OECD Employment Outlook

MOVING BEYOND THE JOBS CRISIS

OECD

2010

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The *OECD Employment Outlook*

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

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Editorial

From deep recession to fragile recovery: How labour market policies can help promote a quick return to work

An economic recovery is underway in most countries…

The global economy is emerging from the worst financial and economic crisis of the past half century, but it will take time and strong political will to heal the wounds in the labour market. While the economic recovery is broadening and strengthening, employment growth is still lagging. In the two years to the first quarter of 2010, employment fell by 2.1% in the OECD area and the unemployment rate increased by just over 50%, to 8.7%, corresponding to 17 million additional persons in unemployment.

… but in most cases, projected output growth will not be robust enough to quickly absorb the massive labour market slack accumulated in many countries

However, recent data suggest that unemployment may have peaked in the OECD area and the latest OECD projections have revised upward the economic outlook for this year and next. Nonetheless, the recovery is unlikely to be sufficiently vigorous to reabsorb rapidly the current high levels of unemployment and underemployment. Indeed, the latest projections suggest that the OECD unemployment rate may still be above 8% by the end of 2011. Moreover, a broader measure of unemployment encompassing inactive persons who wish to work and involuntary part-time workers is nearly twice as large as the official unemployment rate.

With many unemployed experiencing long spells of joblessness, the risk that the sharp increase in cyclical unemployment will become structural in nature is rising. This risk, however, varies significantly across countries, reflecting the diversity of individual country experiences during the crisis. Whereas massive labour shedding led to large increases of unemployment and inactivity in some countries, an unusually high share of the total decline in labour input has been achieved through reductions in working time in a large number of countries. The need for vigorous employment growth to avert unemployment becoming entrenched is evident in the former group. However, the risk that job creation will be particularly weak during the recovery (a so-called jobless recovery) is a major concern for the latter group of countries.

OECD economies are facing the daunting twin challenge of reducing high unemployment and underemployment while also starting to tackle unprecedented fiscal deficits

In the context of rapidly rising unemployment and underemployment, and the permissive funding environment created by large fiscal stimulus packages, most OECD countries moved promptly to scale up resources for labour market programmes early in the

downturn. Recognising that the jobs crisis is still far from over, most governments planned at the beginning of 2010 to hold constant, and in some cases further expand, resources devoted to labour market programmes during the year. However, the pressure to cut large fiscal deficits is mounting rapidly in many countries and with that the need to make hard choices on how to allocate now scarcer public resources across different pressing areas of public policy. Given the depth of the labour market slack and the social and economic risks associated with it, a strong case can be made to ensure that labour market programmes remain adequately funded. But it becomes essential to focus on *cost-effective* programmes and to target the most disadvantaged groups at risk of losing contact with the labour market.

Measures to support labour demand should evolve from preserving jobs to jumpstarting job creation

During the economic downturn, important public and private initiatives were taken in most OECD economies to sustain labour demand, especially by encouraging cuts in hours worked, as an alternative to dismissals. Evidence reported in this volume suggests that public short-time work (STW) schemes have played an important role in preserving jobs during the crisis, although significant reductions in hours were also achieved *via* cuts in overtime, hours-averaging arrangements and in some cases agreements between employers and workers. Many countries have also supported labour demand through cuts in non-wage labour costs, in particular reductions in social security contributions and scaling-up hiring subsidies.

As the economic recovery gains momentum, it is important to begin phasing out these STW schemes, so as not to hinder productivity-enhancing labour reallocation across sectors and firms. At the same time, tight fiscal conditions suggest shifting the focus from across-the-board cuts in non-wage labour costs to employment subsidies, especially for employers recruiting the long-term unemployed or other vulnerable groups, so as to avoid growing deadweight losses.

The widespread resort to STW schemes during the recession also provides useful insights on the optimal use of these schemes over the business cycle. In particular, the take-up rate varied greatly across countries: They were much higher in countries that already had the scheme in place before the crisis than in those that introduced it from scratch during the downturn. Timing was critical in this case, as STW schemes tend to be most effective in the early phase of an economic downturn and it proved difficult in some countries to set them up quickly enough to be fully effective. In light of these implementation problems, an important question is whether it would be appropriate to keep a small, but well-run STW scheme even in good times, which can be scaled up rapidly in bad times, partly by temporarily changing the rules so as to encourage higher participation.

