public policy as possible.[57] In Canada and the United States, for instance, automatic triggers are based on regional unemployment rates. Other potential triggers could include changes in the unemployment rate, changes in the vacancies-to-unemployment ratio or changes in the total number of hours worked. Furthermore, over time, triggers may become obsolete or irrelevant. This suggests that triggers should be subject to pre-defined formal reviews *(e.g.* once every five to ten years). Still, an automatic mechanism brings an element of rigidity in the way policy responds to changing circumstances. This response is inherently informed by past events and could thus prove to be sub-optimal given current circumstances. An alternative could lie in semi-automatic mechanisms whereby a policy adjustment would be triggered, but its precise nature would not be designed in advance (Bhadwal *et al.*, 2009). Linking benefit duration with the business cycle also raises the important question of financing, especially in a context of UI programmes financed through matching payroll contributions. One avenue to mitigate the risk that an automatic trigger leads to excessive public spending is to limit the scope for automatic flexibility between pre-defined bands (see Box 1.4 for an example of how this works in Canada).

In sum, there is a rationale for better linking UB duration with the changing labour market circumstances, but doing so raises a number of practical policy considerations that are not easily resolved. Linking UB features, such as duration, to economic cycles may nonetheless provide a useful way to better balance the competing UB programme objectives to provide "short-term" insurance between two employment spells and to

### Box 1.4. **Practical example of automatically linking UI duration to the business cycle**

In Canada, the Employment Insurance (EI) programme has built-in flexibility specifically designed to respond automatically to changes in local labour markets, with entrance requirements easing and the duration of benefits increasing as the unemployment rate rises. However, these adjustments are designed so as to limit the automatic variation in benefit duration to a pre-defined range.

In Canada, eligibility for and duration of benefits depend on the number of insured hours worked and the EI economic region in which an individual lives. For example, for a 40-year-old who has recently become unemployed and has a long and uninterrupted employment record, the maximum duration of EI regular benefits can range from 36 to 45 weeks depending on the regional unemployment rate of the EI economic region in which the individual resides. More specifically, in this example, the maximum duration of EI benefits is 36 weeks when the regional unemployment rate is 6% or under and is extended by an additional two weeks for each percentage-point increase in the unemployment rate over and above 6%, until it reaches a maximum of 45 weeks of EI regular benefits (*e.g.* maximum benefit duration is reached when the unemployment rate exceeds 10%).

**Example of variable employment insurance duration during the crisis and early recovery**

A 40-year-old from Kitchener, Ontario, who has recently become unemployed and has a long and uninterrupted employment record, claiming EI regular benefits between March and April of a specific year

| | 2008 | 2009 | 2010 | 2011 |
|---|---|---|---|---|
| Regional unemployment rate (%) | 5.1 | 9.1 | 10.1 | 6.7 |
| Regular EI duration (weeks) | 36 | 44 | 45 | 38 |

*Note:* Does not reflect the impact of the temporary 5-week extension of EI regular benefits for all eligible claimants who had an active claim on 1 March 2009 and to claimants whose claim was established between 1 March 2009 and 11 September 2010. Moreover, this does not reflect up to an additional 20 weeks of regular benefits provided to unemployed long-tenured workers who made a claim between 4 January 2009 and 11 September 2010.

StatLink http://dx.doi.org/10.1787/888932480313

For the purposes of determining/triggering an automatic increase in the eligibility and benefit duration, regional unemployment rates for a given month are equivalent to the average seasonally adjusted monthly rates of unemployment over the preceding three months. The use of a three-month moving average can smooth out monthly variations in estimation of unemployment, especially for smaller regions, but it translates in a short lag behind actual conditions in regional labour markets (Bishop and Burleton, 2009).

Canada provides a practical example of linking UB eligibility and benefit duration to the business cycle while limiting the scope for flexibility between pre-defined bands of maximum weeks of benefits received. Such a scheme makes it easier to manage the financial risk associated with increased flexibility inherent to automatic adjustments.

ensure a minimum level of income for those affected by longer unemployment spells. This consideration is likely to be especially pertinent in countries where the normal duration period for first-tier unemployment benefits is relatively short and unemployed persons who are not eligible for UB or exhaust their entitlement have only limited access to second-tier assistance benefits.

### *Should the lowest-tier of income assistance be more responsive?*

As discussed in Section 3, a large share of unemployed individuals or job seekers are not eligible for unemployment benefits in a number of OECD countries. Low UB coverage exerts pressure on the last tier of income assistance to provide for a responsive basic floor of income support for job losers and other unemployed persons, especially in a context of a depressed labour market and a high incidence of long-term unemployment. However, there are also risks in easing the access of unemployed persons to SA or other last-resort benefits. These benefits typically are not associated with activation measures that are as effective as those associated with UBs, creating the risk of a long-run increase in benefit dependency. However, if it is not considered desirable or feasible to expand UB coverage, then it is generally more desirable that unemployment assistance or social assistance play this role, rather than other income replacement benefits such as early retirement or disability benefits. Using these latter programmes as *de facto* last-resort benefits for the unemployed should be avoided on both labour market efficiency and costs grounds (OECD, 2006b and 2009a).

The empirical analysis in Section 3 shows that social assistance programmes have been much less responsive to deteriorating labour market conditions than first-tier unemployment benefits. This difference mainly reflects the more stringent means-testing, particularly asset-testing, generally applying to the determination of benefit entitlement (see Box 1.5). A more responsive lower tier of income assistance could relieve some pressure on unemployment benefit systems, as well as alternative income-replacement schemes such as disability benefit programmes, especially during recessionary periods, potentially setting the stage for better aligning unemployment benefit programmes with their objective of covering temporary losses of earnings between two employment spells.

The different structures of income assistance for jobless individuals not in receipt of unemployment benefits provide for a range of avenues to foster the responsiveness of the lower tier of income assistance for the unemployed. As for the highest tier of income assistance, changes can be implemented temporarily on a discretionary basis during depressed economic times. For instance, in Portugal, the duration of unemployment assistance was temporarily extended by six months during 2009 and the first two quarters of 2010, while in the United States, the American Recovery and Reinvestment Act (ARRA) eliminated the time limit for able-bodied adults without dependents from April 2009 until

Box 1.5. **Assets-testing under social/unemployment assistance programmes in OECD countries**

Eligibility to social/unemployment assistance programmes is usually conditional on the amount of assets owned by a household not exceeding certain limits. Typically, the lower the asset threshold, the longer it will take for job losers who have exhausted eligibility for unemployment benefits to become entitled to social assistance, even if overall household income is low. A comparison of the treatment of assets among OECD countries is complex and the description below – which is based on countries' responses to an OECD Questionnaire and the European Union's Mutual Information System on Social Protection (MISSOC, July 2010) – provides a simplified overview of the main types of assets-testing that are used, with a focus on the treatment of liquid assets as well as the treatment of the value of a claimant's home (a similar approach was used in Eardley *et al.*, 1996).

### Box 1.5. **Assets-testing under social/unemployment assistance programmes in OECD countries** *(cont.)*

Liquid assets (*e.g.* money accumulated in savings accounts) represent the main type of assets owned by non-homeowners. A number of OECD countries apply no assets disregard, such that benefit eligibility is reduced one-for-one with the amount of liquid assets owned. This is generally the case in Austria, Estonia, France, Iceland, Israel, Norway, Slovak Republic, Slovenia, Spain, Sweden and Germany. A positive but relatively low asset disregard applies in other countries, including the Czech Republic, Denmark, most states in the United States under the Temporary Assistance for Needy Families (TANF) and a number of provinces in Canada, while assets disregards are generally higher in Australia, Ireland, Korea, Switzerland, Belgium and the Luxembourg. Finally, the value of assets owned are simply not taken into account in New Zealand, Poland (if deemed reasonable) and in about half the states in the United States under the Supplemental Nutrition Assistance Programme (SNAP). Similarly, assets-testing does not apply over specific periods of benefit receipt in Finland, including while participating in labour market measures and during the first 180 days after the maximum period of payment of unemployment allowance and for some specific eligible persons aged 55 to 64.

For homeowners, about two-thirds of countries disregard the value of the claimant's home in determining eligibility to social assistance benefits. In some countries (*e.g.* the Netherlands and Switzerland), the value of the home exceeding a given threshold is included in the assets test. In Belgium and Korea, a relatively small share of the value of the home is included for the purposes of determining benefit eligibility under social assistance. Similarly, in France and Luxembourg, asset testing includes the value of the home converted into a revenue stream (*e.g.* akin to the concept of imputed rent). Finally, the total value of the home is included as part of the means test in some countries, including Denmark, Israel (in principle, cannot be a homeowner) and Portugal.

Assets-testing under social/unemployment assistance involves a number of facets and its effective stringency depends on its detailed design. The rationale for including assets in the means test is that it better reflects the distribution of economic welfare among individuals, leading to a fairer allocation of public support. It could also be argued that a portion of a household savings (*e.g.* liquid assets) should be used to smooth the impact of lost earnings. For instance, in Australia, unemployment assistance benefits are subject to a liquid assets waiting period of up to 13 weeks. On the other hand, asset testing can be viewed as unduly impoverishing benefit recipients who can be expected to return to work when labour market conditions improve and, to a certain extent, punishing those who carefully managed their budgets prior to losing their job. For instance, including non-liquid assets in the assets test implies that these should be liquidated before public support will be provided, or alternatively that households should borrow against these assets to cover lost income. Selling assets could involve high transaction costs, while financial markets may not be developed enough to allow people to borrow against their assets to fund consumption. While the concept of "saving for a rainy day" is not novel, there is no consensus on the portion of savings that households should allocate towards the compensation of lost earnings or whether a portion of it should be retained towards other goals such supporting a child's education or one's retirement. Furthermore, there is also some evidence suggesting that net worth and disposable income are highly, albeit not perfectly, correlated (OECD, 2008). The distribution of disposable income may then give a reasonable indication of the distribution of economic welfare or the base on which to allocate public support (Jantti *et al.*, 2008).

September 2010 under the SNAP programme.[58] Similarly, in Australia, the liquid assets threshold used to determine the waiting period before unemployment assistance benefits are paid was increased temporarily from April 2009 until March 2011. As mentioned earlier with respect to UB benefits, there are pros and cons associated with the implementation of discretionary policy changes after a recession has begun.

Responsiveness of the lower tier of income assistance can also be fostered through structural adjustments. In the past decades, most structural adjustments have aimed at reducing the role played by assets-testing in determining overall benefit entitlements under the last tier of income assistance. For example, child or in-work benefits[59] are provided outside the confines of social assistance and thereby generally not subject to assets-testing in a number of countries. Similarly, as seen previously in this chapter, some countries have specific, often temporary, programmes delivered outside social assistance for those unemployed who are not eligible for unemployment benefits (*i.e.* unemployment assistance). Typically, these unemployment assistance programmes are subject to less stringent means-testing than social assistance benefits and can be complemented by more stringent SA-type programmes, depending on the specific needs of the individual or family. For instance, in 2009, Japan introduced a new scheme to provide assistance to unemployed workers who are enrolled in training programmes, but do not receive unemployment benefits. Means-testing also can be relaxed for existing programmes with a view to broaden eligibility.

While reducing the role of asset-testing (or other types of means-testing) in determining benefit entitlements under the last tier of income assistance may have the advantage of fostering greater responsiveness to changing labour market conditions, it also runs the danger that benefit dependency will grow in the long run, reducing effective labour supply and imposing a heavy burden on the public purse. That said, one of the policy lessons from the past decade is that responsiveness should not be seen as a "one-way road" into benefit recipiency during an economic downturn. Active labour market programmes (ALMPs) as well as the ability to monitor job availability and sanction noncompliance can help mitigate the risk of job losers relying indefinitely on the lower tier of income assistance (OECD, 2006b). Institutional arrangements, including the division of responsibilities between central and local authorities, also need to be taken into account when considering adjustments to the way income assistance is provided under the last tier of income assistance. Local governments often deliver social assistance, but their role in policy design and financing varies from one OECD country to another (Adema, 2006).

In sum, the general case for fostering a lower tier of income assistance for working-age individuals who are expected to work, which combines basic income support with effective activation, is reinforced by this chapter's analysis of income support for the unemployed. Having such a system in place, makes it more feasible to make last-resort benefits more responsive to a depressed labour market. Since there are also potentially important costs associated with such a change, any such reform would need to be designed carefully. Furthermore, the extent to which this option should be considered depends on the coverage and generosity of the first tier of income support for the unemployed. While the responsiveness of the last tier of income assistance can be fostered in a number of ways, ultimately this involves reducing the share of the overall basic level of assistance that is conditional upon meeting stringent means tests.

## Conclusions

Following the recession of the early 1990s, reforms to income assistance systems for the working-age population mainly focused on encouraging unemployed or inactive individuals who were able to work to make the transition into employment (OECD, 2006a). This trend towards an employment-centred social policy was mainly achieved through a combination of more-targeted assistance, broader tax-benefit reforms intended to make work pay (*e.g.* the introduction of in-work benefits) and activation policies. Since these reforms were enacted in a period of relative macroeconomic stability (the so-called "Great Moderation"), relatively little attention was paid to the challenge of designing a system of income assistance that could withstand severe recessionary shocks, when an increased share of the working-age population become dependent on benefit systems. This chapter has drawn upon the experience of the past several years to better define that challenge and identify some ways that progress might be made in accomplishing that goal.

Since unemployment remains very high in many countries, it is too early to draw definitive conclusions from the "Great Recession" about how labour market and social policies can help workers to get through a deep recession while also encouraging labour market recovery. Nonetheless, this chapter's analysis offers new insights into how to provide adequate income support to unemployed persons without hindering their quick reintegration into employment. Five lessons particularly standout:

- Income support systems need to be ready to respond to a deep recession in which the number of unemployed rises rapidly and a growing share of them experience long periods of joblessness.
- There appear to be significant gaps in the safety net for the unemployed in a deep recession. This was true during the Great Recession despite the considerable responsiveness of first-tier unemployment benefit programmes to rising unemployment and the many crisis-related measures that OECD countries took to reinforce these programmes.
- Temporary extensions of the maximum period of unemployment benefit receipt during a recession may have a useful role to play, especially in countries where the normal duration of these benefits is relatively low and access of the long-term unemployed to last-resort benefits such as social assistance is limited.
- Enrolment in last-resort income support programmes has shown limited responsiveness to rising unemployment during the recession. This suggests that it would be timely to consider whether asset tests or other eligibility rules for these programmes are too strict for them to function effectively as a backstop to first-tier unemployment benefit programmes during an economic downturn.
- Any permanent or temporary increases in the coverage or generosity of income support for the unemployed must be scrutinised carefully in light of their potentially adverse impacts on job search intensity and the public purse.

It would be useful to deepen this analysis of the operation of income support programmes during the "Great Recession" and, especially, to complement it with a parallel analysis of how effectively active labour market programmes (ALMPs) were scaled up during the recession's deepest period of unemployment. While it is known that all OECD countries took steps to reinforce ALMPs in the early stages of the downturn (OECD, 2009a and 2009b), little is known about which policy measures most effectively limited the build-up in long-term unemployment and offset the detrimental impacts of long jobless

spells on workers' future employment prospects. There is a longer time lag in the availability of these latter data, but it will soon become possible to analyse the operation of both passive and active labour market programmes as sources of support for job losers and other unemployed people during the 2008-09 downturn.

It is also important to continue to assess how different labour market policies and institutions affect the resilience of national labour markets to large negative shocks. The analysis of cyclical earnings volatility in Chapter 3 of this publication, together with other OECD work in this area, are shedding new light on this complex issue. However, much remains to be learned and the *OECD Employment Outlook 2012* will devote a chapter to this topic. The ultimate goal of such research is to better understand how to integrate cyclical and structural employment policies. The *Reassessed OECD Jobs Strategy* (OECD, 2006b) provides an extensive set of structural policy guidelines. However, the strategy largely lacks cyclical policy recommendations, aside from a general acknowledgement of the importance of having appropriate macroeconomic policy. The OECD's guidelines for employment policy may soon need to be reviewed and modified to take fuller account of the challenges that the business cycle poses for labour market policy.

### *Notes*

1. The analysis in this chapter reflects data available as of 25 May 2011.
2. Past experience shows that the decline in unemployment rates following deep recessions typically is much slower than its rise during the recession (OECD, 2009a).
3. For a detailed historical analysis of the risk that poorly designed income support schemes can cause unemployment rates to ratchet up from one recession to the next, see Chapter 4 in OECD (2003a).
4. Past recessions have shown that both macro and labour market policies are required to offset persistence effects that would otherwise convert some portion of a cyclical increase in unemployment into higher structural unemployment. Hysteresis effects following a cyclical upsurge of unemployment during a recession appear to be closely associated with increases in long-term unemployment (Ball, 2009; Guichard and Rusticelli, 2010). At the individual level, the progressive loss of human capital, health and morale associated with extended periods of joblessness can reduce the attractiveness of these workers to potential employers. At the aggregate level, the unemployment rate associated with a stable rate of inflation (the so-called NAIRU) tends to rise with the size of the pool of the long-term unemployed, since their relative disconnection from the labour market means that they have little impact in restraining inflationary wage pressures.
5. This OECD total omits Mexico because quarterly harmonised data are lacking. If the missing value is approximated using other sources, the total rises to approximately 47.1 million unemployed persons.
6. The unemployment rate in Estonia has fallen by 4.5 percentage points since its peak. However, that is less than one-third of the 14.8 percentage-point rise that had occurred and the unemployment rate is still above 14%.
7. Ireland is one of six countries where the continuous rise in unemployment rates has not yet ended.
8. This recession actually began in the second quarter of 1979, but unemployment did not peak until mid-1983. [The historical comparisons for the OECD area reported here refer to the 30 countries for which the necessary data are available since 1970. See Annex Table 1.A1.2 in OECD (2011c) for details.]
9. Most of the rise in unemployment during the recession beginning in 1973 occurred in the first nine quarters, generating a similar profile to the curve for the most recent recession up until that point. However, unemployment remained at approximately that same level for an extended period of time in the 1970s recession, finally reaching its highest point after 15 quarters. The pattern was quite different in the recession staring in late 2007 with the unemployment rate switching much more rapidly from its rapid rise during the nine quarters up to 2009Q4 to a slow decline since. While the percentage increase in the OECD-area unemployment rate was approximately 50% in both recessions, the peak rate was much higher in the more recent recession (8.5% as compared to 5%), due to a higher initial unemployment rate in 2007 than prior to the first oil shock.

10. The case of *Kurzarbeit* in Germany has attracted particular attention. However, the majority of OECD countries either set-up new STW schemes early in the crisis or took steps to make existing schemes more attractive to workers and employers (OECD, 2009b).

11. Whereas an Okun's coefficient value (*i.e.* the ratio of the percentage-point increase in the unemployment rate to the percentage decrease in real GDP) of one-half to two-thirds is often considered to be typical during a recession, this value exceeded 1.0 in Spain, the United States and four other countries where the downturn in output was quite mild. While these six countries are located above and to the left of the 45° line in Figure 1.3, Panel A, most OECD countries are to be found below and to the right of that line, indicating various degrees of labour hoarding. For example, the Okun's coefficient value was below 0.2 in Japan and 0.1 in Germany.

12. These are weighted averages for the OECD area. The so-called "jobs gap" (*i.e.* the number of additional jobs required to restore pre-crisis employment rates) has also closely tracked the increase in unemployment in most countries, with the correlation between these two measures being 0.97 (see Annex Table 1.A1.4 in OECD, 2011c), consistent with most of the decline in employment resulting in unemployment rather that inactivity. There are, however, a few countries where the jobs gap in mid-2010 significantly exceeded the rise in unemployment, due to falling participation (most notably, Ireland and the United States). At the same time, a notable increase in participation in Poland, Turkey and, to a lesser extent, Israel resulted in a negative jobs gap, despite a small increase in unemployment. Current OECD projections foresee a progressive closing of the jobs gap in most countries, but it will remain above 5% in 2012Q4 in six countries, including Greece where it is currently 5.5% but projected to be significantly higher in both 2011 and 2012.

13. Note that the employment rates by skill level displayed in Figure 1.5 differ quite sharply from the employment growth rates in Figure 1.4, because the composition of the workforce is rapidly shifting towards higher skill levels in many countries.

14. The combined number of persons who were marginally attached or underemployed was approximately 90% of the number unemployed on average in the OECD area in 2007. That share fell to 79% in 2010Q3 due to the small increase in the number of marginally attached workers.

15. Unless otherwise noted, references to unemployment duration in this chapter always refer to the amount of time that currently unemployed persons have been jobless. Most of the currently unemployed will accumulate some additional time in unemployment, so that their currently observed durations (the so-called "interrupted" durations) understate the total time they ultimately will be unemployed ("completed" durations).

16. The share of all unemployed with a year of more of unemployment increased sharply in Denmark, Estonia, Hungary, Ireland, Spain and the United States. By contrast, the majority of the OECD countries saw a dip in the long-term share early in the recession that was then reversed in 2010, leaving the share approximately unchanged. Even in these countries, there is a risk that this share will continue to rise for some time unless the recovery in employment strengthens. In Germany, the Netherlands, Poland and a few other countries, where there was a declining trend in the long-term share prior to the recession and the recent rise in unemployment was small, the long-term share was significantly lower in 2010Q3 than three years early, despite a small increase in recent quarters.

17. The historical evidence presented in OECD (2011a) suggests that the low spending on ALMPs in many of the hardest hit countries plausibly might have tended to increase how strongly unemployment rose in response to the negative output shock and it is notable that the sharp increase in long-term unemployment is highly concentrated in countries which have tended to invest relatively little in the public employment service and back-to-work measures. However, it is still too early to assess whether the relatively underdeveloped state of employment programmes in these countries played a role in causing labour market conditions to deteriorate so sharply, especially since the hardest hit countries also tended to be most affected by a strong boom-bust pattern in the construction sector and a severe banking crisis. These latter factors are likely to have contributed to a particularly large and persistent fall in employment, as well as considerable structural mismatch between the skills of unemployed workers and the new jobs being created in the recovery period.

18. The results in Figure 1.10 are restricted to countries having replied to both the 2010 and 2011 OECD questionnaires.

19. This qualitative evidence, together with that reported in the 2009 and 2010 editions of the *Employment Outlook*, does suggest a break with the historical pattern in which spending on active measures was essentially acyclic (OECD, 2009a).

20. Other components of the social safety-net can also provide income support for certain groups of the unemployed during an economic downturn. For example, income-replacement programmes for working-age individuals with a disability can serve as an alternative to unemployment benefits for

job losers with health problems that fall short of total disability (Rupp and Stapleton, 1995; Autor and Duggan, 2003). Likewise, a recession may induce older workers to retire earlier than otherwise would have been the case and to claim basic retirement income benefits. While providing significant income support in some countries, these types of programmes will not be the focus of this chapter.

21. In a number of countries, self-employed individuals are not eligible to UB programmes mainly because of conceptual and practical considerations including the difficulty of distinguishing periods of employment from periods of unemployment and ascertaining reasons for separation (O'Leary and Wandner, 1997).

22. In the United States, entitlement to Temporary Assistance for Needy Families is subject to time limits, which vary across the states.

23. The net replacement rates presented in Table 1.1 exclude social assistance and housing benefits, which are analysed separately below. The tight eligibility rules regulating these programmes of last resort, especially with respect to accumulated assets, makes it difficult to identify a typical point during a spell of unemployment when a worker who has exhausted UB would become eligible for SA.

24. It is possible that some crisis-related measures taken early in the recession were not yet in operation and are not reflected in the 2009 replacement rates presented in Table 1.1. Systematic data on the evolution of replacement rates since 2009 are lacking, but it is known that some of the crisis-related measures operating in 2009 have since expired. Some governments have also implemented recent changes to their UB systems as part of broader fiscal consolidation exercises (*e.g.* Denmark, Ireland and Portugal) or other UB reforms initiatives, such as that decided by referendum in Switzerland in 2010.

25. While not shown in Figure 1.11 because of its focus on the first two years of an unemployment spell, Iceland temporarily and retroactively increased UB duration in 2010, such that the period of entitlement to benefits was lengthened from three years to four years for workers who had claimed UB since the end of April 2008 and were still unemployed, as for new filers through 30 June 2011. Similarly, Portugal temporary extended UA duration for the long-term unemployed during 2009 so that the period of entitlement to benefits was lengthened by 6 months.

26. In Turkey, destitute and needy citizens can be taken under social protection and the Ministry of Health can grant "green cards" to support citizens who are not able to afford their health service expenses.

27. Note that the figure focuses on changes to "broad-based" means-tested programmes and may not encompass all targeted enhancements introduced as a result of the crisis. See Annex Table 1.A1.6 in OECD (2011c) for more detailed information on income-support changes introduced to the lower tier of income assistance.

28. These two countries were chosen because household income data for 2009 are already available and they illustrate distinct approaches to structuring income support for job losers and other unemployed persons.

29. As part of the National Accounts, social benefits paid by general government reflect current transfers to households, in cash or in kind, in response to certain events or circumstances such as unemployment, sickness, disability or retirement that may adversely affect their well-being (OECD, 2009d).

30. This analysis first estimates the OECD-average response elasticity of spending on social benefits to the changes in, respectively, the harmonised unemployment rate and the output gap. These elasticities are from unbalanced panel regression models for the OECD area that were estimated using 1970-2007 data (see Annex Table 1.A1.7 in OECD, 2011c). These OECD-average elasticities are then applied to the country-specific changes in harmonised unemployment and output gap that were observed between 2007 and 2009.

31. The unweighted OECD-average spending prediction based on observed declines in the output gap is just over 1% of GDP higher than actual spending. This historically low responsiveness of social spending to falling output could be sizeable enough to have weakened the automatic stabilisation effect from social spending during the 2008-09 recession, but any such effect may have been offset by the large discretionary fiscal stimulus enacted by many governments.

32. Okun's coefficient is defined as the ratio of the percentage-point increase in the unemployment rate to the percentage decline in real GDP. OECD (2010a) shows that these are the only two OECD countries where the percentage-point increase in the unemployment rate exceeded the percentage fall in real GDP during the crisis.

33. Hungary is the only other country where 2009 social spending was far below the level that would have been expected based on the rise in unemployment. In this case, the explanation appears to lie in a strong and early government move towards fiscal consolidation, rather than particularly strong labour shedding by employers. Indeed, social spending in Hungary undershot even more strongly with respect to the prediction based on the fall in the output gap, whereas Spain slightly overspent with respect to the prediction based on the output gap.

34. For the purposes of the analysis, general government expenditures are adjusted using GDP deflators from the *OECD Economic Outlook Database*.

35. A more complete analysis of fiscal stabilisation would need also to take account of tax reductions, such as the broad (and often temporary) reductions of employer social security contributions enacted by a number of OECD countries (OECD, 2009a, 2009b), which are not captured by the change in government general expenditures analysed here.

36. Social security expenditures grew but by less than 1% of GDP in nine countries and were essentially unchanged in Hungary.

37. OECD (2010a) reports estimates that publically subsidised short-time working accounted for only 25% of the sizeable reduction in average hours per worker in Germany during the recession. Reduced over-time, debiting of individual working-time accounts and other employer-initiated reductions in working-time accounted for the rest of the fall in working time.

38. Double-counting may be a particular concern in Austria, Finland and Germany.

39. Receipt of UB also increased sharply in New Zealand despite an average-sized increase in the unemployment rate from 3.4 to 7%. This reflects the very broad coverage offered by the single-tier unemployment assistance programme in this country.

40. More specifically, Figures 1.17 and 1.19 present the ratios of the average changes in the number of benefit recipients to the average change in the number of unemployed (OECD harmonised unemployment level) during the first year of the crisis, the second year of the crisis and for some countries the third year of the crisis relative to the year preceding the crisis. In order to avoid distortions from seasonal patterns in benefit recipiency, changes are first calculated between the same quarters in different years and then the average of these four changes is used to calculate the ratios. Germany is excluded from the analysis because the very small and short-lived increase in unemployment in this country means that it would not be very meaningful to ask whether UB rolls expanded along with the number of unemployed people.

41. This factor may have been particularly important in Denmark (during its 2nd year of the crisis), Estonia (during its 2nd and 3rd years of the crisis), Luxembourg (during its 3rd year of the crisis), Norway (during its 2nd year of the crisis) and the United States (during its 3rd year of the crisis).

42. For a number of these countries, such as Australia, Chile, Israel and Mexico, this second year mainly took the form of a labour market recovery.

43. However, it should also be borne in mind that an unemployed worker who was self-employed immediately prior to becoming jobless might not have been self-employed during the entire qualifying period for unemployment benefits and the prevalence of self-employment varies significantly across countries.

44. Given the focus of this chapter on income support for the unemployed, this section looks at the receipt of SA by working-age individuals. In contrast with the usual convention, working-age individuals are defined here as persons between 15 to 54 years of age. The reason for excluding the 55-64 age group is that many jobless households including persons in this age range are retired households which receive pension income. The empirical analysis also assumes that individuals generally do not combine the receipt of social assistance with unemployment benefits. That being said, in some countries, social assistance may act as a top-up to unemployment assistance benefits.

45. In most cases, data for 2009 are expected to be released later during 2011 or early in 2012.

46. Relative to 2007, benefit receipts under public assistance programmes have slightly decreased for households in the first quintile. This may reflect an increase in the share of the population in the first quintile receiving benefits from other public sources, such as the UI programme, as well as the financing of the Temporary Assistance for Needy Families through a Federal block grants to the states that are not adjusted for inflation nor changes in caseloads.

47. The American Recovery and Reinvestment Act (ARRA) included a temporary increase in EITC and expanded the credit for workers with three or more qualifying children. These changes were temporary applying to the 2009 and 2010 tax years.

48. The asset value limits vary depending on whether the payment recipient is single or partnered and whether the person is a homeowner or non-homeowner. For partnered recipients, the asset test applies to the combined assets of the claimant/recipient and their partner. Lower limits apply to homeowners and reflect the fact that the value of the "principal home" is exempt from the asset test. The asset value limits are indexed on 1 July each year to reflect changes in the broad cost of living as measured by the Consumer Price Index.

49. For a fuller analysis of this issue, see Carone *et al.* (2004).

50. That is, the AETR shows the extent to which taking up employment leads to an increase in disposable income relative to staying on unemployment benefits, taking into account increases in taxes and reductions in benefits. For example, an AETR of 80% means that the increase in disposable income upon re-entering employment, as compared with staying on unemployment benefits, represents 20% of total gross earnings.

51. It is important to note that these rates do not account for the effect of housing subsidies, additional work expenses such as child care nor the loss or gain of in-kind benefits as a result of working.

52. Depending on their design, these programmes can raise work-incentive concerns of their own, especially for the second earner in a two-earner couple.

53. While the discussion in this section mainly focuses on adjustments to benefit duration, the notion of better linking UB programmes to the business cycle could also apply to other features of UB programmes such as minimum eligibility requirements, benefit levels (Kroft *et al.*, 2011) or financing rules.

54. Eligible unemployed individuals must have contributed to the programme at least 30% of the annual maximum EI premiums for at least seven of the ten previous years and have received no more than 35 weeks of regular benefits in the five years prior to the start of their claim.

55. This does raise the difficult practical question of how to determine optimal economic and labour market areas (McNiven *et al.*, 2000; and Czajka *et al.*, 1989).

56. During recessionary periods, the ability of relatively stronger labour market areas to absorb additional inactive or unemployed individuals from weaker areas is limited (Mishel *et al.*, 2010).

57. This can be difficult, since labour market policies, such as short-term work programmes, can have important repercussions for a number of labour market indicators including the overall level of unemployment.

58. Unless a state chooses to offer a qualifying work activity.

59. In some countries, child and in-work benefits are delivered through the tax system, which can raise responsiveness issues of their own as benefit entitlements are typically determined according to the previous year of income.

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*Chapter 2*

# The Labour Market Effects of Social Protection Systems in Emerging Economies

*This chapter looks at the labour market effects of three major components of social protection systems in key emerging economies. Country studies are used to examine the case of unemployment compensation in Brazil, cash transfers in South Africa and health protection in Mexico. The findings suggest that extending social protection coverage can, if well-designed, contribute to improved labour market outcomes. Poorly designed systems can weaken the incentives to work and impede the development of formal employment. To ensure positive outcomes, countries should consider: targeting income support policies to those who need it most; better integrating programmes and policies; and promoting self-insurance among those who can afford it.*

## Key findings

One important challenge for emerging economies in developing adequate social protection systems is to ensure that these systems do not weaken work incentives nor create obstacles to the development of formal employment. Potential trade-offs between social and employment policy objectives also exist in more advanced economies, but this chapter suggests that they tend to take a different form in emerging economies: they tend to be less pronounced in the context of social assistance, but more pronounced in the context of social insurance. In both cases, these differences derive to a large extent from weak administrative capacity.

In the case of social assistance benefits (*e.g.* such as cash transfers that do not require social security contributions for eligibility), the chapter presents new evidence from the *Old-Age Pension* and *Child Support Grant* in South Africa. It finds that these programmes have little adverse impact on labour market outcomes of recipient households. There are a number of reasons for this: cash transfers in emerging countries are usually not conditional on labour force status (unsurprisingly, given the high rate of in-work poverty); due to administrative constraints, the means-tests benefit eligibility are often loosely and irregularly applied, implying that additional income from work is not taxed away as a result of benefit withdrawal; and levels of transfer are usually low relative to household income. As a result, the implicit tax of cash transfers on working tends to be rather low in emerging economies.

In the case of social insurance programmes, however, weak administrative capacity and widespread informal employment may lead to a number of problems. In the case of unemployment insurance (UI), for example, the condition that one must not formally work to be eligible for benefits provides potentially strong incentives to simultaneously receive benefits and work in the informal sector. This may be important, for example, in the case of Brazil. Moreover, workers who can choose between formal and informal work, and who do not perceive the potential benefits of social insurance as outweighing their costs in terms of contributions, may in effect opt out of mandatory social insurance programmes by taking up informal work. Not only can this be detrimental to workers' well being in the longer term, but by reducing the number of contributors to social protection systems, it also has potentially deleterious consequences for economic growth and risk pooling. However, the extension of health coverage in Mexico through the establishment of a new non-contributory system, *Seguro Popular,* suggests that this does not necessarily have to be the case in practice. There appears to be essentially no relationship between the gradual geographical roll-out of *Seguro Popular* and the incidence of informal work, except perhaps for those workers with the highest propensity of moving between informal and formal work.

The cost-effectiveness of social protection programmes can be enhanced through the adoption of innovative programme designs that take account of the potential labour market effects of social protection. Three recommendations are put forward in the chapter to achieve this.

- *Target income support policies to those who need it most*. This is not only important from a social policy perspective, but can also help in achieving better labour market outcomes. Given the high incidence of poverty and the limited availability of private insurance, liquidity constraints are likely to provide a major obstacle to making optimal labour market choices in emerging economies. Providing cash-on-hand to those who need it most could increase labour force participation and reduce labour market mismatch, thus making a potentially important contribution to economic growth. For example, the South African *Child Support Grant* appears to have a more favourable impact on the labour market outcomes of very poor beneficiaries than on less poor ones, presumably because cash transfers allow them to engage in more effective job search. Moreover, evidence from Brazil suggests that providing income support to job losers in the form of unemployment benefits or severance pay reduces the pressure on them to accept job offers that involve large adjustment costs or do not match their qualifications, particularly for those facing tight liquidity constraints.
- *Unify separate programmes or combine different policies under a common umbrella*. This can help to improve the cost-effectiveness of social protection systems. More integrated programmes reduce administrative costs and in the case of social insurance increase the ability of governments to pool risk, making social protection more affordable. The creation of non-contributory programmes alongside existing contributory programmes enhances social protection coverage, notably for health, but may discourage working formally. This is less likely to be the case if the non-contributory programme is designed in a way that allows a smooth transition towards the contributory programme. This can be done through means-tested fees with a subsidy component which decreases with income. Moreover, policies should seek to go beyond the alleviation of hardship by integrating income support policies with policies to assist beneficiaries in their job search or to help them overcome social problems (*e.g.* the anti-poverty programme *Chile Solidario*).
- *Increase the use of mandatory self-insurance based on individual savings accounts for those who can afford it, while ensuring that some form of income support is available for those with insufficient savings*. The Chilean unemployment insurance system of individual unemployment savings accounts (*Régimen de Seguro de Cesantía*) in combination with a Solidarity Fund (*Fondo de Cesantía Solidario*) provides an example of this type of arrangement. Self-insurance provides good incentives for workers to stay employed or return to work when unemployed, while possibly increasing the incentives to work in the formal sector. This may free up resources that could be used to help those with insufficient savings.

These OECD recommendations are in line with the UN's *Social Protection Floor* initiative which seeks to promote access to at least minimum levels of social protection for all.[1] As suggested in this chapter, providing access to minimum standards is not just important from an equity perspective but, if well-designed, can also contribute to better labour market outcomes and ultimately stronger and fairer growth.

## Introduction[2]

Strengthening social protection systems is a key policy priority in emerging economies. These systems have an essential role to play in addressing persistent poverty, protecting households against income and health-related risks and tackling income inequality. The global crisis of 2008-09 provided a further impetus to develop effective

social protection systems in emerging economies. It revealed that having social protection systems in place before a crisis strengthens the effectiveness of social policy responses to changing needs. It also highlighted numerous structural vulnerabilities in the social protection systems of emerging economies (OECD, 2010a).[3]

The development of adequate social protection systems in emerging economies involves some major challenges. The first is to ensure that social protection systems provide adequate support to those who need it in a context of limited fiscal resources and weak administration and a high rate of *informal work* that leaves large parts of the workforce uncovered by the main instruments of social policy. A second challenge is to ensure that social protection systems do not reduce incentives for work, particularly in the formal sector. Indeed, the concentration of vulnerable households in the informal economy creates potentially difficult trade-offs between social and employment policy objectives. Taking account of the potential labour market effects in the design of social protection systems can make a major contribution to their cost-effectiveness.

This chapter focuses on the trade-offs and possible synergies between employment and social policy objectives that governments in emerging economies are confronting when developing or reforming their social protection systems. A full analysis of these trade-offs and synergies requires analysing the impacts of social protection systems on poverty, income and consumption volatility and income inequality, and the potential impacts on labour markets. This chapter focuses on the potential labour market effects, including reduced work incentives, particularly in the formal sector, and changes in job quality. It covers nine key emerging economies: three OECD members (Chile, Mexico Turkey), five enhanced-engagement partners (Brazil, China, India, Indonesia, South Africa) and one economy seeking to join the OECD (the Russian Federation).[4]

Section 1 provides a brief overview of the size and coverage of social protection systems in emerging economies. The rest of the chapter is divided into three Parts, each concentrating on one specific component of social protection and its consequences for labour markets. Part A focuses on the role of unemployment compensation systems for formal-sector job losers, and in particular severance pay and unemployment insurance. New evidence is presented for Brazil, a particularly interesting case due to the relative generosity of its unemployment compensation system and its rich institutional set-up. Part B provides a detailed discussion of the way social assistance may discourage labour market participation or on the contrary help households receiving benefits to overcome barriers to work. New evidence is presented for South Africa, which has a relatively comprehensive and generous system of cash transfers. Part C concentrates on the extension of health protection coverage in countries with national health systems based on contributory and non-contributory components and the potential implications for informal employment. New evidence is presented for Mexico, which increased its health coverage spectacularly during the past decade thanks to the establishment of a non-contributory system, *Seguro Popular*.

## 1. Social protection and labour markets in emerging economies

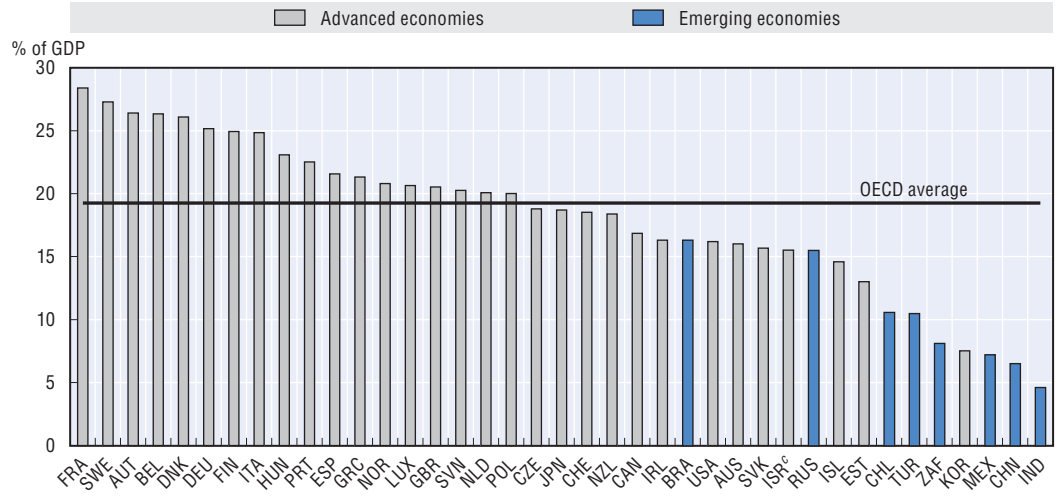
### *Social protection is generally much lower in emerging economies…*

Social protection in emerging economies is generally much weaker than in most OECD countries, leaving an important share of the population vulnerable to poverty, economic shocks and natural and other disasters. Total public social expenditure remains limited in

the emerging economies, well below the OECD average of almost 20% of GDP (Figure 2.1). However, marked differences exist across the emerging economies considered in this chapter. Social spending is highest in Brazil and Russia, where it represents about three quarters of the OECD average, whereas it is three to four times lower than the OECD average in China, India and Mexico. Contributory social insurance programmes account for the bulk of public social expenditure in most emerging countries, but particularly in China, India and Indonesia (OECD, 2010a). Non-contributory social assistance remains limited, despite increases over the past decade. It is most important in South Africa (4.4% of GDP), a country with a comprehensive system of social grants.

Figure 2.1. **Public social expenditure tends to be low in emerging economies**

Total public expenditure, latest year[a, b]




*a)* Latest year refers to 2005 for Brazil, 2006-07 for India and South Africa, 2008 for China.
*b)* Policy areas covered include old-age, survivors, incapacity-related benefits, family, health, active labour market policies, unemployment, housing.
*c)* Information on data for Israel: *http://dx.doi.org/10.1787/888932315602*.

*Source: OECD SOXC Database* for OECD countries; for non-OECD countries, see Annex 2.A4 in OECD (2011b).

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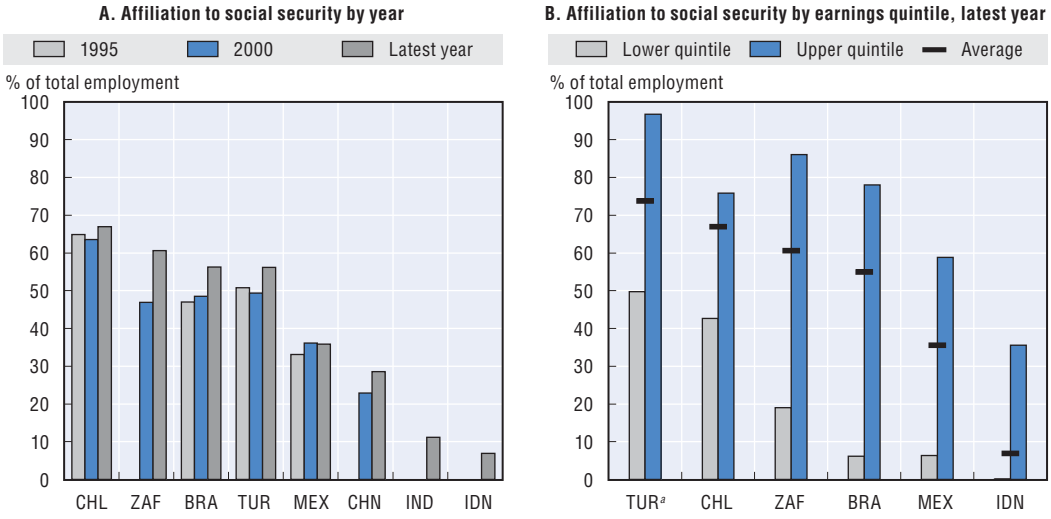
### *... but has increased in recent years*

Compared with most OECD countries, coverage of contributory social insurance programmes remains relatively low. The share of the workforce contributing to a pension plan and/or health insurance ranges from about one in ten in India and Indonesia, to about one in three in China and Mexico and between half and two-thirds in the remaining emerging economies with available data (Figure 2.2).[5, 6] Some countries have managed to increase substantially the coverage of contributory programmes over the past decades,[7] while others, including India, Chile and Mexico have seen only limited progress (Panel A). In part, low coverage reflects the high incidence of informality and self-employment. While workers in informal employment cannot be affiliated to social security, it is not always compulsory for the self-employed, and when it is, it tends to be difficult to enforce. The share of self-employed in total employment is around 40% in Indonesia and between 20 and 30% in most of the other emerging economies, well above the average OECD share of about 15% (see Annex 2.A2 in OECD, 2011b for details). Moreover, coverage of contributory programmes is concentrated among better-off workers. The coverage gap between workers in the upper quintile and those in the bottom quintile is generally very

Figure 2.2. **Coverage of social insurance remains limited, especially among the most vulnerable**




*Note:* 1996 instead of 1995 for Chile; 2001 and 2003 instead of 2000 for Brazil and China, respectively; latest year refers to 2006 for India, 2007 for Indonesia and South Africa, 2008 for Brazil, China and Turkey (Panel B), 2009 for Chile, Mexico and Turkey (Panel A).

*a)* Data refer to salaried workers only.

*Source:* OECD's calculations based on various sources (see Annex 2.A4 in OECD, 2011b for details).

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large, ranging from 33 percentage points in Chile to 72 percentage points in Brazil (Panel B). Extending coverage represents a major policy objective.

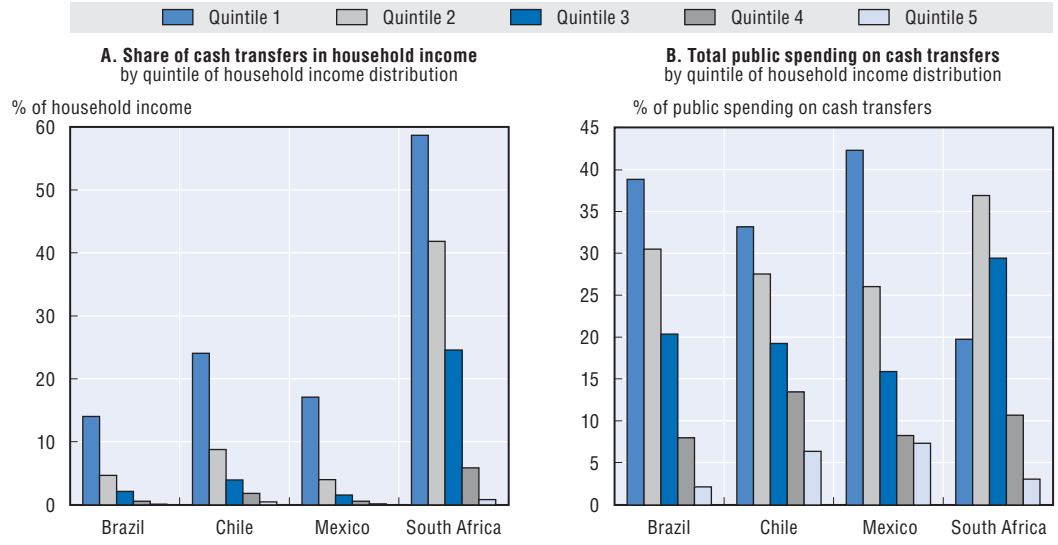
In parallel with the increase in coverage of contributory programmes in some countries, most emerging economies have also experienced a substantial increase in the importance of non-contributory programmes. This reflects, amongst others, the expansion of (conditional) cash-transfer programmes and the development of health-assistance programmes. Cash transfers represent an important component of income for poor households. They account for 58% of household income for the lowest income quintile in South Africa, about 20% in Chile and Mexico and almost 15% in Brazil (Figure 2.3, Panel A).[8] However, this does not necessarily mean that cash transfers are well targeted because it does not take account of differences in income levels across households. Figure 2.3, Panel B, shows that in the three Latin-American economies, the largest part of expenditure on cash transfers goes to the bottom quintile (over 30%), while in South Africa over 35% of cash transfers go to the second lowest quintile and just about 20% to the bottom quintile. In general, the share of cash transfers going to the top quintile tends to be very small.

### *Social protection may have important implications for labour market outcomes*

The remainder of this chapter focuses on three major components of social protection systems: unemployment compensation (Part A, Sections 2 to 4), cash transfers (Part B, Sections 5 to 7) and health care (Part C, Sections 8 to 10). These programmes are primarily intended to deal with social policy objectives, but may also have important implications for labour market outcomes. These may be either positive or negative:

- On the positive side, the main impact of social protection is likely to follow from its potential to alleviate *liquidity constraints*. Liquidity constraints may affect labour market outcomes in different ways. By relaxing liquidity constraints of very poor individuals, cash

Figure 2.3. **Non-contributory programmes are most important for poor households**




*Note:* The following cash transfer programmes are included in the calculations: **Brazil**: Bolsa Familia, Beneficio Assistencial de Prestação Continuada, PETI, Bolsa Escola, Bolsa Alimentação; **Chile**: Chile solidario, Pension Basica Solidaria, Aporte Solidario; **Mexico**: Progresa/Oportunidades and Programa Para Adultos Mayores. **South Africa**: Child Support Grant, Care Dependency Grant, Disability Grants, Old Age Pension. The years considered are: 2009 for Brazil and Chile, 2008 for Mexico and South Africa.

*Source:* OECD's calculations based on national sources (see Annex 2.A4 in OECD, 2011b).

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transfers may help to improve their means to search for work, thus potentially increasing their labour market participation. Income support to liquidity-constrained job losers may enable households to better smooth their income during the period of unemployment and reduce the pressure to accept job even if it does not match a worker's skills. Access to affordable health care, moreover, enhances health, particularly among the poor, and consequently, can have a significant impact on their labour market outcomes.

- On the negative side, social protection may affect labour market outcomes through the presence of *informational asymmetries* in its provision. In the case of cash transfers, these can take the form of moral hazard when income support to the poor reduces incentives for work. Similarly, since unemployment benefits are conditional on not working formally, they may actually increase incentives to work in the informal sector during the period of benefit receipt. The extension of health protection coverage in countries with national health systems based on contributory and non-contributory components may lead to adverse selection. By providing health benefits for free, non-contributory health insurance programmes can undermine the incentives to work in the formal sector and to become a member of contributory health insurance programmes.

# PART A.
# The Impact of Unemployment Compensation Systems on Labour Market Outcomes

Part A concentrates on the two main instruments to protect workers in the case of job loss: severance pay (SP) and unemployment insurance (UI).[9] As SP is only applicable to workers whose employment relationship accords with existing employment regulations and UI to workers who are affiliated to social security, informal workers are excluded from the analysis. Targeted support to informal-sector job losers is rare in emerging economies. The main exception is the Russian Federation which provides unemployment assistance to workers who fail to meet eligibility requirements.[10] In other emerging economies, general social assistance programmes play a potentially important role in alleviating the social costs of unemployment-related poverty for job losers from the informal sector. These are discussed in Part B.

## 2. Characterising unemployment compensation systems in emerging economies

This section characterises unemployment compensation systems in emerging economies in terms of the existing institutional arrangements with respect to unemployment insurance and severance pay, their relative generosity and their coverage.

### *Worker and job-oriented systems of income support for job losers*

While SP and UI are alternative instruments to provide income support to job losers, there are important differences in the way they protect workers against the risk of unemployment.

- UI represents a *worker-oriented approach* to income support for job losers as it tends to be modulated to the needs of workers (*i.e.* being unemployed). The purpose is to alleviate the impact of job loss on consumption during the period of unemployment and to provide workers with the means to search for a suitable job. By contrast, SP represents a *job-oriented approach* in the sense that it tends to reduce the risk of unemployment directly, through the use of a firing penalty based on the implicit value of job matches (*e.g.* seniority). By increasing firing costs for employers, SP may help to preserve match-specific human capital by reducing "excessive turnover" of workers whose job matches have temporarily become unprofitable and to strengthen incentives to invest in firm-specific human capital.[11]
- Another important difference between SP and UI is that the latter relies on the pooling of resources across individuals and firms. Pooling across *individuals* that differ in their labour-market risk reduces the cost of insurance and thus helps to make unemployment protection affordable. The pooling of risk also implies that resources are being redistributed from low-risk to high-risk workers. In the case of SP, the pooling of risk is necessarily restricted to individuals in a given firm, thus limiting its efficiency and its impact on the distribution of income. Traditional UI systems also tend to pool resources across *firms* that differ in their layoff behaviour. Firms typically contribute according to the level of their payrolls and bear no responsibility for the costs of layoffs to society. As a result, UI represents an implicit subsidy from low-layoff to high-layoff firms. This is undesirable to the extent that it increases excessive layoffs, but is desirable to the extent that risk-taking by firms, for example through the adoption of new technologies or innovation, enhances economic growth (Acemoglu and Shimer, 1999).[12]

In principle, unemployment compensation systems could also take the form of a hybrid between the two traditional approaches to deal with unemployment risk. *Individual saving accounts* (ISAs) impose mandatory savings that may be accessed when a worker is

dismissed, as in the case of SP, or during a specified period of unemployment, as in the case of UI. Any savings that are left upon retirement can be converted into a pension or may be withdrawn in their entirety. Similar to traditional SP, ISAs do not allow for the pooling of resources across different groups of workers. Another hybrid system is that of *experience-rated UI* which combines layoff taxes paid by firms, effectively a form of employment protection, with collective UI.[13] A typology of the different systems is provided in Table 2.1.

Table 2.1. **A typology of unemployment compensation systems in emerging economies**

| | Income support without firing penalty | Income support plus firing penalty | Income support in form of firing penalty |
|---|---|---|---|
| Not redistributive | Individual saving accounts | Individual saving accounts with firing penalty | Traditional severance pay systems based on firing penalty |
| | Mexico | Brazil | Chile, China, India, Indonesia, Mexico, Russian Federation, South Africa, Turkey |
| Somewhat redistributive | Individual saving account + unemployment insurance | | |
| | Chile | | |
| Redistributive | Traditional unemployment insurance | Experience-rated unemployment insurance financed through layoff taxes | |
| | Brazil, China, India,[a] Russian Federation, South Africa, Turkey | | |

*a)* The share of unemployed receiving UI benefits in India is close to zero.
*Source:* OECD Secretariat.

StatLink http://dx.doi.org/10.1787/888932480617

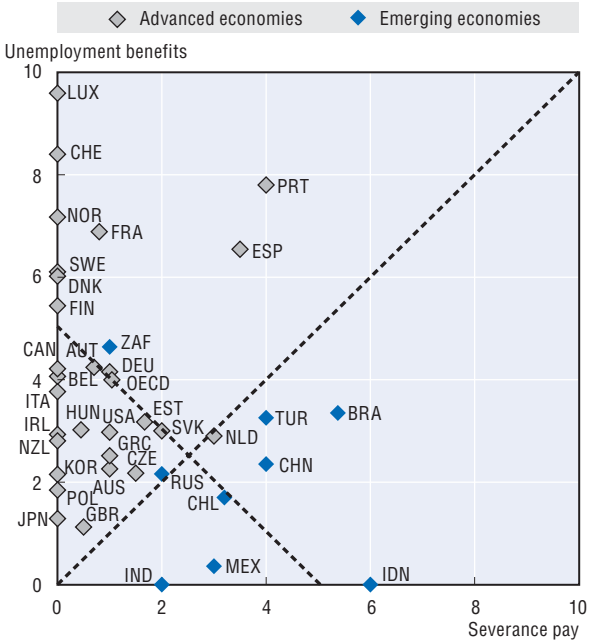
All emerging economies except Brazil have traditional SP systems which impose a firing penalty on employers in the case of unfair dismissal. Brazil has a mixed system that combines ISAs with a firing penalty for employers. Five emerging economies (excluding India where coverage is negligible) have traditional UI systems in place, although pooling is often sub-optimal. Chile has a mixed system that combines individual saving accounts for unemployment with UI to provide support to unemployed job-losers with insufficient savings. Mexico may be considered to have a pure ISA system in the form of an individual pension-accounts system that, in principle, can be used for withdrawals in the case of unemployment under certain conditions.[14]

### *Severance pay represents the main form of unemployment compensation in most emerging economies…*

Figure 2.4 juxtaposes the value of income support from SP and UI that is available to *eligible* job losers in terms of multiples of their previous monthly wage. The comparison is restricted to the maximum value of income support available to eligible job losers with four years of tenure in their last job during the first 12 months of unemployment.[15] The upward-sloping diagonal traces out increasing levels of total unemployment compensation. The downward-sloping diagonal traces out different combinations of SP and UI that sum to the average level of total unemployment compensation in the OECD area (*e.g.* about five months). Countries above this diagonal have overall compensation that is *above* the OECD average. To account for systems with individual accounts, broad definitions of SP and UI are

Figure 2.4. **Severance pay represents the main form of unemployment compensation in emerging economies**

Value of income support in number of months of previous earnings, 2008




*Note:* The total value of income support during the first 12 months of unemployment for workers dismissed without just cause with four years of tenure in the previous job earning the average wage. **Severance pay (SP):** Total value of SP for workers with four years of tenure in the previous job divided by the previous monthly wage; **Unemployment insurance (UI):** Maximum duration in months for workers with four years of contributions times the average replacement rate during the first year of unemployment. Broad definitions of SP and UI are used to include individual account systems: SP refers to lump-sum payments to dismissed workers, whereas UBs refer to (periodic) payments to unemployed workers. Recent reforms to the Labour Code in the Netherlands and Spain have not been taken into account. For further details, see Annex 2.A2 in OECD (2011b).

*Source:* Venn (2009); OECD (2010a); and national sources.

StatLink http://dx.doi.org/10.1787/888932479591

used: SP refers to lump-sum payments to dismissed workers, whereas UBs refer to (periodic) payments to unemployed workers. The figure provides the following insights:

- In seven out of nine emerging economies, the value of SP for workers unemployed for one year exceeds that of UI, while the value of SP and UI are about the same in the Russian Federation. Only in South Africa is the value of UI substantially higher than that of SP. Moreover, three out of nine emerging economies have no universal UI system, while all have SP systems in place.[16] By contrast, in all advanced economies, the value of unemployment benefits available to workers during the first year of unemployment exceeds that of severance pay. Moreover, all advanced countries, have universal UI systems in place, while about half do not have any mandatory SP programmes.[17]
- The value of *de jure* income support available to eligible job losers during the first year of unemployment differs substantially across emerging economies. In Brazil and Turkey, income support is markedly more generous than the OECD average. This reflects a combination of high SP with moderate levels of UI. In India and Mexico, income support is substantially less than the OECD average, with little or no benefits for the unemployed.

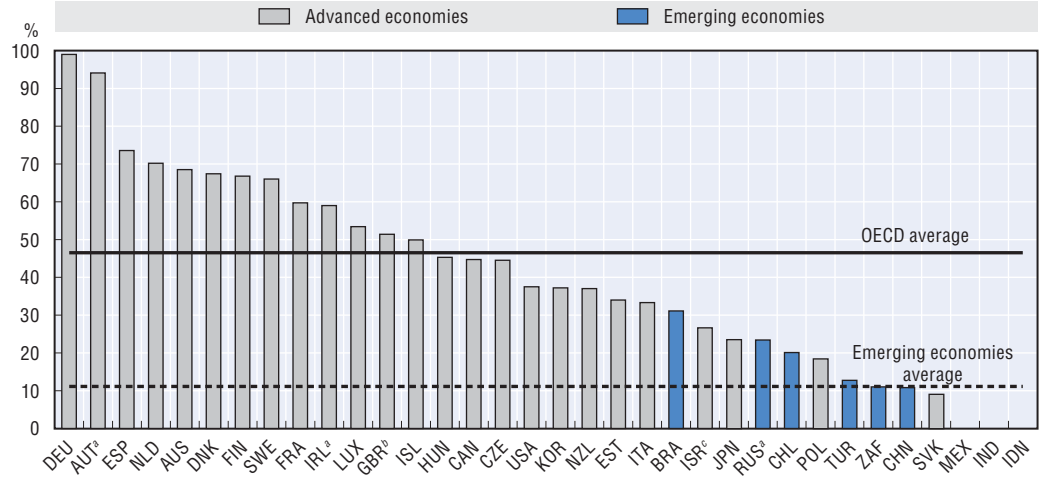
### *... in terms of the value of income support as well as its coverage across job losers*

It should be stressed, however, that in practice, the *average* level of income support available to job losers in emerging economies tends to be much lower because the large majority of them is not eligible to any form of income support. Workers employed in firms that fail to pay social security contributions are necessarily excluded from UI as they do not meet minimum contribution requirements. Moreover, eligible job losers often do not receive severance pay, or the full amount they are entitled to, due to widespread "non-performance", *i.e.* the inability or refusal of firms to live up to their severance-pay commitments. For example, in Indonesia only 34% of eligible workers who separated from their jobs in 2008 actually received severance pay and a large majority of them received less than their full entitlement amount (World Bank, 2010a).[18] Formal-sector job losers often do not qualify for UI due to strict eligibility requirements or exhaust their benefits before finding a job due their short maximum duration (OECD, 2010a). Eligibility conditions are particularly strict in India where workers should have contributed for at least five years and Turkey where workers should have contributed at least during 20 of the last 36 months. Minimum contribution requirements of one year in China and Chile are also likely to exclude many job losers from unemployment benefits. The short maximum duration of UI limits overall coverage in Brazil and Chile (*e.g.* up to five months).

Figure 2.5 presents information on UB coverage as measured by the ratio of beneficiaries to the number of unemployed. It shows that benefit-recipiency rates are much lower in emerging economies than in advanced economies. UB recipiency is highest in Brazil, with just over 30%, it ranges between 20 and 25% in Chile and the Russian Federation, and between 10 and 15% in China, South Africa and Turkey. The low level of coverage in emerging economies greatly limits the ability of UI systems to prevent unemployment-related poverty and increases the importance of informal coping mechanisms. It may also impose higher

Figure 2.5. **Unemployment benefit recipiency rates**

Percentage of total unemployed, 2007/08




*a)* Data do not include unemployment assistance which exists in case the unemployed do not meet minimum eligibility conditions for UI or have exhausted the right to UI benefits.
*b)* Includes Jobseeker's allowance (social insurance and social assistance).
*c)* Information on data for Israel: *http://dx.doi.org/10.1787/888932315602*.

*Source: ILO Social Security Inquiry Database* and national sources for Brazil and Mexico.

StatLink http://dx.doi.org/10.1787/888932479610

adjustment costs for people who return to work and can represent an inefficient use of resources when individuals are credit-constrained.

While internationally comparable data on recipiency rates of SP and UI are not available, it seems plausible that, at least in countries where UBs are conditional on being unemployed involuntarily (Chile is an exception), most job losers who are eligible for UI also qualify for SP, while the share of SP-eligible job losers that also qualifies for UI is likely to be more limited. If this is indeed the case, unemployment support systems in emerging economies place a strong emphasis on SP, not just in terms of the value of income support to eligible workers, but also in terms of coverage.[19]

### *Is unemployment insurance a "superior good"?*

There are several reasons why unemployment compensation systems in advanced economies rely mainly on UI, while they tend to rely on SP in emerging economies:

- The public provision of UI tends be more costly in emerging economies due to the presence of widespread informal work and its tendency to reinforce informational problems, *i.e.* adverse selection and moral hazard.[20] Mandatory requirements in emerging economies are unlikely to completely rule out the problem of adverse selection when large parts of the workforce operate outside the reach of the law. Moreover, moral hazard is more difficult to control when unemployment beneficiaries have the possibility of working in the informal sector whilst claiming benefits.[21] As a result, the provision of public UI may be very costly in emerging economies. Indeed, employment-protection rules have often been considered a low-cost way of providing social insurance to workers in such economies (Heckman and Pages, 2004).
- The institutional capacity for the effective public provision of UI may be lacking. Providing UI effectively requires, first of all, the sound management of insurance funds. This involves a minimum level of financial-market development, low levels of corruption and the establishment of an institution with a certain degree of political independence. Moreover, the administration of initial and continued benefit eligibility requires a rich multi-level infrastructure, ranging from national labour ministries to local public employment services, with effective coordination between the administration of benefits and the providers of employment services. While this can be a challenge in many advanced economies, it is very difficult to achieve in emerging economies.

## 3. The impact of unemployment compensation systems on labour market outcomes: A case study for Brazil

This section sheds light on the labour market effects of different unemployment compensation systems in emerging economies. It considers three channels for such effects: *i)* through its impact on worker turnover; *ii)* through its impact on unemployment and labour supply; and *iii)* through its impact on job quality.[22] Special emphasis is given to Brazil since this provides a particularly interesting case study of unemployment compensation systems due to the relative generosity of unemployment compensation (see Figure 2.4), its high coverage by emerging-economy standards (see Figure 2.5) and its rich institutional set-up based on the combination of individual severance pay accounts (*Fundo de Garantia do Tempo de Serviço*) with a system of public unemployment insurance (*Seguro Desemprego*) (see Box 2.1).

### Box 2.1. **Unemployment compensation systems in Brazil**

Income support to the unemployed in Brazil is restricted to formal workers who are dismissed without just cause and workers who lost their job as their firm closed down. This means that the large majority of unemployed do not have access to unemployment-related benefits, including previously informal workers, labour-market entrants and individuals who quit voluntarily . The system of unemployment compensation consists of two components:

- The Guarantee Fund for Length of Service (*Fundo de Garantia do Tempo de Serviço*, FGTS) combines mandatory saving accounts with a firing penalty upon unfair dismissal. The FGTS – established in 1967 – represents a fund that can be used for special occasions, including dismissal without just cause; the acquisition of a home; and retirement. Withdrawals in the case of unfair dismissal account for about two-thirds of FGTS expenditure (Caixa Economia Federal, 2009). Every Brazilian worker with a formal employment contract governed by the Brazilian Labour Code (*Consolidação das Leis do Trabalho,* CLT) is eligible to FGTS. To constitute this fund, the employer deposits 8% of the worker's monthly earnings into a saving account in the worker's name (2% for fixed-term workers). Moreover, workers with more than three months of tenure are entitled to an indemnity based on the total amount deposited by the employer in their FGTS account. This indemnity, or firing penalty, was initially set at 10% of the amount deposited, but was increased to 40% in 1988. In 2001, the firing penalty was increased further to 50%, although the indemnity to the worker remained unchanged as the additional 10% is to be paid to the government instead of the employee.
- Universal unemployment insurance (*Seguro Desemprego,* SD) was established in 1986 as part of the Cruzado plan of macro-economic stabilisation and has operated in the current institutional structure since 1994. Eligibility is restricted to formal-sector job losers in the private sector with at least six months of contributions during the past three years. Unemployment benefits are means-tested. The insured must lack other resources to support herself or her family and must not receive other social insurance benefits. The benefits range from 1 to 1.87 times the minimum wage, depending on the level of previous earnings. The maximum duration of benefits is three months for individuals in a formal job between 6-12 months in the past three years; four months for individuals in a formal job between 12-24 months; and five months for individuals with more than 24 months. Under special conditions, the benefit may be extended for an additional two months. SD is financed by the government through earmarked taxes on businesses. The law that instituted SD also mandated the public employment service (SINE) with the task to help the unemployed back into work.

The table below provides information on the value of income support available for the unemployed under both systems. The average withdrawal from FGTS is about three to four times as high as one monthly payment of SD. The total value of income support available under SD, *e.g.* five monthly payments, is about 1.7 times as large as that of the average FGTS withdrawal (see Hijzen, 2011, for further details).

**Average values of unemployment benefits and severance payments in selected years**

| | One month of unemployment benefits | | Five months of unemployment benefits | | Severance pay (FGTS) | |
|---|---|---|---|---|---|---|
| | % of minimum wage | % of average wage | % of minimum wage | % of average wage | % of minimum wage | % of average wage |
| 2002 | 143 | 46 | 713 | 229 | 551 | 177 |
| 2005 | 136 | 50 | 678 | 252 | 440 | 164 |
| 2008 | 128 | 53 | 640 | 263 | 391 | 161 |
| 2009 | 128 | 55 | 642 | 274 | 387 | 165 |
| 2010 | 126 | . . | 631 | . . | . . | . . |

*Source:* OECD's calculations based on SAEG and FGTS (*www.fgts.gov.br/downloads.asp*).

StatLink http://dx.doi.org/10.1787/888932480332

### *Unemployment compensation systems and the risk of unemployment*

The primary objective of SP systems is to increase job security through the use of a firing penalty and the existing empirical evidence confirms that severance pay tends to reduce worker turnover (Micco and Pages, 2006; Bassanini *et al.*, 2010).[23] Reducing "excessive" layoffs helps preserving match-specific capital and strengthening incentives to invest in firm-specific skills, but strict employment protection may also have important unintended consequences. It can have adverse consequences for the level of unemployment and employment, the perceived level of worker security and labour market segmentation. Moreover, by locking up workers in unviable jobs, it may become an obstacle to growth and the creation of new jobs.[24]

- Employment protection has no effect or a negative effect on *employment*. Indeed, most previous cross-country studies for developed countries find no significant impact of employment protection on the level on employment or unemployment (Boeri and Van Ours, 2008, for an overview), while its impact on employment in developing countries tends to be negative (Botero *et al.,* 2004; Heckman and Pages, 2004; Micco and Pages, 2006; Djankov and Ramalho, 2008).
- Stricter employment protection may be associated with lower levels of *perceived worker security*, while more generous UBs may improve perceived worker security (Clark and Postel-Vinay, 2009). Although employment protection reduces the risk of unemployment, the cost of losing one's job may be larger in the context of strict employment protection due to its negative impact on hiring. By contrast, UBs reduce the cost of being unemployed.
- Strict employment protection may reinforce *labour-market segmentation* by concentrating job losses among low-tenured workers, while providing protection to long-tenure workers.[25] Moreover, strict employment protection provides incentives to employers to circumvent firing costs by making greater use of temporary contracts or informal working arrangements. For example, Besley and Burgess (2004) find that increased EP raises employment and output in the informal sector in India.

Unemployment compensation systems based on UI or individual saving accounts do not directly affect the risk of unemployment, but can have indirect effects. By redistributing resources from low-risk to high-risk jobs, standard UI promotes the creation of high-risk high-productivity jobs, increasing job turnover. Alternatively, by helping workers to get jobs that are compatible with their skills, UI can increase match efficiency and reduce worker turnover (Marimom and Zilibotti, 1999). Individual saving accounts may affect worker turnover by creating incentives for workers to induce their own dismissal in order to gain access to their saving account. This problem has been observed in Brazil and to a lesser extent also in Chile. Such incentives are likely to be stronger, the higher are mandated savings and the weaker the confidence in the system. A stable macro-economic environment and well-developed financial sector are likely to be important ingredients for fostering trust in the system (see Box 2.2 for a more detailed discussion)

### *The impact of unemployment compensation systems on unemployment duration*

There exists a large literature that analyses the impact of UI on the duration of unemployment in developed countries. The general reading of this literature is that UI increases the duration of unemployment. First, most studies find a positive and significant elasticity of the duration of unemployment with respect to the level or the maximum duration of benefits. The positive impact of UI on unemployment duration is

### Box 2.2. **The role of individual severance saving accounts for worker reallocation**

Individual severance/unemployment saving accounts should have no impact on the hiring and firing decisions of firms. However, individual account systems have sometimes been criticised as they may lead to excessive turnover due to their tendency to create incentives to induce one's own dismissal to gain access to one's saving account.

- In **Brazil**, there has been a lively debate on this question related to FGTS. In the past, workers had strong incentives to access their accounts because the amounts involved were considerable and returns to the fund tended to be below market rates and have even been negative. While the presence of a firing penalty should, in principle, have reduced worker turnover, the fact that until 2001 the entire firing penalty was to be paid directly to the worker, left considerable scope for collusive behavior between workers and their firms. However, reforms in the labour code that increased the firing penalty from 10 to 40% in 1998 and the introduction of an explicit layoff tax of 10% payable directly to the government in 2001 are likely to have reduced the scope for workers and firms to collude over dismissals (Barros and Corseuil, 2004; Gonzago, 2003).
- **Colombia** transformed its traditional system of severance pay in 1990 into a system of individual severance accounts. Instead of having to pay one month per year of service at the time of dismissal, employers are mandated to regularly contribute 8.3% of monthly earnings to an individual's saving account. Since this reform effectively transformed severance pay into a delayed payment, it largely removed the problem of non-performance associated with the original system and increased worker turnover. Kugler (1999) shows that the reform increased flows in and out of unemployment, resulting in a small net reduction in unemployment. The rise in worker turnover is also likely to have contributed to improved job reallocation and higher productivity growth.

typically interpreted as a labour-supply disincentive effect or a moral-hazard effect: by increasing the value of not-working relative to working, UI reduces the marginal benefit of job search and increases the reservation wage. Second, many studies have shown that the exit rate from unemployment exhibits a spike around the time benefits expire. The spike at benefit exhaustion, in principle, suggests that recipients tend to wait until their benefits run out before returning to work. However, there are a number of reasons to suggest that the evidence on the labour-supply disincentives of UI needs to be qualified, particularly in the context of emerging economies.

- The spike around the point of benefit exhaustion may not be as important as sometimes suggested. Card *et al.* (2007a) argue that the spike has often been exaggerated due to problems with the measurement of transitions from unemployment to work. Based on a survey of the literature and new estimates for Austria, they conclude that the vast majority of job seekers does not wait until their UI benefits are exhausted to return to work. Moreover, moral-hazard effects due to UI receipt are likely to take a somewhat different form in emerging economies, since UI not only increases the value of not working but also that of working in the informal sector. In the context of widespread labour informality and weak enforcement capacity, it is difficult to ensure that individuals do not take up a job in the informal sector whilst receiving UBs. Consequently, the impact of UI on work incentives *per se* may be weaker in emerging economies.

- In contrast to conventional wisdom, a positive association between UI eligibility and the duration of unemployment does not necessarily imply that UI benefits are too generous from a welfare perspective (Chetty, 2008). The welfare implications of UI depend on the extent to which increased duration on unemployment derives from a *liquidity (or income) effect, i.e.* the reduced need to return to work quickly to limit the impact of job loss on consumption, or a *moral-hazard (or substitution) effect*, *i.e.* the reduction in search intensity due to the subsidisation of unproductive leisure. The latter is a socially detrimental response as it fails to take account of the cost of unemployment for society. The former is a socially beneficial response to imperfections in credit and insurance markets, since liquidity constraints may force job losers to accept jobs that involve high adjustment costs (*e.g.* relocation) or do not correspond to a person's qualifications and experience, resulting in a loss of human capital. Previous studies for the United States (Chetty, 2008) and Austria (Card *et al.*, 2007a) show that liquidity effects are empirically important, accounting for up to 60% of the marginal effect of UI benefits on the duration of unemployment.[26] Given the importance of financial market imperfections and relatively low levels of wealth, one may expect liquidity effects to be particularly important in emerging economies (Chetty and Looney, 2006).

While the discussion above suggests that the unemployment duration effects of UI may differ in important respects in emerging and developed countries, very few empirical studies have analysed the impact of UI on unemployment duration in emerging economies. In an effort to fill this gap, new econometric evidence is presented on the impact of SP and UI on the duration of non-employment for Brazil. The impact of unemployment compensation systems is identified by means of a difference-in-differences approach that exploits the fact that eligibility to SP and UI depends on tenure in the previous job and is restricted to formal-sector job losers (see Box 2.3 for details). The results are summarised in Figure 2.6, while the full results are reported in Hijzen (2011).

- Severance pay increases the duration of non-employment. This can be seen in Figure 2.6 by comparing the difference in the job-finding rate due to income support for workers with 24 to 48 months of tenure in their last job with those with more than 48 months of tenure in their last job. While formal-sector job losers with 24 to 48 months in the previous job and those with over 48 months are all eligible for five months of UI, the job-finding rate is significantly lower for formal-sector job losers in the latter group. This difference is attributed to the role of SP in insuring liquidity since SP is estimated to be over three times as large for this group compared with formal-sector job losers with between 24 and 48 months in their previous job. The quantitative difference is relatively large. Hijzen (2011) shows that the probability of returning to work would have been about 1.7 times as high without the difference in severance pay at the start of non-employment. This suggests that liquidity effects are empirically important.
- The reduction in the probability of returning to work for workers with less than 48 months of tenure is likely to reflect a combination of liquidity and moral-hazard effects. However, the relative importance of reduced work incentives is likely to be small. First, the reduction in the probability of returning to work appears to fall more or less proportionally with the total value of income support available, despite the fact that the relative importance of severance pay increases. If the rise in the duration of non-employment reflected purely a moral-hazard effect, it should increase substantially less than proportionally with the total value of income support. This also suggests that

### Box 2.3. **Analysing the labour market effects of unemployment compensation systems in Brazil**

In order to analyse the role of unemployment compensation systems for labour markets, this section makes use of a difference-in-differences approach that exploits the fact the eligibility to SP and UI depends on tenure in the previous job and is restricted to formal-sector job losers. While FGTS is in principle available to all formal-sector job losers who have been dismissed from their job, UI further depends on the number of months they have been employed in the formal sector during the past three years (see Box 2.1). In order to analyse the role of SP, the analysis distinguishes between workers eligible to the maximum number of months of UI with 24 to 48 months of tenure in their previous job and workers with more than 48 months. The difference in the value of SP between these two groups is considerable. Since the average level of tenure of job losers in the former is 29 months and in the latter 96 months, SP is over three times higher for job losers in the latter category. The difference-in-differences approach used here identifies the impact of unemployment compensation by comparing the average duration of non-employment or wage changes, $E(y)$, of job losers in the formal sector $f$ with those in the informal sector $i$ in the same tenure group $j$ relative to the difference in outcomes between job losers in the formal and informal sector with less than six months of tenure in the previous job (referred to with subscript 0).

$$\alpha_{DIDj} = [E(y)^{f}_{j} - E(y)^{i}_{j}] - [E(y)^{f}_{o} - E(y)^{i}_{o}]$$

The difference-in-differences approach controls for any unobserved differences in characteristics between formal and informal-sector job losers that are common across tenure groups and differences between jobs losers with more than six months of tenure in the previous job and those with less than six months of tenure that are common between formal and informal-sector workers. It also involves making two assumptions. First, it is assumed that the average value of FGTS among formal-sector job losers with less than six months of tenure in their previous job is negligible. This is reasonable given the short average level of tenure and the high incidence of temporary workers for whom monthly contributions are much smaller.[1] However, it may lead to a slight underestimation of the impact of unemployment compensation systems on labour market outcomes. Second, it is implicitly assumed that characteristics that vary simultaneously across sector of job loss and tenure group do not affect the outcome of interest. In order to control for any such differences, the econometric analysis also controls for a wide range of observable characteristics.

The analysis makes use of data for the period 2002M3 to 2010M11 from the Monthly Employment Survey (*Perquisa Mensal de Emprego*, PME), a monthly survey for six major urban areas. The PME has a rotating panel that allows one to track individuals over time. The analysis focuses on the duration of non-employment spells of employees in the private sector who lose their job as a result of dismissal or firm closure. The PME provides rich information on the unemployed, including on the nature of their last job. This allows one to determine whether individuals are eligible for FGTS and the number of monthly payments of SD (*e.g.* 0, 3, 4 or 5) by using information on whether the person had a work card (*carteira de trabalho)* and the number of months spent in the last job. One drawback of the data is that they do not provide information on actual take-up of either SD or FGTS. However, take-up appears to be reasonably large. In 2009, on average every month about 760 000 individuals were dismissed from a formal job in the private sector without just cause, while on average every month about 600 000 entered into the SD system, suggesting that take-up among eligible unemployed persons may be close to 80%. A further shortcoming is that the employment history of unemployed individuals is limited to the last job only. As a result, one is likely to underestimate the maximum number of monthly

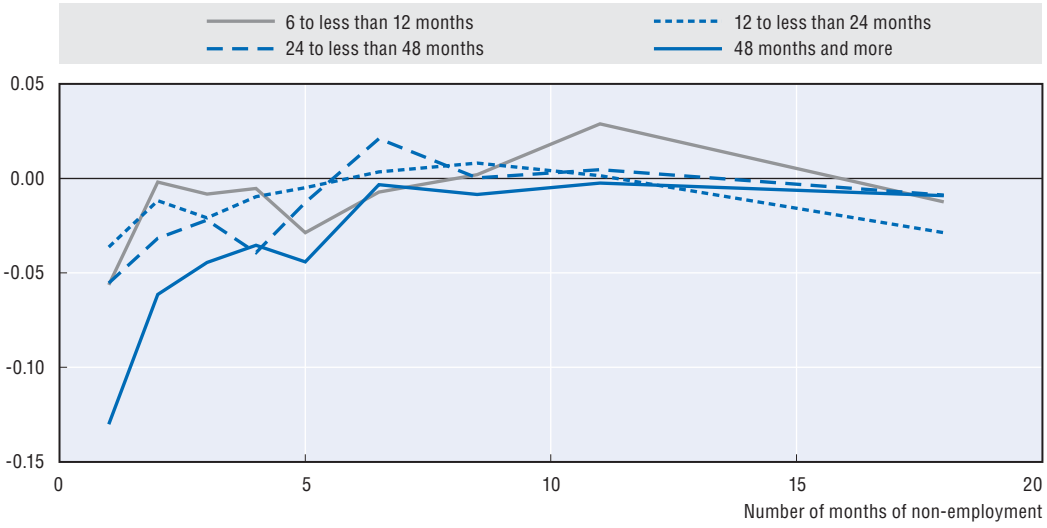
### Box 2.3. **Analysing the labour market effects of unemployment compensation systems in Brazil** *(cont.)*

SD payments to which unemployed individuals are eligible or the amount that an individual has accumulated in his/her saving account. In principle, this problem should be most severe for unemployed workers who spent only a short period in their last job. Administrative data from the Ministry of Labour, however, indicate that less than 5% of benefit recipients were employed for less than six months in their last job, suggesting this is not a major issue.

1. A substantial part of these formal-sector job losers are employed on temporary contracts for which monthly contributions are only 2% of monthly earnings instead of 8% for permanent workers. Moreover, given their average level of tenure of slightly less than three months, they would only be eligible to at most a quarter of previous monthly earnings, if they had been employed on a permanent contract. Moreover, workers with less than three years of previous tenure are not eligible for the firing penalty (40% of total savings).
2. Hijzen (2011) shows that this corresponds to about ten and four months of previous earnings, respectively.

Figure 2.6. **Unemployment insurance and severance pay both tend to increase the duration of non-employment in Brazil**

Difference in the job-finding rate due to income support for workers with different tenure in the last job




*Note:* Difference-in-differences estimates derived from the hazard ratio for each group (loosely defined as the number of individuals starting a job over the number of individuals staying out of work). The hazard ratios for each group are estimated using a complementary log-log model with group-specific baseline hazards that controls for random effects. The baseline hazard for each tenure group is approximated using piecewise constants for the following intervals: [1-2>], [2-3>], [3-4>], [4-5>], [5-6>], [6-8>], [8-9>], [10-12>], [13-27]. The model includes the following observable characteristics: five region dummies (omitted: Sao Paolo); four education dummies (omitted: more than ten years of education); age at dismissal as deviation from the sample average; age at dismissal squared as deviation from the sample average; a dummy for being female; two dummies for the first two terciles of the household income distribution; four race dummies (omitted: white); the log regional unemployment rate as a deviation from the sample mean. The sample is restricted to job losers due to dismissal or firm closures aged between 18 and 65.

*Source:* OECD's calculations based on PME (*Perquisa Mensal de Emprego*).

StatLink http://dx.doi.org/10.1787/888932479629

the increase in the duration of non-employment due to UI largely reflects the role of liquidity constraints. Second, there is no evidence that job losers wait until their benefits have expired with searching for a new job. At the time of benefit exhaustion, the probability of returning to employment is not statistically different from the counterfactual outcome without UI. In sum, there is little evidence that UI reduces work

incentives overall, although it is possible that it reduces incentives for work in the formal sector that are offset by incentives to work informally.[27]

A number of previous studies have analysed the role of UI and SP for the duration of unemployment in Brazil. Cunningham (2000) employs a difference-in-differences approach that exploits the relaxation in eligibility rules and the increase in the maximum duration of benefits that were introduced in 1994. Given the small increase in the generosity of benefits, it may not be surprising that she did not find much of an effect on the duration of unemployment.[28] Domeland and Fiess (2006) find that receiving SP reduces the re-employment hazard of formal workers. As they do not control for the role of UI, the authors argue that the negative impact of severance pay reflects the impact of UI – which is conditional on SP eligibility – on moral hazard. While these results are, in principle, consistent with those presented above, the present analysis further suggests that SP receipt has an independent effect on the duration on employment. As SP is not conditional on being unemployed, this cannot be attributed to a moral-hazard effect, but is more likely to reflect a liquidity effect.

In order to investigate more fully the potential role of liquidity constraints, Figure 2.7 assesses the impact of unemployment compensation on the average re-employment probability of job losers across households with different levels of income.[29] If liquidity constraints contribute to the non-employment-duration increasing impact of unemployment compensation, one would expect a larger impact among job losers in poor households.[30] The figure suggests that this is indeed the case in practice. Unemployment compensation reduces the average probability of starting a new job by up to 5 percentage points in households with little or no alternative source of labour income (*i.e.* in the first two terciles of the household-income distribution) and has no statistically significant impact in households with alternative labour income worth over two full minimum wages (*i.e.* in the third tercile of the household income distribution). These differences are most pronounced among job losers eligible for the maximum level of unemployment compensation, *i.e.* five months of UI plus generous FGTS. These estimates, thus, provide further evidence that liquidity effects account for a substantial part of the positive impact of unemployment compensation on the duration of non-employment.

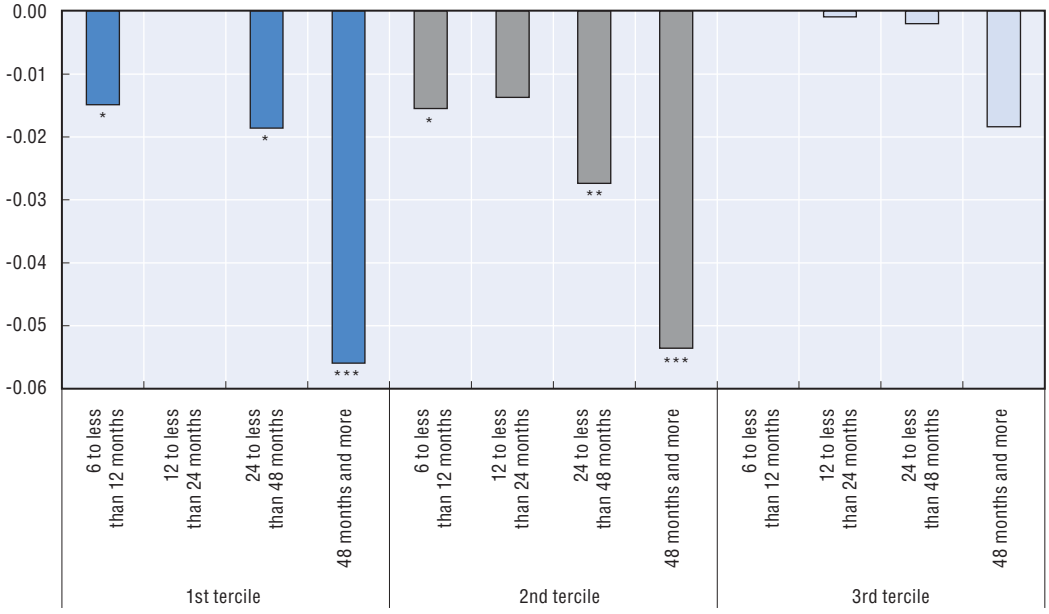
### *The role of income support for re-employment outcomes*

The evidence so far suggests that unemployment compensation systems help job losers smooth their consumption during the period of unemployment and prevent liquidity-constrained job losers from being forced to accept the first job offer that arrives, even though waiting for a better job might have been desirable from a welfare perspective. Since unemployment compensation allows jobseekers to be more critical with respect to job offers, one might expect cash transfers to liquidity-constrained job losers also to contribute to better re-employment outcomes. In the context of emerging economies, having access to unemployment compensation may be particularly important in preventing formal-sector job losers from being pushed into informal work.

Despite the importance of liquidity constraints in emerging economies, there is little evidence on the effects of unemployment compensation systems on the re-employment outcomes of job losers. Cunningham (2000) finds for Brazil that UI has no impact on post-unemployment wages or the probability of finding a formal job, but increases the probability of becoming self-employed for men. Margolis (2008) analyses the role of FGTS and UI for transitions in the formal and informal sector. He finds that income support

Figure 2.7. **The impact of unemployment compensation on unemployment duration in Brazil is larger in liquidity-constrained households**

Difference in the job-finding rate by household-income group in the first six months since dismissal associated with income support for workers with different tenure in the last job




*Note:* Difference-in-differences estimates derived from the hazard ratio for each group. The hazard ratios are estimated using a complementary log-log model with group-specific baseline hazards that controls for random effects. See notes to Figure 2.6 for further details.

*Source:* OECD's calculations based on PME (*Perquisa Mensal de Emprego*).

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reduces the probability of exiting to the informal sector and speeds the exit rate to the formal sector. He concludes that unemployment compensation systems help some formal-sector job losers from being pushed into the informal sector. A potential drawback of his analysis is that he does not explicitly control for the independent role of having been employed in the formal sector or that of tenure in the previous job.[31] As a result, it is not clear to what extent the higher (lower) probability of previously formal-sector workers to find a new job in the formal (informal) sector can be attributed to benefit eligibility.[32]

Figure 2.8 presents new evidence of the impact of unemployment compensation on non-employment transitions into formal and informal employment for the case of Brazil. This not only allows one to get an idea of the extent to which unemployment compensation improves job matching, but also allows one to assess to what extent UI-eligible workers postpone job search until the time of benefit exhaustion or divert search efforts to the informal sector. The role of unemployment compensation is identified using the same difference-in-differences strategy as was used for the aggregate re-employment rate (see Box 2.3). The full results are reported in Hijzen (2011).