Income support to the unemployed should be maintained, but it is essential to condition it on effective job search

In terms of unemployment benefits and other forms of income support for job losers, there is also a difficult balancing act to perform. The build-up in long-term unemployment creates particularly acute needs for income support that require close attention. In those

countries where the duration of benefits is normally short, or the coverage of benefits to workers in atypical jobs is low, there was a strong case for extending maximum duration and coverage of benefits in the downturn. And these extensions should be maintained in the early phases of the recovery until the pool of long-term unemployed begins to drop significantly. But it is becoming even more important to make sure these extensions are accompanied by close monitoring of job-search efforts to avoid benefit dependence. This is a difficult challenge, especially in those countries where public employment services (PES) are lacking the staff or the administrative capacity to handle a large pool of increasingly heterogeneous jobseekers. The situation is very different in other countries where unemployment benefits were already quite generous prior to the crisis and then were expanded further. In most instances, these countries should more quickly phase out these crisis measures in the recovery.

Re-employment services have a key role to play to promote a quick reintegration of jobseekers into productive jobs…

Effective activation strategies helped many OECD countries achieve low unemployment before the crisis and they can play a major role in speeding the reintegration of jobseekers into employment during the recovery. But activation policy has to be adapted to the different phases of the downturn and recovery in order to ensure effective support to a large and growing pool of unemployed. Most countries have maintained or even expanded core job-search assistance and have also sought to provide more targeted re-employment services, including training opportunities, for the most hard-to-place unemployed. A shift towards greater investment in training, especially linked to local labour market needs, is warranted in the present circumstances.

… and efforts made during the crisis can be used to develop a more effective activation strategy

The experience of the crisis and the associated efforts to help the many jobseekers could also be taken as an opportunity to invest in the development of a more comprehensive and effective activation strategy, one that strengthens the links between benefit recipiency, searching for a job and participation in active programmes. Putting in place such an activation strategy generally takes time, as it involves institutional changes associated with the operation of the PES, their relationships with national and local governments and the coordination with benefit providers or private employment services. But even within a given institutional framework, it may be useful to take advantage of the scaled-up resources during the current crisis to put in place a more effective and resilient activation strategy.

A comprehensive strategy to promote job creation and sustained economic growth may also involve reconsidering certain elements of labour regulations

At the time when unemployment is still high and many workers are concerned about the stability of their jobs, it is particularly difficult to call for structural labour market reforms, particularly those concerning labour regulations. But in a number of countries, these

reforms should be an integral part of a comprehensive strategy to promote the creation of more, but also more productive, jobs. Evidence presented in this volume suggests that partial reforms of employment protection over the past two decades that sought to promote labour market adaptability by easing regulations on *temporary* contracts, while leaving in place stringent restrictions on permanent contracts, have indeed increased overall labour mobility. However, these reforms did not necessarily promote a more efficient allocation of workers towards more productive and rewarding jobs. At the same time, workers holding temporary contracts have borne the brunt of job losses in most countries during the recent recession, as firms have adjusted to the sudden decline in demand by simply not renewing their contracts. In other words, the dualism created by these asymmetric reforms of employment protection in some countries even in good times was exacerbated during the crisis as job losses were concentrated on the already disadvantaged workers on precarious jobs, many of whom were youth.

As the recovery gathers pace, it is essential to create the right incentives for firms to hire more workers. Beyond temporary hiring subsidies and efforts to foster the employability of jobseekers, this could involve a rebalancing of employment protection between temporary and permanent contracts. Doing so would allow temporary jobs to function better as stepping stones into permanent jobs, rather than as traps. However, such a strategy would imply that, over time, labour mobility will increase among permanent workers and some will possibly experience income losses not only during their search for another job, but even at re-employment. Thus, the re-balancing of employment protection should be introduced as part of a comprehensive package that also provides adequate unemployment benefits, with strictly enforced work-availability conditions and a well-designed activation package.

Evidence presented in this volume suggests that, while protecting and accompanying workers in their transitions from job to job, such complementary measures do not impair, and actually enhance, productive reallocation of labour resources. This message is not new: It was clearly stated in the 2006 *OECD Reassessed Jobs Strategy.* But it assumes an even greater importance at present, when the need to foster the creation of jobs, but also to promote efficient reallocation of labour, is paramount to tackle high and persistent unemployment and foster sustainable and shared growth.

John P. Martin

Director, OECD Directorate for Employment, Labour and Social Affairs

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Chapter 1

Moving Beyond the Jobs Crisis

This chapter updates the analysis in the 2009 Employment Outlook *of the labour market impact of the 2008-09 recession and policy responses to the resulting jobs crisis. The OECD area unemployment rate reached a post-war high of 8.7% in March 2010 and is probably near its peak, but is projected to decline only slowly. Total labour market slack exceeds conventional unemployment and a broader measure encompassing inactive persons who wish to work and involuntary part-time workers is more than twice as large. The extent to which falling output translated into higher unemployment has differed dramatically across the OECD depending on whether employers emphasised labour shedding or work sharing. The contribution of hours reduction to labour input adjustment is shown to have been unusually high in a considerable number of countries, due in part to public short-time work schemes, which preserved a significant number of jobs at least in the short run. Governments also continue to scale up income support and re-employment assistance for job losers in 2010, but now face difficult choices concerning how quickly to phase out these measures in the context of a still uncertain recovery and mounting fiscal pressures. A major priority going forward is to assure a job-rich recovery while limiting hysteresis effects in unemployment and participation.*

Introduction

OECD employment and labour ministers met in Paris on 28-29 September 2009 – together with their colleagues from a number of other countries – to discuss how best to tackle the jobs crisis created by the 2008-09 recession.[1] Ministers agreed that the severity of the recession called for decisive and comprehensive actions and endorsed a set of broad guidelines for the labour market and social policy responses that are intended to limit the social costs of the recession while also promoting a return to sound economic growth.[2] At the time of the meeting, ministers reported that their governments had taken many measures to support aggregate demand while also expanding social safety nets and re-employment services to assist unemployed workers. Since there was still a great deal of uncertainty about how the global economic situation would evolve and which policy measures would prove to be most effective, ministers requested that the OECD continue to monitor labour market developments and policy responses during the crisis and in the recovery phase, in order to assess the adequacy and effectiveness of the various measures taken in different areas. This chapter reports on this on-going monitoring exercise.[3]

The chapter is divided into five sections. Section 1 updates the analysis of the labour market impact of the 2008-09 recession that was published in the 2009 edition of the *OECD Employment Outlook* (OECD, 2009a). With the still fragile economic recovery in mind, it is also useful to assess the full extent of the labour market slack which has been created by the recession and needs to be reabsorbed as quickly as possible in the recovery. One pattern that emerges clearly in Section 1 is that national labour markets have reacted very differently to the 2008-09 recession. In part, this reflects differences in the severity of the negative shock to aggregate demand. However, job losses and the size of the increase in unemployment have also differed markedly in countries where the fall in real GDP has been similar, raising the possibility that the right package of policies and institutions can significantly reduce the vulnerability of workers to cyclical unemployment. Section 2 analyses this issue in detail, emphasising the different margins along which employers can adjust labour input in response to declining product market demand and draws comparisons with earlier recessions. Employers in a considerable number of countries are shown to have made greater use of employment smoothing following the latest cyclical contraction in demand (so-called "labour hoarding") than in earlier recessions. While increased employment smoothing dampens how sharply unemployment rises, Section 2 highlights that it also implies greater reductions in average hours worked and/or hourly labour productivity and hence has complex implications for the overall cost of recessions. The degree of labour hoarding also appears likely to have important implications for the distribution of recession costs across the workforce and the vigour of job creation during the recovery, but those questions lie outside the scope of this chapter.

Sections 3 to 5 turn to the labour market and social policy response to the 2008-09 recession, updating the analysis presented last year. Section 3 summarises responses from a new EC-OECD questionnaire to governments concerning their policy responses to the

recession and how they have evolved between 2009 and 2010.[4] To the limited extent possible at this point, the effectiveness of different policy measures is discussed, including how successfully income support and re-employment services have been up-scaled in response to often large and rapid increases in the number of job seekers requiring assistance. Section 4 analyses the impact of public short-time work schemes on the labour market impact of recessions, in light of their extensive use during the 2008-09 recession and the unusually large share of total labour input adjustment that took the form of average hours reduction in many countries. One of the key questions examined in this section is how effectively these measures preserved jobs that would otherwise have disappeared during the downturn. Section 5 analyses policies to reduce persistence effects in the labour market, including policy measures to increase net job creation in the early recovery period and to reduce hysteresis effects in unemployment and participation that would have negative implications for employment rates and potential output over the medium term.