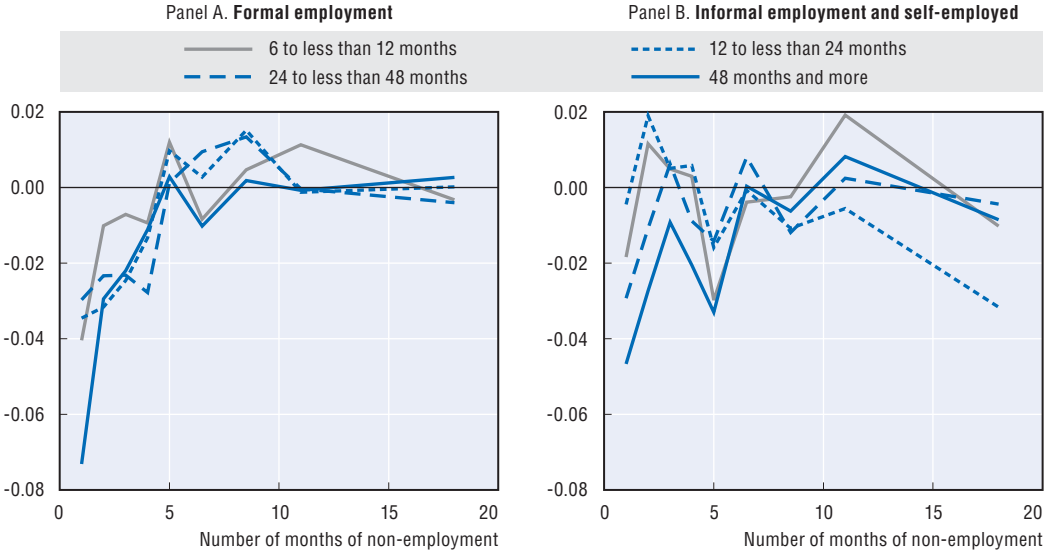
- In contrast to the aggregate analysis discussed above, the analysis of transitions into formal and informal employment suggests that moral hazard is potentially important. There are two reasons for this.
  - Income support reduces the job-finding rate in the formal sector by more than that in the informal sector, at least at the start of non-employment.[33] This suggests that the moral-hazard effect of working informally during the period of benefit receipt tends to

offset the liquidity effect of income support that allows job losers to wait for a job offer in the formal sector. There is some evidence that this difference is smaller for job losers in households with liquidity constraints and larger for job losers who become self-employed (as opposed to informal salaried).

– There is some indication of a positive spike at five months for the re-employment rate in the formal sector. This suggests that some formal-sector job losers tend to wait before returning to formal work until their benefits expire. However, the spike is not statistically significant for any of the groups.

Figure 2.8. **Unemployment compensation reduces the job-starting rate in the formal sector in Brazil**

Difference in the job-starting rates by destination due to income support for workers with different tenure in the last job




*Note:* Difference-in-differences estimates derived from the hazard ratio for each group. The hazard ratios are estimated using a complementary log-log model with group-specific baseline hazards that controls for random effects. See notes to Figure 2.6 for further details.

*Source:* OECD's calculations based on PME (*Perquisa Mensal de Emprego*).

StatLink http://dx.doi.org/10.1787/888932479667

## 4. Building effective unemployment compensation systems in emerging economies

The case study for Brazil illustrates how SP and UI help cash-strapped households in their job search, leading to a potentially more efficient use of resources. However, both SP and UI may also be associated with potentially important costs, albeit of a very different nature. This section discusses the main policy challenges that governments in emerging economies have to confront when reforming or expanding their unemployment-compensation systems.

### *A shift from a more job-oriented to a more worker-oriented approach to unemployment compensation may be appropriate in some countries*

A shift in emphasis from a largely job-oriented approach to unemployment compensation (SP) to a more worker-oriented approach (UI) may be appropriate. Increased competitive pressures associated with the integration of emerging economies into the world economy and technological progress requires more frequent adjustments of the workforce and greater firm

dynamics, while they may also have increased the demand for insurance against unemployment risks. SP not only slows the reallocation of resources between expanding and declining firms, but may also fail to provide adequate protection to job losers due to the tendency of firms to renege on their SP commitments at the time of dismissal. Linking reforms that aim to enhance labour market flexibility to those that seek to respond to the increased demand for UI may, therefore, be attractive from a political-economy perspective. A comprehensive reform may be more effective than piecemeal reforms because it allows one to compensate the losers of reduced job security with more effective income support when unemployed.

Broadly speaking, one may consider two possible strategies that simultaneously increase labour market flexibility and worker insurance against unemployment in emerging economies. The first strategy consists of reforming the severance-pay system by partially or fully transforming the firing penalty payable upon dismissal into a delayed payment. The delayed payment may take the form of a mandatory payment due at separation whatever the reason[34] or a contingent withdrawal from an individual saving account that is portable across employers. The optimal balance of firing costs and delayed payments/mandatory savings is likely to differ across countries. The second strategy consists of fully or partially substituting severance pay by unemployment insurance. In this case, the reduction in severance pay is compensated by increased UBs which can be financed through general taxation or payroll taxes. It may also be possible to combine both strategies to maximise the relative advantages of ISAs for unemployment and UI.[35]

### *Individual saving accounts for unemployment accompanied by some form of redistribution could play a useful role*

Individual unemployment saving accounts (IUSAs) can provide a useful building block of unemployment compensation systems in emerging economies (Robalino *et al.*, 2009). The main benefit of UISAs is their potential to provide support to liquidity-constrained unemployed in their job search, while limiting moral-hazard effects associated with OECD-style systems of unemployment insurance. By allowing workers to run down their personal saving accounts during periods of unemployment, workers internalise the cost of unemployment benefits, thus strengthening the incentives of the employed to prevent job loss and those of the unemployed to return to work quickly (Orszag and Snower, 1999). Consistent with this reasoning, Hartley *et al.* (2010) show, using administrative data for Chile, that IUSAs improve work incentives among the unemployed.[36] As a result, the cost of providing UI in emerging economies does not have to be significantly higher in emerging economies with large informal sectors than in more advanced countries where working informally while receiving benefits is less obvious. Moreover, by relying on mandatory savings rather than payroll taxes for UBs, IUSAs may reduce labour costs and promote formal-sector labour demand (Robalino and Sanchez-Puerta, 2008). Their reliance on individual savings is also likely to reduce reservation wages and worker bargaining power, potentially reinforcing its positive impact on formal-sector labour demand.

The main drawback of IUSA systems relates to their potential to provide adequate protection to vulnerable workers.[37] Pure IUSAs neither pool risks nor redistribute income and thus do not provide adequate coverage to the workers who need it most: those who experience frequent and/or long-lasting spells of unemployment are most likely not to have accumulated sufficient savings in their accounts (OECD, 2010a). The absence of redistribution implies higher contribution rates *ceteris paribus* than would be the case under a similarly generous UI system. This may provide incentives to move into informal work, particularly among low-income

workers. As a result, policy proposals have tended to concentrate on IUSA systems that include some form of redistribution, either by allowing unemployed workers to borrow or by combining individual accounts with a traditional UI component.

- By allowing individuals to have negative account balances, the *IUSA-plus-borrowing alternative* reduces the problem of adequate coverage and reintroduces some redistribution by forgiving any negative account balances at the time of retirement. However, the extent of coverage remains limited compared with traditional UI. The option of borrowing also potentially re-introduces adverse work incentives among unemployed individuals with negative account balances. In order to ensure that individuals with negative balances do not withdraw from the labour market or move into informal work, pension contributions could be used as collateral (Stiglitz and Yun, 2005).[38] This option has not been implemented anywhere yet.
- Combining *IUSAs with unemployment insurance* provides an alternative approach to ensure adequate coverage by providing individuals with insufficient account balances with UBs from an unemployment insurance fund. This approach is likely to involve more redistribution than the UA-plus-borrowing alternative but less than in a pure system of UI. However, the provision of UBs to individuals with insufficient savings also re-introduces the issue of moral hazard. Indeed, Hartley *et al.* (2010) show for Chile, which implemented an individual accounts system with UI in 2001 (see OECD, 2009, for details), that unemployed individuals who rely on collective insurance take longer to get re-employed than other unemployed job-seekers.[39]

Determining whether or not a system of individual unemployment accounts could be appropriate is not straightforward due to the trade-off between improved work incentives under IUSAs and risk pooling under UI. A number of factors are likely to play a role. *First*, it seems plausible that this trade-off becomes more favourable in emerging economies with large informal sectors since informality increases the scope for moral hazard and reduces the benefits of risk pooling. *Second*, IUSAs are likely to be more appropriate when the objective is to smooth consumption rather than unemployment-related poverty alleviation. By contrast, unemployment compensation systems that put more weight on alleviating unemployment-related poverty require more redistribution which may be more effectively provided by traditional UI. *Third*, individual IUSA systems are more effective in the context of frequent and short unemployment spells. These are more important in flexible labour markets that are characterised by relatively high levels of job creation and destruction.

### *Investments in UBs need to be accompanied with investments in benefit administration and re-employment services*

A number of the emerging economies considered in this chapter may be interested in strengthening their unemployment compensation systems by establishing a system of unemployment insurance in the form of a standalone UI plan or a IUSA system with a solidarity fund or expand an existing programme. The design and scope of UI should seek to minimise potential moral-hazard effects and maximise its support to liquidity-constrained job losers. Given the difficulty of determining and monitoring continued benefit eligibility in the context of large informal sectors and a weak administrative capacity, it will be important to ensure that benefit schedules preserve good incentives for work in the formal sector. This suggests that, at least initially, benefits with relatively low replacement rates and short durations may be most appropriate. With time, as the ability to administer benefits effectively improves, the generosity of UB could be increased in line with labour market needs. Declining

benefit schedules as in Chile and the Russian Federation also contribute to maintaining good work incentives over the unemployment spell. In order to maximise the welfare effects of unemployment insurance, benefits need to be targeted towards job losers who are most likely to make sub-optimal employment choices as a result of liquidity constraints. An obvious place to start would be to offer flat benefit schedules, as in China, or means-tested replacement rates, as in Brazil, where benefits are bound between one and two minimum wages depending on one's previous income.

Efforts to strengthen unemployment compensation should be accompanied by investments in activation policies in order to avoid the risk of benefit dependency and help job seekers overcome important adjustment costs or avoid skill mismatch. The essence of activation is the principle of "mutual obligation" under which, in return for paying benefits and offering re-employment services, the government requires recipients to search actively for a new job or participate actively in training and employment programmes to improve their employability. The government can enforce this requirement with the threat of moderate sanctions. Over the past decade, many OECD countries have introduced or reinforced strategies to "activate" the unemployed. Evidence suggests that, if well-designed, such strategies can contribute to better labour market outcomes, by ensuring that benefit recipients have a better chance of getting a job and minimising the risks that generous benefits reduce work incentives (OECD, 2006; OECD, 2010b). UI plans in emerging economies share some of the features of the activation approach. Except for Brazil, job losers are required to register with the public employment service (PES) in order to be able to apply for unemployment benefits. Moreover, continued benefit eligibility tends to be conditional on being available for work, actively engaging in job search and not refusing acceptable job offers. However, in practice, monitoring of continued benefit eligibility tends to be very limited and it may be quite common for benefit recipients to work in the informal sector.

The optimal strictness with which benefit eligibility criteria are enforced and the intensity of job-search assistance depend, amongst other things, on the specific design features of the UI plan (OECD, 2010b). In countries with a relatively short maximum duration of benefits, such as Brazil and Chile, activation may be relatively light. As the benefits are only available for a short duration, work incentives are likely to remain strong during the period of benefit receipt, while the gains from intensive activation measures are relatively small. Moreover, as benefit recipients have recent work experience, there may be little need for intensive counselling or active labour market programmes. The main role of the PES in this case may be to administer initial benefit eligibility and to act as a job broker by providing vacancy information. Available data for Brazil and Chile suggest that the number of job seekers who get a job through the PES is rather low. The ratio of the number of placements to the number of newly registered job seekers is about one in six, while the ratio of placements to the number of new job vacancies is about one half (Gonzalez, 2010, for Brazil; OECD, 2009, for Chile). In countries, where benefits are available for a relatively long duration, such as China and the Russian Federation, activation measures may have a potentially important impact on unemployment. At least in the context of OECD countries, it has been suggested that even low benefits could bring about high rates of benefit dependency in the absence of effective activation measures (OECD, 2010b). This suggests that the PES may have to monitor and enforce continued eligibility more intensively and engage in the development of individual action plans (see, for example, Vodopivec and Tong, 2008, for China). In general, this is likely to require a greater coordination of benefit administration and re-employment services.[40]

# PART B.
# The Impact of Cash Transfer Programmes on Labour Market Outcomes

## 5. Cash transfer programmes in emerging economies

As discussed in Section 1 and Part A, social insurance has a limited reach in emerging economies, and social assistance programmes have been developed to provide basic coverage to a substantial share of the population. In this context, cash transfer (CT) programmes have become an important element of the social protection systems of most emerging economies. CTs aim at reducing poverty, managing risk, smoothing consumption throughout the year, minimising the impact of adverse shocks on households' lives and promoting human capital development. CTs can target poor households in general, those with small children (mainly conditional cash transfers) and other specific groups such as the sick and disabled, the elderly and ethnic minorities.

### *A broad range of cash transfers exist in emerging economies*

CT programmes exist in all the emerging economies covered in this chapter.[41] Table 2.2 presents a taxonomy based on Barrientos *et al.* (2010) of the different programmes in operation in the emerging economies:

- A first group of programmes provides pure income transfers (Table 2.2, Panel A). The majority of such CT programmes in the emerging economies target the elderly (known as non-contributory pensions – NCP, or social pensions – SP) and exist in most of the countries covered in this chapter. The Chinese *Dibao* is an unconditional cash transfer programme, in the same category as is the extensive Child Support Grant in South Africa which, although it provides cash to care givers of children, does not impose any conditionality on schooling or health tests.
- A second category are programmes that condition recipiency on actions on behalf of beneficiaries in terms of investment in education and medical check-ups for children and pregnant women (the CCTs) (Table 2.2, Panel B). *Bolsa Familia*, *Oportunidades*, *Subsidio Unico Familiar* in Chile, the Indonesian *Keluarga Harapan* and the Conditional Educational and Health Support Programme in Turkey are the main CCTs operating in the emerging economies in terms of coverage. Among these programmes, the programme *Apoyo para Adultos Mayores* in Mexico is the only CT which targets adults aged above 70 in households participating in *Oportunidades* and imposes certain conditionalities related to medical visits.
- A third category of programmes includes those that provide short-term assistance combined with a long-term anti-poverty strategy (Table 2.2, Panel C). *Chile Solidario* is a typical example of such an integrated poverty programme. The benefits paid to families are only a small and relatively limited part of the programme's contribution which lies in the provision of personal counselling and psycho-social assistance to vulnerable households and access to social services in the areas of healthcare, education, employment, housing and justice (Barrientos *et al.*, 2010). In addition, *Chile Solidario* aims at improving access to economic and social networks by providing a bridge among the different social assistance programmes.[42] *Oportunidades* and *Bolsa Familia* are also moving towards integrating other existing anti-poverty programmes under their umbrella but these programmes are different in nature from *Chile Solidario* and the benefits paid are relatively generous and constitute a main element of the programmes.

Table 2.2. **Main cash transfer programmes in the emerging economies**

| | Name (date of creation) | Targeted population | Means-test | Share of population covered | Share of targeted group covered |
|---|---|---|---|---|---|
| | | Panel A. **Unconditional cash transfers** | | | |
| Brazil | *Previdência Rural* (1971) | Rural labourers (informal workers in agriculture, mining, and fishing) 55+ for women and 60+ for men | No | 8.8% of Brazilian workers | |
| | *Beneficio de Prestação Continuada* (1996) | 65+ in households with household income below USD 60 a month and no other gov. programme | Yes | | 1.6 million |
| Chile | *Pensión Básica Solidaria de Vejez* (PBS) (2008) | 65+ with no other pension and below certain score in *Ficha de Protección Social* | Yes | | Target of 55% of relevant population |
| | *Aporte Previsional Solidario* (APS) (2008) | 65+ with pensions below 200 000 Chilean Pesos (2010) | Yes | | Target of 60% of relevant population |
| China | Dibao (1999) | Poor households with no ability to work, no source of income, and no support from family members | Yes | 5.3% of total population | |
| India | Indira Gandhi National Old-Age Pension Scheme (2007) | 65+ who are below the poverty line. 60+ if they have some serious illness | Yes | | 28% of 65+ population |
| Mexico | *70 y màs* (2007) | 70+ in areas with less than 30 000 inhabitants | No | | 33% of 70+ population, 96% of 70+ population in targeted areas |
| Russia | Social Pension for the Elderly | 65+ for men and 60+ for women without a labour pension | No | | |
| South Africa | Child Support Grant (1998) | Children aged 17 (2010) or below in poor households | Yes | 36.6% of households | 54% of children below 15 |
| | Old-Age Pension (1928) | 65+ men and 60+ women in poor households | Yes | 15.3% of households | 80% of 60+ population |
| Turkey | Elderly Support Programme (1999) | 65+ with no other social security rights | Yes | 16.7% of 65+ population | |
| | | Panel B. **Conditional cash transfers** | | | |
| Brazil | *Bolsa Familia* (2003) | Extremely poor families and poor families with children | Yes | 20% | |
| Chile | *Subsidio Unico Familiar* | Poor families | Yes | 17% of total population | |
| Indonesia | Program Keluarga Harapan (2007) | Poorest households | Yes | 720 000 households | |
| Mexico | *Oportunidades* (1997) | Poor families with children | Yes | 19% of households; 20.6% of <18 popoulation | 43.5% of <18 in poor households |
| | *Apoyo para Adultos Mayores dentro de Oportunidades* (2006) | 70+ not covered by *70 y más* and who are integrated in households participating in *Oportunidades* | Yes | | |
| Turkey | Conditional Educational and Health Support Programme (2003) | Poor families with children aged 0-6 or in primary or secondary school, and pregnant mothers | Yes | 5.9% of households | |
| | | Panel C. **Integrated programmes** | | | |
| Chile | Chile Solidario (2002) | Extremely poor and poor families (conditionalities attached) | Yes | 6% of total population | |

*Note:* The information in this table is not exhaustive and only covers the main programmes operating in the emerging economies. In most of the countries covered, other smaller programmes with national or very often local coverage exist. Many of these countries also operate old-age pension plans for the disabled, widowed and other categories of the elderly, but these are not covered in this chapter.
*Source:* OECD Secretariat based on various sources; see Annex 2.A4 in OECD (2011b).

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### *Cash transfers are independent of labour market status and target mainly the poor*

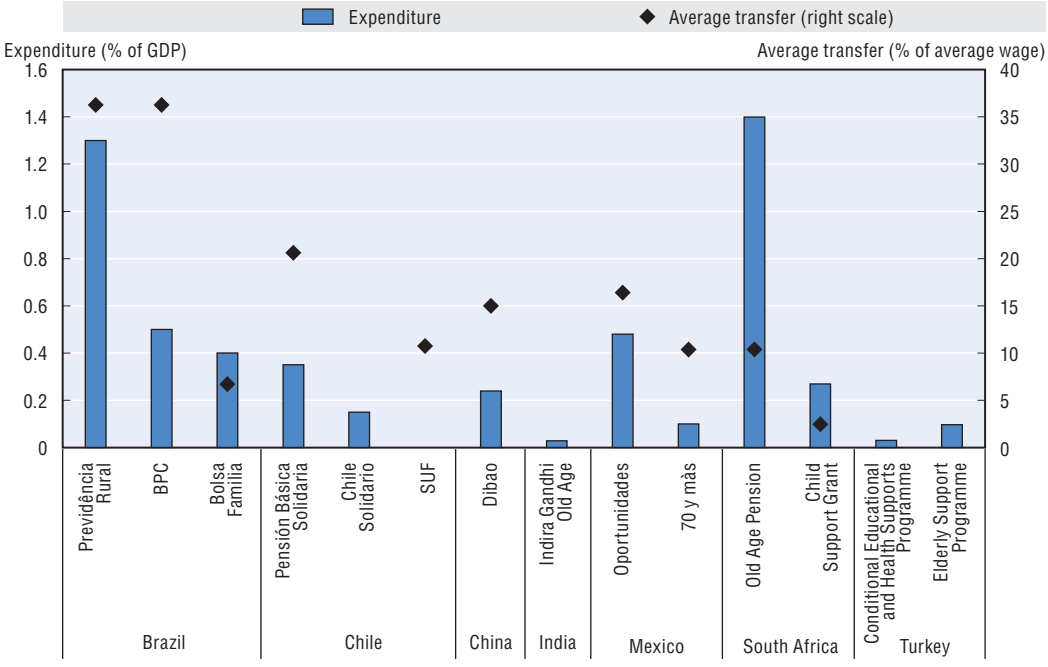
Unlike similar programmes in advanced economies, CT programmes in the emerging economies are *not* conditional on labour market status, which makes sense given the high incidence of in-work poverty in these countries. They are mainly provided to the population in need, usually defined on the basis of geographic location, income and other household or family characteristics, such as the presence of young children and older

household members. Targeting is often done first through selection of location (rural *versus* urban, poorest regions *versus* less poor ones) and second through a means-test in order to identify the neediest individuals and households. In all the programmes covered in Table 2.2, except *Previdencia Rural* in Brazil, the Social Pension for the Elderly in Russia, and the programme *70 y màs* in Mexico, a means-test is used to ensure that only poor individuals become beneficiaries. These means-tests are usually performed once to determine eligibility and are only repeated in rare cases. In most programmes, proxy means-tests are used, based on a formula to estimate household income that considers a number of household characteristics and composition. Only *Bolsa Familia* and the OAP in South Africa, base the means-tests on an actual income declaration.

### *Social pensions tend to be more generous than general cash transfers targeting poor households*

The generosity of the CT programmes varies a great deal across countries, but overall, programmes targeting the elderly seem to be relatively more generous than those targeting poor households in general (Figure 2.9). The Brazilian *Previdencia Rural* and *Beneficio de Prestação Continuada* are the most generous programmes paying an average benefit equivalent to 35% of average wages (equal to the minimum wage in the country). Among the CT programmes targeting poor households, the most generous is *Oportunidades,* which offers 17% of the average wage to about 5.8 million families. As a result of varying coverage and generosity levels, the total public spending on these programmes also varies greatly among countries. The most costly programmes are the South African OAP (1.4% of GDP

Figure 2.9. **CTs targeting the elderly are more generous than those targeting poor households**




*Note:* Data on total expenditure are missing for *Subsidio Unico Familiar* in Chile; data on average transfers are missing for the Indira Gandhi Old-age Pension in India and the Conditional Educational and Health Support Programme in Turkey.

*Source:* OECD Secretariat based on various sources and years; see Annex 2.A4 in OECD (2011b).

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in 2008) and the Brazilian *Previdencia Rural* (1.3% of GDP in 2009). Among the CTs not targeting specifically the elderly, big programmes such as *Oportunidades* and *Bolsa Familia* have annual expenditures representing between 0.4 and 0.5% of GDP.

## 6. The impact of cash transfers on labour market outcomes: A case study for South Africa

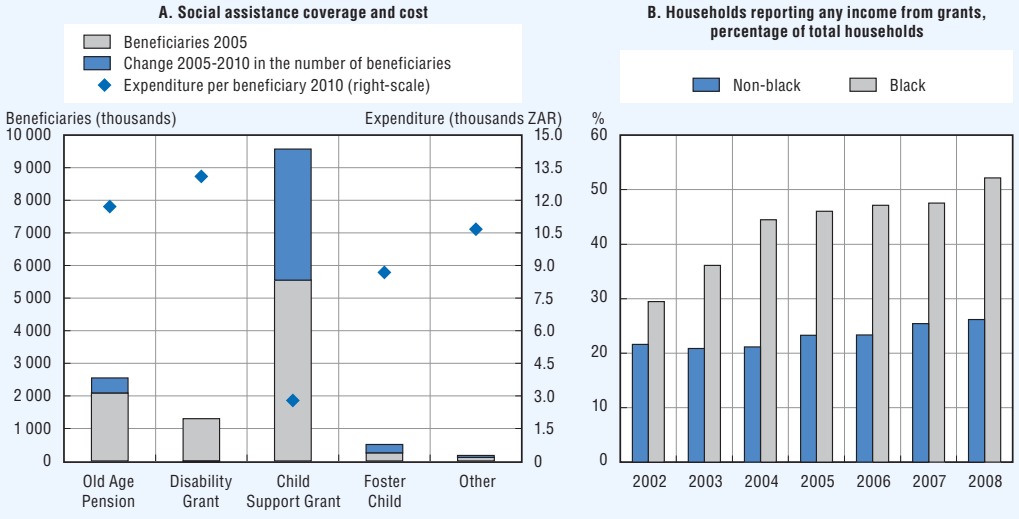
There is a growing empirical literature evaluating the labour market effects of various CTs programmes around the world.[43] The differences in the estimated effects across countries, programmes and studies can be attributed to differences in the programmes' objectives, their setup and coverage, the structure of the labour market, and very importantly, differences in the data and the specific methodology used for the evaluation of the labour market effects.

This section analyses the labour market effects of CTs in the case of South Africa, a country characterised by a well-developed system of social grants covering many population groups and a total of 14 million beneficiaries (representing about 29% of the total population) in 2010 (Box 2.4). South African social grants are fairly generous (with the

### Box 2.4. **Social assistance in South Africa**

South Africa's social assistance programmes have their roots in the first half of the XXth century and were introduced with the objective to support white people. The state welfare system was substantially reformed after the end of Apartheid. Until then, the system was mainly dominated by means-tested, non-contributory old-age and disability pensions with conditions attached to the size of the benefit as well as eligibility that favoured the white population. The reform aimed at changing this and, twenty years later, the picture has been reversed, with the majority of grant beneficiaries being black Africans.

**The expansion of the social assistance system**




*Source:* SOCPEN system: *www.sassa.gov.za* for Panel A and General Household Survey (GHS) 2002-08 for Panel B.

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Box 2.4. **Social assistance in South Africa** *(cont.)*

At the same time, there has been sharp increase in expenditure on welfare and social assistance (Niño-Zarazúa *et al.*, 2010) from ZAR 30.1 billion (3.2% of GDP) in 2000/01 to ZAR 101.4 billion (4.4% of GDP) in 2008/09. The coverage of social grants in South Africa has increased by 50% between 2005 and 2010. The bulk of the increase is driven by the expansion of CSG by 72% between 2005 and 2010, reaching a total of 9.6 million children (and over 10 million in 2010/11). As shown in Panel B of the figure, the share of households receiving some income from social grants has increased substantially in the past eight years and even more so for black African households. Grant recipiency has risen sharply among the black population, from just below 30% in 2002 to above 50% in 2008, whereas this share has remained fairly stable for the non-black population. The impact of the social grants on limiting the extent of poverty has been substantial. According to Woolard and Leibbrandt (2010), without government grants poverty would have worsened between the end of apartheid and today, mainly because unemployment has increased and hence labour income has become less important for a large number of households.

The labour market effects of the largest two CT programmes in South Africa are examined in this section: the OAP and CSG. The OAP was introduced in 1928, but has been heavily reformed since then. It is an extensive and relatively generous system, covering more than 80% of the elderly population (Leibbrandt *et al.*, 2010) and offering about twice the median per capita income to pensioners (married couples may receive up to twice the amount single pensioners receive). The age eligibility is 60 for women and has gradually dropped from 65 to 60 for men. In principle, the amount of the pension is means-tested and there is a reduction by 50 cents for every Rand of other income earned. In practice, however, everybody gets the full amount. The means-test makes ineligible almost all the white population and about 20% of the black population. The OAP is considered as a fairly successful programme in reaching the poor in rural areas, women but also children in three-generation households and contributes in significant ways to poverty reduction for households (Ardington and Lund, 1995). Women are over-represented among beneficiaries (more than two-thirds of beneficiaries) because they are eligible at a younger age and live longer. In addition, they are less likely to be eligible for contributory (private) pensions because of their poorer labour market performance and weak labour force attachment (Leibbrandt *et al.*, 2010).

The CSG was created in 1998, and was initially based on a household income means-test and imposed various constraints in terms of documents collection but also requirements to show efforts to secure income from other sources. As a result, take-up was fairly low and led to the revision of the eligibility conditions and other related requirements. The CSG changed the approach of child-related social transfers in South Africa by paying the benefit to the care-giver rather than to the child. As a result, women who were the majority of care givers were given some freedom in the use and allocation of such funds. Initially, the means-test was applied to the household income, but because of low take-up rates in the early years of operation of the programme, this was altered to only include the income of the care giver and his/her spouse. In 2008, the means-test was amended and was set at ten times the value of the grant. In addition, the means-test is doubled for married couples with two earners, making it more generous and hence more likely to pass it for poor households. In addition, substantial increases have taken place in terms of the benefit level, which increased from ZAR 100 in 1998 to ZAR 250 in 2010/11, reaching 2% of average wages.

Box 2.4. **Social assistance in South Africa** *(cont.)*

Take-up of the CSG has increased dramatically over the past decade, and by 2010, the monthly CSG was paid to care-givers on behalf of 9.6 million children, accounting for about 54% of all children below 15. A substantial increase is also observed in recipiency rates for newborns whose mothers started to increasingly request the grant as the programme was gaining momentum and was becoming widely known among the poorest households. The increase in coverage reflects to a large extent the increased confidence in the system. However, the bulk of the increase is the result of the gradual extension in age eligibility introduced over the years. The CSG was initially available only to children until their seventh birthday. It was gradually extended in three phases to higher age groups and, from April 2005, the age threshold was set at 14 (*i.e.* children had to be under 14 years to receive the grant). Between June 2005 and July 2006, over 1.5 million new children received the grant, after which new take-up slowed again. In 2008, the eligibility conditions were amended again with the objective to cover all children below age 18 in three phases until 2012. This age extension is estimated to further increase the number of beneficiary children by about 2.4 million by 2013. In recent days, there are discussions on the introduction of school enrolment and attendance as conditionalities for receipt of the CSG.

exception of the CSG), and eligibility is based on a number of group-specific conditions but also a relatively weak means-test. A comparison between the potential labour market effects of the OAP and the CSG, two programmes with different target populations, eligibility rules and more importantly different levels of benefits paid, allows a better understanding of the mechanism through which CTs may affect labour market outcomes.

CTs can affect labour-market-related decisions and outcomes of beneficiaries, their families and other household members through several channels. In the case of most emerging economies, where extended families are the norm, spillover effects of CT receipt on other household members can be particularly important if income is pooled in the household. CTs may also have broader effects on the community or local markets with subsequent feedback effects on beneficiary households. CTs can have a direct impact on labour force participation and employment rates, as well as longer-term effects through investments in schooling and health for children. However, the analysis presented here is mainly concerned with the short-term effects of CTs.

### *The income and substitution effects of cash transfers on the labour markets are likely to be negative and relatively small*

Income transfers affect labour supply decisions through an income and a substitution effect. The *income effect* suggests that if leisure is a normal good, labour supply will drop when household income increases. In the emerging economies, where benefit levels are fairly low in comparison with those in the OECD countries, the expected impact on labour supply is likely to be small.[44] In addition, CT programme beneficiaries in emerging economies are generally very poor and the income elasticity of leisure is likely to be low. Moreover, for some households, the reduction in income from child work and the increase in school expenditures associated with the additional school enrolment in the case of conditional cash transfers can offset the amount of the transfer, implying a limited pure income effect of the transfer (Grosh *et al.*, 2008).

The *substitution effect* operates in the same direction by reducing labour supply incentives if CTs are conditional on labour market status or if there is a means-test that imposes an effective marginal tax rate on labour supply, as is the case for the majority of programmes reviewed in this chapter (see Table 2.2). Potentially eligible beneficiaries understand that they may have to reduce labour supply in order to pass the means-test providing access to the CT. The substitution effect depends on whether the means-test of the programme is binding or not, that is, whether it imposes an *implicit tax* on labour income. In the South African OAP, this is very unlikely given that the income bracket that determines eligibility is fairly high and hence is not binding for the majority of black candidates who represent the main group of beneficiaries. In addition, means-tests are not performed regularly. This is in contrast to such programmes in the OECD countries, where eligibility is conditional on labour market status and regular checks are the norm. In programmes such as *Oportunidades*, the fact that the means-test is evaluated only every three years, combined with relatively weak administrative capacity of the authorities, may imply limited actual enforcement of any benefit withdrawal decision. Likewise, in the majority of programmes covered in this chapter there is no provision for gradual withdrawal of the benefit in case of increases in the beneficiary's income. One exception to this is the OAP in South Africa. Moreover, the use of proxy means-tests relative to actual income declarations in the emerging economies implies a less direct link with earned incomes in these countries compared with the OECD countries.

To the extent that means-tests and deductions of non-contributory benefits relative to income from informal work raise the effective marginal tax rate on income from a formal job, they can increase the likelihood of informal employment, or the time that people spend on informal work. The final outcome depends on the extent of the wage gap between the formal and the informal sectors on the one hand, and on the generosity and eligibility conditions of the non-contributory programme on the other. A high effective marginal tax rate is likely to have a smaller effect in the case of large productivity differences between formal and informal employment. This possible labour market effect is similar to the one expected in the case of non-contributory health programmes (see Part C below) but is unlikely to be relevant in the case of most CTs which are not related to the labour market status of the beneficiary.

### *Alleviating liquidity constraints through cash transfers may help overcome barriers to labour force participation and improve productivity*

When CT programmes are targeted at older household members and children, such income can relax care constraints (imposed by the presence of older and/or younger household members) and this effect is likely to be more important in emerging economies in comparison with OECD countries because of the extended family and household structures characterising the former. As a result, other adult members are enabled to look for work outside their homes and in some case migrate to work in neighbouring communities or the city. On the other hand, CCTs may impose time constraints to parents (especially for mothers) who are asked to accompany their children to health clinics and who are hence obliged to reduce their work hours (Grosh *et al.*, 2008).

CTs can increase the time spent on *job search*, thereby improving labour market outcomes and future incomes. *By allowing riskier investments,* CTs can also increase productivity. Moreover, by providing basic income support, social transfers enable

individuals to avoid less efficient insurance mechanisms and beneficiary households may be able to finance additional schooling for the children and young adults, leading to higher future earnings.

### *The empirical evidence on the impact of cash transfers on labour market outcomes is mixed*

Despite the availability of appropriate micro-data in many countries in Latin America as well as South Africa, the empirical evidence on potential labour market effects in the emerging economies covered in this chapter remains fairly limited and focuses mainly on a few countries, such as Mexico, Brazil, Chile and South Africa. The empirical evidence on the impact of social grants on labour supply in South Africa is more extensive compared with that on Latin America. This is mainly explained by the generosity and extensive coverage of these programmes on the one hand and the availability of good-quality micro-data allowing advanced empirical analyses, on the other. It may also reflect the specific labour market situation in South Africa which leaves an important part of the population in unemployment and eventually in inactivity. Overall, a broad range of programmes are examined in the literature and a variety of methods and data are used, showing varying results (a review of these studies can be found in Annex 2.A3 in OECD, 2011b).

### *The labour market impact of cash transfers targeting the elderly is not clear-cut*

Early evidence from South Africa suggested fairly negative effects of the OAP on labour force participation of younger adult household members. Bertrand *et al.* (2003) show a drop in the labour force participation of prime-age resident males in households with pension beneficiaries while participation of resident women remains unaffected.[45] By contrast, using LFS data between 2001 and 2004, Ranchhod (2010) finds that the cessation of OAP significantly increases employment rates for middle-aged and older men and women with a pensioner leaving the household.[46]

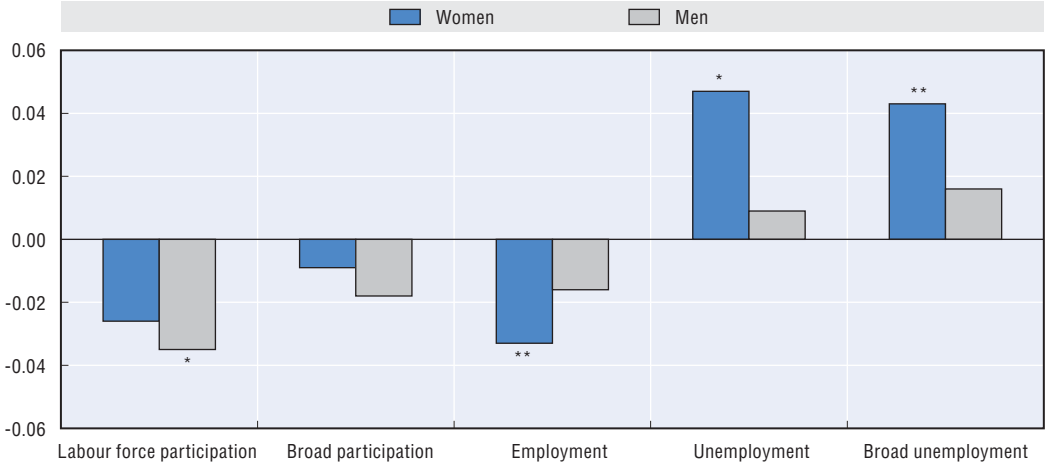
Moreover, in the context of the South African extended families and the high internal migration rates, restricting the impact to resident members of the household may not necessarily give the full impact of CTs since it might miss out the behaviour of the non-resident migrant workers (Posel *et al.*, 2006). In addition, household composition may be endogenous to the receipt of a social grant as argued by Ardington *et al.* (2009). The authors use panel data for the KwaZulu-Natal region and find that the negative impact on labour supply disappears when the impact on non-resident household members is taken into account. Instead, a small positive impact on participation is found especially for non-resident members, indicating a rise in the likelihood of becoming labour migrants.[47]

With the objective to provide more insights on the potential impact of social transfers on broader labour market outcomes, new econometric evidence from South Africa is presented in this section. The analysis is novel because of the data used, the long period examined and in particular the population group that is analysed.[48] The impact of the OAP on labour market outcomes of young and prime-age adults is identified by comparing black adults (20-45 years old) in households with eldest members just above the age-eligibility threshold for receiving the OAP with those in households with eldest members just below the age threshold and hence not likely to be receiving the OAP. Although this comparison

does not allow one to draw general conclusions because it is based on a specific sample, it is likely to be more appropriate than comparisons between households that receive the OAP and those that do not because there is a reduced risk of interpreting the effect of unobserved factors that jointly determine household composition and labour market effects as a pure OAP effect on individual labour market outcomes.

The new evidence on the potential impact of the OAP on adult household members is presented in Figure 2.10. While the main focus of the analysis is on labour supply, results for employment and unemployment are also reported. In the context of South Africa, it is important to consider two definitions of labour force participation and unemployment, the *broad* and the *standard* one. Broad unemployment includes discouraged workers who are ready to start working but not actively search for a job whereas standard unemployment only includes those who are also actively searching for work. Likewise, broad labour force participation includes discouraged workers who are willing to work but do not actively engage in job search. Standard labour force participation does not include discouraged workers. The results indicate that women aged 25-40 living in households with OAP-eligible adults are less likely to be employed and more likely to be unemployed compared with those in households with no OAP-eligible members. For men, the sole negative and significant effect is found on the probability of standard labour force participation.

Figure 2.10. **The impact of OAP on basic labour market outcomes**[a, b, c]




OAP: Old Age Pension.

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

*a)* Samples include black women and men aged 20-45.

*b)* The coefficients presented are marginal effects estimated from separate regressions which include controls for age, education, marital status, household size, location (province dummies), the number of children by age group (0-6, 7-8, 9-10, 11-13 and 14), the number of adults aged above 55, total household expenditure, a dummy variable on the type of dwelling (informal *versus* other) and controls for a number of dwelling characteristics such as the quality of the roof and the walls and access to electricity.

*c)* Broad labour force participation includes discouraged workers who are willing to work but do not actively engage in job search. Labour force participation refers to standard participation and only includes those who actively search for work. Likewise, broad unemployment includes those who are ready to start working and (standard) unemployment those who have actively searched for work. All others are classified as non-participants.

*Source:* OECD estimates based on the General Household Survey for South Africa (2002-08).

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Poor households are more likely to face liquidity constraints and hence are expected to react in different ways to the receipt of the grant compared with less poor households.[49] Overall, no major differences are found when the effect of OAP eligibility is estimated for households by their dwelling's status. Only men in poor households with an eligible eldest member are less likely to be unemployed compared with men in households without eligible members or those in non-poor households with eligible members (see Puymoyen and Xenogiani, 2011).[50]

As noted above, social pensions are also likely to affect the composition of employment between the formal and the informal sectors by lowering the incentives to participate in the contributory programme. Evidence from the Chilean pension system prior to the 2008 pension reform shows increased incentives for informal work and reduced pension contributions for future eligible beneficiaries (Valdés-Prieto, 2009). This effect was mainly driven by the design of *Pensión Asistencial* (PASIS) and the minimum pension guarantee (MPG). For the former, low-income workers had the incentive to contribute up to the point where the contributory pension would be at least half of the minimum pension because, after that point, the amount paid by PASIS would be zero (a 100% EMTR). The same held for MPG, which required only 20 years of contributions. Beyond that point, there were increased incentives to work informally and evade contributions. The current pension system has indeed improved incentives related to participation and contributions in the contributory programmes, by achieving far greater integration of the two systems. This is done through a gradual withdrawal of the social pension under the reformed system, in comparison with the pre-2008 programmes.

***Less generous programmes may be more neutral to the labour market…***

Since general CT programmes that do not target the elderly in emerging economies are less generous compared with social pensions (Figure 2.9), they are likely to have a smaller impact on the labour market. Indeed, existing evidence from Brazil, Mexico and South Africa seems to suggest that CTs targeting poor households have small or even positive effects on individual labour market outcomes. *Oportunidades* in Mexico is not found to have any negative impact on labour supply (Skoufias and Di Maro, 2008). Similar results in terms of labour supply are found for the CCT programmes in Brazil (Medeiros *et al.*, 2008), except for women heads of households for whom a negative effect on labour supply is found.[51] In a recent study of CCTs in Brazil, Foguel and Paes de Barros (2010) find a small positive impact of the programme on male labour force participation, and a small negative impact on hours worked for women earning above the median household income. In a comparative paper, Alzúa *et al.* (2010) use a difference-in-differences approach to analyse the impact of selected CCTs in Mexico, Nicaragua and Honduras. They find no evidence of negative and significant effects on employment or of any labour reallocation between agriculture and other sectors. Finally, in a recent paper by Ribas and Soares (2011) a differential impact of the programme is found in poor areas and large cities in Brazil. In the former, *Bolsa Familia* is associated with an increase in labour supply even if this is translated into higher unemployment rather than employment, possibly because of the lack of available jobs and a reduction in hours worked, whereas in the latter it is associated with a decline in labour supply and participation in the formal sector.

Empirical evidence on South African Child Support Grant is scarcer compared with that on OAP, mainly because of the difficulty in identifying an adequate evaluation strategy and also possibly because of the substantially lower benefit paid by the programme. Eyal and

Woolard (2010) provide the most recent and complete study of the CSG and its impact on labour markets using a variety of techniques. Grant receipt is associated with a higher probability of labour market participation, lower unemployment rates and a higher probability of being employed.

The impact of the CSG on labour market outcomes is examined with a variety of methods in Tables 2.3 and 2.4 (for more details, see Box 2.5 and Puymoyen and Xenogiani, 2011). The main impact of the CSG on individual labour market outcomes can be summarised as follows:

- Mothers with age-eligible children to receive the CSG, have a higher probability of broad labour force participation (Table 2.3, row 1). However, increased participation seems to result in a higher probability of unemployment (both broadly and narrowly defined) rather than higher employment rates.[52] The higher effect on narrow unemployment compared with that on broad unemployment, may suggest that mothers of eligible children are relatively more likely to engage in active job search.[53]
- Most labour market effects seem to disappear when comparisons are drawn between mothers of eligible and non-eligible children one or two years above and below the cut-off point. Having a CSG age-eligible child only increases the probability of (broad) labour force participation for mothers and relative to those with children one or two years above the age eligibility cut-off (Table 2.3, rows 2-3). This is in line with the evidence in Eyal and Woolard (2010) and suggests that when comparisons are drawn between two appropriately-defined groups who are less likely to differ in other substantial ways, the impact of potential CSG receipt is close to zero for most labour market outcomes and only mildly positive for broad labour force participation of mothers.

Table 2.3. **CSG receipt affects labour market outcomes**[a, b, c]

| | Labour force participation | Broad participation | Employment | Unemployment | Broad unemployment |
|---|---|---|---|---|---|
| Age eligibility | 0.012 | 0.033** | –0.012 | 0.044** | 0.039** |
| Youngest child ±1 year from cut-off | 0.032 | 0.051* | –0.007 | 0.051 | 0.041 |
| Youngest child ±2 year from cut-off | 0.000 | 0.037* | 0.003 | 0.005 | 0.023 |

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

*a)* Samples include black African mothers aged 20-45.

*b)* The coefficients presented are marginal effects estimated from separate regressions. See note *c* in Figure 2.10 for a list of the variables included in the regressions and the definition of (broad) labour force participation and (broad) unemployment.

*c)* Observations are clustered at the household level.

*Source:* OECD estimates based on the General Household Survey for South Africa (2003-08).

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### *... and may be less negative and even positive for poor households*

Table 2.4 presents the analytical results for mothers by allowing for a differential impact between poor and non-poor households.[54] When all mothers are considered (Panel A), actual CSG receipt increases the likelihood of broad participation more for mothers in poor households relative to those in non-poor households. In addition, the impact of CSG receipt on standard participation is negative for mothers in non-poor households and may be positive for those in poor households. Moreover, both the negative impact on employment and the positive one on unemployment become less important

Table 2.4. **The labour market impact of the CSG differs across households**[a, b, c, d]

| | Labour force participation | Broad participation | Employment | Unemployment | Broad unemployment |
|---|---|---|---|---|---|
| | | | Panel A. **All mothers** | | |
| At least one CSG | –0.015* | 0.012** | –0.063** | 0.093** | 0.084** |
| At least one CSG* poor | 0.028** | 0.019* | 0.045** | –0.045** | –0.042** |
| Age eligibility | 0.003 | 0.022** | –0.015 | 0.041** | 0.037** |
| Age eligibility* poor | 0.037* | 0.041** | 0.015 | 0.009 | 0.008 |
| | | | Panel B. **Mothers with children +/–2 years from eligibility cut-off** | | |
| At least one CSG | –0.040* | –0.011 | –0.084** | 0.092** | 0.101** |
| At least one CSG* poor | 0.065* | 0.055** | 0.096** | –0.065 | –0.073* |
| Age eligibility | –0.003 | 0.024 | 0.000 | 0.005 | 0.019 |
| Age eligibility* poor | 0.013 | 0.048* | 0.014 | –0.003 | 0.018 |

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

*a)* CSG: Child-support grant. Samples include black Africans mothers aged 20-45.

*b)* The results should be read two by two in every column as these are drawn from the same regression. They are marginal labour market effect on CSG receipt (or eligibility) and the differential impact for poor households. See note *c* in Figure 2.10 for a list of the variables included in the regressions and the definition of (broad) labour force participation and (broad) unemployment.

*c)* Poor is a dichotomous variable taking the value one for households living in dwellings with very weak or weak state of roof. The results are very similar when either variable is used as a proxy for poor dwelling conditions and they are also robust (although less statistically significant) when alternative poverty proxies are used, such as whether the dwelling is informal and whether it has access to electricity.

*d)* Observations are clustered at the household level.

*Source:* OECD estimates based on the General Household Survey for South Africa (2003-08).

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(and insignificant) when CSG receipt is considered in poor households compared with the non-poor ones.

Panel B of Table 2.4, presents comparisons between mothers with children two years below/above the age-eligibility cut-off. The results suggest that CSG receipt is associated with improved labour market outcomes for mothers in poor households, in comparison with those in non-poor households. Mothers receiving the CSG on behalf of their children are more likely to be in the labour market if they are in poor households. In addition, they are more likely to be employed both relative to CSG beneficiaries in non-poor households and non-CSG beneficiaries. Moreover, their chances of being unemployed are lower compared with those of CSG beneficiary mothers in non-poor households. This may suggest that CSG receipt helps overcome liquidity constraints for mothers in poor households and hence enables them to engage in active job search and in employment.

### *Cash transfers reduce child labour and can improve future labour market outcomes of today's youth*

CTs may have a direct labour market impact for beneficiary children by reducing the opportunity cost of having them in school rather than in the labour market. Indeed, evidence from Mexico, Brazil and South Africa suggests a negative impact of CT receipt on *child labour* (see Annex 2.A3 in OECD, 2011b, for a detailed list of studies on these issues). A strong negative impact of *Progresa* on hours spent on paid and domestic work is found by Skoufias and Parker (2001) for boys (only on domestic work for girls) and a similar negative impact of selected CCTs on child labour is found in Brazil by Ferro and Nicollela (2007). In South Africa, the CSG is also found to have a negative effect on child

### Box 2.5. **Estimating the impact of the Child Support Grant on labour market outcomes**

A variety of methods are used to estimate the impact of CSG receipt on individual labour market outcomes (see Puymoyen and Xenogiani, 2011, for more details) taking into account, to the extent possible, that CSG receipt and labour market outcomes may be jointly determined by observed and unobserved factors, which complicates the estimation of the true causal effect of CSG receipt on labour market outcomes.

- First, a comparison is made between the labour market outcomes of mothers with an age-eligible youngest child and those of mothers whose youngest child is not eligible for the grant (first row in Table 2.3). The analysis controls for various characteristics at the individual and household levels such as education, age, marital status, household location and size to account for the possibility of endogeneity bias due to the joint determination of CSG receipt and labour market outcomes by observable characteristics at the individual or household levels. By using age eligibility rather than actual CSG receipt,[1] it partly controls for unobserved characteristics which make some mothers more likely to apply for CSG than others, even though they all have age-eligible children. If mothers who apply for the grant have more motivation and are more informed relative to those who do not apply although they have eligible children, these characteristics may also imply that they will have different (improved) labour market outcomes which will be wrongly attributed to the CSG receipt on behalf of their youngest child.
- In a second estimation, labour market outcomes of women with youngest children who are one or two years below the age-eligibility cut-off point (and hence eligible to receive the CSG) are compared with those of women with youngest children who are one or two years above the age-eligibility cut-off point, who are not eligible for the grant. This analysis follows closely the study by Eyal and Woolard (2010)[2] who conduct an in-depth and convincing evaluation of the impact of CSG on labour force participation of mothers. The econometric framework is a modified version of that developed by that paper as it estimates the impact on a broader set of labour market outcomes including a distinction between paid work, work in own business and domestic work (Puymoyen and Xenogiani, 2011). Moreover, it extends the analysis to all adult men and women in the household as evidence suggests that the impact may go beyond the main recipient (results can be found in Puymoyen and Xenogiani, 2011). If income is pooled within the household, then any potential effect of the grant on adult labour market outcomes should be similar whether it is the mother of the child or any other household member. Furthermore, the analysis controls for the age composition of the household and in particular of older children that the mother has or older children who live in the household as these are also likely to have a direct impact on labour market outcomes. Although this method is likely to better capture the true causal impact of CSG potential receipt on individual labour market outcomes, it also has certain weaknesses. It estimates the potential impact for a specific group of the population (that of adults/mothers in households with youngest children just above and just below the age-eligibility threshold). As a result, the coefficients are estimated on a smaller sample and hence are likely to be less precisely estimated. More importantly, the results cannot be easily generalised to the entire population.

1. The estimations have also been performed with CSG receipt as the variable of interest and the results can be found in Puymoyen and Xenogiani (2011). This variable is also used in the estimations on the restricted sample of mothers with children two years above/below the cutoff eligibility point in Table 2.4.
2. The lack of data prior to the increase in CSG recipiency rates (before 2002) does not allow conducting a differences-in-differences estimation similar to the one implemented in Eyal and Woolard (2010).

labour (Williams, 2007). Edmonds (2004) uses data for the late 1990s and finds that receipt of the OAP by a household member is associated with lower child labour, especially in households with low formal education.

Moreover, CTs can potentially affect labour market outcomes in the long-term through their impact on investment in health and education of beneficiary children. Empirical evidence shows positive effects of CTs on *child nutrition* and *height for age* in Brazil, Colombia, Nicaragua and South Africa. Such programmes are also found to have a positive impact on *school attendance* in a number of Latin American countries, including Mexico, as well as in South Africa [see Annex 2.A3 in OECD (2011b), for a review of relevant studies on these issues].[55]

If the positive impact of CCTs on health, nutrition, education enrolment and attendance is translated into improved human capital and labour market outcomes for the future labour market entrants, this may imply a potential *long-term* labour market effect of such transfers.[56] However, to date there is only limited evidence on the long-term labour market impact of CTs, mainly because the young beneficiaries of early CCTs are only now beginning to enter the labour market and solid empirical evidence on their labour market outcomes is still scarce.[57]

## 7. Policy challenges and difficult trade-offs

Although differences exist across programmes and population groups studied, the evidence presented above suggests that the short-term effects of CTs on the incentives to participate in the labour market in the emerging economies are limited and tend to be less negative for the poorest households facing liquidity constraints. The longer-term labour market effects of CCTs can indeed be positive, if conditionalities related to investments in education and health translate into higher human capital of the future generation and lead to better labour market outcomes. Nonetheless, important challenges related to the design of CTs and their long-term strategy remain.

### *The use and design of means-tests matter for the labour market effects of cash transfers*

All CT programmes have a major objective of reducing poverty by extending coverage to the poor. Means-tests, despite their costs and discouragement of the neediest individuals from applying, are recognised as an efficient way of achieving the objectives of CTs for a given budget (see the discussion in OECD, 2010a). However, because of administrative constraints (both in terms of budget and capacity), means-tests are infrequent in the majority of programmes operating in the emerging economies. Furthermore, proxy means-tests in many programmes only partially reflect real incomes and consumption levels and are rarely verified for their validity (except *Oportunidades*). Although these issues may result in loose targeting and the inclusion of non-poor households among beneficiaries, they are likely to lead to weaker – or no – labour market effects because the marginal effective tax rate imposed on labour supply would also be weaker in comparison with the situation in many OECD countries, where means-tests are appropriately conducted and verified in regular intervals. The experience of *Oportunidades* suggests that as CT programmes grow in emerging economies, more resources will be invested in means-tests and hence these are more likely to capture the real welfare situation of the household. However, at the same time,

more attention may be needed then to minimise the potentially increased disincentives for adult labour force participation.

There would be at least two possible ways to reduce the substitution effect on labour supply operating through the means-test. First, different *thresholds for entry into and exit* out of the programme could be established. Second, a *gradual benefit withdrawal* with additional earned income could be introduced and enforced.

In the case of social pensions, not only does the use of a means-test play a role in the potential labour market effects of CT programmes, but so also does the *reference income* used in it. In the OECD countries, usually only the individual's income and that of his/her spouse are considered to determine eligibility for social pensions, as is also the case in South Africa. Along these lines, the 2008 pension reform in Chile changed the basis for the means-test from the household income to that of the individual and his/her legal spouse (OECD, 2009). Given the importance of extended families and multiple families in the same household in most emerging economies, this may have implications for household composition. Use of a household-level means-test in the case of social pensions may induce the elderly to move out from their household and away from their family in order to receive the maximum amount of cash from social transfers. As a result, informal child care usually provided by older household members in these countries will become scarcer, imposing care-related constraints on labour force participation of mothers and other adults in the household, which may have to be taken into account when designing care policies.

### *Certain conditions need to be satisfied for conditionalities to work*

Despite concerns about the administrative cost and discouragement effects of CCTs (Fiszbein and Schady, 2009; Aguero *et al.*, 2009), the existing evidence suggests that they have the potential to improve immediate or short-term health and education outcomes of beneficiary children. However, for conditionalities to work and be translated into *longer*-term improvements in human capital and labour market outcomes, certain conditions need to be met.

The efficiency of conditionalities depends on *monitoring*, and (enforced) *sanctions in case of non-compliance*. Both vary greatly across programmes and countries. The frequency of conditionality monitoring ranges from monthly (as was the case in the old Social Risk Mitigation Project in Turkey which ended in 2007) to once a year (SUF in Chile). The type of sanctions and their enforcement depend in turn on the type of conditionalities imposed and the administrative and enforcement capacity at the local and central government levels. Among the programmes examined in this part of the chapter, *Oportunidades* withdraws benefits either temporally or definitely according to non-compliance, while Chile Solidario imposes only light penalties and SUF no penalties. For example, in the case of *Oportunidades* the benefit for families is temporarily withdrawn after four months of non-compliance with health co-responsibilities, while it is permanently withdrawn if recipients sell or exchange their *in-kind* benefits (nutritional supplements). But even in the case of these programmes, sanctions are rarely enforced. Monitoring and enforcement of sanctions increase the cost of the programme and can have adverse effects on participation in the programmes for the poorest individuals, in particular for those in poor remote areas, for whom transportation cost can be high. Interestingly, there is evidence that mild verification and less-than-perfect enforcement could still work as even the announcement of conditionalities in a CT programme may induce participants to comply (Grosh *et al.*, 2008).

The *supply of health and education services of appropriate quality* is a key factor determining the effectiveness of conditionalities (Grosh *et al.*, 2008; Ribe *et al.*, 2010, on

Latin America). Teacher absenteeism and poor school and clinic infrastructure are common in emerging economies and in particular in remote rural areas of these countries. Evidence shows that distance from the nearest school matters for participation in *Oportunidades* (Grosh *et al.,* 2008; de Janvry and Sadoulet, 2005) and transfers were usually not sufficient to allow households to pay the transportation cost to reach the nearest school and health centre in the context of the old Social Risk Mitigation Project in Turkey (Adato *et al.*, 2007). Some countries have indeed made important steps to improve the supply and quality of such services (see Part C below). *Chile Solidario* offers an interesting example of interventions on the supply side by allowing for coordination among health providers, social workers and the municipalities. In the context of *Oportunidades*, the Mexican Government took important initiatives to increase the supply of schools in specific areas of the country by rehabilitating old rural schools and constructing new secondary schools (Levy and Rodriguez, 2004). Alternative ways to ensure appropriate supply of services include collaborations with NGOs and community groups. But implementation difficulties have been experienced in some cases.

### *Moving towards more integrated and complete programmes*

Countries have difficulties in assessing whether a *unique* CT programme covering the vulnerable population is sufficient or if *separate* programmes targeting specific groups such as children, the elderly, the sick and the disabled or ethnic minorities, are needed. There is no strategy fitting all cases and the decision depends on the types of vulnerable groups, their presence among the poor, the family and household structure in the country and very importantly the political economy of potential reforms in the country. Overall, it is reasonable to believe that integrated programmes can effectively cover all the needy individuals while keeping administrative costs down. *Oportunidades* in Mexico has already made some steps towards that by including the Programme *Apoyo para Adultos Mayores* in the main programme targeting poor households. There are certainly other ways of exploring synergies across the different programmes, such as the use of common means-tests and administrative offices, as is the case in Chile, Mexico and Brazil (Grosh *et al.,* 2008). Overall, special attention should be paid to ensuring equity in the case of unique programmes targeting the poor by, for example, making the level of the benefit paid a function of household characteristics and structure. This is currently the case in Mexico and South Africa where the number of benefits depends on the actual number of children, or Mexico and Turkey (in the old programme, Social Risk Mitigation project) where the benefit is also differentiated by grade or gender of the children, with higher amounts paid for secondary-grade children and for girls. A similar approach accounting for household composition should be followed if such programmes have to integrate those programmes targeting the elderly.

However, there are special cases in which CT targeting on a specific group may be needed. This is likely to be the case when such transfers can empower vulnerable members within the household and the community who are discriminated against by informal institutions and when the stigma associated with the receipt of the transfer for these groups is lower in the case of targeted interventions. Country experiences suggest that there is broader political support for interventions targeting the elderly as the need to focus on this group seems clearer to the public and hence easier to defend by politicians. Similarly, the stigma associated with the receipt of the transfer is likely to be smaller in the case of SPs in comparison with general CTs, especially if this is administered by a social security agency rather than a welfare one.

# PART C.
# Extending Health Protection Coverage: The Labour Market Challenges

This part of the chapter will focus on how health protection systems and their extension may affect labour demand and supply. Compared with other social benefits such as unemployment benefits or cash transfers discussed in Parts A and B, health benefits *per se* provide no income to beneficiaries and are thus not likely to affect the labour supply directly. However, the *financing of health benefits*, when at least partly based on taxes weighing directly and exclusively on labour, such as social contributions, can have an impact on labour market outcomes. This implies that only emerging countries having *mandatory contributory* health insurance systems financed out of social contributions based on the wages of affiliates are considered in this part, namely Chile, China, India, Indonesia, Mexico, and Turkey. Brazil and South Africa, for their part, have fully-fledged universal national health services financed exclusively out of general taxation.[58] Other effects of health protection on labour market outcomes transit through its impact on productivity. Health is a key factor for promoting productivity, and for the capacity to learn in school and grow physically and intellectually; better health is also likely to reduce work interruptions due to sickness. Although important, these effects are not addressed in this chapter.

One difficulty faced in examining the implications of the extension of health protection coverage for the labour market is that, in countries with health insurance programmes, it is often difficult, and perhaps even not relevant, to distinguish between the financing of health protection and that of social protection at large. In fact, the various existing social insurance programmes are often bundled together (*e.g.* Chile, Indonesia, Mexico and Turkey). And even when they are not by rule, they often are in practice, because employers contributing to one social programme most often also contribute to the others. Hence, the channels through which they affect the labour market are common, and they often have to be considered together.

## 8. Health protection systems and their coverage

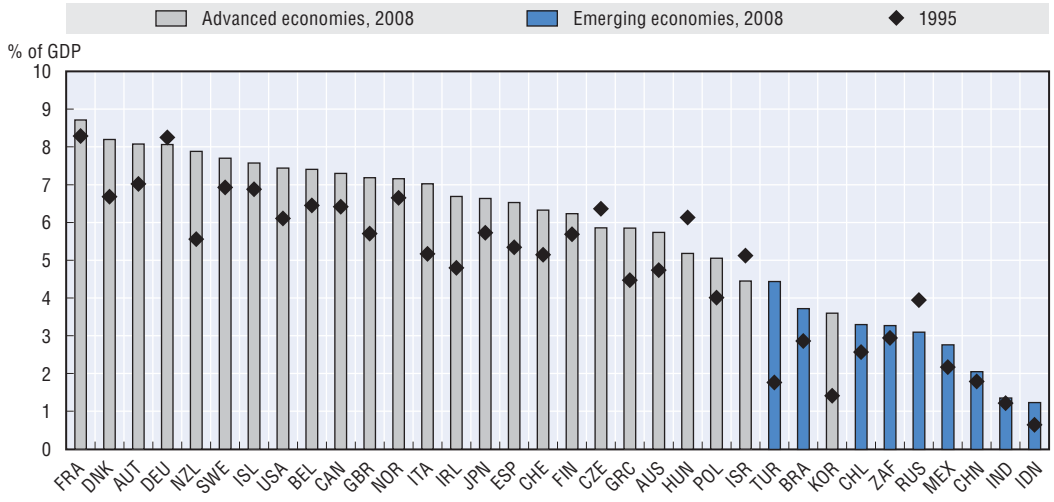
Having access to health services is essential to the welfare of the population, as it is for economic and social development. For a large majority of the population, this is conditioned by the existence of a health system, which *i)* provides financial protection to make it affordable for people to access health services; and *ii)* allows effective access to these services by permitting the development of health services (infrastructure, workforce, medical goods and products).

### *Public health expenditures remain significantly lower than in most OECD countries*

One important indicator of the development of the "health protection effort" is the amount of public resources allocated to health, which is a key factor for effective access to health care. Public health expenditure is obviously lower in the countries considered in this chapter than in most OECD countries, but there is also large variation among them (Figure 2.11). Public health expenditure is about 6 times lower than the OECD average in India and Indonesia and three times lower in China. Health expenditure is relatively higher in Chile, South Africa, Russia, and Brazil, and highest in Turkey. Mexico is in an intermediate position.

Figure 2.11. **Public expenditure on health**

Percentage of GDP




*Source:* National health accounts, WHO, *www.who.int/nha/en*; *OECD Database on Health*.

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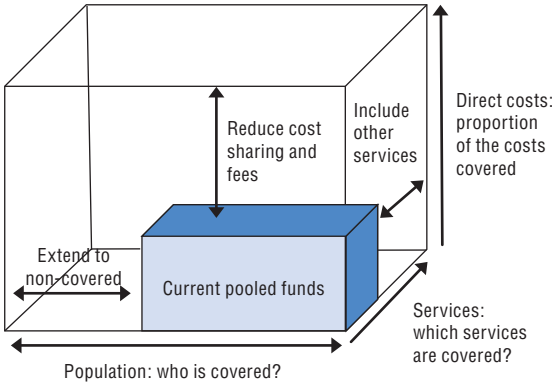
### *What does health protection coverage mean?*

The degree of protection provided by the various health programmes is often referred to as the coverage of the system. This notion encompasses three dimensions (Figure 2.12). The first one is the *extent* of health protection, *i.e.* the share of the population who may potentially receive benefits from the programmes. The second is the *scope* of health protection, that is the range of health services that are covered. Finally, the *level or depth* of health protection corresponds to the proportion of the costs of the services that is covered. These three dimensions matter in measuring the *effective protection* provided by health systems to the population, as well as when discussing the extension of coverage.

Figure 2.12. **The various dimensions of health coverage**



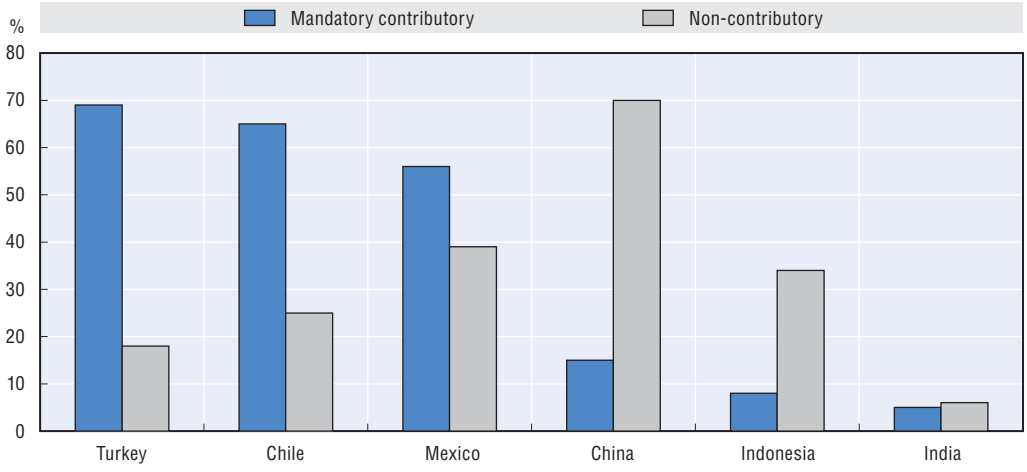

*Source:* World Health Organization (2010), *Health Systems Financing – The Path to Universal Coverage*, World Health Report, Geneva.

### *Governments have developed non-contributory programmes to compensate for the limited coverage of contributory health programmes*

Historically, countries with contributory health insurance programmes have in fact had "two-tiered" health systems in place. First, for those contributing and often their dependents, health insurance programmes cover the costs of publicly or privately provided health services.[59] These programmes cover workers in the formal sector, and thus a smaller share of the population than in higher income OECD countries. Yet, population coverage of the contributory programmes varies significantly across emerging countries: in Turkey and Chile they cover about two-thirds of the population, but only a small part of the population in China, India and Indonesia (Figure 2.13). In Mexico, social security covers more than half the population. Second, those not covered by health insurance have open access to a public provider network, financed out of general taxation.

Figure 2.13. **Population coverage of contributory and non-contributory health insurance programmes**

Percentage of total population




*Note:* Data refer to 2007 for Indonesia (contributory programme); 2008 for China, Mexico (contributory), Turkey and Indonesia (non-contributory); 2009 for Chile; and 2010 for India and Mexico (non-contributory); data for coverage of contributory programmes in India does not include the public employee programme.

*Source:* See Annex 2.A4 in OECD (2011b).

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However, open access to public health services does not imply effective health protection in practice because:

- *Population coverage* may be *de facto* limited because physical access to public health infrastructure is not always possible. This appears to be the case particularly in India, where the public health infrastructure is underdeveloped, and, given that health expenditures are decentralised at the state/local level, very inequitably shared across states and regions (PricewaterhouseCoopers, 2007). But lack of physical access in some regions is observed in many countries.
- The benefits provided by the basic public programme are generally much weaker than those provided by the contributory health programmes, implying that the *scope and depth of health protection coverage* (see above) is much lower for these groups. In these economies with limited capacity to raise taxes compared with most OECD countries,

underinvestment in health infrastructure, staff and medicines often implies low availability and low quality of care. Patients often experience long waiting lists to get health services. In India, for example, it was estimated that less than 20% of the population which seeks outdoor services and 45% of those seeking indoor patient treatment avail of such services in public hospitals.[60] The quality of public health care tends to be low, especially in some specific regions and/or in rural areas (see *e.g.* Brixi *et al.*, 2011 for China; Rokx *et al.*, 2009 for Indonesia; PricewaterhouseCoopers, 2007). Finally, effective access is limited by financial barriers: while primary care is often provided free of charges, public hospitals frequently charge fees for services, and sometimes high ones. In China, for example, fees represent the main funding source of public hospitals.

Governments in emerging economies have taken a number of policy measures to improve health protection coverage since the end of the 1990s. Some have taken initiatives to encourage workers not covered by the mandatory contributory programmes to join voluntarily the social security programmes, as in Indonesia and Mexico. However, the lack of significant subsidisation of contributions has resulted in very low levels of voluntary affiliation. Acknowledging that improving population coverage through health insurance programmes requires public subsidisation, all the emerging economies considered here have introduced some kind of non-contributory health programmes. But the strategies to extend coverage have differed in terms of: *i*) the benefits provided; and *ii*) the groups of population targeted:

- Chile and Turkey are fully *subsidising contributions to the contributory health insurance* programme for some groups, who thus get access to the same benefit package as those contributing to the programme. China, India, Indonesia and Mexico have *set up separate non-contributory programmes* (Table 2.5). The scope and depth of health protection provided by these separate health insurance programmes is higher than that available through the basic public network, but generally lower than that provided by the contributory programmes.[61] Indonesia appears to be an exception, as benefits seem more generous in the non-contributory programme than in the contributory ones.[62]
- Some programmes are targeted on the basis of income criteria (individuals with no income at all in Chile and no labour income in China's urban areas, or poor households in India, Indonesia and Turkey). Other programmes have a broader scope: in China, a non-contributory health programme has been set up for all rural residents, while in Mexico, it is accessible to every household not covered by a contributory programme.

Some countries have also taken measures to improve the scope and depth of health protection provided by the contributory programmes. Since 2005, all those insured in Chile are guaranteed a certain basic set of health services (prevention and care) determined on the basis of epidemiological danger and feasibility of solutions (Plan AUGE). Micro-efficiency reforms have also improved the quality of care in Turkey. These reforms also benefit those whose contributions are fully subsidised.

All in all, depending on the size of the population groups concerned and the extent of benefit levels, the effective increase in protection resulting from the non-contributory programmes or programmes varies significantly across countries. It is probably highest in Mexico, where the non-contributory programme, *Seguro Popular,* provides quasi-free coverage on a sizeable number of health services to all those not covered by contributory health insurance. It is also high in Turkey and Indonesia for poor households, but non-poor informal workers remain uncovered. In Chile, protection has increased significantly for individuals with no income, but also for all the insured due to the AUGE plan. China has

Table 2.5. **Social health insurance programmes**

| | Mandatory contributory | | Targeted non-contributory | |
|---|---|---|---|---|
| | Population target | Pooling | Subsidised contribution to mandatory programme for: | Separate programme for: |
| Chile | All | One public programme; possibility to opt-out to private programmes at the individual level | Persons with no income | |
| China | Urban employees | County/municipal-level programmes | | Rural residents<br>Urban residents not working |
| India | Employees in large formal firms | Two programmes for public and private employees | | Poor households (central level)<br>Specific occupations (central and state level) |
| Indonesia | Employees in firms with ten or more employees | Two programmes for public and private employees; possibility to opt-out to private at the enterprise level | | Poor households |
| Mexico | Employees | Two main programmes for government and private employees, other small occupational programmes | | Households not covered by contributory programmes |
| Turkey | Employed persons | One programme | Poor persons not covered by contributory programmes | |

*Source:* OECD Secretariat.

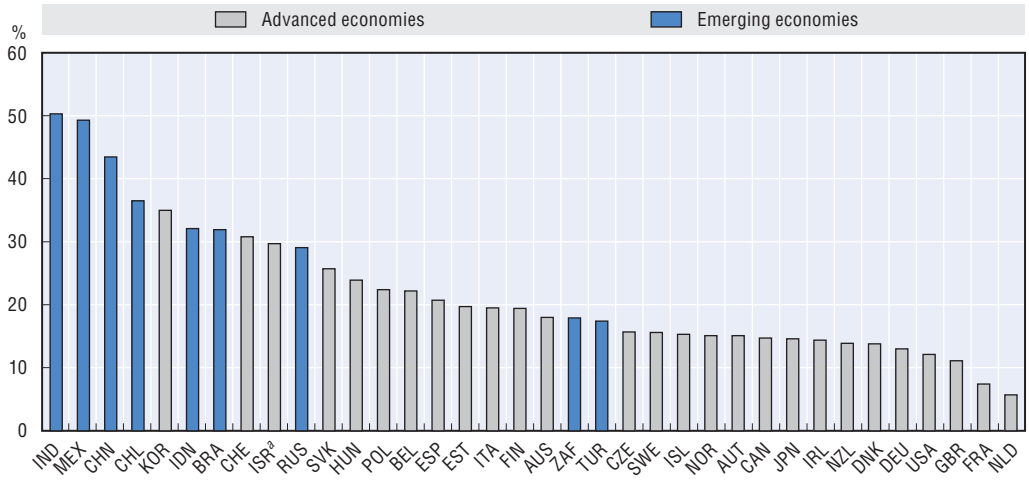
experienced a huge increase in the population covered, and, despite some progress, the main remaining coverage gap concerns migrant workers (about 15% of the Chinese population in 2008, out of which about a fifth was covered by the urban contributory programme, Zhu, 2009). However, the scope and depth of coverage of the non-contributory programmes, especially for rural residents, is still very low.[63] Finally, in India, the coverage provided to poor households enrolled in the non-contributory programmes has increased significantly, but the extent of coverage of the programme remains limited, implying that most of the population remain largely unprotected against health risks.

### *Out-of-pocket payments remain sizeable*

Despite the recent progress in health protection coverage, the share of out-of-pocket payments (OOP) in total health expenditure remains significantly higher in the emerging economies than in most OECD countries (Figure 2.14). OOP are particularly important in India, and Mexico, but also in China, where they covered respectively half and more than 40% of total health expenditure in 2008.[64] They cover almost one third of total health expenditure in Indonesia, Brazil and Russia. Such direct payments can be very disruptive for households' living standards, because they reduce the amount of resources available to meet the demand for other goods. This is especially the case for poor households, who have no room for shock absorption, but can also be true for relatively better-off households when the costs of healthcare are high (*e.g.* hospitalisation, medicines, forgone labour income). Higher levels of OOP payments have been found to be positively correlated with the share of households incurring catastrophic health expenditures (see Xu *et al.*, 2003; and van Doorslaer *et al.*, 2006), which have strong impoverishing effects.[65] Besides, having to make important direct payments for healthcare often results in postponing health checks and not getting care when sick. This is particularly the case for the poorest, who probably need health care most. O'Donnel *et al.* (2008) indeed show that the better-off receive more health care than the poor in those Asian countries relying most heavily on direct payments, such as India and Indonesia.

Figure 2.14. **Out-of-pocket payments, 2008**

As a percentage of total health expenditure




*a)* Information on data for Israel: *http://dx.doi.org/10.1787/888932315602.*

*Source:* National health accounts, WHO, *www.who.int/nha/en.*

StatLink http://dx.doi.org/10.1787/888932479762

## 9. The labour market effects of health/social protection: A case study of Mexico

### *The financing of health/social protection is more likely to affect the formal/informal composition of employment than its overall level*

The effects of social contributions on the labour market have been widely discussed for OECD countries.[66] Other things being equal, labour demand tends to decrease when labour costs rise. Hence, the overall effect on employment depends on how much the tax increase is passed through to wages, which in turn hinges upon the wage-bargaining framework (including possible minimum wage provisions) and how labour supply reacts to taxes. There are three different effects of a higher tax wedge on labour supply: *i)* a *substitution effect*, whereby a higher tax wedge reduces the opportunity cost of not working and thus tends to depress labour supply and generate wage resistance;[67] *ii) an income effect* in the opposite direction, as households may raise their labour supply to compensate for higher taxes on wages; and *iii) a perception effect* as employees may be willing to accept lower after-tax wages if they perceive the individual and/or collective value of the benefits financed out these taxes. Empirical studies in OECD countries often conclude that higher taxes on labour tend to increase labour costs, especially for low-wage workers in the presence of a binding minimum wage. At average wage levels, labour taxes seem to be shared between higher labour costs and lower take-home pay, although the relative magnitude of these effects varies significantly across countries (OECD, 2007).

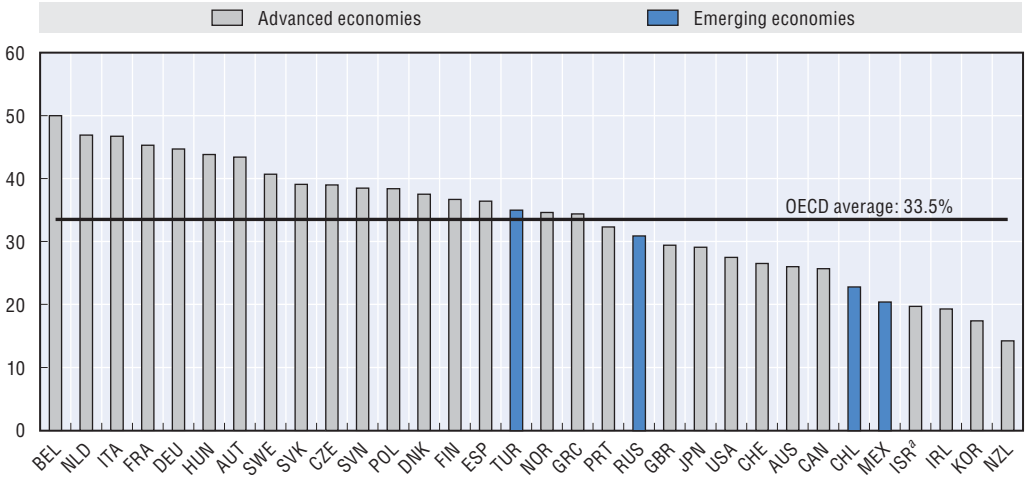
In emerging economies, however, the existence of a large informal sector and a large group of the population with very low income levels (which makes it more urgent to ensure daily subsistence rather than insure against health risks), as well as less developed administrative capacities of enforcement, increases the likelihood of evasion to the system. Hence, compared with most OECD countries, the overall effect of social contributions/the tax wedge on the labour market is likely to be much more important for the *composition* of employment rather than for the overall employment level – other things being equal, the higher the tax wedge, the higher the share of informal employment. This is precisely one of

the barriers these countries face when seeking to increase the coverage of contributory social programmes, which explains why some have resorted either to systems fully based on general taxation (Brazil, see Section 10) or to non-contributory programmes.

Tax-wedge calculations are available for four of the nine emerging economies only. Figure 2.15 shows an augmented tax wedge which, in addition to the taxes and social contributions, also includes those compulsory payments made to private programmes (such as pension funds in Chile and Mexico, unemployment accounts in Chile and housing fund in Mexico). For workers with relatively low wages, who are most likely to be concerned by informality, the augmented tax wedge is high in Turkey, 2 percentage points above the OECD average, despite recent reforms that have reduced it significantly (World Bank, 2010b). Mexico and Chile, on the other hand, have much lower tax wedges than most other OECD countries. For the other emerging economies, it is possible to compare social contribution rates only, although they provide partial information. Social contribution rates can be quite high in China, and close to the Turkish levels in Brazil and India (Annex 2.A2 in OECD, 2011b). By contrast, they are rather low in Indonesia and very low in South Africa.

Figure 2.15. **Augmented tax wedge, 2010**

Average compulsory payment wedge for a single worker paid at 67% of the average wage as a percentage of total augmented labour cost




*Note:* The augmented tax wedge corresponds to the difference between the labour costs and the take-home pay as a proportion of total labour costs.

*a)* Information on data for Israel: *http://dx.doi.org/10.1787/888932315602*.

*Source:* OECD (2010), *Taxing Wages* and OECD Secretariat for the Russian Federation.

StatLink http://dx.doi.org/10.1787/888932479781

Extending health coverage by introducing non-contributory programmes parallel to the contributory ones may increase the incentives for informal work, as providing free benefits to those who do not contribute to social programmes amounts to reducing the relative benefits of contributing to social programmes (see *e.g.* Levy, 2008, on Mexico). Differences in the nature of the benefits and in the financing between social security and non-contributory social security/health programmes result in a tax on formal salaried labour and a subsidy to (salaried or self-employed) informal labour. Higher costs on formal labour due to social security programmes, combined with other costs related to the regulation of formal salaried labour (*e.g.* employment protection legislation), could result in

higher informal employment and lower aggregate productivity.[68] This theoretical argument applies to any country that runs contributory and non-contributory social protection programmes in parallel. Finally, Levy (2008) argues that, due to poorer quality and lower availability of healthcare facilities and other social security infrastructure in rural and small urban areas – where about two-thirds of the poor workers live – the value of contributory social benefits is lower for poor workers than for other workers, thus contributing to trap the poor into informality and poverty, which goes against the very objective of social policy.

The labour market model underlying Levy's theoretical arguments is one of competitive labour markets where firms and workers make free choices between the two sectors. If it is indeed the workers' choice to decide whether to contribute to social security or not, the provision of (quasi) free benefits to informal workers only should, other things being equal, increase labour supply in the informal sector compared with the formal sector which, in a partial equilibrium framework, should lead to an increase in informal employment relative to formal employment. However, institutions and market forces, such as the minimum wage, trade unionism and the collective bargaining framework, employment protection, efficiency wages, rent-sharing, etc., can also lead to imperfectly competitive labour markets, and segmentation between the formal and informal sectors. Factors related more to the business environment or the effectiveness of tax and labour law enforcement also play a role in the decision of firms to operate in the formal or informal sector.[69] Hence, employers may decide, for all the possible reasons mentioned above, not to comply with regulations, including by not affiliating their workers to social security, and workers cannot always choose between a formal and an informal job. If workers have no choice, *i.e.* if the labour market is segmented, the provision of quasi-free health benefits to informal sector workers is unlikely to cause a shift in the employment composition towards informal employment.

Available research suggests that informal employment is very heterogeneous, both within and across countries. Studies on earning gaps and worker flows generally point to some workers, often among the self-employed, choosing to be informal and others, often low-qualified salaried workers, being trapped in informal jobs with few opportunities to access better jobs in the formal sector (see Annex 2.A3 in OECD, 2011b, for a review of the empirical literature on the formal/informal sectors segmentation).[70] This is what Perry *et al.* (2007) refer to as exit or exclusion, outlining that there is a continuum in the relative importance of exclusion and exit among individual workers and firms within countries.[71] Given that countries differ greatly in history, institutions and legal frameworks, there is also significant cross-country variation, with exclusionary mechanisms being more important in some countries and exit more important in others.

### *Social protection and the incentives for informality: A summary*

Overall, for those who are in a position to choose, the contribution of social protection to the incentives to be/remain in the informal sector will depend on: *i*) the difference in the value of benefits provided for the workers; and *ii*) the difference in the costs of those benefits or, more synthetically, on the difference between net benefits (or net costs) in the contributory and the non-contributory programmes. The smaller the net benefits of contributing to social security programmes compared with being covered by the non-contributory programmes, the larger are the incentives to be/remain informal. Benefits value depends on effective access to benefits in the two programmes, on the

number of benefits available, as well as on their quality. The costs depend on the level of social contributions and the premium level for the voluntary non-contributory benefit. In turn, the level of social contributions will depend on the efficiency of the social protection system (or in a more restrictive sense on the efficiency of the health financing system).

But even for those who choose, the incentives for informality faced by workers are broader than those related to social protection. Employers, in the case of salaried informal workers, and the self-employed can evade many types of regulation, including tax and labour laws, which has implications for net earnings and working conditions. On the one hand, informal jobs might be inferior to formal ones in terms of earnings, safety, labour standards and job security. On the other hand, informal workers escape the labour income tax that formal workers have to pay. Informal jobs might also provide more autonomy and flexibility in the case of self-employed but also for women with children working at home.

Obviously, the relative size of the various incentives matters when assessing the impact of extending social protection through non-contributory programmes on formalisation. On the one hand, the higher the quality of the benefits provided by the non-contributory programme relative to those provided by the contributory programmes, the higher is the increase in incentives for informality. On the other hand, the higher the share of incentives not directly associated with social protection, the lower the impact of extension is likely to be.

### *Non-contributory health programmes do not appear to be key drivers of informality*

Most of the empirical literature testing the effects of social protection expansion through non-contributory programmes focuses on Mexico. This is probably due to the fact that *Seguro Popular* (Box 2.6) is one of the largest non-contributory programmes implemented up to now and its implementation has raised a lively debate (see *e.g.* Levy, 2008). However, Juarez (2008) exploits a natural policy experiment based on the implementation of free health care in 2001 in Mexico City to analyse the compensating wage differential associated with working in the informal sector, as well as the impact on the probability to have a formal job after the policy change. She finds that women with at most secondary education are 4 to 10 percentage points less likely to have a formal job after the implementation of the programme.[72] In the case of Turkey, World Bank (2010b) provides some evidence that the incentive effects of the Green Card, the non-contributory health programmes, are not key drivers of informality. The main explanation proposed for this is that the wage gap between the formal and informal sector is too high for the Green Card programme to make a real difference in incentives.

In the case of Mexico, Barros (2008) is among the first studies dealing with the possible spillovers of *Seguro Popular* on labour markets using data for the period 2002-06. The impact of *Seguro Popular* is identified by exploiting differences across states in terms of the implementation targets of *Seguro Popular* and time. The author finds no evidence that the implementation targets of *Seguro Popular* are correlated with the probability of being formal or the wage premium associated with being formal. Campos-Vazquez and Knox (2010) and Bosch and Campos-Vasquez (2010) both exploit the geographical variation in the actual implementation of *Seguro Popular* at the municipal level in order to identify its impact. While Campos-Vazquez and Knox do not find an impact of *Seguro Popular* using labour force data for the period 2002-06, Bosch and Campos-Vasquez do find a significant impact using IMSS-registery data for the period 2002-09. The authors estimate that the programme came at the cost of 300 000 formal jobs that would have been created otherwise, which

### Box 2.6. *Seguro Popular*

*Seguro Popular* was designed by the Mexican federal government to reduce the segmentation of the health system by providing subsidised health insurance to households not covered by social security, who previously relied on low-quality public health services and paid fees for such services. Initially, reformers planned to create a subsidised health programme *within the main social security scheme* (IMSS), but resistance from the IMSS union led to the creation of a *separate health insurance scheme*. While existing health programmes were each providing their own health services, the plan was to separate the purchasing and the provision of health services and allow *Seguro Popular* affiliates to choose between the public and private providers contracted by the programme.

Implementation started in January 2004. By the fourth quarter of 2010, almost 40% of the population was covered by *Seguro Popular*. All the states had joined the programme by the end of 2006, but the actual availability of the programme at the municipal level took longer as the states had to strike a balance between the two conflicting aims of targeting the municipalities most in need while complying with minimum infrastructure requirements. By the end of 2005, about 65% of the municipalities were offering the programme and gradual expansion led to almost full coverage by the end of 2010.

The benefit package initially covered diagnosis, treatment and medication for about 90% of the disease burden in Mexico, and was progressively extended to cover about 95% of the disease burden. In addition, beneficiaries are entitled to support in case of catastrophic expenditure arising from certain health events such as AIDS, specific cancers, and premature birth. However, in practice, the benefit package has not been guaranteed in the poorest states, due to limited management capacity.

Financing is shared between the federal government, state governments and the affiliates. The federal contribution includes a per-enrolled family fee and a solidarity contribution that together account for five-sixths of the total budget of *Seguro Popular*. The states' contribution is established in principle at half the federal per-enrolled family fee (equivalent to the remaining one sixth of total budget), but due to limited tax capacity, states have not contributed as foreseen. Families were supposed to pay a premium increasing with their income, which was initially waived for those in the two lowest income deciles. However, very few families actually pay any fee (see Section 10) and in 2011, the first four income deciles have been formally exempted from paying a premium.

Evaluation studies generally conclude that *Seguro Popular* has allowed improved access to medical care and a reduction in out-of-pocket payments and catastrophic health expenditure, especially for poor households (Gakidou *et al.*, 2006; King *et al.*, 2009). However, whether this has been achieved in the most cost-effective way is debated. The administration of *Seguro Popular* is complex and costly (Homedes and Ugalde, 2009) and indicators to precisely evaluate costs and efficiency of operations are lacking (Urbina, 2008). Progress in terms of separation of purchaser and provider functions is taking place slowly at the state level (Lakin, 2010).

corresponds to 2% of total formal employment in 2009. However, compared with the size of the programme and that of the labour force, this effect is not large.[73] These findings may suggest that the programme was simply not sufficiently large during the early years of its implementation to have a significant impact on the share of informal employment.

In order to shed some further light on the impact of *Seguro Popular* on informality, new econometric evidence is presented based on recent data for the period 2005Q1 and 2010Q3,

the period during which the coverage of *Seguro Popular* increased dramatically from 1.7 million affiliated families to roughly 14 million families. The impact of *Seguro Popular* is identified using a difference-in-differences estimator that exploits the staggered implementation across states. The analysis makes use of two different measures of programme supply: *i*) the actual share of households affiliated to *Seguro Popular* in the total; and *ii*) the targeted share of households, as agreed between the federal and state governements. The econometric analysis involves relating the within-state variation in the supply of *Seguro Popular* to the within-state variation in the incidence of informality conditional on any common macro-economic developments across states and various observable state characteristics (see Box 2.7). The key results are summarised by means of two scatter plots that relate the effective or targeted supply of *Seguro Popular*, after controlling for the role of state and time-fixed effects, to the incidence of informal work (see Figure 2.16). The results suggest no relationship between the roll-out of *Seguro Popular* and informal work. These results are robust to the inclusion of a variety of state characteristics. Moreover, no impact of *Seguro Popular* is found on the probability of moving from the formal to the informal sector or *vice versa*. These results are consistent with previous estimates that suggest no or a small effect of *Seguro Popular* on informality (for further details, see Del Valle *et al*., 2011).