Main findings

- *Starting from a 28-year low of 5.8% in late 2007, the OECD unemployment rate rose to a post-war high of 8.7% in the first quarter of 2010, corresponding to more than 17 million additional persons in unemployment.* The most recent OECD economic projections indicate that unemployment has peaked, but will decline only slowly and still be above 8% at the end of 2011.[5] Should these projections prove accurate, it would mean that the OECD average impact of the 2008-09 recession on unemployment would be comparable to the deepest earlier recession in the post-war period, namely, that following the first oil shock in 1973.
- *Unemployment has risen much more in some countries than in others and differences in how sharply real GDP fell leave much of this heterogeneity unexplained.* Job losses have been unusually large compared with the fall in output in a few countries where a boom-bust pattern in the housing market played an important role in causing the recession, notably Spain, the United States and, to a lesser extent, Ireland (where the fall in output was also especially large). By contrast, the employment response to declining output has been unusually muted in a larger number of countries, including Germany, Japan, Mexico, the Netherlands and the Slovak Republic, where a sharp decline in exports was a major driver of the downturn.
- *Job losses have been disproportionately large for certain workforce groups and industries.* In most cases, these differences conform to past recessions (*e.g.* employment losses have been far above average for construction, temporary and low-skilled workers, and youth). However, the 2008-09 recession has been unusual in that employment has fallen significantly more for men than for women, probably due to the sectoral profile of the recession (*i.e.* especially large employment losses in mining, manufacturing, and construction). Continued employment growth for older workers during the recession is also a break with the past.
- *The total labour market slack created by the recession substantially exceeds the increase in the conventional unemployment rate,* due to a recession-induced increase in the number of persons who are outside of the labour force despite wanting a job, because they believe none are available, and reduced hours for persons remaining employed. For the OECD area at the end of 2009, the sum of marginally attached and underemployed workers exceeded the number of unemployed.
- *Cross-country differences in the relative importance of labour demand adjustment along the employment and hours worked margins explain much of the heterogeneity in the rise of*

unemployment during the recession. Hours reduction has played a large role in Japan and a number of European countries such as Germany, the Slovak Republic and Austria. This pattern of so-called "labour hoarding" by firms has reduced the social costs associated with a recessionary upsurge in unemployment, but also raises concerns about the risk of a jobless recovery, particularly in countries where lower hours were associated with a substantial reduction in hourly productivity. For example, GDP in Germany and Japan could grow by more than 7% without any increase in employment, if hours worked per employee and hourly productivity were to rise back to their pre-crisis levels.

- *The relative importance of adjustment on the employment and hours margins reflects differences in the nature of the shock, the structure of the economy and labour market institutions*. Shorter and shallower downturns tend to be associated with relatively more hours adjustment. Moreover, differences in the mix of firms may explain some the observed adjustment patterns across countries as labour hoarding varies with firm size, debt leverage and technology intensity. Labour market institutions affecting the mix between hours and employment reductions include the regulations affecting employment protection and hours adjustments (*e.g.* rules applying to over-time work, hours averaging and short-time work).
- *Even though the economic recovery began in the second half of 2009 in the majority of OECD countries, most governments expect to expand or at least hold constant the resources devoted to unemployment benefits and re-employment assistance in 2010 compared with their spending in 2009, according to their responses to a new questionnaire in early 2010*. However, countries facing especially large government budget deficits or where an already high unemployment rate is projected to remain stable or decline are more likely to envisage beginning to trim back some of the increases in spending that were taken in response to the crisis. Many of the crisis measures are scheduled to expire, often at the end of 2010 or early in 2011. This is particularly common for expansions of unemployment benefit coverage or benefit generosity and measures to stimulate labour demand, including expansions of short-time work (STW) schemes.
- *Coverage of unemployment benefits has grown approximately in proportion with the number of unemployed persons, fulfilling its role as an automatic stabiliser*. OECD governments have also scaled-up spending and participation in a number of active labour market programmes (ALMPs), which are intended to assist the unemployed to find a new job or improve their employability, more strongly than in previous recessions. Public employment service (PES) staffing has increased significantly in a number of countries, with Japan increasing it by over one-third. Participation in STW schemes also increased sharply in a number of countries, including in Germany, Japan, Italy and Turkey. Despite these increases, the volume of ALMP services typically did not increase as rapidly as the ranks of the unemployed.
- *Public STW schemes have played an important role in preserving jobs during the crisis in a number of countries*, although significant hours reductions were also achieved *via* lower overtime hours, hours averaging arrangements and employer initiatives. New OECD estimates indicate that the jobs impact of STW schemes was particularly large in Germany and Japan, saving over 200 000 and nearly 400 000 jobs respectively by 2009 Q3, while the proportional impact on employment was also substantial in Belgium, Finland and Italy. These estimates are somewhat smaller than full-time equivalent participation

in short-time work, suggesting that STW schemes end up supporting some jobs that would have been maintained in the absence of the subsidy, although the implied rate of deadweight appears to be modest in comparison with that for other types of job subsidies. The positive impact of STW was limited to workers with permanent contracts, further increasing labour market segmentation between workers in regular jobs and workers in temporary and part-time jobs. As the OECD area is only just emerging from the crisis, it is not yet possible to assess how the intensive use of STW schemes will affect the vigour of employment growth in the recovery and economic restructuring in the longer run. In order to prevent such schemes from becoming an obstacle to the recovery, it is important for crisis measures to encourage short-time working to be phased out as the recovery takes hold.