The absence of any significant effects of *Seguro Popular* may be due to a combination of economic and methodological factors. First, once affiliated, families may not find the quality of health services offered as part of *Seguro Popular* to be of high value. This is obviously difficult to measure, and might also vary from one place to the other.[74] However, an evaluation study by Urbina (2008) indicates that those insured by *Seguro Popular* generally found the treatment they received to be of good quality. Another reason may be that formal jobs are associated with other benefits (other social protection benefits or advantages not associated with social protection as discussed above) that cannot easily be compensated for when working in the informal sector. From a methodological perspective, one reason for not finding any significant effects may be that the state-level analysis presented here does not provide sufficient variation in the supply of *Seguro Popular* over time. However, further analysis reported in Del Valle *et al*. (2011) that exploits the staggered implementation of *Seguro Popular* across municipalities also suggests no significant impact. A more important reason for not finding any significant effects may be that there is substantial heterogeneity in the impact of *Seguro Popular* across different groups of workers or that the impact of *Seguro Popular* is only concentrated in a specific segment of the workforce. The number of potential movers for which informal and formal work represents relatively close substitutes may be small compared with the overall size of the workforce and this could explain the absence of any significant effects in the results here. Indeed, distinguishing between workers according to their propensity to move between the formal and informal sector, Del Valle *et al*. (2011) suggest that there may be a small adverse impact on high-propensity movers.

### Box 2.7. **Analysing the impact of *Seguro Popular* on informality**

Similar to previous studies in the literature, the staggered implementation of *Seguro Popular* is exploited in order to identify the impact of the programme on informality. The analysis presented here exploits the variation in programme supply across states and quarters to analyse the impact of *Seguro Popular* on the incidence of informality, while further analysis, not presented, exploits the variation across municipalities. The analysis is based on the ENOE labour force surveys for the period 2005Q1-2010Q3.

The main challenge is to construct a measure of programme supply at the state level that allows one to identify the impact of *Seguro Popular* on informality. Two different measures are used. The first measure is based on the effective number of affiliated households in a given state over the total number of households. This measure may not be ideal for at least two reasons (Campos-Vazquez and Knox, 2010): *i*) the effective share of affiliated households may be driven by changes in demand due to health shocks that may be correlated to informality (self-selection) rather than the availability of *Seguro Popular*; and *ii*) the availability of *Seguro Popular* within a state in turn may be driven by unobserved economic factors that may be correlated with informality (non-random programme placement).In order to deal with self-selection and non-random programme placement, a second measure of programme supply is used based on the targeted share of affiliated households among the total number of households, similar to Barros (2008). The advantage of this strategy is twofold. First, the independence of the *ex ante* negotiations between the federal and state governments over the number of affiliations that a state would pursue in a specific quarter from *ex post* health-demand shocks rules out the possibility of self-selection. Second, the fact that political and logistical constraints in addition to economic conditions weighted heavily in the determination of the targets allows one to overcome the problem of non-random placement. Indeed, the share of targeted households is not significantly correlated with economic conditions as measured by the state-level GDP per household after conditioning for state and time fixed effects.

The impact of *Seguro Popular* is estimated by relating the state-quarter variation in programme supply to the variation in the incidence of formality as follows:

$$\frac{F_{st}}{E_{st}} = \theta SP_{st} + \gamma X_{st} + \beta_s + \beta_t + \varepsilon_{st} \qquad [1]$$

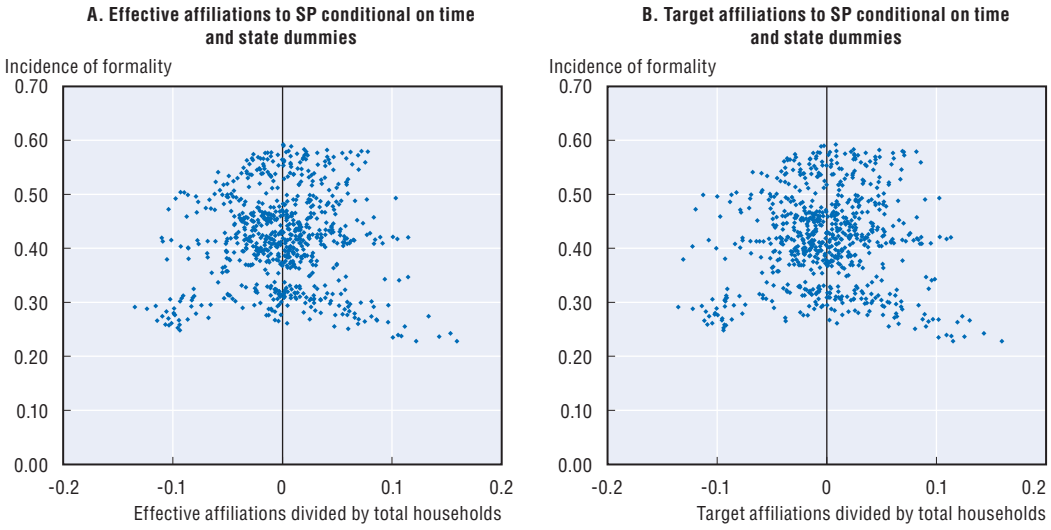
where the outcome variable $\frac{F_{st}}{E_{st}}$ represents the share of the formally employed in total employment in state *s* at time *t*, $\beta_s$ represents state-level fixed effects that control for time-invariant unobserved heterogeneity (*e.g.* demographics), $\beta_t$ time dummies that control for common shock across states and $X_{st}$ are state-level controls.* Finally, *q* is the coefficient of interest, which gives the effect of SP coverage. This equation is estimated using pooled OLS with robust standard errors clustered at the state level.

* Controls include: the share of workers located in urban areas, age, gender and education profiles, industry shares at the two-digit level, size of firms shares, mean income and share of workers paid minimum wages among others.

## 10. The policy challenges

Labour markets effects are not the main priority of health policies, and governments may decide that improving the health status of the population is what should be aimed for, even if it increases the incentives for informality. However, there are probably ways to design health protection and the extension of its coverage so as to minimise such "side" effects. Switching to general taxation instead of payroll taxes to finance health protection

Figure 2.16. **The Impact of *Seguro Popular* on informality**




*Source:* OECD's calculations based on ENOE (National Survey of Occupation and Employment).

StatLink http://dx.doi.org/10.1787/888932479800

could possibly be one way to eliminate the incentives to informality arising from dual health protection systems. Alternatively, policy should work at improving the efficiency of existing programmes and increasing the consistency and incentive compatibility between the various programmes, so as to reduce the gap between contribution and benefits and favour enrolment of those who can afford it in the contributory programmes.

### *Financing health from general taxation instead of payroll taxes*

Financing health benefits completely out of general tax revenues instead of payroll taxes, as done in Brazil and South Africa, would delink health protection from labour market status. It would hence remove the disincentives to formality arising from the co-existence of contributory and non-contributory health programmes. An additional advantage of such health systems is that health risks are effectively pooled across the entire population (Wagstaff, 2009). Finally, this would allow switching to a larger tax base and might thus reduce the tax wedge on (formal) labour (OECD, 2007), which may encourage formal-sector job creation.

Brazil actually switched from a three-tier social insurance system (social security, public and private) to a universal national health service financed by federal, state and municipal budgets in the early 1990s. The Brazilian reform was brought about by a political movement associating the demand for universality and equality of access in health care with the demand for a democratic regime (Lobato and Burlandy, 2000). However, in the absence of these specific conditions, such reforms might be difficult to implement. First, due to limited revenue-raising capacity as well as fiscal sustainability issues, switching to a tax-funded universal health system would imply lower health benefits than those provided by current contributory programmes (Ribe *et al.*, 2010), thus reducing the effective coverage of those currently covered by such programmes. The better-off segments of the population could resort to private insurance as a complement (top up). In Brazil and South Africa, for example, voluntary private insurance respectively covered 20 and 16% of the population in 2009 and 2010.[75] However, when the package provided under the national health system is

relatively low, this raises equity issues. In addition, the higher the population coverage of existing social security programmes, the higher the resistance to this change is likely to be. Second, due to a significantly narrower tax base in emerging economies than in most OECD countries, a switch towards general taxation might not be as advantageous in terms of reducing the distortionary effects of taxes on labour. Raising income and corporate taxes, which weigh mainly on the formal sector, would limit the reduction in disincentives to formality. Consumption taxes would have no direct employment effects,[76] but they tend to be regressive, which is at odds with the aim of such a reform.[77]

### *Reducing costs through better integrating contributory programmes*

In most of the countries studied, there are multiple contributory programmes and sometimes additional non-contributory programmes (Table 2.5). There is thus room for more *risk pooling*, as it would reduce the overall cost of contributory programmes. Risk pooling refers to the collection and management of financial resources in a way that spreads financial risks from an individual to all members of the programme. From a policy perspective, risk-pooling arrangements attempt to manage the need to subsidise care for people with the highest health risks (horizontal redistribution), the lowest ability to pay (vertical redistribution), or both when facing a health shock (Baeza and Packard, 2006). Besides, by exploiting economies of scale, risk pooling can reduce the average cost of the benefit package compared with multiple programmes, each with their own administrations and information systems. Fragmentation can also lead to adverse selection and cream-skimming. Usually, one of the pools will provide benefits to the relatively wealthy groups, who will not want to cross-subsidise the cost of poorer, less healthy groups (WHO, 2010). When health insurance programmes also provide healthcare, fragmentation also tends to increase the overall administrative costs of healthcare. Mutual exclusivity across programmes can also lead to inefficiencies in the production of health care (for example low use of capacities in health facilities and suboptimal allocation of care, duplication of facilities).

Cost reductions from more risk pooling would be large in a number of countries. This is particularly the case in China where the thousands of county/municipal-level programmes within each province increase the overall cost of health protection, generate significant regional inequalities, and raise equity issues for migrants as workers cannot claim health benefits outside the region where they contributed. In Mexico, there are at least five contributory programmes and *Seguro Popular*, and spending on administration represents more than 11% of total health expenditure, the highest level in the OECD (Joumard and André, 2010). Chile, in the mid-1980s, actually merged the social security institution and the national health system into the current public health programme (FONASA). But individuals can choose between public and private insurance, which results in private insurers covering mostly the higher income individuals with relatively low health risks. As a consequence, public insurance faces higher costs than if there was a single pool (Bes, 2008).[78] Turkey has recently integrated the three previously separated programmes for public employees, private employees and self-employed into a single one (OECD, 2008c). In countries where separate programmes remain, compensating mechanisms between the programmes to reduce the cost differences could be introduced, as for example in Colombia but also the Netherlands and Switzerland. However, this requires political will and technical and administrative capacity (WHO, 2010).

### *Enrolling the self-employed who can afford it in mandatory health insurance programmes*

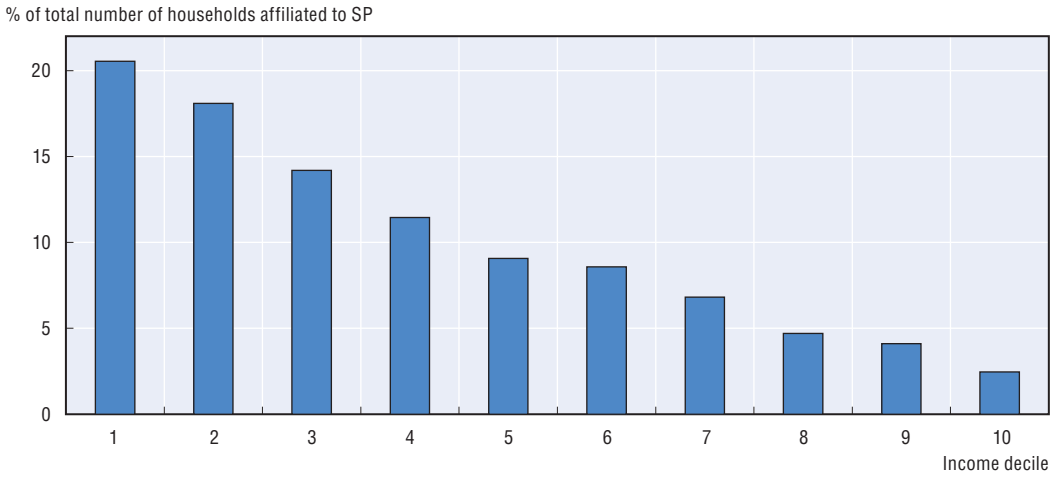
The fact that workers may not fully value the benefits of social programmes does not in itself imply that the state should not try to enforce social protection legislation. Health programmes could be well designed and performing and yet insufficiently valued by workers because they are myopic or prefer to free-ride. Hence, in addition to reducing the costs and increasing the benefits of health protection, there may also be scope for improving enforcement of mandatory programmes on some groups who can afford to contribute, in particular relatively well-off self-employed. For example, in some countries, such as China, Indonesia, and Mexico, the self-employed are excluded from the mandatory contributory programmes. Making it compulsory for them to participate, as is the case in most OECD countries with mandatory contributory health programmes, is a policy option worth considering. If made mandatory for all self-employed, the premiums should obviously take account of the income level, as for many workers in emerging economies, self-employment is a subsistence strategy. Apart for those with high income levels, such as for example professionals, partly subsidising contributions is probably necessary to significantly increase coverage. This is what was actually done in Korea, where government subsidies accounted for 44% of the revenues of the self-employed health programme in the first year of implementation at the end of the 1980s, and were progressively reduced through time (Kwon, 2002). Increasing the coverage of self-employed workers also implied reforming at the same time the tax system and improving income assessment methods.

### *Facilitating transitions between contributory and non-contributory programmes*

In most countries, non-contributory programmes were designed to provide coverage to those who cannot afford to contribute, *i.e.* to the poor. For this group, public subsidies are the only way to provide health protection, and the policy challenge is to achieve good targeting. But in the case of non-poor households not contributing to health insurance programmes, policy challenges differ. While some public subsidy is required to make them join a health protection programme, full subsidisation should be avoided, because it could reduce the incentives to join the contributory programme.

Currently, China and Mexico are the only countries where participation to the non-contributory programme is not conditional on income but on residence in the case of the Chinese rural medical programme and non-registration with a contributory programme in the case of *Seguro Popular*. In China, given that there is no contributory programme in the rural areas, the problem is not to render it incentive compatible, but more to ensure fiscal sustainability in the long run, as the scope and depth of coverage of the programme progress. Besides, the geographical segmentation between programmes may also constitute an obstacle to labour mobility between rural and urban areas. In Mexico, households not belonging to the first two income deciles should in principle pay a premium increasing with the income level – equivalent to 0.5% and 7.7% of the total average income in 2008 for households in the third and tenth deciles, respectively. However, pushed by the objective of rapidly expanding coverage, the income evaluation method used at the inception of the programme[79] was replaced by a simpler and less effective system (Lakin, 2010). As a result, very few families pay any premium – less than 3% of the eligible families in 2008 (Lakin, 2010). Figure 2.17 shows that more than 60% of the households affiliated with *Seguro Popular* in 2008 were, in fact, not in the first two income deciles and should, in principle, have paid a premium. And more than a fourth of affiliated

Figure 2.17. **Households affiliated to *Seguro Popular* by income deciles, 2008**




*Note:* Household income is measured as total income net of public transfers divided by the square root of household size.
*Source:* OECD Secretariat based on ENIGH.

StatLink http://dx.doi.org/10.1787/888932479819

households belonged to the top half of the income distribution. In Turkey, where the Green Card is currently restricted to poor households – and actually well-targeted (World Bank, 2010b) – there was also a plan to introduce a reduced premium based on a means-test for those not qualifying as poor but not yet covered by the contributory programme (OECD, 2008a), but it has not been implemented yet. This highlights the importance of the (proxy-) means test (see Part B).

### *Increasing the benefits of participating to the contributory programmes for informal workers*

On top of providing benefits in an efficient way, social protection programmes should be adapted to informal workers' needs to improve their incentives to join. This might imply some degree of unbundling in some countries where all social contributions are tied together. In Mexico, for example, the housing and childcare contributions could be separated from the health and pension parts, as most poor workers often cannot access these services. The government has recently taken some steps in that direction (OECD, 2011a). When health and pension contributions are tied together, as in Chile, Mexico and Turkey, this may also imply adapting the rules for pension contributions to the workers' needs, notably by providing them more flexibility in the contributions. Irregular contributions are allowed for temporary or seasonal workers in Chile for example, so as to accommodate the relatively large fluctuations in their income (Hu and Stewart, 2009).

## Conclusions

This chapter has analysed the labour market effects in emerging economies of three major components of social protection: unemployment compensation, cash transfers and health-care benefits. While these programmes are primarily intended to deal with social policy objectives, they also have important implications for employment policy. These may be negative when social protection reduces incentives for work, particularly for work in the formal sector, but may also be positive by allowing cash-poor households to make better employment choices. Taking account of the potential labour market effects in the design of

social protection systems can make a major contribution to their cost-effectiveness. Based on the analysis presented in this chapter a number of conclusions can be distilled that may also be of relevance for other emerging economies:

- *Target support to those who need it most.* This can help in achieving better labour market outcomes and is desirable from a social policy perspective. A high incidence of poverty and liquidity constraints in emerging economies are likely to constrain labour market choices and thus reduce labour force participation or increase labour market mismatch. The evidence provided in the chapter on the labour market impact of the *Child Support Grant* in South Africa and income support to job losers in Brazil suggests that these benefits allow the most cash-poor individuals to engage in more effective job search in the former case and reduce the pressure on them to accept unsuitable jobs in the latter. A fruitful avenue for future research would be to identify how cash transfers allow for more effective job search and how income support to jobseekers affects re-employment outcomes in terms of job stability and wages.
- *Unify separate programmes or combine different policies under a common umbrella*. More integrated programmes reduce the overall cost of social protection by reducing administrative costs and, in the case of social insurance programmes, by increasing risk pooling. This would make social protection systems more effective. The creation of non-contributory programmes alongside contributory ones allows for an increase in social protection coverage, notably for health. However, such non-contributory programmes should be designed so as to minimise the disincentives that may arise to work formally. This can be done by enforcing means-tested fees with a subsidy element which decreases as income rises, thus allowing a smooth transition towards the contributory programme. An alternative would be to switch to a universal tax-financed health system, as was done in Brazil. Moreover, policies that integrate income support policies with policies to assist beneficiaries in their job search or to overcome social problems (*e.g.* the anti-poverty programme *Chile Solidario*) can also be important. They go beyond the short-term alleviation of hardship by addressing the underlying source of the problem such as poverty and unemployment.
- *Increase the use of mandatory self-insurance based on individual saving accounts for those who can afford it and provide a redistributive component for those who cannot rely on individual savings*. This would reduce the cost of unemployment protection. Mandatory self-insurance provides incentives for workers to stay employed or return to work when unemployed and possibly increases the incentives to work formally. This may free up resources that could be used to help those with insufficient savings and enhance the protection of the most vulnerable. The Chilean unemployment insurance system of individual unemployment saving accounts (*Régimen de Seguro de Cesantía*) in combination with a Solidarity Fund (*Fondo de Cesantía Solidario*) provides an interesting example of self-insurance combined with income support in the event of job loss for the poor.

The effectiveness of these OECD recommendations will depend upon the extent to which means testing can be reliably carried out. However, the importance of income from informal work for many households as well as the relatively limited administrative capacity suggest that income testing is difficult in emerging economies. There are nevertheless examples of successful "proxy" means-testing, such as the one used in the Mexican conditional cash transfer programme, and this is certainly one area in which emerging countries should be encouraged to invest.

### *Notes*

1. See *www.ilo.org/gimi/gess/RessShowRessource.do?ressourceId=14603*.
2. The authors would like to thank Alejandro Del Valle for his excellent work on the econometric analysis of *Seguro Popular*.
3. Moreover, having more extensive social protection systems before the crisis also facilitated the use of counter-cyclical fiscal policies through the use of automatic stabilisers.
4. The economic importance of these nine economies is substantial. Together they account for half the world's population and a fifth of the world's exports and GDP.
5. The number of workers contributing to social insurance programmes is more easily available for pension programmes than for health programmes. Questions related to health in household surveys generally relate to access to health care rather than contributing to health insurance.
6. The share of the workforce contributing to social insurance programmes is one of the measures frequently used for formal employment and the preferred definition in this chapter. However, there is no universally accepted definition of informal employment. For a discussion of the definition and measurement of informal employment, see OECD (2008a).
7. This is generally associated with a reduction in the share of agricultural employment in those countries (OECD, 2010a).
8. Non-contributory pensions represent a substantial share of household income for the poorest three quintiles in South Africa. Their contribution is also important in Chile and Brazil.
9. Although severance pay is not part of social protection, the focus of this chapter, it represents an essential component of unemployment compensation systems in emerging economies. Any discussion of unemployment protection for job losers should therefore take account of this.
10. However, given the very low level of unemployment assistance benefits, these are unlikely to represent an important part of the overall support available to job losers (OECD, 2010a).
11. While SP may be considered a compensation for the wage loss associated with job displacement due to the loss of match-specific human capital, it is less effective in providing protection to workers once unemployed: too little support may be available for workers at risk of long-term unemployment, while job losers with good job prospects may be overcompensated.
12. To the extent that such jobs entail higher growth and workers are risk-averse, this provides an efficiency justification for UI (Acemoglu and Shimer, 1999).
13. The basic idea of experience-rated UI systems is to remove the implicit subsidy from low-risk to high-risk firms that is present in traditional UI systems by replacing payroll or ear-marked taxes as the main source of finance by layoff taxes.
14. No emerging economy has an experience-rated UI system.
15. Restricting the analysis to job losers with nine months of tenure in their last job does not change the conclusion that income support in emerging economies tends to take the form of SP. However, it does suggest that, in comparison with advanced economies, income support to the unemployed tends to be biased towards job losers with relatively high levels of tenure in their previous job, which raises concerns about their effectiveness to protect the most vulnerable (see Annex 2.A2 in OECD, 2011b for details).
16. Mexico has a positive level of UB in Figure 2.4 because of its system of individual pension accounts that can be used for the purposes of unemployment under certain conditions. Mexico does not have a UI system.
17. However, severance pay included in collective agreements or private contracts may be quite important in many of these countries.
18. In addition, judicial procedures related to disputes over the reason of dismissal tend to be time-consuming and costly in many emerging economies, resulting in financial insecurity for firms and inadequate compensation for dismissed workers (Venn, 2009).
19. Annex 2.A1 in OECD (2011b) provides a more detailed overview of the unemployment compensation systems in emerging economies.
20. *Adverse selection* arises when workers have information on their own risk of job loss that is not available to insurance providers. *Moral hazard* arises because unemployment insurance reduces worker incentives to avoid job loss or find a new job once unemployed. In principle, governments can improve welfare by making UI mandatory and taking an active role in its provision to ensure

active job search by benefit recipients. The mandatory nature of UI precludes the possibility of adverse selection, while public authorities are typically better placed to administer and monitor benefit eligibility than private providers.

21. To the extent that tracking UI recipients may be infeasible in emerging economies with substantial informal sectors, UI may be considered a form of severance pay with periodic payments (Parsons, 2010).

22. The emphasis is on the effects of unemployment compensation systems on individual labour outcomes in partial equilibrium, in line with much of the evaluation literature. However, general-equilibrium effects can be very important. To a limited extent, these are discussed in Section 4.

23. Bassanini *et al.* (2010) show that country differences in the stringency of employment protection (EP) account for as much as 20 to 30% of the country variation in worker turnover. Moreover, a more detailed analysis of the components of EP suggests that the level of SP is an important factor behind this result.

24. Although these inefficiencies can in principle be circumvented by passing the cost of severance pay on to workers in the form of lower wages ("wage shifting") or via the design of efficient contracts, this is unlikely to be fully realised in practice due to the role of financial market imperfections, wage rigidities and uncertainty about the future of the firm (Lazear, 1990).

25. This may also explain why countries with strict employment protection tend to have relatively high unemployment rates among youth.

26. This estimate is based on two alternative experiments that show, respectively, that the impact of UI on unemployment duration is greater in liquidity-constrained than in unconstrained households and that SP also increases the duration of unemployment, despite not being conditional on being unemployed (Chetty, 2008). Similarly, Card *et al.* (2007a) show that SP equal to two months of previous earnings reduces the job-finding rate by about 10%. Moreover, an extension of the maximum duration of unemployment benefits from 20 to 30 weeks lowers the job-finding rate in the first 20 weeks of search by 5-9%.

27. In order to address this issue one needs to distinguish between the probability of returning to a job in the formal sector and that of starting to work informally. This is done below.

28. Indeed, the changes in the law are of similar magnitude to the differences in eligibility between different tenure groups, which also in the present case are associated with rather small and typically insignificant differences in the job-finding rate.

29. Household income is measured as total labour income by other household members at the start of non-employment divided by the square root of household size (OECD, 2008b). This is the most appropriate measure of liquidity-constrained households that can be constructed with the present data. Ideally, one would like to measure liquidity constraints using household wealth or total household income (and not just that from labour).

30. The figure only focuses on the average probability of starting a new job within the first six months from the time of job loss since it was shown in Figure 2.6 that unemployment compensation only affects the non-employment duration during the first couple of months of non-employment.

31. However, the analysis attempts to control for unobserved individual characteristics that may be correlated with working in the formal sector.

32. There are many studies on the effects of unemployment compensation for the re-employment outcomes of job losers in developed countries, but also there the evidence is rather mixed. Card *et al.* (2007b) for Austria and Van Ours and Vodopivec (2008) for Slovenia do not find an impact of UI on job quality or job stability, while Caliendo *et al.* (2009) for Germany and Tatsiramos (2009) for a number of European countries find positive effects.

33. While previously informal workers have a much higher chance of returning to informal work, whether in the form of salaried work or self-employment, consistent with findings reported in Margolis (2008), this difference is only slightly larger for long-tenure workers than for short-tenure workers.

34. For employees, this effectively represents a sort of mandatory saving that offers protection against unemployment. Such payment programmes have not been taken account in Figure 2.1 as they do not explicitly relate to job loss or unemployment.

35. Rather than treating SP and UI as substitutes, it may be also be possible to enhance their complementarity. For example, one may make SP conditional on eligibility for UBs. This is effectively the case in Chile, where employers are allowed to subtract their UI contributions made

in the account of a worker from SP. This means that severance pay is relatively more important for job losers with few entitlements to UBs. Alternatively, Ubs can be made conditional on the number of monthly wages worth of SP. Such an arrangement exists in Canada.

36. While the authors claim their findings reflect moral-hazard effects, it is not clear why liquidity effects could not play a role as well. Take-up of the Solidarity Fund is likely is likely to be driven by liquidity constraints, which, as has been shown for Brazil, affects the duration of unemployment.

37. Another concern with IUSAs is that they provide incentives for workers to collude with their employers over dismissals to gain access to their accounts (see Box 2.2).

38. An advantage is also that it can be implemented relatively quickly in response to a crisis (Robalino *et al*., 2009).

39. While the authors claim their findings reflect moral-hazard effects, it is not clear why liquidity effect could not play a role as well. Take-up of the Solidarity Fund is likely to be driven by liquidity constraints which, as has been shown for Brazil, affect the duration on unemployment.

40. In Brazil, about a third of benefit applications are handled by the network of local public employment offices (SINE) (Gonzalez, 2010).

41. The main cash transfer programmes operating in emerging economies, excluding those targeting the elderly, were examined in detail in OECD (2010a).

42. In 2011, Chile introduced a new conditional cash transfer programme which encompasses *Chile Solidario* and includes conditionalities related to health, education and women's employment. The first payments were made in April 2011 and hence data on the coverage and expenditure are still limited.

43. The impact of CTs on poverty was thoroughly examined in OECD (2010a) and hence is not reviewed here.

44. Any labour-market-related moral-hazard effect is likely to be less relevant in the case of CTs to the elderly who are anyway out of the labour market, especially in countries where life expectancy is substantially lower than in the OECD. Other types of medium to long-term effects include the impact of the existing pension system on the incentives to contribute throughout one's working life. However, this issue may be less relevant in the emerging economies, where frequent major reforms of the pension system take place and hence there is little certainty with respect to the existence or not of the current programmes in ten or twenty years later. Other short-term effects are those of the transfer on the actual beneficiary in the case of transfers to the elderly and subsequent impact on retirement age (see Piggott *et al*., 2009, for empirical evidence on this).

45. A study by Mitra (2009) on the generous South African Disability Grant (DG) finds negative effects on broad labour force participation (includes discouraged workers who would be willing to work if an offer was made to them but would remain unemployed otherwise as they do not actively engage in job search) of older men (55-64). The study finds no significant impact on the labour force participation based on the narrow definition (which only includes the unemployed who actively search for a job) implying that less stringent screening techniques pushed out the discouraged workers from the labour force while not impacting the existing labour force.

46. A recent study by de Carvalho Filho (2008) on Brazil uses a triple differences-in-differences approach and exploits a major reform of *Previdencia Rural* that took place in 1992 and introduced a simultaneous change in age eligibility, an increase in the amount of the benefit and expanded eligibility to non-heads of households. The study presents evidence of reduced employment rates and total hours of work associated with the generous transfer to rural labourers. Given that the programme is not means-tested but instead universal for workers in rural areas, the negative impact of *Previdencia Rural* on labour supply reflects a pure income effect associated with a fairly generous transfer amounting to 36% of average wages.

47. Some positive labour market effects have been also found in the case of Brazil. Delgado and Cardoso (2000) argue that many beneficiaries use some of the transfers to purchase seeds and tools to support their economic activity. The study finds a higher incidence of continued employment among beneficiaries of Prêvidencia Rural compared with other pension programmes in Brazil.

48. However, the GHS data do not allow the analysis of the impact of the OAP on non-resident household members.

49. The General Household Survey (GHS) data do not allow a classification of households according to their total incomes or wealth and the information on household expenditure is of limited use when different years are pooled together as it is a categorical variable with fixed brackets that do not adjust to take into account inflation. Access to the main providers of electricity, the quality of

the dwelling's roof and walls as well as the type of dwelling are used instead to identify poor households.

50. The analysis of the type of work presented in Puymoyen and Xenogiani (2011) suggests that among employed adults, there is a higher incidence of domestic work both for poor men and women and relative to adults in non-OAP eligible households, but also relative to those in OAP-eligible non-poor households.

51. More mixed results on Brazilian CCTs are shown in Ferro and Nicollela (2007) and Tavares (2008).

52. These correlations are consistent across the different specifications (results reported in Puymoyen and Xenogiani, 2011) and hold when the variable of interest is CSG receipt and the total number of CSGs received by a mother on behalf of her children. When a distinction is made between men and women, CSG receipt or potential receipt (proxied by age eligibility of children in the household) is negatively associated with participation and employment for men and women in the household, and positively associated with the probability of unemployment.

53. According to the results in Puymoyen and Xenogiani (2011), CSG receipt or potential receipt (proxied by age eligibility of children in the household) is negatively associated with participation and employment for men and women in the household, and positively associated with the probability of unemployment.

54. Poor households are defined on the basis of the quality of the roof of their dwelling, but the results are robust to the use of alternative measures for household poverty.

55. Existing evidence also suggests that there is an important gender dimension in the effects on health, education and child labour. The impact on education and child labour seem to be greater for girls than for boys (Hamoudi and Thomas, 2005). In addition, who receives the transfer also matters for the impact of the transfer on children's outcomes. Most studies on the South African OAP find evidence of higher effects when the recipient is a woman (Case and Ardington, 2006; Case and Deaton, 1998).

56. Such potential effects may also apply to the case of unconditional CTs, as long as the additional household income is used to finance school fees, uniforms, books and other school-related expenses, providing a potential further boost to school attendance and performance.

57. Rodríguez-Oreggia and Freije (2009) use the 2007 panel wave of the Rural Households Evaluation Survey in Mexico and find little evidence of impacts of *Oportunidades* on employment, wages or inter-generational occupational mobility among the cohort of beneficiaries under study. This could be explained by either limited labour market prospects in the treated rural localities or low-quality education and health services minimising the potential improvement in future labour market outcomes of today's beneficiaries (see Section 4 for a discussion on the quality of health services in emerging economies). Using MxFLS-1 for 2002, McKee and Todd (forthcoming) simulate earnings distributions, with and without *Oportunidades*, to find that programme participation will increase future mean earnings but have only modest effects on poverty rates and earnings inequality.

58. Although partly financed from social contributions, Russia's health system *de facto* operates along the same lines.

59. In India and Mexico, the social health insurance programmes not only cover costs but also provide health services through their own infrastructure and staff.

60. *Source*: India National Health Profile, WHO, *www.searo.who.int/LinkFiles/India_CHP_india.pdf*.

61. The Mexican programme provides free access to a sizeable number of health services, the Indian programme covers hospitalisation expenses for a large number of health problems – but up to a certain amount and for a maximum of five persons per household, and not non-surgery-outpatient care; finally, the Chinese programmes cover major diseases and hospitalisation fees, but with a much lower reimbursement rate than the contributory programme.

62. See *http://jointlearningnetwork.org/content/jamkesmas*.

63. See *e.g. The Economist*, 11 October 2007, "Rural China – Missing the Barefoot Doctors", *www.economist.com/node/9944734*.

64. In India, it is mainly the result of people paying for healthcare services in the private sector, while in China OOP mostly stem from fees paid in the public sector (Saksena *et al*., 2010). In China, public hospitals function on a fee-per service basis, and fees account for 90% of their operational funds (Hu, 2008).

65. In India, 20 million households were estimated to fall into poverty each year due to health expenditures (PricewaterhouseCooper, 2007). In China, in 2008, 10% and 6% of the low-income

households in rural and urban areas, respectively, experienced catastrophic health expenditures (Brixi *et al*., 2011).

66. For a comprehensive discussion of the employment effects of financing social protection, see OECD (2007), Chapter 4.

67. This effect holds under the condition, which is often the case in OECD countries, that non-labour-market incomes are less taxed than wages.

68. This is mainly because the need for informal businesses to hide their activities obliges them to remain small, thus constraining their access to credit and thereby their investment.

69. For a discussion of the role of various policies in determining informality in a number of low-income OECD countries, see OECD (2008a).

70. For a presentation of the various models describing labour markets with formal and informal sectors, see Fields (2005).

71. However, as noted by Perry *et al*. (2007), it is sometimes difficult to distinguish the two: a microenterpreneur concluding that formality is not worth its costs may be explicitly excluded or self-excluded. On the other hand, poor workers excluded from healthcare services because they live in remote rural areas or a poor urban neighbourhood may see little point in paying labour taxes for services to which they have no access.

72. Camacho *et al*. (2009) study Colombia's 1993 health reforms that considerably expanded the availability of non-contributory health insurance to the poor. They identify the impact of the expansion in non-contributory health insurance by exploiting the staggered time profile with which eligibility was determined across municipalities. Their empirical findings suggest that there might have been a small negative impact on formal employment. However, the simultaneous increase in labour taxes makes it hard to draw firm conclusions.

73. Azuara and Marinescu (2010) also find that the effects of SP are small or insignificant. To the extent there are any negative effects the effects appear to be concentrated among low-skilled workers, married workers with children or the young (below 34).

74. According to available data, the expenditure per capita in *Seguro Popular* was about 42% of that in the social contributory programmes, but this gives only an indication since it includes administrative costs of the programme, and quality is not directly related to health spending.

75. *Source*: Jurberg and Humphrey (2010) for Brazil, and McIntyre *et al*. (2008) for South Africa.

76. However, they may generate upward wage pressure to compensate for reduced purchasing power.

77. Designing a compensating mechanism for poor households, as suggested for example by Levy (2008), implies additional tax reform, which may not always be feasible.

78. Bes (2008) indicates that as they grow older, individuals insured by private insurance face increased premiums and often return to the public programme, which ends up spending high amounts for individuals who have not contributed to the public system earlier in their life.

79. It was the method designed for the anti-poverty programme (see Section 3).

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*Chapter 3*

# Earnings Volatility: Causes and Consequences

*This chapter presents, for the first time, comparable estimates of the extent to which individuals' earnings fluctuate from year to year in a large number of OECD countries. It looks at which individuals are most likely to be affected by earnings volatility and at what causes it, as well as the impact of taxes and benefits. It also examines how wages and earnings vary across the business cycle, and how policies and institutions influence such fluctuations and the relative importance of different adjustment margins. By breaking the latter down by level of education, the chapter also examines the effect of the business cycle on earnings inequality, a key issue for social cohesion that has to date been investigated for only a few countries.*

## Key findings

Many workers experience large fluctuations in before-tax labour earnings from one year to the next, due to changes in working hours, movements in and out of work and changes in pay. Youth entering the labour market and workers in non-standard jobs (such as temporary employment or self-employment) are the most likely to experience both large increases and large decreases in earnings. Other workers, such as those with a low level of education, poor health or approaching retirement, have only an increased chance of experiencing a large drop in earnings. However, even after taking personal and job characteristics into account, there are significant cross-country differences in the incidence of earnings volatility. Countries with the most dynamic labour markets – as measured by hiring, firing and quit rates – tend to have a relatively low incidence of earnings volatility.

It is often difficult for workers to predict changes in earnings and assess whether these are temporary or permanent. Additionally, private insurance and financial markets are poorly equipped to protect households against earnings fluctuations. Large drops in individual earnings are associated with increased risk of household poverty and financial stress, with the impact largest in the poorest households. Tax and welfare systems can help buffer households against volatile earnings. Taxes play a prominent role in reducing the impact of earnings fluctuations among full-time workers, while transfers such as unemployment benefits and social assistance are more important when volatility is due to movements into or out of work.

Tax and transfer systems can lower the risk of poverty or financial stress when earnings drop, but may also absorb the potential benefits of increased earnings and intensify the business cycle's effect on earnings. Generous unemployment benefits may reduce workers' resistance to job loss and increase unemployment duration, leading to a greater fall in earnings in downturns when unemployment rises. High marginal tax rates are associated with greater cyclical volatility of hourly wages because they reduce worker resistance to gross wage adjustments. During a recession, these effects amplify reductions in earnings and government revenues, making it harder for governments to provide protection against earnings fluctuations when the need is greatest.

Moderately progressive taxes and generous unemployment benefits, coupled with strictly-enforced work-availability conditions and a well-designed "activation" strategy, can provide a solid framework for reconciling labour market dynamism with adequate income security. Such measures can be costly and countries need to achieve a sound fiscal stance during periods of growth, so as to be able to sustain workers' incomes during a downturn. Care is also needed to ensure that such systems do not raise structural unemployment.

Employment protection – notably strict dismissal rules for workers with regular contracts – effectively mitigates the short-term impact of macroeconomic shocks on employment and earnings. However, strict dismissal regulations also tend to make the effects of shocks on labour income more persistent, notably by prolonging wage adjustments. Moreover, strict employment protection is often associated with labour

market duality, and workers with temporary contracts are more likely to experience earnings volatility than those with regular contracts. Policy makers need to strike a balance between the income-smoothing effect of stricter employment protection and the gains in efficiency associated with lower employment protection, as well as taking into consideration the goal of minimising labour market duality.

## Introduction

Earnings from labour market activity play a major role in household welfare. Yet little attention has been paid in the literature to the extent to which labour market volatility translates into fluctuations over time in individual and household income. Workers' earnings might fluctuate over time due to the dynamic nature of modern labour markets that are characterised by the continuous reallocation of labour (OECD, 2009, 2010a). Even workers remaining in the same job may find their earnings vary substantially from one pay period to the next if, for example, they have irregular working hours or depend on commissions or bonus payments. Tax and transfer systems in OECD countries are designed to cushion households against large earnings shocks. However, if their success in sheltering households is limited, earnings volatility could result in increased insecurity and poverty risk for households, particularly for those without access to credit or savings.

These risks are amplified during a recession, when the proportion of individuals experiencing large increases in earnings falls and the proportion experiencing large decreases rises. Most studies on the impact of the business cycle on the labour market, including previous OECD work, have focused essentially on fluctuations in employment and unemployment. A key issue for workers' well-being, however, is the extent to which cyclical downturns result in fluctuations in labour market earnings – that is the *combined* effect of changes in *employment*, *hours worked* and *wages*. Indeed, a recession can impact the labour income of employees even if they do not lose their job, by affecting the number of paid hours of work (through lower paid overtime or temporary cuts to working hours) and/or by reducing their real hourly wage (generally by compressing nominal wage growth). These issues assume a particular importance in the aftermath of the 2008/09 "Great Recession". In a number of countries, much of the labour market adjustment has been in terms of reductions of working time rather than job losses. Quantifying the costs of a recession for workers involves, at the very least, assessing all sources of loss of labour income. This is also of crucial importance to the government budget in downturns because reductions in gross labour income are directly reflected in falling government revenues.

This chapter presents, for the first time, comparable estimates of the incidence of individual earnings volatility for a large number of OECD countries. It also examines the extent to which tax and benefit systems, and households themselves, provide a buffer against earnings volatility, and whether this volatility increases the risk of household poverty and financial stress. Using aggregate and industry-level data, the chapter also explores, for the first time in OECD work, how wages and earnings adjust across the business cycle and the role for policies and institutions in influencing earnings fluctuations and the relative importance of different adjustment margins.[1] Moreover, by breaking down adjustment patterns by level of education, the chapter also examines the effect of the business cycle on earnings inequality, a key issue for social cohesion that has so far been investigated for only a few countries.

The analysis in the chapter covers a period prior to the onset of the 2008/09 global recession, therefore some caution is necessary when applying the lessons from past downturns to the current situation. With the exceptions of Iceland, Ireland, Spain and the United States, the increase in unemployment during the 2008/09 recession was smaller than that experienced in many of the earlier recessions. Chapter 1 discusses some of the reasons for this difference, including large-scale fiscal stimulus plans, labour hoarding (encouraged by short-time work schemes) and, in some countries, reforms to activation policies enacted over the past decade. As a result, it could be expected that the shock to labour earnings was smaller than in previous downturns. Changes to unemployment benefit schemes during the course of the recession – most notably to improve coverage among previously-excluded workers – may also have buffered households against earnings shocks in a different way than prior to the recession. The effectiveness of the social safety net during the 2008/09 recession is discussed in Chapter 1.

This chapter is divided as follows. Section 1 outlines the incidence of earnings volatility in OECD countries. Section 2 discusses the consequences of earnings volatility for individuals and households, looking at the role of the tax and transfer system in buffering households against earnings volatility and at the impact of earnings volatility on household poverty risk and financial stress. Section 3 moves to an aggregate level to examine the extent to which the business cycle affects *total* earnings and the relative importance of different margins of adjustment. Section 4 then examines the role of selected labour market institutions in amplifying/mitigating or shortening/prolonging the effects of the business cycle on earnings, wages and hours. Finally, Section 5 looks at how earnings inequality between workers with different levels of education fluctuates over the business cycle and at the extent to which these fluctuations are affected by labour market institutions.

## 1. Individual earnings volatility

### *Earnings volatility in OECD countries*

There are several ways to measure earnings volatility (see Box 3.1). This section will adopt a categorical method used by the US Congressional Budget Office (2007) and define individual earnings volatility based on workers receiving a large increase or large decrease in annual labour earnings from one year to the next. Specifically, a worker will be said to

Box 3.1. **Alternative approaches to measuring earnings volatility**

In an attempt to explain the causes of growing US earnings inequality, Gottschalk and Moffitt (1994) pioneered an approach which distinguished between *permanent* earnings changes due to factors such as skill-biased technical change, and *transitory* changes, which they termed earnings or income *instability*. This approach was very influential and inspired a large literature tracing the evolution of earnings instability over time. In general, estimating transitory changes in earnings requires complex econometric models and various assumptions about functional forms that can dramatically alter estimates [although later work by Gottschalk and Moffitt (2009), finds that simpler statistics based on variation from a long-run average provide a good approximation for transitory variation estimates from more complex time-series models]. Long time-series of data for individual earnings are also required. As a result, the existing literature focuses largely on the United States (where such datasets are readily available) and there are few cross-country estimates of earnings instability (an exception is Gangl, 2005).

Box 3.1. **Alternative approaches to measuring earnings volatility** *(cont.)*

Recently, a new strand of literature has developed examining earnings *volatility* or overall changes in earnings for individuals or households across time. In contrast to the complex time-series models used in the earnings instability literature, this approach uses far simpler measures based on individual or cross-sectional variation in earnings. While it is not possible to distinguish between permanent and transitory variation in earnings using these approaches, several authors argue that overall measures of earnings volatility are in fact more useful when examining the potential impact on earnings *risk* because both permanent and transitory changes in earnings have the potential to impact on household welfare (*e.g.* Shin and Solon, 2008; Dynan *et al.*, 2007). Of course, increased volatility is not necessarily an indicator of increased risk; earnings changes may be the result of voluntary decisions by households. Even if earnings changes are involuntary, the extent to which they affect household welfare will depend on the extent to which household consumption is buffered against earnings volatility by the tax and transfer system, insurance markets and the labour supply and savings responses of households themselves (this issue will be examined in more detail in Section 2). Nevertheless, it is important to document the extent to which earnings fluctuate as a first step in understanding earnings risk.

There are three main approaches to estimating earnings volatility, all of which require longitudinal data on earnings for individuals:

- Time-series methods (*e.g.* Hällsten *et al.*, 2010; McManus and DiPrete, 2000; Beach *et al.*, 2006): earnings volatility is calculated for each individual as the standard deviation of earnings or earnings changes over several consecutive periods (typically 5-8 years). An overall measure of earnings volatility for a country or sub-group is then calculated as the average of the individual standard deviations.
- Cross-sectional methods (*e.g.* Shin and Solon, 2007; Dynan *et al.*, 2007; Ziliak *et al.*, 2010): earnings volatility is measured as the cross-sectional variance or standard deviation of year-to-year earnings changes. The idea is that increases in earnings volatility should appear as an increased dispersion of year-to-year changes.
- Categorical methods (*e.g.* US Congressional Budget Office, 2007; Dynan *et al.*, 2007): an individual is defined as having volatile earnings if they experience a large increase or decrease in earnings from one year to the next. An overall measure of earnings volatility can then be calculated as the proportion of workers in a particular country or sub-group with volatile earnings.

Each of these approaches has advantages and disadvantages. Time-series methods are quite data-intensive as they require long time-series of data for each individual. Cross-sectional and categorical methods are less data-intensive but more open to measurement error because they are based only on year-to-year changes rather than changes over a longer period of time. Both time-series and categorical methods have the advantage of providing individual-level indicators of earnings volatility which can then be regressed against the personal or job characteristics of individuals to explain how earnings volatility varies by, for example, education level or age.

have volatile earnings if their gross annual labour earnings increased by 20% or decreased by 20% in real terms from one year to the next.[2]

This approach has a number of advantages. First, it requires earnings data which are relatively easy to obtain for a large number of countries on a comparable basis.[3] Second, because volatility is defined at the individual level (rather than as a summary measure for

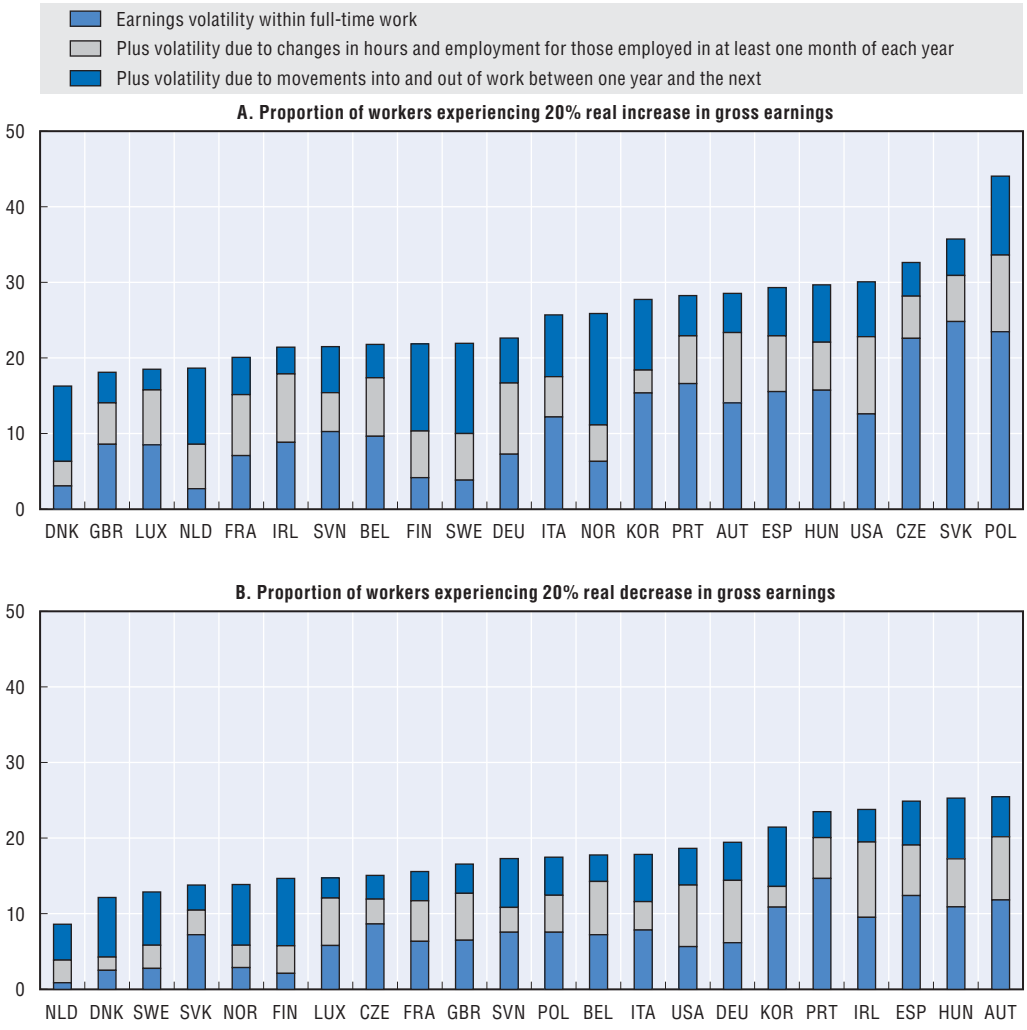
a whole country or sub-group of workers), it is possible to examine how personal and job characteristics affect its incidence. Third, volatility measures can be calculated using data from longitudinal surveys covering a minimum of two years rather than requiring long time-series of data, which expands the number of countries for which comparable earnings volatility measures can be calculated. On the other hand, using this method, it is impossible to distinguish between permanent and transitory earnings changes, which may have important policy implications. The relatively short window over which estimates are constructed makes it difficult to distinguish between structural and cyclical influences on earnings volatility, given that different countries are likely to be at different points of their business cycles. This should be kept in mind when considering cross-country comparisons. Concentrating on year-to-year changes also risks overestimating the extent of earnings volatility by capturing one-off earnings changes or even measurement errors.[4]

Workers' earnings may vary from year-to-year for many reasons. Their basic wage rate could be adjusted upwards or downwards, they could increase or reduce the number of overtime hours worked, they may receive (or not) performance pay, commissions or income from profit-sharing arrangements, they could switch from full-time to part-time work (or *vice versa*), take up a second job or move between work, unemployment and inactivity, or their self-employment income could fluctuate due to the performance of their business. The data used in this section are not suitable for examining pure wage volatility, being based on *annual* earnings. However, by examining earnings volatility for workers with different levels of labour market attachment, it is possible to get an idea of how important different types of adjustments are in influencing overall earnings volatility.

Figure 3.1 shows the incidence of earnings volatility in OECD countries for which data are available in the mid-2000s.[5] The estimates shown are for workers aged between 25 and 59 years to minimise the possibility that the results are driven by young people entering the labour market and older workers transitioning into retirement (earnings volatility for youth and older workers will be examined below). Overall earnings volatility is highest in Austria, Hungary, Korea, Portugal and Spain, which all have a high incidence of both large increases and large decreases. In addition, a large proportion of workers in the Czech Republic, the Slovak Republic and Poland faced large increases in earnings, while large decreases are relatively common in Ireland. Excluding the Czech Republic, Slovak Republic and Poland, which experienced annual GDP growth in excess of 6% during the period under examination, there is a high degree of symmetry between increases and decreases in earnings: countries with a large proportion of workers receiving an increase in earnings also tend to have a large proportion of workers receiving a decrease in earnings.[6]

Many workers who are employed full-time in both years experience earnings volatility, particularly in countries with overall high levels of volatility. Only a relatively small proportion of full-time employees change from one job to another each year (OECD, 2010a), so on average for the countries where data are available, around one quarter of earnings volatility within full-time work is the result of job changes, with the remainder due to changes in earnings within existing jobs (Venn, 2011). Movements into and out of work are also important contributors to earnings volatility, more so for earning decreases than increases and in countries with low overall levels of earnings volatility. For the remainder of this section, the analysis will focus on two main types of earnings volatility: *i) full-time earnings volatility* which refers to earnings volatility among workers who were employed full-time for the full year in both years (not necessarily in the same job) for which earnings volatility is calculated; and *ii) overall earnings volatility* which refers to earnings volatility

Figure 3.1. **Incidence of year-to-year gross labour earnings volatility**




*Note:* Data are for the income reference years 2004-07 for all countries except Italy and Portugal (2006-07), France (2005-06), Denmark (2004-05) and the United States (1995-96). Estimates are as a proportion of all workers who worked at least some time in at least one of the two years for which the estimates are made. Countries are ordered from left to right from lowest to highest earnings volatility within full-time work.

*Source:* OECD calculations using data from the European Survey of Income and Labour Conditions (EU-SILC) except for Germany, Korea, the United Kingdom and the United States, which are from the Cross-National Equivalence Files of the German Socio-Economic Panel, the Korean Labor and Income Panel Survey, the British Household Panel Survey and the Panel Study of Income Dynamics, respectively.

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among all workers who worked at least some time in one of the two years for which earnings volatility is calculated.

Earnings volatility trends vary substantially across the countries for which data are available (see Venn, 2011). Full-time earnings volatility has increased over time in the United States and Germany, declined in Korea and stayed relatively constant in the United Kingdom (apart from an increase in the late 1990s associated with the introduction of the minimum wage). In the most recent years, overall earnings volatility appears to be declining in all four countries.[7] As well as longer-term trends, the business cycle is likely to be a significant contributor to individual earnings volatility and could explain part of the

cross-country differences in earnings volatility shown in Figure 3.1. Periods of rising unemployment are typically accompanied by more large decreases in earnings and fewer large increases, due to greater fluctuations in the earnings of full-time workers, more labour market exits and fewer entries. However, important differences across countries suggest that country-specific policy and institutional settings may influence how the business cycle affects earnings volatility. Unfortunately, it is not possible to examine the effects of the business cycle on earnings volatility in more detail using microdata because few countries have a sufficiently long time-series on earnings volatility available. This issue will be taken up again using aggregate and industry-level data in Sections 3 to 5 of this chapter.

### *Explaining cross-country differences in earnings volatility*

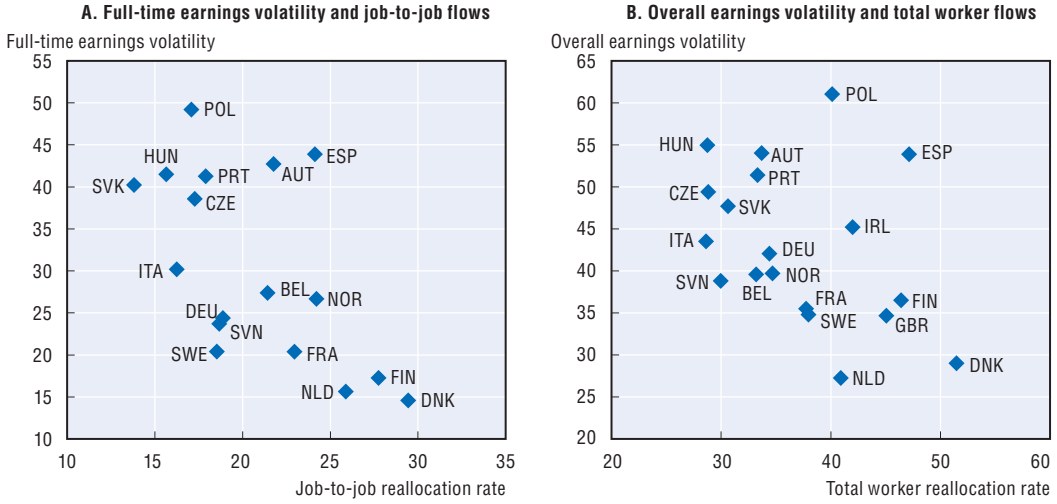
The large cross-country differences in earnings volatility identified in Figure 3.1 raise questions about the extent to which country-specific policies and institutions affect the incidence of earnings volatility, over and above business-cycle effects. On the face of it, there are several institutional similarities among the group of countries with the least earnings volatility – the Nordic countries and the Netherlands – which tend to have generous unemployment benefits, an emphasis on activation for job-seekers, coordinated wage bargaining, widespread collective bargaining coverage and high labour taxes. However, other countries with similar features – notably Austria – have much more earnings volatility. Indeed, the countries with the highest incidence of earnings volatility – the eastern European countries plus Spain, Portugal, Austria and Korea – are quite disparate in their institutional settings.

One possible explanation for a high level of earnings volatility is that it is a by-product of other changes in labour market status. For example, in countries where workers move frequently into and out of work, the incidence of overall earnings volatility (which is partly driven by movements into and out of work) might be expected to be higher than in countries with lower labour mobility. Likewise, voluntary job-to-job movements are often associated with wage increases (OECD, 2010a), so countries with higher job-to-job flows might be expected to have greater (upwards) earnings volatility.

However, Figure 3.2 shows that there is a negative correlation between earnings volatility and labour mobility. Contrary to expectations, high job-to-job reallocation rates are associated with lower levels of full-time earnings volatility. This relationship also holds for increases in year-to-year earnings, but the relationship between job-to-job reallocation and the incidence of large decreases in earnings is weaker.[8] With the exceptions of Poland and Spain, countries with higher overall earnings volatility tend to have less worker flows and *vice versa*.[9] Crucially, there is little evidence that workers in countries with highly-dynamic labour markets, as measured by worker flows, are more likely to experience earnings volatility than those in other countries. In Poland and Spain, the high share of temporary workers could explain both high worker reallocation rates and the high incidence of earnings volatility. Bassanini *et al.* (2010) find that a larger share of temporary employees is associated with increased hirings and separations. The subsection below will show that temporary workers are also much more likely to experience earnings volatility, both within full-time jobs and due to movements into and out of work.

Instead of earnings volatility being a by-product of labour mobility, the two forms of labour market flexibility may be substitutes. It is conceivable that in countries where hiring and firing is difficult (either because of strict regulation or because it is difficult to convince workers who are well-matched to their job to move to another job), adjustments might

Figure 3.2. **Earnings volatility and labour mobility: complements or substitutes?**




*Note:* Full-time earnings volatility is the proportion of workers who are employed full-time for the full year in two years who experience either a 20% increase or decrease in gross labour earnings. Overall earnings volatility is the proportion of workers who are employed for at least some time in the two-year period who experience either a 20% increase or decrease in gross labour earnings. Total worker reallocation rate is the sum of total hirings and total separations, as a percentage of total employment. Job-to-job reallocation rate is the sum of job-to-job hirings and job-to-job separations as a percentage of total employment. See OECD (2010a) for full details on the calculation of worker reallocation data.

*Source:* Data on earnings volatility are from the sources described in the note to Figure 3.1. Data on worker reallocation are from OECD (2010a).

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take place on the *internal* margin through adjustments to base wages, bonus payments, overtime or hours of work. Countries with less dynamic labour markets also tend to have longer unemployment spells on average (Nickell and Layard, 1999), in which case workers would suffer a larger reduction in annual earnings in the event of unemployment than in countries where unemployment spells are shorter.

It is highly likely that country-specific policies and institutions impact on the relative ease or attractiveness of adjustment on the internal *versus* external margin. However, with the data available, it is very difficult to test this directly. There is very little cross-country correlation between the incidence of individual earnings volatility as measured in this chapter and a range of standard indicators for policy and institutional settings, including employment protection, wage-setting arrangements, taxes, working-time regulation, unemployment benefit generosity and product-market competition. Cross-country comparisons are confounded by correlations between policy indicators and possible measurement errors in data on earnings volatility, which may be country-specific. A more sophisticated analysis would require longer time-series of data on earnings volatility than are currently available for most OECD countries. In light of these limitations, the impact of policies and institutions on earnings volatility will be examined using aggregate and industry-level data in Sections 4 and 5.

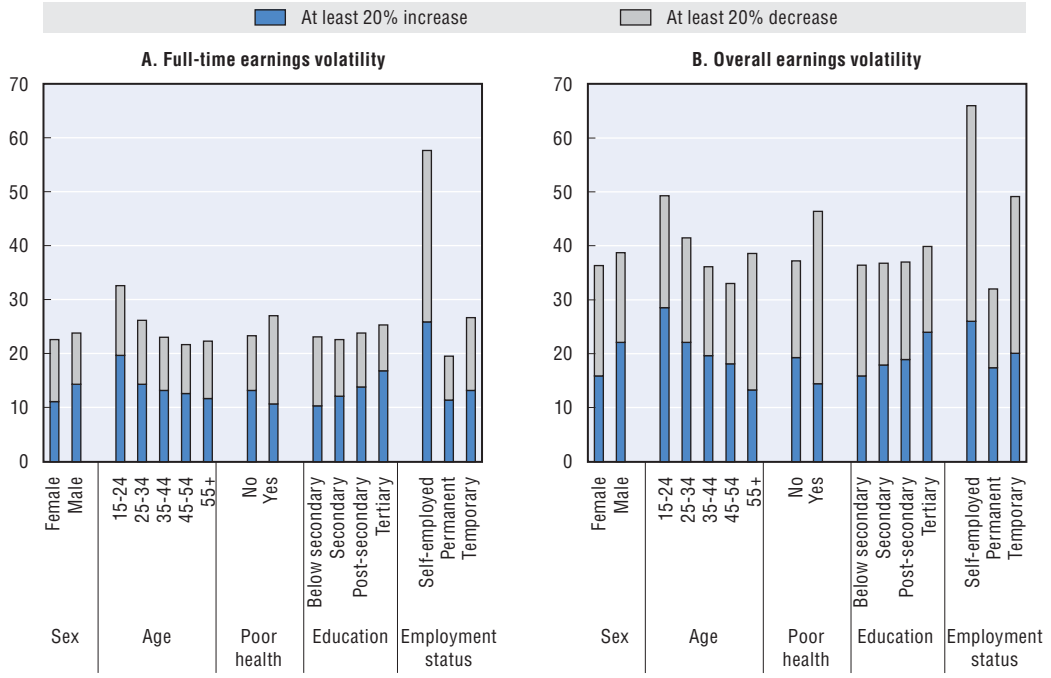
### *Who has volatile earnings?*

Personal and job characteristics have an important impact on whether or not an individual experiences high earnings volatility. The characteristics of those who tend to experience large increases in earnings often differ from those who are at risk of

experiencing large decreases. Figure 3.3 shows how various characteristics affect the likelihood of year-to-year earnings volatility, both for full-time workers and overall (results for multi-year earnings volatility are shown in Venn, 2011). All other things equal:

- Men are more likely than women to experience large year-to-year increases in earnings, while the opposite is true for large decreases in earnings.[10] This pattern persists both within full-time work and when movements into and out of work are taken into account. However, there is little gender difference in the incidence of multi-year earnings volatility.
- Young workers experience substantially more year-to-year earnings volatility – both increases and decreases – than prime-age workers. The effect is largest for those aged under 25 years, but persists into the late 20s and early 30s. This may reflect the impact of work experience and tenure in stabilising employment, but also the process of job search that younger workers undertake when joining the workforce.[11] *Successive* large increases in earnings are still more likely for younger workers, but large decreases in earnings over multiple years are only significantly more likely among older workers approaching retirement. However, there is no evidence that older workers experience more earnings volatility within full-time jobs than prime-age workers.
- Less-educated workers are more likely to experience a large decrease in year-to-year earnings and less likely to experience a large increase than more educated workers;

Figure 3.3. **Estimated probability of year-to-year earnings volatility by personal and job characteristics**




*Note:* Estimated probabilities from multinomial logit models where the dependent variable is a five-category indicator of year-to-year individual gross labour earnings volatility over a three-year period: at least 20% increase; 5-20% increase; 5% increase to 5% decrease; 5-20% decrease; at least 20% decrease. Probabilities are estimated for each variable holding all other variables at sample mean values. ***, ** and * indicate that coefficients are significantly different from zero at the 99%, 95% and 90% level, respectively. Robust standard-errors are adjusted for clustering at the country-level. Estimates are weighted so that the effects represent the cross-country average effect. See Venn (2011) for full results.

*Source:* OECD calculations using data from EU-SILC for income reference years 2004 to 2007.

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however, there is little difference in the probability of multi-year earnings volatility by education level.

- Workers with health problems (who say that their current state of health is "bad" or "very bad") are significantly more likely to have earnings decreases, both year-to-year and across multiple years. This is consistent with people with health problems pulling out of work or reducing their availability to work overtime if they work full-time.[12] On the other hand, workers with health problems are less likely to have multi-year earnings increases.
- Workers in "non-regular" employment are far more likely to experience earnings volatility than employees with permanent contracts. Temporary employees and the self-employed are more likely to have both large increases and large decreases in earnings within full-time work than permanent employees, and this holds for year-to-year and multi-year earnings volatility. For temporary employees, the earnings volatility gap compared with permanent employees grows even larger when movements into and out of work are taken into account. For the self-employed, most decreases in earnings result from decreases within full-time work, both on a year-to-year and multi-year basis. In contrast, multi-year earnings increases for the self-employed are driven mainly by labour market entry.

Additional insight into the characteristics of workers and jobs who experience earnings volatility can be gleaned by looking at the likelihood of receiving paid overtime or performance pay, which are the most volatile components of earnings (Anger, 2011; Devereux, 2001; Shin and Solon, 2007; Swanson, 2007; Urasawa, 2008). Indeed, earnings volatility is significantly more likely for workers in countries where paid overtime is more common. Firm characteristics are an important factor in determining the incidence of variable pay: workers in larger firms are more likely to have variable types of pay, while foreign-owned firms are more likely to operate performance-pay schemes than those in domestic ownership. Paid overtime is also more likely (and unpaid overtime less likely) when there is a collective agreement in place in the firm, whereas collective bargaining appears to have little impact on the use of performance-pay schemes. In general, the characteristics of workers with paid overtime are quite different to those with performance pay. Paid overtime is most likely for less-educated workers in blue-collar jobs, whereas performance pay is most likely for those with a tertiary qualification and longer job tenure, working in complex jobs. In both cases, women – particularly those with family responsibilities – are significantly less likely than men to receive variable types of pay (Venn, 2011).

## 2. Consequences of earnings volatility

In a world where workers have perfect foresight about future earnings, can buy insurance against earnings fluctuations, and are able to save or borrow money to smooth consumption, temporary changes in earnings should have no or limited impact on household consumption (Friedman, 1957). In reality, it is often difficult for workers to foresee earnings changes or assess whether they are permanent or temporary. Private insurance markets for individual earnings volatility are poorly developed. Public unemployment insurance typically provides income support only in the case of job loss (or loss of a significant number of hours of work) whereas public disability insurance only protects against income volatility in limited circumstances. Workers with the most volatile earnings, such as temporary workers or the self-employed, may have limited recourse to public insurance schemes (see Chapter 1). Access to credit and savings may also be limited

for workers who have lost a significant part of their income or among low-income earners more generally (*e.g.* Simpson and Buckland, 2009; Devlin, 2005).

However, even in the presence of market imperfections, there are several possible buffers against individual earnings volatility. Large fluctuations in individual earnings may be offset by changes in the earnings of other household members, other forms of income and the operation of the tax and transfer system. As a result, fluctuations in household disposable income, which is what matters most for consumption, are likely to be smaller than fluctuations in individual earnings. This section will examine the operation of these buffers and the extent to which individual earnings volatility translates into poorer household welfare.

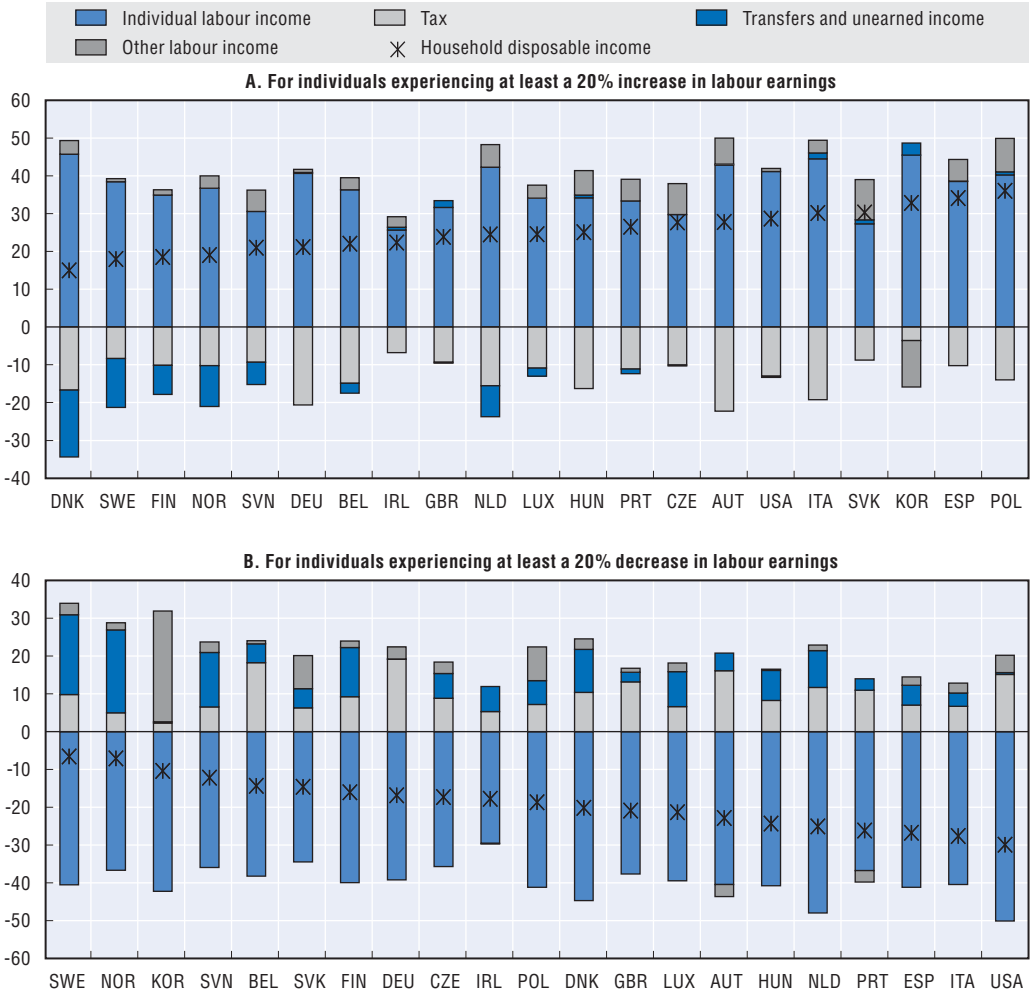
### *Buffers against individual earnings volatility*

Figure 3.4 shows how an increase or decrease in individual gross labour earnings of 20% or more affects household disposable income in selected OECD countries. The percentage change in household disposable income following an episode of individual earnings volatility can be decomposed into components due to changes in the earnings of the individual and other household members, changes in taxes paid and changes in transfers and other non-earned household income (such as income from rental properties or other investments).[13] To reduce the impact of changes in household size, the analysis is limited to households with one or two adults (and where the number of adults is the same in both years), with or without children aged under 18 years.

The results show that there is significant cross-country variation in the extent to which individual earnings volatility flows on to household disposable income. In almost every country, household disposable income is buffered from the full impact of individual earnings volatility.[14] Buffering is particularly strong in the Nordic countries, where the change in household disposable earnings is on average only 46% of the size of an increase in individual gross labour earnings and 30% of the size of a decrease. At the other end of the scale, in Portugal, Spain, Italy, Ireland and the United States, large increases and decreases in individual earnings translate into relatively large changes in household disposable income: 81% of the size of an increase in individual earnings and 66% of the size of a decrease, on average. It is interesting to note that the countries where buffering is most pronounced are also those with among the lowest incidence of earnings volatility (*cf*. Figure 3.1). In contrast, buffers are less effective in countries where earnings volatility is more widespread.

In most countries, offsetting changes in tax are the most prominent buffer for households against individual earnings volatility, especially in the case of large increases. In the case of large decreases in earnings, offsetting changes in transfers and other unearned income are relatively large. In cases where earnings volatility is due only to changes within full-time work (rather than including movements into and out of employment as in Figure 3.4), the role of transfers is much reduced (Venn, 2011). On average, the change in transfers is around 19% of the size of the reduction in individual earnings in the case of a large decrease and 7% in the case of a large increase when including volatility due to movements in and out of work, compared with 11% and 3%, respectively, in the case where only full-time workers are considered. This suggests that transfer payments are more effective at smoothing earnings volatility when it results from movements into and out of work than when it results from changes in earnings for workers who remain employed, which is not surprising given that most working-age income-support payments are available only in case of job loss and are withdrawn quickly

Figure 3.4. **Decomposition of change in household disposable income resulting from overall individual earnings volatility**




*Note:* People aged 25-59 years. Households with one or two adults and no year-to-year change in the number of adults in the household. Sample includes individuals who worked at least some time in each of the two years over which calculations are made.

*Source:* OECD calculations using data described in the note to Figure 3.1.

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when individuals take up work. In contrast, the proportionate change in taxes is slightly larger (26% the size of a decrease in individual earnings and 36% the size of an increase) where only full-time workers are considered compared to when there are movements into and out of work (24% and 34%, respectively).

In Korea, there are significant offsetting movements in household members' labour earnings. A large increase in an individual's labour earnings is accompanied by a decrease of around one-third of the size in the labour earnings of other household members, while a large decrease in individual earnings induces an increase by other family members of more than two-thirds the size. The same pattern is evident to a much more limited extent in Poland and the Slovak Republic when an individual has a large decrease in labour earnings. One possible explanation is that households are compensating for deficiencies in the social safety net in these countries. For example, in Korea around 40% of employees are

not registered for employment insurance (Kim, 2010), while in Poland and the Slovak Republic conditions for accessing unemployment benefits are strict so only a minority of the unemployed receive benefits (OECD, 2008).

Not surprisingly, the design of countries' tax and benefit systems explains part of the difference in the extent of buffering across countries. In the event of a large decrease in individual gross labour earnings, the countries with the largest offsetting declines in taxes tend to be the countries with among the highest marginal tax rates (Germany, Austria and Belgium). Likewise, the countries with the largest offsetting increases in transfers tend to have more generous unemployment benefits (Norway, Sweden, Finland and Denmark). However, this relationship is not always clear-cut. Gaps in the coverage of the tax and transfer system could also undermine its role in buffering households against earnings shocks. For example, in Portugal, where the effectiveness of transfers in buffering earnings shocks is low despite generous replacement rates, long contribution periods for unemployment insurance mean that younger workers or those on temporary contracts – both groups that are more vulnerable to earnings volatility – might not receive benefits if they become unemployed (OECD, 2010b).

### *How does earnings volatility affect households?*

The previous section shows that households and governments both play a role in buffering households against individual earnings volatility, but large increases and decreases in individual earnings typically flow through, at least in part, to household disposable income. However, there is little empirical evidence on the relationship between earnings volatility and household welfare.[15]

By definition, large changes in household income will affect the likelihood that a household experiences poverty, where poverty is defined on a relative basis depending on the household's position in the income distribution. In the analysis below, the link between earnings volatility and poverty risk is assessed by defining poor households as those with household disposable income (equivalised for household size) less than 50% of the median for the country in which they live. Large changes in income could also affect household consumption patterns. Unfortunately, the data used to estimate earnings volatility do not contain any measures of household consumption. However, it is possible to examine the impact of earnings volatility on consumption indirectly by looking at measures of *financial stress* in households. Five measures of household financial stress are used: *i)* whether the household has been unable to pay a scheduled rent or mortgage payment in the previous 12 months due to lack of money;[16] *ii)* whether the household has been unable to pay a scheduled bill for electricity, gas or water in the past 12 months due to lack of money; *iii)* inability to afford a one-week annual holiday away from home (regardless of whether or not the household has taken a holiday); *iv)* inability to afford a meal with chicken, meat or fish (or vegetarian equivalent) every second day, if wanted; and *v)* inability to face unexpected financial expenses using the financial resources of the household.

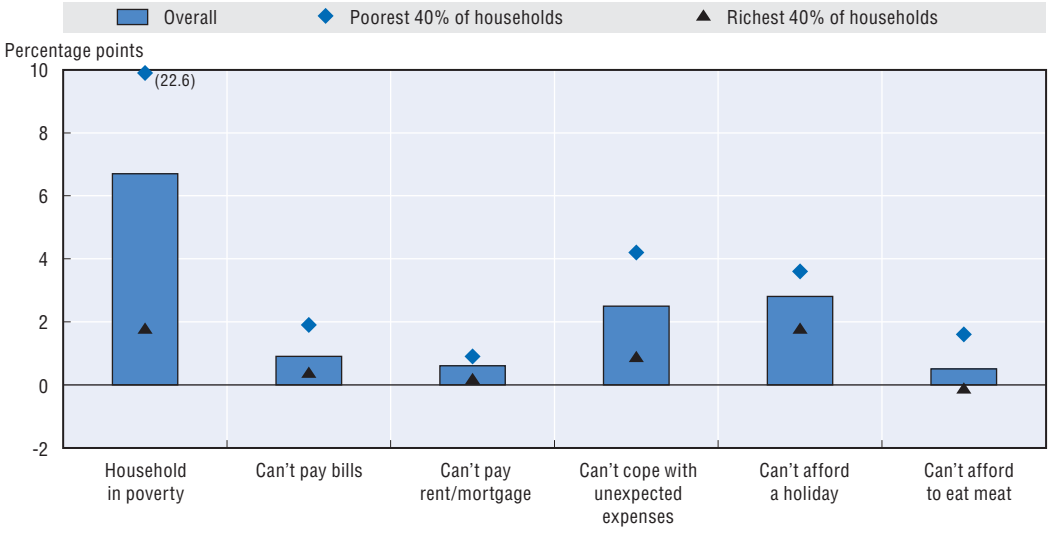
The analysis of the link between earnings volatility and household welfare is performed at the individual level. The main research question is whether or not an individual who experiences a large increase or large decrease in earnings is more likely to live in a poor household or in a household that has experienced financial stress in the subsequent year(s) than an individual who does not experience earnings volatility. Drawing on existing empirical literature on the factors that affect household financial stress (Boheim and Taylor, 2000; Diaz-Serrano, 2004; Georgarakos *et al.*, 2010; Worthington,

2006), the analysis controls for household composition (household size; marital status; whether someone in the household has a serious health problem), housing tenure and wealth (whether household are homeowners, renting at market or below-market rates; the extent to which housing costs are a financial burden; dwelling size) and personal characteristics to control for life-cycle effects, unobservable risk preference and access to credit markets (age, gender, education). The sample includes only individuals who did not experience poverty or financial stress in the year before the earnings shock.[17]

Figure 3.5 shows the additional likelihood of poverty or financial stress for individuals who experience at least a 20% decrease in earnings compared with those who have little or no change in earnings from year to year. Overall, large earnings shocks are associated with a significantly increased risk of poverty and all types of financial stress. The effects are even stronger for individuals in the poorest households, where earnings shocks are associated with a significant increase in the risk of poverty by more than 20 percentage points and of financial stress by between one and four percentage points. In contrast, in the richest households, earnings shocks are associated with only a small change in the likelihood of poverty and the ability to afford a holiday or unexpected expenses and no significant impact on other forms of financial stress. For both rich and poor households, negative earnings shocks are associated with increased poverty risk both in the year of the earnings shock and, to a lesser extent, in the two following years (Venn, 2011). These results suggest that earnings volatility at the individual level translates into earnings risk at the household level, particularly in the poorest households, who are likely to have less access to savings, credits and assets to smooth consumption, and that the effects may be relatively long-lasting.

Figure 3.5. **Effect of a large earnings shock on the incidence of household poverty and financial stress**

Marginal effect (in percentage points) of having a year-to-year decrease in individual labour earnings of at least 20% compared with having a change in earnings of –5% to +5%




*Note:* The charts show marginal effects from probit regressions where the dependent variable is whether or not the individual lives in a household that experienced poverty/financial stress in the previous 12 months. Regressions also include controls for age, gender, marital status, education, employment status, household income quintile (financial stress models only), household size, dwelling size, housing tenure, financial burden from housing costs, whether a household member had bad or very bad health, country and year. Sample aged 25-59 years in households with one or two adults where the number of adults does not change over time.

*Source:* OECD calculations from EU-SILC, 2006-08.

StatLink http://dx.doi.org/10.1787/888932479933

Additional analysis of the links between earnings volatility, poverty and financial stress suggests that some groups of workers may be more vulnerable than others to experiencing adverse consequences as a result of earnings volatility (Venn, 2011). As expected from the results in the previous section, the tax and transfer system buffers households from the adverse consequences of earnings volatility. Earnings shocks tend to be associated with smaller changes in poverty risk and some types of financial stress in countries where the buffering effect – as identified in Figure 3.4 – is strongest and larger changes in countries where buffers are less effective. This means that negative earnings shocks are less likely to be associated with increased poverty and financial stress in the "high-buffer" countries. However, positive earnings shocks are also buffered by tax and transfer systems. In "high-buffer" countries, a 20% increase in earnings does not translate into a reduced risk of poverty or financial stress.

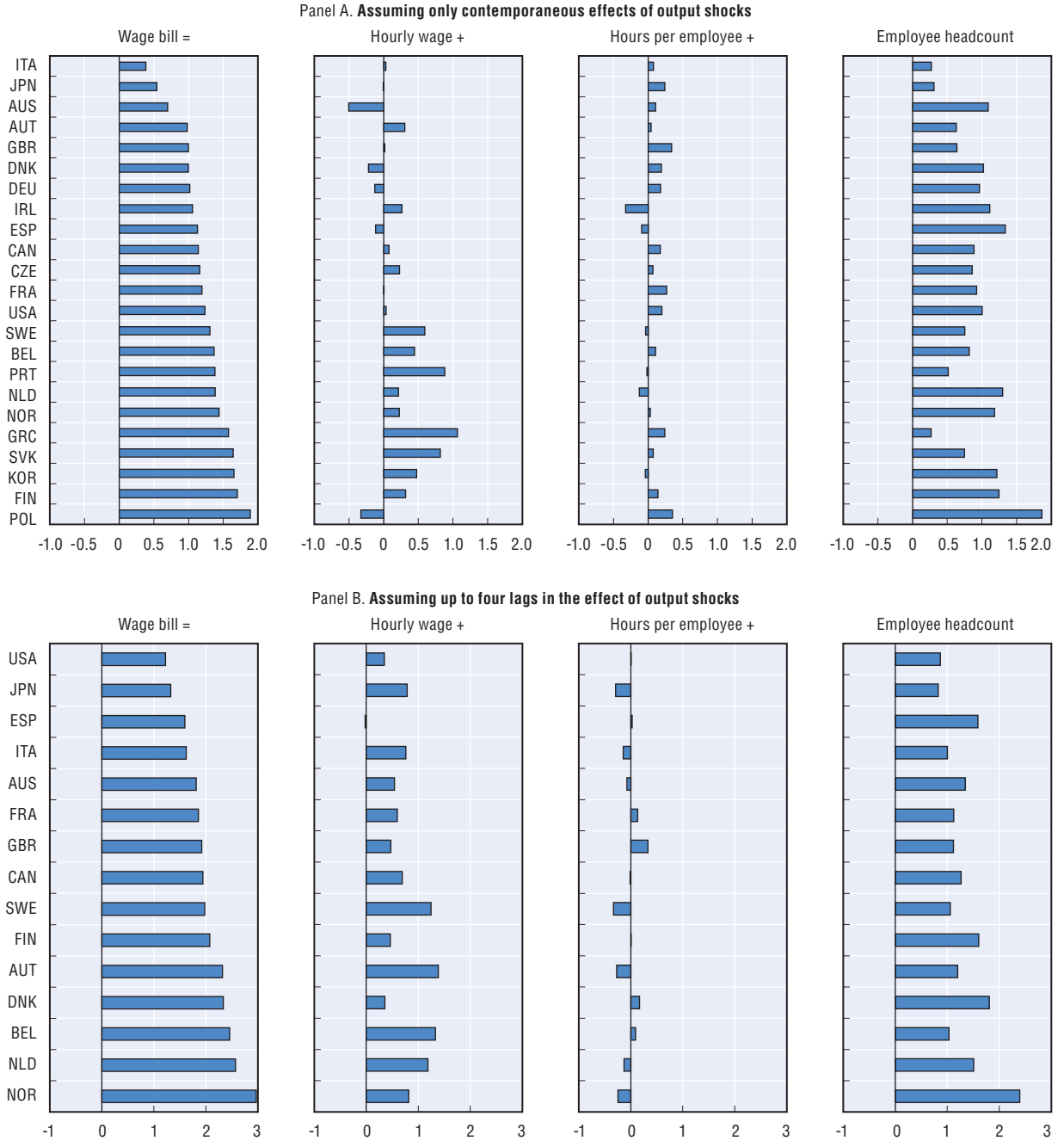
Within countries, workers who are less likely to be covered by unemployment benefits are also more likely to suffer from poverty and financial stress as a result of negative earnings shocks. Most notably, employees with temporary contracts, who are more likely than permanent employees to experience large drops in earnings, are also 2-3 times more likely to experience poverty and most types of financial stress in conjunction with a negative earnings shock than permanent employees. The self-employed also have a higher risk of poverty as a result of negative earnings shocks than permanent employees, but are more sheltered from financial stress than temporary workers, possibly because they have more assets or savings to smooth their consumption in the face of earnings volatility. Youth who experience negative earnings shocks have no greater risk of poverty than adults in the same situation, but may be more likely to default on a rent/mortgage or bill payment.

## 3. Cyclical fluctuations of earnings at the aggregate level

Evidence presented in Section 1 shows that the proportion of individuals experiencing large increases in earnings falls during recessions and the proportion experiencing large decreases rises. This suggests that business-cycle fluctuations are likely to be one of the key components of earnings volatility. Unfortunately, individual-level data on earnings volatility are available over a long period for only a small number of countries, which makes it difficult to examine cyclical fluctuations in individual earnings for a large number of countries. For this reason, this section uses aggregate business-sector data, and investigates the impact of business-cycle fluctuations on total gross annual earnings.

Quantifying the short-run cost of a recession for workers involves looking at *all* sources of loss in labour income, that is, whether or not workers were displaced, to what extent they were forced to reduce working hours and/or whether they experienced a reduction in hourly compensation.[18] Similarly, important insights into the labour market impact of business-cycle fluctuations can be drawn by considering the overall effect on total labour income. This is also of crucial importance to the government budget in downturns insofar as reductions in gross labour income are directly reflected in falling government revenues. In this vein, Figure 3.6 presents the estimated elasticity of the cyclical component of total gross real annual earnings in the business-sector (the so-called "wage bill") to output fluctuations for all countries for which comparable data are available (see Box 3.2 for the methodology).[19] Output fluctuations are measured using the output gap as computed by the OECD. The gap between the actual level of total earnings and its trend is likely to be a good approximation of the cyclical fluctuations of total gross labour

Figure 3.6. **Elasticity of total wage earnings to the output gap, 1971-2007**




*Note:* 1971-2004 for Canada; 1972-2007 for the United Kingdom; 1973-2007 for Denmark; 1974-2005 for Japan; 1977-2007 for Finland; 1978-2007 for Austria; 1979-2007 for France; 1980-2007 for Spain; 1980-2006 for Norway; 1991-2005 for Portugal; 1993-2007 for Germany; 1994-2005 for Korea; 1996-2007 for Greece; 1996-2007 for Ireland; 1997-2003 for the Slovak Republic; 1997-2006 for Poland; and 1997-2007 for the Czech Republic. Data refer to wage and salary employees of the non-agricultural business-sector except for Norway, where they refer to total employment in this sector.

*Source:* OECD estimates on the basis of *EUKLEMS*, *STAN* and *EO Databases*.

StatLink http://dx.doi.org/10.1787/888932479952

income (hereafter simply called the "gap" for brevity) which includes the combined effect of fluctuations in the labour input and its compensation. In turn, the magnitude of the transmission of macroeconomic shocks on gross labour income provides insights into the

### Box 3.2. **Measuring the sensitivity of total gross earnings and its components to business-cycle fluctuations**

A very simple and widely-used way to measure the impact of cyclical output fluctuations on a given aggregate variable (*e.g.* log total earnings) is to measure the covariation of the output gap and the cyclical component of that variable (see *e.g.* Abraham and Haltiwanger, 1995). Let us consider the following simple country-specific model:

$$\log W_t = \theta \log W_t^* + \sum_l \varphi_l OGAP_{t-l} + \varepsilon_t$$

where *log* W is the log of total earnings, * indicates its non-cyclical (*i.e.* trend or potential) component, *OGAP* is the output gap – measured by the OECD output gap – that is assumed to capture all business-cycle-related macroeconomic shocks, *t* indexes time and $\varepsilon$ is an error term capturing shocks that are unrelated to the business cycle.

The non-cyclical component of total earnings is disentangled from the cyclical component through a Hodrick-Prescott (HP) filter (see Hodrick and Prescott, 1997), but all results are qualitatively robust to the use of a Baxter-King filter (Baxter and King, 1999). Hereafter, we will refer to the non-cyclical component of a variable as its trend and to the cyclical component as its gap, noting that the sum of the trend and gap yields the actual value by construction. To the extent that the trend captures all structural long-run determinants of the variable, including *e.g.* population growth and institutions, and shocks are stationary (with zero mean), $\theta$ can be set equal to 1 and the above equation becomes:

$$\log WGAP_t = \sum_l \varphi_l OGAP_{t-l} + \varepsilon_t$$

where *log WGAP* is the gap of *log* W. The sum of $\varphi$s represents the long-run elasticity of fluctuations in *log* W to macroeconomic fluctuations. Different lags can be tried for different variables in order to capture delayed business-cycle effects.

The HP filter preserves additivity: if a variable is equal to the sum of several other variables, gap and trend can be written as the sum of gaps and trends, respectively, of the other variables. This implies that one can decompose the elasticity of the cyclical component of total earnings to the output gap into the sum of the elasticity of the average hourly wage, average hours per employee and total dependent employment, in such a way that the contribution of each margin of labour market adjustment can be assessed separately.

effect of these shocks on both the labour tax base and workers' average income if these losses or gains are not buffered by tax and transfer policies (see, for example, section on "How does earnings volatility affect households?").

Looking at the elasticity of total earnings to output shocks suggests that the effects of business-cycle fluctuations on labour income are sizable. On average, a macroeconomic shock as large as one percentage point of GDP is associated with a deviation of at least 1.2 percentage-points of total earnings from its trend (Figure 3.6, Panel A). If it is assumed that the impact of output shocks are not entirely reflected in contemporaneous labour market indicators (see Box 3.2), the effect of shocks appears to be greater, and the longer the lag, the greater the estimated elasticity. The greatest estimated elasticity to output shocks is estimated if it is assumed that it takes four years to fully realise the impact of the shock. In this case, the average cumulated impact on earnings would be about *twice as large* as the initial shock (see Figure 3.6, Panel B), which implies that the labour market is, on average, severely affected by adverse shocks.[20] Differences across countries are large (of a factor of three) regardless of the assumptions about lagged effects.

Three facts emerge clearly from the decomposition of the output elasticity of total earnings (Figure 3.6). First, employment fluctuations are one key driver of total earnings fluctuations in most countries. On average they account for 65-75% of the effect of output fluctuations on total earnings, depending on the estimation method (compare Panels A and B in Figure 3.6). Second, the effect of the business cycle on average hours worked per employee is small. Finally, the contribution of average wages to overall earning fluctuations depends on the assumptions that are made on how long the effect of a shock lasts. In fact, the wage response takes time and typically emerges only when lagged effects are included in the statistical model (see Box 3.2). When the effects are assumed to be only contemporaneous, the contribution of wage fluctuations is limited, except in a few countries typically with large total earnings fluctuations (Figure 3.6, Panel A). By contrast, if it is assumed that the effect of a temporary macroeconomic shock on output could still be visible in labour market fluctuations four years later, the estimated cumulated response of aggregate wages to a 1% output shock climbs, on average, to an economically significant 0.75%, which accounts for 35% of the overall response in total earnings (see Figure 3.6, Panel B), compared with 17% when the effects are assumed to be only contemporaneous. This suggests that in most countries, the effects of downturns on average wages and total earnings are felt for several years *after* the shock, even when employment rates are back to equilibrium levels. However, just as there is considerable cross-country heterogeneity in the cyclical responsiveness of total earnings, there are also marked cross-country differences in the relative importance of the different margins of adjustment.

Two reasons might explain the small contribution of short-run wage fluctuations in most countries. First, there is evidence that the sensitivity of employment to downturns is greater among low-paid workers, youth, low-skilled and temporary workers (see *e.g.* Abraham and Haltiwanger, 1995; OECD, 2010a; Heathcote *et al.*, 2010; Robin, 2011), particularly in the short-run. Therefore, given the size of the employment elasticity, the low aggregate wage elasticity might reflect a compositional effect, with the average hourly wage remaining relatively unchanged when adverse shocks drive a large numbers of youth, low-paid and temporary workers into unemployment or inactivity.[21] Indeed, estimates based on microdata consistently indicate a greater pro-cyclicality of individual wages than those based on macrodata (*e.g.* Abraham and Haltiwanger, 1995; Brandolini, 1995; Devereux, 2001; Devereux and Hart, 2007). Second, when contracts cannot be re-negotiated each year, any short-run measure of the cyclicality of real wages tends to be dominated by changes in the consumption price deflator (*e.g.* Messina *et al.*, 2009). Moreover, even when contracts are frequently negotiated, there is evidence that nominal wages tend to be rigid both downward and upward, so that adjustments are delayed for several periods, particularly in times of low inflation when these rigidities bind (see in particular Elsby, 2009; and Bassanini, 2011, for more references).

Overall, the analysis of the descriptive patterns presented in this section suggests that the patterns of employment and wage adjustments to macroeconomic shocks vary significantly across countries. This fact suggests a potential role for policies and institutions in shaping these patterns, which is analysed in the next sections.

## 4. Policies and institutions and cyclical fluctuations of earnings and wages

There is an increasingly large empirical literature that investigates cross-country differences in the way employment and unemployment react to macroeconomic shocks (Blanchard and Wolfers, 2000; Nickell *et al.*, 2005; Bassanini and Duval, 2006; Porter and

Vitek, 2008). Many studies also point to cross-country differences in the *resilience* of employment to shocks – most prominently between the United States and Continental European countries (Burgess *et al.*, 2000; Balakrishnan and Michelacci, 2001; Amisano and Serrati, 2003; Dustmann *et al.*, 2010; Ormerod, 2010). In this context, previous research, including many OECD studies, suggests that structural policy settings and labour market institutions can amplify or mitigate the employment effects of shocks and make them more or less persistent (Bassanini and Duval, 2006; OECD, 2010a, 2011). The literature on cross-country differences in the response of aggregate earnings to shocks is comparatively smaller (see *e.g.* Balmaseda *et al.*, 2000; Messina *et al.*, 2009; Dustmann *et al.*, 2010; Kandil, 2010). In order to fill this gap, this section examines the impact of policies and institutions on the cyclical variation of employment, earnings and wages.

### *Amplification/mitigation effects of policies and institutions*

To begin, the extent to which selected policies and institutions amplify or mitigate the impact of output shocks on total earnings, average wages and total hours worked will be estimated by fitting a simple aggregate cross-country/time-series and industry-level difference-in-difference models (see Box 3.3 for the methodology and Bassanini, 2011, for detailed results). In this analysis, estimated specifications include the standard set of policy and institutional variables (henceforth, institutions for brevity) for which quantitative indicators have been developed by the OECD and which have been widely used in previous empirical analyses of unemployment (see *e.g.* Blanchard and Wolfers, 2000; Nickell *et al.*, 2005; Bassanini and Duval, 2006).[22]

The tax wedge and the generosity of unemployment benefits are estimated to unambiguously amplify the impact of output-gap fluctuations on total annual earnings. Figure 3.7 in fact shows that both policies tend to increase the elasticity of total labour income to GDP shocks. Taken at face value, the estimates suggest that in a country where the average unemployment benefit replacement rate is about 5 percentage points greater than the OECD average (26% in 2007), the elasticity of cyclical fluctuations of total annual earnings to the output gap tends to be about 10% greater than in the average OECD country.[23] Consistent with previous OECD findings (OECD, 2006; Bassanini and Duval, 2006), this effect appears to be entirely due to the fact that, *ceteris paribus*, the employment impact of shocks tends to be larger in countries where unemployment benefits are more generous. Two mechanisms might explain this result. First, generous unemployment benefits might reduce workers' resistance to job loss, making them less inclined to challenge dismissals in courts, thereby increasing the reactivity of employment to product demand shocks. In support of this hypothesis, Bassanini *et al.* (2010) show that dismissals leading to unemployment spells are more common in countries with generous unemployment benefits. Second, a number of empirical studies suggest that longer durations of generous benefits tend to reduce job-search effort and make the unemployed more choosy about job offers, thereby lengthening the duration of unemployment spells (see *e.g.* OECD, 2006; Boeri and van Ours, 2008, for surveys), although a few recent studies have questioned these results.[24] Statistically, this would imply that in the year in which an adverse shock occurs, those who become redundant would remain in the unemployment pool longer, thereby dampening further average employment in that year (and possibly in subsequent years; see Zanetti, 2011, for a theoretical model incorporating these features).

By contrast, the effect of the average tax wedge on labour income appears to be essentially due to its role in amplifying gross wage fluctuations, while no significant

### Box 3.3. **Estimating amplification/mitigation and persistence effects of institutions**

In order to assess the amplification/mitigation effects of policies or institutions, these effects are modeled as interactions with the output gap. More precisely, the following static model* is considered:

$$\log W_{it} = \theta \log W_{it}^{*} + \varphi_0 OGAP_{it-l} + \sum_k \varphi_k (X_{it}^{k} - \overline{X}^{k}) OGAP_{it} + \text{Other covariates} + \varepsilon_t$$

where *log* W is the logarithm of total earnings, hours worked, or hourly wages, * indicates their respective trend values, *OGAP* is the output gap, *I* and t index country and time, respectively, *X* stands for policies and institutions, indexed by *k*, a bar above a variable indicates its sample average and $\varepsilon$ is an error term capturing shocks that are unrelated to the business cycle. Other covariates include country and time dummies, and the level of each included institution (for identification of the interaction terms). As in Box 3.2, to the extent that the trend captures all structural long-run determinants of the dependent variable (including *e.g.* population growth) and shocks are stationary (with zero mean), $\theta$ can be set equal to 1 and the above equation becomes:

$$\log WGAP_{it} = \varphi_0 OGAP_{it-l} + \sum_k \varphi_k (X_{it}^{k} - \overline{X}^{k}) OGAP_{it} + \text{Other covariates} + \varepsilon_t$$

where *log WGAP* is the gap of *log* W. The hypothesis $\theta = 1$ can be easily tested and in fact is never rejected in the specifications presented in this chapter. A positive estimated sign of $\varphi_k$ for a given policy $X_k$ implies that the policy significantly amplifies output shocks, while a negative sign means that the policy exerts a smoothing effect on output fluctuations.

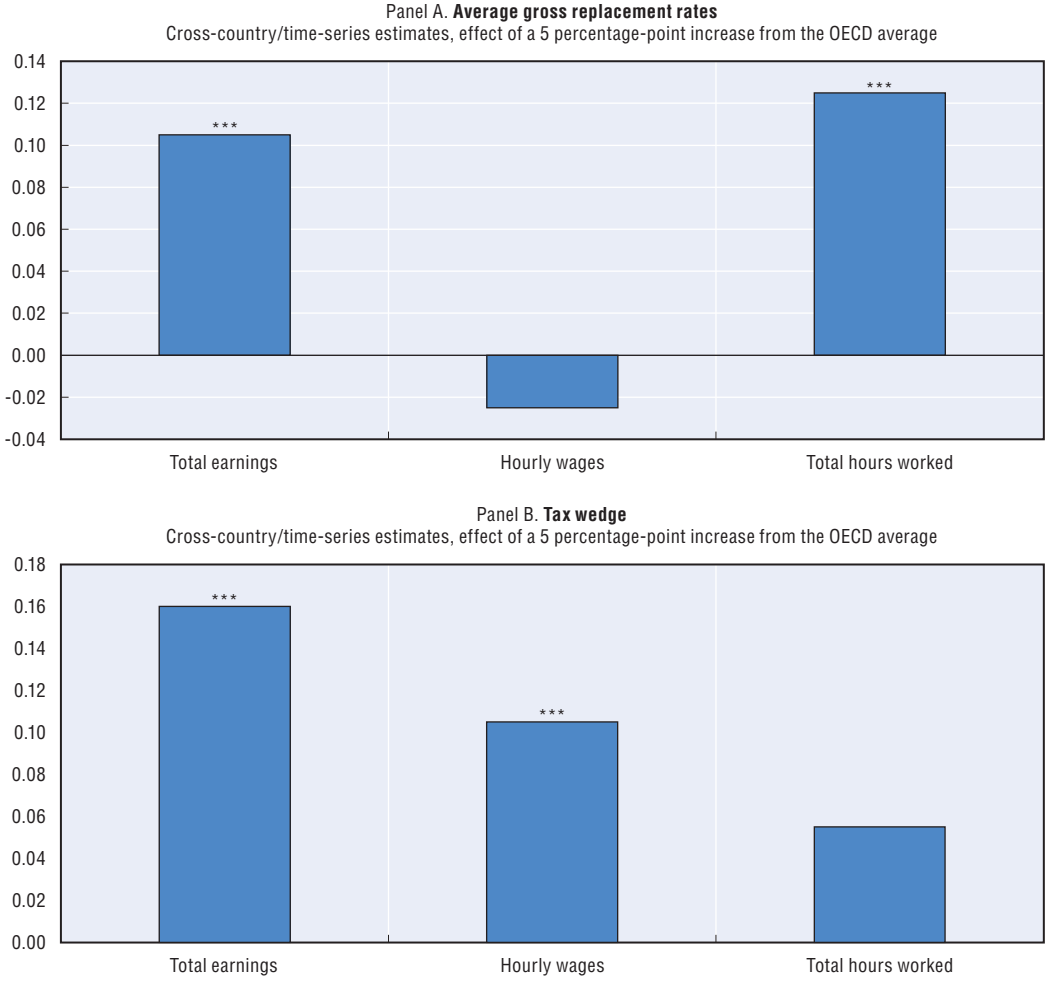
Following OECD (2007) and Bassanini *et al.* (2009), for the purposes of this chapter, the effects of employment protection (EP) and statutory minimum wages, have also been estimated at an industry level using a reduced-form difference-in-difference version of the above model (see Bassanini, 2011). This approach is based on the assumption that the effect of a given policy on an economic variable is greater in industries where this policy is more likely to be binding – hereafter called "policy-bound industries". For example, EP-bound industries are likely to be those where firms typically need to lay off workers to restructure their operations in response to changes in technologies or product demand and where, therefore, high firing costs are likely to slow the pace of reallocation of resources. By contrast, in industries where firms can restructure through internal adjustments or by relying on natural attrition of staff, changes in EP for open-ended contracts can be expected to have little impact on labour reallocation. Average dismissal rates by industry in the United States, the least regulated country, are used as a benchmark to measure the layoff propensity of each industry in the absence of regulation. Similarly, minimum-wage-bound industries will be those that are more heavily reliant on low-wage labour in the absence of a minimum wage. For this policy, low-wage industries are identified based on the incidence of low-wage workers by industry in one specific country, the United Kingdom, prior to the introduction of statutory minimum wages in that country in 1999. The advantage of this estimation strategy is that it controls for policies or institutions that influence cyclical fluctuations in the same way in all industries. More precisely, all factors and policies that can be assumed to have, on average, the same effect on the dependent variable in policy-bound industries as in other industries can be controlled for by country-by-time dummies and by including an interaction between the output gap and the indicator identifying policy-bound industries. In addition, endogeneity issues can be more easily dealt with in the difference-in-difference framework.

### Box 3.3. **Estimating amplification/mitigation and persistence effects of institutions** *(cont.)*

An adverse shock might not only compress earnings and reduce employment. Its effects might also persist over time, and the degree of persistence is likely to be affected by policies and institutions. In order to assess amplification *versus* persistence effects of shocks, a dynamic error-correction version of the baseline model described above is also estimated, interacting policies with the coefficient of the error-correction term (see Bassanini, 2011, for more details).

* The model presented in this box is static for simplicity. However, dynamic models have also been estimated for the chapter leading to consistent results.

## Figure 3.7. **Impact of unemployment benefits and the tax wedge on the elasticity of total earnings fluctuations to the output gap**




*Note:* Absolute effect of a 5% increase of the policy indicator from the sample average on the elasticity to the output gap of gaps in total earnings, hourly wages and hours worked, obtained from aggregate cross-country/time-series estimates. Gaps are defined as the difference between the log of the actual and trend value of each variable.
***: statistically significant at the 1% level.

*Source:* OECD estimates on the basis of *EUKLEMS*, *STAN* and *EO Databases*.

StatLink http://dx.doi.org/10.1787/888932479971

impact on employment fluctuations is detected. One possible explanation of this finding could be that average tax wedges are higher in countries where marginal tax wedges are more progressive. In turn, progressive labour taxes make labour supply more inelastic and/or the wage-setting curve steeper (see *e.g.* Guo and Lansing, 1998; Dromel and Pintus, 2008), at least when the latter is defined in terms of gross wages, thereby facilitating wage adjustments (and, possibly, restraining employment adjustments) whenever firms need to compress unit labour costs. In this interpretation, the effect of the average tax wedge would reflect the impact of the marginal tax wedge, which is omitted from the main empirical specifications due to lack of data on marginal tax rates for the whole time period under examination.[25]

The evidence presented here suggests that, by amplifying the effects of shocks on gross labour income, high tax wedges and generous unemployment benefits unambiguously affect fluctuations of the labour tax base and government revenues, so that they can become extremely costly for the government budget in bad times. By contrast, these findings do not imply that these measures amplify the effects of shocks on household disposable income. In fact, the evidence presented in Section 2 suggests that the tax and transfer system also mitigates the transmission of individual earnings volatility onto household disposable income.

In contrast with progressive taxes, by preventing downward adjustment at the bottom of the distribution, minimum wages can be expected to significantly constrain wage adjustments in the aftermath of an adverse aggregate shock (see *e.g.* Bertola and Rogerson, 1997). Whether the lack of wage adjustment will be reflected in stronger adjustments in employment or along other margins remain an open question that must be assessed empirically. Estimates suggest that statutory minimum wages mitigate the impact of macroeconomic shocks on the cyclicality of hourly wages (Figure 3.8).[26] A ten percentage point increase in the ratio of minimum to median wages from the OECD average appears to reduce the elasticity of hourly wages to the output gap by 0.18, which is a significant effect from an economic point of view, taken into account the relatively low elasticity of wage fluctuations. However, due to the heterogeneous impact of the minimum wage on the cyclicality of employment and hours worked, no significant impact on the transmission of GDP shocks on total earnings is detected.

Finally, the empirical analysis suggests a strong and robust role for employment protection (EP) in mitigating the earnings impact of shocks, in particular in the case of dismissal regulations (Figure 3.9).[27] This is consistent with a large body of theoretical literature suggesting that firms' optimal behaviour in the presence of positive firing costs is to compress both job creation and destruction, thereby reducing employment fluctuations over the business cycle (see Bentolila and Bertola, 1990; Bertola, 1990; Mortensen and Pissarides, 1999; Zanetti, 2011).[28] Taken at face value, the estimates suggest that in a country where the indicator of EP stringency for regular contracts is one unit below the OECD average – *i.e.* approximately the level of the United Kingdom – the elasticity of cyclical fluctuations in total annual earnings to the output gap is 25% greater than in the average OECD country. This effect appears to be entirely due to the impact of firing restrictions on employment retention during downturns (as well as on hiring restraint during booms). By contrast, no significant effect emerges as regards hourly wages or average hours per employee.[29]

Figure 3.8. **Impact of statutory minimum wages on the elasticity of total-earnings fluctuations to the output gap**

Difference-in difference estimates, effect at the OECD average

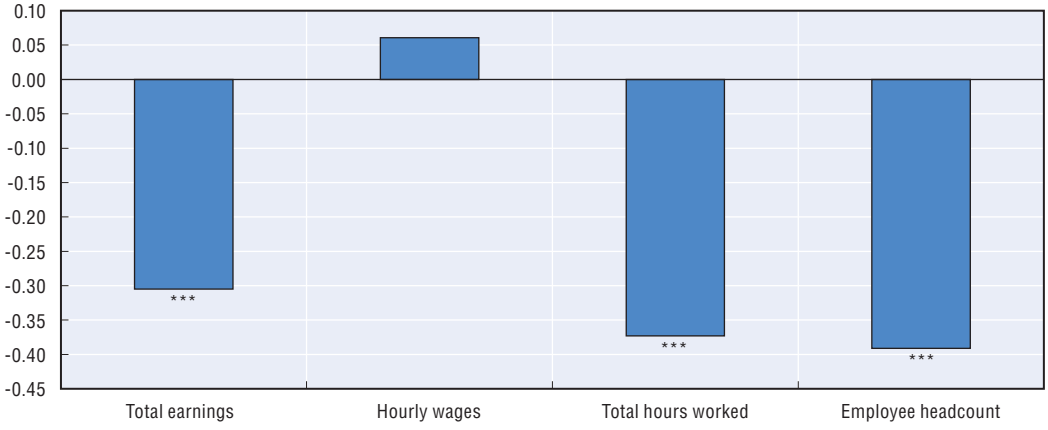

*Note:* Absolute effect of a 10 percentage-point increase from the OECD average of the ratio of minimum to median wages on the elasticity of industry-level gaps to the aggregate output gap, obtained from the difference-in-difference estimates (see Bassanini, 2011). Gaps are defined as the difference between the log of the actual and trend value of each variable. **: statistically significant at the 5% level.

*Source:* OECD estimation on the basis of *UK LFS*, *EUKLEMS* and *EO Databases*.

StatLink http://dx.doi.org/10.1787/888932479990

Figure 3.9. **Impact of the employment protection for regular contracts on the elasticity of total earnings fluctuations to the output gap**

Difference-in difference estimates, effect at the OECD average




*Note:* Absolute effect of a one-unit increase of the indicator of EP for regular workers from the sample average on the elasticity of industry-level gaps to the aggregate output gap, obtained from the difference-in-difference estimates (see Bassanini, 2011). Gaps are defined as the difference between the log of the actual and trend value of each variable. ***: statistically significant at the 1% level.

*Source:* OECD estimation on the basis of Bassanini *et al.* (2010) as well as *EUKLEMS*, *STAN* and *EO Databases*.

StatLink http://dx.doi.org/10.1787/888932480009

One of the effects of stringent dismissal regulations is that firms react by increasing the share of workers on *temporary* contracts (see *e.g.* Boeri, 2011). Indeed, estimates presented by OECD (2010a) and Bassanini *et al.* (2010) suggest that a one unit increase in the indicator of EP for permanent contracts raises the share of temporary contracts by at least 5 percentage points. In turn, as the experience of the OECD countries in recent years suggests, the greater the share of temporary workers, the greater is the employment adjustment in a downturn (see OECD, 2010a). Moreover, evidence presented in Section 1

suggests that earnings volatility is more prominent among temporary workers. This must induce some caution when interpreting the estimates in Figure 3.8.

Estimates obtained by including an indicator for the aggregate trend share of temporary contracts[30] suggest that a 5 percentage-point increase in the share of temporary contracts increases the elasticity of employment to aggregate shocks by 23% (with, however, an insignificant impact on total earnings fluctuations). Even if, conditional on the share of temporary contracts, the estimated shock-mitigation effect of dismissal regulation is still significant (and actually greater),these results suggest that stringent dismissal regulations might make the effects of recessions more unequal. In fact, stringent EP for regular workers, by reducing the share of permanent contracts, tends to shrink the number of workers that are sheltered from the cost of business-cycle fluctuations who, by contrast, enjoy an increased degree of protection and security. Thus, these estimates suggest that countries with relatively lax firing procedures could unambiguously gain in terms of shock mitigation by increasing the stringency of EP only if they manage to avoid labour market dualism. Yet, this balance might be difficult to achieve due to the difficulty of enforcing stringent regulation for temporary contracts. In fact, EP is typically enforced by individuals who consider themselves as victims and lodge a complaint with the competent tribunals or courts. In the case of dismissals, potential plaintiffs are easily identified and able to react, whereas victims of breaches of rules on temporary contracts (particularly in the case of violations of hiring restrictions under such contract) are much less likely to make a complaint (see Bassanini *et al.*, 2010, for an extensive discussion). This suggests that, even if firing restrictions tend to mitigate the average impact of adverse shocks, for equity reasons, countries should avoid excessively restrictive regulations.

### *Institutions and the persistence of shocks over time*

An adverse shock might not only compress earnings and reduce employment. Its effects might also persist over time, and the degree of persistence is likely to be affected by policies and institutions. Improving upon Bassanini and Duval (2006), aggregate and industry-level dynamic models are estimated for this chapter where the speed of shock re-absorption is assumed to depend on policies and institutions (see Box 3.3 above). These models show that EP is the only labour market policy or institution, among those examined (see above), that significantly affects the persistence of shocks (see Bassanini, 2011, for full results). Taken at face value, these estimates imply that the time span required to reduce the effect of a temporary macroeconomic shock on total earnings by one half (the so-called *half life*) would be 13% smaller in a country where the indicator of stringency of EP for regular contracts is one unit below the OECD average, than in an average OECD country.[31] The estimates also suggest that firing restrictions delay the re-absorption of the initial effect of shocks on total earnings mainly through their effect on the speed of adjustment of wages, while no significant effect is found on hours or employment. This finding suggests that stringent dismissal regulations could be among the factors behind the slow reaction of wages to shocks, which is underlined in Section 3. Indeed, economic theory and the available empirical evidence support the conclusion that wage rigidity is likely to be more widespread when firing restrictions are high, since strong insiders can more easily resist real wage cuts (see *e.g.* Bertola and Rogerson, 1997; Bertola, 1999; Babecký *et al.*, 2009, 2010).

What do the counteracting effects of firing restrictions on shock amplification and persistence imply for labour-income smoothing? From the econometric estimates presented

above, it is possible to derive, the effect of EP on the *cumulated* impact of an adverse temporary shock on total earnings (see Bassanini, 2011). These estimates suggest that, in a country where the indicator of stringency of EP for regular contracts is one unit below the OECD average, the actual value of the total cumulated loss of labour income due to a one-time adverse macroeconomic shock would be about 20% larger than in the average OECD country. This effect would result from the combination of larger employment fluctuations partially compensated by a more rapid adjustment of hourly wages to the equilibrium.

## 5. Policies and institutions and cyclical fluctuations of the earnings distribution

The analysis of the impact of institutions presented so far has considered average effects on earnings, hours worked, employment and wages, but these averages can hide large asymmetries in adjustment patterns, particularly in the case of employment fluctuations. Of particular policy concern, the labour income of workers at the bottom of the wage distribution appears to be particularly affected by business-cycle fluctuations. Indeed, one key finding of the recent US-based literature on earning inequality is that the dispersion of the wage and salary annual earnings (and to a minor extent of that of hourly wages) is significantly counter-cyclical (see *e.g.* Heathcote *et al.*, 2010). That is, the distribution of annual earnings becomes less equal during recessions and more equal during booms. This has been attributed to spikes in the incidence of unemployment for low-skilled (low-paid) workers around business-cycle troughs. For a given hourly wage, the longer the time an individual spends jobless, the lower his/her annual earnings. To the extent that low-paid workers appear to suffer from greater increases in the risk of joblessness in a recession, this would explain why the effect is more evident within the earnings rather than the wage distribution (see *e.g.* Robin, 2011). According to this literature, the business cycle will also exacerbate disparities in consumption and living standards insofar as workers that are typically in low-paid jobs are also less wealthy and find it more difficult to smooth consumption over time by temporarily tapping into financial assets if they are hit by negative income shocks. They may also have poorer access to financial markets to help them smooth consumption. For example, the analysis in Section 2 shows that individuals in poorer households are far more likely to experience financial stress in response to large earnings decreases than those in richer households.

Data on the earnings distribution at a relatively high frequency (at least annual) are not available for many countries, which makes it difficult to see whether this phenomenon occurs outside the United States. One alternative way to look at this issue – that is exploited here – is to examine the distribution of total gross real annual earnings of wage and salary employees by level of education using data derived from the national accounts and national labour force and earnings surveys.[32] In fact, to the extent that differences in employment, hours worked and pay across different educational attainment levels are among the main drivers of earnings disparities, the ratio between total gross annual earnings of the high- and low-educated workers[33] provides a measure of the dispersion of the earnings distribution, which compounds the impacts of relative wage and employment fluctuations. The results of this exercise are presented in Figure 3.10, which shows the elasticity of the cyclical component of this ratio with respect to the output gap.

Two main stylised facts emerge from Figure 3.10:

- First, in most countries, relative earnings by educational attainment appear to fluctuate counter-cyclically, although with important cross-country differences. In other words the

Figure 3.10. **Elasticity of the cyclical component of the earnings ratio between high and low-educated workers to the output gap**


*Note:* 1974-2004 for the United States; 1980-2003 for Denmark; 1982-2002 for France; 1984-2003 for Austria; 1987-2003 for the United Kingdom; 1987-2004 for Finland; 1991-2004 for Canada; 1992-2002 for Japan; 1992-2002 for the Netherlands; 1992-2004 for Germany; 1993-2004 for Sweden; 1993-2005 for Korea; and 1999-2004 for the Slovak Republic.

*Source:* OECD estimates on the basis of *EUKLEMS* and *EO Databases*.

StatLink http://dx.doi.org/10.1787/888932480028

earnings distribution becomes more unequal around the troughs of the business cycle. This has important equity consequences. To the extent that low-educated/low-paid workers are less able to shield themselves against income shocks, they will suffer a greater welfare reduction in bad times than high-educated/high-paid workers, in the absence of policy interventions to compensate their loss of labour income.

- Second, cyclical fluctuations in total hours by education levels are the main driver of cyclical fluctuations of the earnings distribution (Canada being the only exception),confirming the generality of similar findings in the US literature (see above). This is true both at the top and bottom of the distribution (see Bassanini, 2011), and can essentially be explained by the fact that the lower the level of educational attainment, the greater the risk of incurring spells of joblessness – and therefore of working few or no hours in a year and having thus low labour income – in bad times.[34]

Aggregate and industry-level difference-in-difference analysis – based on the same methodology as in Box 3.3 – suggests that, among those policies and institutions considered in the previous section, EP is the only policy with an unambiguous effect on the output-gap elasticity of the earnings distribution by educational attainment. In fact, it appears that dismissal restrictions dampen the tendency of the earnings distribution to become more unequal around business-cycle troughs (Figure 3.11). A negative value in Figure 3.11 implies that EP reduces the tendency of the earnings ratio between high and low-educated workers to fluctuate counter-cyclically.[35] Taken at face value, the estimates suggest that in a country where the indicator of stringency of EP for regular contracts is one unit below the OECD average, the fluctuations of the earnings ratio between the high- and low-educated to the output gap would be 32% more counter-cyclical than in the average OECD country. This pattern appears to be almost equally due to the effects of dismissal regulations on the wage and employment distribution.

The available data also allow the effect of firing restrictions on the cyclicality of earnings inequality to be analysed separately in the top and bottom halves of the

Figure 3.11. **Percentage impact of EP for regular contracts on the elasticity to the output gap of the industry-level earnings ratio between high and low-educated workers**


*Note:* Percentage effect of a one-unit deviation of the indicator of EP for regular workers from the sample average on the absolute value of the elasticity of industry-level gaps to the aggregate output gap, obtained from the difference-in-difference estimates (see Bassanini, 2011). Gaps are defined as the difference between the log of the actual and trend values of each variable. Elasticities in the average countries are always negative.
***: statistically significant at the 1% level.

*Source:* OECD estimation on the basis of Bassanini *et al.* (2010), as well as *EUKLEMS* and *EO Databases*.

StatLink http://dx.doi.org/10.1787/888932480047

distribution. The estimates suggest that EP for regular contracts has a strong dampening impact on the counter-cyclicality of earnings inequality in the bottom half of the earnings distribution – that is of the earnings ratio of medium-educated to the low-educated – but has no significant impact on fluctuations in the top half, notably because of the lack of any effect on relative employment fluctuations in this segment of the distribution (Figure 3.11).

## Conclusions

This chapter has investigated patterns of earnings fluctuations and volatility at the individual and aggregate levels. Even in good times, many workers in OECD countries experience large fluctuations in gross labour earnings from one year to another due to changes in working hours, movements into and out of employment and changes in pay within jobs. Nevertheless, the business cycle plays an important role for individual and aggregate earnings fluctuations, particularly for those with low levels of education, who are typically also low-paid workers. The poorest households also have the least access to credit or savings to help them weather the fluctuations, thus the risk that earnings volatility – including that associated with recessions – translates into household poverty and financial stress is particularly high for this group.

There is some evidence that generous unemployment benefits and labour taxes amplify the effect of macroeconomic shocks on labour income. However, the tax and transfer system partially offsets the impact of individual earnings volatility on household disposable income. In most countries, and particularly in those countries with more progressive labour taxation, progressive income taxes account for much of this buffering effect. In countries with generous unemployment benefits and when the reduction of labour income is due to job loss, changes in transfers are also important. This suggests that moderately progressive taxes and generous benefits, if coupled with strictly-enforced

work-availability conditions and a well-designed "activation" strategy, as suggested by the restated *OECD Jobs Strategy* (OECD, 2006), provide a solid framework for reconciling labour market dynamism with adequate income security, although this is not easy to design and implement effectively.

Providing adequate income security is more difficult in a recession and this chapter sheds new light on this challenge by providing evidence that generous unemployment benefits and labour taxes may actually amplify the effect of macroeconomic shocks on labour income. By amplifying the effects of shocks on gross labour income, and therefore government revenues, these measures can be costly for the government budget, underlying the importance of countries achieving a sound fiscal stance during periods of growth, so as to have the fiscal capacity to sustain income support for vulnerable workers and households during a crisis. Care is also required to ensure that income support systems do not raise structural unemployment.

In contrast, policies that keep workers in their current jobs, such as short-time work schemes and employment protection for *regular* workers, are likely to mitigate the average loss of labour income in downturns. In the case of employment protection, the reduction in the risk of job and earnings losses appears to be particularly large for workers at the bottom of the earnings distribution. However, the evidence also suggests that these policies tend to prolong the effects of adverse aggregate shocks. Overall, the dampening effect outweighs the persistence effect, so that employment protection for regular workers is likely to reduce the total cumulated loss of labour income brought about by a downturn. This average effect may hide adverse impacts for some groups of workers, however. Notably, strict employment protection tends to exacerbate labour market duality (OECD, 2010a). This chapter shows that workers with temporary contracts are more likely to experience earnings volatility than those with regular contracts. Taken together, these findings suggest that policy makers need to strike a balance between the income-smoothing effect of higher employment protection and both the gains in efficiency associated with lower employment protection (OECD, 2007) and the need to prevent labour market duality.

### *Notes*

1. For most of this chapter, "earnings" refers to *gross* labour earnings, *i.e.* pre-tax earnings from wage employment or self-employment. Earnings may include wage or salary earnings, bonus and overtime payments. Other income concepts are introduced and explained in section "Buffers against individual earnings volatility".
2. Following US Congressional Budget Office (2007), workers who have no labour earnings in the first year and positive labour earnings in the second year are assumed to have had an increase in labour earnings of 20% or more. Workers who have positive labour earnings in the first year and no labour earnings in the second year are assumed to have had a decrease of 20% or more.
3. In order to include a number of non-European countries in the analysis, labour earnings includes positive self-employment income. Self-employment losses are given a value of zero when calculating labour earnings. Comparison of the results for European countries using labour earnings and wage/salary income (*i.e.* excluding self-employment income) show that the results are very similar.
4. However, country rankings based on multi-year observations of earnings volatility, which are likely to be less prone to measurement error, are highly correlated with the year-to-year measures used in this chapter. Likewise, the results of descriptive regressions discussed in section "Who has volatile earnings?" are similar using year-to-year and multi-year measures of earnings volatility (Venn, 2011).

5. Estimates for the United States in this section use data from the Panel Survey of Income Dynamics (PSID). After 1997, the survey was conducted only once every two years, so year-to-year estimates of earnings volatility are not available for the United States after 1996. Estimates of earnings volatility based on earnings changes over a three-year window for the United States suggest that full-time earnings volatility remained relatively stable and overall earnings volatility decreased slightly since 1996 (Venn, 2011).

6. Excluding the Czech Republic, Poland and the Slovak Republic, the cross-country correlation between the incidence of large increases and the incidence of large decreases is 79% for workers who were employed full-time for the full year and 71% for all workers (both correlations are significant at 99% level).

7. The cross-country divergence in earnings volatility trends is also echoed in the findings of other researchers. Hällsten *et al.* (2010) find that earnings volatility increased in Sweden between 1985 and 2003, while Beach *et al.* (2006) show overall volatility in Canada was relatively stable over a similar period.

8. The cross-country correlation between the job-to-job reallocation rate and the incidence of large increases in full-time earnings is –62% (significant at 99% level), while for decreases, the correlation is –36% (significant only at 85% level).

9. The United States also appears to have relatively high earnings volatility coexisting with relatively high labour mobility. However, this may be due to measurement errors: the data used to calculate earnings volatility for the United States are from the mid-1990s while the data used to calculate worker reallocation rates are for 2000-06. For this reason, the United States is not shown in Figure 3.2.

10. Looking at the average incidence of earnings volatility for men and women (without controlling for job and personal characteristics) shows that, while men are more likely than women to have volatile year-to-year earnings within full-time work, women are more likely to move into and out of work and from full-time to part-time jobs and so have greater overall earnings volatility. This is not evident once job characteristics are taken into account because women are concentrated in jobs that have greater volatility. Notably, women are more likely than men on average to hold temporary jobs.

11. Data on work experience are not available for all countries. Models run on a reduced sample including a control for experience show that less-experienced workers have more earnings volatility, but younger workers are still significantly more likely than prime-age workers to have volatile earnings.

12. The results are similar if health problems are defined using alternative variables such as self-defined chronic health problems or if workers say that they have a health problem that limits their activities. These alternative variables are not used in the main analysis shown in Figure 3.3 because they are missing for a large proportion of respondents from some countries. The results for year-to-year earnings increases shown in Figure 3.3 are not found using the alternative measures, but those for multi-year earnings increases using the alternative measures are the same as in Figure 3.3.

13. Define $\Delta HY_{net} = \Delta(HY_{net} - HY_{gross}) + \Delta(HY_{gross} - HY_{labour}) + \Delta(HY_{labour} - IY_{labour}) + \Delta IY_{labour}$ where *HY* is household income/earnings, *IY* is individual earnings and the subscripts denote *net* income, *gross* income and *labour* earnings. The first bracket on the right-hand side is equal to the component due to changes in taxes, the second bracket is the component due to changes in transfers and other non-earned household income, the third bracket is the component due to changes in the labour earnings of other household members and the last term is the component due to changes in individual labour earnings.

14. The exception is for large increases in earnings in the Slovak Republic.

15. One notable exception is Diaz-Serrano (2004) who examines the impact of household income volatility (measured by the coefficient of variation in net household annual income over time) on the likelihood of mortgage delinquency. He finds that volatility significantly increases the risk of mortgage delinquency and also reduces the likelihood of being a homeowner rather than a renter.

16. Those households that do not have a mortgage or do not pay rent are assumed to have not missed a rent or mortgage payment.

17. An alternative specification which includes the whole sample but controls for the experience of poverty or financial stress in the year before the earnings shock gives qualitatively similar, but slightly larger, estimates than those reported in this chapter (Venn, 2011).

18. Long-run effects should also take into account the effect of business-cycle fluctuations on the length of non-employment spells and wage levels at re-employment (*e.g.* OECD, 2009; Jacobson *et al.*, 1993; Farber, 2005; Krebs, 2007).

19. Total earnings and hourly wages in this and the following sections are gross and expressed in real terms and refer to wage and salary employees unless otherwise specified. In principle, the private consumption deflator and the consumer price index can be used to deflate these variables. Figures presented in this chapter are based on the private consumption deflator because it is available for more countries and years than the consumer price index. All results are robust, however, to changes in the deflator.

20. These figures must be treated with caution, however, since they do not refer to the same number of countries, insofar as longer time series are required for obtaining reliable estimates when many lags are included.

21. This compositional effect tends to raise the average wage and thus offsets downward adjustments in the wages of workers remaining employed. During the 2008/09 recession, the response of average wages was particularly small (and even of opposite sign in some countries) in comparison with the figures reported here (see OECD, 2010a), possibly because the severity of the employment contraction exacerbated compositional effects.

22. These are: the tax wedge between labour cost and take-home pay (for a single-earner couple with two children, at average earnings levels); a summary measure of unemployment benefit generosity (a cross-country comparable measure of average *net* replacement rates would be more appropriate, but this is only available since 2001; therefore, it is used only as a robustness check); the degree of stringency of employment protection (EP); collective bargaining coverage rates; and the degree of centralisation/co-ordination of wage bargaining, a proxy for the concept of "corporatism" which has received widespread attention in the comparative political economy literature.The statutory minimum wage, available for fewer countries, is separately analysed. The average degree of stringency of product market regulation (PMR) across seven non-manufacturing industries is also included, essentially because of the close correlation between product and labour regulations (see Annex 3.A1 for details on data construction and sources). By contrast, other labour market policies, including short-time work schemes that played a key role in the 2008/09 recession (see Hijzen and Venn, 2010), are not analysed here, due to limited data availability, except as a further control in certain specifications (see Bassanini, 2011).

23. Estimates in Figure 3.7 imply that a 5% increase in average replacement rates from the OECD average – that is, about one standard deviation of the distribution, considering only time-series variation – raises the elasticity of the total earnings gap to the output gap by about 0.11. The percentage effect can be obtained by dividing it by the corresponding average elasticities (see Bassanini, 2011).

24. Recent findings suggest that one needs to be cautious about the interpretation of the empirical relationship between benefit generosity and the duration of unemployment spells. For example, using Austrian data, Card *et al.* (2007) argue that unemployment exit spikes at benefit exhaustion are mainly due to leaving the unemployment system and becoming inactive rather than to job-finding. Using US time-use data, Krueger and Mueller (2010) show that there is not much difference in average job-search effort between UI-eligible and non-eligible job seekers, but the profile of job-search intensity of the former depends on time to benefit exhaustion. Moreover, the effect of unemployment insurance on search effort seems to be confined only to those job seekers that are liquidity-constrained, whom UI enables to smooth consumption and thus reduces the pressure to rush back to work (Chetty, 2008). By contrast, those with access to a secondary income source are more likely to maintain consumption during a spell of unemployment and thus are less responsive to unemployment benefits.

25. Bassanini (2011) shows on a more limited sample that the estimated effect of the average tax wedge that is presented in Figure 3.7 is entirely due to its correlation with marginal tax wedges on middle-to-high labour incomes.

26. The effects of statutory minimum wages on the transmission of aggregate shocks are estimated using only industry-level data and a difference-in-difference approach (see Box 3.3). The reason is that comparable time-series on minimum wages are available for only the subset of countries where they are imposed by law or regulation, rather than being set by collective bargaining among social partners (these include Australia, Belgium, Canada, Czech Republic, France, Greece, Japan, Korea, the Netherlands, Poland, Portugal, Slovak Republic, Spain, the United Kingdom and the United States). Minimum wages are measured as the economy-wide ratio of the gross statutory minimum wage to the median wage.

27. This finding is based both on aggregate cross-country/time-series estimates and difference-in-difference industry-level estimates (see Box 3.3). Figure 3.8 presents the effect on industry-level fluctuations but qualitatively similar results are obtained for aggregate fluctuations.

28. To the extent that EP shelters insiders against the risk of job loss, they can also resist downward adjustment of wages after an adverse shock (Bertola and Rogerson, 1997; Bertola, 1999). In fact, there is evidence that, in countries with restrictive dismissal regulations, firms with a large share of permanent workers and/or a greater share of blue-collar and low-skilled white-collar workers tend to have more rigid wage-setting schemes (Babecký *et al.*, 2009, 2010).

29. See Bassanini (2011) for detailed results and robustness checks.

30. Trends are obtained with a standard HP filter. They are used here instead of actual values to avoid endogeneity problems due to the cyclical fluctuation of the share of temporary contracts.

31. These estimates also appear robust to changes in model specifications, excluding countries one-by-one and including additional controls (see Bassanini, 2011). Moreover, there is no evidence that the share of temporary workers has any significant effect on persistence, or that its inclusion affects the impact of EP for regular contracts on persistence.

32. The source is the *EUKLEMS Database* (see Annex 3.A1).

33. The term "high-educated" identifies here those with more than upper secondary education, the "low-educated" are those with less than upper secondary education, while "medium-education" denotes those with upper-secondary education.

34. These findings appear consistent with the few available studies in the literature (see, for example, Dustmann *et al.*, 2010). They are also independent of the number of lags included in the model.

35. The elasticity of fluctuations of the earnings ratio between the high- and low-educated to the output gap is negative in the average country, suggesting that earnings inequalities fluctuate counter-cyclically (see Figure 3.10).

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ANNEX 3.A1

# *Data Construction and Sources*

## Trend and cyclical components

In this chapter, the non-cyclical component of any given variable is disentangled from the cyclical component through a band-pass filter. Band-pass filters are statistical tools that retain fluctuations at specified frequencies and sweep out or attenuate those at other frequencies. The two most commonly used band-pass filters are the Hodrick-Prescott (HP) filter and the Baxter-King (BK) filter (see Hodrick and Prescott, 1997; and Baxter and King, 1999). The HP filter is derived by minimising a weighted average of the square of the growth of the trend component and its quadratic difference from the actual series. The relative weight of the growth term is usually set to 100 for annual data. One problem with the HP filter is that it performs poorly around the beginning and the end of each time series. The BK filter, by "passing" only frequencies between a low and high thresholds (reflecting the idea that business cycles are fluctuations of a certain frequency), performs better but at the cost of eliminating a few observations around the endpoints. Usual thresholds for the BK filter are two and eight years. In order to preserve sample size, the HP filter is mainly used in this chapter, but all results are qualitatively robust to the use of a BK filter.

## Data for the aggregate and industry-level analysis

### *Industry-level data*

Earnings and hourly wage data refer to total gross annual earnings and average hourly wages, respectively of wage and salary employees. Employment and hours worked refer to annual averages for wage and salary employees. Real value added is obtained by deflating nominal value added in each industry with the industry-specific double deflator. Data are from the *EUKLEMS Database* except for Norway, where they come from the *OECD STAN Database* and refer to total employment. EUKLEMS data obtained through interpolation and/or estimated on the basis of conjectures, identified from Timmer *et al.* (2007), Baldwin (2009) and the related EUKLEMS documentation, were removed from the sample to avoid artificial compression of business-cycle fluctuations. Data are aggregated at the level of the business sector to be used in aggregate regressions. In the industry-level analysis the business sector is disaggregated in 23 industries.

The distributions by educational attainment of earnings, wage, and hours also come from the EUKLEMS Database. Again, data obtained through interpolation and/or on the basis of conjectures were removed from the sample. Education is divided into three categories: low-education (less than upper secondary); medium education (upper

secondary); and high education (more than upper secondary). The business sector, in this case, is partitioned in 9 industries for reasons of data reliability.

The industry-specific US dismissal rate is from Bassanini *et al.* (2010; *www.oecd.org/dataoecd/28/30/46825863.zip*) and is derived from various waves of the CPS Displaced Workers Supplement (2000-06, even years). An individual is considered to have been dismissed 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.

The share of low-paid workers in the United Kingdom prior to the introduction of the minimum wage in 1999 is the average share of low-pay workers in each industry over all available quarters between 1994 and 1998. In each quarter, low-paid workers are defined as those with gross hourly wages less than two-thirds of the median wage of the quarter for the whole economy. The source is the *UK Labour Force Survey*.

### *Institutional variables*

EP indicators come from the OECD Indicators of Employment Protection (*www.oecd.org/employment/protection*). All indicators vary from 0 to 6 from the least to the most stringent. In aggregate regressions, data are extended backward by making them constant between 1978 and 1985.

UB generosity is measured on the basis of average replacement rates (in per cent of pre-displacement wage), defined as the average unemployment benefit replacement rate across two income situations (100% and 67% of average worker earnings), three family situations (single, with dependent spouse, with spouse in work) and three different unemployment durations (first year, second and third years, and fourth and fifth years of unemployment). Net benefits, available between 2001 and 2007, are net of taxes and transfers, but exclude means-tested social assistance. The source is the *OECD Benefits and Wages Database* (*www.oecd.org/els/social/workincentives*).

The indexes of anti-competitive product market regulation come from the *OECD Regulatory Database* (*www.oecd.org/document/1/0,3746,en_2649_37421_2367297_1_1_1_37421,00.html*). They vary from 0 to 6 from the least to the most restrictive.

Minimum wages are measured as the ratio of the statutory minimum wage to median wage of full-time workers. For exogeneity tests, the deviation of the logarithm of the real minimum wage in 2000 USD purchasing power parities from the OECD average of each year is used an instrument. The source of all these variables is the *OECD Employment Database* (*www.oecd.org/els/employment/database*).

The average tax wedge considered in this chapter is the wedge between the labour cost for the employer and the corresponding net take-home pay of the employee for single-earner couples with two children earning 100% of average worker earnings. It is expressed as the sum of personal income tax and all social security contributions as a percentage of total labour cost. Data are retropolated using tax wedges for average production workers between 1978 and 1982 for most countries. The source is the *OECD Taxing Wages Database* (*www.oecd.org/ctp/taxingwages*).

Collective bargaining coverage is the share of workers covered by a collective agreement, in percentage. Data were averaged or interpolated when information is not available at the annual level. The degree of corporatism is proxied by the ICTWSS index of

coordination, which takes values from 1 to 5 from the least to the most coordinated. The source of both variables is the *ICTWSS Database* (*www.uva-aias.net/207*).

### *Other aggregate variables*

The output gap is the OECD measure of the gap between actual and potential output as a percentage of potential output. In the case of Korea, due to the lack of data on the OECD measure of the output gap, an HP filter of GDP in volume terms is used to derive the output gap. The source is *OECD Economic Outlook* (EO) *Database*.

Earnings and wage data are deflated using the private consumption deflator, drawn from the *OECD EO Database*.

The aggregate share of temporary workers is drawn from labour force surveys. Missing years were interpolated. Temporary workers are those whose job's termination is determined by objective conditions such as reaching a certain date, completion of an assignment or return of another employee who has been temporarily replaced. Included in these groups also are: *a)* persons with a seasonal job; *b)* persons engaged by an employment agency or business and hired out to a third party for the carrying out of a "work mission" (unless there is a work contract of unlimited duration with the employment agency or business); and *c)* persons with specific training contracts. The source is the *OECD Employment Database* (*www.oecd.org/els/employment/database*).

*Chapter 4*

# Right for the Job: Over-Qualified or Under-Skilled?*

*This chapter sheds light on the issue of qualification mismatch, disentangles its link with skill mismatch and analyses its determinants. The findings provide the basis for a better understanding of the role that education systems, lifelong learning institutions and labour market policies can play to ensure that workers acquire the skills needed on the labour market and that these skills are matched to the most appropriate jobs.*

* The OECD acknowledges the financial support of the European Commission to conduct the analysis included in this chapter.

## Key findings

Ensuring a good match between skills acquired in education and on the job and those required in the labour market is essential to make the most of investments in human capital and promote strong and inclusive growth. Unfortunately, on average in the OECD, about one in four workers are over-qualified (they possess higher qualifications than those required by their job) and just over one in five are under-qualified (they possess lower qualifications than those required by their job). In addition, some socio-demographic groups are more likely than others to be over-qualified, notably immigrants and new labour market entrants who take some time to sort themselves into appropriate jobs. Others are likely to be under-qualified, particularly experienced workers lacking a formal qualification for the skills acquired on the labour market.

The genuine mismatch between *skills* possessed by workers and those required in the labour market only explains a small portion of qualification mismatch. Indeed, qualifications only reflect certified skills, mostly acquired in initial education while a great deal of skill acquisition happens on the job along with some skill obsolescence. Moreover, workers with the same level of formal qualifications level may display different degrees of competency and in different areas according to their field of study. In the European countries covered in the analysis, only about 40% of over-qualified workers feel that they have the skills to cope with more demanding tasks at work – the definition adopted for over-skilling. Even more strikingly, only 12% of under-qualified workers report needing further training to cope well with their duties at work – the definition adopted for under-skilling.

The variation in the skills of individuals with the same qualification plays a key role in explaining qualification mismatch. *First*, workers' *ability* varies within qualification level: workers with low ability for their qualification level may be hired for jobs that normally require lower qualifications and the inverse is true for workers of high ability for their qualification. *Second*, the likelihood of finding work in areas that are not directly related to one's field of studies varies across these fields and working outside one's field is an important source of over-qualification. In addition to the choices made in initial education, some labour market events may increase the likelihood of over-qualification. Workers fired or dismissed in the context of business closures are more likely to be over-qualified at re-employment than workers who quit and this effect is stronger if the job separation occurs at times of rising unemployment. Moreover, the more time spent out of work between two jobs, the higher the risk of over-qualification, suggesting that skills may become obsolete during prolonged unemployment.

Another explanation for the high incidence of qualification mismatch is that occupations are a poor proxy for job requirements. While for the purposes of measuring qualification mismatch jobs are summarised by occupational codes, in practice employers can match new hires' skills to the degree of complexity and responsibility in the specific job to be filled or adapt job requirements based on the skills that workers demonstrate after hiring. Indeed, as shown in this chapter, within each occupation, jobs involving a

supervisory role, complex tasks, significant independence and the frequent use of computer technology are associated with a higher likelihood of over-qualification.

The earnings penalty/premium for qualification mismatch is small once unobserved variation across individuals is accounted for. This suggests that employers succeed in screening workers and predicting their marginal productivity based on skills rather than qualifications. However, the process is not without costs for employers and society. Employers incur additional costs in terms of human resource management to "see through" the qualification "mist" and/or to adapt job requirements to candidates' skills. Moreover, over-qualification and over-skilling reduce job satisfaction and increase the likelihood of on-the-job search and these effects are likely to reduce productivity. Finally, governments spend a significant percentage of GDP on education and any mis-investment that results in over-qualification represents a significant cost to society even if a good worker and job match, based on underlying skills, is ultimately achieved on the labour market.

The recognition of non-formal and informal learning may help to reduce the wage penalty that the under-qualified face due to the lack of formal recognition of their competences. Highly qualified immigrants in low-skilled jobs would also benefit from targeted measures to help them have their qualifications recognised and, if necessary, brought in line with national standards.

In the context of initial education, high-quality career guidance counselling, accompanied by information on the returns to education by field of study, would ensure that students make informed choices. In addition, over-qualification could be tackled through measures aimed at raising the performance of struggling students, in order to ensure that they graduate with the *minimum* competences expected by employers of someone with their level of qualification.

But skills accumulation does not end with initial education, and comprehensive lifelong-learning frameworks are essential to ensure that new skills are acquired throughout one's careers and that skills are kept up to date, all this in line with rapidly evolving labour market requirements. This need for lifelong skills development calls for employer-provided on-the-job training, pathways back into the education system and cost-effective training as part of active labour market policies for the unemployed. In the context of the recent economic crisis, activation strategies involving training to counter skills obsolescence due to prolonged unemployment could play a particularly crucial role in maintaining the skills of the labour force and in helping job seekers transition back to work.

## Introduction

Qualification mismatch – the discrepancy between the qualifications held by workers and those required by their job – has become a growing concern among policy makers. In several countries, large numbers of graduates hold jobs that do not seem to make the best use of their qualifications. As a result, many commentators point to the failure of the education system in providing youth with the skills required at work and to the inability of labour markets to sort many workers into suitable jobs.

These concerns call for a thorough analysis of the incidence and determinants of qualification mismatch to assess the importance of the phenomenon and determine

whether policy action is needed. However, this task is complicated by the fact that several different concepts are often lumped together under the heading of qualification mismatch (see glossary in Table 4.1) and by the lack of suitable data.

Table 4.1. **Glossary of key terms**

| Mismatch concept | Definition | Measure used in this chapter |
|---|---|---|
| Qualification mismatch | Discrepancy between the highest qualification held by a worker and the qualification required by his/her job. | Qualifications are ranked on a five-level scale, ranging from "no qualifications (1)" to "tertiary qualifications (5)". The qualification requirement in a given occupation is measured as the modal qualification of workers – *i.e.* the most common qualification – in that occupation. |
| Over-qualification | Situation where a worker's highest qualification exceeds the one required by his/her job. | A worker is classified as over-qualified when the difference between his/her qualification level and the qualification level required in his/her occupation is positive. |
| Under-qualification | Situation where a worker's highest qualification is lower than the one required by his/her job. | A worker is classified as under-qualified when the difference between his/her qualification level and the qualification level required in his/her occupation is negative. |
| Skill mismatch | Discrepancy between the skills – both specific and general – possessed by a worker and the skills required by his/her job. | The discrepancy is assessed through workers' views on the use of their skills at work. |
| Over-skilling | Situation where a worker's skills are above those required by his/her job. | A worker is classified as over-skilled if he/she reports that he/she has "the skills to cope with more demanding duties at work". |
| Under-skilling | Situation where a worker's skills are below those required by his/her job. | A worker is classified as under-skilled if he/she reports that he/she "needs further training to cope well with his/her duties at work". |

Indeed, qualification mismatch is much more complex than commonly thought. First, there is more to qualifications than just their level. At the tertiary level as well as in vocational secondary education, students choose to specialise in different fields and the demand for this specialised knowledge will affect their chances of finding a job that is well matched to their competences. Second, although commentators use the terms *qualifications* and *skills* interchangeably, qualifications are far from a perfect measure of actual individual skills. Some of the skills acquired in initial education may be lost over time – for instance, if they are not continuously used – and new skills may be acquired through on-the-job learning and labour market experience. This implies that qualification mismatch does not necessarily reflect a discrepancy between workers' skills and the skill requirements of their job.

The paucity of comprehensive data sources on workers' qualifications and skills and on job requirements is another key barrier to a thorough understanding of qualification mismatch. Few cross-country studies exist and country-specific incidences of qualification mismatch are seldom comparable because of methodological issues, varying time periods and focus on different population groups. Data on qualification levels are more easily available than disaggregated data on fields of study or measures of individual skills and their use at work. As a result, most of the literature has focused on qualification levels. Few studies have investigated the role played by field of study and by other factors in explaining qualification mismatch or explored underlying skills discrepancies.

This chapter attempts to shed light on these different facets of mismatch and the links between them by exploiting several datasets covering most OECD countries. It only focuses on mismatch among workers and thus does not address other related crucial issues such as the under-utilisation of skills implicit in unemployment and inactivity or the mismatch between the demand and supply of specific competences which can result in significant skill shortages.

Section 1 summarises the most relevant explanations for qualification mismatch and frames the analysis that follows. Section 2 presents the incidence of qualification mismatch across most OECD countries and compares qualification mismatch to skill mismatch. The determinants of qualification mismatch are explored in Section 3. This is followed by an examination of the consequences of qualification and skill mismatch in Section 4. Section 5 discusses policy issues.

## 1. What is behind qualification mismatch?

The underlying assumption of many papers in the literature and most articles in the media about over-*qualification* is that what is being measured is a discrepancy between the *skills* of the individual – often a young graduate – and those required by the job he/she holds. In fact, while *qualifications* are one of the closest proxies of *skills* one can think of, they are an imperfect one for several reasons: *i)* at each qualification level, student performance varies significantly and so does field of study, particularly for tertiary graduates; *ii)* qualifications only reflect skills learnt in formal education and certified training; *iii)* skills learnt on the job through labour market experience are not measured; and *iv)* some of the skills reflected in qualifications may deteriorate over time if they are not used or kept up-to-date.

Despite these differences between qualifications and skills, it is likely that some qualification mismatch does reflect skills mismatch. In this event, qualification mismatch is clearly inefficient and should be of serious policy concern as it implies either that there has been over- or under-investment in education and training – *e.g.* there is a discrepancy between the shares of complex jobs and highly-qualified workers – or that workers and jobs do not match efficiently along the qualification dimension or both.

Overall, the evidence that there are too many graduates in the labour force is refuted by a number of well-established facts. First, there is significant international evidence of skills shortages at the tertiary level.[1] Second, despite massive increases in tertiary attainment, the earnings premium for tertiary education has remained high in most OECD countries and has increased in some (OECD, 2010a; but also Dearden *et al.*, 2002 for the United Kingdom; Deschênes, 2001; and Katz and Murphy, 1992, for the United States). OECD (2010a) shows that in more than half of the 21 countries for which data are available, the earnings premium for workers with tertiary qualifications increased over the past decade, and in Germany, Hungary, Korea and Italy, this increase was between 25 and 40 percentage points. The returns were roughly constant in all other countries. If wages respond to market forces, an over-supply of university graduates should have driven returns down unless demand for their services expanded more.

On the other hand, it is possible that the jobs on offer are not matched to the most appropriate workers because of a lack of information, adjustment costs, aggregate labour market conditions or personal preferences. For instance, employers may find it difficult to upgrade job content or hire workers with more appropriate skills in the presence of labour

market rigidities. Or, they may lack information to judge the actual marginal productivity of their workers and/or judge it too costly to monitor individuals, and instead opt to use signals other than the qualification level to assess it – such as whether the worker has a good attitude or has experienced a spell of unemployment – resulting in over-skilling for some. Finally, some workers may choose to accept a job for which they are over-qualified. This could occur in the context of a recession, when dismissed workers or new entrants may prefer to accept a job below their skills rather than experience prolonged unemployment. It may also occur for workers who wish to remain close to their families or to work in jobs in which it is easier to reconcile work and family life – notably, part-time jobs.

However, some qualification mismatch is likely to be explained by issues other than skills discrepancies, notably it could be caused by skill heterogeneity among workers with the same qualifications and/or heterogeneity in the skill requirements among jobs in the same occupation category. In fact, in the same way as qualifications are not a perfect proxy for skills, occupations, even at a fine level of disaggregation, may include jobs involving different tasks: the same occupation may include jobs with varying responsibilities, degrees of complexity, supervision requirements, etc. In the presence of individual and job heterogeneity, qualification mismatch is often defined in the literature as *apparent* because it identifies individuals who are not over-skilled or under-skilled but are mismatched to their current job by their qualification.

This is not to say that over-qualification and under-qualification not accompanied by skill mismatch do not warrant policy interventions. Some of the forms of heterogeneity mentioned above give rise to economically-damaging mismatch and could justify policy interventions. For instance, educational investments are made more complex by the existence of several different fields of study with varying likelihoods of qualification mismatch upon graduation – *i.e.* prospective students have to decide not only how long to study but also in what field. Also, information requirements are significantly increased by the heterogeneity among workers with the same qualification level and jobs in the same occupation. And, the fact that much human capital acquired on the job is at least partly specific to a particular firm, occupation or industry also greatly complicates investments in skill acquisition and matching process. In addition, over-qualification may represent a low return investment in education for graduates who leave without the minimum skills required to obtain a job at their qualification level.

Finally, the relevance of qualification mismatch for policy makers depends on whether it is only a temporary phenomenon or it persists through the worker's career. Indeed, it is possible that school-leavers and other new entrants without work experience are hired for jobs below their competence level but that they only remain mismatched for as long as it takes them to find a more appropriate match through job-search or for their employers to realise their skill level. If this process is sufficiently smooth, policy makers may consider that it does not require policy intervention. On the other hand, specific measures are more likely to be put in place to counter qualification mismatch that is persistent. Notably, immigrants whose qualifications are not recognised in the destination country may find it impossible to move into jobs that are in line with their skills, thereby implying a loss of productivity.

Overall, while qualifications mismatch could be too easily dismissed as apparent or, at worst, temporary, it could also be due to imperfect matching which is not self-correcting or to systematic errors in what types of skills are acquired in initial education or to how the skills evolve after entering the labour market. These issues are explored in the following sections.

## 2. Does qualification mismatch reflect a mismatch in skills?

This section assesses the prevalence of over-qualification across OECD countries and for workers belonging to some key socio-demographic groups. It also attempts to shed light on the issues outlined above by assessing whether qualification mismatch is a good proxy for skill mismatch.

### *A picture of qualification mismatch across OECD countries*

In 2005, on average across OECD countries for which data are available, 25.3% of workers were over-qualified and 22.2% were under-qualified (Figure 4.1). These figures are derived by comparing workers' qualifications measured using the 1997 International Standards Classification of Education (ISCED) on a five-point scale – no qualifications, lower secondary qualifications,[2] upper secondary qualifications, post-secondary non-tertiary qualifications,[3] tertiary qualifications – to the qualifications required by their occupation coded using the 1988 International Standard Classification of Occupation (ISCO) at the two-digit level.[4] The modal qualification possessed by workers in each occupation group at the two-digit level is used as a measure of required qualification and is calculated separately for each country (see Annex 4.A1 for a discussion of methodological issues). Workers are classified as over-qualified if they possess higher qualifications than those required by their job and under-qualified if they possess lower qualifications than those required by their job. Qualification mismatch for European countries is derived from the European Survey of Working Conditions (ESWC), while for non-European countries it is taken from the International Social Survey Programme (ISSP).

Across OECD countries, Australia, Mexico, the Netherlands and Turkey have the highest incidence of over-qualification[5] while the United Kingdom and a number of Central and Eastern European countries stand at the other end of the spectrum. It is also noteworthy that Austria, Germany and Switzerland – countries with a long tradition of vocational training – all experience below-average incidences of over-qualification, although this is not the case for Denmark where vocational education is equally widespread. Finally, about a third of workers are over-qualified in Spain, Portugal and Greece, where the issue of over-qualification among graduates most often makes the headlines.

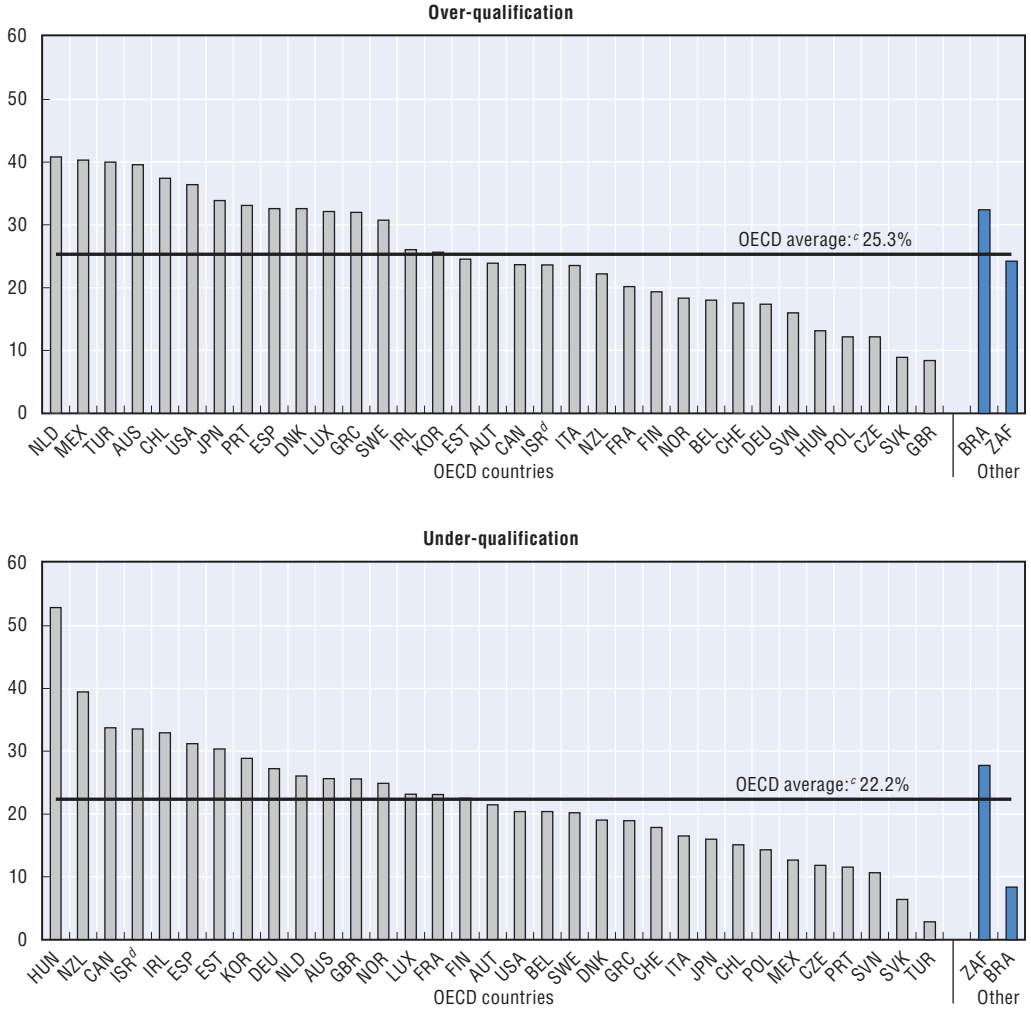
Hungarian workers are the most likely to possess fewer qualifications than required by their job[6] but under-qualification is also relatively high in New Zealand, Canada and Israel.[7] On the other hand, fewer than one in ten workers are under-qualified in Turkey, the Slovak Republic and Brazil.

Overall, there is little correlation across countries between over- and under-qualification. A few countries have both below average over-qualification and under-qualification. This is the case for Italy, Switzerland and several Central and Eastern European countries – notably, the Czech Republic, Poland, Slovenia and the Slovak Republic. On the other hand, Australia, Korea, Luxembourg, the Netherlands and Spain suffer from both above-average over-qualification and under-qualification. For some of these countries – notably, Korea and Spain – the significant qualification mismatches may be a reflection of the very rapid rise in average educational attainment which is likely to create both graduate over-qualification and upgrading of qualification requirements in jobs resulting in the apparent under-qualification of older workers.

Finally, because qualifications are measured using ISCED on a five-point scale, individuals can be mismatched to different degrees. Figure 4.A2.1 in Annex 4.A2 presents the incidence of

Figure 4.1. **Indicators of qualification mismatch,[a] OECD and selected countries, 2005**

Percentages of employees and self-employed[b]




*a)* Over-qualified workers are those whose qualifications are higher than required by their occupation. Under-qualified workers are those whose qualifications are lower than required by their occupation. The modal qualification in each occupational group at the two-digit level is used to measure qualification requirements.

*b)* Trainees and apprentices are excluded.

*c)* Unweighted average of OECD countries shown.

*d)* Information on data for Israel: *http://dx.doi.org/10.1787/888932315602*.

*Source:* International Social Survey Programme (2005) for Australia, Canada, Israel, Japan, Korea, Mexico, New Zealand, the United States and South Africa. International Social Survey Programme (2004) for Brazil and Chile. European Survey of Working Conditions (2005) for all other countries.

StatLink http://dx.doi.org/10.1787/888932480066

so-called "severe" qualification mismatch, whereby individuals are classified as severely mismatched if their qualification level is more than one step away from the required qualification in their job on the five-point ISCED scale. By definition, the incidences of severe over-qualification and under-qualification are smaller than those presented in Figure 4.1 and for some countries the ranking changes significantly. For instance, Australia and the United States which have the highest incidences of over-qualification, rank below the OECD average as far as severe over-qualification is concerned. This is largely due to the fact that post-secondary non-tertiary graduates in occupations that require upper secondary

qualifications contribute significantly to the incidence of over-qualification, but this effect disappears when severe over-qualification is measured.

### *Does qualification mismatch reflect genuine skill mismatch?*

Several researchers have argued that qualification mismatch may not reflect skill mismatch – *i.e.* a genuine discrepancy between one's competences and those required by his/her job – but hide instead skill heterogeneity (Chevalier, 2003; and McGuinness, 2006). For instance, over-qualified workers may possess different skills or abilities or motivation levels than their equally qualified counterparts who are well matched to their jobs.

Ideally, skill mismatch should be assessed by comparing objective measures of workers' skills to equally objective measures of the skills required in their jobs. Unfortunately, only *self-reported* data on under-skilling and over-skilling are currently available to gauge the extent of skill mismatch internationally.[8] Like all self-reported measures, these indicators are likely to suffer from some measurement bias which could downplay the role of skill mismatch in regression analysis. However, they do provide some valuable information on the match between workers and jobs. The forthcoming survey of the OECD Programme for the International Assessment of Adult Competences (PIAAC) will measure workers' competences and job requirements more precisely and allow computing a better measure of mismatch and identifying the skills for which mismatch most often arises.

The measure of self-reported skill mismatch used in this chapter is derived from the 2005 wave of the ESWC.[9] The survey asks employees and self-employed workers to describe their skills at work by choosing among three options, namely: the need for training; the correspondence between skills and job requirements; or job requirements below the respondent's competences.

The top panel of Figure 4.2 shows the share of over-skilled workers – 33.5% on average in the 24 OECD countries included in the ESWC – based on respondents claiming that they have the skills to cope with more demanding duties than those required by their current job. The share of workers who feel their skills are underutilised exceeds 40% in four countries (France, Ireland, the United Kingdom and Sweden). Beyond these peak values, the incidence of over-skilling is relatively high across-the-board, falling below 25% only in Austria, the Czech Republic and Finland.

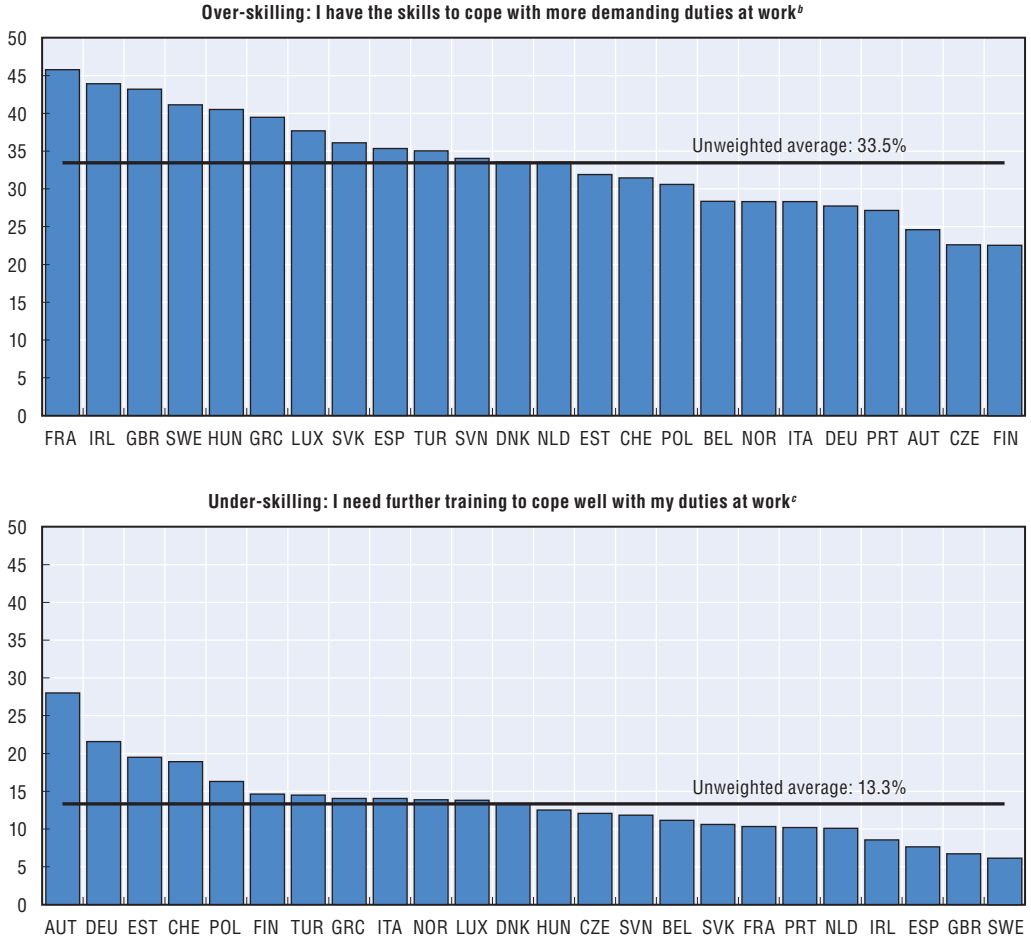
On the other hand, the need for training can be interpreted as pointing to a skill deficit and the share of workers answering this way is presented in the bottom panel of Figure 4.2.[10] On average, in the 24 OECD countries included in the ESWC, under-skilling affects 13.3% of workers. Surprisingly, three countries with a long tradition of apprenticeship training – Austria, Germany and Switzerland – figure among those with the highest incidence of skill deficits. Estonia and Poland also suffer from significant skill deficits according to this indicator. At the other end of the spectrum, in Sweden, the United Kingdom, Spain and Ireland fewer than 10% of workers feel they need training to do their job well.

A cursory look at the data presented in Figure 4.2 and suggests very little correlation with the data on qualification mismatch presented in Figure 4.1. Indeed, the spearman's rank correlation coefficient between the incidence of over-skilling and that of over-qualification is just 0.17 and not statistically significant and the same coefficient between under-skilling and under-qualification is negative and not statistically significant.

Table 4.2 shows that only 36% of over-qualified workers are also over-skilled and only about 12% of under-qualified workers report feeling under-skilled. In fact, in most cases,

Figure 4.2. **Self-reported skill mismatch, EU19 countries, Estonia, Norway, Slovenia, Switzerland and Turkey, 2005**

Percentages of employees and self-employed[a]




*a)* Trainees and apprentices are excluded.

*b)* Share responding "I have the skills to cope with more demanding duties" to the question "Which of the following alternatives would best describe your skills in your own work". Alternative responses include: "My duties correspond well with my present skills" and "I need further training to cope well with my duties".

*c)* Share responding "I need further training to cope well with my duties" to the question "Which of the following alternatives would best describe your skills in your own work". Alternative responses include: "My duties correspond well with my present skills" and "I have the skills to cope with more demanding duties".

*Source:* European Survey of Working Conditions.

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under and over-qualified workers are well matched as far as their skills are concerned, suggesting that skill heterogeneity within a given qualification level may explain over-qualification to a large extent and reinforcing the idea that under-qualified workers may have acquired further skills outside the formal education sector allowing them to hold more complex jobs than their qualifications suggest. Also, only about 55% of workers who are well matched by their qualifications are also well-matched in terms of their skills. This result suggests that while a good match in terms of formal education improves the chances of using one's knowledge and skills, it is neither a necessary nor a sufficient condition for good skill utilisation.[11] It is also noteworthy that the share of the working population that is mismatched by both qualification and skill is only 11%, with 8.4% of workers being both over-qualified and over-skilled and 2.6% being under-qualified and under-skilled.

## 3. What explains qualification mismatch?

Evidence presented in Section 2 shows that only a small fraction of qualification mismatch reflects an underlying skill mismatch. This section explores several possible explanations of qualification mismatch: *i)* skill heterogeneity among individuals with the same qualifications; *ii)* the heterogeneity of jobs with the same occupational code; *iii)* workers' socio-demographic characteristics; and *iv)* crucial labour market events such as labour market entry or job separations.

Table 4.2. **Mismatch by qualifications and skills, EU19 countries, Estonia, Norway, Slovenia, Switzerland and Turkey, 2005**

Employees and self-employed[a]

| | Over-qualified | Under-qualified | Matched | Total |
|---|---|---|---|---|
| | Panel A. **Percentage of workers within qualification-match category** | | | |
| Over-skilled | 36.4 | 30.5 | 31.6 | |
| Under-skilled | 14.2 | 12.1 | 13.2 | |
| Matched | 49.5 | 57.4 | 55.1 | |
| **Total** | **100.0** | **100.0** | **100.0** | |
| | Panel B. **Percentage of all workers** | | | |
| Over-skilled | 8.4 | 6.5 | 17.6 | |
| Under-skilled | 3.3 | 2.6 | 7.3 | |
| Matched | 11.4 | 12.3 | 30.7 | |
| **Total** | | | | **100.0** |

*a)* Trainees and apprentices are excluded.
*Source:* European Survey of Working Conditions.

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### *The role of within-qualification skill heterogeneity*

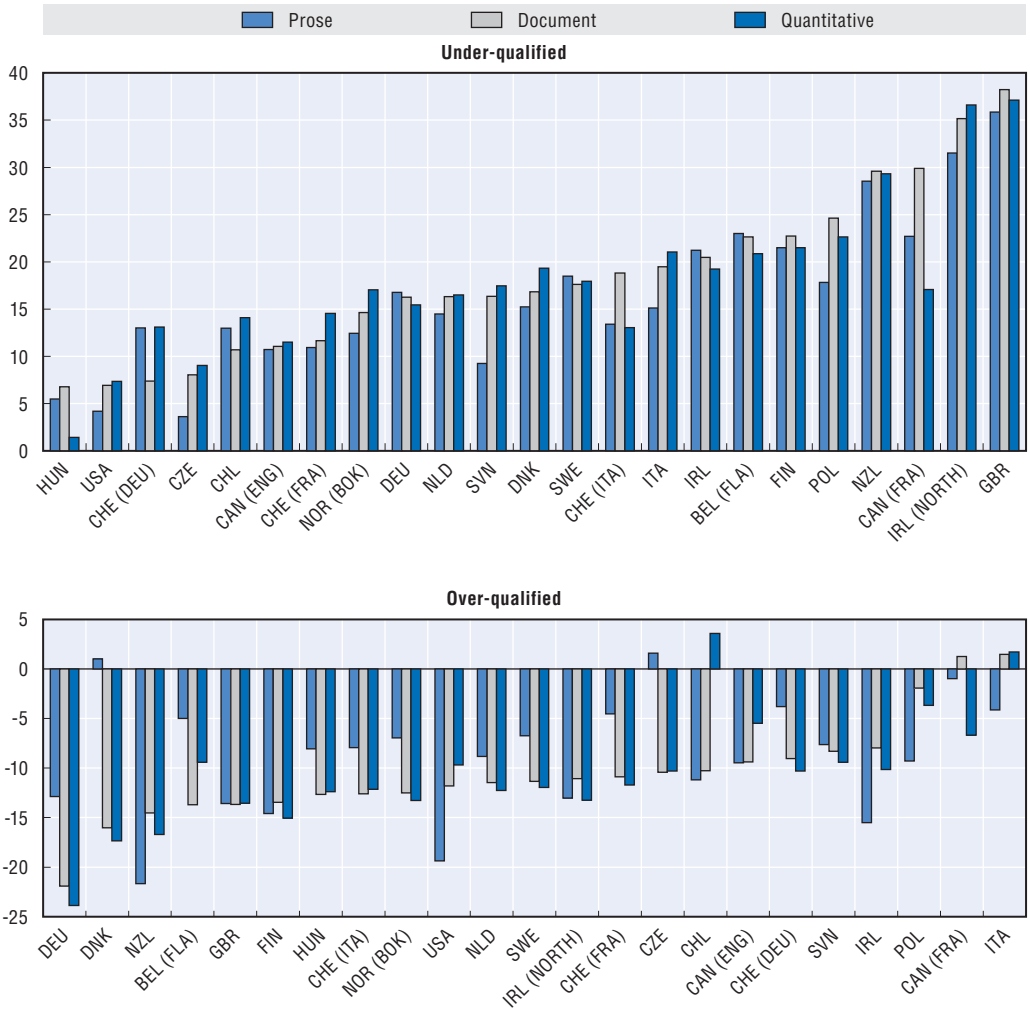
Several studies show that there is significant skill heterogeneity among workers with the same qualification level, particularly in the literature focusing on returns to graduate education (Ingram and Neumann, 2006).[12] In the context of qualification mismatch, the best skilled individuals in a given qualification category may get jobs normally requiring higher formal qualifications while the least skilled in the group will only be able to get jobs requiring lower formal qualifications. Hence, individuals in the former group will appear as under-qualified despite actually possessing the competences required by their job, while those in the latter will appear as over-qualified while lacking some of the key skills needed to get and do a job with higher qualification requirements.[13]

The International Adult Literacy Survey includes measures of prose, document and quantitative literacy and also allows calculating qualification mismatch.[14] Figure 4.3 shows the difference in prose document and quantitative literacy scores between under-qualified workers and well-matched workers (top panel) and between well-matched workers and over-qualified workers (bottom panel). To control for compositional effects, the scores are corrected for socio-demographic characteristics. Under-qualified individuals have higher prose, document and quantitative scores than their well-matched counterparts – *i.e.* the differences presented in the top panel of Figure 4.3 are all positive. The inverse is true for over-qualified workers in most countries and most literacy domains.

It is noteworthy that the form of within-qualification skill heterogeneity highlighted above is not necessarily related to the performance in initial education. Some graduates

Figure 4.3. **Prose, document and quantitative literacy, by mismatch status, selected countries**[a]

Difference in adjusted scores[b] between each mismatched group and well-matched workers




*a)* Data for Canada, Ireland, Poland, the Netherlands, Switzerland and the United States refer to 1994. Data for the Flemish Community in Belgium and New Zealand refer to 1996. Data for Chile, the Czech Republic, Hungary, Italy and Slovenia refer to 1998.

*b)* Adjusted scores are residuals from regressing prose, document and quantitative literacy scores on ISCED level, gender, age, immigration status and marital status. Marital status is not included in the regressions for Germany, the Netherlands, Sweden and German and French Switzerland because the variable is not available for these countries.

*Source:* International Adult Literacy Survey, 1994, 1996 and 1998.

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may lack generic skills that the education system can foster but that are better learnt in the labour market such as communication, team-work and negotiation skills. In addition, some workers may have the competences expected of their qualification level at graduation but these competences may be lost or become obsolete over time – notably, if they are not used or for a lack of upgrading in a context of rapid technological change.

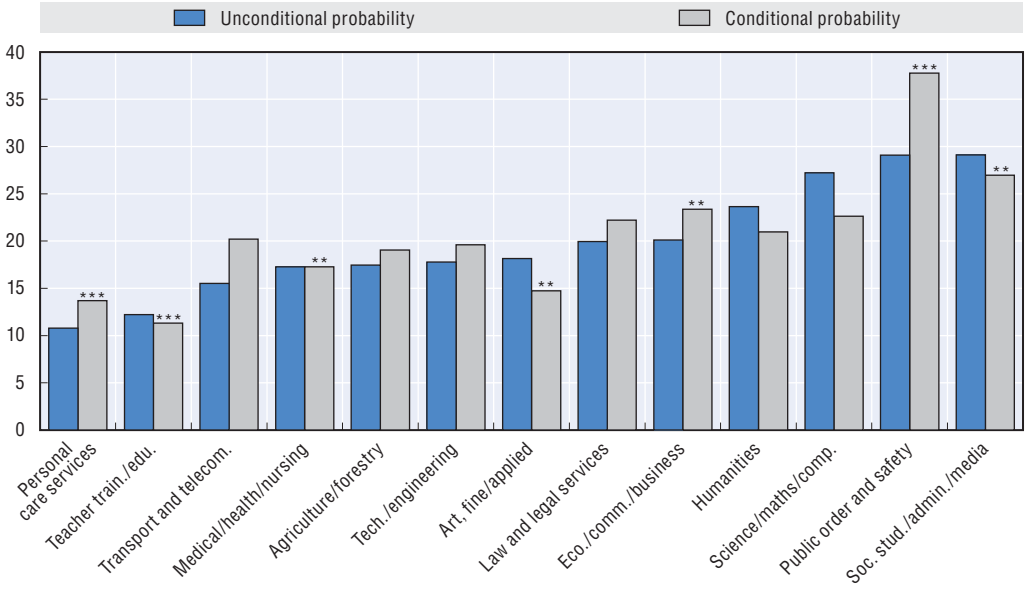
Skill heterogeneity does not refer exclusively to the skill level of the individuals holding the same qualification. Individuals with the same qualification and the same competence level may have specialised in different areas and this could lead to very

different labour market outcomes as far as mismatch is concerned. Notably, students in areas where the number of graduates exceeds the number of job openings may face some downgrading. In addition, some university graduates may encounter difficulties finding work that is related to their field of study, ending up in jobs for which they appear to be over-qualified but for which, in fact, they may lack specific skills.

The second wave of the European Social Survey, conducted in 2004,[15] includes information on field of study as well as qualification level; hence it allows shedding light on differences in the incidence of over-qualification by field of study. Figure 4.4 shows that some fields of study are associated with a higher incidence of over-qualification. For instance, just over 10% of workers with qualifications in Personal Care Services and Teaching are over-qualified in their job compared with almost 30% for those with Social Studies training.[16] Figure 4.4 also presents the effect of field of study on over-qualification once adjustments are made for a number of socio-demographic characteristics and country effects.[17] While in most cases the predicted probabilities are very close to the unconditional ones, compositional effects appear to play a relatively big role in explaining the incidence of over-qualification for graduates in Transport and Telecommunications, Arts and Science.[18]

Figure 4.4. **Field of study and the likelihood of over-qualification, 2004**

Unconditional and conditional probabilities[a] of over-qualification[b]




***, **: statistically significant at 1% and 5% levels, respectively. The significance level is that of the marginal effects on fields of study estimated from a probit regression where the "Technical and Engineering" category is omitted.

*a)* The dependent variable is the probability of being over-qualified as opposed to well-matched (under-qualified individuals are excluded). By definition, individuals with no qualifications cannot be over-qualified; hence they are excluded from the regression. The omitted field of study is "Technical and Engineering". In addition to field of study, the probit model includes controls for: gender, age, immigration status, marital status, firm size, contract type, full-time status, supervisory functions, job complexity, opportunities for advancement, job latitude, tenure, unemployment experience over the previous three months and country dummies. Predicted probabilities of over-qualification for each field of study are obtained at mean values of all other variables.

*b)* Includes Austria, Belgium, the Czech Republic, Denmark, Estonia, Finland, Germany, Greece, Hungary, Iceland, Ireland, Luxembourg, the Netherlands, Norway, Poland, Portugal, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

*Source:* European Social Survey, 2004.

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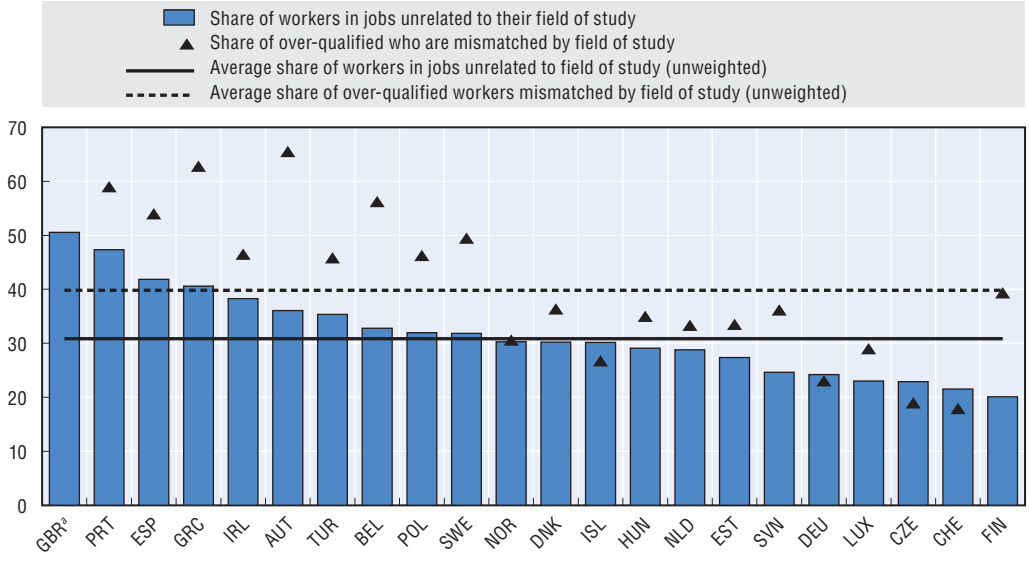
The ESWC can also be exploited to assess how many workers hold jobs in areas that are not related to their field of study and how this contributes to qualification mismatch.[19] This analysis requires identifying what occupations are suitable for each field of study. For this purpose, a correspondence between three-digit occupational codes and required/suitable field of study is developed drawing largely from Wolbers (2003) and is reported in Annex 4.A4 of Quintini (2011b).

Figure 4.5 shows that, on average, across the 22 OECD countries covered by the ESS, 31% of workers hold jobs in areas that are unrelated to their field of study[20] and this is the case for 40% of the over-qualified.[21] However, these values vary significantly across countries. Interestingly, some workers who are mismatched by their field of study are under-qualified in their job (not shown). As it is the case for under-qualification in general, this may be due to the fact that these workers have acquired job-specific skills through training which did not translate into a further qualification.

Figure 4.5. **Work outside one's field of study and over-qualification, 2004**

Percentages




*a)* Qualification mismatch cannot be computed for the United Kingdom. As a result, for consistency, the United Kingdom is excluded from both averages reported in the figure.

*Source:* European Social Survey, 2004.

StatLink http://dx.doi.org/10.1787/888932480142

### *The role of job heterogeneity*

Several studies have found that workers' heterogeneity alone cannot account for the extent of qualification mismatch in the labour market. As suggested in Section 1, jobs also differ widely, even when they carry the same occupational code. Hence, workers who are over-qualified could hold jobs involving more complex tasks, more decision-making and more responsibilities than workers who are well-matched by their qualifications and work in the same occupation while the inverse could be true for under-qualified workers.

The ESWC includes considerable information on job tasks which can be summarised in eight job characteristics as described in Annex 4.A5 of Quintini (2011b). Table 4.3 shows the marginal effects of these job characteristics on the probability of being mismatched.[22]

## Table 4.3. **Determinants of qualification and skill mismatch, 2005**[a]

Probit regression,[b] marginal effects[c] of independent variables

| Explanatory variables | | Over-qualification (1) | Over-qualification (2) | Over-skilling (3) | Under-qualification (4) | Under-qualification (5) | Under-skilling (6) |
|---|---|---|---|---|---|---|---|
| Over-skilled | | | 0.015 | | | –0.026 | |
| Under-skilled | | | 0.054*** | | | 0.029 | |
| Age | | 0.008*** | 0.008*** | –0.001 | –0.004*** | –0.004*** | –0.001 |
| Women | | –0.016 | –0.016 | –0.025** | 0.041** | 0.040** | –0.019** |
| Upper secondary qualification | | | | 0.058*** | | | –0.008 |
| Tertiary qualification | | | | 0.105*** | | | –0.010 |
| Non-citizen | | 0.133*** | 0.132*** | 0.084*** | 0.049 | 0.052 | –0.013 |
| Single | | 0.005 | 0.005 | 0.014 | –0.018 | –0.020 | 0.005 |
| With children under 15 living in household | | –0.007 | –0.007 | 0.002 | 0.035* | 0.037* | 0.013 |
| Tenure (years) | 2-5 | –0.037** | –0.033* | –0.021 | 0.016 | 0.021 | –0.052*** |
| | 6-10 | –0.078*** | –0.075*** | –0.042*** | –0.011 | –0.009 | –0.073*** |
| | 11-20 | –0.041** | –0.040* | –0.065*** | 0.018 | 0.020 | –0.052*** |
| | 21 and over | –0.086*** | –0.083*** | –0.094*** | 0.018 | 0.016 | –0.054*** |
| Experience | | –0.008*** | –0.008*** | 0.000 | 0.010*** | 0.010*** | –0.002*** |
| Firm size (employees) | 1-9 | –0.149*** | –0.148*** | –0.051 | –0.044 | –0.042 | –0.050 |
| | 10-49 | –0.137*** | –0.135*** | –0.056 | –0.099 | –0.099 | –0.061 |
| | 50-499 | –0.136*** | –0.135*** | –0.047 | –0.096 | –0.092 | –0.059 |
| | 500 and over | –0.114** | –0.110** | –0.043 | –0.098 | –0.092 | –0.048 |
| Private sector | | –0.027* | –0.022 | –0.001 | 0.054** | 0.051** | –0.014 |
| Contract type | Fixed-term | 0.009 | 0.007 | 0.032** | 0.033 | 0.029 | 0.036** |
| | TWA | –0.025 | –0.028 | 0.008 | 0.020 | 0.027 | –0.085*** |
| Full-time | | 0.014 | 0.014 | –0.019 | –0.041* | –0.044* | 0.010 |
| Supervisor (employees) | 1-9 | 0.091*** | 0.091*** | 0.006 | –0.020 | –0.018 | 0.003 |
| | 10 and over | 0.117*** | 0.113*** | 0.030 | –0.022 | –0.019 | 0.014 |
| Job complexity[d] | | 0.053*** | 0.052*** | 0.010 | –0.068*** | –0.068*** | 0.072*** |
| Job latitude[e] | | 0.012* | 0.012 | 0.018*** | –0.012 | –0.012 | 0.001 |
| Working conditions[f] | | –0.051*** | –0.052*** | 0.024** | 0.119*** | 0.120*** | 0.016* |
| Job stress[g] | | 0.003 | –0.001 | 0.069*** | –0.092*** | –0.092*** | 0.058*** |
| Computer use | Medium | 0.086*** | 0.081*** | –0.024* | –0.178*** | –0.177*** | 0.060*** |
| | High | 0.138*** | 0.133*** | 0.001 | –0.180*** | –0.179*** | 0.047*** |
| Interpersonal tasks | Medium | 0.039*** | 0.040*** | 0.003 | –0.070*** | –0.067*** | 0.007 |
| | High | –0.009 | –0.008 | 0.005 | 0.005 | 0.010 | –0.012 |
| Team work | | 0.007 | 0.006 | –0.021** | 0.008 | 0.006 | 0.006 |
| *Number of observations* | | *9 305* | *9 175* | *13 177* | *6 076* | *6 011* | *10 305* |

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

*a)* Includes: Austria, Belgium, the Czech Republic, Denmark, Germany, Greece, Estonia, Finland, France, Hungary, Ireland, Italy, Luxembourg, the Netherlands, Norway, Poland, Portugal, the Slovak Republic, Slovenia, Spain, Sweden, Switzerland, Turkey and the United Kingdom.

*b)* The dependent variables are defined as follows: the probability of being over-qualified as opposed to well-matched by qualifications (under-qualified individuals are excluded as well as individuals with no qualifications); the probability of being under-qualified as opposed to well-matched by qualifications (over-qualified individuals are excluded as well as individuals with tertiary qualifications); the probability of being over-skilled as opposed to well-matched by skills (under-skilled individuals are excluded); and the probability of being under-skilled as opposed to well-matched by skills (over-skilled individuals are excluded). Control variables not reported in the table include: country dummies, occupation dummies, industry dummies. Data include employees and the self-employed but exclude trainees and apprentices.

*c)* Marginal effects calculated at the variable mean for continuous variables and for discrete changes of categorical variables.

*d)* The degree of job complexity is obtained by applying Cronbach's Alpha technique to individual responses of whether the job involves: complex tasks, assessing the quality of one's own work, solving unforeseen problems and learning new things.

*e)* The degree of job latitude is obtained by applying Cronbach's Alpha technique to individual responses of whether the worker is free to choose method and speed of work and order of tasks.

*f)* Working conditions refers to an index obtained by applying Cronbach's Alpha technique to individual responses of whether the job involves: heavy loads, repetitive movements, painful positions, vibrations, noise, breathing or handling dangerous substances, radiations, wearing protective clothes, high temperature, low temperature or health and safety risks.

*g)* Job stress refers to an index obtained by applying Cronbach's Alpha technique to individual responses of whether: *i)* the job involves high speed, tight deadlines, not enough time, shift work, night work, Sunday work, Saturday work; *ii)* the job requires unforeseen tasks, interruptions, or conforming to the pace of colleagues, production targets or machines; and *iii)* the job causes stress, fatigue, headaches or anxiety.

*Source:* European Survey of Working Conditions, 2005.

StatLink http://dx.doi.org/10.1787/888932480370

The coefficients in column 1 confirm that workers in supervisory roles, in complex jobs, in jobs that allow significant independence and in jobs that require the frequent use of computing skills are more likely to be over-qualified while workers in jobs where physical working conditions are poor are less likely to be over-qualified – *i.e.* the over-qualified are in more demanding jobs, all things being equal. Results are less clear-cut for under-qualification (column 4) but job complexity, job-related stress and computer use do reduce the likelihood of under-qualification – *i.e.* the under-qualified are in less demanding jobs, all things being equal. These results are unchanged if controls for over-skilling and under-skilling are included (columns 2 and 5).[23]

Finally, columns 3 and 6 of Table 4.3 show the marginal effects of individual and job characteristics on the likelihood of over-skilling and under-skilling. Because over-skilling and under-skilling are based on individuals' judgement of their skills and their job requirements, one would expect workers who feel over-skilled to be in less demanding jobs and those who feel under-skilled to be in more demanding jobs. This is confirmed for under-skilling as far as complexity and the use of computing skills are concerned while the results for overskilling are less clear-cut.

### *Socio-demographic characteristics and mismatch*

Table 4.3 also summarises the role of several socio-demographic characteristics on the likelihood of mismatch. No difference across gender in the likelihood of over-qualification is found but women are more likely to be under-qualified than men.[24] Marital status and the presence of children are not found to play a role for over-qualification. However, working full-time reduces the likelihood of under-qualification and having young children increases it. Hence, the compound effect of gender, part-time work and children in the household would increase the likelihood of under-qualification sizeably. Overall, these results lend little support to the idea that women may choose a job for which they are over-qualified to improve their work-life balance.[25] This is consistent with the academic literature which has provided very mixed results concerning the role played by gender and family status in explaining qualification mismatch (Quintini, 2011a).[26]

Consistent with the findings of a rich empirical literature, Table 4.3 shows that non-citizens are more likely to be over-qualified than citizens. Although this definition does not allow separating the native-born from the foreign-born, it is nevertheless a good approximation.[27] Immigrants could be at higher risk of over-qualification for a number of reasons including poor language proficiency, the fact that they often hold qualifications acquired in their home country or racial discrimination.[28, 29]

Table 4.3 shows that both over-skilling and under-skilling decline with labour market experience, suggesting that workers' skills and/or job requirements adjust over time to achieve a better match.[30] On the other hand, under-qualification is higher for more experienced workers, supporting the theory that the under-qualified may have acquired further skills on the labour market which are not reflected in their qualifications but allow them to do more complex jobs than their qualifications suggest. Over-qualification is found to decline with experience, suggesting that it may be more frequent among new labour market entrants who may lack job-specific skills despite their qualifications.

Workers in private firms are found to be less likely to be over-qualified but more likely to be under-qualified than their public sector counterparts. This could be explained by the fact that public-sector workers may be willing to trade job content for more job security or by the fact that public sector job openings often include explicit qualification

requirements. Also, qualification mismatch is found to decline with firm size, possibly because larger firms offer more opportunities for highly-qualified workers compared with SMEs. Nevertheless, due to personal or institutional barriers to geographical mobility, some workers may choose to work in areas where firms are predominantly small and accept jobs for which they are over-qualified. Finally, contrary to the common discourse that over-qualification is more often found among workers on temporary contracts, no significant difference in qualification mismatch is observed between permanent workers and workers on fixed-term or temporary work agency contracts. On the other hand, it appears that workers on fixed-term contracts are more likely to be over-skilled at work than those on other contract types.

### *Labour market factors*

Some labour market events – such as losing one's job – may increase the likelihood of over-qualification at re-employment or subsequently. First, as individuals struggle to find another job after an involuntary job separation, they may prefer to accept a job for which they are over-skilled than remain unemployed or they may be forced to accept it under the threat of suffering a cut in their unemployment benefit if they refuse the job offer. On the other hand, it is also possible that an involuntary job loss may carry a scar as perspective employers cannot verify the individual's competences directly and may interpret the fact that they have been laid off as a negative signal, particularly if this resulted in a spell of unemployment. Finally, a long spell of unemployment after a job separation may result in skill obsolescence and/or atrophy, leading to under-skilling and/or over-qualification.

Table 4.4 shows the effect of different types of job separations on the likelihood of qualification mismatch and over-skilling using the European Community Household Panel (ECHP).[31] Individuals who have lost their job following business closure and those who have been fired are significantly more likely to find work in a job for which they are over-qualified than workers who have quit their previous job voluntarily. In addition, the likelihood of over-qualification increases with the time between jobs. Over-skilling is also higher among workers who have been fired or laid-off as a result of business closure, suggesting that both the negative signal sent by an involuntary separation and the pressure to find a job could explain these effects. On the other hand, workers who change job voluntarily are among the most likely to be under-qualified in their following job, *i.e.* involuntary separations reduce the likelihood that their uncertified skills are recognised by prospective employers.

The way a job is found also affects the likelihood of mismatch. Family and friends do not seem to help in finding work that is well matched to one's skills and qualifications. Answering job ads or relying on employment and vocational guidance agencies also increases the likelihood of over-skilling compared with direct applications. Finally, the coefficients on mismatch status in the previous job confirm that all three forms of mismatch presented in Table 4.4 are rather persistent.

The specification underlying the results presented in Table 4.4 allows exploring the effect on mismatch of involuntary separations at different points in the business cycle. Indeed, the model includes the logarithm of the ratio of the unemployment rate at the time of hiring[32] and the average unemployment rate in the five previous years – hereon called the relative unemployment rate – as a stand-alone term and interacted with the reason for job separation. While Table 4.4 reports the marginal effects of involuntary separations at the mean relative unemployment rate, Figure 4.6 shows how these marginal effects vary with the business cycle. Job separations are found to have a stronger effect when the log of

Table 4.4. **Likelihood of mismatch following a job separation**[a]

Probit regression,[b] marginal effects[c] of independent variables

| Explanatory variables | Over-qualification | Over-skilling | Under-qualification |
|---|---|---|---|
| **Way work is found**[d] | | | |
| Answered job ads | 0.003 | 0.042*** | 0.043*** |
| Employment or vocational guidance agency | –0.008 | 0.064*** | 0.009 |
| Family and friends | 0.031** | 0.027*** | –0.012* |
| Own family business | 0.043 | –0.055** | 0.060* |
| Other | –0.072*** | –0.015 | 0.101*** |
| **Reason for job separation**[e] **at mean relative unemployment rate at hiring** | | | |
| Fired | 0.032** | 0.042*** | –0.062*** |
| End of temporary contract | 0.019 | –0.006 | –0.039*** |
| Business closure | 0.121*** | 0.040* | –0.042** |
| Personal/family reasons | –0.008 | 0.010 | –0.034** |
| Health or military service | 0.026 | 0.052** | 0.017 |
| **Relative unemployment rate at hiring**[f] | –0.052 | 0.012 | 0.041 |
| **Previous job** | | | |
| Over-qualification | 0.692*** | | |
| Over-skilling | –0.019 | 0.546*** | |
| Under-qualification | | | 0.696*** |
| **Time between jobs** | 0.041*** | –0.009 | 0.007 |
| *Number of observations* | *15 599* | *30 928* | *20 235* |

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

*a)* Includes: Austria, Belgium, Denmark, Greece, Finland, France, Ireland, Italy, Luxembourg, the Netherlands, Portugal, Spain and the United Kingdom.

*b)* The dependent variables are defined as follows: the probability of being over-qualified as opposed to well-matched by qualifications (under-qualified individuals are excluded as well as individuals with no qualifications); the probability of being under-qualified as opposed to well-matched by qualifications (over-qualified individuals are excluded as well as individuals with tertiary qualifications); the probability of being over-skilled as opposed to under-skilled or well-matched by skills (under-skilled individuals cannot be identified in the ECHP). Control variables not reported in the table include: country dummies and year dummies. Data includes employees and self-employed but excludes trainees and apprentices. Only workers who have had a previous job are included. Survey years are pooled.

*c)* Marginal effects calculated at the variable mean for continuous variables and for discrete changes of categorical variables.

*d)* The omitted category is "Direct application".

*e)* The omitted category is "Quit voluntarily". Because the model includes an interaction between the reason for job separation and the relative unemployment rate of hiring (see note f), these marginal effects are measured at the mean relative unemployment rate at hiring.

*f)* Natural logarithm of the relative unemployment rate where the relative unemployment rate is equal to the ratio of the unemployment rate in the year of hiring to the average unemployment rate in the previous five years – *i.e.* the natural logarithm of the relative unemployment rate takes the value of zero if the unemployment rate is in line with the 5-year average.

*Source:* European Community Household Panel (all waves, 1994-2001). See Table 4.A6.1 in Annex 4.A6 of Quintini (2011b) for full regression results.

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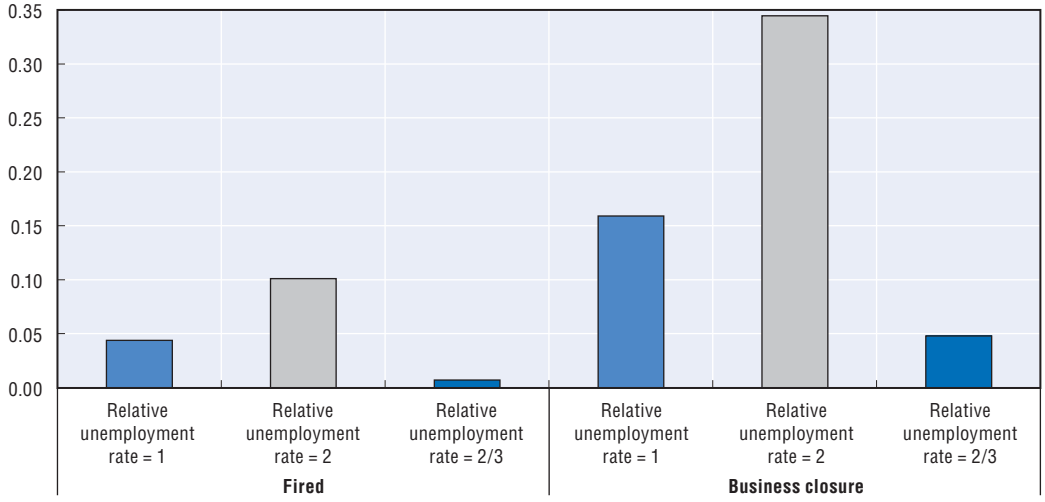
the relative unemployment rate is greater than zero – *i.e.* during a recession. Indeed, when the unemployment rate is in line with its medium-term average – *i.e.* the relative unemployment rate takes the value of one – losing one's job because of business closure increases the likelihood of over-qualification by 15% compared to quitting while if hiring happens at a time when the unemployment rate is twice the five-year average rate, this effect increases to almost 35%. On the other hand, if growth accelerates and the unemployment rate falls to two-thirds of the five-year average rate, this effect declines to just 5%. A similar pattern is observed for the marginal effects of being fired. Results for over-skilling are very similar while those for under-qualification are less clear-cut.

In the context of the recent global economic crisis, analysts and policy makers have expressed worries that the current generation of school leavers may be permanently scarred in terms of their labour market outcomes. To explore this issue, Figure 4.7 shows

Figure 4.6. **Likelihood of over-qualification and the business cycle**[a]

Marginal effects of involuntary separations at selected values of the relative unemployment rate at hiring[b]




*a)* See notes to Table 4.4.

*b)* The relative unemployment rate is equal to the ratio of the unemployment rate in the year of hiring to the average unemployment rate in the previous five years. A relative unemployment rate of 1 (2, 2/3) indicates that the unemployment rate is in line with (twice, two-thirds of) its five-year average.

*Source:* European Community Household Panel (all waves, 1994-2001).

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Figure 4.7. **Likelihood of mismatch in the first job and the business cycle at labour market entry**[a]

Estimated probability at selected values of the relative unemployment rate at leaving education[b]


*a)* See Table 4.A6.2 in Annex 4.A6 of Quintini (2011b) for full regression results and notes.

*b)* The relative unemployment rate is equal to the ratio of the unemployment rate in the year of leaving education to the average unemployment rate in the previous five years. For instance, a relative unemployment rate of 1 indicates that the unemployment rate is in line with its five-year average.

*Source:* *European Community Household Panel* (all waves, 1994-2001).

StatLink http://dx.doi.org/10.1787/888932480180

how the likelihood of over-qualification in the first job varies with the relative unemployment rate and Table 4.A6.2 in Annex 4.A6 of Quintini (2011b) presents full regression results. The relative unemployment rate is defined similarly to Table 4.4 but refers to the rate at the time of leaving initial education. The probability of being

over-qualified in the first job increases with the relative unemployment rate at leaving education: it is 39% when leaving education at times of constant unemployment – *i.e.* a relative unemployment rate of 1 but 42% if the unemployment rate at leaving education is twice as high as its five-year average will increase the likelihood of over-qualification by approximately 3 percentage points.

It is worth noting that the year of leaving education[33] is likely to be endogenous to labour market conditions. However, because students would choose to leave when labour market conditions are least unfavourable, the marginal effects presented in Table 4.A6.2 in Annex 4.A6 of Quintini (2011b) are likely to represent lower bounds of the effect of the time of labour market entry on the likelihood of over-qualification.

## 4. What is the relevance of qualification mismatch for policy makers?

The extent to which policy makers ought to take measures to reduce qualification mismatch depends crucially on the consequence of mismatch for workers and their employers. The measurement of the effect of mismatch on worker's wages, job satisfaction and on-the-job search is a key issue in the literature on qualification mismatch and several meta-analyses have been carried out so far (Groot and Maasen van den Brink, 2000; Rubb, 2003; Verhaest and Omey, 2006; and Quintini, 2011a). On the other hand, few studies have looked at the separate role played by qualification and skill mismatch in determining wages, job satisfaction, turnover and productivity (Allen and van der Velden, 2001; and Green and McIntosh, 2007) and, to the best of our knowledge, only Bauer (2002), Lindley and McIntosh (2008), Tsai (2010) and Mavromaras *et al.* (2010) exploit panel data to control for unobserved individual heterogeneity. These issues are explored in this section which also assesses the role of unobserved individual heterogeneity. The latter may provide further evidence on the extent to which qualification mismatch only reflects an apparent – rather than actual – discrepancy between workers' competences and job requirements.

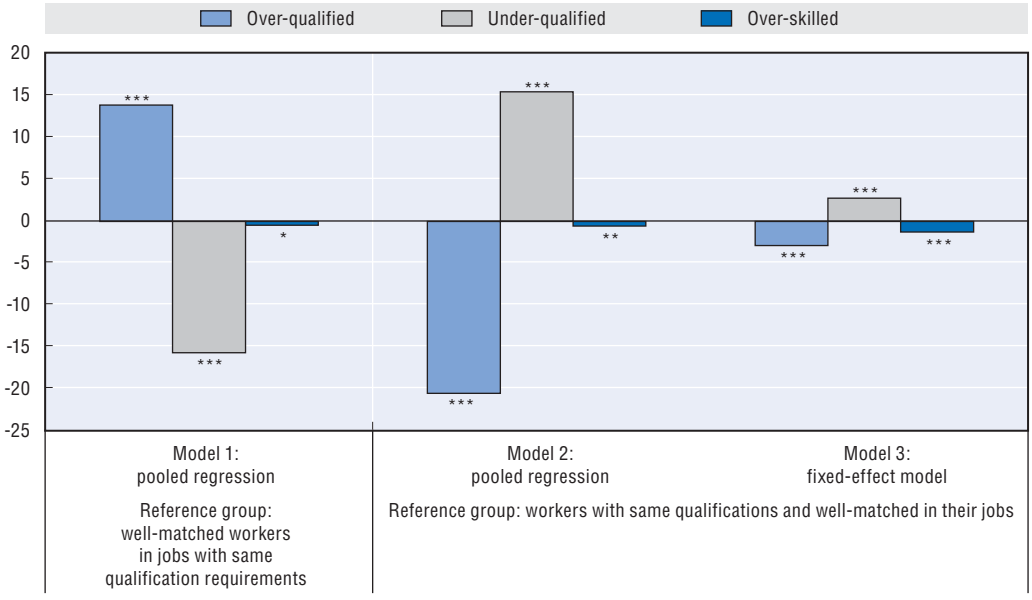
### *To what extent do qualification and skill mismatch affect wages?*

The relevant literature is unanimous[34] in finding that the qualification mismatch affects wages. To confirm this, Figure 4.8 presents estimates of the effect of mismatch – over-qualification, under-qualification and over-skilling – on the logarithm of gross monthly wages, after controlling for a number of other individual and job characteristics. The analysis is conducted using the ECHP. In order to assess the role played by unobserved individual heterogeneity in the relationship between mismatch and wages, both pooled estimates[35] and panel estimates are presented.

Models 1 and 2 show estimates of the effect of over-qualification, under-qualification and over-skilling that are comparable with those obtained in the literature. The over-qualified – *e.g.* tertiary graduates in jobs requiring upper secondary qualifications – earn 20% less than workers who hold their same qualifications but have found a job that matches such qualifications – *e.g.* tertiary graduates in jobs requiring tertiary qualifications (Model 2). Conversely, the under-qualified – *e.g.* upper secondary graduates in jobs requiring tertiary qualifications – earn 15% more than workers with their same qualifications who are well-matched to their job – *e.g.* upper secondary graduates in jobs requiring upper secondary qualifications (Model 2). Using the same method, the penalty for over-skilling is significantly smaller, at approximately 0.5%. On the other hand, when workers are compared with their colleagues in similar jobs who hold just the qualifications

Figure 4.8. **Impact of qualification and skill mismatch on wages**[a]

OLS regression coefficients, using log of gross monthly wages as dependent variable[b]




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

*a)* Includes: Austria, Belgium, Denmark, Greece, France, Ireland, Italy, the Netherlands, Portugal, Spain and the United Kingdom. Pooled OLS regressions, with standard errors corrected for clustering.

*b)* Models include controls for: a quadratic in age, gender, immigration status, marital status, job qualification requirements (Model 1 only), worker's qualifications (Models 2 and 3), full-time status, contract type, tenure and firm size.

*Source:* European Community Household Panel (all waves, 1994-2001). See Table 4.A6.3 in Annex 4.A6 of Quintini (2011b) for full regression results.

StatLink http://dx.doi.org/10.1787/888932480199

required by the job, the over-qualified are found to earn 14% more and the under-qualified 16% less, while the coefficient on over-skilling is unchanged (Model 1).[36]

The magnitude of the coefficients on over-qualification and under-qualification is significantly reduced when controls for unobserved individual heterogeneity are included. The fixed-effect model (Model 3) shows a penalty of 3% for over-qualification and a return of 2-3% to under-qualification. The coefficient on over-skilling doubles but remains small at about 1%. The latter result is in line with the findings of some other researchers (Allen and van der Velden, 2001) and suggests that it is the level of education, not the level of skills, that determines workers' remuneration.[37]

Overall, the fact that qualification mismatch has a much smaller effect on wages when panel data are exploited provides support for the hypothesis that qualification mismatch mainly reflects heterogeneity among individuals with the same qualifications. Further evidence of the role played by individual heterogeneity is provided by Table 4.A6.3 in Annex 4.A6 of Quintini (2011b). This table presents additional results exploiting the ESS and controlling for the likelihood of holding a job in an area unrelated to his studies. The results suggest that working outside one's field of study has a negative effect on wages only as long as it causes over-qualification and that the effects vary across field of study.

### *Is job satisfaction influenced by qualification and skill mismatch?*

Several researchers have explored the impact of mismatch on job satisfaction in order to discriminate between genuine and apparent mismatch in skills, arguing that only the types of mismatch that decrease job satisfaction should be regarded as a problem.[38] Indeed, through a reduction in job satisfaction, mismatch could increase absenteeism and/or lower productivity.

Figure 4.9 presents estimates of the impact of mismatch on job satisfaction using ECHP data. Similarly to the wage regressions presented above, both pooled and panel estimates[39] are presented. Because pay is a critical determinant of job satisfaction, gross monthly pay is included in all three models as a control. As a result, the coefficients on the mismatch variables presented in Figure 4.9 are to be interpreted as *net* of the effect that operates via the impact of mismatch on pay. Model 2 finds that being over-qualified reduces job satisfaction and being under-qualified increases it compared with well-matched workers with the same level of qualification. Both coefficients are halved when unobserved individual heterogeneity is controlled for (Model 3). The effect of

Figure 4.9. **Job satisfaction and qualification and skill mismatch**[a]

Probit regressions, marginal effects[b] of independent variables

Satisfaction measure: "How satisfied are you with your present job in terms of the type of work?"[c]


***: statistically significant at 1% level.

*a)* Includes: Austria, Belgium, Denmark, Greece, France, Ireland, Italy, the Netherlands, Portugal, Spain and the United Kingdom. Pooled OLS regressions, with standard errors corrected for clustering.

*b)* Marginal effects calculated at the variable mean for continuous variables and for discrete changes of categorical variables.

*c)* The dependent variable takes value 1 if the worker is fully satisfied with the type of work they do and value 0 otherwise. The following explanatory variables are also included in all three models: age, age squared, gender, immigration status, marital status, part-time status, contract type, job tenure and firm size, log of gross monthly pay. Model 1 also includes required qualifications while Models 2 and 3 control for workers' qualifications.

*d)* Random-effect model with Mundlak correction – *i.e.* the regression includes averages by individual over time of each explanatory variable – to control for unobserved time-invariant individual heterogeneity.

*Source:* European Community Household Panel (all waves, 1994-2001). See Table 4.A6.4 in Annex 4.A6 of Quintini (2011b) for full regression results.

StatLink http://dx.doi.org/10.1787/888932480218

qualification mismatch is much smaller and not always significant when the comparison group is made up of workers in a similar job holding the qualifications required by the job (Model 1). Over-skilling reduces the likelihood of being satisfied with one's job by 3.6% in a cross-section setting and 2.5% in the panel regression.

### *Are mismatched workers more likely to move on?*

The effect of qualification mismatch on wages and job satisfaction may have implications for the mobility behaviour of workers.[40] To shed light on this relationship, this section investigates the effect of qualification mismatch and over-skilling on the likelihood of on-the-job search using ECHP data. As for job satisfaction, all models control for gross monthly pay, hence the coefficients on the mismatch variables are to be interpreted as *net* of the effect that operates via the impact of mismatch on pay. Both over-skilled and over-qualified workers are found to be more likely to engage in on-the-job search, controlling for socio-demographic characteristics, job attributes and monthly pay (Figure 4.10), with the effect of over-skilling being much larger than that of over-qualification. This is true whether workers are compared with their well-matched counterparts with similar qualifications or with their well-matched

Figure 4.10. **On-the-job search and qualification and skill mismatch**[a]

Probit regressions, marginal effects[b] of independent variables[c]
On-the-job search measure: "Are you currently looking for a job?"


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

*a)* Includes: Austria, Belgium, Denmark, Greece, France, Ireland, Italy, the Netherlands, Portugal, Spain and the United Kingdom. Pooled OLS regressions, with standard errors corrected for clustering.

*b)* Marginal effects calculated at the variable mean for continuous variables and for discrete changes of categorical variables.

*c)* The following explanatory variables are also included in all three models: age, age squared, gender, immigration status, marital status, part-time status, contract type, job tenure and firm size. Model 1 also includes required qualifications while Models 2 and 3 control for workers' qualifications.

*d)* Random-effect model with Mundlak correction – *i.e.* the regression include averages by individual over time of each explanatory variable – to control for unobserved time-invariant individual heterogeneity.

*Source:* European Community Household Panel (all waves, 1994-2001). See Table 4.A6.5 in Annex 4.A6 of Quintini (2011b) for full regression results.

StatLink http://dx.doi.org/10.1787/888932480237

peers in the same job. It is noteworthy that controlling for unobserved individual heterogeneity reduces the coefficients somewhat. Also, under-qualified individuals are less likely to be searching on the job but the coefficient is small.

## 5. Which labour market, education and training policies can ensure that available skills and competences are not under-utilised?

The analysis conducted in Sections 2 to 4 suggests that, although skill mismatch is neither necessary nor sufficient to explain qualification mismatch, the two phenomena overlap to some extent, particularly for over-qualified and over-skilled workers. Hence, over-qualification can partly be explained by genuine mismatch between workers' competences and job requirements. However, the analysis also confirms that a significant share of qualification mismatch is explained by individual heterogeneity, with qualifications being poor signals of workers' skills.

These findings suggest various motives for government intervention, including: the waste of resources implied by mis-investment in education; the additional efforts required of employers to select the best candidates in the absence of useful information conveyed by qualifications; the need for additional training or adjustment in job requirements to adapt skills supply to skills demand; and the need for action targeted on some at-risk groups, notably immigrants and the unemployed.

### *Under-qualification: Why and how should it be reduced?*

The findings presented above paint a consistent picture of the under-qualified as a group of workers who do possess the competences and skills required by their job but do not have formal qualifications to show it. For instance, under-qualification increases with labour market experience and is particularly high among older workers and immigrants. In addition, nearly 90% of the under-qualified report feeling well-matched or over-skilled for their job. Finally, evidence suggests that the under-qualified tend to be of high ability for their qualification.

These findings are not surprising as employers are unlikely to retain workers who are persistently unable to perform the tasks required in their jobs – a genuine lack of skills required by business is more likely to result in skills shortages or in remedial training provided by employers at hiring. However, to the extent that under-qualified individuals earn less than better-qualified workers in the same occupation, even once job tasks and characteristics are controlled for, under-qualification might warrant policy intervention.[41] The recognition of non-formal and informal learning (RNFIL) – *i.e.* learning that takes place outside formal education institutions – could play a key role in ensuring that appropriately-skilled workers are not penalised by a lack of formal qualifications.

OECD work in the area recognises the potential benefits of RNFIL for workers and employers (OECD, 2010b and 2010c). In the context of under-qualification, recognition can provide greater visibility and therefore add value to the competences of people in the labour market. It can also facilitate structural adjustment by enabling competences of displaced workers to be recognised and reapplied in other parts of the labour market.In their study on Canada, Bloom and Grant (2001) estimate that eliminating the learning recognition gap which affects just over 2% of the Canadian adult population would give Canadians CAD 4.1-5.9 billion in additional income annually – between 0.4 and 0.5% of GDP. This gain would come from increased earnings among the unemployed (CAD 2.2-2.5 billion) and the underemployed (CAD 2 to 3.4 billion).[42]

Unfortunately, although many OECD countries have established RNFIL systems, recognition processes are often small-scale, too complex and costly to be used more broadly and have a relatively low profile which reduces their value to employers. In addition, good RNFIL systems require well-established and well-functioning competency-based qualification frameworks and reliable assessment procedures and many OECD countries are only starting to work on these basic requirements. Finally, most OECD countries with RNFIL systems have put the accent on facilitating entry to further formal learning[43] rather than on the potential benefits of recognition for employers and employees.[44] Given most existing RNFIL systems, recognition should not be seen as a solution applicable to all under-qualified workers but could, instead, be helpful for specific groups. For instance, recognition could play an especially useful role for older, long-tenured displaced workers, to improve signalling of the competencies they possess on the job market. Similarly, nearly half of the under-qualified in the countries included in the ESWC have lower-secondary qualifications and they too could be the object of focused programmes.[45] Finally, immigrants are a group for which recognition processes may yield particularly high returns, especially when traditional equivalence procedures are not possible – *e.g.* when professions have different regulations in the host country and the country of origin.

### *Over-qualification*

The analysis presented above shows that over-qualification often reflects skills heterogeneity among workers. This can result from the fact that some graduates lack the skills expected of someone with their qualification level[46] – they are of low ability for their qualification – or are skilled in areas that are not in demand on the labour market – there is a quantitative mismatch between demand and supply at the field-of-study level. Secondly, involuntary job separations or labour market entry during a recession are found to increase the likelihood of over-qualification at re-employment.

### *The role of guidance in reducing field-of-study mismatch*

The analysis conducted in this chapter shows that about two in five over-qualified workers are employed in a job that is unrelated to their field of study. Evidence suggests that this is likely to be the result of significant discrepancies between the supply and demand of workers by field of study. Although efforts are ongoing in several countries to link provision to labour market needs, in most OECD countries student preference remains the key driver of education provision.[47] As a result, better career guidance in support of individual choices could play an important role in reducing the existing discrepancies in the supply and demand of workers by field of study.

Unfortunately, current guidance provision is often limited and of poor quality (OECD, 2004a and 2010d). First, staff providing career guidance are sometimes inadequately prepared for dealing with labour market issues. When they are not teachers, they are often trained in the context of psychological counselling and, while this background may be appropriate for supporting students at-risk of dropping out of school, it does not equip them to deliver sound advice on jobs and career prospects. Second, most counsellors are based in education and have primarily an education background. As a result, they lack direct knowledge of other work environments and their skill requirements and tend to be biased towards general education and university pathways. Third, relevant labour market information, essential to provide good-quality guidance, is not always available. Ideally, professional career guidance systems should be managed from outside schools by guidance professionals who are dispatched to schools to deliver guidance services (Box 4.1).

### Box 4.1. **Guidance services in New Zealand**

The main provider of career guidance services in New Zealand is Career Services (CS) – a body independent of the education system. CS provide services directly to students to help them make informed work and training choices. These services include the provision of labour market information (*e.g.* job profiles and industry outlooks) and tertiary and trade training information. In addition to directly providing information and advice, CS also develop guidance modules for schools. Notably, the Creating Pathways and Building Lives (CPaBL) programme assists schools in the development of effective career advice.

The quality of career guidance is supported by wide-ranging information on career paths and training opportunities. The New Zealand Qualification Authority provides information about qualifications and the quality of learning institutions. The New Zealand Register of Quality Assured Qualifications provides a comprehensive list of all quality-assured qualifications in New Zealand. In addition, most tertiary education institutions conduct surveys of graduates to inform the organisation of their programmes. The Department of Labour collects and analyses information about the skills needed in the labour market and about how the tertiary education system interacts with the labour market. Merging this information with that from other sources, the Tertiary Education Commission – the body supervising the New Zealand tertiary education system – produces annual "portraits" of tertiary education and training in New Zealand, including indicators of possible under- and over-supply in provision.

### *Addressing heterogeneous educational outcomes*

Findings presented in Section 3 above suggest that, for a given qualification level, skill heterogeneity contributes to qualification mismatch, with the over-qualified being of low ability and the under-qualified of high ability for their qualification. While studies focusing specifically on this issue are few, there is a growing body of literature studying the heterogeneity of returns to tertiary education to which qualification mismatch contributes.[48] Among the most recent studies, Schneider (2010) exploits a new source of information on the returns on investment in tertiary education in the United States and highlights their heterogeneity across institutions. Walker and Zhu (2010) and Bratti *et al.* (2008) find that, in the United Kingdom, returns to tertiary education vary significantly by class of degree awarded – *i.e.* the UK grading scheme for undergraduate degrees.

Variation in the quality of education provided by tertiary institutions has been addressed, in several OECD countries, with the introduction of Quality Assurance Systems. More specifically, assurance systems aimed at quality improvement exist in several OECD countries, such as Australia, the Czech Republic, Finland, Iceland, New Zealand, Norway, Portugal, Sweden and the United Kingdom (OECD, 2008a and 2008b). In the United Kingdom, the quality assurance system has been developed after a series of external reviews over the period 1992-2000 and allows for *ad hoc* reviews should the need arise. In addition, standardised performance data are published to assist students' in their choice of tertiary institution.

However, over-qualification is not limited to tertiary graduates and skills heterogeneity is also evident at lower levels. The dispersion is already visible among 15-year-olds, as shown by the 2006 survey of the OECD *Programme for International Student Assessment* (PISA). Although both between and within-school variance contribute to explain the overall score dispersion in PISA science, reading and mathematics scores, OECD (2007b) shows that, in most countries, the within-school variance is larger in all three areas of knowledge. Finally,

as mentioned above, whether students attend vocational or general education is another source of significant dispersion in scores at the secondary level (OECD, 2010e).[49]

For the purpose of matching workers to jobs, it is important that graduates with a given qualification possess the set of competences required to obtain a job at that qualification level. Many OECD countries have introduced policies to improve educational outcomes for the weakest students, particularly at the upper secondary level, putting the accent on achieving numeracy and literacy proficiency.[50] In the United States, the No Child Left Behind (NCLB) programme aims at ensuring that every upper secondary graduate attains literacy and numeracy levels deemed necessary for labour market access and career progression (Box 4.2). Although NCLB has achieved some progress towards 100% proficiency in reading and mathematics in the United States by 2013, some limitations have emerged and some changes to improve the original system have been proposed.

### Box 4.2. **Initiatives to improve numeracy and literacy in upper secondary education: The US No Child Left Behind (NCLB) Act**

NCLB was enacted in 2002 with the aim of improving literacy, numeracy and school performance more generally across the country. In exchange for federal funding, NCLB holds states and schools accountable for making progress towards the goal of 100% of students being proficient in reading and mathematics by 2013-14, according to state standards and assessment.

NCLB requires schools to achieve Adequate Yearly Progress (AYP) towards specific state-set academic standards measured by performance on literacy and numeracy tests administered sometime between 10th and 12th grade. Schools need to meet test score requirements for all students and for each of the following subgroups: economically disadvantaged students, students from major racial or ethnic groups, students with disabilities, and low English proficiency students. Schools that do not meet their AYP targets face increasing sanctions. In school year 2005-06, 10% of schools across the country had underperformed for at least two years and about 3% were being restructured.

NCLB appears to have had some positive repercussions on school performance across the country. Schools are paying more attention to achievement gaps and the learning needs of particular groups of students, making efforts to better align curriculum and instruction and there is evidence that progress is not being achieved at the expense of high-performing students. But some weaknesses of the legislation have emerged. Performance measurement through reading and mathematics tests has had some undesirable effects. For instance, there is some evidence that NCLB only improves the performance of students who are under the proficiency threshold but have the potential to reach it in the near future. In addition, schools are spending more time on reading and mathematics in order to meet the test requirements, sometimes at the expense of other subjects. Recently, the federal government has put forward plans to re-authorise NCLB albeit with some changes aimed at strengthening its role in raising literacy and numeracy. Proposals so far include the improvement of the assessment tools used to track students' progress and the measurement of readiness for college and the workplace.

### *Achieving good matches for unemployed new entrants to avoid long-term scarring*

Evidence presented in Figure 4.7 shows that young people leaving education at a time of rising unemployment face an increased risk of over-qualification but not of over-skilling. One explanation for this is that the *best* students would choose to stay in education longer

rather than enter the labour market in the midst of a recession so the share of school leavers who are of low ability based on their qualification is larger than in normal times. Alternatively, certain skills – such as those acquired with work experience – may be more highly valued by firms when they re-start hiring, with youth facing significant competition from experienced workers who have been dismissed.[51] Finally, as it is the case for displaced adults, a long period of unemployment following graduation may cause skills obsolescence, particularly in countries where youth are not entitled to unemployment benefits and may distance themselves from the labour force.

ALMPs targeted to unemployed school leavers may help in these situations, with emphasis put on work-experience programmes and job-search training (OECD, 2010f). For the youngest, to the extent possible, staying in education longer may be a win-win solution.

### *Skill mismatch*

#### *The role of on-the-job training in preventing under-skilling*

As mentioned in Section 2, existing self-reported measures of under-skilling are rather imperfect and could be capturing the desire rather than the need to participate in further training to perform on the job. Indeed, employers are unlikely to take on under-skilled workers without a plan for remedial training at hiring. However, while under-skilling at hiring is difficult to justify from the economic point of view, some workers who are well matched to their job may become under-skilled because of the lack of upgrade training. Skill obsolescence is particularly relevant in the context of technological change when *old* skills become obsolete and *new* skills are acquired slowly. In this situation, training can narrow the gap between skills acquired at schools and skills required on the job (Arulampalam *et al.*, 2004) and contribute to the resolution of skill mismatch (van Smoorenburg and van der Velden, 2000). Indeed, contrary to the disappointing evidence on the effectiveness of public training, there is consistent evidence that adult learning has a positive effect on the earnings of participants, although researchers are not unanimous on the size of the premium (OECD, 2004b).

#### *Lifelong learning as an instrument to reduce skills mismatch*

In the context of rapidly changing labour market demand and imprecise occupational projections, upgrade training alone is not sufficient to ensure that workers' skills fit well with job requirements. In many instances, opportunities for retraining in high-growth occupations and pathways back into the education system could play a crucial role in addressing skill mismatch and shortages. The availability of accessible retraining options would also allow workers who have qualified in fields in which labour demand is limited and who face the prospect of over-qualification to retrain in a different area. Some features could make the return to learning easier for adults: *i)* a modular structure allowing learners to take only the parts of a course they need to re-qualify; *ii)* high-quality RNFIL systems to provide learning credits for skills that are transferable between two fields/occupation; and *iii)* part-time learning opportunities for those wanting to continue working.

### *Immigrants*

The analysis conducted in this chapter supports the widespread finding that immigrants are substantially more likely to be mismatched based on their qualifications and skills than natives. While the general policy issues mentioned above apply, immigrants are likely to face additional challenges such as low proficiency in the language of the host

country, qualifications acquired in their home country which are not recognised in the host country and, in some instances, racial discrimination.

In the context of supply-driven immigration whereby immigrants do not hold a work contract before arriving in the country, the lack of recognition or equivalency of foreign qualifications could lead to over-skilling, particularly among high-skilled immigrants.[52]

Currently, only few countries assess educational qualifications prior to entry (OECD, 2009). Sometimes the assessment is a prerequisite for immigration, like in Australia, where persons expecting to apply in the country's skilled migration scheme must have their qualifications assessed and recognised before their application is accepted. New Zealand and the United Kingdom identify specific educational institutions and specify how many points are awarded in their points-based system for qualifications from these institutions. Qualifications not specifically identified must be assessed separately by national agencies mandated to do this. Canada encourages potential immigrants to enquire about the recognition of their qualifications in the Canadian labour market and organises information sessions in a number of overseas locations for individuals selected under the national skilled-worker category.

The above systems ensure some form of pre-arrival assessment or information on the recognition of qualifications acquired in the home country. In addition, for immigrants who arrive without jobs, some countries provide assessment services at reasonable cost where information on the status of home-country qualifications and any additional education and training required for recognition can be acquired. Besides, some programmes offer subsidised or unpaid work-placements, often linked with job-specific vocational skills and language training. Some of these services are geared very specifically to high-skilled immigrants employed in low-skilled jobs, *i.e.* over-qualified immigrants (Box 4.3).

## Conclusions

Only about 40% of over-qualified workers report feeling mismatched based on their skills and the relationship between under-qualification and under-skilling is even weaker. In fact, to a significant extent, over-qualification is explained by heterogeneity across workers with the same qualification level, due to their performance in the education system, variation in generic skills including those not learnt in education, different fields of study and/or to skills obsolescence. It is also due to the diversity of jobs identified by the same occupational code which may vary in their levels of complexity or responsibility. On the other hand, under-qualification is found to affect workers who do have the skills required by their job but lack formal qualifications to show it.

Qualification mismatch and skill mismatch affect wages, job satisfaction and incentives to engage in on-the-job search. However, the effect of qualification mismatch on wages is significantly reduced when unobserved individual heterogeneity is accounted for, confirming that within-qualification heterogeneity plays a key role in explaining mismatch.

Despite the significant role played by individual skill heterogeneity in explaining qualification mismatch and its repercussions on wages, policy intervention may be warranted to address a number of issues. These include:

- the mis-investment in education implicit in large numbers of youth leaving school without the skills that employers require;
- the costs incurred by firms to sort candidates into jobs when qualifications provide bad signals for skills; and
- the difficulties faced by some specific groups such as job losers and immigrants.

### Box 4.3. **Over-qualified immigrants: examples of targeted programmes**

In Australia, some states have established programmes to overcome the problem of over-qualification among recent skilled independent migrants. In Victoria, for example, the Overseas Qualified Professionals Programme (OQPP) provides recently arrived professionals who acquired their skills abroad with a work-experience placement to enhance their opportunities for employment in their field of study. The participants must be either unemployed or employed in low-skilled jobs. The programme consists of an initial six-week training period to develop job-search skills, followed by a four to six-week work-experience placement in the participant's field or in a closely related occupation. The work-placement component is generally not remunerated. The programme includes mentoring elements and industry-specific networking sessions with employers and professional associations to provide further orientation and networking opportunities. Six months after completing the programme, more than 60% of participants were in paid employment in a field corresponding to their qualifications and experience.

Following a different approach, in 2004, Denmark established regional knowledge centres for the assessment of the skills and qualifications of immigrants – a joint project by the Ministry of Employment and the social partners. The assessment is generally done in workplace situations at companies and participants obtain "competence cards" relating immigrants' skills to labour market needs. The centres also assist in finding employment that matches the immigrants' skills (OECD, 2007c).

In other countries, programmes have focused on over-qualification in specific occupations. In Portugal, two non-governmental organisations (the Gulbenkian Foundation and the Jesuit Refugee Service) developed, jointly with universities and various ministries (Health, Interior and Foreign Affairs), a programme for foreign-trained doctors who were found to be working in low-skilled occupations such as in construction or cleaning. The programme provided for the translation of documents, bridging courses at medical faculties, as well as comprehensive preparation material, internships in teaching hospitals, and vocation-specific language training. Participants had to pass a final assessment examination. At the end of the pilot project, about 90% of the participants were employed as doctors. Participants were followed for one year after completion of the programme to ensure a lasting integration. The programme has now been mainstreamed. In Sweden, the Government has recently assigned a number of universities and colleges to arrange supplementary courses for immigrants with a foreign university degree in law, education, health and public administration. The programme was introduced to provide an opportunity to adjust foreign credentials to the Swedish labour market, thereby helping high-skilled immigrants obtain employment in their field of study.

Finally, one group that is particularly affected by skill underutilisation is that of refugees, who are often highly qualified but whose primary objective for migration is not employment. The Netherlands has set up several specific training programmes for highly-qualified refugees (OECD, 2008c).

Above all, policy interventions designed to reduce mismatches require the co-operation of the many different actors involved in generating jobs, imparting and acquiring skills and bringing jobs and workers together: employers, educators, individual workers, central and local governments, public employment services and the social partners. Furthermore, it is important to recognise that skill formation, skill demand and their matching process are undergoing long-term changes somewhat independently of each other: for example, population ageing affects skills supply while globalisation,

technical change and other long-term trends drive the changes in the occupational structure of employment (Handel, 2011). Policy interventions need to be sensitive to these trends in order to be effective.

The analysis conducted in this chapter provides some policy directions in the current post-crisis environment. The evidence suggests that workers who are fired or are victims of business closures at times of rising unemployment are particularly vulnerable to both over-qualification and over-skilling at re-employment. For workers who were well-matched to their job before job loss, skill obsolescence due to protracted unemployment is likely to be behind the higher risk of over-qualification. But workers who started off as under-qualified – *e.g.* older, long-tenured workers, victims of mass layoffs – may also be affected as they lose jobs in which their uncertified competences were recognised, only to become over-skilled at re-employment. The higher likelihood of mismatch could also result from the trade-off between moving back to employment quickly and waiting for a suitable match, affected both by individual preferences and unemployment insurance rules. A number of activation measures may help address these challenges. Notably, upgrade training could help counter skill obsolescence while re-training for a different occupation could be the best solution for workers displaced from declining sectors. In addition, measures towards the recognition of non-formal and informal learning would benefit older, highly-skilled displaced workers with low qualifications. More generally, policies aimed at keeping the unemployed in touch with the labour market until job creation resumes, through such measures as training and work guarantees (particularly in the voluntary and non-profit sectors), could help keep skills obsolescence at bay.

### *Notes*

1. Manpower – a global employment services agency – carries out a yearly survey of recruitment difficulties among firms in 33 countries worldwide – the so-called *Talent Shortage Survey* – and also produces a list of the top ten jobs that employers are having difficulties filling. In 2009, several graduate-level occupations – notably, accounting and finance jobs, engineers, management executives and teachers – topped the list. And at least two of these – management executives and accounting and finance jobs – presumably require graduates in economics and commerce, one of the most popular tertiary degrees. This was true on average across the countries surveyed, but also for individual countries for which data on skills shortages are publicly available, namely Australia, France, Germany, Italy, Japan, the Netherlands, the United Kingdom and the United States.
2. In most OECD countries, the end of lower secondary education coincides with the end of compulsory schooling.
3. These are typically 1-2 year post-secondary vocational courses or certificates awarded to students who have attended some college but have not graduated.
4. This translates into 28 occupational groups.
5. In Australia and the United States, the high incidence of over-qualification is explained by the combination of a relatively large share of workers holding post-secondary non-tertiary qualifications (40% and 28%, respectively) and the high likelihood of over-qualification for these workers (75% and 90%, respectively).
6. The high incidence of under-qualification in Hungary is explained by a large share of workers with lower-secondary qualifications in craft occupations where the modal qualification is an upper secondary certificate. In fact, the under-qualification rate among craft and related trades workers and plant and machine operators is unusually high at 63%.
7. In New Zealand and Canada, under-qualification is particularly common among workers with upper secondary qualifications – 61% and 67%, respectively – in mid-level occupations for which post-secondary non-tertiary qualifications are the mode. Although it is rare for post-secondary non-tertiary qualifications to represent the modal qualification in any occupation, both New

Zealand and Canada have a very large share of workers with this level of qualifications, large enough to be reflected in qualification requirements.

8. Self-reported skill mismatch – *i.e.* direct questions on the extent to which one's skills are used at work – has been largely used in the academic literature (Allen and van der Velden, 2001; McGuinness and Wooden, 2007; Green and McIntosh, 2007; Mavromaras *et al*., 2007 and 2009; and Green and Zhu, 2010). Alternatively, some studies have exploited detailed information on competences possessed by workers and compared them to competences needed in their job (Krahn and Lowe, 1998; and Ryan and Sinning, 2009). Both approaches have limitations. The latter method is often limited to measures of numeracy and/or literacy, hence it fails to account for the whole spectrum of skills that workers need to be productive in a job. On the other hand, while being more comprehensive, surveys enquiring about the overall use of these skills in one's job fail to detail what skills are in deficit and what are not fully exploited.

9. Unfortunately, non-European countries cannot be included in this analysis. In fact, while the ISSP includes a question on the use of skills at work, the wording is too different to be comparable with that of the ESWC and does not allow a clear distinction between over- and under-skilling to compare with over- and under-qualification. Skill mismatch derived from the ISSP is presented separately in Annex 4.A3 of Quintini (2011b) along with another measure derived from the European Community Household Panel.

10. Similar questions have been used in other surveys to identify the under-skilled. Allen and Van der Velden (2001) exploit workers' agreement to the following statement from survey data collected for the project Higher Education and Graduate Employment in Europe: "I would perform better in my current job if I possessed additional knowledge and skills." Workers who agree or strongly agree with the statement are classified as under-skilled. Green and McIntosh (2007) use an identical question in the UK Skills Survey. In both cases, the authors concluded that this measure implied unreasonably high rates of under-skilling, possibly reflecting the tendency of workers to report even small skill deficits. The question at hand is formulated slightly differently and does not seem to suffer from the same problem. Notably, in the Netherlands and the United Kingdom – the two countries on which Allen and Van der Velden (2001) and Green and McIntosh (2007) focus on, respectively – the under-skilling rate is relatively low (Figure 4.2).

11. Allen and van der Velden (2001) reach a similar conclusion.

12. Ingram and Neumann (2006) use job skills information from the US Dictionary of Occupational Titles as opposed to years of education or qualifications, to infer skill levels of workers. Applying this measure of skills to data from the *United States Current Population Survey*, they find significant skill heterogeneity among individuals with equivalent qualifications.

13. There is some evidence that skill heterogeneity may have risen over time. Green and Zhu (2010) report increasing dispersion of returns to graduate education in Britain. Budría and Pereira (2005) show increases in Germany, Greece, Finland, France, Italy, Norway, Sweden and the United Kingdom.

14. Country-specific qualification requirements are computed using one-digit occupational codes as occupation is not available at a more disaggregated level.

15. Dates of data collection vary across countries, with the survey carried out mostly in 2004 but up to 2006 for a small number of countries.

16. See also Barone and Ortiz (2010), Boudarbat and Chernoff (2009), Green and McIntosh (2007) and Wolbers (2003).

17. These factors allow to partly control for self-selection into some fields of study by individuals who are more likely to become over-qualified in employment. For instance, some fields of study may be found mostly among older workers – if they are out of fashion – or younger workers – if they include some relatively new sub-fields. When these factors are not controlled for, they may bias the effect of field of study alone.

18. Although the coefficient on Public Order and Safety is positive, very large and statistically significant, only about 1% of individuals in the sample have qualifications falling into this group.

19. Unfortunately, the data do not allow deriving a measure of skill mismatch.

20. Workers for whom the field of study is reported as "general" or is missing as well as those in occupations that do not require a specific field of study – elementary occupations (ISCO major group 9) – are excluded from this calculation. Note that 97% of workers for which the field of study is reported as "general" hold qualifications at ISCED level 3 or below – *i.e.* they hold primary or secondary (presumably non-vocational) qualifications.

21. Restricting the analysis to tertiary graduates only makes a minor difference to these results.

22. These coefficients come from probit models where the over-qualified and under-qualified are compared, in turns, with well-matched workers. Using multinomial logit or ordered probit models does not change the sign or significance of the coefficients. However, using standard probit models allows excluding the lowest qualified from the over-qualification regressions – because, by definition, they cannot be over-qualified – and the highest qualified from the under-qualification regressions – because, by definition, they cannot be under-qualified.

23. As shown in Section 2, skill mismatch (measured as self-reported over-skilling and under-skilling) does play a role in explaining over-qualification and under-qualification, albeit a small one. As expected, being over-skilled reduced the likelihood of being under-qualified and being under-skilled increases it, although this latter result is not statistically significant (column 5). On the other hand, being over-skilled does increase the likelihood of being over-qualified but so does being under-skilled (column 2).

24. It is noteworthy that women are less likely to report being over-skilled or under-skilled than their male counterparts.

25. In an alternative specification to that presented in Table 4.3, the interactions of gender and marital status or the presence of children under 15 in the household are all insignificant in explaining over-qualification.

26. According to spatial models of job search, husbands tend to optimise their individual job search while their wives' job search is undertaken under the condition that the job search of their husband is optimised. Also, some researchers have argued that women with children may be more likely to be over-qualified because of the constraints on job choice imposed by child-rearing, but no empirical evidence is available to support this claim.

27. To the extent that some foreign-born citizens may face similar employment barriers to immigrants without citizenship, the positive effect of non-citizenship on the probability of being over-qualified is likely to be a lower bound of the true effect.

28. OECD (2007a) finds a clear association between the proficiency in the host-country language and the incidence of over-qualification and shows that literacy can explain a significant portion of the increased risk of over-qualification for immigrants. Focusing on foreign schooling, Støren and Wiers-Jenssen (2010) find that, in Norway, education from abroad increases the risk of over-qualification for both native-born and foreign-born tertiary graduates. This could be due to a lack of information about or formal recognition of foreign qualifications. However, it could also derive from actual differences in schooling quality. In this regard, Chiswick and Miller (2010) show that the quality of schooling in the home country – as measured by PISA scores – is strongly positively related to the payoffs to schooling for immigrants. Finally, Støren and Wiers-Jenssen (2010) also find that non-western immigrants in Norway have a higher risk of over-qualification irrespective of the origin of their education, suggesting the existence of discrimination against Non-Western immigrants.

29. Some, but not all, of these factors may become less important with time spent working in the host country but this cannot be tested as the ESWC does not contain information on when immigrants arrived in the country of current work. A recent paper by Poot and Stillman (2010) finds that New Zealand immigrants are more likely to be over-qualified than their native counterparts but over-qualification declines with years of residence in the country. Similarly, OECD (2007a) documents an improvement in the incidence of over-qualification with length of stay among immigrants in several OECD countries.

30. Tenure is also found to reduce over-skilling and over-qualification. Because, by definition, over-qualification cannot vary with tenure unless the worker acquires further qualifications and/or changes job, the results presented in Table 4.3 are better interpreted as a simple association between long tenure and a good worker-job match. In fact, an endogeneity issue may arise with tenure as over-qualified and over-skilled workers may be more inclined to move jobs while well-matched workers may accumulate longer tenures.

31. The ECHP does not include a measure of self-reported under-skilling (see Annex 4.A3 of Quintini, 2011b).

32. The results are unchanged when the unemployment rate at the time of separation is used.

33. Using the year of obtaining the highest educational qualification gives somewhat similar results but the coefficients' interpretation is less clear-cut as some youth may decide to stay on in further education until the labour market conditions improve.

34. Irrespective of the measure used for qualification mismatch.

35. For the pooled estimates, standard errors are corrected to control for clustering.

36. It is worth noting that these are instantaneous returns and penalties to qualification mismatch. Taking a lifetime perspective may change things somewhat as the over-qualified will have "lost" years in education that have not fully paid off while the under-qualified will have "gained" time on the labour market despite suffering a small penalty for not possessing formal qualifications.

37. Mavromaras *et al.* (2010) exploit the HILDA panel survey to study qualification and skill mismatch in Australia. They find that neither over-qualification nor over-skilling alone affects the wages of graduate males but over-skilling in conjunction with over-qualification does. The results for graduate women are more similar to those presented in Figure 4.8, with over-qualification and over-skilling affecting wages both separately and jointly.

38. Chevalier (2003) defines genuinely mismatched individuals as those who possess more education than is required to perform their job and report a low level of job satisfaction. Mavromaras *et al.* (2010) argue that mismatch may arise out of choice as workers compensate lower wages for other intrinsic aspects of the job that increase satisfaction, for example enhanced work-life balance or increased social responsibility.

39. Panel estimates are obtained from a random-effect model augmented with a Mundlak correction. The correction consists in adding the value of each explanatory variable averaged over time for each worker. This allows controlling for unobserved time-invariant individual heterogeneity. Unlike the fixed-effect model, the random-effect model with Mundlak correction allows the inclusion of variables with little or no time variation.

40. Several researchers have found evidence in support of this claim using a number of different measures to assess mismatched workers' propensity to change jobs (Quintini, 2011a). Hersch (1995), Robst (1995) and Allen and van der Velden (2001) use a similar approach to the one adopted in this chapter and proxy mobility with on-the-job search. However, other studies have looked at the effect of qualification mismatch on job/firm/occupation changes, tenure and quit intentions.

41. One possibility is that these wage penalties result from collective bargaining systems where wages are mostly based on formal qualifications. Alternatively, because some skills and competences may be hard to assess at interviews, employers may choose to use qualifications as a signal.

42. These gains do not include the private and public savings obtained through the shortening of the formal education process – *i.e.* the reduction in the direct costs of learning and opportunity costs for individuals. In fact, most workers seeking to obtain the recognition of their non-formal and informal learning do so in view of obtaining credits towards a higher education qualification.

43. For example, through the exemption from certain coursework or parts of a formal study programme. In this context, recognition can lead to significant individual and public savings.

44. Countries that have highlighted the benefits of RNFIL for the labour market include: Australia, Spain, Norway, Italy and Chile. The accent has been put primarily on the role played by RNFIL in facilitating and encouraging upward job mobility.

45. While half of these workers are 35-54 year-old, the share of 25-34 year-olds is not negligible at close to 20%. Indeed, this group could include school drop-outs who have succeeded in entering the labour market and have accumulated competences and skills through work experience or programmes that do not lead to formal qualifications (OECD, 2010d).

46. This may not be entirely a reflection of the quality of the education system as some of the skills in shortage may not be acquired in school.

47. This is not to say that prospective students always make bad choices. In fact, there is some evidence from the United States and Canada that expected earnings play a prominent role in the choice of field of study by post-secondary students, but that students respond differently to wage signals. Boudarbat (2004) finds that the field of study chosen by Canadian university graduates shifted in response to changing relative wages and employment prospects but males, those with prior work experience, and those in Business and Commerce-related fields were more sensitive to wage changes than others. Along the same lines, Usher (2006) shows that in the United States those from lower socio-economic groups have shorter-term decision-making horizons, hence they do not give appropriate weight to medium-term returns.

48. In this strand of literature, returns to investments in education and their heterogeneity are studied in light of the rising cost of attending university. This explains the focus on tertiary education.

49. Figure 2.2 in OECD (2010e) is based on the 2006 PISA survey and shows the difference in performance between vocational and academic students, on average across knowledge areas after controlling for a number of socio-demographic characteristics in order to isolate institutional effects. Vocational

students tend to perform less well than general education students and the difference in performance is particularly large in the Netherlands, Greece, Belgium, Korea and Japan.

50. Most of the policies aim to reduce the share of youth who leave education before acquiring an upper secondary qualification which experts consider to be the minimum requirement to successfully enter the labour market and participate in lifelong learning.

51. In good times, these youth would have been under-skilled based on these work-related competences but well-matched by their qualifications. However, as argued here, the lack of experience may become more penalising in times of labour market slack.

52. Different issues are likely to arise when immigrants arrive with a job offer in hand – notably, in the context of temporary migration schemes. In this case, immigrants may choose to temporarily accept jobs below their qualification level in exchange of higher wages than in their home country.

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ANNEX 4.A1

# *Data Sources and Methodological Issues*

## Data sources

Qualification mismatch has received significant attention over the past several decades, with most research focusing on the Netherlands, Spain, the United Kingdom and the United States (Quintini, 2011a). However, despite the extensive literature, international comparisons are rare due to data comparability issues. For the purpose of this chapter, no single database contains the information required to produce consistent statistics on the incidence of qualification mismatch in all OECD countries and carry out an in-depth analysis. As a result, several data sources are exploited. Together, the 2005 wave of the European Survey of Working Conditions (ESWC) and the 2005 International Social Survey Programme database (ISSP) cover most OECD countries including two enhanced engagement countries (Brazil and South Africa). These two datasets are used to assess the incidence of qualification mismatch across countries using consistent methodologies. The ESWC also contains information on skill mismatch, hence it allows exploring the relationship between qualification and skill mismatch. In addition, a few other data sources are exploited to study specific issues. The European Social Survey (ESS) contains information on workers' field of study, hence it is used to assess the incidence of field-of-study mismatch and its contribution to qualification mismatch. Finally, the longitudinal dimension of the European Community Household Panel (ECHP) is exploited to study the labour market determinants of mismatch and the effect of mismatch on wages, job satisfaction and on-the-job search.

## Measuring qualification mismatch

Although qualification mismatch is based on widely available information – namely, educational attainment and occupation – several measurement issues must be addressed when deriving what qualifications are required by each occupation, including: *i)* what method to use to derive *required qualifications*; *ii)* what level of disaggregation to use for the qualification classification; *iii)* what level of disaggregation to use for the occupational classification; and *iv)* whether it is necessary and possible to calculate country-specific requirements.

As far as methodology is concerned, required qualifications have been measured in several different ways in the literature and the incidence of qualification mismatch has been found to be sensitive to the method used.[1] The so-called "statistical" method uses the mean or modal educational attainment of workers in each occupation.[2] Alternatively, the "normative" method exploits experts' assessment of required qualifications[3] while "self-declared"

measures use workers' views of what qualifications one requires to do or be hired for their job.[4] Groot and Maassen van den Brink (2000) carry out a cross-country meta-analysis of 25 studies of over-qualification and find that studies using a "statistical" method to assess required qualifications tend to yield lower estimates of over/under qualification than studies using the two alternative definitions.[5] In this chapter, the *modal qualification level* of workers in each occupation is retained as a measure of required qualification for that occupation.[6] The statistical method is chosen over the other two methods for two reasons. First, both experts' assessments and workers' judgements are subjective. Second, experts' assessments are not readily available in the literature, particularly when using occupational codes at more disaggregated level than just one digit,[7] and few surveys ask workers about their view on the qualifications required in their current job.[8]

The other three measurement issues are related. The highest the level of disaggregation the more precise educational requirements are. However, depending on the data used, sample size in each occupation may be too small to estimate the modal qualification reliably when a high level of disaggregation is used. Similarly, country-specific educational requirements are preferable, particularly when cross-survey comparisons are needed and surveys include countries at different levels of economic development, but are subject to the same sample size limitation. This chapter uses country-specific qualification requirements for occupations defined at the two-digit level, with qualifications measured on the following five-level scale: no qualifications, lower secondary qualifications, upper secondary qualifications, post-secondary non-tertiary qualifications and tertiary qualifications.

Aggregating occupations at the two-digit level makes little difference to the incidence of qualification mismatch compared with using three digit occupational codes.[9] Given the small sample size of the databases used in this chapter, where possible, qualification requirements are derived from larger external sources to improve data reliability. Hence, the European Labour Force Survey is used for EU countries, the survey of Household, Income and Labour Dynamics in Australia is used for Australia, the Korean Labour Income Panel Survey for Korea and the Current Population Survey for the United States.[10] For the remaining non-European countries, country-specific qualification requirements at the two-digit level are derived by pooling waves 2000-05 of the ISSP in order to increase sample size.[11]

Using ISCED on a five-level scale – as opposed to a three-point scale focusing on tertiary, upper secondary and no or low qualifications – affects the extent of qualification mismatch captured and does so differently across countries. The difference between using ISCED at five or three levels is larger in countries with very large proportions of workers with post-secondary non-tertiary qualifications. Notably, post-secondary non-tertiary qualifications rarely turn up in occupation-specific qualification requirements, hence workers with these qualifications are either over-qualified – if they work in occupations requiring an upper secondary qualification – or under-qualified – if they are employed in occupations requiring a tertiary qualification. Notably, this is the case in Australia and the United States. On the other hand, in countries where workers with post-secondary non-tertiary qualifications are sufficiently numerous to affect qualification requirements in mid-level occupations – notably Canada and New Zealand – most workers with upper secondary qualifications are classified as under-qualified. Using ISCED at three levels would miss the extent of mismatch and the cross-country differences related to the varying degree of importance of post-secondary non-tertiary qualifications.

Finally, it is important to note that the modal method of deriving qualification requirements provides a lower bound for the incidence of over-qualification and an upper bound for the incidence of under-qualification. In fact, the mode is affected by increases in educational attainment and by qualification mismatch itself in countries where it is very widespread. This is particularly noticeable in sales and service elementary occupations where higher average educational attainment in some countries has caused a rise in the modal qualification – as fewer workers have lower secondary or no qualifications, upper secondary graduates are becoming increasingly common in some of these occupations and this, in turn, affects the incidence of under-qualification among the remaining (mostly older) low-educated workers.

### *Notes*

1. The effect of qualification mismatch on wages, on the other hand, is significantly less affected by this methodological issue.
2. The mode has the advantage of being less sensitive to outliers and changes in educational attainment.
3. See, for instance, Chevalier (2003) and Vaisey (2006). The correspondence is generally set based on expert opinion about what qualifications are required to carry out the tasks involved with a given occupation – *e.g.* being a judge requires a tertiary education qualification. Studies of mismatch in the United States have also exploited the Dictionary of Occupational Titles which details the skills required in each occupation.
4. See for instance Sicherman (1991); Sloane *et al.* (1999); Battu *et al.* (2000); and Dorn and Sousa-Poza (2005).
5. In addition to the method used to measure over-qualification, the authors control for country, time period and socio-demographic group – notably, graduates or immigrants as opposed to the entire working-age population.
6. Although comparing the incidence of qualification mismatch across methodologies is an interesting exercise, the aim of this paper is to understand the determinants of qualification mismatch.
7. OECD (2007a) applied the "normative" method to assess the incidence of over-qualification among immigrants in OECD countries. In this study, required qualifications were apriori defined for occupation groups at one-digit level, although managers of small enterprises (identifiable with occupation at the two digit level) were separated from the overall managers and legislators group and set to require only an upper secondary qualification as opposed to a tertiary one. For the purpose of an in-depth analysis of qualification mismatch, educational requirements at a more disaggregated level of the occupation classification are needed.
8. Additionally, the phrasing of the question can make a significant difference when measuring required qualifications through workers' own assessment. Notably, some surveys ask about the qualifications required to *carry out* one's job while others focus on the qualifications required to be *hired* for one's job.
9. On average, in the 31 countries included in the 2005 wave of the European Labour Force Survey, the incidence of over-qualification using two-digit occupational codes is 0.3 percentage points higher than that obtained when using three-digit ISCO codes. In 15 of the 31 countries, the difference between using two-digit and three-digit occupational codes (the incidence using two-digit ISCO *minus* the incidence using three-digit ISCO) was between –1 and +1 percentage points and in 24 countries it was between –2 and +2 percentage points. The largest differences were observed in Iceland (5.1), the United Kingdom (–4.4), Norway (–3.9) and Cyprus (–3.5). In 13 of the 31 countries, the difference was negative. Similar differences are observed in the incidence of under-qualification. Using European Labour Force Data it is not possible to identify individuals that are over-qualified using two-digit occupational codes but not over-qualified using three-digit codes or *vice versa*. This robustness check can be carried out using the 2005 wave of the International Social Survey Programme. On average, in the countries included in the survey, 85% of workers are attributed the same mismatch status (over-qualified, under-qualified or well-matched) using

two-digit or three-digit occupational codes. The least over-lap is observed in the Czech Republic (77%) while the largest is found in New Zealand (91%).

10. Requirements were derived from these outside sources using the closest available year to the year or the survey used in the analysis (2005 for the ESWC and the ISSP; 2001 for the ECHP; and 2004 for the ESS).

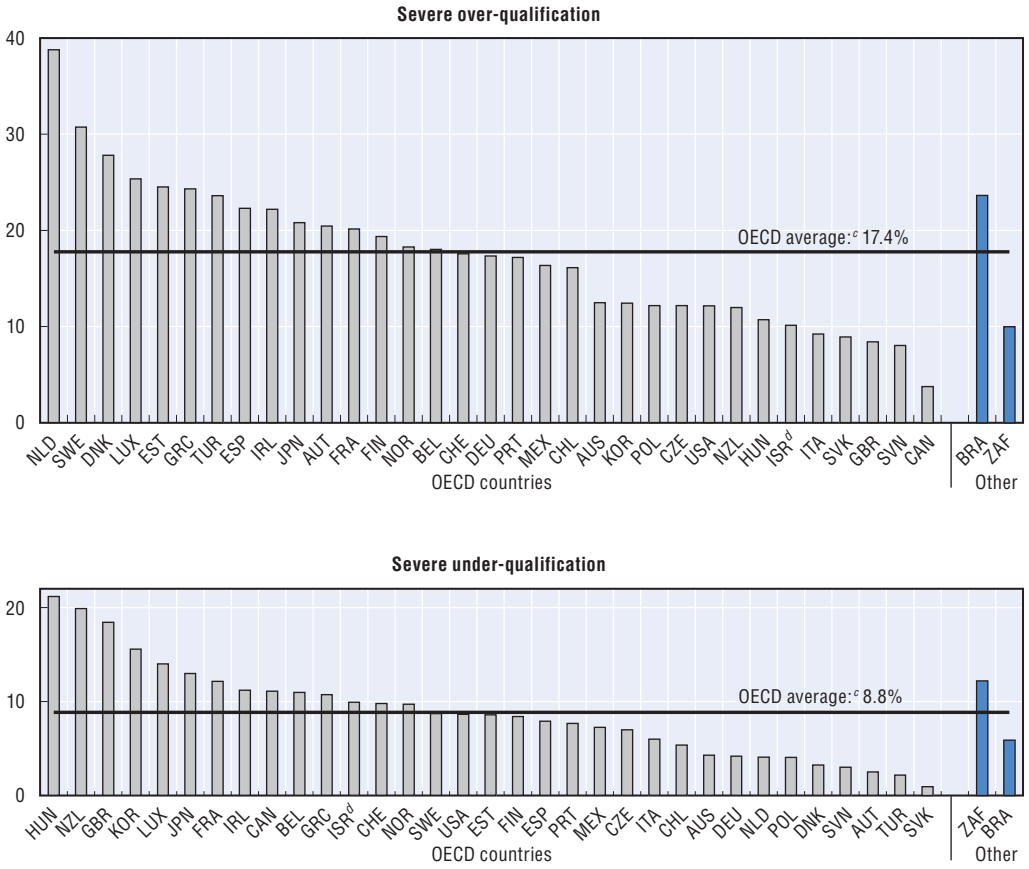
11. Except for Chile (only included in waves 2000 to 2004 of ISSP) and Brazil (only included in waves 2001, 2002 and 2004 of ISSP).

# ANNEX 4.A2

# *Severe Over-Qualification and Under-Qualification*

## Figure 4.A2.1. **Indicators of severe qualification mismatch,[a] OECD and selected countries, 2005**

Percentages of employees and self-employed[b]




*a)* Severely over-qualified workers are those whose qualifications are more than one ISCED step higher than required by their occupation – *e.g.* a tertiary graduate (ISCED 5) is classified as severely over-qualified is he/she holds a job that requires upper secondary qualifications or less (ISCED 3); on the other hand someone holding a tertiary qualification (ISCED 5) but working in a job where the modal qualification is a post-secondary non-tertiary qualification (ISCED 4) will not be classified as severely over-qualified. Severely under-qualified workers are those whose qualifications are more than one ISCED step lower than required by their occupation – *e.g.* an upper secondary graduate (ISCED 3) is classified as severely under-qualified is he/she holds a job that requires a tertiary qualification (ISCED 5); on the other hand, someone holding a post-secondary non-tertiary qualification (ISCED 4) but working in a job where the modal qualification is a tertiary degree (ISCED 5) will not be classified as severely over-qualified. The modal qualification in each occupational group at the two-digit level is used to measure qualification requirements.

*b)* Trainees and apprentices are excluded.

*c)* Unweighted average of OECD countries shown.

*d)* Information on data for Israel: *http://dx.doi.org/10.1787/888932315602*.

*Source:* International Social Survey Programme (2005) for Australia, Canada, Israel, Japan, Korea, Mexico, New Zealand, the United States and South Africa. International Social Survey Programme (2004) for Brazil and Chile. European Survey of Working Conditions (2005) for all other countries.

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# *Statistical Annex*

## Sources and definitions

Most of the statistics shown in these tables can also be found in two other (paper or electronic) publication and data repository, as follows:

- The annual edition of *OECD Labour Force Statistics, 1990-2010*.
- OECD.Stat, the OECD's central data warehouse (*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, educational attainment, part-time employment, temporary employment, duration of unemployment, and other series than are shown in this annex, such as, employee job tenure, involuntary part-time employment, distribution of employment by weekly usual hours worked intervals, etc.

Data available for Brazil and the Russian Federation are included in most of the tables in addition to data for 34 OECD countries. For recent years, data are annual averages of monthly and quarterly estimates based on labour force surveys, except for *Tables B* and *C* for Chile where they refer to fourth quarter for data prior to 2010. Finally, data shown for France in *Tables B, C, E, F* and *H* are from the European Labour Force Survey (EU-LFS), which are more consistent over time than the national LFS-based data series.

Statistical tables showing data for Israel are supplemented with the following footnote: "The statistical data for Israel are supplied by and under the responsibility of the relevant Israeli authorities. The use of such data by the OECD is without prejudice to the status of the Golan Heights, East Jerusalem and Israeli settlements in the West Bank under the terms of international law".

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 included in some charts and tables of Chapter 1 of this publication.

Interested users can refer to the online database (*www.oecd.org/els/employment/database*), 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 online 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 harmonised unemployment rates are consistent over time.

*Tables B* to *F* and *Table H*: 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 (2003/04), Belgium (1998/99), Czech Republic (1996/97), Denmark (1999/2000, quarterly continuous survey), Finland (1999/2000), France (2002/03), Germany (2004/05), Hungary (2002/03), Iceland (2002/03), Ireland (1996/97/98), Italy (2003/04), Luxembourg (2002/03), Netherlands (1999/2000, quarterly continuous survey), Norway (1995/96), Poland (1998/99/2000), Portugal (1997/98), Slovak Republic (1997/98), Spain (1998/99), and United Kingdom (1991/92).
- *Redesign of labour force survey:* Greece (1997/98), Portugal (1997/98), Slovak Republic (1998/99), Spain (2004/05), 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:*
  - Neat application of the criterion of "at least one hour worked in a gainful job" in the Chilean *Nueva Encuesta Nacional de Empleo* (NENE) from 2010 onward.
- *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 (2002/03), Spain (2000/01).
  - 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 (2004/05). This criterion did not exist prior to 2010 in the Chilean *Encuesta Nacional de Empleo* (ENE) and has been introduced in the *Nueva Encuesta Nacional de Empleo* (NENE) since 2010.

**Major breaks in series** *(cont.)*

- Persons on lay-off considered as employed instead of unemployed: Norway (2005/06).
- 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. In Chile (2009/10), the duration of active job search has been shortened from last two months to previous four weeks including the survey week.
- Other minor changes: Australia (2000/01) and Poland (2003/04).

- *Changes in the questionnaire with impact on employment and unemployment estimates:* Spain (2004/05) and unemployment estimates Sweden (2004/05), Norway (2005/06).
- *Change from seasonal to calendar quarters:* Slovak Republic (1999/2000) and the United Kingdom (2005/06). 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 (2004/05).
- *Change in lower age limit from 16 to 15 years:* Norway (2005/06). 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:* Israel (2008), Spain (1995/96), Turkey (2006/07), 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*.

In 2010, OECD countries welcomed four new members: Chile, Estonia, Israel and Slovenia. The Russian Federation is currently undergoing an accession process.

## Table A. **Harmonised unemployment rates in OECD countries**

As a percentage of civilian labour force

| | 1990 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Australia | 6.9 | 7.7 | 6.9 | 6.3 | 6.8 | 6.4 | 5.9 | 5.4 | 5.0 | 4.8 | 4.4 | 4.2 | 5.6 | 5.2 |
| Austria | . . | 4.5 | 3.9 | 3.6 | 3.6 | 4.2 | 4.3 | 5.0 | 5.2 | 4.8 | 4.4 | 3.8 | 4.8 | 4.4 |
| Belgium | 6.6 | 9.3 | 8.5 | 6.9 | 6.6 | 7.5 | 8.2 | 8.4 | 8.4 | 8.3 | 7.5 | 7.0 | 7.9 | 8.3 |
| Canada | 8.1 | 8.3 | 7.6 | 6.8 | 7.2 | 7.7 | 7.6 | 7.2 | 6.8 | 6.3 | 6.0 | 6.1 | 8.3 | 8.0 |
| Chile | 7.8 | 6.4 | 10.1 | 9.7 | 9.9 | 9.8 | 9.5 | 10.0 | 9.2 | 7.8 | 7.1 | 7.8 | 10.8 | 8.2 |
| Czech Republic | 0.8 | 6.4 | 8.6 | 8.7 | 8.0 | 7.3 | 7.8 | 8.3 | 7.9 | 7.2 | 5.3 | 4.4 | 6.7 | 7.3 |
| Denmark | 7.2 | 4.9 | 5.2 | 4.3 | 4.5 | 4.6 | 5.4 | 5.5 | 4.8 | 3.9 | 3.8 | 3.3 | 6.0 | 7.4 |
| Estonia | . . | 9.2 | 11.4 | 13.6 | 12.6 | 10.3 | 10.0 | 9.7 | 7.9 | 5.9 | 4.7 | 5.5 | 13.8 | 16.9 |
| Finland | 3.2 | 11.4 | 10.2 | 9.8 | 9.1 | 9.1 | 9.0 | 8.8 | 8.4 | 7.7 | 6.9 | 6.4 | 8.2 | 8.4 |
| France | 8.4 | 11.0 | 10.4 | 9.0 | 8.3 | 8.6 | 9.0 | 9.3 | 9.2 | 9.2 | 8.4 | 7.8 | 9.5 | 9.8 |
| Germany | . . | 9.1 | 8.3 | 7.5 | 7.6 | 8.4 | 9.3 | 9.8 | 10.6 | 9.8 | 8.7 | 7.5 | 7.8 | 7.1 |
| Greece | . . | . . | 12.0 | 11.2 | 10.7 | 10.3 | 9.8 | 10.5 | 9.9 | 8.9 | 8.3 | 7.7 | 9.5 | 12.6 |
| Hungary | . . | 8.4 | 6.9 | 6.4 | 5.7 | 5.8 | 5.9 | 6.1 | 7.2 | 7.5 | 7.4 | 7.8 | 10.0 | 11.2 |
| Iceland | . . | 2.8 | 2.0 | 2.3 | 2.3 | 3.3 | 3.4 | 3.1 | 2.6 | 2.9 | 2.3 | 3.0 | 7.2 | 7.5 |
| Ireland | 13.5 | 7.6 | 5.6 | 4.2 | 3.9 | 4.5 | 4.6 | 4.5 | 4.4 | 4.5 | 4.6 | 6.3 | 11.9 | 13.7 |
| Israel[a] | . . | . . | . . | . . | 9.3 | 10.3 | 10.7 | 10.4 | 9.0 | 8.4 | 7.3 | 6.1 | 7.5 | 6.7 |
| Italy | 8.9 | 11.3 | 11.0 | 10.2 | 9.1 | 8.6 | 8.5 | 8.0 | 7.7 | 6.8 | 6.1 | 6.7 | 7.8 | 8.4 |
| Japan | 2.1 | 4.1 | 4.7 | 4.7 | 5.0 | 5.4 | 5.3 | 4.7 | 4.4 | 4.1 | 3.9 | 4.0 | 5.1 | 5.1 |
| Korea | 2.4 | 7.0 | 6.6 | 4.4 | 4.0 | 3.3 | 3.6 | 3.7 | 3.7 | 3.5 | 3.2 | 3.2 | 3.6 | 3.7 |
| Luxembourg | 1.7 | 2.7 | 2.4 | 2.2 | 1.9 | 2.6 | 3.8 | 5.0 | 4.6 | 4.6 | 4.2 | 4.9 | 5.1 | 4.5 |
| Mexico | 2.7 | 3.2 | 2.5 | 2.5 | 2.8 | 3.0 | 3.4 | 3.9 | 3.6 | 3.6 | 3.7 | 4.0 | 5.5 | 5.4 |
| Netherlands | 5.1 | 4.3 | 3.5 | 3.1 | 2.6 | 3.1 | 4.2 | 5.1 | 5.3 | 4.3 | 3.6 | 3.1 | 3.7 | 4.5 |
| New Zealand | 8.0 | 7.7 | 7.1 | 6.2 | 5.5 | 5.3 | 4.8 | 4.1 | 3.8 | 3.9 | 3.7 | 4.2 | 6.1 | 6.5 |
| Norway | 5.2 | 3.1 | 3.0 | 3.2 | 3.4 | 3.7 | 4.2 | 4.3 | 4.5 | 3.4 | 2.5 | 2.5 | 3.1 | 3.5 |
| Poland | . . | 10.2 | 13.4 | 16.1 | 18.3 | 20.0 | 19.7 | 19.0 | 17.8 | 13.9 | 9.6 | 7.1 | 8.2 | 9.7 |
| Portugal | 4.8 | 5.0 | 4.4 | 4.0 | 4.1 | 5.1 | 6.4 | 6.8 | 7.7 | 7.8 | 8.1 | 7.7 | 9.6 | 11.0 |
| Slovak Republic | . . | 12.6 | 16.4 | 18.8 | 19.3 | 18.7 | 17.6 | 18.2 | 16.3 | 13.4 | 11.1 | 9.5 | 12.0 | 14.4 |
| Slovenia | . . | 7.4 | 7.4 | 6.7 | 6.2 | 6.3 | 6.7 | 6.3 | 6.5 | 6.0 | 4.9 | 4.4 | 5.9 | 7.3 |
| Spain | 13.0 | 15.5 | 12.8 | 11.3 | 10.4 | 11.2 | 11.2 | 10.7 | 9.2 | 8.5 | 8.3 | 11.3 | 18.0 | 20.1 |
| Sweden | 1.7 | 8.2 | 6.7 | 5.6 | 5.8 | 6.0 | 6.6 | 7.4 | 7.6 | 7.0 | 6.1 | 6.2 | 8.3 | 8.4 |
| Switzerland | 0.5 | 3.3 | 2.8 | 2.5 | 2.2 | 2.9 | 3.9 | 4.1 | 4.2 | 3.8 | 3.4 | 3.2 | 4.1 | 4.2 |
| Turkey | . . | . . | . . | . . | . . | . . | . . | . . | 9.2 | 8.8 | 8.8 | 9.7 | 12.6 | 10.7 |
| United Kingdom | 6.9 | 6.1 | 5.9 | 5.4 | 5.0 | 5.1 | 5.0 | 4.7 | 4.8 | 5.4 | 5.3 | 5.7 | 7.6 | 7.8 |
| United States | 5.6 | 4.5 | 4.2 | 4.0 | 4.7 | 5.8 | 6.0 | 5.5 | 5.1 | 4.6 | 4.6 | 5.8 | 9.3 | 9.6 |
| OECD[b] | . . | 6.8 | 6.7 | 6.3 | 6.5 | 7.1 | 7.3 | 7.1 | 6.8 | 6.2 | 5.7 | 6.1 | 8.3 | 8.6 |

*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, Norway and Turkey, the procedures are similar to those used in deriving the harmonised unemployment rates of the Statistical Office of the European Communities. Minor differences may appear mainly because of various methods of calculating and applying adjustment factors, and because EU estimates are based on the civilian labour force. For a fuller description, please refer to the following URL: *www.oecd.org/std*.

*a)* The statistical data for Israel are supplied by and under the responsibility of the relevant Israeli authorities. The use of such data by the OECD is without prejudice to the status of the Golan Heights, East Jerusalem and Israeli settlements in the West Bank under the terms of international law.

*b)* Weighted averages for above countries only.

*Source:* OECD (2011), *OECD Main Economic Indicators*, Paris, June.

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## Table B. **Employment/population ratios, activity and unemployment rates**[a]

Persons aged 15-64 years (percentages)

| | Employment/population ratio | | | | | | Labour force participation rate | | | | | | Unemployment rate | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1994 | 2006 | 2007 | 2008 | 2009 | 2010 | 1994 | 2006 | 2007 | 2008 | 2009 | 2010 | 1994 | 2006 | 2007 | 2008 | 2009 | 2010 |
| Australia | 66.0 | 72.2 | 72.9 | 73.2 | 72.0 | 72.4 | 73.2 | 75.8 | 76.2 | 76.5 | 76.4 | 76.5 | 9.9 | 4.9 | 4.5 | 4.3 | 5.7 | 5.3 |
| Austria | 68.4 | 70.2 | 71.4 | 72.1 | 71.6 | 71.7 | 71.0 | 73.7 | 74.7 | 75.0 | 75.3 | 75.1 | 3.6 | 4.8 | 4.5 | 3.9 | 4.8 | 4.5 |
| Belgium | 55.7 | 61.0 | 62.0 | 62.4 | 61.6 | 62.0 | 61.7 | 66.5 | 67.1 | 67.1 | 66.9 | 67.7 | 9.7 | 8.3 | 7.5 | 7.0 | 8.0 | 8.4 |
| Canada | 67.0 | 72.8 | 73.5 | 73.6 | 71.5 | 71.5 | 74.9 | 77.7 | 78.3 | 78.5 | 78.0 | 77.8 | 10.5 | 6.4 | 6.1 | 6.2 | 8.4 | 8.1 |
| Chile | . . | 55.5 | 56.3 | 57.3 | 56.1 | 59.3 | . . | 60.3 | 60.8 | 62.3 | 62.3 | 64.8 | . . | 7.9 | 7.4 | 8.0 | 10.0 | 8.4 |
| Czech Republic | 69.2 | 65.3 | 66.1 | 66.6 | 65.4 | 65.0 | 72.4 | 70.3 | 69.8 | 69.7 | 70.1 | 70.2 | 4.3 | 7.2 | 5.4 | 4.4 | 6.8 | 7.4 |
| Denmark | 72.4 | 77.4 | 77.1 | 77.9 | 75.7 | 73.4 | 78.8 | 80.6 | 80.2 | 80.7 | 80.7 | 79.5 | 8.1 | 4.0 | 3.8 | 3.4 | 6.1 | 7.6 |
| Estonia | 68.4 | 67.9 | 69.2 | 69.7 | 63.5 | 61.0 | 74.1 | 72.3 | 72.7 | 73.9 | 73.9 | 73.7 | 7.7 | 6.0 | 4.8 | 5.6 | 14.0 | 17.2 |
| Finland | 60.7 | 69.6 | 70.5 | 71.3 | 68.4 | 68.3 | 72.7 | 75.4 | 75.7 | 76.1 | 74.6 | 74.6 | 16.5 | 7.7 | 6.9 | 6.4 | 8.4 | 8.5 |
| France | 58.9 | 63.7 | 64.3 | 64.9 | 64.1 | 64.0 | 67.4 | 69.9 | 69.9 | 70.1 | 70.6 | 70.6 | 12.7 | 8.8 | 8.0 | 7.4 | 9.1 | 9.3 |
| Germany | 64.5 | 67.2 | 69.0 | 70.2 | 70.4 | 71.2 | 70.5 | 75.0 | 75.6 | 75.9 | 76.4 | 76.6 | 8.5 | 10.4 | 8.7 | 7.6 | 7.8 | 7.2 |
| Greece | 54.1 | 61.0 | 61.4 | 61.9 | 61.2 | 59.6 | 59.5 | 67.0 | 67.0 | 67.1 | 67.8 | 68.2 | 9.1 | 9.0 | 8.4 | 7.8 | 9.6 | 12.7 |
| Hungary | 53.5 | 57.3 | 57.3 | 56.7 | 55.4 | 55.4 | 60.0 | 62.0 | 61.9 | 61.5 | 61.6 | 62.4 | 10.8 | 7.5 | 7.4 | 7.9 | 10.1 | 11.2 |
| Iceland[b] | 78.5 | 85.3 | 85.7 | 84.2 | 78.9 | 78.9 | 83.0 | 88.0 | 87.8 | 86.9 | 85.3 | 85.5 | 5.4 | 3.0 | 2.3 | 3.0 | 7.4 | 7.7 |
| Ireland | 51.9 | 68.5 | 69.2 | 68.1 | 62.5 | 60.4 | 61.1 | 71.8 | 72.6 | 72.3 | 71.3 | 70.2 | 15.1 | 4.7 | 4.7 | 5.8 | 12.2 | 13.9 |
| Israel[c] | 55.5 | 57.6 | 58.9 | 59.8 | 59.2 | 60.2 | 60.2 | 62.9 | 63.7 | 63.8 | 64.1 | 64.5 | 8.0 | 8.5 | 7.4 | 6.2 | 7.7 | 6.8 |
| Italy | 51.5 | 58.4 | 58.7 | 58.7 | 57.5 | 56.9 | 58.0 | 62.7 | 62.5 | 63.0 | 62.4 | 62.2 | 11.1 | 6.9 | 6.2 | 6.8 | 7.9 | 8.5 |
| Japan | 69.3 | 70.0 | 70.7 | 70.7 | 70.0 | 70.1 | 71.4 | 73.1 | 73.6 | 73.8 | 73.9 | 74.0 | 3.0 | 4.3 | 4.1 | 4.2 | 5.3 | 5.3 |
| Korea | 62.8 | 63.8 | 63.9 | 63.8 | 62.9 | 63.3 | 64.4 | 66.2 | 66.2 | 66.0 | 65.4 | 65.8 | 2.6 | 3.6 | 3.4 | 3.3 | 3.8 | 3.8 |
| Luxembourg | 60.2 | 63.6 | 64.2 | 63.4 | 65.2 | 65.2 | 62.3 | 66.7 | 66.9 | 66.8 | 68.7 | 68.2 | 3.5 | 4.7 | 4.1 | 5.1 | 5.2 | 4.4 |
| Mexico | 58.7 | 61.0 | 61.1 | 61.3 | 59.4 | 60.4 | 61.4 | 63.0 | 63.3 | 63.6 | 62.8 | 63.9 | 4.4 | 3.3 | 3.5 | 3.6 | 5.4 | 5.4 |
| Netherlands | 63.9 | 72.5 | 74.4 | 75.9 | 75.6 | 74.7 | 68.6 | 75.8 | 77.1 | 78.3 | 78.5 | 78.2 | 6.8 | 4.3 | 3.6 | 3.0 | 3.7 | 4.5 |
| New Zealand | 67.5 | 74.9 | 75.2 | 74.7 | 72.9 | 72.3 | 73.8 | 77.9 | 78.1 | 78.0 | 77.8 | 77.5 | 8.4 | 3.9 | 3.8 | 4.3 | 6.3 | 6.7 |
| Norway[b] | 72.2 | 75.5 | 76.9 | 78.1 | 76.5 | 75.4 | 76.4 | 78.2 | 78.9 | 80.2 | 79.0 | 78.2 | 5.4 | 3.5 | 2.6 | 2.6 | 3.2 | 3.7 |
| Poland | 58.3 | 54.5 | 57.0 | 59.2 | 59.3 | 59.3 | 68.4 | 63.4 | 63.2 | 63.8 | 64.7 | 65.6 | 14.8 | 14.0 | 9.7 | 7.2 | 8.3 | 9.7 |
| Portugal | 64.0 | 67.9 | 67.8 | 68.2 | 66.3 | 65.6 | 69.0 | 73.9 | 74.1 | 74.2 | 73.7 | 74.0 | 7.2 | 8.1 | 8.5 | 8.1 | 10.0 | 11.4 |
| Slovak Republic | 59.8 | 59.4 | 60.7 | 62.3 | 60.2 | 58.8 | 69.3 | 68.5 | 68.2 | 68.9 | 68.4 | 68.7 | 13.7 | 13.3 | 11.0 | 9.6 | 12.1 | 14.4 |
| Slovenia | . . | 66.6 | 67.8 | 68.6 | 67.5 | 66.2 | . . | 70.9 | 71.3 | 71.8 | 71.8 | 71.5 | . . | 6.1 | 5.0 | 4.5 | 6.0 | 7.4 |
| Spain[b] | 47.4 | 65.7 | 66.6 | 65.3 | 60.6 | 59.4 | 62.4 | 71.9 | 72.6 | 73.7 | 74.0 | 74.4 | 24.0 | 8.6 | 8.3 | 11.4 | 18.1 | 20.2 |
| Sweden[b] | 71.5 | 74.6 | 75.7 | 75.8 | 72.3 | 72.7 | 79.2 | 80.3 | 80.7 | 80.8 | 78.9 | 79.5 | 9.7 | 7.1 | 6.2 | 6.1 | 8.5 | 8.5 |
| Switzerland | 75.6 | 77.9 | 78.6 | 79.5 | 79.0 | 78.6 | 78.7 | 81.2 | 81.6 | 82.3 | 82.5 | 82.2 | 4.0 | 4.1 | 3.7 | 3.4 | 4.2 | 4.4 |
| Turkey | 52.4 | 44.6 | 44.6 | 44.9 | 44.3 | 46.3 | 57.5 | 49.8 | 49.8 | 50.6 | 51.7 | 52.7 | 8.8 | 10.5 | 10.5 | 11.2 | 14.3 | 12.1 |
| United Kingdom[b] | 68.7 | 72.5 | 72.3 | 72.7 | 70.6 | 70.3 | 76.0 | 76.7 | 76.3 | 76.8 | 76.6 | 76.3 | 9.7 | 5.4 | 5.3 | 5.4 | 7.8 | 7.9 |
| United States[b] | 72.0 | 72.0 | 71.8 | 70.9 | 67.6 | 66.7 | 76.7 | 75.5 | 75.3 | 75.3 | 74.6 | 73.9 | 6.2 | 4.7 | 4.7 | 5.8 | 9.4 | 9.8 |
| OECD (weighted average) | 64.0 | 66.0 | 66.5 | 66.5 | 64.7 | 64.6 | 69.5 | 70.4 | 70.5 | 70.8 | 70.6 | 70.7 | 7.9 | 6.2 | 5.8 | 6.1 | 8.3 | 8.5 |
| Brazil | . . | 67.4 | 67.4 | 68.3 | 67.6 | . . | . . | 73.7 | 73.5 | 73.7 | 73.9 | . . | . . | 8.6 | 8.3 | 7.3 | 8.5 | . . |
| Russian Federation | 65.4 | 66.7 | 68.3 | 68.6 | 66.8 | 67.4 | 71.2 | 71.9 | 72.8 | 73.3 | 73.0 | 72.9 | 8.2 | 7.2 | 6.2 | 6.4 | 8.5 | 7.5 |

Table B. **Employment/population ratios, activity and unemployment rates**[a] *(cont.)*

Men aged 15-64 years (percentages)

| | Employment/population ratio | | | | | | Labour force participation rate | | | | | | Unemployment rate | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1994 | 2006 | 2007 | 2008 | 2009 | 2010 | 1994 | 2006 | 2007 | 2008 | 2009 | 2010 | 1994 | 2006 | 2007 | 2008 | 2009 | 2010 |
| Australia | 75.0 | 78.8 | 79.6 | 79.7 | 77.8 | 78.6 | 83.5 | 82.8 | 83.0 | 83.0 | 82.6 | 82.9 | 10.2 | 4.8 | 4.1 | 4.1 | 5.9 | 5.2 |
| Austria | 78.0 | 76.9 | 78.4 | 78.5 | 76.9 | 77.1 | 80.7 | 80.4 | 81.7 | 81.4 | 81.0 | 80.9 | 3.2 | 4.4 | 4.0 | 3.6 | 5.1 | 4.6 |
| Belgium | 66.5 | 67.9 | 68.7 | 68.6 | 67.2 | 67.4 | 72.0 | 73.4 | 73.6 | 73.3 | 72.8 | 73.4 | 7.7 | 7.5 | 6.7 | 6.5 | 7.8 | 8.2 |
| Canada | 73.0 | 76.7 | 77.1 | 77.2 | 73.9 | 74.2 | 82.0 | 82.1 | 82.4 | 82.7 | 81.7 | 81.5 | 11.0 | 6.6 | 6.4 | 6.7 | 9.6 | 8.9 |
| Chile | . . | 72.0 | 72.3 | 72.6 | 70.0 | 72.1 | . . | 77.4 | 77.4 | 78.1 | 77.3 | 77.8 | . . | 6.9 | 6.5 | 7.0 | 9.4 | 7.4 |
| Czech Republic | 77.5 | 73.7 | 74.8 | 75.4 | 73.8 | 73.5 | 80.4 | 78.2 | 78.1 | 78.1 | 78.5 | 78.6 | 3.6 | 5.9 | 4.3 | 3.5 | 5.9 | 6.5 |
| Denmark | 77.6 | 81.2 | 81.0 | 81.9 | 78.3 | 75.8 | 83.7 | 84.1 | 83.9 | 84.5 | 84.0 | 82.7 | 7.3 | 3.4 | 3.5 | 3.0 | 6.7 | 8.4 |
| Estonia | 75.3 | 70.9 | 73.0 | 73.5 | 64.1 | 61.5 | 81.3 | 75.6 | 77.2 | 78.0 | 77.4 | 76.7 | 7.4 | 6.3 | 5.5 | 5.9 | 17.3 | 19.7 |
| Finland | 62.6 | 71.8 | 72.4 | 73.4 | 68.9 | 69.7 | 76.3 | 77.5 | 77.4 | 78.1 | 75.8 | 76.7 | 17.9 | 7.3 | 6.5 | 6.0 | 9.1 | 9.2 |
| France | 66.6 | 68.9 | 69.2 | 69.6 | 68.4 | 68.3 | 75.0 | 75.0 | 74.8 | 74.8 | 75.1 | 75.0 | 11.2 | 8.1 | 7.5 | 6.9 | 8.9 | 9.0 |
| Germany | 74.0 | 72.8 | 74.7 | 75.9 | 75.5 | 76.1 | 79.8 | 81.4 | 81.8 | 82.1 | 82.2 | 82.4 | 7.2 | 10.5 | 8.6 | 7.5 | 8.2 | 7.6 |
| Greece | 72.2 | 74.6 | 74.9 | 75.0 | 73.5 | 70.9 | 77.0 | 79.1 | 79.1 | 79.1 | 79.0 | 78.9 | 6.2 | 5.7 | 5.3 | 5.1 | 7.0 | 10.1 |
| Hungary | 59.6 | 63.8 | 64.0 | 63.0 | 61.1 | 60.4 | 67.8 | 68.7 | 69.0 | 68.3 | 68.2 | 68.3 | 12.1 | 7.2 | 7.2 | 7.7 | 10.3 | 11.6 |
| Iceland[b] | 82.4 | 88.7 | 89.5 | 87.8 | 80.6 | 80.6 | 86.8 | 91.4 | 91.6 | 90.9 | 88.4 | 88.2 | 5.1 | 3.0 | 2.3 | 3.4 | 8.9 | 8.6 |
| Ireland | 64.8 | 77.7 | 77.6 | 75.7 | 67.3 | 64.5 | 76.2 | 81.6 | 81.6 | 81.2 | 79.6 | 77.9 | 15.0 | 4.8 | 4.9 | 6.8 | 15.5 | 17.2 |
| Israel[c] | 64.6 | 61.8 | 63.3 | 64.1 | 62.5 | 63.4 | 69.0 | 67.2 | 68.0 | 68.1 | 67.8 | 68.2 | 6.3 | 8.0 | 6.9 | 5.8 | 7.7 | 6.9 |
| Italy | 67.8 | 70.5 | 70.7 | 70.3 | 68.6 | 67.7 | 74.2 | 74.6 | 74.4 | 74.4 | 73.7 | 73.3 | 8.6 | 5.5 | 5.0 | 5.6 | 6.9 | 7.7 |
| Japan | 81.9 | 81.0 | 81.7 | 81.6 | 80.2 | 80.0 | 84.4 | 84.8 | 85.2 | 85.2 | 84.8 | 84.8 | 2.9 | 4.4 | 4.1 | 4.3 | 5.5 | 5.6 |
| Korea | 76.3 | 74.6 | 74.7 | 74.4 | 73.6 | 73.9 | 78.6 | 77.7 | 77.6 | 77.3 | 76.9 | 77.1 | 2.9 | 4.0 | 3.8 | 3.7 | 4.3 | 4.1 |
| Luxembourg | 74.9 | 72.6 | 72.3 | 71.5 | 73.2 | 73.1 | 77.3 | 75.3 | 75.0 | 74.7 | 76.6 | 76.0 | 3.0 | 3.6 | 3.6 | 4.3 | 4.4 | 3.8 |
| Mexico | 82.9 | 81.6 | 80.9 | 80.7 | 77.7 | 78.4 | 86.4 | 84.2 | 83.7 | 83.5 | 82.3 | 82.9 | 4.1 | 3.1 | 3.3 | 3.4 | 5.6 | 5.5 |
| Netherlands | 74.9 | 79.5 | 81.1 | 82.4 | 81.5 | 80.0 | 79.6 | 82.7 | 83.8 | 84.8 | 84.6 | 83.8 | 5.9 | 3.9 | 3.2 | 2.8 | 3.7 | 4.5 |
| New Zealand | 75.7 | 81.9 | 81.9 | 80.9 | 78.6 | 78.2 | 83.1 | 85.0 | 84.9 | 84.4 | 83.9 | 83.6 | 8.9 | 3.6 | 3.5 | 4.2 | 6.3 | 6.4 |
| Norway[b] | 76.8 | 78.6 | 79.7 | 80.6 | 78.4 | 77.4 | 81.6 | 81.4 | 81.8 | 82.9 | 81.4 | 80.8 | 6.0 | 3.5 | 2.6 | 2.8 | 3.7 | 4.2 |
| Poland | 64.9 | 60.9 | 63.6 | 66.3 | 66.1 | 65.6 | 75.0 | 70.1 | 70.0 | 70.9 | 71.8 | 72.4 | 13.4 | 13.1 | 9.1 | 6.5 | 7.9 | 9.4 |
| Portugal | 73.5 | 73.9 | 73.9 | 74.0 | 71.1 | 70.1 | 78.4 | 79.5 | 79.4 | 79.5 | 78.5 | 78.2 | 6.3 | 7.0 | 7.0 | 6.9 | 9.4 | 10.4 |
| Slovak Republic | 67.2 | 67.0 | 68.4 | 70.0 | 67.6 | 65.2 | 77.6 | 76.3 | 75.8 | 76.4 | 76.3 | 76.0 | 13.3 | 12.2 | 9.8 | 8.4 | 11.4 | 14.3 |
| Slovenia | . . | 71.1 | 72.7 | 72.7 | 71.0 | 69.6 | . . | 74.9 | 75.8 | 75.8 | 75.6 | 75.4 | . . | 5.0 | 4.1 | 4.1 | 6.1 | 7.6 |
| Spain[b] | 63.3 | 77.3 | 77.4 | 74.6 | 67.5 | 65.6 | 78.5 | 82.5 | 82.7 | 83.0 | 82.2 | 81.9 | 19.4 | 6.4 | 6.4 | 10.1 | 17.8 | 19.8 |
| Sweden[b] | 72.2 | 77.1 | 78.2 | 78.3 | 74.2 | 75.0 | 81.3 | 82.8 | 83.1 | 83.3 | 81.4 | 82.2 | 11.1 | 6.9 | 5.9 | 5.9 | 8.8 | 8.7 |
| Switzerland | 86.3 | 84.7 | 85.6 | 85.4 | 84.4 | 84.8 | 89.5 | 87.8 | 88.2 | 88.0 | 87.8 | 88.2 | 3.6 | 3.5 | 3.0 | 2.9 | 3.9 | 3.9 |
| Turkey | 74.6 | 66.8 | 66.8 | 66.6 | 64.6 | 66.7 | 82.0 | 74.4 | 74.4 | 74.8 | 75.2 | 75.4 | 9.0 | 10.1 | 10.2 | 11.0 | 14.2 | 11.7 |
| United Kingdom[b] | 75.3 | 78.4 | 78.4 | 78.5 | 75.7 | 75.3 | 85.1 | 83.2 | 83.1 | 83.4 | 83.2 | 82.5 | 11.5 | 5.8 | 5.6 | 5.8 | 8.9 | 8.8 |
| United States[b] | 79.0 | 78.1 | 77.8 | 76.4 | 72.0 | 71.1 | 84.3 | 81.9 | 81.7 | 81.4 | 80.4 | 79.6 | 6.2 | 4.7 | 4.8 | 6.2 | 10.5 | 10.7 |
| OECD (weighted average) | 75.4 | 75.5 | 75.9 | 75.6 | 72.9 | 72.7 | 81.4 | 80.3 | 80.3 | 80.4 | 79.8 | 79.7 | 7.4 | 6.0 | 5.6 | 6.0 | 8.7 | 8.8 |
| Brazil | . . | 79.6 | 79.7 | 80.6 | 79.7 | . . | . . | 85.1 | 84.9 | 85.1 | 85.1 | . . | . . | 6.5 | 6.2 | 5.3 | 6.3 | . . |
| Russian Federation | 70.5 | 69.9 | 71.8 | 72.9 | 70.6 | 71.6 | 76.9 | 75.6 | 76.8 | 78.1 | 77.7 | 77.9 | 8.3 | 7.6 | 6.5 | 6.6 | 9.1 | 8.0 |

## Table B. **Employment/population ratios, activity and unemployment rates**[a] *(cont.)*

Women aged 15-64 years (percentages)

| | Employment/population ratio | | | | | | Labour force participation rate | | | | | | Unemployment rate | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 1994 | 2006 | 2007 | 2008 | 2009 | 2010 | 1994 | 2006 | 2007 | 2008 | 2009 | 2010 | 1994 | 2006 | 2007 | 2008 | 2009 | 2010 |
| Australia | 56.9 | 65.5 | 66.1 | 66.7 | 66.3 | 66.2 | 62.8 | 68.9 | 69.5 | 70.0 | 70.1 | 70.0 | 9.5 | 5.0 | 4.8 | 4.6 | 5.5 | 5.5 |
| Austria | 58.9 | 63.5 | 64.4 | 65.8 | 66.4 | 66.4 | 61.3 | 67.0 | 67.8 | 68.6 | 69.6 | 69.3 | 4.0 | 5.3 | 5.1 | 4.2 | 4.6 | 4.3 |
| Belgium | 44.8 | 54.0 | 55.3 | 56.2 | 56.0 | 56.5 | 51.2 | 59.5 | 60.4 | 60.8 | 60.9 | 61.8 | 12.5 | 9.4 | 8.5 | 7.6 | 8.1 | 8.6 |
| Canada | 61.1 | 68.8 | 69.9 | 70.1 | 69.0 | 68.8 | 67.8 | 73.3 | 74.1 | 74.3 | 74.3 | 74.2 | 9.8 | 6.1 | 5.7 | 5.7 | 7.1 | 7.3 |
| Chile | . . | 39.2 | 40.4 | 42.1 | 42.2 | 46.7 | . . | 43.3 | 44.4 | 46.6 | 47.4 | 51.8 | . . | 9.6 | 8.8 | 9.7 | 10.9 | 9.9 |
| Czech Republic | 61.0 | 56.8 | 57.3 | 57.6 | 56.7 | 56.3 | 64.4 | 62.3 | 61.5 | 61.0 | 61.5 | 61.5 | 5.2 | 8.9 | 6.8 | 5.7 | 7.8 | 8.5 |
| Denmark | 67.1 | 73.4 | 73.2 | 73.9 | 73.1 | 71.1 | 73.8 | 77.0 | 76.4 | 76.8 | 77.3 | 76.1 | 9.0 | 4.6 | 4.2 | 3.8 | 5.4 | 6.6 |
| Estonia | 62.0 | 65.1 | 65.7 | 66.3 | 63.0 | 60.5 | 67.4 | 69.1 | 68.5 | 70.0 | 70.6 | 70.9 | 8.1 | 5.8 | 4.0 | 5.4 | 10.8 | 14.7 |
| Finland | 58.7 | 67.3 | 68.5 | 69.0 | 67.9 | 66.9 | 69.1 | 73.2 | 73.9 | 74.0 | 73.5 | 72.5 | 14.9 | 8.1 | 7.3 | 6.8 | 7.6 | 7.8 |
| France | 51.3 | 58.6 | 59.7 | 60.4 | 60.0 | 59.9 | 60.1 | 64.9 | 65.3 | 65.6 | 66.2 | 66.3 | 14.6 | 9.7 | 8.6 | 7.9 | 9.4 | 9.7 |
| Germany | 54.7 | 61.4 | 63.2 | 64.3 | 65.2 | 66.1 | 60.9 | 68.5 | 69.4 | 69.7 | 70.4 | 70.8 | 10.1 | 10.3 | 8.9 | 7.7 | 7.4 | 6.6 |
| Greece | 37.1 | 47.4 | 47.9 | 48.7 | 48.9 | 48.1 | 43.2 | 55.0 | 54.9 | 55.1 | 56.5 | 57.6 | 14.0 | 13.8 | 12.9 | 11.5 | 13.3 | 16.4 |
| Hungary | 47.8 | 51.2 | 50.9 | 50.6 | 49.9 | 50.6 | 52.7 | 55.5 | 55.1 | 55.0 | 55.3 | 56.7 | 9.3 | 7.9 | 7.7 | 8.1 | 9.8 | 10.8 |
| Iceland[b] | 74.6 | 81.6 | 81.7 | 80.3 | 77.2 | 77.0 | 79.1 | 84.2 | 83.6 | 82.5 | 82.0 | 82.7 | 5.7 | 3.1 | 2.4 | 2.6 | 5.8 | 6.8 |
| Ireland | 38.9 | 59.1 | 60.7 | 60.5 | 57.8 | 56.4 | 45.8 | 61.9 | 63.5 | 63.3 | 62.9 | 62.6 | 15.2 | 4.5 | 4.5 | 4.5 | 8.1 | 9.9 |
| Israel[c] | 46.4 | 53.3 | 54.6 | 55.6 | 55.9 | 56.9 | 51.6 | 58.7 | 59.4 | 59.5 | 60.5 | 60.9 | 10.1 | 9.1 | 8.0 | 6.6 | 7.6 | 6.6 |
| Italy | 35.4 | 46.3 | 46.6 | 47.2 | 46.4 | 46.1 | 41.9 | 50.8 | 50.7 | 51.6 | 51.1 | 51.1 | 15.5 | 8.8 | 7.9 | 8.6 | 9.3 | 9.7 |
| Japan | 56.5 | 58.8 | 59.5 | 59.7 | 59.8 | 60.1 | 58.3 | 61.3 | 61.9 | 62.2 | 62.9 | 63.2 | 3.1 | 4.1 | 3.9 | 4.0 | 5.0 | 4.8 |
| Korea | 49.8 | 53.1 | 53.2 | 53.2 | 52.2 | 52.6 | 50.8 | 54.8 | 54.8 | 54.7 | 53.9 | 54.5 | 2.0 | 3.1 | 2.8 | 2.8 | 3.2 | 3.4 |
| Luxembourg | 44.9 | 54.6 | 56.1 | 55.1 | 57.0 | 57.2 | 47.0 | 58.2 | 58.9 | 58.7 | 60.7 | 60.3 | 4.3 | 6.3 | 4.7 | 6.1 | 6.1 | 5.1 |
| Mexico | 36.2 | 42.9 | 43.6 | 44.1 | 43.0 | 44.1 | 38.1 | 44.5 | 45.3 | 45.9 | 45.2 | 46.6 | 4.9 | 3.6 | 3.8 | 4.0 | 5.0 | 5.4 |
| Netherlands | 52.6 | 65.4 | 67.5 | 69.3 | 69.6 | 69.4 | 57.3 | 68.8 | 70.4 | 71.7 | 72.3 | 72.6 | 8.1 | 4.9 | 4.1 | 3.4 | 3.8 | 4.5 |
| New Zealand | 59.5 | 68.2 | 68.7 | 68.7 | 67.4 | 66.7 | 64.6 | 71.2 | 71.6 | 71.8 | 72.0 | 71.8 | 7.9 | 4.2 | 4.0 | 4.3 | 6.3 | 7.0 |
| Norway[b] | 67.5 | 72.3 | 74.0 | 75.4 | 74.4 | 73.3 | 70.9 | 74.8 | 75.9 | 77.4 | 76.5 | 75.6 | 4.8 | 3.4 | 2.5 | 2.5 | 2.7 | 3.1 |
| Poland | 51.9 | 48.2 | 50.6 | 52.4 | 52.8 | 53.0 | 62.1 | 56.8 | 56.5 | 57.0 | 57.8 | 59.0 | 16.4 | 15.1 | 10.4 | 8.0 | 8.8 | 10.1 |
| Portugal | 55.0 | 62.0 | 61.9 | 62.5 | 61.6 | 61.1 | 60.0 | 68.4 | 68.8 | 68.9 | 69.0 | 69.9 | 8.3 | 9.5 | 10.1 | 9.4 | 10.7 | 12.5 |
| Slovak Republic | 52.6 | 51.9 | 53.0 | 54.6 | 52.8 | 52.3 | 61.2 | 60.9 | 60.7 | 61.4 | 60.6 | 61.3 | 14.1 | 14.7 | 12.6 | 11.1 | 12.9 | 14.6 |
| Slovenia | . . | 61.8 | 62.6 | 64.2 | 63.8 | 62.6 | . . | 66.7 | 66.6 | 67.5 | 67.9 | 67.4 | . . | 7.4 | 6.0 | 4.9 | 5.9 | 7.2 |
| Spain[b] | 31.5 | 54.0 | 55.5 | 55.7 | 53.5 | 53.0 | 46.3 | 61.1 | 62.3 | 64.1 | 65.7 | 66.8 | 31.8 | 11.6 | 10.9 | 13.1 | 18.5 | 20.6 |
| Sweden[b] | 70.7 | 72.1 | 73.2 | 73.2 | 70.2 | 70.3 | 77.0 | 77.7 | 78.2 | 78.2 | 76.4 | 76.7 | 8.2 | 7.2 | 6.4 | 6.4 | 8.1 | 8.3 |
| Switzerland | 64.9 | 71.1 | 71.6 | 73.5 | 73.6 | 72.3 | 68.0 | 74.7 | 75.0 | 76.6 | 77.1 | 76.1 | 4.4 | 4.8 | 4.6 | 4.0 | 4.6 | 4.9 |
| Turkey | 30.4 | 22.7 | 22.8 | 23.5 | 24.2 | 26.2 | 33.2 | 25.6 | 25.7 | 26.7 | 28.4 | 30.2 | 8.3 | 11.4 | 11.3 | 11.9 | 14.7 | 13.3 |
| United Kingdom[b] | 62.1 | 66.8 | 66.3 | 66.9 | 65.6 | 65.3 | 67.1 | 70.3 | 69.8 | 70.2 | 70.2 | 70.2 | 7.4 | 5.0 | 4.9 | 4.8 | 6.5 | 6.9 |
| United States[b] | 65.2 | 66.1 | 65.9 | 65.5 | 63.4 | 62.4 | 69.4 | 69.3 | 69.1 | 69.3 | 69.0 | 68.4 | 6.1 | 4.7 | 4.6 | 5.5 | 8.2 | 8.7 |
| OECD (weighted average) | 52.9 | 56.7 | 57.2 | 57.6 | 56.7 | 56.7 | 57.8 | 60.7 | 60.9 | 61.4 | 61.5 | 61.8 | 8.5 | 6.6 | 6.0 | 6.2 | 7.9 | 8.2 |
| Brazil | . . | 55.9 | 55.8 | 56.8 | 56.4 | . . | . . | 63.0 | 62.8 | 62.9 | 63.5 | . . | . . | 11.3 | 11.1 | 9.8 | 11.3 | . . |
| Russian Federation | 60.5 | 63.7 | 65.1 | 64.7 | 63.3 | 63.5 | 65.7 | 68.4 | 69.1 | 68.9 | 68.7 | 68.2 | 8.0 | 6.9 | 5.8 | 6.1 | 7.9 | 7.0 |

*a)* Ratios refer to persons aged 15-64 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 16-64. For Norway, up to 2005.

*c)* The statistical data for Israel are supplied by and under the responsibility of the relevant Israeli authorities. The use of such data by the OECD is without prejudice to the status of the Golan Heights, East Jerusalem and Israeli settlements in the West Bank under the terms of international law.

*Source: OECD Online Employment Database: www.oecd.org/els/employment/database.*

StatLink http://dx.doi.org/10.1787/888932480427

## Table C. **Employment/population ratios, activity and unemployment rates by selected age groups**

Total (percentages)

| | | 15 to 24 | | | | | 25 to 54 | | | | | 55 to 64 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 1994 | 2007 | 2008 | 2009 | 2010 | 1994 | 2007 | 2008 | 2009 | 2010 | 1994 | 2007 | 2008 | 2009 | 2010 |
| Australia | Unemployment rates | 17.1 | 9.4 | 8.8 | 11.5 | 11.5 | 7.6 | 3.4 | 3.4 | 4.5 | 4.0 | 9.5 | 2.7 | 2.6 | 3.4 | 3.3 |
| | Labour force participation rates | 70.7 | 70.8 | 70.8 | 69.2 | 68.6 | 79.7 | 82.8 | 83.1 | 82.9 | 82.8 | 44.8 | 58.2 | 58.9 | 61.1 | 62.7 |
| | Employment/population ratios | 58.6 | 64.2 | 64.5 | 61.2 | 60.7 | 73.6 | 80.0 | 80.3 | 79.1 | 79.5 | 40.5 | 56.6 | 57.4 | 59.0 | 60.6 |
| Austria | Unemployment rates | 5.0 | 8.7 | 8.1 | 10.0 | 8.8 | 3.3 | 3.8 | 3.3 | 4.2 | 4.0 | 3.4 | 3.0 | 2.1 | 2.4 | 2.2 |
| | Labour force participation rates | 62.3 | 60.8 | 60.8 | 60.5 | 58.8 | 82.5 | 87.4 | 87.3 | 87.7 | 87.7 | 29.4 | 39.8 | 41.9 | 42.1 | 43.4 |
| | Employment/population ratios | 59.2 | 55.5 | 55.9 | 54.5 | 53.6 | 79.8 | 84.0 | 84.4 | 84.0 | 84.2 | 28.4 | 38.6 | 41.0 | 41.1 | 42.4 |
| Belgium | Unemployment rates | 21.8 | 18.8 | 18.0 | 21.9 | 22.4 | 8.4 | 6.6 | 6.1 | 6.8 | 7.3 | 4.9 | 4.2 | 4.4 | 5.1 | 4.6 |
| | Labour force participation rates | 35.2 | 33.9 | 33.4 | 32.4 | 32.5 | 79.9 | 85.3 | 85.7 | 85.6 | 86.3 | 23.5 | 35.9 | 36.1 | 37.2 | 39.2 |
| | Employment/population ratios | 27.5 | 27.5 | 27.4 | 25.3 | 25.2 | 73.1 | 79.7 | 80.5 | 79.8 | 80.0 | 22.4 | 34.4 | 34.5 | 35.3 | 37.3 |
| Canada | Unemployment rates | 15.9 | 11.2 | 11.6 | 15.2 | 14.8 | 9.4 | 5.1 | 5.1 | 7.1 | 6.9 | 9.2 | 5.0 | 5.4 | 6.9 | 6.6 |
| | Labour force participation rates | 63.9 | 66.9 | 67.5 | 65.5 | 64.5 | 83.3 | 86.6 | 86.7 | 86.4 | 86.4 | 48.1 | 60.1 | 60.8 | 61.9 | 62.5 |
| | Employment/population ratios | 53.8 | 59.5 | 59.7 | 55.5 | 55.0 | 75.5 | 82.2 | 82.3 | 80.3 | 80.5 | 43.6 | 57.0 | 57.5 | 57.6 | 58.3 |
| Chile | Unemployment rates | . . | 17.8 | 19.7 | 22.6 | 18.6 | . . | 6.0 | 6.6 | 8.5 | 7.1 | . . | 3.8 | 3.7 | 5.3 | 4.3 |
| | Labour force participation rates | . . | 32.1 | 34.2 | 33.3 | 37.5 | . . | 73.9 | 75.3 | 75.6 | 77.6 | . . | 56.5 | 57.9 | 58.4 | 60.6 |
| | Employment/population ratios | . . | 26.4 | 27.5 | 25.8 | 30.5 | . . | 69.5 | 70.3 | 69.2 | 72.1 | . . | 54.4 | 55.7 | 55.4 | 58.0 |
| Czech Republic | Unemployment rates | 8.7 | 10.7 | 9.9 | 16.6 | 18.3 | 3.4 | 4.9 | 4.0 | 5.9 | 6.4 | 3.5 | 4.6 | 3.9 | 5.7 | 6.5 |
| | Labour force participation rates | 52.0 | 31.9 | 31.1 | 31.8 | 30.9 | 89.3 | 87.8 | 87.3 | 87.7 | 87.8 | 33.5 | 48.2 | 49.5 | 49.6 | 49.7 |
| | Employment/population ratios | 47.5 | 28.5 | 28.1 | 26.5 | 25.2 | 86.3 | 83.5 | 83.8 | 82.5 | 82.2 | 32.3 | 46.0 | 47.6 | 46.8 | 46.5 |
| Denmark | Unemployment rates | 10.2 | 7.9 | 7.6 | 11.2 | 13.8 | 7.8 | 3.0 | 2.5 | 5.2 | 6.5 | 6.5 | 3.5 | 2.8 | 4.7 | 5.8 |
| | Labour force participation rates | 69.1 | 70.9 | 72.4 | 71.7 | 67.4 | 87.2 | 89.0 | 89.9 | 89.7 | 89.0 | 53.7 | 60.8 | 59.0 | 60.3 | 61.1 |
| | Employment/population ratios | 62.1 | 65.3 | 66.9 | 63.6 | 58.1 | 80.5 | 86.3 | 87.6 | 85.1 | 83.2 | 50.2 | 58.6 | 57.3 | 57.5 | 57.6 |
| Estonia | Unemployment rates | 11.3 | 9.8 | 11.7 | 26.8 | 32.0 | 7.3 | 4.2 | 4.9 | 12.9 | 15.2 | 5.2 | 3.5 | 4.1 | 9.4 | 16.2 |
| | Labour force participation rates | 53.2 | 38.7 | 41.9 | 40.4 | 38.8 | 89.7 | 88.3 | 88.0 | 87.6 | 88.1 | 45.3 | 61.7 | 64.9 | 66.6 | 64.2 |
| | Employment/population ratios | 47.2 | 34.9 | 37.0 | 29.6 | 26.4 | 83.1 | 84.5 | 83.7 | 76.2 | 74.6 | 42.9 | 59.5 | 62.2 | 60.4 | 53.8 |
| Finland | Unemployment rates | 31.2 | 15.7 | 15.7 | 21.6 | 20.3 | 14.1 | 5.3 | 4.8 | 6.6 | 6.9 | 19.0 | 6.5 | 5.5 | 6.3 | 6.5 |
| | Labour force participation rates | 46.3 | 55.0 | 55.1 | 49.2 | 50.8 | 87.1 | 88.0 | 88.6 | 88.2 | 87.6 | 41.3 | 58.8 | 59.7 | 59.3 | 60.2 |
| | Employment/population ratios | 31.9 | 46.4 | 46.4 | 38.5 | 40.5 | 74.9 | 83.3 | 84.3 | 82.4 | 81.5 | 33.5 | 55.0 | 56.4 | 55.6 | 56.3 |
| France | Unemployment rates | 28.8 | 18.9 | 18.4 | 22.8 | 22.5 | 11.1 | 6.9 | 6.3 | 7.7 | 8.0 | 6.7 | 5.1 | 4.6 | 6.2 | 6.7 |
| | Labour force participation rates | 36.7 | 38.7 | 39.0 | 40.4 | 39.7 | 85.9 | 88.2 | 88.7 | 88.8 | 88.9 | 31.5 | 40.2 | 40.0 | 41.4 | 42.5 |
| | Employment/population ratios | 26.1 | 31.4 | 31.9 | 31.2 | 30.8 | 76.3 | 82.0 | 83.1 | 82.0 | 81.8 | 29.4 | 38.2 | 38.2 | 38.8 | 39.7 |
| Germany | Unemployment rates | 8.2 | 11.7 | 10.4 | 11.0 | 9.7 | 8.1 | 8.0 | 7.0 | 7.3 | 6.6 | 11.6 | 10.3 | 8.5 | 8.0 | 7.7 |
| | Labour force participation rates | 56.0 | 52.0 | 52.7 | 52.3 | 51.8 | 82.9 | 87.2 | 87.0 | 87.2 | 87.3 | 40.6 | 57.2 | 58.7 | 61.0 | 62.5 |
| | Employment/population ratios | 51.4 | 45.9 | 47.2 | 46.6 | 46.8 | 76.2 | 80.3 | 81.0 | 80.8 | 81.5 | 35.9 | 51.3 | 53.8 | 56.1 | 57.7 |
| Greece | Unemployment rates | 27.7 | 22.9 | 22.1 | 25.8 | 32.9 | 7.0 | 7.8 | 7.2 | 8.9 | 12.0 | 3.1 | 3.4 | 3.2 | 4.6 | 6.3 |
| | Labour force participation rates | 36.9 | 31.1 | 30.2 | 30.9 | 30.3 | 73.7 | 81.9 | 82.0 | 82.8 | 83.3 | 40.7 | 43.9 | 44.2 | 44.2 | 45.1 |
| | Employment/population ratios | 26.7 | 24.0 | 23.5 | 22.9 | 20.4 | 68.6 | 75.6 | 76.1 | 75.4 | 73.3 | 39.5 | 42.4 | 42.8 | 42.2 | 42.3 |
| Hungary | Unemployment rates | 20.9 | 18.0 | 19.9 | 26.5 | 26.6 | 9.3 | 6.8 | 7.1 | 9.1 | 10.4 | 7.0 | 4.2 | 5.0 | 6.3 | 7.8 |
| | Labour force participation rates | 39.0 | 25.6 | 25.0 | 24.6 | 24.9 | 79.0 | 80.0 | 80.1 | 80.2 | 80.9 | 18.3 | 34.5 | 33.1 | 35.0 | 37.3 |
| | Employment/population ratios | 30.8 | 21.0 | 20.0 | 18.1 | 18.3 | 71.7 | 74.6 | 74.4 | 72.9 | 72.5 | 17.0 | 33.1 | 31.4 | 32.8 | 34.4 |

## Table C. **Employment/population ratios, activity and unemployment rates by selected age groups** *(cont.)*

Total (percentages)

| | | 15 to 24 | | | | | 25 to 54 | | | | | 55 to 64 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 1994 | 2007 | 2008 | 2009 | 2010 | 1994 | 2007 | 2008 | 2009 | 2010 | 1994 | 2007 | 2008 | 2009 | 2010 |
| Iceland[a] | Unemployment rates | 11.5 | 7.2 | 8.2 | 16.0 | 16.2 | 4.2 | 1.3 | 2.0 | 6.2 | 6.3 | 3.8 | 0.9 | 1.6 | 3.6 | 4.4 |
| | Labour force participation rates | 58.5 | 80.1 | 78.6 | 73.4 | 74.0 | 91.3 | 90.6 | 89.9 | 89.3 | 89.4 | 88.1 | 85.7 | 84.7 | 83.8 | 84.2 |
| | Employment/population ratios | 51.7 | 74.3 | 72.1 | 61.7 | 62.1 | 87.5 | 89.4 | 88.1 | 83.8 | 83.7 | 84.7 | 84.9 | 83.3 | 80.8 | 80.5 |
| Ireland | Unemployment rates | 24.2 | 10.0 | 12.5 | 25.9 | 28.7 | 13.4 | 3.9 | 4.8 | 10.8 | 12.6 | 8.5 | 2.2 | 3.2 | 6.0 | 8.2 |
| | Labour force participation rates | 44.2 | 55.4 | 53.1 | 49.0 | 43.1 | 72.4 | 82.0 | 81.8 | 81.3 | 81.0 | 43.2 | 55.4 | 55.8 | 55.2 | 55.3 |
| | Employment/population ratios | 33.5 | 49.8 | 46.5 | 36.3 | 30.7 | 62.7 | 78.8 | 77.9 | 72.6 | 70.8 | 39.5 | 54.2 | 54.0 | 51.9 | 50.8 |
| Israel[b] | Unemployment rates | 16.7 | 16.1 | 12.6 | 14.6 | 13.7 | 6.3 | 6.2 | 5.4 | 6.9 | 6.0 | 5.1 | 5.3 | 4.5 | 5.4 | 4.8 |
| | Labour force participation rates | 34.8 | 32.4 | 31.6 | 31.4 | 31.3 | 74.8 | 77.8 | 78.1 | 78.2 | 78.7 | 49.7 | 60.4 | 61.2 | 62.1 | 62.9 |
| | Employment/population ratios | 29.0 | 27.2 | 27.6 | 26.8 | 27.0 | 70.0 | 73.0 | 73.9 | 72.8 | 73.9 | 47.2 | 57.2 | 58.4 | 58.8 | 59.8 |
| Italy | Unemployment rates | 30.5 | 20.3 | 21.3 | 25.4 | 27.9 | 8.2 | 5.3 | 6.0 | 7.0 | 7.6 | 3.4 | 2.4 | 3.1 | 3.4 | 3.6 |
| | Labour force participation rates | 40.7 | 30.9 | 30.9 | 29.1 | 28.4 | 71.7 | 77.6 | 78.1 | 77.2 | 76.9 | 30.4 | 34.6 | 35.5 | 37.0 | 38.0 |
| | Employment/population ratios | 28.3 | 24.7 | 24.4 | 21.7 | 20.5 | 65.8 | 73.5 | 73.5 | 71.9 | 71.1 | 29.4 | 33.8 | 34.4 | 35.7 | 36.6 |
| Japan | Unemployment rates | 5.5 | 7.7 | 7.2 | 9.1 | 9.2 | 2.4 | 3.7 | 3.9 | 4.9 | 4.9 | 3.5 | 3.4 | 3.6 | 4.6 | 5.0 |
| | Labour force participation rates | 47.6 | 44.9 | 44.6 | 43.9 | 43.1 | 81.4 | 83.3 | 83.4 | 83.7 | 84.0 | 66.1 | 68.4 | 68.8 | 68.7 | 68.7 |
| | Employment/population ratios | 45.0 | 41.4 | 41.4 | 39.9 | 39.2 | 79.5 | 80.2 | 80.2 | 79.6 | 79.9 | 63.7 | 66.1 | 66.3 | 65.5 | 65.2 |
| Korea | Unemployment rates | 7.2 | 8.8 | 9.3 | 9.8 | 9.8 | 1.9 | 3.1 | 3.0 | 3.6 | 3.5 | 0.6 | 2.2 | 2.0 | 2.3 | 2.9 |
| | Labour force participation rates | 37.2 | 28.2 | 26.3 | 25.4 | 25.5 | 75.1 | 76.4 | 76.6 | 76.0 | 76.4 | 63.3 | 62.0 | 61.8 | 61.8 | 62.7 |
| | Employment/population ratios | 34.5 | 25.7 | 23.8 | 22.9 | 23.0 | 73.6 | 74.0 | 74.2 | 73.3 | 73.8 | 62.9 | 60.6 | 60.6 | 60.4 | 60.9 |
| Luxembourg | Unemployment rates | 7.9 | 15.2 | 17.9 | 17.2 | 14.2 | 3.0 | 3.4 | 4.2 | 4.2 | 3.9 | 0.7 | 2.1 | 2.7 | 3.0 | 2.3 |
| | Labour force participation rates | 46.5 | 26.5 | 29.0 | 32.3 | 24.7 | 75.8 | 84.7 | 83.4 | 84.8 | 85.7 | 23.3 | 32.7 | 35.1 | 39.4 | 40.6 |
| | Employment/population ratios | 42.8 | 22.5 | 23.8 | 26.7 | 21.2 | 73.5 | 81.9 | 80.0 | 81.2 | 82.3 | 23.2 | 32.0 | 34.1 | 38.2 | 39.6 |
| Mexico | Unemployment rates | 7.1 | 6.7 | 7.0 | 10.0 | 9.5 | 3.3 | 2.7 | 2.8 | 4.2 | 4.5 | 1.9 | 1.6 | 1.9 | 3.1 | 3.2 |
| | Labour force participation rates | 54.1 | 47.4 | 47.7 | 45.8 | 47.2 | 67.2 | 72.3 | 72.6 | 72.4 | 73.3 | 53.5 | 55.6 | 55.8 | 54.2 | 56.2 |
| | Employment/population ratios | 50.3 | 44.2 | 44.3 | 41.2 | 42.7 | 65.0 | 70.3 | 70.6 | 69.4 | 70.0 | 52.4 | 54.7 | 54.7 | 52.5 | 54.5 |
| Netherlands | Unemployment rates | 10.2 | 7.0 | 6.4 | 7.7 | 8.7 | 6.3 | 2.8 | 2.2 | 2.9 | 3.6 | 3.5 | 4.0 | 3.4 | 3.3 | 4.0 |
| | Labour force participation rates | 61.7 | 70.4 | 71.3 | 70.8 | 69.0 | 78.7 | 86.8 | 87.7 | 87.9 | 87.8 | 30.0 | 50.8 | 53.5 | 55.1 | 56.3 |
| | Employment/population ratios | 55.4 | 65.5 | 66.8 | 65.3 | 63.0 | 73.7 | 84.4 | 85.8 | 85.4 | 84.6 | 29.0 | 48.8 | 51.7 | 53.3 | 54.1 |
| New Zealand | Unemployment rates | 15.5 | 10.1 | 11.4 | 16.6 | 17.1 | 6.8 | 2.6 | 2.9 | 4.4 | 4.9 | 4.8 | 1.5 | 2.0 | 3.2 | 3.4 |
| | Labour force participation rates | 66.1 | 64.7 | 63.3 | 61.9 | 60.4 | 81.3 | 84.1 | 84.4 | 84.3 | 84.1 | 49.4 | 72.9 | 73.2 | 74.5 | 75.9 |
| | Employment/population ratios | 55.9 | 58.2 | 56.1 | 51.6 | 50.1 | 75.8 | 81.9 | 81.9 | 80.6 | 80.0 | 47.1 | 71.8 | 71.7 | 72.1 | 73.3 |
| Norway[a] | Unemployment rates | 12.6 | 7.3 | 7.5 | 9.2 | 9.3 | 4.5 | 1.9 | 2.0 | 2.5 | 3.1 | 2.6 | 1.0 | 1.0 | 1.1 | 1.4 |
| | Labour force participation rates | 55.4 | 59.4 | 62.7 | 58.5 | 57.4 | 85.1 | 87.5 | 88.5 | 88.1 | 87.4 | 63.3 | 69.7 | 70.0 | 69.5 | 69.6 |
| | Employment/population ratios | 48.4 | 55.1 | 58.0 | 53.2 | 52.0 | 81.3 | 85.8 | 86.8 | 86.0 | 84.7 | 61.6 | 69.0 | 69.3 | 68.7 | 68.6 |
| Poland | Unemployment rates | 32.6 | 21.7 | 17.3 | 20.7 | 23.7 | 12.8 | 8.4 | 6.1 | 6.9 | 8.3 | 7.0 | 6.8 | 5.3 | 6.3 | 7.1 |
| | Labour force participation rates | 41.5 | 33.0 | 33.1 | 33.8 | 34.5 | 84.7 | 81.7 | 82.5 | 83.4 | 84.1 | 37.0 | 31.8 | 33.3 | 34.5 | 36.7 |
| | Employment/population ratios | 28.0 | 25.8 | 27.3 | 26.8 | 26.3 | 73.8 | 74.9 | 77.5 | 77.6 | 77.1 | 34.4 | 29.7 | 31.6 | 32.3 | 34.0 |
| Portugal | Unemployment rates | 14.1 | 16.6 | 16.4 | 20.0 | 22.3 | 6.0 | 7.8 | 7.3 | 9.3 | 10.7 | 4.0 | 6.5 | 6.6 | 7.7 | 8.9 |
| | Labour force participation rates | 47.2 | 41.9 | 41.6 | 39.2 | 36.7 | 83.8 | 87.8 | 88.0 | 87.9 | 88.7 | 47.9 | 54.4 | 54.4 | 53.9 | 54.0 |
| | Employment/population ratios | 40.5 | 34.9 | 34.7 | 31.3 | 28.5 | 78.7 | 81.0 | 81.6 | 79.7 | 79.2 | 45.9 | 50.9 | 50.8 | 49.7 | 49.2 |

Table C. **Employment/population ratios, activity and unemployment rates by selected age groups** *(cont.)*

Total (percentages)

| | | 15 to 24 | | | | | 25 to 54 | | | | | 55 to 64 | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | 1994 | 2007 | 2008 | 2009 | 2010 | 1994 | 2007 | 2008 | 2009 | 2010 | 1994 | 2007 | 2008 | 2009 | 2010 |
| Slovak Republic | Unemployment rates | 27.3 | 20.1 | 18.8 | 27.3 | 33.6 | 11.0 | 10.1 | 8.8 | 10.8 | 12.8 | 9.0 | 8.1 | 6.5 | 7.7 | 10.1 |
| | Labour force participation rates | 47.3 | 34.5 | 32.3 | 31.3 | 31.0 | 88.0 | 86.8 | 87.8 | 87.2 | 86.9 | 23.5 | 38.8 | 42.0 | 42.9 | 45.2 |
| | Employment/population ratios | 34.4 | 27.6 | 26.2 | 22.8 | 20.5 | 78.4 | 78.0 | 80.1 | 77.8 | 75.8 | 21.3 | 35.7 | 39.3 | 39.6 | 40.6 |
| Slovenia | Unemployment rates | . . | 10.1 | 10.4 | 13.6 | 14.7 | . . | 4.5 | 3.7 | 5.3 | 7.0 | . . | 3.3 | 4.0 | 3.6 | 4.0 |
| | Labour force participation rates | . . | 41.8 | 42.9 | 40.9 | 39.9 | . . | 89.3 | 90.1 | 89.6 | 90.0 | . . | 34.6 | 34.2 | 36.9 | 36.5 |
| | Employment/population ratios | . . | 37.6 | 38.4 | 35.3 | 34.1 | . . | 85.3 | 86.8 | 84.8 | 83.7 | . . | 33.5 | 32.8 | 35.6 | 35.0 |
| Spain[a] | Unemployment rates | 42.9 | 18.2 | 24.6 | 37.9 | 41.6 | 20.9 | 7.2 | 10.2 | 16.5 | 18.6 | 12.4 | 5.9 | 7.3 | 12.1 | 14.1 |
| | Labour force participation rates | 49.4 | 52.4 | 52.5 | 49.5 | 46.9 | 73.9 | 82.8 | 83.8 | 84.7 | 85.5 | 37.3 | 47.4 | 49.2 | 50.2 | 50.8 |
| | Employment/population ratios | 28.3 | 42.9 | 39.5 | 30.8 | 27.4 | 58.4 | 76.8 | 75.3 | 70.7 | 69.6 | 32.7 | 44.6 | 45.6 | 44.1 | 43.6 |
| Sweden[a] | Unemployment rates | 22.7 | 18.8 | 19.2 | 24.8 | 25.2 | 8.1 | 4.4 | 4.3 | 6.2 | 6.1 | 6.9 | 3.9 | 3.8 | 5.2 | 5.3 |
| | Labour force participation rates | 53.5 | 57.6 | 57.4 | 51.1 | 51.5 | 89.2 | 90.0 | 90.4 | 90.0 | 90.6 | 66.5 | 73.0 | 73.0 | 74.0 | 74.6 |
| | Employment/population ratios | 41.3 | 46.8 | 46.4 | 38.4 | 38.5 | 81.9 | 86.1 | 86.5 | 84.4 | 85.0 | 61.9 | 70.1 | 70.3 | 70.1 | 70.6 |
| Switzerland | Unemployment rates | 5.8 | 7.1 | 7.0 | 8.4 | 7.2 | 3.6 | 3.1 | 2.9 | 3.7 | 4.0 | 4.1 | 3.1 | 2.6 | 2.7 | 3.4 |
| | Labour force participation rates | 64.0 | 67.4 | 67.1 | 67.3 | 66.5 | 86.2 | 88.9 | 89.8 | 90.0 | 89.6 | 63.7 | 69.3 | 70.2 | 70.2 | 70.7 |
| | Employment/population ratios | 60.3 | 62.6 | 62.4 | 61.6 | 61.7 | 83.2 | 86.1 | 87.2 | 86.7 | 86.0 | 61.1 | 67.2 | 68.4 | 68.3 | 68.3 |
| Turkey | Unemployment rates | 16.0 | 20.0 | 20.5 | 25.3 | 21.7 | 6.2 | 8.5 | 9.4 | 12.3 | 10.4 | 2.3 | 4.3 | 5.1 | 6.4 | 5.8 |
| | Labour force participation rates | 51.2 | 37.7 | 38.1 | 38.7 | 38.3 | 63.7 | 58.2 | 59.0 | 60.3 | 61.8 | 41.8 | 28.3 | 28.9 | 30.1 | 31.4 |
| | Employment/population ratios | 43.0 | 30.2 | 30.3 | 28.9 | 30.0 | 59.8 | 53.2 | 53.5 | 52.9 | 55.4 | 40.8 | 27.1 | 27.4 | 28.2 | 29.6 |
| United Kingdom[a] | Unemployment rates | 16.1 | 14.4 | 14.1 | 18.9 | 19.1 | 8.2 | 3.7 | 3.9 | 6.1 | 6.1 | 9.1 | 3.3 | 2.8 | 4.6 | 4.9 |
| | Labour force participation rates | 70.1 | 65.3 | 65.6 | 64.2 | 62.9 | 83.4 | 84.5 | 84.9 | 85.0 | 85.0 | 52.1 | 59.3 | 59.9 | 60.3 | 59.6 |
| | Employment/population ratios | 58.8 | 55.9 | 56.4 | 52.1 | 50.9 | 76.5 | 81.3 | 81.6 | 79.8 | 79.8 | 47.4 | 57.4 | 58.2 | 57.5 | 56.7 |
| United States[a] | Unemployment rates | 12.5 | 10.5 | 12.8 | 17.6 | 18.4 | 5.0 | 3.7 | 4.8 | 8.3 | 8.6 | 4.1 | 3.1 | 3.7 | 6.6 | 7.1 |
| | Labour force participation rates | 66.4 | 59.4 | 58.8 | 56.9 | 55.2 | 83.4 | 83.0 | 83.1 | 82.6 | 82.2 | 56.8 | 63.8 | 64.5 | 64.9 | 64.9 |
| | Employment/population ratios | 58.1 | 53.1 | 51.2 | 46.9 | 45.0 | 79.2 | 79.9 | 79.1 | 75.8 | 75.1 | 54.4 | 61.8 | 62.1 | 60.6 | 60.3 |
| OECD (weighted average) | Unemployment rates | 14.4 | 12.0 | 12.7 | 16.7 | 16.7 | 6.7 | 4.9 | 5.2 | 7.3 | 7.5 | 5.4 | 4.0 | 4.1 | 5.7 | 6.1 |
| | Labour force participation rates | 53.6 | 49.0 | 49.0 | 47.9 | 47.4 | 79.8 | 81.0 | 81.3 | 81.2 | 81.4 | 48.5 | 55.7 | 56.3 | 56.9 | 57.5 |
| | Employment/population ratios | 45.8 | 43.1 | 42.8 | 40.0 | 39.5 | 74.5 | 77.0 | 77.1 | 75.3 | 75.3 | 45.9 | 53.5 | 54.1 | 53.6 | 54.0 |
| Brazil | Unemployment rates | . . | 16.8 | 15.5 | 17.8 | . . | . . | 6.1 | 5.3 | 6.3 | . . | . . | 2.9 | 2.4 | 3.0 | . . |
| | Labour force participation rates | . . | 63.5 | 63.2 | 62.7 | . . | . . | 81.0 | 81.2 | 82.0 | . . | . . | 55.3 | 56.5 | 55.5 | . . |
| | Employment/population ratios | . . | 52.9 | 53.4 | 51.5 | . . | . . | 76.1 | 77.0 | 76.9 | . . | . . | 53.7 | 55.1 | 53.8 | . . |
| Russian Federation | Unemployment rates | 16.3 | 14.5 | 14.1 | 18.6 | 17.2 | 6.9 | 5.2 | 5.3 | 7.2 | 6.4 | 5.3 | 3.1 | 4.1 | 5.6 | 4.9 |
| | Labour force participation rates | 50.8 | 41.0 | 44.9 | 44.9 | 43.5 | 88.6 | 89.2 | 88.7 | 88.5 | 89.0 | 33.9 | 50.3 | 49.2 | 47.8 | 46.6 |
| | Employment/population ratios | 42.6 | 35.0 | 38.6 | 36.5 | 36.0 | 82.4 | 84.6 | 84.0 | 82.1 | 83.3 | 32.1 | 48.8 | 47.2 | 45.1 | 44.4 |

## 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 | 2007 | 2008 | 2009 | 2010 | 1994 | 2007 | 2008 | 2009 | 2010 | 1994 | 2007 | 2008 | 2009 | 2010 |
| Australia | Unemployment rates | 17.7 | 9.5 | 9.1 | 12.5 | 11.9 | 7.8 | 2.9 | 2.9 | 4.5 | 3.7 | 11.4 | 2.8 | 3.1 | 3.7 | 3.7 |
| | Labour force participation rates | 73.0 | 71.8 | 72.0 | 70.6 | 69.8 | 91.6 | 90.8 | 90.9 | 90.3 | 90.6 | 61.7 | 67.7 | 67.7 | 69.3 | 71.3 |
| | Employment/population ratios | 60.1 | 65.0 | 65.5 | 61.7 | 61.5 | 84.4 | 88.1 | 88.3 | 86.3 | 87.2 | 54.7 | 65.8 | 65.7 | 66.7 | 68.6 |
| Austria | Unemployment rates | 4.7 | 8.3 | 7.9 | 10.5 | 8.9 | 2.9 | 3.3 | 3.1 | 4.4 | 4.2 | 3.8 | 2.9 | 1.8 | 2.5 | 2.5 |
| | Labour force participation rates | 65.3 | 65.0 | 64.6 | 64.0 | 63.6 | 93.1 | 93.7 | 93.0 | 92.6 | 92.5 | 41.3 | 51.3 | 52.8 | 52.3 | 53.0 |
| | Employment/population ratios | 62.3 | 59.6 | 59.5 | 57.3 | 57.9 | 90.4 | 90.6 | 90.2 | 88.5 | 88.7 | 39.8 | 49.8 | 51.8 | 51.0 | 51.6 |
| Belgium | Unemployment rates | 20.5 | 17.1 | 17.3 | 21.5 | 22.4 | 6.4 | 5.9 | 5.7 | 6.7 | 7.2 | 4.5 | 3.6 | 3.6 | 5.0 | 4.2 |
| | Labour force participation rates | 37.3 | 36.1 | 36.0 | 34.9 | 35.2 | 92.1 | 92.5 | 92.3 | 91.8 | 92.2 | 34.5 | 44.4 | 44.4 | 45.2 | 47.6 |
| | Employment/population ratios | 29.7 | 29.9 | 29.7 | 27.4 | 27.3 | 86.2 | 87.0 | 87.0 | 85.7 | 85.5 | 33.0 | 42.9 | 42.8 | 42.9 | 45.6 |
| Canada | Unemployment rates | 17.9 | 12.3 | 13.1 | 18.0 | 17.1 | 9.6 | 5.3 | 5.3 | 8.0 | 7.3 | 9.7 | 5.2 | 5.8 | 8.0 | 7.5 |
| | Labour force participation rates | 65.9 | 67.4 | 68.0 | 65.7 | 64.4 | 91.2 | 91.1 | 91.5 | 90.7 | 90.5 | 59.5 | 67.1 | 67.2 | 67.6 | 68.4 |
| | Employment/population ratios | 54.1 | 59.1 | 59.1 | 53.9 | 53.4 | 82.5 | 86.3 | 86.6 | 83.5 | 83.9 | 53.7 | 63.6 | 63.3 | 62.2 | 63.3 |
| Chile | Unemployment rates | . . | 16.1 | 17.8 | 21.5 | 16.6 | . . | 5.2 | 5.5 | 7.8 | 6.1 | . . | 3.8 | 3.8 | 5.8 | 4.5 |
| | Labour force participation rates | . . | 39.0 | 41.5 | 39.7 | 43.8 | . . | 93.9 | 93.9 | 93.6 | 92.5 | . . | 80.2 | 81.2 | 81.5 | 82.2 |
| | Employment/population ratios | . . | 32.7 | 34.1 | 31.2 | 36.6 | . . | 89.0 | 88.7 | 86.3 | 86.9 | . . | 77.2 | 78.2 | 76.7 | 78.5 |
| Czech Republic | Unemployment rates | 7.9 | 10.6 | 9.8 | 16.6 | 18.3 | 2.5 | 3.5 | 2.8 | 4.8 | 5.2 | 3.5 | 4.5 | 3.5 | 5.6 | 6.5 |
| | Labour force participation rates | 59.9 | 36.7 | 35.9 | 37.3 | 36.2 | 95.3 | 95.0 | 94.8 | 95.1 | 95.5 | 49.0 | 62.4 | 64.2 | 63.2 | 62.5 |
| | Employment/population ratios | 55.2 | 32.8 | 32.3 | 31.1 | 29.6 | 92.9 | 91.7 | 92.1 | 90.5 | 90.5 | 47.3 | 59.6 | 61.9 | 59.6 | 58.4 |
| Denmark | Unemployment rates | 10.2 | 8.2 | 6.8 | 12.4 | 15.8 | 6.7 | 2.6 | 2.3 | 5.7 | 7.1 | 6.3 | 3.1 | 2.5 | 5.3 | 6.8 |
| | Labour force participation rates | 72.1 | 72.3 | 73.4 | 72.6 | 67.5 | 91.9 | 92.5 | 93.4 | 92.4 | 92.4 | 63.8 | 66.9 | 66.3 | 67.7 | 67.3 |
| | Employment/population ratios | 64.8 | 66.3 | 68.4 | 63.6 | 56.9 | 85.7 | 90.2 | 91.2 | 87.2 | 85.9 | 59.8 | 64.9 | 64.6 | 64.1 | 62.7 |
| Estonia | Unemployment rates | 11.0 | 11.7 | 12.0 | 30.3 | 33.5 | 6.9 | 4.2 | 4.8 | 15.8 | 17.6 | 4.9 | 6.8 | 5.2 | 11.8 | 19.0 |
| | Labour force participation rates | 62.1 | 44.9 | 46.1 | 46.0 | 43.3 | 93.6 | 93.3 | 92.6 | 91.4 | 91.4 | 60.6 | 62.8 | 68.5 | 67.4 | 64.5 |
| | Employment/population ratios | 55.3 | 39.7 | 40.6 | 32.1 | 28.8 | 87.2 | 89.4 | 88.1 | 77.0 | 75.4 | 57.7 | 58.6 | 64.9 | 59.4 | 52.2 |
| Finland | Unemployment rates | 31.5 | 14.8 | 15.3 | 24.5 | 21.6 | 15.5 | 4.8 | 4.3 | 7.1 | 7.4 | 20.4 | 6.9 | 5.7 | 7.1 | 7.3 |
| | Labour force participation rates | 51.2 | 56.3 | 56.4 | 47.2 | 52.1 | 90.2 | 90.3 | 91.2 | 90.8 | 90.6 | 43.9 | 59.2 | 60.5 | 58.9 | 60.0 |
| | Employment/population ratios | 35.1 | 47.9 | 47.8 | 35.6 | 40.8 | 76.2 | 85.9 | 87.3 | 84.4 | 83.9 | 35.0 | 55.1 | 57.0 | 54.7 | 55.6 |
| France | Unemployment rates | 27.2 | 18.2 | 18.5 | 23.6 | 21.9 | 9.5 | 6.3 | 5.6 | 7.2 | 7.5 | 7.0 | 5.3 | 4.8 | 6.4 | 6.9 |
| | Labour force participation rates | 38.7 | 42.1 | 42.5 | 43.6 | 43.3 | 95.2 | 94.2 | 94.5 | 94.4 | 94.2 | 36.9 | 42.7 | 42.6 | 44.2 | 45.2 |
| | Employment/population ratios | 28.2 | 34.4 | 34.7 | 33.3 | 33.9 | 86.2 | 88.3 | 89.1 | 87.6 | 87.1 | 34.3 | 40.5 | 40.6 | 41.3 | 42.1 |
| Germany | Unemployment rates | 8.2 | 12.2 | 10.7 | 12.0 | 10.4 | 6.5 | 7.8 | 6.9 | 7.6 | 7.1 | 10.5 | 9.7 | 8.1 | 8.0 | 8.1 |
| | Labour force participation rates | 58.8 | 54.9 | 55.6 | 55.2 | 54.7 | 92.9 | 93.8 | 93.5 | 93.2 | 93.1 | 53.1 | 65.8 | 67.2 | 69.3 | 70.7 |
| | Employment/population ratios | 53.9 | 48.2 | 49.7 | 48.6 | 49.0 | 86.8 | 86.4 | 87.1 | 86.1 | 86.5 | 47.5 | 59.4 | 61.7 | 63.8 | 65.0 |
| Greece | Unemployment rates | 19.8 | 15.7 | 17.0 | 19.4 | 26.7 | 4.8 | 4.7 | 4.5 | 6.4 | 9.4 | 3.3 | 2.9 | 2.9 | 4.1 | 6.2 |
| | Labour force participation rates | 41.8 | 34.7 | 34.3 | 34.4 | 33.4 | 94.5 | 94.6 | 94.4 | 94.4 | 94.2 | 60.1 | 60.8 | 60.9 | 60.1 | 60.2 |
| | Employment/population ratios | 33.5 | 29.2 | 28.5 | 27.7 | 24.5 | 90.0 | 90.1 | 90.2 | 88.4 | 85.3 | 58.1 | 59.1 | 59.1 | 57.7 | 56.5 |
| Hungary | Unemployment rates | 24.6 | 17.6 | 19.1 | 28.2 | 27.9 | 10.2 | 6.5 | 6.9 | 9.2 | 10.6 | 6.8 | 4.5 | 5.0 | 6.4 | 8.2 |
| | Labour force participation rates | 42.7 | 29.3 | 28.6 | 27.7 | 27.7 | 86.9 | 86.9 | 87.0 | 86.9 | 87.2 | 28.4 | 43.6 | 40.5 | 42.6 | 43.1 |
| | Employment/population ratios | 32.2 | 24.2 | 23.2 | 19.9 | 20.0 | 78.0 | 81.3 | 81.0 | 78.9 | 77.9 | 26.5 | 41.7 | 38.5 | 39.9 | 39.6 |

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 | 2007 | 2008 | 2009 | 2010 | 1994 | 2007 | 2008 | 2009 | 2010 | 1994 | 2007 | 2008 | 2009 | 2010 |
| Iceland[a] | Unemployment rates | 13.0 | 8.0 | 9.0 | 19.9 | 18.3 | 3.5 | 1.2 | 2.2 | 7.2 | 7.0 | 3.8 | 0.9 | 2.5 | 4.9 | 5.1 |
| | Labour force participation rates | 57.9 | 80.0 | 77.4 | 70.7 | 71.7 | 96.1 | 95.3 | 95.0 | 93.7 | 93.4 | 95.9 | 90.4 | 90.9 | 89.3 | 88.4 |
| | Employment/population ratios | 50.4 | 73.6 | 70.5 | 56.7 | 58.5 | 92.7 | 94.2 | 92.9 | 86.9 | 86.9 | 92.3 | 89.6 | 88.7 | 85.0 | 83.9 |
| Ireland | Unemployment rates | 25.4 | 10.4 | 14.9 | 32.4 | 34.8 | 13.4 | 4.2 | 5.8 | 14.0 | 15.9 | 8.6 | 2.4 | 3.6 | 7.8 | 10.5 |
| | Labour force participation rates | 48.7 | 58.6 | 55.9 | 50.5 | 44.2 | 91.3 | 91.6 | 91.7 | 90.8 | 89.9 | 64.9 | 69.8 | 68.9 | 67.5 | 65.3 |
| | Employment/population ratios | 36.3 | 52.5 | 47.5 | 34.1 | 28.8 | 79.0 | 87.8 | 86.4 | 78.0 | 75.6 | 59.3 | 68.1 | 66.5 | 62.2 | 58.4 |
| Israel[b] | Unemployment rates | 14.5 | 15.0 | 11.9 | 15.7 | 14.5 | 4.8 | 5.7 | 5.1 | 6.9 | 6.2 | 5.1 | 5.9 | 4.6 | 5.6 | 5.2 |
| | Labour force participation rates | 35.3 | 30.7 | 30.1 | 29.1 | 28.9 | 85.9 | 83.7 | 83.9 | 83.3 | 83.8 | 69.4 | 71.4 | 71.7 | 72.1 | 72.5 |
| | Employment/population ratios | 30.1 | 26.1 | 26.5 | 24.6 | 24.7 | 81.8 | 78.9 | 79.6 | 77.5 | 78.6 | 65.8 | 67.2 | 68.4 | 68.0 | 68.8 |
| Italy | Unemployment rates | 26.3 | 18.2 | 18.9 | 23.3 | 26.8 | 6.1 | 4.0 | 4.7 | 5.9 | 6.6 | 3.4 | 2.6 | 3.2 | 3.7 | 3.9 |
| | Labour force participation rates | 46.9 | 36.1 | 35.9 | 34.0 | 33.2 | 90.8 | 91.0 | 91.0 | 90.0 | 89.4 | 48.1 | 46.3 | 47.0 | 48.5 | 49.6 |
| | Employment/population ratios | 34.5 | 29.6 | 29.1 | 26.1 | 24.3 | 85.3 | 87.3 | 86.7 | 84.7 | 83.5 | 46.5 | 45.1 | 45.5 | 46.7 | 47.7 |
| Japan | Unemployment rates | 5.6 | 8.3 | 7.9 | 10.1 | 10.4 | 2.0 | 3.6 | 3.8 | 4.9 | 4.9 | 4.5 | 4.1 | 4.3 | 5.4 | 6.1 |
| | Labour force participation rates | 48.0 | 45.1 | 44.5 | 43.0 | 42.3 | 97.5 | 96.3 | 96.3 | 96.1 | 96.2 | 85.0 | 84.9 | 85.1 | 84.4 | 83.9 |
| | Employment/population ratios | 45.4 | 41.3 | 41.0 | 38.7 | 37.9 | 95.5 | 92.8 | 92.6 | 91.3 | 91.4 | 81.2 | 81.5 | 81.4 | 79.8 | 78.8 |
| Korea | Unemployment rates | 9.2 | 11.4 | 11.5 | 11.9 | 11.2 | 2.5 | 3.6 | 3.5 | 4.1 | 3.8 | 0.9 | 2.7 | 2.6 | 2.8 | 3.4 |
| | Labour force participation rates | 31.8 | 23.1 | 21.0 | 20.4 | 20.2 | 94.6 | 90.5 | 90.5 | 90.0 | 90.3 | 79.2 | 76.8 | 76.3 | 76.6 | 77.7 |
| | Employment/population ratios | 28.9 | 20.5 | 18.5 | 18.0 | 17.9 | 92.3 | 87.3 | 87.3 | 86.3 | 86.8 | 78.5 | 74.7 | 74.3 | 74.5 | 75.1 |
| Luxembourg | Unemployment rates | 8.5 | 13.5 | 12.5 | 16.7 | 17.6 | 2.5 | 2.8 | 3.8 | 3.5 | 3.0 | 0.4 | 2.3 | 2.5 | 2.4 | 2.4 |
| | Labour force participation rates | 47.9 | 30.6 | 30.9 | 34.9 | 26.8 | 94.9 | 94.9 | 93.7 | 94.1 | 94.8 | 33.6 | 36.4 | 39.7 | 47.7 | 48.8 |
| | Employment/population ratios | 43.8 | 26.5 | 27.0 | 29.1 | 22.1 | 92.6 | 92.2 | 90.2 | 90.8 | 92.0 | 33.5 | 35.6 | 38.7 | 46.5 | 47.7 |
| Mexico | Unemployment rates | 6.5 | 6.2 | 6.2 | 9.7 | 9.1 | 3.2 | 2.5 | 2.6 | 4.5 | 4.5 | 2.0 | 2.0 | 2.2 | 3.9 | 3.9 |
| | Labour force participation rates | 72.6 | 61.7 | 61.8 | 59.6 | 61.4 | 96.1 | 95.3 | 95.1 | 94.5 | 94.7 | 82.4 | 80.9 | 80.0 | 77.8 | 78.8 |
| | Employment/population ratios | 67.9 | 57.8 | 57.9 | 53.9 | 55.8 | 93.0 | 92.9 | 92.5 | 90.2 | 90.5 | 80.7 | 79.2 | 78.2 | 74.7 | 75.8 |
| Netherlands | Unemployment rates | 10.9 | 6.3 | 6.3 | 8.2 | 8.8 | 5.2 | 2.3 | 1.8 | 2.8 | 3.6 | 2.7 | 4.2 | 3.5 | 3.4 | 4.1 |
| | Labour force participation rates | 62.6 | 71.4 | 72.3 | 71.2 | 68.5 | 92.3 | 93.5 | 94.1 | 94.0 | 93.3 | 41.8 | 62.6 | 65.7 | 66.8 | 67.6 |
| | Employment/population ratios | 55.8 | 66.9 | 67.8 | 65.4 | 62.5 | 87.5 | 91.4 | 92.4 | 91.4 | 90.0 | 40.7 | 60.0 | 63.4 | 64.6 | 64.8 |
| New Zealand | Unemployment rates | 16.1 | 10.0 | 11.8 | 16.0 | 16.8 | 7.3 | 2.2 | 2.7 | 4.4 | 4.4 | 5.5 | 1.5 | 2.2 | 3.8 | 3.8 |
| | Labour force participation rates | 70.1 | 67.2 | 66.0 | 64.2 | 62.2 | 92.0 | 92.1 | 91.9 | 91.5 | 91.8 | 62.4 | 81.9 | 81.8 | 82.7 | 82.7 |
| | Employment/population ratios | 58.8 | 60.5 | 58.2 | 53.9 | 51.8 | 85.3 | 90.1 | 89.4 | 87.5 | 87.8 | 59.0 | 80.7 | 79.9 | 79.5 | 79.6 |
| Norway[a] | Unemployment rates | 13.1 | 7.9 | 8.2 | 10.3 | 10.9 | 5.0 | 1.9 | 2.0 | 2.9 | 3.5 | 3.1 | 1.1 | 1.1 | 1.5 | 1.8 |
| | Labour force participation rates | 57.8 | 58.6 | 62.9 | 57.9 | 57.6 | 90.6 | 90.9 | 91.4 | 90.9 | 90.2 | 71.5 | 74.7 | 75.0 | 73.9 | 73.5 |
| | Employment/population ratios | 50.2 | 54.0 | 57.7 | 52.0 | 51.3 | 86.0 | 89.2 | 89.5 | 88.3 | 87.1 | 69.3 | 73.9 | 74.2 | 72.8 | 72.2 |
| Poland | Unemployment rates | 30.8 | 20.0 | 15.2 | 20.2 | 22.4 | 11.3 | 7.8 | 5.4 | 6.3 | 7.9 | 7.5 | 7.4 | 5.8 | 6.7 | 7.5 |
| | Labour force participation rates | 45.2 | 36.5 | 36.5 | 38.1 | 39.1 | 90.9 | 87.9 | 88.8 | 89.4 | 89.7 | 46.7 | 44.8 | 46.8 | 47.5 | 48.9 |
| | Employment/population ratios | 31.3 | 29.2 | 31.0 | 30.4 | 30.3 | 80.6 | 81.1 | 84.0 | 83.7 | 82.6 | 43.2 | 41.4 | 44.1 | 44.3 | 45.2 |
| Portugal | Unemployment rates | 12.3 | 13.5 | 13.4 | 18.7 | 21.1 | 5.0 | 6.1 | 6.0 | 8.5 | 9.3 | 5.0 | 7.1 | 7.3 | 8.3 | 10.0 |
| | Labour force participation rates | 51.6 | 45.3 | 44.4 | 40.8 | 38.6 | 93.6 | 92.8 | 93.2 | 92.4 | 92.5 | 63.6 | 63.0 | 63.0 | 62.7 | 61.8 |
| | Employment/population ratios | 45.2 | 39.2 | 38.5 | 33.2 | 30.4 | 88.9 | 87.2 | 87.6 | 84.5 | 83.9 | 60.4 | 58.6 | 58.5 | 57.5 | 55.6 |

## 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 | 2007 | 2008 | 2009 | 2010 | 1994 | 2007 | 2008 | 2009 | 2010 | 1994 | 2007 | 2008 | 2009 | 2010 |
| Slovak Republic | Unemployment rates | 28.0 | 20.3 | 18.1 | 27.9 | 34.7 | 10.4 | 8.6 | 7.5 | 10.0 | 12.4 | 8.1 | 7.7 | 5.5 | 6.4 | 9.6 |
| | Labour force participation rates | 52.7 | 38.7 | 37.7 | 37.0 | 36.2 | 95.0 | 93.0 | 93.4 | 93.6 | 92.9 | 40.9 | 56.9 | 60.0 | 58.8 | 59.9 |
| | Employment/population ratios | 38.0 | 30.9 | 30.8 | 26.7 | 23.6 | 85.1 | 85.0 | 86.4 | 84.2 | 81.4 | 37.6 | 52.6 | 56.7 | 55.0 | 54.1 |
| Slovenia | Unemployment rates | . . | 9.4 | 9.9 | 13.8 | 15.2 | . . | 3.4 | 3.3 | 5.3 | 7.1 | . . | 3.0 | 3.6 | 3.8 | 4.2 |
| | Labour force participation rates | . . | 47.6 | 47.7 | 45.4 | 44.4 | . . | 91.3 | 91.6 | 91.3 | 91.7 | . . | 46.7 | 46.4 | 48.2 | 47.5 |
| | Employment/population ratios | . . | 43.2 | 43.0 | 39.1 | 37.6 | . . | 88.1 | 88.6 | 86.4 | 85.2 | . . | 45.3 | 44.7 | 46.4 | 45.5 |
| Spain[a] | Unemployment rates | 37.4 | 15.2 | 23.7 | 39.1 | 43.2 | 16.4 | 5.4 | 8.9 | 16.2 | 18.1 | 13.3 | 4.9 | 6.4 | 11.3 | 14.3 |
| | Labour force participation rates | 55.0 | 57.2 | 56.6 | 53.1 | 49.7 | 93.1 | 92.6 | 92.6 | 92.3 | 92.5 | 56.6 | 63.1 | 65.1 | 64.0 | 63.9 |
| | Employment/population ratios | 34.4 | 48.5 | 43.2 | 32.4 | 28.2 | 77.8 | 87.6 | 84.4 | 77.3 | 75.7 | 49.1 | 60.0 | 60.9 | 56.7 | 54.7 |
| Sweden[a] | Unemployment rates | 25.3 | 18.1 | 18.8 | 25.9 | 26.7 | 9.3 | 4.1 | 4.0 | 6.4 | 6.0 | 8.5 | 4.3 | 4.1 | 5.8 | 6.2 |
| | Labour force participation rates | 53.5 | 57.5 | 57.8 | 51.3 | 51.7 | 91.3 | 92.9 | 93.1 | 92.8 | 93.6 | 70.5 | 76.4 | 76.7 | 77.9 | 79.2 |
| | Employment/population ratios | 40.0 | 47.1 | 46.9 | 38.0 | 37.9 | 82.8 | 89.0 | 89.4 | 86.9 | 88.0 | 64.5 | 73.1 | 73.6 | 73.3 | 74.3 |
| Switzerland | Unemployment rates | 5.4 | 6.8 | 6.7 | 7.9 | 6.8 | 3.1 | 2.3 | 2.2 | 3.3 | 3.4 | 4.6 | 2.6 | 2.5 | 3.0 | 3.4 |
| | Labour force participation rates | 63.2 | 70.2 | 68.1 | 66.1 | 68.3 | 98.2 | 95.8 | 95.9 | 96.0 | 95.7 | 82.9 | 78.4 | 78.9 | 79.5 | 80.6 |
| | Employment/population ratios | 59.8 | 65.4 | 63.6 | 60.9 | 63.6 | 95.2 | 93.6 | 93.7 | 92.8 | 92.4 | 79.1 | 76.4 | 77.0 | 77.1 | 77.9 |
| Turkey | Unemployment rates | 17.5 | 19.6 | 20.1 | 25.4 | 21.0 | 6.2 | 8.5 | 9.3 | 12.2 | 10.1 | 3.0 | 5.4 | 6.6 | 8.2 | 7.5 |
| | Labour force participation rates | 67.2 | 51.6 | 51.7 | 52.2 | 50.9 | 93.7 | 88.1 | 88.5 | 88.8 | 89.5 | 59.5 | 42.9 | 43.8 | 44.8 | 46.1 |
| | Employment/population ratios | 55.5 | 41.5 | 41.3 | 39.0 | 40.2 | 87.9 | 80.7 | 80.2 | 77.9 | 80.4 | 57.7 | 40.5 | 40.9 | 41.1 | 42.7 |
| United Kingdom[a] | Unemployment rates | 19.2 | 16.0 | 16.0 | 21.7 | 21.2 | 9.7 | 3.7 | 4.1 | 6.8 | 6.7 | 11.6 | 4.1 | 3.4 | 6.0 | 6.3 |
| | Labour force participation rates | 75.1 | 68.2 | 68.5 | 67.4 | 65.3 | 92.9 | 91.6 | 91.7 | 91.5 | 91.4 | 64.0 | 68.9 | 70.1 | 70.3 | 69.2 |
| | Employment/population ratios | 60.7 | 57.3 | 57.5 | 52.8 | 51.5 | 83.9 | 88.3 | 87.9 | 85.4 | 85.3 | 56.6 | 66.1 | 67.7 | 66.1 | 64.9 |
| United States[a] | Unemployment rates | 13.2 | 11.6 | 14.4 | 20.1 | 20.8 | 4.9 | 3.7 | 5.0 | 9.2 | 9.3 | 4.4 | 3.2 | 3.7 | 7.2 | 8.0 |
| | Labour force participation rates | 70.3 | 61.5 | 61.0 | 58.5 | 56.7 | 91.7 | 90.9 | 90.5 | 89.7 | 89.3 | 65.5 | 69.6 | 70.4 | 70.3 | 70.0 |
| | Employment/population ratios | 61.0 | 54.4 | 52.3 | 46.7 | 44.9 | 87.2 | 87.5 | 86.0 | 81.5 | 81.0 | 62.6 | 67.4 | 67.7 | 65.2 | 64.4 |
| OECD (weighted average) | Unemployment rates | 14.5 | 12.2 | 13.1 | 17.9 | 17.6 | 6.1 | 4.6 | 5.0 | 7.6 | 7.6 | 5.9 | 4.2 | 4.3 | 6.2 | 6.7 |
| | Labour force participation rates | 59.2 | 53.6 | 53.5 | 52.1 | 51.5 | 93.3 | 92.2 | 92.1 | 91.7 | 91.6 | 62.5 | 66.7 | 67.2 | 67.3 | 67.6 |
| | Employment/population ratios | 50.7 | 47.0 | 46.5 | 42.8 | 42.5 | 87.6 | 87.9 | 87.5 | 84.8 | 84.7 | 58.8 | 63.9 | 64.3 | 63.2 | 63.0 |
| Brazil | Unemployment rates | . . | 12.9 | 11.9 | 13.9 | . . | . . | 4.2 | 3.5 | 4.3 | . . | . . | 3.0 | 2.2 | 2.7 | . . |
| | Labour force participation rates | . . | 72.2 | 71.9 | 71.3 | . . | . . | 92.8 | 93.2 | 93.4 | . . | . . | 72.2 | 72.4 | 71.7 | . . |
| | Employment/population ratios | . . | 62.9 | 63.3 | 61.4 | . . | . . | 88.9 | 90.0 | 89.4 | . . | . . | 70.1 | 70.9 | 69.8 | . . |
| Russian Federation | Unemployment rates | 15.4 | 14.4 | 13.3 | 18.3 | 16.9 | 7.3 | 5.4 | 5.6 | 7.8 | 6.8 | 5.0 | 3.4 | 4.7 | 6.3 | 5.6 |
| | Labour force participation rates | 55.4 | 44.5 | 49.5 | 48.8 | 48.1 | 91.2 | 92.0 | 91.9 | 91.6 | 92.2 | 49.0 | 62.3 | 61.6 | 59.5 | 58.7 |
| | Employment/population ratios | 46.9 | 38.1 | 42.9 | 39.9 | 39.9 | 84.6 | 87.0 | 86.8 | 84.5 | 86.0 | 46.6 | 60.1 | 58.7 | 55.7 | 55.4 |

## 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 | 2007 | 2008 | 2009 | 2010 | 1994 | 2007 | 2008 | 2009 | 2010 | 1994 | 2007 | 2008 | 2009 | 2010 |
| Australia | Unemployment rates | 16.4 | 9.2 | 8.6 | 10.4 | 11.1 | 7.3 | 3.9 | 3.9 | 4.6 | 4.4 | 5.5 | 2.6 | 2.0 | 2.9 | 2.6 |
| | Labour force participation rates | 68.3 | 69.8 | 69.5 | 67.7 | 67.3 | 67.7 | 74.8 | 75.4 | 75.5 | 75.2 | 27.7 | 48.7 | 50.2 | 52.9 | 54.2 |
| | Employment/population ratios | 57.1 | 63.3 | 63.6 | 60.7 | 59.8 | 62.8 | 71.9 | 72.4 | 72.1 | 71.9 | 26.2 | 47.4 | 49.2 | 51.4 | 52.8 |
| Austria | Unemployment rates | 5.2 | 9.1 | 8.2 | 9.4 | 8.8 | 3.8 | 4.5 | 3.6 | 4.0 | 3.8 | 2.7 | 3.1 | 2.5 | 2.2 | 1.6 |
| | Labour force participation rates | 59.2 | 56.7 | 56.9 | 57.0 | 54.1 | 71.6 | 81.1 | 81.5 | 82.8 | 82.8 | 18.4 | 28.9 | 31.6 | 32.4 | 34.2 |
| | Employment/population ratios | 56.1 | 51.5 | 52.2 | 51.7 | 49.4 | 68.9 | 77.5 | 78.6 | 79.5 | 79.7 | 17.9 | 28.0 | 30.8 | 31.7 | 33.7 |
| Belgium | Unemployment rates | 23.4 | 20.9 | 18.7 | 22.5 | 22.4 | 11.2 | 7.4 | 6.6 | 6.9 | 7.5 | 5.9 | 5.3 | 5.6 | 5.2 | 5.2 |
| | Labour force participation rates | 33.0 | 31.6 | 30.8 | 29.9 | 29.8 | 67.2 | 78.0 | 79.0 | 79.2 | 80.4 | 13.2 | 27.5 | 27.9 | 29.3 | 30.9 |
| | Employment/population ratios | 25.3 | 25.0 | 25.0 | 23.2 | 23.1 | 59.7 | 72.3 | 73.8 | 73.8 | 74.4 | 12.4 | 26.0 | 26.3 | 27.7 | 29.2 |
| Canada | Unemployment rates | 13.7 | 10.0 | 10.0 | 12.3 | 12.4 | 9.0 | 4.8 | 4.8 | 6.1 | 6.4 | 8.4 | 4.9 | 5.0 | 5.7 | 5.6 |
| | Labour force participation rates | 61.9 | 66.5 | 67.0 | 65.2 | 64.6 | 75.4 | 82.1 | 81.9 | 82.1 | 82.3 | 36.9 | 53.2 | 54.6 | 56.3 | 56.7 |
| | Employment/population ratios | 53.4 | 59.8 | 60.3 | 57.2 | 56.6 | 68.6 | 78.2 | 78.0 | 77.2 | 77.0 | 33.8 | 50.7 | 51.9 | 53.1 | 53.5 |
| Chile | Unemployment rates | . . | 20.8 | 23.0 | 24.4 | 21.7 | . . | 7.3 | 8.2 | 9.5 | 8.6 | . . | 3.6 | 3.4 | 4.1 | 4.0 |
| | Labour force participation rates | . . | 24.8 | 26.3 | 26.3 | 30.4 | . . | 54.6 | 57.3 | 58.4 | 63.2 | . . | 33.7 | 35.4 | 36.6 | 40.8 |
| | Employment/population ratios | . . | 19.6 | 20.2 | 19.8 | 23.8 | . . | 50.6 | 52.7 | 52.8 | 57.7 | . . | 32.5 | 34.2 | 35.1 | 39.2 |
| Czech Republic | Unemployment rates | 9.8 | 11.0 | 9.9 | 16.7 | 18.5 | 4.4 | 6.7 | 5.4 | 7.3 | 8.0 | 3.7 | 4.8 | 4.6 | 5.8 | 6.5 |
| | Labour force participation rates | 43.7 | 26.9 | 26.1 | 26.1 | 25.3 | 83.2 | 80.3 | 79.6 | 79.9 | 79.8 | 20.0 | 35.2 | 36.1 | 37.2 | 38.0 |
| | Employment/population ratios | 39.4 | 23.9 | 23.5 | 21.7 | 20.6 | 79.6 | 74.9 | 75.2 | 74.1 | 73.4 | 19.3 | 33.5 | 34.4 | 35.0 | 35.5 |
| Denmark | Unemployment rates | 10.2 | 7.5 | 8.5 | 9.9 | 11.7 | 9.0 | 3.5 | 2.8 | 4.7 | 5.9 | 6.7 | 4.1 | 3.2 | 3.9 | 4.6 |
| | Labour force participation rates | 65.9 | 69.4 | 71.4 | 70.7 | 67.2 | 82.7 | 85.4 | 86.4 | 87.0 | 85.6 | 43.1 | 54.6 | 51.8 | 53.0 | 55.0 |
| | Employment/population ratios | 59.1 | 64.2 | 65.4 | 63.7 | 59.4 | 75.2 | 82.4 | 84.0 | 82.9 | 80.6 | 40.2 | 52.4 | 50.1 | 50.9 | 52.5 |
| Estonia | Unemployment rates | 11.8 | 7.1 | 11.3 | 22.0 | 30.0 | 7.7 | 4.3 | 4.9 | 10.0 | 12.9 | 5.6 | 0.9 | 3.2 | 7.5 | 14.1 |
| | Labour force participation rates | 44.2 | 32.3 | 37.5 | 34.6 | 34.1 | 85.9 | 83.5 | 83.6 | 83.9 | 84.9 | 33.5 | 60.8 | 62.1 | 66.0 | 63.9 |
| | Employment/population ratios | 39.0 | 30.0 | 33.2 | 27.0 | 23.9 | 79.3 | 80.0 | 79.5 | 75.5 | 73.9 | 31.6 | 60.3 | 60.1 | 61.1 | 54.9 |
| Finland | Unemployment rates | 30.7 | 16.8 | 16.2 | 18.8 | 18.9 | 12.5 | 5.8 | 5.4 | 6.1 | 6.3 | 17.5 | 6.0 | 5.3 | 5.5 | 5.8 |
| | Labour force participation rates | 41.1 | 53.7 | 53.7 | 51.2 | 49.4 | 84.0 | 85.6 | 85.9 | 85.6 | 84.4 | 38.9 | 58.3 | 59.0 | 59.8 | 60.3 |
| | Employment/population ratios | 28.5 | 44.7 | 45.0 | 41.6 | 40.1 | 73.5 | 80.7 | 81.3 | 80.4 | 79.1 | 32.1 | 54.8 | 55.8 | 56.5 | 56.9 |
| France | Unemployment rates | 30.5 | 19.8 | 18.3 | 21.9 | 23.3 | 13.0 | 7.7 | 7.1 | 8.2 | 8.5 | 6.3 | 4.8 | 4.4 | 6.0 | 6.4 |
| | Labour force participation rates | 34.7 | 35.4 | 35.5 | 37.2 | 36.1 | 76.6 | 82.4 | 83.1 | 83.5 | 83.8 | 26.4 | 37.8 | 37.6 | 38.8 | 40.0 |
| | Employment/population ratios | 24.1 | 28.4 | 29.0 | 29.1 | 27.7 | 66.6 | 76.0 | 77.2 | 76.6 | 76.7 | 24.8 | 36.0 | 35.9 | 36.5 | 37.5 |
| Germany | Unemployment rates | 8.3 | 11.1 | 10.0 | 9.8 | 8.8 | 10.1 | 8.1 | 7.2 | 6.9 | 6.2 | 13.5 | 11.2 | 8.9 | 8.0 | 7.3 |
| | Labour force participation rates | 53.0 | 49.0 | 49.5 | 49.2 | 48.9 | 72.6 | 80.6 | 80.5 | 81.0 | 81.3 | 28.3 | 48.9 | 50.6 | 52.9 | 54.5 |
| | Employment/population ratios | 48.6 | 43.5 | 44.5 | 44.4 | 44.5 | 65.3 | 74.0 | 74.7 | 75.4 | 76.3 | 24.5 | 43.4 | 46.0 | 48.6 | 50.5 |
| Greece | Unemployment rates | 36.9 | 32.1 | 28.9 | 33.9 | 40.6 | 10.7 | 12.0 | 10.9 | 12.4 | 15.5 | 2.6 | 4.3 | 3.9 | 5.5 | 6.5 |
| | Labour force participation rates | 32.6 | 27.6 | 26.1 | 27.4 | 27.2 | 53.9 | 69.1 | 69.4 | 71.0 | 72.2 | 23.0 | 28.2 | 28.6 | 29.3 | 30.9 |
| | Employment/population ratios | 20.6 | 18.7 | 18.5 | 18.1 | 16.2 | 48.1 | 60.8 | 61.9 | 62.2 | 61.1 | 22.4 | 26.9 | 27.5 | 27.7 | 28.9 |
| Hungary | Unemployment rates | 16.5 | 18.6 | 20.9 | 24.2 | 24.9 | 8.1 | 7.2 | 7.4 | 9.0 | 10.1 | 7.2 | 3.9 | 5.1 | 6.2 | 7.3 |
| | Labour force participation rates | 35.3 | 21.8 | 21.3 | 21.5 | 22.1 | 71.5 | 73.2 | 73.3 | 73.6 | 74.6 | 10.2 | 27.3 | 27.0 | 28.8 | 32.4 |
| | Employment/population ratios | 29.5 | 17.8 | 16.8 | 16.3 | 16.6 | 65.7 | 67.9 | 67.9 | 66.9 | 67.1 | 9.4 | 26.2 | 25.7 | 27.0 | 30.1 |

## 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 | 2007 | 2008 | 2009 | 2010 | 1994 | 2007 | 2008 | 2009 | 2010 | 1994 | 2007 | 2008 | 2009 | 2010 |
| Iceland[a] | Unemployment rates | 10.1 | 6.3 | 7.5 | 12.0 | 14.1 | 5.0 | 1.6 | 1.7 | 4.9 | 5.6 | 3.8 | 0.9 | 0.6 | 2.2 | 3.5 |
| | Labour force participation rates | 59.1 | 80.1 | 79.9 | 76.2 | 76.5 | 86.3 | 85.4 | 84.4 | 84.7 | 85.3 | 80.5 | 80.7 | 78.1 | 78.1 | 79.8 |
| | Employment/population ratios | 53.1 | 75.0 | 73.9 | 67.0 | 65.7 | 82.0 | 84.1 | 82.9 | 80.6 | 80.6 | 77.4 | 80.0 | 77.6 | 76.4 | 77.0 |
| Ireland | Unemployment rates | 22.5 | 9.5 | 9.7 | 19.1 | 22.4 | 13.4 | 3.6 | 3.6 | 6.7 | 8.5 | 8.1 | 1.9 | 2.4 | 3.1 | 5.0 |
| | Labour force participation rates | 39.6 | 52.0 | 50.4 | 47.5 | 42.0 | 53.6 | 72.2 | 71.8 | 71.9 | 72.2 | 21.5 | 40.7 | 42.4 | 42.7 | 45.3 |
| | Employment/population ratios | 30.6 | 47.1 | 45.5 | 38.5 | 32.6 | 46.5 | 69.6 | 69.3 | 67.1 | 66.0 | 19.7 | 40.0 | 41.4 | 41.4 | 43.0 |
| Israel[b] | Unemployment rates | 19.1 | 17.0 | 13.4 | 13.6 | 12.9 | 8.4 | 6.8 | 5.7 | 6.9 | 5.8 | 4.9 | 4.6 | 4.3 | 5.1 | 4.4 |
| | Labour force participation rates | 34.2 | 34.1 | 33.3 | 33.7 | 33.7 | 63.8 | 72.0 | 72.4 | 73.2 | 73.6 | 32.3 | 50.3 | 51.5 | 53.0 | 54.0 |
| | Employment/population ratios | 27.7 | 28.3 | 28.8 | 29.1 | 29.3 | 58.4 | 67.1 | 68.3 | 68.2 | 69.3 | 30.8 | 48.0 | 49.3 | 50.3 | 51.6 |
| Italy | Unemployment rates | 36.5 | 23.3 | 24.7 | 28.7 | 29.4 | 11.8 | 7.1 | 7.7 | 8.5 | 8.9 | 3.4 | 2.1 | 2.9 | 2.8 | 3.0 |
| | Labour force participation rates | 34.4 | 25.5 | 25.7 | 23.9 | 23.4 | 52.6 | 64.1 | 65.2 | 64.5 | 64.4 | 14.2 | 23.5 | 24.7 | 26.1 | 27.0 |
| | Employment/population ratios | 21.8 | 19.5 | 19.4 | 17.0 | 16.5 | 46.3 | 59.6 | 60.2 | 59.1 | 58.7 | 13.7 | 23.0 | 24.0 | 25.4 | 26.2 |
| Japan | Unemployment rates | 5.3 | 7.1 | 6.6 | 8.1 | 8.0 | 2.8 | 3.9 | 4.0 | 4.9 | 4.8 | 1.9 | 2.4 | 2.6 | 3.4 | 3.3 |
| | Labour force participation rates | 47.1 | 44.7 | 44.7 | 44.8 | 44.0 | 65.3 | 70.1 | 70.3 | 71.1 | 71.6 | 48.1 | 52.5 | 53.1 | 53.5 | 53.9 |
| | Employment/population ratios | 44.6 | 41.5 | 41.8 | 41.2 | 40.5 | 63.4 | 67.4 | 67.5 | 67.6 | 68.2 | 47.2 | 51.2 | 51.7 | 51.7 | 52.1 |
| Korea | Unemployment rates | 6.0 | 7.1 | 8.0 | 8.5 | 9.0 | 1.0 | 2.4 | 2.4 | 2.8 | 2.9 | 0.2 | 1.4 | 1.1 | 1.7 | 2.2 |
| | Labour force participation rates | 41.8 | 32.7 | 31.1 | 30.0 | 30.4 | 54.8 | 62.0 | 62.3 | 61.5 | 62.2 | 49.5 | 47.6 | 47.9 | 47.5 | 48.1 |
| | Employment/population ratios | 39.3 | 30.4 | 28.6 | 27.4 | 27.7 | 54.2 | 60.5 | 60.8 | 59.8 | 60.3 | 49.4 | 46.9 | 47.4 | 46.7 | 47.1 |
| Luxembourg | Unemployment rates | 7.2 | 17.5 | 24.1 | 17.8 | 10.2 | 3.9 | 4.0 | 4.6 | 5.2 | 5.0 | 1.2 | 1.7 | 3.0 | 4.0 | 2.2 |
| | Labour force participation rates | 45.0 | 22.3 | 27.1 | 29.5 | 22.7 | 55.7 | 74.7 | 72.9 | 75.3 | 76.4 | 13.4 | 29.1 | 30.3 | 30.6 | 32.0 |
| | Employment/population ratios | 41.8 | 18.4 | 20.6 | 24.2 | 20.3 | 53.5 | 71.7 | 69.5 | 71.4 | 72.6 | 13.2 | 28.6 | 29.3 | 29.4 | 31.3 |
| Mexico | Unemployment rates | 8.3 | 7.5 | 8.4 | 10.6 | 10.2 | 3.5 | 3.1 | 3.0 | 3.8 | 4.5 | 1.6 | 0.6 | 1.1 | 1.5 | 1.8 |
| | Labour force participation rates | 35.8 | 34.1 | 34.4 | 32.2 | 33.3 | 41.3 | 52.6 | 53.2 | 53.2 | 54.6 | 25.8 | 32.9 | 34.6 | 33.3 | 36.1 |
| | Employment/population ratios | 32.8 | 31.5 | 31.5 | 28.8 | 29.9 | 39.8 | 51.0 | 51.6 | 51.1 | 52.1 | 25.4 | 32.7 | 34.3 | 32.8 | 35.4 |
| Netherlands | Unemployment rates | 9.4 | 7.8 | 6.4 | 7.2 | 8.6 | 7.8 | 3.3 | 2.6 | 3.0 | 3.6 | 5.2 | 3.8 | 3.3 | 3.1 | 3.7 |
| | Labour force participation rates | 60.7 | 69.4 | 70.2 | 70.3 | 69.5 | 64.5 | 79.9 | 81.2 | 81.8 | 82.3 | 18.5 | 38.9 | 41.3 | 43.3 | 44.9 |
| | Employment/population ratios | 55.0 | 64.0 | 65.7 | 65.2 | 63.5 | 59.4 | 77.3 | 79.1 | 79.3 | 79.3 | 17.5 | 37.5 | 39.9 | 42.0 | 43.3 |
| New Zealand | Unemployment rates | 14.7 | 10.1 | 10.9 | 17.2 | 17.4 | 6.1 | 3.0 | 3.2 | 4.4 | 5.4 | 3.6 | 1.4 | 1.7 | 2.5 | 2.9 |
| | Labour force participation rates | 62.1 | 62.2 | 60.4 | 59.4 | 58.5 | 70.8 | 76.6 | 77.4 | 77.5 | 76.9 | 36.6 | 64.0 | 64.8 | 66.6 | 69.2 |
| | Employment/population ratios | 52.9 | 55.9 | 53.8 | 49.2 | 48.3 | 66.5 | 74.3 | 75.0 | 74.2 | 72.8 | 35.3 | 63.1 | 63.7 | 65.0 | 67.2 |
| Norway[a] | Unemployment rates | 12.1 | 6.6 | 6.8 | 8.0 | 7.7 | 3.8 | 2.0 | 1.8 | 2.0 | 2.6 | 1.9 | 0.8 | 0.9 | 0.6 | 0.9 |
| | Labour force participation rates | 53.0 | 60.3 | 62.5 | 59.2 | 57.1 | 79.4 | 84.0 | 85.6 | 85.2 | 84.4 | 55.4 | 64.6 | 64.9 | 65.0 | 65.6 |
| | Employment/population ratios | 46.6 | 56.3 | 58.3 | 54.4 | 52.7 | 76.4 | 82.3 | 84.0 | 83.5 | 82.2 | 54.3 | 64.0 | 64.3 | 64.6 | 65.0 |
| Poland | Unemployment rates | 34.7 | 23.8 | 19.9 | 21.2 | 25.4 | 14.5 | 9.1 | 6.8 | 7.6 | 8.7 | 6.4 | 5.7 | 4.4 | 5.5 | 6.5 |
| | Labour force participation rates | 37.9 | 29.3 | 29.6 | 29.4 | 29.7 | 78.6 | 75.6 | 76.3 | 77.5 | 78.6 | 28.7 | 20.6 | 21.6 | 23.2 | 25.9 |
| | Employment/population ratios | 24.8 | 22.4 | 23.7 | 23.2 | 22.1 | 67.2 | 68.8 | 71.0 | 71.6 | 71.7 | 26.8 | 19.4 | 20.7 | 21.9 | 24.2 |
| Portugal | Unemployment rates | 16.3 | 20.3 | 20.2 | 21.6 | 23.7 | 7.2 | 9.6 | 8.6 | 10.1 | 12.2 | 2.4 | 5.8 | 5.8 | 7.0 | 7.6 |
| | Labour force participation rates | 42.6 | 38.4 | 38.6 | 37.5 | 34.8 | 74.4 | 82.8 | 82.9 | 83.4 | 84.9 | 34.2 | 46.7 | 46.6 | 45.9 | 47.0 |
| | Employment/population ratios | 35.7 | 30.6 | 30.8 | 29.4 | 26.5 | 69.0 | 74.9 | 75.8 | 74.9 | 74.6 | 33.4 | 44.0 | 43.9 | 42.7 | 43.5 |

## 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 | 2007 | 2008 | 2009 | 2010 | 1994 | 2007 | 2008 | 2009 | 2010 | 1994 | 2007 | 2008 | 2009 | 2010 |
| Slovak Republic | Unemployment rates | 26.5 | 19.9 | 19.9 | 26.5 | 32.0 | 11.6 | 11.9 | 10.3 | 11.8 | 13.3 | 12.3 | 9.1 | 8.5 | 10.0 | 11.0 |
| | Labour force participation rates | 41.8 | 30.1 | 26.8 | 25.4 | 25.5 | 81.1 | 80.5 | 82.2 | 80.8 | 80.8 | 9.2 | 23.3 | 26.5 | 29.1 | 32.4 |
| | Employment/population ratios | 30.7 | 24.1 | 21.4 | 18.6 | 17.3 | 71.7 | 71.0 | 73.7 | 71.2 | 70.1 | 8.0 | 21.2 | 24.2 | 26.2 | 28.8 |
| Slovenia | Unemployment rates | . . | 11.2 | 11.3 | 13.4 | 13.8 | . . | 5.6 | 4.2 | 5.4 | 6.8 | . . | 3.8 | 4.8 | 3.2 | 3.6 |
| | Labour force participation rates | . . | 35.4 | 37.4 | 35.8 | 34.8 | . . | 87.3 | 88.5 | 87.9 | 88.1 | . . | 23.1 | 22.2 | 25.6 | 25.5 |
| | Employment/population ratios | . . | 31.4 | 33.2 | 31.0 | 30.0 | . . | 82.4 | 84.8 | 83.2 | 82.1 | . . | 22.2 | 21.1 | 24.8 | 24.5 |
| Spain[a] | Unemployment rates | 50.1 | 21.9 | 25.8 | 36.4 | 39.8 | 28.6 | 9.7 | 11.8 | 16.9 | 19.2 | 9.9 | 7.7 | 8.9 | 13.3 | 13.8 |
| | Labour force participation rates | 43.7 | 47.4 | 48.1 | 45.7 | 44.0 | 54.6 | 72.7 | 74.7 | 76.7 | 78.3 | 19.4 | 32.5 | 34.2 | 37.2 | 38.5 |
| | Employment/population ratios | 21.8 | 37.0 | 35.7 | 29.1 | 26.5 | 39.0 | 65.6 | 65.9 | 63.8 | 63.2 | 17.5 | 30.0 | 31.1 | 32.3 | 33.2 |
| Sweden[a] | Unemployment rates | 19.9 | 19.5 | 19.6 | 23.7 | 23.7 | 6.8 | 4.7 | 4.7 | 6.0 | 6.3 | 5.2 | 3.5 | 3.4 | 4.6 | 4.4 |
| | Labour force participation rates | 53.4 | 57.8 | 57.1 | 50.8 | 51.2 | 86.9 | 87.1 | 87.5 | 87.1 | 87.5 | 62.6 | 69.6 | 69.3 | 70.0 | 69.9 |
| | Employment/population ratios | 42.7 | 46.5 | 45.9 | 38.8 | 39.0 | 81.1 | 83.0 | 83.5 | 81.9 | 82.0 | 59.3 | 67.2 | 66.9 | 66.8 | 66.8 |
| Switzerland | Unemployment rates | 6.1 | 7.4 | 7.4 | 9.0 | 7.6 | 4.2 | 4.1 | 3.6 | 4.1 | 4.7 | 3.2 | 3.8 | 2.7 | 2.3 | 3.5 |
| | Labour force participation rates | 64.8 | 64.5 | 66.1 | 68.5 | 64.6 | 74.1 | 81.9 | 83.6 | 83.9 | 83.4 | 47.2 | 60.3 | 61.6 | 61.0 | 60.9 |
| | Employment/population ratios | 60.8 | 59.7 | 61.2 | 62.4 | 59.7 | 70.9 | 78.5 | 80.6 | 80.4 | 79.4 | 45.7 | 58.1 | 60.0 | 59.6 | 58.8 |
| Turkey | Unemployment rates | 13.4 | 20.8 | 21.2 | 25.0 | 23.0 | 6.0 | 8.8 | 9.6 | 12.5 | 11.4 | 0.7 | 1.1 | 1.3 | 1.6 | 1.5 |
| | Labour force participation rates | 35.8 | 24.4 | 25.1 | 25.8 | 26.3 | 33.1 | 28.0 | 29.3 | 31.6 | 34.0 | 24.8 | 14.8 | 15.0 | 16.3 | 17.3 |
| | Employment/population ratios | 31.0 | 19.3 | 19.8 | 19.3 | 20.3 | 31.1 | 25.6 | 26.5 | 27.6 | 30.1 | 24.6 | 14.6 | 14.8 | 16.0 | 17.1 |
| United Kingdom[a] | Unemployment rates | 12.6 | 12.7 | 12.0 | 15.6 | 16.8 | 6.4 | 3.7 | 3.7 | 5.2 | 5.4 | 5.3 | 2.2 | 2.0 | 2.8 | 3.0 |
| | Labour force participation rates | 65.1 | 62.5 | 62.6 | 60.9 | 60.4 | 74.1 | 77.6 | 78.3 | 78.5 | 78.7 | 40.7 | 50.1 | 50.0 | 50.8 | 50.5 |
| | Employment/population ratios | 56.9 | 54.6 | 55.1 | 51.4 | 50.3 | 69.3 | 74.7 | 75.4 | 74.4 | 74.4 | 38.5 | 49.0 | 49.0 | 49.3 | 48.9 |
| United States[a] | Unemployment rates | 11.6 | 9.4 | 11.2 | 14.9 | 15.8 | 5.0 | 3.8 | 4.6 | 7.2 | 7.8 | 3.9 | 3.0 | 3.7 | 6.0 | 6.2 |
| | Labour force participation rates | 62.5 | 57.2 | 56.5 | 55.2 | 53.5 | 75.3 | 75.4 | 75.8 | 75.6 | 75.2 | 48.9 | 58.3 | 59.1 | 60.0 | 60.2 |
| | Employment/population ratios | 55.3 | 51.8 | 50.2 | 47.0 | 45.1 | 71.5 | 72.5 | 72.3 | 70.2 | 69.3 | 47.0 | 56.6 | 57.0 | 56.4 | 56.4 |
| OECD (weighted average) | Unemployment rates | 14.4 | 11.7 | 12.2 | 15.2 | 15.7 | 7.5 | 5.3 | 5.5 | 7.0 | 7.5 | 4.6 | 3.7 | 3.8 | 5.0 | 5.2 |
| | Labour force participation rates | 47.9 | 44.4 | 44.5 | 43.7 | 43.2 | 66.4 | 70.1 | 70.6 | 70.9 | 71.3 | 35.5 | 45.3 | 46.1 | 47.0 | 47.9 |
| | Employment/population ratios | 41.0 | 39.2 | 39.1 | 37.1 | 36.4 | 61.5 | 66.3 | 66.8 | 65.9 | 66.0 | 33.8 | 43.6 | 44.4 | 44.6 | 45.4 |
| Brazil | Unemployment rates | . . | 21.9 | 20.5 | 23.1 | . . | . . | 8.5 | 7.4 | 8.7 | . . | . . | 2.7 | 2.8 | 3.4 | . . |
| | Labour force participation rates | . . | 54.7 | 54.2 | 54.0 | . . | . . | 70.2 | 70.2 | 71.5 | . . | . . | 40.6 | 42.8 | 41.4 | . . |
| | Employment/population ratios | . . | 42.7 | 43.1 | 41.5 | . . | . . | 64.3 | 65.0 | 65.3 | . . | . . | 39.5 | 41.6 | 40.0 | . . |
| Russian Federation | Unemployment rates | 17.5 | 14.7 | 15.0 | 19.0 | 17.5 | 6.5 | 4.9 | 5.1 | 6.6 | 5.9 | 5.7 | 2.6 | 3.4 | 4.7 | 4.0 |
| | Labour force participation rates | 46.2 | 37.3 | 40.2 | 40.8 | 38.8 | 85.9 | 86.6 | 85.7 | 85.6 | 85.9 | 22.3 | 41.4 | 39.9 | 39.1 | 37.8 |
| | Employment/population ratios | 38.1 | 31.8 | 34.2 | 33.0 | 32.0 | 80.3 | 82.4 | 81.4 | 79.9 | 80.8 | 21.0 | 40.3 | 38.6 | 37.2 | 36.2 |

*a)* Age group 15-24 refers to 16-24. For Norway, up to 2005.

*b)* The statistical data for Israel are supplied by and under the responsibility of the relevant Israeli authorities. The use of such data by the OECD is without prejudice to the status of the Golan Heights, East Jerusalem and Israeli settlements in the West Bank under the terms of international law.

*Source: OECD Online Employment Database: www.oecd.org/els/employment/database.*

StatLink http://dx.doi.org/10.1787/888932480446

## Table D. **Employment/population ratios, activity and unemployment rates by educational attainment, 2009**

Persons aged 25-64 (percentages)

| | | Both sexes | | | Men | | | Women | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | Less than upper secondary education | Upper secondary education | Tertiary education | Less than upper secondary education | Upper secondary education | Tertiary education | Less than upper secondary education | Upper secondary education | Tertiary education |
| Australia | Unemployment rates | 6.6 | 4.1 | 3.3 | 7.6 | 3.9 | 3.6 | 5.6 | 4.5 | 2.9 |
| | Labour force participation rates | 70.8 | 83.7 | 87.1 | 82.9 | 90.8 | 92.4 | 61.1 | 74.0 | 82.7 |
| | Employment/population ratios | 66.1 | 80.2 | 84.3 | 76.5 | 87.2 | 89.1 | 57.7 | 70.7 | 80.2 |
| Austria | Unemployment rates | 8.4 | 3.6 | 2.2 | 10.2 | 4.0 | 1.9 | 7.1 | 3.2 | 2.6 |
| | Labour force participation rates | 60.7 | 80.5 | 88.6 | 72.4 | 84.9 | 91.0 | 54.6 | 75.6 | 85.7 |
| | Employment/population ratios | 55.6 | 77.6 | 86.7 | 65.0 | 81.5 | 89.3 | 50.7 | 73.2 | 83.4 |
| Belgium | Unemployment rates | 11.9 | 6.5 | 3.8 | 11.4 | 5.9 | 3.8 | 12.7 | 7.2 | 3.8 |
| | Labour force participation rates | 54.4 | 79.1 | 87.5 | 66.3 | 85.5 | 90.6 | 42.4 | 72.0 | 84.8 |
| | Employment/population ratios | 48.0 | 74.0 | 84.2 | 58.7 | 80.5 | 87.2 | 37.0 | 66.8 | 81.6 |
| Canada | Unemployment rates | 12.6 | 8.1 | 5.3 | 13.0 | 8.9 | 6.0 | 11.8 | 6.9 | 4.8 |
| | Labour force participation rates | 63.0 | 80.2 | 86.3 | 72.6 | 85.6 | 89.9 | 51.4 | 73.8 | 83.4 |
| | Employment/population ratios | 55.1 | 73.7 | 81.7 | 63.1 | 78.0 | 84.5 | 45.4 | 68.7 | 79.4 |
| Chile | Unemployment rates | 5.9 | 7.4 | 7.7 | 5.7 | 6.9 | 7.5 | 6.2 | 8.2 | 7.9 |
| | Labour force participation rates | 61.9 | 74.8 | 84.4 | 87.3 | 94.1 | 92.2 | 38.6 | 56.3 | 76.7 |
| | Employment/population ratios | 58.3 | 69.2 | 78.0 | 82.3 | 87.6 | 85.3 | 36.2 | 51.7 | 70.6 |
| Czech Republic | Unemployment rates | 21.8 | 5.4 | 2.2 | 23.0 | 4.4 | 2.3 | 21.0 | 6.7 | 2.0 |
| | Labour force participation rates | 56.2 | 79.4 | 86.2 | 69.6 | 87.9 | 93.1 | 49.4 | 70.2 | 78.5 |
| | Employment/population ratios | 43.9 | 75.1 | 84.3 | 53.6 | 84.0 | 91.0 | 39.1 | 65.5 | 76.9 |
| Denmark | Unemployment rates | 7.3 | 5.0 | 3.9 | 8.4 | 5.4 | 4.2 | 6.2 | 4.4 | 3.7 |
| | Labour force participation rates | 69.7 | 83.9 | 91.0 | 77.4 | 87.0 | 93.1 | 62.8 | 79.9 | 89.3 |
| | Employment/population ratios | 64.6 | 79.7 | 87.4 | 71.0 | 82.3 | 89.1 | 59.0 | 76.4 | 86.0 |
| Estonia | Unemployment rates | 24.1 | 14.8 | 6.3 | 25.0 | 17.3 | 7.1 | 22.5 | 11.6 | 5.9 |
| | Labour force participation rates | 62.4 | 84.0 | 88.4 | 68.9 | 88.1 | 94.1 | 53.5 | 79.3 | 85.4 |
| | Employment/population ratios | 47.4 | 71.6 | 82.8 | 51.7 | 72.9 | 87.4 | 41.4 | 70.1 | 80.4 |
| Finland | Unemployment rates | 10.1 | 7.7 | 4.0 | 10.7 | 8.1 | 3.8 | 9.1 | 7.2 | 4.2 |
| | Labour force participation rates | 62.7 | 81.0 | 87.9 | 66.6 | 83.2 | 90.5 | 57.4 | 78.3 | 85.9 |
| | Employment/population ratios | 56.4 | 74.7 | 84.3 | 59.5 | 76.5 | 87.1 | 52.2 | 72.7 | 82.3 |
| France | Unemployment rates | 11.9 | 7.2 | 5.0 | 11.6 | 6.4 | 4.8 | 12.3 | 8.2 | 5.2 |
| | Labour force participation rates | 63.6 | 81.3 | 87.9 | 72.0 | 86.0 | 91.3 | 56.0 | 76.3 | 85.0 |
| | Employment/population ratios | 56.0 | 75.5 | 83.5 | 63.7 | 80.5 | 86.9 | 49.1 | 70.0 | 80.6 |
| Germany | Unemployment rates | 17.0 | 7.4 | 3.5 | 19.3 | 8.0 | 3.3 | 14.8 | 6.8 | 3.7 |
| | Labour force participation rates | 65.9 | 81.9 | 90.0 | 79.7 | 87.3 | 93.0 | 56.4 | 76.6 | 86.0 |
| | Employment/population ratios | 54.7 | 75.9 | 86.9 | 64.4 | 80.4 | 90.0 | 48.0 | 71.4 | 82.8 |
| Greece | Unemployment rates | 8.8 | 9.2 | 6.7 | 6.8 | 6.1 | 5.0 | 12.8 | 13.3 | 8.5 |
| | Labour force participation rates | 65.5 | 75.3 | 88.2 | 83.7 | 88.5 | 91.5 | 45.9 | 63.2 | 84.9 |
| | Employment/population ratios | 59.7 | 68.4 | 82.4 | 78.0 | 83.1 | 86.9 | 40.0 | 54.8 | 77.7 |
| Hungary | Unemployment rates | 21.0 | 8.2 | 3.5 | 21.8 | 8.1 | 3.5 | 20.2 | 8.4 | 3.5 |
| | Labour force participation rates | 47.3 | 73.0 | 81.6 | 58.2 | 79.6 | 86.8 | 39.9 | 65.5 | 77.8 |
| | Employment/population ratios | 37.4 | 67.0 | 78.8 | 45.5 | 73.1 | 83.7 | 31.9 | 60.0 | 75.1 |
| Iceland | Unemployment rates | 7.4 | 5.8 | 3.9 | 9.4 | 6.2 | 4.4 | 5.0 | 5.1 | 3.4 |
| | Labour force participation rates | 83.2 | 87.7 | 91.9 | 89.7 | 92.7 | 94.1 | 76.9 | 80.6 | 90.0 |
| | Employment/population ratios | 77.1 | 82.6 | 88.3 | 81.2 | 86.9 | 89.9 | 73.0 | 76.5 | 86.9 |
| Ireland | Unemployment rates | 15.4 | 11.3 | 6.1 | 18.5 | 14.3 | 7.1 | 8.4 | 7.3 | 5.1 |
| | Labour force participation rates | 59.1 | 77.9 | 87.3 | 73.5 | 89.1 | 92.5 | 41.2 | 66.9 | 82.8 |
| | Employment/population ratios | 50.0 | 69.1 | 82.0 | 59.9 | 76.3 | 86.0 | 37.7 | 62.0 | 78.5 |
| Israel[a] | Unemployment rates | 10.8 | 7.7 | 5.2 | 10.7 | 7.1 | 5.0 | 11.0 | 8.4 | 5.3 |
| | Labour force participation rates | 49.6 | 74.8 | 86.9 | 66.7 | 81.3 | 91.5 | 29.8 | 67.7 | 83.1 |
| | Employment/population ratios | 44.3 | 69.0 | 82.4 | 59.6 | 75.6 | 87.0 | 26.5 | 62.1 | 78.7 |
| Italy | Unemployment rates | 8.4 | 5.6 | 5.1 | 7.2 | 4.6 | 4.0 | 10.8 | 6.9 | 6.1 |
| | Labour force participation rates | 55.9 | 77.5 | 83.5 | 74.5 | 86.4 | 88.4 | 36.9 | 68.3 | 79.5 |
| | Employment/population ratios | 51.2 | 73.1 | 79.2 | 69.2 | 82.5 | 84.9 | 32.9 | 63.6 | 74.7 |
| Japan | Unemployment rates | X | 5.9 | 3.6 | X | 6.4 | 3.4 | X | 5.3 | 3.8 |
| | Labour force participation rates | X | 77.7 | 82.7 | X | 91.7 | 95.5 | X | 64.2 | 69.3 |
| | Employment/population ratios | X | 73.1 | 79.7 | X | 85.8 | 92.3 | X | 60.8 | 66.6 |
| Korea | Unemployment rates | 3.0 | 3.7 | 3.5 | 4.1 | 4.3 | 3.8 | 2.0 | 2.8 | 2.9 |
| | Labour force participation rates | 67.3 | 72.3 | 78.9 | 80.5 | 87.9 | 91.8 | 58.8 | 57.2 | 61.8 |
| | Employment/population ratios | 65.3 | 69.6 | 76.1 | 77.2 | 84.1 | 88.3 | 57.6 | 55.6 | 60.1 |
| Luxembourg | Unemployment rates | 5.8 | 3.5 | 3.8 | 4.8 | 2.9 | 3.2 | 6.9 | 4.2 | 4.6 |
| | Labour force participation rates | 65.1 | 72.7 | 88.3 | 78.5 | 81.4 | 93.5 | 54.8 | 63.8 | 82.0 |
| | Employment/population ratios | 61.3 | 70.2 | 84.9 | 74.7 | 79.1 | 90.5 | 51.0 | 61.1 | 78.2 |

## Table D. **Employment/population ratios, activity and unemployment rates by educational attainment, 2009** *(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 |
| Mexico | Unemployment rates | 4.0 | 4.2 | 4.4 | 4.3 | 4.6 | 4.7 | 3.4 | 3.8 | 3.9 |
| | Labour force participation rates | 64.3 | 75.1 | 85.4 | 91.1 | 94.1 | 93.1 | 42.1 | 60.0 | 76.0 |
| | Employment/population ratios | 61.7 | 71.9 | 81.7 | 87.2 | 89.8 | 88.7 | 40.7 | 57.7 | 73.0 |
| Netherlands | Unemployment rates | 4.3 | 2.9 | 2.1 | 4.3 | 2.8 | 2.1 | 4.4 | 3.0 | 2.0 |
| | Labour force participation rates | 66.2 | 84.0 | 89.9 | 81.1 | 89.0 | 92.0 | 53.1 | 79.0 | 87.4 |
| | Employment/population ratios | 63.3 | 81.6 | 88.0 | 77.6 | 86.6 | 90.1 | 50.8 | 76.6 | 85.6 |
| New Zealand | Unemployment rates | 5.9 | 3.9 | 3.3 | 6.2 | 3.9 | 3.5 | 5.5 | 3.8 | 3.2 |
| | Labour force participation rates | 73.3 | 85.7 | 86.9 | 82.2 | 91.9 | 93.4 | 65.8 | 77.4 | 81.9 |
| | Employment/population ratios | 69.0 | 82.4 | 84.0 | 77.1 | 88.4 | 90.1 | 62.1 | 74.4 | 79.3 |
| Norway | Unemployment rates | 4.3 | 1.8 | 1.6 | 5.3 | 2.2 | 1.6 | 3.1 | 1.2 | 1.5 |
| | Labour force participation rates | 68.8 | 84.1 | 91.7 | 74.7 | 87.4 | 93.4 | 63.0 | 80.0 | 90.2 |
| | Employment/population ratios | 65.9 | 82.6 | 90.3 | 70.7 | 85.5 | 91.9 | 61.0 | 79.0 | 88.9 |
| Poland | Unemployment rates | 13.9 | 7.2 | 3.6 | 13.2 | 6.4 | 3.4 | 15.0 | 8.4 | 3.8 |
| | Labour force participation rates | 48.3 | 71.5 | 88.5 | 61.5 | 80.3 | 93.0 | 36.5 | 62.1 | 85.3 |
| | Employment/population ratios | 41.6 | 66.3 | 85.3 | 53.4 | 75.1 | 89.9 | 31.1 | 56.9 | 82.1 |
| Portugal | Unemployment rates | 10.1 | 8.2 | 5.6 | 9.4 | 6.6 | 5.8 | 11.1 | 9.9 | 5.4 |
| | Labour force participation rates | 76.8 | 87.3 | 91.8 | 84.5 | 89.7 | 93.1 | 68.8 | 84.9 | 91.0 |
| | Employment/population ratios | 69.0 | 80.1 | 86.7 | 76.5 | 83.8 | 87.6 | 61.1 | 76.5 | 86.1 |
| Slovak Republic | Unemployment rates | 38.3 | 10.0 | 3.6 | 38.4 | 9.0 | 3.4 | 38.2 | 11.3 | 3.9 |
| | Labour force participation rates | 49.2 | 80.0 | 86.3 | 63.3 | 87.9 | 92.6 | 40.9 | 71.5 | 80.8 |
| | Employment/population ratios | 30.3 | 72.0 | 83.2 | 39.0 | 80.0 | 89.4 | 25.2 | 63.5 | 77.7 |
| Slovenia | Unemployment rates | 7.8 | 5.6 | 3.1 | 7.9 | 5.3 | 2.9 | 7.6 | 5.9 | 3.2 |
| | Labour force participation rates | 58.2 | 79.0 | 91.2 | 67.9 | 82.4 | 93.0 | 50.2 | 74.7 | 90.0 |
| | Employment/population ratios | 53.7 | 74.6 | 88.4 | 62.5 | 78.0 | 90.3 | 46.4 | 70.3 | 87.1 |
| Spain | Unemployment rates | 22.0 | 15.5 | 8.8 | 21.1 | 14.4 | 8.2 | 23.5 | 16.8 | 9.5 |
| | Labour force participation rates | 69.0 | 83.0 | 89.0 | 83.1 | 89.9 | 91.9 | 54.2 | 76.1 | 86.1 |
| | Employment/population ratios | 53.8 | 70.1 | 81.1 | 65.5 | 77.0 | 84.4 | 41.4 | 63.3 | 77.9 |
| Sweden | Unemployment rates | 10.3 | 6.0 | 4.3 | 10.1 | 6.0 | 4.8 | 10.5 | 6.0 | 3.9 |
| | Labour force participation rates | 72.2 | 87.1 | 92.0 | 79.8 | 90.1 | 93.7 | 63.7 | 83.4 | 90.8 |
| | Employment/population ratios | 64.8 | 81.9 | 88.1 | 71.7 | 84.7 | 89.2 | 57.0 | 78.5 | 87.2 |
| Switzerland | Unemployment rates | 7.5 | 3.2 | 2.7 | 7.5 | 3.3 | 2.4 | 7.4 | 3.1 | 3.4 |
| | Labour force participation rates | 72.9 | 84.4 | 92.1 | 83.9 | 91.4 | 95.1 | 66.6 | 78.3 | 87.3 |
| | Employment/population ratios | 67.5 | 81.7 | 89.6 | 77.6 | 88.4 | 92.9 | 61.6 | 75.9 | 84.4 |
| Turkey | Unemployment rates | 11.8 | 12.0 | 8.7 | 12.7 | 9.8 | 7.3 | 8.9 | 20.8 | 11.1 |
| | Labour force participation rates | 50.7 | 66.2 | 80.5 | 80.2 | 86.3 | 87.0 | 23.6 | 34.3 | 71.0 |
| | Employment/population ratios | 44.7 | 58.3 | 73.5 | 70.0 | 77.9 | 80.6 | 21.5 | 27.1 | 63.2 |
| United Kingdom | Unemployment rates | 9.9 | 5.8 | 3.5 | 11.3 | 6.6 | 3.9 | 8.4 | 4.8 | 3.0 |
| | Labour force participation rates | 63.1 | 83.2 | 87.5 | 75.2 | 88.6 | 91.7 | 53.9 | 76.8 | 83.5 |
| | Employment/population ratios | 56.9 | 78.3 | 84.5 | 66.7 | 82.7 | 88.1 | 49.4 | 73.1 | 81.0 |
| United States | Unemployment rates | 15.8 | 9.8 | 4.9 | 16.5 | 11.5 | 5.4 | 14.5 | 7.7 | 4.4 |
| | Labour force participation rates | 62.3 | 76.4 | 84.9 | 73.7 | 82.4 | 90.3 | 49.0 | 70.2 | 80.2 |
| | Employment/population ratios | 52.5 | 68.9 | 80.8 | 61.6 | 72.9 | 85.4 | 41.9 | 64.8 | 76.7 |
| OECD[b] | Unemployment rates | 11.6 | 6.9 | 4.4 | 12.0 | 6.8 | 4.3 | 11.2 | 7.2 | 4.5 |
| | Labour force participation rates | 63.0 | 79.6 | 87.4 | 75.9 | 87.4 | 92.1 | 51.5 | 71.1 | 82.8 |
| | Employment/population ratios | 56.4 | 74.7 | 84.0 | 67.1 | 81.8 | 88.4 | 46.8 | 67.3 | 79.7 |
| EU21 | Unemployment rates | 13.7 | 7.5 | 4.3 | 14.0 | 7.3 | 4.2 | 13.5 | 7.7 | 4.5 |
| | Labour force participation rates | 61.5 | 80.1 | 88.2 | 73.2 | 86.3 | 91.9 | 51.1 | 73.5 | 84.9 |
| | Employment/population ratios | 53.3 | 74.1 | 84.4 | 63.2 | 80.0 | 88.0 | 44.4 | 67.9 | 81.1 |
| Brazil | Unemployment rates | 5.7 | 7.2 | 3.5 | 3.9 | 5.0 | 2.8 | 8.3 | 9.7 | 4.0 |
| | Labour force participation rates | 72.9 | 83.4 | 88.7 | 87.8 | 93.4 | 93.9 | 58.4 | 74.9 | 84.8 |
| | Employment/population ratios | 68.7 | 77.4 | 85.6 | 84.4 | 88.8 | 91.3 | 53.5 | 67.7 | 81.5 |

X: Included in upper secondary education.

*a)* The statistical data for Israel are supplied by and under the responsibility of the relevant Israeli authorities. The use of such data by the OECD is without prejudice to the status of the Golan Heights, East Jerusalem and Israeli settlements in the West Bank under the terms of international law.

*b)* Weighted average for OECD countries shown.

*Source:* OECD (2011), *Education at a Glance – OECD Indicators*, Paris.

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## Table E. **Incidence and composition of part-time employment**[a]

Percentages

| | Part-time employment as a proportion of total employment | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Men | | | | | Women | | | | |
| | 1994 | 2007 | 2008 | 2009 | 2010 | 1994 | 2007 | 2008 | 2009 | 2010 |
| Australia[b] | . . | 12.3 | 12.3 | 13.2 | 13.5 | . . | 37.7 | 37.7 | 38.3 | 38.6 |
| Austria | . . | 5.6 | 6.3 | 6.7 | 7.0 | . . | 31.4 | 31.3 | 32.2 | 33.0 |
| Belgium | 4.4 | 6.4 | 6.3 | 6.6 | 6.7 | 30.0 | 32.2 | 32.5 | 31.8 | 31.7 |
| Canada | 10.8 | 11.1 | 11.4 | 12.0 | 12.1 | 28.8 | 26.3 | 26.6 | 27.1 | 27.4 |
| Chile | . . | 5.2 | 6.0 | 7.1 | 12.0 | . . | 13.9 | 15.2 | 17.0 | 25.7 |
| Czech Republic | 2.1 | 1.7 | 1.7 | 2.1 | 2.3 | 5.6 | 5.9 | 5.8 | 6.2 | 7.0 |
| Denmark | 9.8 | 12.0 | 13.1 | 13.6 | 13.6 | 26.2 | 23.4 | 23.1 | 24.8 | 25.9 |
| Estonia | . . | . . | . . | . . | 5.8 | . . | . . | . . | . . | 11.3 |
| Finland | 6.5 | 8.2 | 8.2 | 8.7 | 9.2 | 11.5 | 15.5 | 15.1 | 15.9 | 16.0 |
| France | 5.3 | 4.9 | 4.9 | 5.1 | 5.7 | 24.5 | 22.8 | 21.9 | 22.5 | 22.3 |
| Germany | 3.0 | 7.8 | 7.9 | 8.0 | 7.9 | 28.0 | 38.9 | 38.3 | 38.1 | 37.9 |
| Greece | 5.0 | 4.1 | 4.2 | 4.5 | 5.0 | 13.1 | 13.3 | 13.6 | 14.4 | 14.4 |
| Hungary | . . | 1.6 | 2.0 | 2.3 | 2.3 | . . | 4.2 | 4.3 | 5.0 | 5.2 |
| Iceland | 9.2 | 8.0 | 8.0 | 10.0 | 11.4 | 37.9 | 25.4 | 23.6 | 25.8 | 25.9 |
| Ireland | 6.4 | 7.3 | 8.1 | 10.7 | 11.9 | 25.5 | 35.0 | 35.6 | 37.4 | 38.2 |
| Israel[c] | . . | 7.1 | 7.3 | 7.4 | 7.0 | . . | 23.8 | 23.1 | 23.0 | 21.8 |
| Italy | 4.2 | 5.5 | 6.1 | 5.9 | 6.3 | 20.6 | 29.8 | 30.6 | 30.5 | 31.1 |
| Japan[d] | . . | 9.2 | 9.9 | 10.5 | 10.4 | . . | 32.6 | 33.2 | 33.8 | 33.9 |
| Korea[d] | 2.9 | 6.3 | 6.5 | 6.9 | 7.2 | 6.8 | 12.5 | 13.2 | 14.2 | 15.5 |
| Luxembourg | 1.9 | 1.4 | 1.7 | 5.4 | 4.6 | 25.7 | 27.6 | 28.9 | 31.1 | 30.4 |
| Mexico | . . | 11.2 | 11.5 | 12.0 | 12.6 | . . | 28.1 | 27.6 | 27.8 | 28.6 |
| Netherlands | 11.3 | 16.1 | 16.2 | 17.0 | 17.2 | 54.5 | 59.9 | 59.8 | 59.9 | 60.6 |
| New Zealand | 9.1 | 11.1 | 11.3 | 11.9 | 11.5 | 36.0 | 34.6 | 34.6 | 34.5 | 33.8 |
| Norway | 7.7 | 10.5 | 10.9 | 11.3 | 11.4 | 37.7 | 31.6 | 30.8 | 30.4 | 29.8 |
| Poland | . . | 6.0 | 5.3 | 5.0 | 5.2 | . . | 15.0 | 14.1 | 13.1 | 13.0 |
| Portugal | 4.9 | 6.2 | 5.8 | 5.9 | 6.1 | 15.2 | 14.2 | 14.3 | 13.8 | 13.0 |
| Slovak Republic | 1.3 | 1.2 | 1.5 | 2.2 | 2.8 | 4.4 | 4.4 | 4.1 | 4.1 | 5.0 |
| Slovenia | . . | 6.3 | 5.7 | 6.6 | 7.2 | . . | 9.7 | 9.6 | 10.4 | 12.1 |
| Spain | 2.4 | 3.6 | 3.8 | 4.4 | 4.9 | 14.3 | 20.7 | 21.0 | 21.4 | 21.7 |
| Sweden | 7.1 | 9.5 | 9.6 | 10.0 | 9.7 | 24.9 | 19.7 | 19.6 | 19.8 | 18.8 |
| Switzerland[b] | 6.8 | 8.7 | 9.0 | 9.2 | 9.6 | 44.9 | 45.6 | 45.9 | 46.7 | 46.4 |
| Turkey | 4.9 | 4.4 | 4.8 | 6.4 | 6.7 | 18.5 | 18.6 | 19.0 | 23.5 | 23.4 |
| United Kingdom | 7.0 | 9.8 | 10.3 | 10.9 | 11.6 | 41.2 | 38.3 | 37.8 | 38.8 | 39.4 |
| United States[e] | 8.5 | 7.6 | 8.0 | 9.2 | 8.8 | 20.4 | 17.9 | 17.8 | 19.2 | 18.4 |
| OECD (weighted average) | 5.1 | 7.8 | 8.1 | 8.8 | 8.9 | 19.7 | 25.3 | 25.3 | 26.1 | 26.3 |
| Brazil | . . | 10.3 | 10.2 | 10.1 | . . | . . | 29.1 | 28.7 | 28.1 | . . |
| Russian Federation | 2.6 | 3.6 | 3.4 | 3.3 | 3.0 | 7.1 | 6.7 | 6.5 | 6.3 | 5.6 |

## Table E. **Incidence and composition of part-time employment**[a] *(cont.)*

Percentages

| | Part-time employment as a proportion of total employment | | | | | Women's share in part-time employment | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 1994 | 2007 | 2008 | 2009 | 2010 | 1994 | 2007 | 2008 | 2009 | 2010 |
| Australia[b] | . . | 23.8 | 23.8 | 24.7 | 24.9 | . . | 71.5 | 71.7 | 70.8 | 70.4 |
| Austria | . . | 17.3 | 17.7 | 18.5 | 19.0 | . . | 82.1 | 80.7 | 80.6 | 80.3 |
| Belgium | 14.6 | 18.1 | 18.3 | 18.2 | 18.3 | 81.8 | 80.7 | 81.3 | 80.6 | 80.4 |
| Canada | 18.9 | 18.3 | 18.5 | 19.3 | 19.4 | 68.9 | 67.9 | 67.7 | 67.4 | 67.3 |
| Chile | | 8.0 | 9.1 | 10.5 | 17.4 | . . | 56.9 | 56.4 | 56.0 | 58.1 |
| Czech Republic | 3.6 | 3.5 | 3.5 | 3.9 | 4.3 | 67.7 | 72.3 | 72.1 | 68.7 | 69.2 |
| Denmark | 17.3 | 17.3 | 17.8 | 18.9 | 19.5 | 69.4 | 63.1 | 60.7 | 62.3 | 63.2 |
| Estonia | . . | . . | . . | . . | 8.7 | . . | . . | . . | . . | 67.4 |
| Finland | 8.9 | 11.7 | 11.5 | 12.2 | 12.5 | 62.8 | 63.7 | 63.0 | 63.6 | 62.2 |
| France | 13.8 | 13.3 | 12.9 | 13.3 | 13.6 | 78.6 | 80.5 | 79.8 | 79.8 | 78.1 |
| Germany | 13.5 | 22.0 | 21.8 | 21.9 | 21.7 | 87.1 | 80.8 | 80.4 | 80.4 | 80.4 |
| Greece | 7.8 | 7.7 | 7.9 | 8.4 | 8.8 | 59.1 | 67.6 | 67.4 | 67.7 | 65.9 |
| Hungary | . . | 2.8 | 3.1 | 3.6 | 3.6 | . . | 68.6 | 64.7 | 65.0 | 66.4 |
| Iceland | 22.6 | 15.9 | 15.1 | 17.5 | 18.4 | 78.3 | 72.7 | 71.2 | 70.0 | 67.6 |
| Ireland | 13.5 | 19.8 | 20.8 | 23.7 | 24.8 | 70.3 | 79.8 | 79.0 | 76.8 | 75.6 |
| Israel[c] | . . | 14.6 | 14.5 | 14.6 | 13.8 | . . | 73.2 | 72.3 | 72.6 | 72.8 |
| Italy | 10.0 | 15.2 | 15.9 | 15.8 | 16.3 | 72.6 | 78.1 | 77.0 | 77.6 | 76.9 |
| Japan[d] | . . | 18.9 | 19.6 | 20.3 | 20.3 | | 71.5 | 70.4 | 69.9 | 70.3 |
| Korea[d] | 4.5 | 8.9 | 9.3 | 9.9 | 10.7 | 61.3 | 58.9 | 59.0 | 59.3 | 60.3 |
| Luxembourg | 10.7 | 13.1 | 13.4 | 16.4 | 15.8 | 88.6 | 93.9 | 92.6 | 81.2 | 83.7 |
| Mexico | . . | 17.6 | 17.6 | 17.9 | 18.7 | . . | 60.1 | 59.2 | 58.2 | 58.0 |
| Netherlands | 28.9 | 35.9 | 36.1 | 36.7 | 37.1 | 76.8 | 75.5 | 75.6 | 75.0 | 75.0 |
| New Zealand | 21.0 | 22.0 | 22.2 | 22.5 | 21.9 | 76.0 | 73.0 | 72.8 | 71.9 | 72.0 |
| Norway | 21.5 | 20.4 | 20.3 | 20.4 | 20.1 | 80.6 | 72.9 | 71.7 | 70.8 | 70.3 |
| Poland | . . | 10.1 | 9.3 | 8.7 | 8.7 | . . | 67.0 | 68.1 | 68.4 | 67.5 |
| Portugal | 9.5 | 9.9 | 9.7 | 9.6 | 9.3 | 71.3 | 66.4 | 68.1 | 67.7 | 65.6 |
| Slovak Republic | 2.7 | 2.6 | 2.7 | 3.0 | 3.7 | 72.0 | 74.0 | 67.1 | 59.0 | 58.6 |
| Slovenia | . . | 7.8 | 7.5 | 8.3 | 9.4 | . . | 56.2 | 58.3 | 57.3 | 58.5 |
| Spain | 6.4 | 10.7 | 11.1 | 11.9 | 12.4 | 75.5 | 80.4 | 80.6 | 79.3 | 78.2 |
| Sweden | 15.8 | 14.4 | 14.4 | 14.6 | 14.0 | 76.8 | 65.0 | 64.6 | 64.2 | 63.3 |
| Switzerland[b] | 23.2 | 25.4 | 25.9 | 26.5 | 26.3 | 83.3 | 81.3 | 81.2 | 81.2 | 80.1 |
| Turkey | 8.8 | 8.1 | 8.5 | 11.1 | 11.5 | 61.0 | 59.6 | 58.7 | 58.4 | 58.0 |
| United Kingdom | 22.4 | 22.9 | 23.0 | 23.9 | 24.6 | 82.7 | 77.0 | 76.1 | 75.8 | 74.9 |
| United States[e] | 14.2 | 12.6 | 12.8 | 14.1 | 13.5 | 68.4 | 68.4 | 67.5 | 66.5 | 66.9 |
| OECD (weighted average) | 11.3 | 15.4 | 15.6 | 16.4 | 16.6 | 74.1 | 71.6 | 70.9 | 70.3 | 70.0 |
| Brazil | . . | 18.3 | 18.1 | 17.8 | . . | . . | 67.7 | 67.9 | 67.5 | . . |
| Russian Federation | 4.7 | 5.1 | 5.0 | 4.8 | 4.3 | 71.5 | 64.6 | 64.7 | 65.1 | 64.2 |

*a)* Part-time employment refers to persons who usually work less than 30 hours per week in their main job.
*b)* Part-time employment based on hours worked at all jobs.
*c)* The statistical data for Israel are supplied by and under the responsibility of the relevant Israeli authorities. The use of such data by the OECD is without prejudice to the status of the Golan Heights, East Jerusalem and Israeli settlements in the West Bank under the terms of international law.
*d)* Data are based on actual hours worked.
*e)* Data are for wage and salary workers only.

*Source and definition: OECD Online Employment Database*: *www.oecd.org/els/employment/database*. See OECD (1997), "Definition of Part-Time Work for the Purpose of International Comparisons", *Labour Market and Social Policy Occasional Paper,* No. 22, available on Internet (*www.oecd.org/els/workingpapers*).

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## Table F. **Incidence of temporary employment**[a]

Percentages

| | Temporary employees as a proportion of total employees | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Youth (15-24) | | | | | Prime age (25-54) | | | | |
| | 1994 | 2007 | 2008 | 2009 | 2010 | 1994 | 2007 | 2008 | 2009 | 2010 |
| Austria[b] | 18.8 | 34.9 | 34.9 | 35.6 | 37.0 | 3.3 | 4.3 | 4.5 | 4.5 | 4.9 |
| Belgium | 18.0 | 31.6 | 29.5 | 33.2 | 30.4 | 3.8 | 6.6 | 6.4 | 6.2 | 6.5 |
| Canada | . . | 28.8 | 27.2 | 27.8 | 30.0 | . . | 9.2 | 8.8 | 9.1 | 9.9 |
| Chile | . . | . . | . . | . . | 47.5 | . . | . . | . . | . . | 28.5 |
| Czech Republic | 14.7 | 17.4 | 15.6 | 18.8 | 22.5 | 2.8 | 5.6 | 5.1 | 5.3 | 6.2 |
| Denmark | 31.1 | 22.2 | 23.2 | 23.6 | 21.6 | 7.8 | 6.5 | 5.7 | 6.5 | 6.6 |
| Estonia | . . | 6.6 | 6.0 | 8.3 | 11.6 | . . | 1.6 | 2.2 | 2.0 | 3.1 |
| Finland | . . | 42.4 | 39.6 | 39.0 | 43.0 | . . | 13.2 | 12.5 | 12.3 | 13.0 |
| France | 40.7 | 53.9 | 52.9 | 52.7 | 55.2 | 7.9 | 11.2 | 11.1 | 10.5 | 11.0 |
| Germany | 38.0 | 57.5 | 56.6 | 57.2 | 57.2 | 6.2 | 9.1 | 9.4 | 9.3 | 9.8 |
| Greece | 22.0 | 27.0 | 29.2 | 28.4 | 30.4 | 8.6 | 9.9 | 10.5 | 11.3 | 11.7 |
| Hungary | . . | 19.1 | 20.0 | 21.4 | 35.0 | . . | 6.5 | 7.1 | 7.8 | 28.5 |
| Iceland | 25.9 | 32.0 | 27.8 | 26.8 | 31.4 | 10.7 | 8.9 | 6.0 | 7.1 | 9.3 |
| Ireland | 17.9 | 20.5 | 22.0 | 25.0 | 30.4 | 7.3 | 5.4 | 5.9 | 6.2 | 6.8 |
| Italy | 16.7 | 42.3 | 43.3 | 44.4 | 46.7 | 6.0 | 11.4 | 11.5 | 10.7 | 11.1 |
| Japan | 15.2 | 26.4 | 26.0 | 25.5 | 26.6 | 8.3 | 10.9 | 10.6 | 10.8 | 10.6 |
| Korea | . . | 28.8 | 27.9 | 29.4 | 28.2 | . . | 19.9 | 17.8 | 17.4 | 15.7 |
| Luxembourg | 10.7 | 34.1 | 39.3 | 39.4 | 36.5 | 1.7 | 5.3 | 4.1 | 4.9 | 5.6 |
| Netherlands | 26.5 | 45.1 | 45.2 | 46.5 | 48.3 | 7.3 | 12.9 | 13.0 | 13.0 | 13.2 |
| Norway | . . | 27.6 | 25.9 | 25.3 | 26.8 | . . | 7.4 | 6.7 | 5.9 | 6.0 |
| Poland | . . | 65.7 | 62.8 | 62.0 | 64.6 | . . | 24.0 | 22.7 | 22.5 | 23.5 |
| Portugal | 24.2 | 52.6 | 54.2 | 53.5 | 55.6 | 6.9 | 19.8 | 20.4 | 19.9 | 21.4 |
| Slovak Republic | 4.4 | 13.7 | 12.6 | 12.5 | 17.1 | 1.5 | 3.7 | 3.6 | 3.4 | 4.6 |
| Slovenia | . . | 68.3 | 69.8 | 66.6 | 69.6 | . . | 12.9 | 11.6 | 11.3 | 12.5 |
| Spain | 74.4 | 62.8 | 59.4 | 55.9 | 58.6 | 28.4 | 29.5 | 27.5 | 24.2 | 23.9 |
| Sweden | . . | 57.2 | 53.7 | 53.4 | 57.1 | . . | 13.0 | 11.6 | 11.0 | 11.0 |
| Switzerland | 40.7 | 50.3 | 50.5 | 53.1 | 52.7 | 7.2 | 6.3 | 6.6 | 6.3 | 6.4 |
| Turkey | 27.1 | 12.4 | 12.5 | 15.0 | 17.2 | 16.8 | 11.3 | 10.5 | 9.5 | 9.9 |
| United Kingdom | 11.8 | 13.3 | 12.0 | 11.9 | 13.7 | 5.3 | 4.2 | 3.9 | 4.3 | 4.6 |
| United States[b] | 9.9 | . . | . . | . . | . . | 4.1 | . . | . . | . . | . . |
| OECD (weighted average) | 21.3 | 26.1 | 25.6 | 25.6 | 26.4 | 8.1 | 10.3 | 10.0 | 9.7 | 10.2 |
| Russian Federation | . . | 23.4 | 24.5 | . . | . . | . . | 11.2 | 12.7 | . . | . . |

## Table F. **Incidence of temporary employment**[a] *(cont.)*

Percentages

| | Temporary employees as a proportion of total employees | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Women | | | | | Total | | | | |
| | 1994 | 2007 | 2008 | 2009 | 2010 | 1994 | 2007 | 2008 | 2009 | 2010 |
| Austria[b] | 6.3 | 9.0 | 9.1 | 9.0 | 8.9 | 6.0 | 8.9 | 9.0 | 9.1 | 9.3 |
| Belgium | 7.5 | 10.8 | 10.2 | 10.2 | 9.6 | 5.1 | 8.7 | 8.3 | 8.2 | 8.1 |
| Canada | . . | 13.6 | 12.7 | 12.9 | 13.7 | . . | 13.0 | 12.3 | 12.5 | 13.4 |
| Chile | . . | . . | . . | . . | 29.4 | . . | . . | . . | . . | 30.8 |
| Czech Republic | 7.8 | 10.2 | 9.8 | 10.2 | 10.6 | 8.4 | 8.6 | 8.0 | 8.5 | 8.9 |
| Denmark | 12.9 | 10.0 | 9.2 | 9.6 | 8.8 | 12.0 | 8.7 | 8.4 | 8.9 | 8.6 |
| Estonia | . . | 1.6 | 1.4 | 2.1 | 2.8 | . . | 2.1 | 2.4 | 2.5 | 3.7 |
| Finland | . . | 19.4 | 18.8 | 18.4 | 18.5 | . . | 15.9 | 15.1 | 14.6 | 15.5 |
| France | 12.4 | 16.3 | 16.3 | 15.9 | 16.0 | 11.0 | 15.2 | 15.0 | 14.5 | 15.1 |
| Germany | 11.0 | 14.5 | 14.6 | 14.6 | 14.9 | 10.4 | 14.6 | 14.7 | 14.5 | 14.7 |
| Greece | 10.5 | 13.1 | 13.7 | 14.1 | 14.4 | 10.3 | 10.9 | 11.5 | 12.1 | 12.4 |
| Hungary | . . | 6.8 | 7.0 | 7.8 | 15.4 | . . | 7.3 | 7.9 | 8.5 | 29.0 |
| Iceland | 11.8 | 13.6 | 9.9 | 10.5 | 12.8 | 12.7 | 12.3 | 9.5 | 9.7 | 12.4 |
| Ireland | 11.4 | 9.5 | 9.8 | 9.6 | 10.0 | 9.5 | 8.1 | 8.5 | 8.5 | 9.3 |
| Italy | 9.3 | 15.9 | 15.6 | 14.6 | 14.5 | 7.3 | 13.2 | 13.3 | 12.5 | 12.8 |
| Japan | 18.1 | 21.7 | 21.0 | 21.3 | 20.9 | 10.3 | 13.9 | 13.6 | 13.7 | 13.8 |
| Korea | . . | 24.4 | 23.6 | 26.2 | 23.5 | . . | 22.3 | 20.4 | 21.3 | 19.2 |
| Luxembourg | 4.4 | 7.6 | 6.6 | 8.4 | 8.3 | 2.9 | 6.8 | 6.2 | 7.2 | 7.1 |
| Netherlands | 15.0 | 19.7 | 20.0 | 20.3 | 19.9 | 10.9 | 18.1 | 18.2 | 18.3 | 18.5 |
| Norway | . . | 11.7 | 11.1 | 9.8 | 9.8 | . . | 9.6 | 9.1 | 8.1 | 8.4 |
| Poland | . . | 27.9 | 27.7 | 26.6 | 27.1 | . . | 28.2 | 27.0 | 26.5 | 27.3 |
| Portugal | 10.5 | 23.0 | 24.2 | 23.2 | 23.6 | 9.4 | 22.4 | 22.8 | 22.0 | 23.0 |
| Slovak Republic | 2.6 | 5.3 | 4.8 | 4.1 | 5.9 | 2.9 | 5.1 | 4.7 | 4.4 | 5.8 |
| Slovenia | . . | 20.8 | 19.7 | 17.8 | 19.4 | . . | 18.5 | 17.4 | 16.4 | 17.3 |
| Spain | 37.9 | 33.1 | 31.4 | 27.3 | 26.1 | 33.7 | 31.7 | 29.3 | 25.4 | 24.9 |
| Sweden | . . | 19.9 | 18.7 | 17.6 | 17.6 | . . | 17.5 | 16.1 | 15.3 | 15.8 |
| Switzerland | 13.4 | 13.2 | 13.2 | 13.5 | 13.4 | 12.9 | 13.0 | 13.3 | 13.4 | 13.3 |
| Turkey | 18.5 | 11.4 | 11.6 | 11.5 | 12.5 | 20.0 | 11.9 | 11.2 | 10.7 | 11.5 |
| United Kingdom | 7.5 | 6.5 | 6.0 | 6.1 | 6.5 | 6.5 | 5.9 | 5.4 | 5.7 | 6.1 |
| United States[b] | 5.4 | . . | . . | . . | . . | 5.1 | . . | . . | . . | . . |
| OECD (weighted average) | 11.2 | 13.2 | 12.9 | 12.8 | 12.9 | 10.4 | 12.4 | 12.1 | 11.9 | 12.4 |
| Russian Federation | . . | 10.4 | 11.5 | . . | . . | . . | 12.4 | 14.1 | . . | . . |

*a)* Temporary employees are wage and salary workers whose job has a pre-determined termination date as opposed to permanent employees whose job is of unlimited duration. National definitions broadly conform to this generic definition, but may vary depending on national circumstances. Country-specific details can be found under the url mentioned in the source below.

*b)* Data refer to 1995 instead of 1994.

*Source: OECD Online Employment Database: www.oecd.org/els/employment/database.*

StatLink http://dx.doi.org/10.1787/888932480503

## Table G. **Average annual hours actually worked per person in employment**[a]

Total employment

| | 1979 | 1983 | 1994 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 |
|---|---|---|---|---|---|---|---|---|---|
| Australia | 1 833 | 1 788 | 1 795 | 1 727 | 1 719 | 1 712 | 1 717 | 1 690 | 1 686 |
| Austria[b] | . . | . . | 1 654 | 1 652 | 1 642 | 1 632 | 1 620 | 1 581 | 1 587 |
| Belgium | . . | 1 670 | 1 554 | 1 565 | 1 566 | 1 560 | 1 568 | 1 550 | 1 551 |
| Canada | 1 841 | 1 779 | 1 774 | 1 739 | 1 738 | 1 738 | 1 728 | 1 700 | 1 702 |
| Chile | . . | . . | . . | 2 157 | 2 165 | 2 128 | 2 095 | 2 074 | 2 068 |
| Czech Republic | . . | . . | 2 043 | 2 002 | 1 997 | 1 985 | 1 992 | 1 942 | 1 947 |
| Denmark[c] | 1 636 | 1 638 | 1 548 | 1 579 | 1 586 | 1 570 | 1 570 | 1 559 | 1 542 |
| Estonia | . . | . . | . . | 2 010 | 2 001 | 1 999 | 1 969 | 1 831 | 1 879 |
| Finland | 1 869 | 1 823 | 1 775 | 1 716 | 1 709 | 1 706 | 1 704 | 1 673 | 1 697 |
| France[c] | 1 868 | 1 749 | 1 675 | 1 557 | 1 536 | 1 556 | 1 560 | 1 554 | 1 562 |
| Germany | . . | . . | 1 547 | 1 434 | 1 430 | 1 430 | 1 426 | 1 390 | 1 419 |
| Western Germany | 1 770 | 1 705 | 1 515 | 1 419 | 1 416 | 1 420 | 1 417 | 1 379 | 1 409 |
| Greece | . . | 2 194 | 2 133 | 2 086 | 2 148 | 2 115 | 2 116 | 2 034 | 2 109 |
| Hungary | . . | 2 112 | 2 032 | 1 993 | 1 989 | 1 985 | 1 986 | 1 968 | 1 961 |
| Iceland[d] | . . | . . | 1 813 | 1 794 | 1 795 | 1 807 | 1 807 | 1 716 | 1 697 |
| Ireland | . . | 1 981 | 1 883 | 1 654 | 1 645 | 1 634 | 1 601 | 1 549 | 1 664 |
| Israel[e] | . . | . . | . . | 1 989 | 1 887 | 1 921 | 1 898 | 1 889 | . . |
| Italy | . . | 1 876 | 1 857 | 1 819 | 1 815 | 1 816 | 1 803 | 1 772 | 1 778 |
| Japan | 2 126 | 2 095 | 1 898 | 1 775 | 1 784 | 1 785 | 1 771 | 1 714 | 1 733 |
| Korea[c] | . . | 2 911 | 2 640 | 2 351 | 2 346 | 2 306 | 2 246 | 2 232 | 2 193 |
| Luxembourg | . . | 1 778 | 1 709 | 1 570 | 1 580 | 1 515 | 1 555 | 1 601 | 1 616 |
| Mexico | . . | . . | 1 839 | 1 909 | 1 883 | 1 871 | 1 893 | 1 857 | 1 866 |
| Netherlands | 1 556 | 1 524 | 1 445 | 1 393 | 1 392 | 1 388 | 1 379 | 1 378 | 1 377 |
| New Zealand | . . | . . | 1 848 | 1 811 | 1 788 | 1 766 | 1 750 | 1 738 | 1 758 |
| Norway | 1 580 | 1 553 | 1 505 | 1 420 | 1 414 | 1 419 | 1 423 | 1 407 | 1 414 |
| Poland | . . | . . | . . | 1 994 | 1 985 | 1 976 | 1 969 | 1 948 | 1 939 |
| Portugal | . . | . . | 1 838 | 1 752 | 1 757 | 1 727 | 1 745 | 1 719 | 1 714 |
| Slovak Republic[b] | . . | . . | 1 880 | 1 785 | 1 779 | 1 793 | 1 790 | 1 738 | 1 786 |
| Slovenia[c] | . . | . . | . . | 1 698 | 1 669 | 1 656 | 1 687 | 1 684 | 1 684 |
| Spain | 1 930 | 1 825 | 1 733 | 1 668 | 1 656 | 1 636 | 1 647 | 1 653 | 1 663 |
| Sweden | 1 530 | 1 532 | 1 635 | 1 605 | 1 599 | 1 618 | 1 617 | 1 602 | 1 624 |
| Switzerland[f] | . . | . . | 1 725 | 1 667 | 1 652 | 1 643 | 1 640 | . . | . . |
| Turkey[d] | 1 964 | 1 935 | 1 886 | 1 936 | 1 944 | 1 911 | 1 900 | 1 881 | 1 877 |
| United Kingdom | 1 813 | 1 711 | 1 731 | 1 673 | 1 668 | 1 670 | 1 665 | 1 643 | 1 647 |
| United States | 1 829 | 1 820 | 1 837 | 1 799 | 1 800 | 1 798 | 1 792 | 1 768 | 1 778 |
| OECD (weighted average) | 1 922 | 1 895 | 1 843 | 1 782 | 1 779 | 1 773 | 1 767 | 1 741 | 1 749 |
| Russian Federation | . . | . . | 1 895 | 1 990 | 1 999 | 2 000 | 1 997 | 1 973 | 1 976 |

## Table G. **Average annual hours actually worked per person in employment**[a] *(cont.)*

Dependent employment

| | 1979 | 1983 | 1994 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 |
|---|---|---|---|---|---|---|---|---|---|
| Austria | . . | . . | . . | 1 520 | 1 510 | 1 529 | 1 525 | 1 499 | 1 474 |
| Belgium | . . | 1 563 | 1 510 | 1 450 | 1 454 | 1 454 | 1 469 | 1 453 | 1 446 |
| Canada | 1 807 | 1 754 | 1 758 | 1 735 | 1 734 | 1 734 | 1 727 | 1 699 | 1 704 |
| Chile | . . | . . | . . | 2 227 | 2 217 | 2 168 | 2 143 | 2 140 | 2 122 |
| Czech Republic | . . | . . | 1 974 | 1 923 | 1 922 | 1 914 | 1 923 | 1 879 | 1 883 |
| Denmark[c] | 1 600 | 1 614 | 1 524 | 1 548 | 1 556 | 1 545 | 1 550 | 1 538 | 1 520 |
| Estonia | . . | . . | . . | 2 078 | 2 060 | 2 057 | 2 049 | 1 970 | 2 004 |
| Finland | . . | . . | 1 670 | 1 605 | 1 600 | 1 594 | 1 610 | 1 555 | 1 584 |
| France[c] | 1 710 | 1 608 | 1 563 | 1 466 | 1 447 | 1 468 | 1 475 | 1 469 | 1 469 |
| Germany | . . | . . | 1 474 | 1 354 | 1 352 | 1 354 | 1 351 | 1 309 | 1 340 |
| Western Germany | 1 689 | 1 621 | 1 435 | 1 338 | 1 337 | 1 343 | 1 340 | 1 297 | 1 329 |
| Greece | . . | 1 760 | 1 792 | 1 811 | 1 796 | 1 782 | 1 803 | 1 777 | 1 754 |
| Hungary[g] | . . | 1 829 | 1 759 | 1 803 | 1 799 | 1 778 | 1 786 | 1 766 | 1 818 |
| Iceland[d] | . . | . . | 1 774 | 1 751 | 1 735 | 1 725 | 1 739 | 1 653 | 1 635 |
| Ireland | . . | 1 702 | 1 652 | 1 562 | 1 564 | 1 549 | 1 522 | 1 470 | 1 588 |
| Japan[h] | . . | . . | 1 910 | 1 802 | 1 811 | 1 808 | 1 792 | 1 733 | 1 754 |
| Korea[h] | . . | . . | . . | . . | . . | 2 090 | 2 057 | 2 074 | 2 111 |
| Luxembourg | . . | 1 637 | 1 598 | 1 524 | 1 555 | 1 513 | 1 544 | 1 559 | 1 594 |
| Mexico[i] | . . | . . | 1 948 | 1 970 | 1 944 | 1 933 | 1 960 | 1 915 | 1 940 |
| Netherlands | 1 512 | 1 491 | 1 407 | 1 345 | 1 343 | 1 340 | 1 333 | 1 326 | 1 323 |
| New Zealand | . . | . . | 1 770 | 1 782 | 1 761 | 1 748 | 1 729 | 1 718 | 1 742 |
| Poland | . . | . . | . . | 1 970 | 1 958 | 1 953 | 1 940 | 1 914 | 1 911 |
| Portugal | . . | . . | 1 690 | 1 680 | 1 694 | 1 674 | 1 686 | 1 664 | 1 659 |
| Slovak Republic | . . | . . | . . | 1 757 | 1 775 | 1 775 | 1 775 | 1 728 | 1 729 |
| Slovenia | . . | . . | . . | 1 689 | 1 685 | 1 673 | 1 653 | 1 592 | 1 611 |
| Spain | 1 844 | 1 750 | 1 665 | 1 634 | 1 622 | 1 603 | 1 613 | 1 616 | 1 623 |
| United Kingdom | 1 765 | 1 667 | 1 708 | 1 666 | 1 648 | 1 655 | 1 634 | 1 630 | 1 620 |
| United States | 1 828 | 1 827 | 1 839 | 1 801 | 1 802 | 1 799 | 1 797 | 1 776 | 1 786 |
| Russian Federation | . . | . . | 1 891 | 2 014 | 2 023 | 2 021 | 2 016 | 1 994 | 1 996 |

*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 reported for 1994 refer to 1995.
*c)* Data for the year 2010 are provisional estimates.
*d)* Data for the years 2005-10 are provisional estimates.
*e)* The statistical data for Israel are supplied by and under the responsibility of the relevant Israeli authorities. The use of such data by the OECD is without prejudice to the status of the Golan Heights, East Jerusalem and Israeli settlements in the West Bank under the terms of international law.
*f)* Secretariat estimates on hours per worker are obtained by dividing total hours worked from the Federal Statistical Office (FSO) by average employment from the FSO website, referring both to National Accounts domestic concept.
*g)* Data refer to establishments in manufacturing with five or more employees.
*h)* Data refer to establishments with five or more regular employees.
*i)* Data for 1994 are estimates.

*Source:*

The series on annual hours actually worked per person in total employment presented in this table for all 34 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*). 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 moments of the year.

Hours actually worked per person in employment are according to National Accounts concepts for 17 countries: Austria, Canada, Denmark, Finland, France, Germany, Greece, Hungary, Italy, Korea, the Netherlands, Norway, the Slovak Republic, Spain, Sweden, Switzerland and Turkey. Secretariat estimates for Belgium, Ireland, Luxembourg and Portugal for annual hours worked are 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 27 countries. The table includes labour-force-survey-based estimates for the Russian Federation.

Country specific notes can be found at: *www.oecd.org/els/employment/outlook* and data at the *OECD Online Employment Database*: *www.oecd.org/els/employment/database*.

StatLink http://dx.doi.org/10.1787/888932480522

## Table H. **Incidence of long-term unemployment**[a, b]

As a percentage of total unemployment

| | 1994 | | 2007 | | 2008 | | 2009 | | 2010 | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 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 | 27.1 | 15.4 | 26.7 | 14.9 | 29.9 | 14.7 | 33.1 | 18.5 |
| Austria | 31.8 | 18.4 | 44.2 | 26.8 | 42.3 | 24.2 | 39.4 | 21.3 | 43.1 | 25.2 |
| Belgium | 75.2 | 58.3 | 65.0 | 50.4 | 61.3 | 47.6 | 60.2 | 44.2 | 66.1 | 48.8 |
| Canada | 32.7 | 17.9 | 14.8 | 7.4 | 14.6 | 7.1 | 17.9 | 7.8 | 23.2 | 12.0 |
| Czech Republic | 41.9 | 22.3 | 71.6 | 53.4 | 69.4 | 50.2 | 54.9 | 31.2 | 66.2 | 43.3 |
| Denmark | 54.0 | 32.1 | 28.0 | 16.2 | 22.1 | 13.1 | 25.4 | 9.1 | 37.8 | 19.1 |
| Estonia | 66.5 | 42.5 | 58.3 | 49.5 | 47.0 | 30.9 | 48.1 | 27.4 | 67.2 | 45.4 |
| Finland | . . | . . | 37.9 | 23.0 | 31.5 | 18.2 | 31.7 | 16.6 | 39.5 | 23.6 |
| France | 58.9 | 37.5 | 57.9 | 40.2 | 55.0 | 37.5 | 55.7 | 35.2 | 59.8 | 40.1 |
| Germany | 63.8 | 44.3 | 69.8 | 56.6 | 66.6 | 52.6 | 61.8 | 45.5 | 63.5 | 47.4 |
| Greece | 72.8 | 50.5 | 65.9 | 50.0 | 63.4 | 47.5 | 58.8 | 40.8 | 62.8 | 45.0 |
| Hungary | 62.6 | 41.3 | 69.0 | 47.5 | 69.1 | 47.6 | 66.7 | 42.6 | 73.4 | 50.6 |
| Iceland[c, d] | (32.2) | (15.1) | (11.1) | (8.0) | (7.4) | (4.1) | (24.5) | (6.9) | (42.5) | (21.3) |
| Ireland | 80.7 | 64.3 | 47.1 | 29.5 | 45.6 | 27.1 | 52.9 | 29.0 | 69.4 | 49.0 |
| Israel[e] | . . | . . | 38.8 | 24.9 | 36.0 | 22.7 | 35.1 | 20.3 | 36.9 | 22.4 |
| Italy | 79.5 | 61.5 | 60.8 | 47.3 | 59.8 | 45.7 | 61.5 | 44.4 | 64.6 | 48.5 |
| Japan | 36.1 | 17.5 | 48.2 | 32.0 | 46.9 | 33.3 | 46.3 | 28.5 | 55.6 | 37.6 |
| Korea | 20.7 | 5.4 | 11.7 | 0.6 | 9.7 | 2.7 | 9.0 | 0.5 | 7.0 | 0.3 |
| Luxembourg[d] | (54.7) | (29.6) | (49.4) | (28.7) | (49.0) | (32.4) | (48.7) | (23.1) | (45.2) | (29.3) |
| Mexico | . . | . . | 5.4 | 2.7 | 4.2 | 1.7 | 6.4 | 1.9 | 7.7 | 2.4 |
| Netherlands | 77.5 | 49.4 | 55.8 | 39.4 | 49.7 | 34.4 | 43.4 | 24.8 | 48.5 | 27.6 |
| New Zealand | 50.7 | 32.9 | 17.1 | 6.1 | 14.8 | 4.4 | 23.2 | 6.3 | 28.1 | 9.0 |
| Norway[c] | 43.7 | 28.8 | 25.8 | 8.8 | 18.4 | 6.0 | 25.1 | 7.7 | 31.3 | 9.5 |
| Poland | 65.2 | 40.4 | 64.3 | 45.9 | 46.7 | 29.0 | 44.7 | 25.2 | 46.5 | 25.5 |
| Portugal | 57.2 | 43.4 | 65.0 | 47.1 | 63.7 | 47.4 | 63.7 | 44.1 | 70.5 | 52.3 |
| Slovak Republic | 63.9 | 42.6 | 82.3 | 70.8 | 78.6 | 66.0 | 66.8 | 50.9 | 77.5 | 59.3 |
| Slovenia | . . | . . | 61.5 | 45.7 | 57.4 | 42.2 | 50.6 | 30.1 | 63.4 | 43.3 |
| Spain[c] | 73.4 | 56.2 | 42.6 | 27.6 | 40.2 | 23.8 | 53.2 | 30.2 | 65.4 | 45.1 |
| Sweden[c] | 46.7 | 25.7 | 27.2 | 13.0 | 25.9 | 12.4 | 29.4 | 12.8 | 34.0 | 16.6 |
| Switzerland | 50.1 | 29.0 | 56.6 | 40.8 | 49.3 | 34.3 | 48.0 | 30.1 | 55.4 | 34.3 |
| Turkey | 68.9 | 45.9 | 46.3 | 30.3 | 42.6 | 26.9 | 44.9 | 25.3 | 45.7 | 28.6 |
| United Kingdom[c] | 63.4 | 45.4 | 39.9 | 23.7 | 40.2 | 24.1 | 44.7 | 24.5 | 52.6 | 32.6 |
| United States[c] | 20.3 | 12.2 | 17.6 | 10.0 | 19.7 | 10.6 | 31.5 | 16.3 | 43.3 | 29.0 |
| OECD (weighted average) | 52.4 | 35.5 | 41.9 | 29.0 | 38.2 | 25.5 | 41.0 | 24.2 | 48.5 | 32.4 |
| Russian Federation | . . | . . | 58.7 | 40.6 | 52.6 | 35.2 | . . | . . | . . | . . |

## Table H. **Incidence of long-term unemployment**[a, b] *(cont.)*

As a percentage of male unemployment

| | 1994 | | 2007 | | 2008 | | 2009 | | 2010 | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 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 | 27.6 | 16.3 | 27.7 | 15.8 | 31.0 | 15.0 | 35.0 | 20.3 |
| Austria | 30.8 | 18.4 | 43.9 | 26.6 | 43.5 | 25.8 | 39.7 | 21.5 | 44.9 | 27.8 |
| Belgium | 72.4 | 53.4 | 64.4 | 49.3 | 61.8 | 47.0 | 59.9 | 43.5 | 67.0 | 49.6 |
| Canada | 34.5 | 19.5 | 15.6 | 8.4 | 15.8 | 7.9 | 18.5 | 8.1 | 24.3 | 12.7 |
| Czech Republic | 40.4 | 21.7 | 70.5 | 51.7 | 69.4 | 50.4 | 52.0 | 29.0 | 66.2 | 43.3 |
| Denmark | 52.1 | 31.9 | 27.1 | 15.5 | 21.5 | 14.1 | 26.4 | 8.9 | 40.8 | 20.6 |
| Estonia | 65.9 | 43.3 | 60.5 | 52.8 | 50.6 | 35.3 | 50.2 | 26.8 | 69.8 | 48.4 |
| Finland | . . | . . | 41.0 | 26.5 | 33.6 | 20.1 | 34.9 | 18.2 | 44.4 | 27.0 |
| France | 58.0 | 36.8 | 57.7 | 40.5 | 56.2 | 38.9 | 55.9 | 35.3 | 61.6 | 41.5 |
| Germany | 60.4 | 41.2 | 69.7 | 56.7 | 66.7 | 53.2 | 60.9 | 44.4 | 64.3 | 48.1 |
| Greece | 65.8 | 41.3 | 59.0 | 41.8 | 57.8 | 40.6 | 53.4 | 34.4 | 58.0 | 38.8 |
| Hungary | 65.0 | 43.6 | 69.0 | 47.3 | 69.4 | 48.8 | 65.8 | 42.4 | 73.5 | 51.2 |
| Iceland[c, d] | (29.7) | (14.0) | (11.2) | (9.5) | (5.7) | (4.0) | (25.1) | (7.0) | (44.2) | (22.9) |
| Ireland | 83.0 | 68.5 | 52.8 | 34.8 | 50.7 | 31.0 | 57.2 | 32.1 | 73.8 | 53.9 |
| Israel[e] | . . | . . | 41.2 | 28.9 | 36.9 | 26.4 | 37.5 | 23.4 | 41.0 | 25.7 |
| Italy | 77.4 | 59.6 | 59.0 | 45.5 | 58.4 | 43.7 | 60.1 | 42.0 | 64.2 | 47.2 |
| Japan | 40.2 | 21.4 | 55.7 | 40.3 | 54.2 | 39.9 | 52.0 | 34.8 | 63.1 | 44.8 |
| Korea | 22.8 | 6.4 | 13.9 | 0.7 | 12.9 | 3.7 | 10.5 | 0.6 | 8.6 | 0.5 |
| Luxembourg[d] | (59.6) | (33.8) | (55.4) | (35.4) | (45.6) | (29.4) | (45.2) | (19.9) | (44.3) | (32.2) |
| Mexico | . . | . . | 5.3 | 3.0 | 4.1 | 1.6 | 6.3 | 1.8 | 8.0 | 2.7 |
| Netherlands | 74.3 | 50.0 | 57.3 | 41.8 | 51.6 | 36.8 | 42.2 | 23.7 | 49.2 | 27.7 |
| New Zealand | 56.1 | 37.4 | 19.0 | 6.8 | 16.5 | 5.4 | 23.7 | 6.3 | 29.1 | 8.9 |
| Norway[c] | 43.5 | 28.1 | 27.4 | 10.2 | 18.6 | 6.0 | 26.5 | 7.5 | 35.6 | 10.6 |
| Poland | 61.8 | 36.8 | 64.1 | 45.8 | 44.3 | 27.3 | 42.3 | 23.3 | 46.7 | 25.3 |
| Portugal | 54.2 | 42.3 | 65.1 | 47.7 | 63.4 | 48.3 | 61.7 | 40.7 | 70.3 | 51.7 |
| Slovak Republic | 63.8 | 41.7 | 82.8 | 72.3 | 77.7 | 65.6 | 64.3 | 47.8 | 76.9 | 58.3 |
| Slovenia | . . | . . | 61.3 | 45.3 | 56.5 | 41.4 | 51.8 | 28.3 | 66.8 | 45.0 |
| Spain[c] | 68.5 | 49.5 | 38.3 | 23.9 | 35.3 | 18.8 | 51.7 | 26.9 | 65.6 | 44.6 |
| Sweden[c] | 50.0 | 29.1 | 29.8 | 14.4 | 27.3 | 13.5 | 30.9 | 13.1 | 35.9 | 18.1 |
| Switzerland | 47.4 | 22.9 | 55.9 | 37.9 | 43.1 | 27.3 | 44.3 | 26.4 | 52.8 | 28.3 |
| Turkey | 66.8 | 43.7 | 42.7 | 27.0 | 39.7 | 24.0 | 42.4 | 22.6 | 41.9 | 24.7 |
| United Kingdom[c] | 68.6 | 51.2 | 45.0 | 28.4 | 44.3 | 28.3 | 47.7 | 26.5 | 57.2 | 37.2 |
| United States[c] | 22.2 | 13.9 | 18.2 | 10.7 | 20.1 | 10.9 | 31.7 | 16.4 | 44.6 | 29.9 |
| OECD (weighted average) | 51.9 | 34.9 | 41.6 | 29.0 | 37.8 | 25.1 | 40.5 | 23.5 | 49.2 | 32.8 |
| Russian Federation | . . | . . | 56.4 | 38.8 | 49.4 | 32.7 | . . | . . | . . | . . |

## Table H. **Incidence of long-term unemployment**[a, b] *(cont.)*

As a percentage of female unemployment

| | 1994 | | 2007 | | 2008 | | 2009 | | 2010 | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 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 | 26.5 | 14.4 | 25.6 | 13.9 | 28.5 | 14.3 | 31.0 | 16.4 |
| Austria | 33.1 | 18.5 | 44.5 | 27.1 | 41.2 | 22.6 | 39.1 | 21.0 | 40.9 | 22.0 |
| Belgium | 77.7 | 62.6 | 65.6 | 51.4 | 60.8 | 48.1 | 60.5 | 45.0 | 65.1 | 47.8 |
| Canada | 30.1 | 15.6 | 13.6 | 6.2 | 13.0 | 6.0 | 17.1 | 7.3 | 21.7 | 11.0 |
| Czech Republic | 43.1 | 22.8 | 72.5 | 54.7 | 69.4 | 50.1 | 57.8 | 33.4 | 66.2 | 43.3 |
| Denmark | 55.8 | 32.4 | 28.9 | 16.9 | 22.6 | 12.3 | 23.9 | 9.4 | 33.6 | 16.9 |
| Estonia | 67.1 | 41.7 | 55.1 | 44.7 | 42.9 | 25.9 | 44.7 | 28.4 | 63.8 | 41.2 |
| Finland | .. | .. | 34.9 | 19.5 | 29.5 | 16.2 | 27.6 | 14.7 | 33.2 | 19.3 |
| France | 59.7 | 38.1 | 58.2 | 40.0 | 53.8 | 36.1 | 55.6 | 35.0 | 57.9 | 38.7 |
| Germany | 67.1 | 47.2 | 69.9 | 56.5 | 66.5 | 51.9 | 62.9 | 47.0 | 62.3 | 46.3 |
| Greece | 78.0 | 57.2 | 69.9 | 54.8 | 66.9 | 52.0 | 62.8 | 45.6 | 66.9 | 50.3 |
| Hungary | 58.9 | 37.6 | 69.0 | 47.9 | 68.8 | 46.3 | 67.8 | 42.8 | 73.3 | 49.9 |
| Iceland[c, d] | (34.9) | (16.3) | (10.9) | (5.7) | (10.2) | (4.1) | (23.5) | (6.7) | (40.2) | (19.0) |
| Ireland | 76.8 | 57.4 | 38.5 | 21.3 | 35.3 | 19.3 | 42.8 | 21.7 | 59.8 | 38.2 |
| Israel[e] | . . | . . | 36.3 | 20.9 | 35.2 | 19.0 | 32.4 | 16.7 | 32.2 | 18.5 |
| Italy | 81.5 | 63.3 | 62.5 | 49.1 | 61.1 | 47.5 | 62.9 | 46.9 | 64.9 | 49.9 |
| Japan | 30.5 | 12.2 | 36.7 | 19.4 | 36.2 | 23.8 | 37.5 | 18.8 | 42.9 | 25.2 |
| Korea | 16.1 | 3.2 | 7.4 | 0.3 | 1.6 | 0.4 | 6.0 | 0.3 | 4.2 | 0.0 |
| Luxembourg[d] | (48.9) | (24.6) | (43.7) | (22.3) | (52.2) | (35.2) | (52.0) | (26.1) | (46.2) | (26.5) |
| Mexico | . . | . . | 5.4 | 2.3 | 4.3 | 1.8 | 6.7 | 2.1 | 7.2 | 2.0 |
| Netherlands | 80.9 | 48.7 | 54.4 | 37.1 | 47.9 | 32.0 | 44.7 | 26.1 | 47.5 | 27.4 |
| New Zealand | 42.9 | 26.4 | 15.3 | 5.4 | 13.0 | 3.4 | 22.6 | 6.4 | 27.0 | 9.0 |
| Norway[c] | 43.9 | 29.8 | 23.9 | 7.1 | 18.2 | 6.0 | 23.0 | 8.0 | 24.7 | 7.7 |
| Poland | 68.4 | 43.8 | 64.5 | 46.0 | 49.0 | 30.8 | 47.2 | 27.3 | 46.4 | 25.8 |
| Portugal | 60.1 | 44.3 | 64.9 | 46.7 | 63.9 | 46.6 | 65.6 | 47.5 | 70.6 | 52.8 |
| Slovak Republic | 64.1 | 43.5 | 81.9 | 69.4 | 79.4 | 66.4 | 69.6 | 54.4 | 78.1 | 60.5 |
| Slovenia | .. | .. | 61.6 | 46.1 | 58.3 | 43.0 | 49.0 | 32.1 | 59.1 | 41.2 |
| Spain[c] | 78.4 | 63.0 | 45.9 | 30.5 | 45.3 | 28.9 | 55.2 | 34.4 | 65.1 | 45.6 |
| Sweden[c] | 41.8 | 20.5 | 24.6 | 11.5 | 24.4 | 11.3 | 27.6 | 12.4 | 31.9 | 14.8 |
| Switzerland | 53.0 | 35.4 | 57.1 | 43.0 | 54.5 | 39.9 | 51.6 | 33.8 | 57.8 | 39.8 |
| Turkey | 74.7 | 51.9 | 55.8 | 38.9 | 50.1 | 34.4 | 51.4 | 32.2 | 53.8 | 37.0 |
| United Kingdom[c] | 53.3 | 33.9 | 33.1 | 17.6 | 34.4 | 18.1 | 40.1 | 21.4 | 45.7 | 26.0 |
| United States[c] | 18.1 | 10.2 | 16.8 | 9.0 | 19.3 | 10.3 | 31.2 | 16.1 | 41.5 | 27.7 |
| OECD (weighted average) | 53.0 | 36.1 | 42.2 | 29.1 | 38.7 | 26.0 | 41.8 | 25.3 | 47.5 | 31.7 |
| Russian Federation | . . | . . | 61.3 | 42.7 | 56.2 | 38.0 | . . | . . | . . | . . |

*a)* Persons for whom no duration of unemployment was specified are excluded from the total.

*b)* Data are averages of monthly figures for Australia, Canada, Sweden and the United States ; averages of quarterly figures for the Czech Republic, Estonia, Hungary, Israel, Norway, New Zealand, Poland, the Slovak Republic, Slovenia 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 all four quarters; Belgium, April, and since 1999 all weeks of all four quarters; Denmark, April-May, and since 1999 all weeks of all four quarters; Finland, spring between 1995 and 1998, and averages of monthly figures since 1999; France, March and since 2003 all weeks of all four quarters; Germany, April, and since 2005 all weeks of all four quarters; Greece, all weeks of all four quarters; Iceland, April and since 2003 all weeks of all four quarters; Ireland, May and since 1998 all weeks of all four quarters; Italy, April and since 2004 all weeks of all four quarters; Japan, February; Luxembourg, April and since 2003 all weeks of the year; Mexico, April; the Netherlands, March-June and since 2000 all weeks of all four quarters; Portugal, all weeks of all four quarters; Switzerland, second quarter; and the United Kingdom, all weeks of all four quarters.

*c)* Refers to persons aged 16-64. For Norway up to 2005.

*d)* Data in brackets are based on small sample sizes.

*e)* The statistical data for Israel are supplied by and under the responsibility of the relevant Israeli authorities. The use of such data by the OECD is without prejudice to the status of the Golan Heights, East Jerusalem and Israeli settlements in the West Bank under the terms of international law.

*Source: OECD Online Employment Database: www.oecd.org/els/employment/database.*

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## Table I. **Earnings dispersion,[a] gender wage gap[b] and incidence of low pay[c]**

| | Ratio of | | | | | | Gender wage gap (%) | | Incidence of low pay (%) | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 9th to 1st earnings deciles | | 9th to 5th earnings deciles | | 5th to 1st earnings deciles | | | | | |
| | 1999 | 2009 | 1999 | 2009 | 1999 | 2009 | 1999 | 2009 | 1999 | 2009 |
| Australia | 3.00 | 3.33 | 1.84 | 2.00 | 1.63 | 1.67 | 14 | 16 | 14.3 | 14.4 |
| Austria | . . | 3.36 | . . | 1.94 | . . | 1.73 | 23 | 19 | . . | 16.0 |
| Belgium | 2.39 | 2.25 | 1.70 | 1.66 | 1.41 | 1.36 | 15 | 9 | . . | 4.0 |
| Canada | 3.63 | 3.68 | 1.81 | 1.90 | 2.00 | 1.94 | 24 | 20 | 23.1 | 20.5 |
| Czech Republic | 2.86 | 3.19 | 1.72 | 1.84 | 1.66 | 1.74 | 22 | 18 | 15.1 | 17.1 |
| Denmark | 2.49 | 2.73 | 1.70 | 1.71 | 1.46 | 1.60 | 15 | 12 | 8.0 | 13.6 |
| Finland | 2.36 | 2.59 | 1.69 | 1.76 | 1.40 | 1.47 | 22 | 20 | . . | 8.5 |
| France | 3.10 | 2.84 | 1.94 | 2.01 | 1.59 | 1.41 | 9 | 13 | . . | . . |
| Germany | 3.22 | 3.67 | 1.83 | 1.82 | 1.76 | 2.02 | 23 | 22 | 20.0 | 20.2 |
| Greece | . . | 3.24 | . . | 2.04 | . . | 1.59 | . . | 10 | . . | 13.5 |
| Hungary | 4.38 | 4.28 | 2.22 | 2.43 | 1.97 | 1.76 | 15 | 4 | 22.7 | 21.8 |
| Iceland | . . | 3.21 | . . | 1.80 | . . | 1.78 | . . | 13 | . . | 16.8 |
| Ireland | 3.27 | 3.94 | 1.92 | 2.12 | 1.70 | 1.86 | 20 | 10 | 17.8 | 20.2 |
| Israel[d] | . . | 5.19 | . . | 2.69 | . . | 1.93 | . . | 20 | . . | 23.1 |
| Italy | 2.50 | 2.27 | 1.60 | 1.56 | 1.56 | 1.45 | 8 | 12 | 10.4 | 8.0 |
| Japan | 2.97 | 2.99 | 1.84 | 1.85 | 1.62 | 1.62 | 35 | 28 | 14.6 | 14.7 |
| Korea[e] | 3.83 | 4.69 | 1.97 | 2.25 | 1.94 | 2.09 | 41 | 39 | 23.4 | 25.7 |
| Netherlands | 2.89 | 2.91 | 1.74 | 1.76 | 1.66 | 1.65 | 22 | 17 | 14.8 | . . |
| New Zealand | 2.68 | 2.83 | 1.70 | 1.83 | 1.58 | 1.55 | 8 | 8 | 12.3 | 12.5 |
| Norway | 1.95 | 2.29 | 1.41 | 1.47 | 1.38 | 1.55 | 10 | 9 | 10.4 | 8.0 |
| Poland | . . | 3.64 | . . | 2.11 | . . | 1.73 | . . | 10 | . . | 21.1 |
| Portugal | . . | 4.26 | . . | 2.74 | . . | 1.55 | . . | 16 | . . | 14.2 |
| Spain | . . | 3.28 | . . | 1.98 | . . | 1.66 | . . | 12 | . . | 15.7 |
| Sweden | 2.24 | 2.28 | 1.64 | 1.68 | 1.36 | 1.36 | 17 | 15 | . . | . . |
| Switzerland | 2.53 | 2.69 | 1.70 | 1.83 | 1.49 | 1.47 | 22 | 20 | . . | . . |
| United Kingdom[e] | 3.44 | 3.59 | 1.90 | 1.99 | 1.81 | 1.81 | 25 | 20 | 20.1 | 20.6 |
| United States | 4.50 | 4.98 | 2.21 | 2.36 | 2.04 | 2.11 | 23 | 20 | 24.5 | 24.8 |
| OECD[f] | 3.01 | 3.34 | 1.80 | 1.97 | 1.65 | 1.68 | 20 | 16 | 16.8 | 16.3 |

*Note:* Estimates of earnings used in the calculations refer to gross earnings of full-time wage and salary workers. However, this definition may slightly vary from one country to another. Further information on the national data sources and earnings concepts used in the caculations can be found at: *www.oecd.org/employment/outlook*.

*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 1998 (instead of 1999) for Italy and Switzerland, and to 2000 for Ireland. They refer to 2005 (instead of 2009) for the Netherlands, and to 2008 for Belgium, France, Greece, Iceland, Italy, Poland, Portugal, Spain and Switzerland.

*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 1998 (instead of 1999) for Italy and Switzerland, and to 2000 for Austria and Ireland. They refer to 2005 (instead of 2009) for the Netherlands, and to 2008 for Belgium, France, Greece, Iceland, Italy, Poland, Portugal, Spain and Switzerland.

*c)* The incidence of low pay refers to the share of workers earning less than two-thirds of median earnings. Data refer to 1998 (instead of 1999) for Italy and to 2000 for Ireland. They refer to 2008 (instead of 2009) for Belgium, France, Greece, Iceland, Italy, Poland, Portugal and Spain.

*d)* The statistical data for Israel are supplied by and under the responsibility of the relevant Israeli authorities. The use of such data by the OECD is without prejudice to the status of the Golan Heights, East Jerusalem and Israeli settlements in the West Bank under the terms of international law.

*e)* Data for 1999 refer to estimations obtained splicing *new-to-old series*. 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.

*f)* Unweighted average for the 27 countries shown in the table.

*Source: OECD Database on Earnings Distribution.*

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## Table J. **Average annual wages in the total economy**

Average gross annual wages per full-time and full-year equivalent dependent employee in the total economy[a]

| | Level of average wages in 2010 in current USD[b] | Level of average wages in 2010 in 2010 prices and USD PPPs[c] | Average annual growth rates of real average wages[d] (%) | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | 1990-95 | 1995-2000 | 2000-05 | 2005-10 | 2009 | 2010 |
| Australia | 63 656 | 42 550 | 1.5 | 2.0 | 1.3 | 0.9 | –1.1 | 1.7 |
| Austria | 48 649 | 42 005 | 1.5 | 0.6 | 0.8 | 1.2 | 2.9 | 0.2 |
| Belgium | 52 477 | 43 023 | 2.7 | 1.3 | 0.4 | 0.2 | 1.8 | –1.2 |
| Canada | 54 120 | 41 961 | 0.0 | 2.1 | 1.2 | 2.1 | 2.5 | 1.1 |
| Czech Republic | 16 001 | 20 587 | 5.9 | 3.0 | 5.1 | 2.6 | 1.7 | 0.8 |
| Denmark | 68 280 | 43 190 | 0.8 | 1.6 | 1.9 | 1.2 | 1.2 | 0.7 |
| Estonia | 13 835 | 17 145 | . . | . . | 7.0 | 3.7 | –2.7 | –2.2 |
| Finland | 48 333 | 35 707 | 0.0 | 1.3 | 2.5 | 1.6 | 2.0 | 1.1 |
| France | 46 365 | 38 124 | 1.1 | 1.3 | 1.3 | 0.8 | 2.1 | 0.8 |
| Germany | 43 352 | 38 325 | 2.1 | 0.8 | 0.2 | 0.1 | –0.2 | 0.2 |
| Greece | 29 058 | 27 484 | 2.9 | 2.4 | 2.9 | –0.3 | 4.5 | –6.8 |
| Hungary | 13 179 | 18 667 | 6.4 | 1.1 | 7.3 | –0.8 | –4.8 | –2.6 |
| Ireland | 64 095 | 48 757 | 2.6 | 2.2 | 2.4 | 2.3 | 6.5 | 1.1 |
| Italy | 36 773 | 32 657 | –0.7 | 0.8 | 0.3 | 0.2 | 0.0 | 0.8 |
| Japan | 47 398 | 33 900 | 0.8 | 0.6 | 0.3 | 0.1 | –0.6 | 2.1 |
| Korea | 26 538 | 33 221 | 4.7 | 0.4 | 2.8 | 1.5 | 0.0 | 4.7 |
| Luxembourg | 67 934 | 52 110 | 1.9 | 1.2 | 1.1 | 0.7 | 1.4 | –0.1 |
| Netherlands | 53 656 | 45 671 | 0.3 | 0.0 | 0.6 | 1.3 | 3.1 | –0.4 |
| Norway | 72 237 | 44 164 | 1.2 | 2.2 | 3.1 | 2.4 | 0.8 | 1.8 |
| Poland | 12 475 | 18 380 | 3.1 | 5.0 | 1.0 | 1.5 | 0.3 | 0.8 |
| Portugal | 22 033 | 23 173 | 1.0 | 2.5 | 0.2 | 1.5 | 7.0 | –0.3 |
| Slovak Republic | 14 391 | 18 719 | 6.4 | 5.3 | 3.3 | 3.7 | 6.2 | 3.8 |
| Slovenia | 29 046 | 32 308 | . . | . . | . . | 2.1 | 1.6 | 1.8 |
| Spain | 35 031 | 33 656 | 1.9 | –0.5 | –0.2 | 1.4 | 4.5 | –0.7 |
| Sweden | 47 352 | 36 826 | –0.3 | 3.4 | 1.5 | 1.5 | 0.5 | 0.2 |
| Switzerland | 80 153 | 49 810 | 0.9 | 0.9 | 1.1 | 0.9 | 2.8 | –0.7 |
| United Kingdom | 47 645 | 44 008 | 0.6 | 2.4 | 1.4 | 0.2 | 1.1 | –2.0 |
| United States | 52 607 | 52 607 | 1.0 | 2.9 | 0.5 | 0.5 | 0.0 | 0.7 |
| EU-15[e] | 44 904 | 39 124 | 1.1 | 1.2 | 0.9 | 0.6 | 1.6 | –0.3 |
| EU-21[e] | 41 100 | 36 474 | 1.4 | 1.4 | 1.0 | 0.7 | 1.5 | –0.2 |
| OECD[e] | 48 488 | 43 933 | 1.3 | 1.9 | 0.8 | 0.7 | 0.6 | 0.7 |

*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 usually weekly hours for all employees. For more details, see: *www.oecd.org/employment/outlook*.

*b)* Average wages are converted in USD using current exchange rates in USD.

*c)* Average wages are converted in USD PPPs using 2010 USD PPPs for private consumption.

*d)* Average annual wages are deflated by a price deflator for private final consumption expenditures in 2010 prices.

*e)* Aggregates are weighted averages computed on the basis of 2010 GDP weights expressed in 2010 purchasing power parities and include the countries shown.

*Source:* OECD estimates based on *OECD National Accounts Database* and OECD (2011), *OECD Economic Outlook*, No. 89, Paris, May.

StatLink http://dx.doi.org/10.1787/888932480579

## Table K. **Public expenditure and participant stocks in labour market programmes in OECD countries**[a]

| Programme categories and sub-categories | Australia[b] | | | | | | Austria | | | | | | Belgium | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 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 | | |
| | 2007-08 | 2007-08 | 2009-10 | 2007-08 | 2008-09 | 2009-10 | 2007 | 2008 | 2009 | 2007 | 2008 | 2009 | 2007 | 2008 | 2009 | 2007 | 2008 | 2009 |
| **1. PES and administration**[a] | **0.17** | **0.17** | **0.17** | | | | **0.16** | **0.16** | **0.18** | | | | **0.20** | **0.20** | **0.22** | | | |
| *of which:* 1.1. Placement and related services[a] | 0.10 | 0.10 | 0.11 | | | | 0.08 | 0.08 | 0.09 | | | | 0.07 | 0.07 | 0.08 | | | |
| 1.2. Benefit administration[a] | 0.03 | 0.03 | 0.03 | | | | 0.02[g] | 0.02[g] | 0.03[g] | | | | 0.10[j] | 0.10[j] | 0.11[j] | | | |
| **2. Training** | **0.01**[c] | **0.01**[c] | **0.03**[c] | . . | . . | . . | **0.37**[h] | **0.37**[h] | **0.52**[h] | **2.29**[i] | **2.44**[i] | **2.64**[i] | **0.14** | **0.16** | **0.16** | **1.90**[i] | **2.29**[i] | **2.63**[i] |
| 2.1. Institutional training | 0.01 | 0.01 | 0.03 | . . | . . | . . | 0.27 | 0.26 | 0.40 | 3.00 | 2.82 | 3.63 | 0.14 | 0.15 | 0.15 | 1.93 | 1.99 | 2.44 |
| 2.2. Workplace training | – | – | – | . . | . . | . . | 0.02 | 0.02 | 0.02 | 0.15 | 0.25 | 0.25 | – | – | 0.01 | 0.20 | 0.42 | 0.35 |
| 2.3. Alternate training | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – |
| 2.4. Special support for apprenticeship[a] | – | – | – | – | – | – | 0.06 | 0.07 | 0.06 | 0.76 | 0.87 | 0.67 | – | – | – | 0.12 | 0.23 | 0.22 |
| **4. Employment incentives**[a] | **0.01** | **0.01** | **0.01** | . . | . . | . . | **0.06** | **0.06** | **0.05** | **1.25** | **1.49** | **1.62** | **0.37**[k] | **0.45**[k] | **0.52**[k] | **3.86**[k] | **4.52**[k] | **4.72**[k] |
| 4.1. Recruitment incentives | 0.01 | 0.01 | 0.01 | . . | . . | . . | 0.04 | 0.03 | 0.03 | 0.38 | 0.32 | 0.31 | 0.37 | 0.45 | 0.51 | 3.86 | 4.52 | 4.72 |
| 4.2. Employment maintenance incentives | – | – | – | – | – | – | 0.02 | 0.03 | 0.02 | 0.88 | 1.17 | 1.31 | – | 0.01 | 0.01 | – | – | – |
| **5. Supported employment and rehabilitation** | **0.06** | **0.06** | **0.07** | **1.18** | **1.08** | **1.24** | **0.03** | **0.04** | **0.04** | **0.05** | **0.05** | **0.05** | **0.12** | **0.12** | **0.14** | **0.77** | **0.79** | **0.77** |
| 5.1. Supported employment | 0.04 | 0.04 | 0.06 | 0.89 | 0.73 | 0.84 | 0.03 | 0.04 | 0.04 | 0.05 | 0.05 | 0.05 | 0.12 | 0.12 | 0.14 | 0.77 | 0.79 | 0.77 |
| 5.2. Rehabilitation | 0.02 | 0.02 | 0.01 | 0.29 | 0.35 | 0.40 | – | – | – | – | – | – | – | – | – | – | – | – |
| **6. Direct job creation** | **0.05**[c] | **0.05**[c] | **0.03**[c,d] | **0.48** | **0.40** | **0.15**[d] | **0.04** | **0.04** | **0.05** | **0.19** | **0.16** | **0.17** | **0.35** | **0.34** | **0.37** | **2.62** | **3.18** | **3.32** |
| **7. Start-up incentives** | **0.01** | **0.01** | **0.01** | . . | . . | . . | **0.01** | **0.01** | **0.01** | **0.06** | **0.06** | **0.08** | **–** | **–** | **–** | **0.02** | **0.03** | **0.03** |
| **8. Out-of-work income maintenance and support**[a] | **0.41** | **0.41** | **0.55** | **4.15** | **5.25** | **5.49** | **1.02** | **0.96** | **1.31** | **4.80** | **4.59** | **6.36** | **1.27** | **1.26** | **1.62** | **12.56** | **12.33** | **14.46** |
| 8.1. Full unemployment benefits | 0.40[e] | 0.40[e] | 0.54[e] | 4.15[e] | 5.25[e] | 5.49[e] | 0.90 | 0.84 | 1.12 | 4.74 | 4.51 | 5.55 | 1.06 | 1.03 | 1.19 | 9.03 | 8.43 | 9.02 |
| *of which:* Unemployment insurance | – | – | – | – | – | – | 0.55 | 0.53 | 0.74 | 2.72 | 2.67 | 3.42 | 1.06 | 1.03 | 1.19 | 9.03 | 8.43 | 9.02 |
| 8.2., 8.3. Partial and part-time unemployment benefits | – | – | – | – | – | – | 0.01 | 0.01 | 0.05 | 0.06 | 0.08 | 0.81 | 0.17 | 0.19 | 0.38 | 3.53 | 3.90 | 5.45 |
| 8.4., 8.5. Redundancy and bankrupcy compensation | 0.01 | 0.01 | 0.01 | . . | . . | . . | 0.11 | 0.11 | 0.14 | – | – | – | 0.03 | 0.04 | 0.05 | – | – | – |
| **9. Early retirement**[a] | **–** | **–** | **–** | **–** | **–** | **–** | **0.22** | **0.20** | **0.18** | 1.33 | 1.20 | 1.11 | **0.74** | **0.74** | **0.76** | 4.69 | 4.53 | 4.43 |
| **TOTAL (1-9)** | **0.71** | **0.76** | **0.88** | | | | **1.92** | **1.83** | **2.34** | | | | **3.19** | **3.28** | **3.79** | | | |
| Active measures (1-7) | 0.30 | 0.31 | 0.32 | | | | 0.67 | 0.67 | 0.85 | | | | 1.18 | 1.28 | 1.41 | | | |
| *of which:* Categories 2-7 only | 0.14 | 0.16 | 0.15 | 1.66[f] | 1.55[f] | 1.75[f] | 0.51 | 0.51 | 0.67 | 3.84 | 4.21 | 4.56 | 0.98 | 1.08 | 1.19 | 9.16 | 10.81 | 11.47 |
| Passive measures (8-9) | 0.41 | 0.45 | 0.55 | 4.15 | 5.25 | 5.49 | 1.24 | 1.16 | 1.49 | 6.13 | 5.79 | 7.47 | 2.01 | 2.00 | 2.38 | 17.25 | 16.86 | 18.90 |

*a)* See the introductory note about scope and comparability at *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 1st July.

*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)* From 2009-10, the Work for the Dole programme is reported under placement services (in Category 1.1) with expenditure not separately identified.

*e)* Includes Mature Age, Partner Allowances (benefit only) and Youth Allowances.

*f)* Participants stocks for Categories 2 "Training", 4 "Employment incentives" and 7 "Start-up incentives" are not included.

*g)* Staff costs of the unemployment insurance service.

*h)* Includes Employment Foundations established by enterprises in cases of large-scale manpower reductions, which have not been allocated across sub-categories.

*i)* 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"), but not to sub-category data.

*j)* Includes administration costs of union and auxiliary benefit payment organisations.

*k)* Includes the "titres services" programme, which is only partly targeted on the unemployed.

## Table K. **Public expenditure and participant stocks in labour market programmes in OECD countries**[a] *(cont.)*

| Programme categories and sub-categories | Canada[b] | | | | | | Chile | | | | | | Czech Republic | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 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 | | |
| | 2007-08 | 2008-09 | 2009-10 | 2007-08 | 2008-09 | 2009-10 | 2007 | 2008 | 2009 | 2007 | 2008 | 2009 | 2007 | 2008 | 2009 | 2007 | 2008 | 2009 |
| **1. PES and administration**[a] | **0.14**[c] | **0.13**[c] | **0.14**[c] | | | | **0.02**[g] | **0.02**[g] | **0.02**[g] | | | | **0.13** | **0.12** | **0.13** | | | |
| *of which:* 1.1.Placement and related services[a] | 0.04[d] | 0.04[d] | 0.04[d] | | | | 0.01 | 0.01 | 0.01 | | | | 0.04 | 0.04 | 0.04 | | | |
| 1.2. Benefit administration[a] | 0.03 | 0.03 | 0.04 | | | | 0.01 | 0.01 | 0.01 | | | | . . | . . | . . | | | |
| **2. Training** | **0.08**[c] | **0.10**[c] | **0.14**[c] | **1.52** | **1.56** | **1.79** | **0.11** | **0.13** | **0.20** | **. .** | **. .** | **. .** | **0.01** | **0.01** | **–** | **0.14** | **0.09** | **0.08** |
| 2.1. Institutional training | 0.06 | 0.06 | 0.09 | 1.16 | 1.24 | 1.46 | 0.02 | 0.02 | 0.05 | . . | . . | . . | 0.01 | 0.01 | – | 0.14 | 0.09 | 0.08 |
| 2.2. Workplace training | 0.01 | 0.01 | 0.01 | 0.12 | 0.12 | 0.11 | 0.08 | 0.08 | 0.12 | . . | . . | . . | – | – | – | – | – | – |
| 2.3. Alternate training | – | – | – | – | – | – | – | 0.01 | 0.01 | . . | . . | . . | – | – | – | – | – | – |
| 2.4. Special support for apprenticeship[a] | 0.01 | 0.01 | 0.01 | 0.24 | 0.20 | 0.22 | 0.01 | 0.01 | 0.01 | . . | . . | . . | – | – | – | – | – | – |
| **4. Employment incentives**[a] | **0.01** | **0.01** | **0.01** | **0.12** | **0.11** | **0.12** | **0.01** | **0.01** | **0.01** | **0.13** | **0.33** | **0.34** | **0.02** | **0.01** | **0.01** | **0.25** | **0.14** | **0.05** |
| 4.1. Recruitment incentives | 0.01 | 0.01 | 0.01 | 0.12 | 0.11 | 0.12 | 0.01 | 0.01 | 0.01 | 0.13 | 0.33 | 0.34 | 0.02 | 0.01 | 0.01 | 0.23 | 0.12 | 0.05 |
| 4.2. Employment maintenance incentives | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 0.02 | 0.02 | – |
| **5. Supported employment and rehabilitation** | **0.02** | **0.02** | **0.02** | **. .** | **. .** | **. .** | **–** | **–** | **–** | **–** | **–** | **–** | **0.07** | **0.07** | **0.07** | **0.51** | **0.55** | **0.49** |
| 5.1. Supported employment | – | – | – | 0.05 | 0.05 | 0.05 | – | – | – | – | – | – | 0.07 | 0.07 | 0.07 | 0.51 | 0.55 | 0.49 |
| 5.2. Rehabilitation | 0.01 | 0.01 | 0.01 | . . | . . | . . | – | – | – | – | – | – | – | – | – | – | – | – |
| **6. Direct job creation** | **0.02** | **0.02** | **0.02** | **. .** | **. .** | **. .** | **0.04** | **0.04** | **0.05** | **0.25** | **0.25** | **0.31** | **0.02** | **0.01** | **0.01** | **0.14** | **0.08** | **0.04** |
| **7. Start-up incentives** | **0.01** | **0.01** | **0.01** | **0.11** | **0.10** | **0.10** | **–** | **–** | **–** | **0.01** | **–** | **0.01** | **–** | **–** | **–** | **0.07** | **0.07** | **0.06** |
| **8. Out-of-work income maintenance and support**[a] | **0.56** | **0.66** | **0.97** | **. .** | **. .** | **. .** | **0.13** | **0.16** | **0.24** | **1.40** | **1.52** | **2.01** | **0.20** | **0.20** | **0.44** | **2.24** | **2.09** | **3.56** |
| 8.1. Full unemployment benefits | 0.56 | 0.66 | 0.97 | . . | . . | . . | 0.13 | 0.16 | 0.24 | 1.40 | 1.52 | 2.01 | 0.20 | 0.19 | 0.42 | 2.24 | 2.09 | 3.56 |
| *of which:* Unemployment insurance | 0.56 | 0.66 | 0.97 | . . | . . | . . | 0.13 | 0.16 | 0.24 | 1.40 | 1.52 | 2.01 | 0.20 | 0.19 | 0.42 | 2.24 | 2.09 | 3.56 |
| 8.2., 8.3. Partial and part-time unemployment benefits | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – |
| 8.4., 8.5. Redundancy and bankrupcy compensation | – | – | – | – | – | – | – | – | – | – | – | – | 0.01 | – | 0.02 | – | – | – |
| **9. Early retirement**[a] | **–** | **–** | **–** | . . | . . | . . | **–** | **–** | **–** | **–** | **–** | **–** | **–** | **–** | **–** | – | – | – |
| **TOTAL (1-9)** | **0.85** | **0.95** | **1.33** | | | | **0.31** | **0.36** | **0.52** | | | | **0.46** | **0.42** | **0.66** | | | |
| Active measures (1-7) | 0.29[e] | 0.29[e] | 0.35[e] | | | | 0.18 | 0.20 | 0.28 | | | | 0.25 | 0.23 | 0.22 | | | |
| *of which:* Categories 2-7 only | 0.15[e] | 0.16[e] | 0.21[e] | 2.26[e, f] | 2.30[e, f] | 2.59[e, f] | 0.15 | 0.18 | 0.26 | . . | . . | . . | 0.12 | 0.10 | 0.09 | 1.12 | 0.93 | 0.74 |
| Passive measures (8-9) | 0.56 | 0.66 | 0.98 | . . | . . | . . | 0.13 | 0.16 | 0.24 | 1.40 | 1.52 | 2.01 | 0.20 | 0.20 | 0.44 | 2.24 | 2.09 | 3.56 |

*a)* See the introductory note about scope and comparability at *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 1st April.

*c)* Reported Labour Market Agreements expenditure is allocated 20% to Category 1, 60% to Category 2, and 20% outside the scope of the database (training for people in employment). A small proportion of the expenditure is devoted to work experience but this is not separately accounted for.

*d)* Employment Assistance Service.

*e)* Includes the Aboriginal Human Resources Development Agreements, which have not been allocated across the main categories.

*f)* Participant stocks for Categories 5.2 "Rehabilitation" and 6 "Direct job creation" are not included.

*g)* Secretariat estimate based on the staff of local employment offices (OMIL) (654 staff, about 0.01% of total employment, in 2007), and assuming a further 0.01% of GDP is spent on other counselling and benefit administration functions.

## Table K. **Public expenditure and participant stocks in labour market programmes in OECD countries**[a] *(cont.)*

| Programme categories and sub-categories | Denmark | | | | | | Estonia | | | | | | Finland | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 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 | | |
| | 2007 | 2008 | 2009 | 2007 | 2008 | 2009 | 2007 | 2008 | 2009 | 2007 | 2008 | 2009 | 2007 | 2008 | 2009 | 2007 | 2008 | 2009 |
| **1. PES and administration**[a] | **0.28** | **0.37** | **0.45** | | | | **0.02** | **0.03** | **0.09** | | | | **0.16** | **0.15** | **0.17** | | | |
| *of which:* 1.1.Placement and related services[a] | 0.06 | 0.17 | 0.24 | | | | . . | . . | . . | | | | 0.10 | 0.09 | 0.10 | | | |
| 1.2. Benefit administration[a] | 0.14[b] | 0.13[b] | 0.14[b] | | | | . . | . . | . . | | | | 0.04[g] | 0.04[g] | 0.06[g] | | | |
| **2. Training** | **0.33** | **0.23** | **0.30** | **1.85** | **2.08** | **2.20** | **0.03** | **0.03** | **0.13** | **0.16** | **0.15** | **0.38** | **0.38** | **0.36** | **0.43** | **1.86** | **1.68** | **1.81** |
| 2.1. Institutional training | 0.31[c] | 0.21[c] | 0.27[c] | 1.50 | 1.70 | 1.89 | 0.02 | 0.02 | 0.11 | 0.09 | 0.10 | 0.28 | 0.31 | 0.29 | 0.35 | 1.20 | 1.10 | 1.15 |
| 2.2. Workplace training | – | – | – | – | – | – | – | 0.01 | 0.01 | 0.05 | 0.03 | 0.05 | 0.06 | 0.05 | 0.06 | 0.48 | 0.39 | 0.46 |
| 2.3. Alternate training | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – |
| 2.4. Special support for apprenticeship[a] | 0.03 | 0.03 | 0.03 | 0.35 | 0.37 | 0.31 | – | – | 0.01 | 0.03 | 0.02 | 0.06 | 0.02 | 0.02 | 0.02 | 0.18 | 0.18 | 0.19 |
| **4. Employment incentives**[a] | **0.13** | **0.13** | **0.19** | **0.77** | **0.78** | **1.05** | **–** | **–** | **–** | **0.04** | **0.01** | **0.01** | **0.14**[h] | **0.14**[h] | **0.13**[h] | **0.89**[h] | **0.80**[h] | **0.74**[h] |
| 4.1. Recruitment incentives | 0.13 | 0.13 | 0.19 | 0.77 | 0.78 | 1.04 | – | – | – | 0.04 | 0.01 | 0.01 | 0.08 | 0.08 | 0.08 | 0.60 | 0.51 | 0.49 |
| 4.2. Employment maintenance incentives | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – |
| **5. Supported employment and rehabilitation** | **0.55** | **0.61** | **0.68** | **2.15** | **2.22** | **2.25** | **–** | **–** | **–** | **–** | **–** | **–** | **0.09** | **0.09** | **0.09** | **0.31** | **0.30** | **0.29** |
| 5.1. Supported employment | 0.37 | 0.45 | 0.53 | 1.69 | 1.86 | 1.92 | – | – | – | – | – | – | 0.02 | 0.02 | 0.01 | 0.12 | 0.10 | 0.09 |
| 5.2. Rehabilitation | 0.18 | 0.16 | 0.16 | 0.46 | 0.37 | 0.33 | – | – | – | – | – | – | 0.07 | 0.07 | 0.08 | 0.20 | 0.20 | 0.21 |
| **6. Direct job creation** | **–** | **–** | **–** | **–** | **–** | **–** | **–** | **–** | **–** | **0.01** | **–** | **–** | **0.08** | **0.07** | **0.08** | **0.51** | **0.43** | **0.43** |
| **7. Start-up incentives** | **–** | **–** | **–** | **–** | **–** | **–** | **–** | **–** | **0.02** | **0.03** | **0.02** | **0.04** | **0.02** | **0.02** | **0.02** | **0.17** | **0.16** | **0.19** |
| **8. Out-of-work income maintenance and support**[a] | **0.98** | **0.73** | **1.29** | **3.57** | **2.46** | **4.27** | **0.10** | **0.21** | **1.26** | **1.26** | **1.71** | **5.73** | **1.05** | **0.96** | **1.49** | **7.20** | **6.58** | **8.70** |
| 8.1. Full unemployment benefits | 0.96[d] | 0.69[d] | 1.22[d] | 3.57[d] | 2.46[d] | . . | 0.08 | 0.15 | 1.00 | 1.26 | 1.71 | 5.73 | 0.96 | 0.88 | 1.37 | 6.30 | 5.76 | 7.74 |
| *of which:* Unemployment insurance | 0.68[e] | 0.45[e] | 0.88[e] | 2.47[e] | 1.55[e] | . . | 0.04 | 0.10 | 0.91 | 0.41 | 0.56 | 3.69 | 0.62 | 0.57 | 0.96 | 3.06 | 2.83 | 4.11 |
| 8.2., 8.3. Partial and part-time unemployment benefits | – | – | – | – | – | – | – | – | – | – | – | – | 0.08 | 0.07 | 0.10 | 0.91 | 0.82 | 0.96 |
| 8.4., 8.5. Redundancy and bankrupcy compensation | 0.02 | 0.04 | 0.07 | – | – | – | 0.02 | 0.06 | 0.26 | – | – | – | 0.01 | 0.01 | 0.02 | – | – | – |
| **9. Early retirement**[a] | **0.52**[f] | **0.48**[f] | **0.44**[f] | 2.11 | 1.90 | 1.61 | **–** | **–** | **–** | – | – | – | **0.38** | **0.39** | **0.41** | 1.69 | 1.76 | 1.84 |
| **TOTAL (1-9)** | **2.80** | **2.56** | **3.35** | | | | **0.15** | **0.27** | **1.50** | | | | **2.29** | **2.17** | **2.82** | | | |
| Active measures (1-7) | 1.30 | 1.34 | 1.62 | | | | 0.05 | 0.07 | 0.24 | | | | 0.87 | 0.82 | 0.92 | | | |
| *of which:* Categories 2-7 only | 1.02 | 0.98 | 1.17 | 4.76 | 5.08 | 5.50 | 0.03 | 0.03 | 0.15 | 0.24 | 0.18 | 0.44 | 0.71 | 0.67 | 0.75 | 3.74 | 3.37 | 3.46 |
| Passive measures (8-9) | 1.50 | 1.21 | 1.73 | 5.68 | 4.36 | 5.89 | 0.10 | 0.21 | 1.26 | 1.26 | 1.71 | 5.73 | 1.43 | 1.35 | 1.89 | 8.90 | 8.33 | 10.54 |

*a)* See the introductory note about scope and comparability at *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, Korea, Spain and Sweden.

## Table K. **Public expenditure and participant stocks in labour market programmes in OECD countries**[a] *(cont.)*

| Programme categories and sub-categories | France | | | | | | Germany | | | | | | Greece | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 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 | | |
| | 2007 | 2008 | 2009 | 2007 | 2008 | 2009 | 2007 | 2008 | 2009 | 2007 | 2008 | 2009 | 2007 | 2008 | 2009 | 2007 | 2008 | 2009 |
| **1. PES and administration**[a] | **0.22** | **0.21** | **0.26** | | | | **0.27** | **0.29** | **0.37** | | | | **. .** | **. .** | **. .** | | | |
| *of which:* 1.1.Placement and related services[a] | 0.15 | 0.15 | 0.25 | | | | 0.16 | 0.17 | 0.19 | | | | 0.02 | 0.01 | 0.01 | | | |
| 1.2. Benefit administration[a] | 0.07 | 0.05 | . . | | | | 0.04 | 0.04 | 0.10 | | | | . . | . . | . . | | | |
| **2. Training** | **0.30**[b] | **0.28**[b] | **0.36**[b] | **2.04** | **2.10** | **2.05** | **0.25**[b] | **0.27**[b] | **0.35**[b] | **1.81** | **1.80** | **1.89** | **0.06** | **0.09** | **0.02** | **0.30** | **0.29** | **0.03** |
| 2.1. Institutional training | 0.12 | 0.11 | 0.11 | 0.86 | 0.85 | 0.83 | 0.19 | 0.19 | 0.26 | 1.07 | 1.32 | 1.37 | 0.04 | 0.03 | – | 0.27 | 0.18 | 0.02 |
| 2.2. Workplace training | – | – | – | – | – | 0.01 | – | 0.01 | 0.01 | – | 0.11 | 0.13 | – | – | – | – | – | – |
| 2.3. Alternate training | – | – | – | 0.02 | 0.03 | 0.02 | – | – | – | – | – | – | 0.02 | 0.06 | 0.01 | 0.03 | 0.11 | 0.02 |
| 2.4. Special support for apprenticeship[a] | 0.08 | 0.08 | 0.11 | 1.07 | 1.07 | 0.97 | 0.06 | 0.02 | 0.02 | 0.73 | 0.35 | 0.36 | – | – | – | – | – | – |
| **4. Employment incentives**[a] | **0.11** | **0.10** | **0.10** | **1.92** | **. .** | **. .** | **0.06**[c] | **0.08**[c] | **0.11**[c] | **0.39**[c] | **0.45**[c] | **0.62**[c] | **0.06** | **0.04** | **0.10** | **0.37** | **0.46** | **1.30** |
| 4.1. Recruitment incentives | 0.11 | 0.10 | 0.10 | 1.92 | . . | . . | 0.06 | 0.08 | 0.11 | 0.39 | 0.45 | 0.62 | 0.06 | 0.04 | 0.10 | 0.37 | 0.46 | 1.30 |
| 4.2. Employment maintenance incentives | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – |
| **5. Supported employment and rehabilitation** | **0.07** | **0.07** | **0.07** | **0.50** | **0.48** | **0.51** | **0.01** | **0.03** | **0.04** | **0.06** | **0.11** | **0.10** | **–** | **–** | **–** | **–** | **–** | **–** |
| 5.1. Supported employment | 0.07 | 0.07 | 0.07 | 0.50 | 0.48 | 0.51 | 0.01 | 0.01 | 0.01 | 0.04 | 0.04 | 0.03 | – | – | – | – | – | – |
| 5.2. Rehabilitation | – | – | – | – | – | – | – | 0.03 | 0.03 | – | 0.07 | 0.07 | – | – | – | – | – | – |
| **6. Direct job creation** | **0.20** | **0.15** | **0.15** | **1.20** | **0.83** | **0.79** | **0.07** | **0.07** | **0.06** | **0.85** | **0.79** | **0.71** | **0.01** | **0.01** | **–** | **0.01** | **0.02** | **–** |
| **7. Start-up incentives** | **0.03** | **0.03** | **0.04** | **0.37** | **0.46** | **0.51** | **0.08** | **0.07** | **0.07** | **0.57** | **0.43** | **0.35** | **0.03** | **0.01** | **0.09** | **0.12** | **0.10** | **0.51** |
| **8. Out-of-work income maintenance and support**[a] | **1.20** | **1.15** | **1.40** | **7.90** | **7.99** | **8.33** | **1.23** | **1.05** | **1.47** | **8.34**[d] | **7.42**[d] | **10.27**[d] | **0.33** | **0.47** | **0.69** | **. .** | **4.44** | **3.70** |
| 8.1. Full unemployment benefits | 1.19 | 1.15 | 1.39 | 7.89 | 7.99 | 8.11 | 1.18 | 1.00 | 1.18 | 8.46 | 7.44 | 7.86 | 0.33 | 0.47 | 0.69 | . . | 4.44 | 3.70 |
| *of which:* Unemployment insurance | 1.05 | 1.01 | 1.25 | 6.39 | 6.53 | 7.20 | 0.70 | 0.56 | 0.72 | 2.59 | 2.20 | 2.73 | 0.28 | 0.41 | 0.62 | . . | 2.63 | 3.63 |
| 8.2., 8.3. Partial and part-time unemployment benefits | – | – | 0.02 | 0.01 | 0.01 | 0.23 | 0.02 | 0.02 | 0.22 | 0.14 | 0.22 | 2.71 | – | – | – | – | – | – |
| 8.4., 8.5. Redundancy and bankrupcy compensation | – | – | – | – | – | – | 0.03 | 0.03 | 0.07 | – | – | – | – | – | – | – | – | – |
| **9. Early retirement**[a] | **0.04** | **0.02** | **0.02** | 0.21 | 0.14 | 0.09 | **0.06** | **0.06** | **0.06** | 0.25 | 0.24 | 0.23 | **–** | **–** | **–** | . . | . . | . . |
| **TOTAL (1-9)** | **2.17** | **2.01** | **2.40** | | | | **2.02** | **1.90** | **2.52** | | | | **. .** | **. .** | **. .** | | | |
| Active measures (1-7) | 0.93 | 0.84 | 0.98 | | | | 0.73 | 0.80 | 1.00 | | | | . . | . . | . . | | | |
| *of which:* Categories 2-7 only | 0.71 | 0.63 | 0.72 | 6.03 | 5.53 | 5.27 | 0.46 | 0.51 | 0.63 | 3.67 | 3.58 | 3.68 | 0.15 | 0.14 | 0.21 | 0.81 | 0.87 | 1.85 |
| Passive measures (8-9) | 1.24 | 1.17 | 1.42 | 8.11 | 8.13 | 8.42 | 1.29 | 1.10 | 1.52 | 8.59 | 7.66 | 10.50 | 0.33 | 0.47 | 0.69 | . . | 4.44 | 3.70 |

*a)* See the introductory note about scope and comparability at *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)* Includes training allowances which have not been allocated across sub-categories.

*c)* The totals shown for Category 4 include non-zero spending on Eurostat Category 3 "Job rotation and sharing" in Finland, Germany, Italy, Korea, Spain and Sweden.

*d)* The totals shown for Category 8 include an adjustment for double-counting of participants.

## Table K. **Public expenditure and participant stocks in labour market programmes in OECD countries**[a] *(cont.)*

| Programme categories and sub-categories | Hungary | | | | | | Ireland | | | | | | Israel[e] | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 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 | | |
| | 2007 | 2008 | 2009 | 2007 | 2008 | 2009 | 2007 | 2008 | 2009 | 2007 | 2008 | 2009 | 2007 | 2008 | 2009 | 2007 | 2008 | 2009 |
| **1. PES and administration**[a] | **0.08** | **0.09** | **0.09** | | | | **0.12**[b] | **0.14**[b] | **0.18**[b] | | | | **0.03** | **0.03** | **0.02** | | | |
| *of which:* 1.1.Placement and related services[a] | . . | . . | . . | | | | 0.04 | 0.04 | 0.05 | | | | . . | . . | . . | | | |
| 1.2. Benefit administration[a] | . . | . . | . . | | | | 0.03[c] | 0.04[c] | 0.07[c] | | | | . . | . . | . . | | | |
| **2. Training** | **0.06** | **0.06** | **0.05** | **0.32** | **0.39** | **0.32** | **0.26**[d] | **0.30**[d] | **0.37**[d] | **1.41**[d] | **1.54**[d] | **2.55**[d] | **0.09** | **0.08** | **0.07** | **1.59** | **1.43** | **1.64** |
| 2.1. Institutional training | 0.06 | 0.06 | 0.05 | 0.32 | 0.39 | 0.32 | 0.14 | 0.16 | 0.22 | 0.80 | 0.88 | 1.95 | 0.04 | 0.03 | 0.04 | 1.16 | 1.04 | 1.24 |
| 2.2. Workplace training | – | – | – | – | – | – | 0.02 | 0.02 | 0.02 | 0.11 | 0.11 | 0.13 | – | – | – | 0.01 | – | 0.01 |
| 2.3. Alternate training | – | – | – | – | – | – | 0.08 | 0.09 | 0.10 | 0.42 | 0.46 | 0.38 | – | – | – | – | – | – |
| 2.4. Special support for apprenticeship[a] | – | – | – | – | – | – | – | – | – | – | – | . . | 0.05 | 0.05 | 0.03 | 0.42 | 0.40 | 0.39 |
| **4. Employment incentives**[a] | **0.08** | **0.07** | **0.07** | **0.76** | **0.84** | **0.65** | **0.04** | **0.04** | **0.05** | **0.25** | **0.20** | **0.10** | **0.02** | **0.02** | **0.02** | **0.08** | **0.07** | **0.08** |
| 4.1. Recruitment incentives | 0.07 | 0.07 | 0.04 | 0.67 | 0.82 | 0.47 | 0.04 | 0.04 | 0.05 | 0.25 | 0.20 | 0.10 | 0.02 | 0.02 | 0.02 | 0.08 | 0.07 | 0.08 |
| 4.2. Employment maintenance incentives | – | – | 0.02 | 0.09 | 0.02 | 0.11 | – | – | – | – | – | – | – | – | – | – | – | – |
| **5. Supported employment and rehabilitation** | **–** | **–** | **–** | **–** | **–** | **–** | **0.01** | **0.01** | **0.01** | **0.14** | **0.14** | **0.16** | **0.03** | **0.03** | **0.03** | **0.55** | **0.56** | **0.59** |
| 5.1. Supported employment | – | – | – | – | – | – | 0.01 | 0.01 | 0.01 | 0.14 | 0.14 | 0.16 | – | – | – | 0.03 | 0.03 | 0.02 |
| 5.2. Rehabilitation | – | – | – | – | – | – | – | – | – | – | – | – | 0.03 | 0.03 | 0.03 | 0.53 | 0.54 | 0.57 |
| **6. Direct job creation** | **0.04** | **0.04** | **0.23** | **0.39** | **0.32** | **0.33** | **0.21** | **0.23** | **0.26** | **1.07** | **1.09** | **1.13** | **–** | **–** | **–** | **–** | **–** | **–** |
| **7. Start-up incentives** | **–** | **0.01** | **0.01** | **0.04** | **0.07** | **0.03** | **–** | **–** | **–** | **0.22** | **0.21** | **0.26** | **–** | **–** | **–** | **0.13** | **0.19** | **0.21** |
| **8. Out-of-work income maintenance and support**[a] | **0.36** | **0.37** | **0.53** | **3.27** | **3.67** | **5.69** | **0.85** | **1.27** | **2.56** | **6.90** | **9.84** | **19.07** | **0.64** | **0.61** | **0.75** | **6.17** | **5.64** | **6.35** |
| 8.1. Full unemployment benefits | 0.36 | 0.37 | 0.53 | 3.27 | 3.67 | 5.69 | 0.75 | 1.16 | 2.34 | 6.90 | 9.67 | 18.29 | 0.61 | 0.58 | 0.72 | 5.88 | 5.41 | 6.13 |
| *of which:* Unemployment insurance | 0.36 | 0.37 | 0.45 | 2.23 | 2.51 | 3.87 | 0.29 | 0.52 | 1.08 | 2.94 | 4.60 | 7.50 | 0.25 | 0.25 | 0.39 | 1.72 | 1.62 | 2.42 |
| 8.2., 8.3. Partial and part-time unemployment benefits | – | – | – | – | – | – | – | – | – | – | 0.16 | 0.78 | – | – | – | – | – | – |
| 8.4., 8.5. Redundancy and bankrupcy compensation | – | – | – | – | – | – | 0.10 | 0.11 | 0.22 | – | – | – | 0.03 | 0.03 | 0.03 | 0.29 | 0.23 | 0.23 |
| **9. Early retirement**[a] | **–** | **–** | **–** | 0.04 | 0.01 | – | **0.07** | **0.07** | **0.06** | 0.49 | 0.40 | 0.34 | **–** | **–** | **–** | – | – | – |
| **TOTAL (1-9)** | **0.62** | **0.64** | **0.98** | | | | **1.55** | **2.06** | **3.49** | | | | **0.80** | **0.76** | **0.89** | | | |
| Active measures (1-7) | 0.27 | 0.27 | 0.45 | | | | 0.64 | 0.72 | 0.87 | | | | 0.17 | 0.15 | 0.14 | | | |
| *of which:* Categories 2-7 only | 0.18 | 0.18 | 0.36 | 1.51 | 1.62 | 1.34 | 0.52 | 0.58 | 0.69 | 3.08 | 3.18 | 4.19 | 0.14 | 0.13 | 0.12 | 2.36 | 2.25 | 2.51 |
| Passive measures (8-9) | 0.36 | 0.37 | 0.53 | 3.30 | 3.68 | 5.69 | 0.92 | 1.34 | 2.62 | 7.39 | 10.24 | 19.41 | 0.64 | 0.61 | 0.75 | 6.17 | 5.64 | 6.35 |

*a)* See the introductory note about scope and comparability at *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)* 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.

*c)* 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).

*d)* Includes the Specialist Training Providers programme which has not been allocated across sub-categories.

*e)* The statistical data for Israel are supplied by and under the responsibility of the relevant Israeli authorities. The use of such data by the OECD is without prejudice to the status of the Golan Heights, East Jerusalem and Israeli settlements in the West Bank under the terms of international law.

## Table K. **Public expenditure and participant stocks in labour market programmes in OECD countries**[a] *(cont.)*

| Programme categories and sub-categories | Italy | | | | | | Japan[g] | | | Korea[k] | | | Luxembourg | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Public expenditure as a percentage of GDP | | | Participant stocks as a percentage of the labour force | | | Public expenditure as a percentage of GDP | | | Public expenditure as a percentage of GDP | | | Public expenditure as a percentage of GDP | | | Participant stocks as a percentage of the labour force | | |
| | 2007 | 2008 | 2009 | 2007 | 2008 | 2009 | 2007-08 | 2008-09 | 2009-10 | 2007 | 2008 | 2009 | 2007 | 2008 | 2009 | 2007 | 2008 | 2009 |
| **1. PES and administration**[a] | **0.08** | **0.09** | **0.11** | | | | **0.08** | **0.10** | **0.09** | **0.03** | **0.01** | **0.02** | **0.04** | **0.05** | **0.05** | | | |
| *of which:* 1.1.Placement and related services[a] | 0.01 | 0.01 | – | | | | 0.01 | 0.02 | 0.03 | 0.01 | 0.01 | 0.01 | 0.02 | 0.02 | 0.03 | | | |
| 1.2. Benefit administration[a] | 0.05[b] | 0.05[b] | 0.08[b] | | | | – | – | – | 0.01 | . . | – | 0.01 | 0.01 | 0.01 | | | |
| **2. Training** | **0.18** | **0.18** | **0.16** | **3.55** | **3.20** | **2.93** | **0.03** | **0.03** | **0.05** | **0.05** | **0.06** | **0.07** | **0.10** | **0.03** | **0.03** | **0.97** | **0.36** | **0.33** |
| 2.1. Institutional training | 0.03 | 0.03 | 0.02 | . . | . . | . . | 0.03[h] | 0.03[h] | 0.04[h] | 0.04[l] | 0.01 | 0.01 | 0.01 | – | – | . . | . . | . . |
| 2.2. Workplace training | 0.01 | 0.01 | 0.01 | 0.20 | 0.20 | 0.23 | – | – | – | – | 0.05 | 0.06 | 0.07 | 0.01 | 0.01 | 0.68 | 0.09 | 0.08 |
| 2.3. Alternate training | – | – | – | . . | . . | . . | – | – | – | – | – | – | 0.02 | 0.02 | 0.02 | 0.17 | 0.15 | 0.14 |
| 2.4. Special support for apprenticeship[a] | 0.13[c] | 0.14[c] | 0.13[c] | 2.50 | 2.51 | 2.37 | – | – | – | 0.01 | – | – | 0.01 | 0.01 | 0.01 | 0.13 | 0.12 | 0.11 |
| **4. Employment incentives**[a] | **0.15**[d] | **0.16**[d] | **0.15**[d] | **2.59**[d] | **2.51**[d] | **2.41**[d] | **0.06** | **0.07** | **0.23** | **0.03**[d] | **0.05**[d] | **0.06**[d] | **0.22**[m] | **0.25**[m] | **0.28**[m] | **4.45**[m] | **5.61**[m] | **6.12**[m] |
| 4.1. Recruitment incentives | 0.15[e] | 0.15[e] | 0.15[e] | 2.51 | 2.43 | 2.33 | 0.01 | 0.01 | 0.02 | 0.03 | 0.04 | 0.03 | 0.02 | 0.03 | 0.04 | 1.51 | 2.09 | 2.11 |
| 4.2. Employment maintenance incentives | – | – | – | – | – | – | 0.05[i] | 0.06[i] | 0.21[i] | – | 0.01 | 0.03 | 0.06 | 0.07 | 0.10 | 0.63 | 0.80 | 0.94 |
| **5. Supported employment and rehabilitation** | **–** | **–** | **–** | **–** | **–** | **–** | **–** | **–** | **–** | **–** | **0.01** | **0.02** | **0.01** | **0.01** | **0.01** | **0.02** | **0.02** | **0.02** |
| 5.1. Supported employment | – | – | – | – | – | – | – | – | – | – | 0.01 | 0.02 | 0.01 | 0.01 | 0.01 | 0.02 | 0.02 | 0.02 |
| 5.2. Rehabilitation | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – |
| **6. Direct job creation** | **0.01** | **0.01** | **0.01** | **0.11** | **0.09** | **0.08** | **–** | **0.08** | **0.10** | **0.01** | **0.05** | **0.22** | **0.10**[n] | **0.09**[n] | **0.12**[n] | **0.81**[n] | **0.74**[n] | **0.82**[n] |
| **7. Start-up incentives** | **0.03** | **0.02** | **0.02** | **–** | **–** | **–** | **–** | **–** | **–** | **–** | **–** | **0.01** | **–** | **–** | **–** | **–** | **–** | **–** |
| **8. Out-of-work income maintenance and support**[a] | **0.61** | **0.72** | **1.28** | **2.65** | **3.05** | **5.40** | **0.28**[i, j] | **0.25**[i, j] | **0.42**[i, j] | **0.25** | **0.29** | **0.42** | **0.36** | **0.37** | **0.70** | **3.05** | **3.59** | **7.68** |
| 8.1. Full unemployment benefits | 0.52 | 0.62 | 0.96 | 2.26 | 2.57 | 3.44 | 0.27[i, j] | 0.24[i, j] | 0.41[i, j] | 0.25 | 0.27 | 0.39 | 0.33 | 0.33 | 0.48 | 2.25 | 2.23 | 2.91 |
| *of which:* Unemployment insurance | 0.49 | 0.59 | 0.89 | 2.22 | 2.52 | 3.35 | 0.27 | 0.24 | 0.41 | 0.25 | 0.27 | 0.39 | 0.33 | 0.33 | 0.48 | 2.25 | 2.23 | 2.91 |
| 8.2., 8.3. Partial and part-time unemployment benefits | 0.09 | 0.09 | 0.33 | 0.39 | 0.47 | 1.96 | – | – | – | – | – | – | 0.01 | 0.02 | 0.20 | 0.81 | 1.36 | 4.77 |
| 8.4., 8.5. Redundancy and bankrupcy compensation | – | – | – | – | – | – | – | – | 0.01 | – | 0.02 | 0.03 | 0.02 | 0.02 | 0.03 | – | – | – |
| **9. Early retirement**[a] | **0.09** | **0.09** | **0.10** | 1.38[f] | 1.32[f] | 1.28[f] | **–** | **–** | **–** | **–** | **–** | **–** | **0.16** | **0.15** | **0.17** | 0.58 | 0.59 | 0.58 |
| **TOTAL (1-9)** | **1.14** | **1.27** | **1.83** | | | | **0.45** | **0.54** | **0.88** | **0.38** | **0.48** | **0.82** | **0.99** | **0.95** | **1.36** | | | |
| Active measures (1-7) | 0.45 | 0.46 | 0.44 | | | | 0.18 | 0.29 | 0.47 | 0.13 | 0.19 | 0.40 | 0.47 | 0.42 | 0.49 | | | |
| *of which:* Categories 2-7 only | 0.37 | 0.36 | 0.34 | 6.25 | 5.81 | 5.41 | 0.10 | 0.18 | 0.38 | 0.10 | 0.18 | 0.38 | 0.42 | 0.38 | 0.44 | 6.25 | 6.74 | 7.29 |
| Passive measures (8-9) | 0.69 | 0.81 | 1.39 | 4.03 | 4.36 | 6.68 | 0.28 | 0.25 | 0.42 | 0.25 | 0.29 | 0.42 | 0.52 | 0.52 | 0.87 | 3.63 | 4.18 | 8.25 |

*a)* See the introductory note about scope and comparability at *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).

*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 the total for 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, Korea, 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)* Revised data.

*g)* Fiscal years starting on 1st April.

*h)* Includes education and training allowances, but not unemployment benefits paid to programme participants.

*i)* Employment Adjustment Subsidies and the Employment Continuation Benefit of the Employment Insurance (EI) system are reported in Category 4.2. The Re-employment Allowance of the EI system is reported in Category 8.1.

*j)* Data for Unemployment Insurance refer to budget data rather than actual outlays and in some years they may include a contribution from the EI system budget towards PES and administration costs. These factors may explain certain discrepancies with data in other publications. For data on an actual outlay basis including only cash transfers to the unemployed, see the *OECD Social Expenditure Database* (*www.oecd.org/els/social/expenditure*).

*k)* Statistical break between 2007 and 2008 due to an extensive revision of the reporting framework.

*l)* 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.

*m)* Includes the re-employment bonus and measures of professional (re)integration of disabled workers which have not been allocated across sub-categories.

*n)* Includes Secretariat estimates in Category 6 for "Special measures".

## Table K. **Public expenditure and participant stocks in labour market programmes in OECD countries**[a] *(cont.)*

| Programme categories and sub-categories | Mexico | | | Netherlands | | | | | | New Zealand[h] | | | | | | Norway | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Public expenditure as a percentage of GDP | | | 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 | | |
| | 2007 | 2008 | 2009 | 2007 | 2008 | 2009 | 2007 | 2008 | 2009 | 2007-08 | 2008-09 | 2009-10 | 2007-08 | 2008-09 | 2009-10 | 2007 | 2008 | 2009 | 2007 | 2008 | 2009 |
| **1. PES and administration**[a] | –[b] | –[b] | –[b] | **0.38** | **0.34** | **0.43** | | | | **0.11** | . . | . . | | | | **0.11** | . . | . . | | | |
| *of which:* 1.1.Placement and related services[a] | – | – | – | 0.21 | 0.19 | 0.25 | | | | 0.01 | 0.02 | 0.02 | | | | 0.08 | . . | . . | | | |
| 1.2. Benefit administration[a] | . . | . . | . . | 0.17 | 0.14 | 0.18 | | | | 0.07 | . . | . . | | | | 0.01[l] | . . | . . | | | |
| **2. Training** | **0.01** | **0.01** | **0.01** | **0.10**[d] | **0.10**[d] | **0.13**[d] | **1.33** | **1.60** | **2.03** | **0.16**[i] | **0.17**[i] | **0.16**[i] | **1.17** | **1.23** | **1.15** | **0.23** | **0.21** | **0.22** | **1.26** | **1.14** | **0.97** |
| 2.1. Institutional training | . . | . . | . . | 0.04 | 0.04 | 0.04 | 0.41 | 0.41 | 0.43 | 0.06 | 0.06 | 0.05 | 0.23 | 0.24 | 0.20 | 0.22[m] | 0.20[m] | 0.22[m] | 1.11 | 0.99 | 0.97 |
| 2.2. Workplace training | . . | . . | . . | – | – | – | . . | – | – | – | – | – | – | – | – | 0.01 | 0.01 | – | 0.15 | 0.15 | – |
| 2.3. Alternate training | . . | . . | . . | 0.02 | 0.01 | 0.02 | 0.11 | 0.09 | 0.28 | 0.10 | 0.11 | 0.10 | 0.94 | 1.00 | 0.95 | – | – | – | – | – | – |
| 2.4. Special support for apprenticeship[a] | . . | . . | . . | 0.04[e] | 0.05[e] | 0.06[e] | 1.02[e] | 1.34[e] | 1.57[e] | – | – | – | – | – | – | – | – | – | – | – | – |
| **4. Employment incentives**[a] | **–** | **–** | **–** | –[f] | –[f] | –[f] | **0.01**[f] | –[f] | –[f] | **0.01** | **0.01** | **0.02** | **. .** | **. .** | **. .** | **0.03** | **0.02** | **0.03** | **0.19** | **0.19** | **0.19** |
| 4.1. Recruitment incentives | – | – | – | – | – | – | 0.01 | – | – | 0.01 | 0.01 | 0.02 | . . | . . | . . | 0.03 | 0.02 | 0.03 | 0.19 | 0.19 | 0.19 |
| 4.2. Employment maintenance incentives | – | – | – | – | – | – | – | – | – | – | – | – | . . | . . | . . | – | – | – | – | – | – |
| **5. Supported employment and rehabilitation** | **–** | **–** | **–** | **0.46** | **0.47** | **0.50** | **1.68** | **1.68** | **1.76** | **0.05** | **0.05** | **0.05** | **1.12** | **1.22** | **1.13** | **0.15** | **0.14** | **0.17** | **0.55** | **0.54** | **0.55** |
| 5.1. Supported employment | – | – | – | 0.41 | 0.41 | 0.44 | 1.17 | 1.17 | 1.16 | 0.02 | 0.02 | 0.02 | 0.65 | 0.77 | 0.65 | 0.10 | 0.10 | 0.13 | 0.40 | 0.41 | 0.42 |
| 5.2. Rehabilitation | – | – | – | – | – | – | – | – | – | 0.03 | 0.03 | 0.03 | 0.47 | 0.45 | 0.47 | 0.04 | 0.04 | 0.04 | 0.14 | 0.13 | 0.13 |
| **6. Direct job creation** | –[c] | –[c] | –[c] | **0.16**[f] | **0.15**[f] | **0.16**[f] | **0.41**[f] | **0.37**[f] | **0.32**[f] | **–** | **–** | **0.02** | **. .** | **. .** | **. .** | **0.05** | **0.04** | **0.04** | **0.27** | **0.26** | **0.40** |
| **7. Start-up incentives** | **0.01** | **0.01** | **0.01** | **–** | **–** | **–** | **–** | **–** | **–** | **0.01** | **0.01** | **0.01** | **. .** | **. .** | **. .** | **–** | **–** | **–** | **0.02** | **0.01** | **0.01** |
| **8. Out-of-work income maintenance and support**[a] | **–** | **–** | **–** | **1.41**[g] | **1.29**[g] | **1.70**[g] | **6.45**[g] | **6.20**[g] | **7.63**[g] | **0.23**[j] | **0.27**[j] | **0.47**[j] | **0.84** | **2.29** | **2.76** | **0.42** | **0.32** | **0.50** | **2.03** | **1.76** | **3.11** |
| 8.1. Full unemployment benefits | – | – | – | 1.41[g] | 1.29[g] | 1.70[g] | 6.45[g] | 6.20[g] | 7.63[g] | 0.23[j] | 0.27[j] | 0.47[j] | 0.84 | 2.29 | 2.76 | 0.36 | 0.29 | 0.44 | 2.03 | 1.76 | 3.11 |
| *of which:* Unemployment insurance | – | – | – | 0.69 | 0.62 | 0.98 | 2.79 | 2.79 | 3.92 | – | – | – | – | – | – | 0.14 | 0.13 | 0.26 | 1.28 | 1.09 | 2.36 |
| 8.2., 8.3. Partial and part-time unemployment benefits | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 0.06 | 0.03 | 0.06 | – | – | . . |
| 8.4., 8.5. Redundancy and bankrupcy compensation | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – |
| **9. Early retirement**[a] | **–** | **–** | **–** | **–** | **–** | **–** | – | – | – | **–** | **–** | **–** | – | – | – | **–** | **–** | **–** | – | – | – |
| **TOTAL (1-9)** | **0.02** | **0.02** | **0.02** | **2.50** | **2.35** | **2.91** | | | | **0.58** | **. .** | **. .** | | | | **0.98** | **. .** | **. .** | | | |
| Active measures (1-7) | 0.02 | 0.02 | 0.02 | 1.10 | 1.06 | 1.21 | | | | 0.35 | . . | . . | | | | 0.56 | . . | . . | | | |
| *of which:* Categories 2-7 only | 0.02 | 0.02 | 0.02 | 0.72 | 0.72 | 0.79 | 3.42 | 3.65 | 4.11 | 0.24 | 0.25 | 0.25 | 2.29[k] | 2.45[k] | 2.27[k] | 0.45 | 0.42 | 0.47 | 2.29 | 2.13 | 2.12 |
| Passive measures (8-9) | – | – | – | 1.41 | 1.29 | 1.70 | 6.45 | 6.20 | 7.63 | 0.23 | 0.27 | 0.47 | 0.84 | 2.29 | 2.76 | 0.42 | 0.32 | 0.50 | 2.03 | 1.76 | 3.11 |

*a)* See the introductory note about scope and comparability at *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)* 0.002% of GDP.

*c)* The Temporary Employment Programme (*Programa Empleo Temporal*) is not reported here as an active or passive labour market programme. It is included in the Income Maintenance area of the *OECD's SOCX Database* (*www.oecd.org/els/social/expenditure*).

*d)* Unemployment benefits paid to participants in training are included.

*e)* Employer tax reductions payable for every apprentice who does not earn more than 130% of the minimum wage.

*f)* Wage cost subsidies component of "Flexible reintegration budget for municipalities" measure is allocated to Category 6 in order to improve time-series consistency.

*g)* Includes social assistance benefits paid to inactive individuals as well as unemployed recipients.

*h)* Fiscal years starting on 1st July.

*i)* 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.

*j)* Excludes training benefits and includes unemployment benefits paid to participants in active programmes.

*k)* Participant stocks for Categories 4 "Employment incentives", 6 "Direct job creation" and 7 "Start-up incentives" are not included.

*l)* Includes the administration costs of rehabilitation benefits.

*m)* Mainly rehabilitation benefits paid to participants in education in regular schools.

## Table K. **Public expenditure and participant stocks in labour market programmes in OECD countries**[a] *(cont.)*

| Programme categories and sub-categories | Poland | | | | | | Portugal | | | | | | Slovak Republic | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 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 | | |
| | 2007 | 2008 | 2009 | 2007 | 2008 | 2009 | 2007 | 2008 | 2009 | 2007 | 2008 | 2009 | 2007 | 2008 | 2009 | 2007 | 2008 | 2009 |
| **1. PES and administration**[a] | **0.10** | **0.09** | **0.10** | | | | **0.14** | **0.15** | **0.14** | | | | **0.11** | **0.11** | **0.07** | | | |
| *of which:* 1.1.Placement and related services[a] | 0.01 | 0.01 | 0.01 | | | | 0.03 | 0.06 | 0.05 | | | | 0.04 | 0.04 | – | | | |
| 1.2. Benefit administration[a] | . . | . . | . . | | | | 0.02[b] | 0.02[b] | 0.02[b] | | | | . . | . . | . . | | | |
| **2. Training** | **0.10** | **0.12** | **0.67** | **0.54** | **0.56** | **0.02** | **0.19** | **0.24** | **0.43** | **0.81** | **0.89** | **1.46** | **–** | **0.01** | **0.01** | **0.02** | **0.04** | **0.04** |
| 2.1. Institutional training | 0.02 | 0.02 | 0.66 | 0.06 | 0.06 | 0.04 | 0.11 | 0.16 | 0.32 | 0.39 | 0.50 | 0.93 | – | 0.01 | 0.01 | 0.02 | 0.04 | 0.04 |
| 2.2. Workplace training | 0.02 | 0.03 | 0.01 | 0.11 | 0.15 | – | 0.04 | 0.04 | 0.07 | 0.17 | 0.18 | 0.30 | – | – | – | – | – | – |
| 2.3. Alternate training | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – |
| 2.4. Special support for apprenticeship[a] | 0.06 | 0.07 | – | 0.40 | 0.39 | – | 0.05 | 0.04 | 0.04 | 0.26 | 0.21 | 0.22 | – | – | – | – | – | – |
| **4. Employment incentives**[a] | **0.05** | **0.06** | **0.16** | **0.27** | **0.27** | **0.82** | **0.12** | **0.12** | **0.12** | **1.39** | **1.48** | **1.42** | **0.02** | **0.02** | **0.03** | **0.32** | **0.35** | **0.50** |
| 4.1. Recruitment incentives | 0.05 | 0.06 | 0.16 | 0.27 | 0.27 | 0.82 | 0.11 | 0.11 | 0.11 | 1.34 | 1.42 | 1.36 | 0.02 | 0.02 | 0.03 | 0.32 | 0.35 | 0.50 |
| 4.2. Employment maintenance incentives | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | . . |
| **5. Supported employment and rehabilitation** | **0.19** | **0.21** | **0.21** | **. .** | **3.65** | **3.49** | **0.04** | **0.03** | **0.04** | **0.11** | **0.11** | **0.10** | **0.01** | **0.02** | **0.03** | **0.04** | **0.07** | **0.10** |
| 5.1. Supported employment | 0.18 | 0.20 | 0.21 | . . | 3.64 | 3.48 | – | – | – | 0.01 | 0.01 | 0.01 | 0.01 | 0.02 | 0.03 | 0.04 | 0.07 | 0.10 |
| 5.2. Rehabilitation | – | – | – | 0.01 | 0.01 | 0.01 | 0.03 | 0.03 | 0.04 | 0.10 | 0.10 | 0.09 | – | – | – | – | – | – |
| **6. Direct job creation** | **0.02** | **0.02** | **0.03** | **0.06** | **0.07** | **0.06** | **0.02** | **0.02** | **0.04** | **0.40** | **0.37** | **0.57** | **0.04** | **0.05** | **0.01** | **2.46** | **2.12** | **0.75** |
| **7. Start-up incentives** | **0.05** | **0.06** | **0.08** | **0.02** | **0.04** | **0.04** | **–** | **–** | **–** | **0.08** | **0.11** | **0.11** | **0.04** | **0.06** | **0.07** | **0.69** | **0.78** | **1.00** |
| **8. Out-of-work income maintenance and support**[a] | **0.19** | **0.14** | **0.21** | **1.49** | **1.59** | **2.20** | **0.95** | **0.90** | **1.20** | **4.93** | **3.90** | **6.02** | **0.10**[c] | **0.11**[c] | **0.29**[c] | **0.82** | **0.83** | **1.87** |
| 8.1. Full unemployment benefits | 0.19 | 0.14 | 0.21 | 1.49 | 1.59 | 2.20 | 0.91 | 0.85 | 1.14 | 4.85 | 3.84 | 5.87 | 0.10 | 0.10 | 0.27 | 0.82 | 0.83 | 1.87 |
| *of which:* Unemployment insurance | 0.19 | 0.14 | 0.21 | 1.49 | 1.59 | 2.20 | 0.73 | 0.66 | 0.88 | 3.52 | 2.63 | 4.02 | 0.10 | 0.10 | 0.27 | 0.82 | 0.83 | 1.87 |
| 8.2., 8.3. Partial and part-time unemployment benefits | – | – | – | – | – | – | 0.01 | 0.01 | 0.02 | 0.08 | 0.07 | 0.15 | – | – | – | – | – | – |
| 8.4., 8.5. Redundancy and bankrupcy compensation | – | – | – | – | – | – | 0.03 | 0.04 | 0.05 | – | – | – | – | 0.01 | 0.02 | – | – | – |
| **9. Early retirement**[a] | **0.33** | **0.21** | **0.12** | 1.94 | 1.08 | 0.90 | **0.10** | **0.09** | **0.10** | 0.52 | 0.60 | 0.55 | **0.26** | **0.33** | **0.38** | 1.82 | 2.14 | 2.09 |
| **TOTAL (1-9)** | **1.01** | **0.90** | **1.59** | | | | **1.56** | **1.54** | **2.08** | | | | **0.59** | **0.69** | **0.89** | | | |
| Active measures (1-7) | 0.50 | 0.56 | 1.26 | | | | 0.51 | 0.55 | 0.77 | | | | 0.22 | 0.26 | 0.22 | | | |
| *of which:* Categories 2-7 only | 0.40 | 0.47 | 1.16 | 2.74 | 4.58 | 4.43 | 0.37 | 0.41 | 0.63 | 2.79 | 2.96 | 3.66 | 0.12 | 0.15 | 0.15 | 3.54 | 3.37 | 2.38 |
| Passive measures (8-9) | 0.51 | 0.35 | 0.34 | 3.43 | 2.67 | 3.10 | 1.05 | 0.99 | 1.31 | 5.45 | 4.51 | 6.57 | 0.36[c] | 0.43[c] | 0.67[c] | 2.64 | 2.96 | 3.97 |

*a)* See the introductory note about scope and comparability at *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 Segurança Social 2007*).

*c)* Does not include social assistance, which is the form of income support received by the majority of registered unemployed.

## Table K. **Public expenditure and participant stocks in labour market programmes in OECD countries**[a] *(cont.)*

| Programme categories and sub-categories | Slovenia | | | | | | Spain[b] | | | | | | 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[e] | | | Public expenditure as a percentage of GDP | | | Participant stocks as a percentage of the labour force | | |
| | 2007 | 2008 | 2009 | 2007 | 2008 | 2009 | 2007 | 2008 | 2009 | 2007 | 2008 | 2009 | 2007 | 2008 | 2009 | 2007 | 2008 | 2009 |
| **1. PES and administration**[a] | **0.09** | **0.09** | **0.10** | | | | **0.13** | **0.13** | **0.16** | | | | **0.23** | **0.33** | **0.46** | | | |
| *of which:* 1.1.Placement and related services[a] | 0.04 | 0.04 | 0.05 | | | | 0.02 | 0.02 | 0.04 | | | | 0.11 | 0.22 | 0.34 | | | |
| 1.2. Benefit administration[a] | 0.01 | 0.01 | 0.01 | | | | 0.02 | 0.02 | 0.03 | | | | 0.04[f] | 0.04[f] | 0.05[f] | | | |
| **2. Training** | **0.03** | **0.03** | **0.07** | **0.44** | **0.33** | **3.22** | **0.15** | **0.17** | **0.19** | **1.48** | **1.04** | **1.28** | **0.18**[g] | **0.07**[g] | **0.06**[g] | **0.61** | **0.21** | **0.21** |
| 2.1. Institutional training | 0.02 | 0.01 | 0.02 | 0.40 | 0.25 | 0.32 | 0.09 | 0.10 | 0.10 | 0.90 | 0.64 | 0.90 | 0.17 | 0.07 | 0.06 | 0.59 | 0.21 | 0.21 |
| 2.2. Workplace training | 0.02 | 0.01 | 0.05 | . . | 0.08 | 2.90 | 0.01 | 0.02 | 0.02 | . . | . . | . . | – | – | – | 0.01 | – | – |
| 2.3. Alternate training | – | – | – | – | – | – | 0.04 | 0.05 | 0.06 | 0.16 | 0.17 | 0.21 | – | – | – | – | – | – |
| 2.4. Special support for apprenticeship[a] | – | – | – | – | – | – | 0.01 | 0.01 | 0.01 | – | – | – | – | – | – | – | – | – |
| **4. Employment incentives**[a] | **0.02** | **0.01** | **0.05** | **0.17** | **0.06** | **0.25** | **0.32**[c] | **0.28**[c] | **0.27**[c] | **16.66**[c] | **11.58**[c] | **9.88**[c] | **0.50**[c] | **0.37**[c] | **0.37**[c] | **2.14**[c] | **1.71**[c] | **1.78**[c] |
| 4.1. Recruitment incentives | 0.02 | 0.01 | 0.05 | 0.17 | 0.06 | 0.25 | 0.24[d] | 0.19[d] | 0.17[d] | 12.86[d] | 8.66[d] | 6.45[d] | 0.47 | 0.37 | 0.37 | 2.05 | 1.71 | 1.78 |
| 4.2. Employment maintenance incentives | – | – | – | – | – | – | 0.07 | 0.08 | 0.09 | 3.43 | 2.51 | 3.03 | – | – | – | – | – | – |
| **5. Supported employment and rehabilitation** | **–** | **–** | **–** | **–** | **–** | **–** | **0.02** | **0.03** | **0.03** | **0.23** | **0.25** | **0.24** | **0.18** | **0.19** | **0.22** | **0.72** | **0.79** | **0.90** |
| 5.1. Supported employment | – | – | – | – | – | – | 0.02 | 0.02 | 0.03 | 0.22 | 0.24 | 0.23 | 0.17 | 0.19 | 0.21 | 0.56 | 0.62 | 0.68 |
| 5.2. Rehabilitation | – | – | – | – | – | – | – | – | – | – | – | – | 0.01 | 0.01 | 0.01 | 0.17 | 0.17 | 0.22 |
| **6. Direct job creation** | **0.05** | **0.04** | **0.06** | **0.54** | **0.23** | **0.29** | **0.08** | **0.09** | **0.10** | **. .** | **. .** | **. .** | **–** | **–** | **–** | **–** | **–** | **–** |
| **7. Start-up incentives** | **–** | **0.02** | **0.06** | **0.03** | **0.08** | **0.39** | **0.09** | **0.11** | **0.10** | **1.16** | **1.71** | **1.74** | **0.02** | **0.01** | **0.01** | **0.06** | **0.06** | **0.06** |
| **8. Out-of-work income maintenance and support**[a] | **0.30** | **0.27** | **0.63** | **1.75** | **1.40** | **5.95** | **1.40** | **1.82** | **2.92** | **6.41** | **7.94** | **11.64** | **0.65** | **0.45** | **0.72** | **5.39** | **4.03** | **5.16** |
| 8.1. Full unemployment benefits | 0.30 | 0.27 | 0.54 | 1.75 | 1.40 | 2.32 | 1.37 | 1.78 | 2.81 | 6.40 | 7.93 | 11.58 | 0.38[h] | 0.25[h] | 0.38[h] | 2.74[h] | 2.12[h] | 3.41[h] |
| *of which:* Unemployment insurance | 0.29 | 0.27 | 0.54 | 1.60 | 1.40 | 2.32 | 1.03 | 1.41 | 2.26 | 3.51 | 4.80 | 7.00 | 0.38 | 0.25 | 0.38 | 2.74 | 2.12 | 3.41 |
| 8.2., 8.3. Partial and part-time unemployment benefits | – | – | 0.09 | – | – | 3.62 | – | 0.01 | 0.05 | 0.01 | 0.01 | 0.06 | 0.25 | 0.17 | 0.25 | 2.65 | 1.91 | 1.75 |
| 8.4., 8.5. Redundancy and bankrupcy compensation | – | – | – | – | – | – | 0.03 | 0.03 | 0.06 | – | – | – | 0.02 | 0.03 | 0.10 | – | – | – |
| **9. Early retirement**[a] | **–** | **–** | **–** | – | – | – | **0.04** | **0.05** | **0.04** | . . | . . | . . | **–** | **–** | **–** | – | – | – |
| **TOTAL (1-9)** | **0.50** | **0.45** | **0.96** | | | | **2.24** | **2.68** | **3.82** | | | | **1.75** | **1.42** | **1.85** | | | |
| Active measures (1-7) | 0.20 | 0.18 | 0.33 | | | | 0.79 | 0.81 | 0.86 | | | | 1.10 | 0.97 | 1.13 | | | |
| *of which:* Categories 2-7 only | 0.11 | 0.09 | 0.23 | 1.19 | 0.69 | 4.15 | 0.67 | 0.68 | 0.69 | 19.52 | 14.59 | 13.16 | 0.87 | 0.65 | 0.67 | 3.54 | 2.77 | 2.95 |
| Passive measures (8-9) | 0.30 | 0.27 | 0.63 | 1.75 | 1.40 | 5.95 | 1.44 | 1.87 | 2.96 | 6.41 | 7.94 | 11.64 | 0.65 | 0.45 | 0.72 | 5.39 | 4.03 | 5.16 |

*a)* See the introductory note about scope and comparability at *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)* Categories 1 to 7 include expenditure by the autonomous communities and municipalities (additional to data published by Eurostat).

*c)* The totals shown for Category 4 include non-zero spending on Eurostat Category 3 "Job rotation and sharing" in Finland, Germany, Italy, Korea, Spain and Sweden.

*d)* Includes an employer subsidy for the conversion of temporary contracts into permanent contracts, not otherwise conditional on employment status.

*e)* Participant stock data do not include participants in municipal programmes.

*f)* Administration costs of independent unemployment insurance funds.

7. Includes income support paid to participants in "Activities within counselling, guidance and placement services" but not the corresponding services (which are in Category 1).

*h)* Includes "basic insurance" which is not a contribution-based benefit.

## Table K. **Public expenditure and participant stocks in labour market programmes in OECD countries**[a] *(cont.)*

| Programme categories and sub-categories | Switzerland | | | | | | United Kingdom[e] | | | | | | United States[g] | | | OECD unweighted average[j] | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | 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 | | | Public expenditure as a percentage of GDP | | | Participant stocks as a percentage of the labour force | | |
| | 2007 | 2008 | 2009 | 2007 | 2008 | 2009 | 2007-08 | 2008-09 | 2009-10 | 2007-08 | 2008-09 | 2009-10 | 2007-08 | 2008-09 | 2009-10 | 2007 | 2008 | 2009 | 2007 | 2008 | 2009 |
| **1. PES and administration**[a] | **0.11** | **0.11** | **0.12** | | | | **0.27** | **0.22** | **0.29** | | | | **0.03** | **0.04** | **0.05** | 0.13 | 0.13 | 0.16 | | | |
| *of which:* 1.1.Placement and related services[a] | . . | . . | . . | | | | 0.14 | 0.10 | 0.13 | | | | 0.01 | 0.01 | 0.01 | 0.06 | 0.06 | 0.08 | | | |
| 1.2. Benefit administration[a] | 0.04 | 0.04 | 0.04 | | | | 0.06[f] | 0.05[f] | 0.05[f] | | | | 0.02[h] | 0.03[h] | 0.04[h] | 0.04 | 0.04 | 0.05 | | | |
| **2. Training** | **0.19** | **0.16** | **0.20** | **0.64** | **0.55** | **0.66** | **0.02** | **0.02** | **0.02** | **0.07** | **0.07** | **. .** | **0.04** | **0.07** | **0.05** | **0.13** | **0.13** | **0.18** | **1.16** | **1.12** | **1.37** |
| 2.1. Institutional training | 0.18 | 0.16 | 0.19 | 0.62 | 0.53 | 0.62 | 0.01 | 0.02 | 0.02 | 0.07 | 0.07 | . . | 0.02 | 0.03 | 0.02 | 0.09 | 0.08 | 0.12 | 0.76 | 0.74 | 0.93 |
| 2.2. Workplace training | 0.01 | 0.01 | 0.01 | 0.03 | 0.02 | 0.03 | – | – | – | – | – | – | – | – | – | 0.01 | 0.01 | 0.02 | 0.11 | 0.09 | 0.20 |
| 2.3. Alternate training | – | – | – | – | – | – | – | – | – | – | – | – | 0.02 | 0.04 | 0.03 | 0.01 | 0.01 | 0.01 | 0.07 | 0.08 | 0.08 |
| 2.4. Special support for apprenticeship[a] | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 0.02 | 0.02 | 0.02 | 0.30 | 0.31 | 0.30 |
| **4. Employment incentives**[a] | **0.06** | **0.06** | **0.07** | **0.56** | **0.50** | **0.58** | **0.01** | **0.01** | **0.01** | **0.13** | **0.15** | **0.12** | **–** | **0.01** | **0.01** | **0.09** | **0.08** | **0.10** | **1.54** | **1.38** | **1.42** |
| 4.1. Recruitment incentives | 0.06[b] | 0.06[b] | 0.07[b] | 0.56[b] | 0.50[b] | 0.58[b] | 0.01 | 0.01 | 0.01 | 0.13 | 0.15 | 0.12 | – | 0.01 | 0.01 | 0.07 | 0.07 | 0.08 | 1.22 | 1.06 | 1.05 |
| 4.2. Employment maintenance incentives | – | – | – | – | – | – | – | – | – | – | – | – | – | – | – | 0.01 | 0.01 | 0.02 | 0.19 | 0.17 | 0.21 |
| **5. Supported employment and rehabilitation** | **0.20** | **. .** | **. .** | **0.37**[d] | **0.42**[d] | **0.50**[d] | **0.01** | **0.01** | **0.01** | **0.06** | **0.05** | **. .** | **0.03** | **0.04** | **0.03** | **0.08** | **0.08** | **0.09** | **0.43** | **0.56** | **0.59** |
| 5.1. Supported employment | 0.08 | . . | . . | . . | . . | . . | 0.01 | 0.01 | 0.01 | 0.06 | 0.05 | 0.01 | – | – | – | 0.05 | 0.06 | 0.07 | 0.30 | 0.44 | 0.43 |
| 5.2. Rehabilitation | 0.13 | 0.13 | 0.15 | 0.37 | 0.42 | 0.50 | – | – | – | . . | . . | . . | 0.03 | 0.04 | 0.03 | 0.02 | 0.02 | 0.02 | 0.11 | 0.11 | 0.12 |
| **6. Direct job creation** | **–** | **–** | **–** | **–** | **–** | **–** | **0.01** | **0.01** | **–** | **0.02** | **0.03** | **0.03** | **0.01** | **0.01** | **0.01** | **0.05** | **0.05** | **0.07** | **0.51** | **0.47** | **0.43** |
| **7. Start-up incentives** | **0.01** | **–** | **0.01** | **0.01** | **0.01** | **0.01** | **–** | **–** | **–** | **–** | **–** | **–** | **–** | **–** | **–** | **0.01** | **0.01** | **0.02** | **0.15** | **0.17** | **0.21** |
| **8. Out-of-work income maintenance and support**[a] | **0.57** | **0.53** | **1.00** | **2.24** | **2.03** | **4.27** | **0.16** | **0.20** | **0.33** | **2.71** | **3.26** | **5.05** | **0.30** | **0.82** | **1.00** | **0.58** | **0.60** | **0.95** | **4.25** | **4.35** | **6.40** |
| 8.1. Full unemployment benefits | 0.57[c] | 0.52[c] | 0.77[c] | 2.19 | 1.95 | 2.70 | 0.16 | 0.20 | 0.33 | 2.71 | 3.26 | 5.05 | 0.30[i] | 0.82[i] | 1.00[i] | 0.54 | 0.56 | 0.85 | 3.92 | 4.01 | 5.53 |
| *of which:* Unemployment insurance | 0.52 | 0.47 | 0.75 | 2.19 | 1.95 | 2.70 | . . | . . | . . | . . | . . | . . | 0.30 | 0.81 | 1.00 | 0.40 | 0.42 | 0.66 | 2.46 | 2.45 | 3.57 |
| 8.2., 8.3. Partial and part-time unemployment benefits | 0.01 | 0.01 | 0.23 | – | – | – | – | – | – | – | – | – | – | – | – | 0.02 | 0.02 | 0.06 | 0.31 | 0.32 | 0.86 |
| 8.4., 8.5. Redundancy and bankrupcy compensation | – | – | 0.01 | – | – | – | – | – | – | – | – | – | – | – | – | 0.01 | 0.02 | 0.04 | 0.01 | 0.01 | 0.01 |
| **9. Early retirement**[a] | **–** | **–** | **–** | – | – | – | **–** | **–** | **–** | – | – | – | **–** | **–** | **–** | 0.09 | 0.09 | 0.09 | 0.68 | 0.64 | 0.60 |
| **TOTAL (1-9)** | **1.15** | **. .** | **. .** | | | | **0.47** | **0.47** | **0.66** | | | | **0.43** | **0.99** | **1.17** | **1.18** | **1.21** | **1.67** | | | |
| Active measures (1-7) | 0.57 | . . | . . | | | | 0.32 | 0.27 | 0.33 | | | | 0.13 | 0.18 | 0.16 | 0.50 | 0.50 | 0.62 | | | |
| *of which:* Categories 2-7 only | 0.46 | . . | . . | 1.59[d] | 1.48[d] | 1.74[d] | 0.05 | 0.05 | 0.04 | 0.28 | 0.30 | 0.22 | 0.10 | 0.14 | 0.12 | 0.36 | 0.36 | 0.46 | 3.70 | 3.59 | 3.82 |
| Passive measures (8-9) | 0.57 | 0.53 | 1.00 | 2.24 | 2.03 | 4.27 | 0.16 | 0.20 | 0.33 | 2.71 | 3.26 | 5.05 | 0.30 | 0.82 | 1.00 | 0.67 | 0.69 | 1.04 | 4.91 | 4.94 | 6.95 |

*a)* See the introductory note about scope and comparability at *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)* 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)* Participant stocks for Category 5.1 "Supported employment" are not included.

*e)* Coverage of expenditure and participants in Northern Ireland is incomplete. Fiscal years starting on 1st April.

*f)* Includes the administration of benefits (JSA) and other benefits for persons of working age (incapacity benefit, income support and certain supplementary benefits), although only JSA is included in Category 8.

*g)* Fiscal years starting on 1st October.

*h)* Mainly costs of running unemployment insurance offices. Also includes various national activities such as information, research and evaluation.

*i)* 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.

*j)* Estimates. 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 European Union countries and Norway, Eurostat (2011), *Labour Market Policy: 2011 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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