- *A high priority should be assigned to minimising the persistence of high labour market slack during the recovery and beyond*. Marginal employment subsidies (MES), which are paid for *net* increases in jobs, appear to have the potential to increase job creation in the early stages of the recovery at a relatively modest cost as compared with broader employment subsidies. A number of countries have introduced such schemes in response to the current crisis (*e.g.* Hungary, Ireland, Portugal and Turkey), while several other countries have continued to operate existing schemes. It is also important to minimise hysteresis effects in the labour market, since previous severe recessions have raised the structural rate of unemployment and depressed trend participation rates. The labour market policy response to the crisis, in combination with pre-crisis structural reforms in many countries, holds out the hope that persistence effects from the 2008-09 recession may be less severe than those observed following deep downturns during the last three decades of the 20th century.

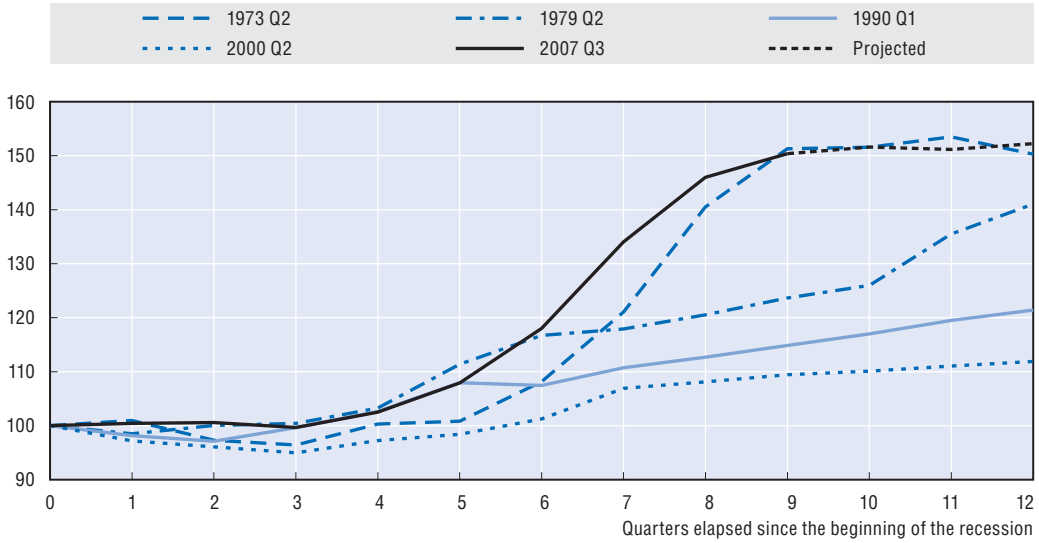
1. Overview of the labour market impact of the recession[6]

1.1. *How bad has it been?*

The overall labour market impact of the 2008-09 recession appears likely to end up being comparable to the deepest earlier recession in the post-war period, namely, that following the first oil price shock in 1973. Starting from a 28-year low of 5.6% in late 2007, the OECD area unemployment rate had risen to 8.5% by the first quarter of 2010, corresponding to 17 million additional persons in unemployment.[7] This represented an increase in the unemployment rate of just over 50%, with both the size of the overall rise and its time profile being very similar to the unemployment trajectory that was observed during the first nine quarters of the recession following the first oil shock (Figure 1.1). The proportionate increase in the unemployment rate for the OECD area as a whole was smaller and less rapid in other post-war recessions, including that following the second oil shock and the one beginning in 1990.[8] The most recent OECD projections, which date from May 2010, foresee that the number of persons unemployed will reach a peak of 8.6% in the third quarter of 2010 and then recede slowly remaining above 8% at the end of 2011. If those projections were to be realised, the impact of the 2008-09 recession on the average unemployment rate for the OECD area would approximately equal the worst previous post-war recession. While this outcome represents a major challenge for employment policy, particularly in the context of increasing pressures for fiscal consolidation, it is better than might have been expected given how sharply output fell (see Section 2).

Figure 1.1. **Comparing unemployment rate trajectories during this and previous recessions**[a, b]

Index base 100 = OECD area unemployment rate at the preceding business-cycle peak, quarterly data



a) Unemployment data used in this figure are based on national definitions since that is the concept used in OECD economic projections. For certain countries, these may differ from the harmonised unemployment data used in Figure 1.2.

b) Recessions are defined to begin at the preceding business-cycle peak of the OECD area output gap.

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

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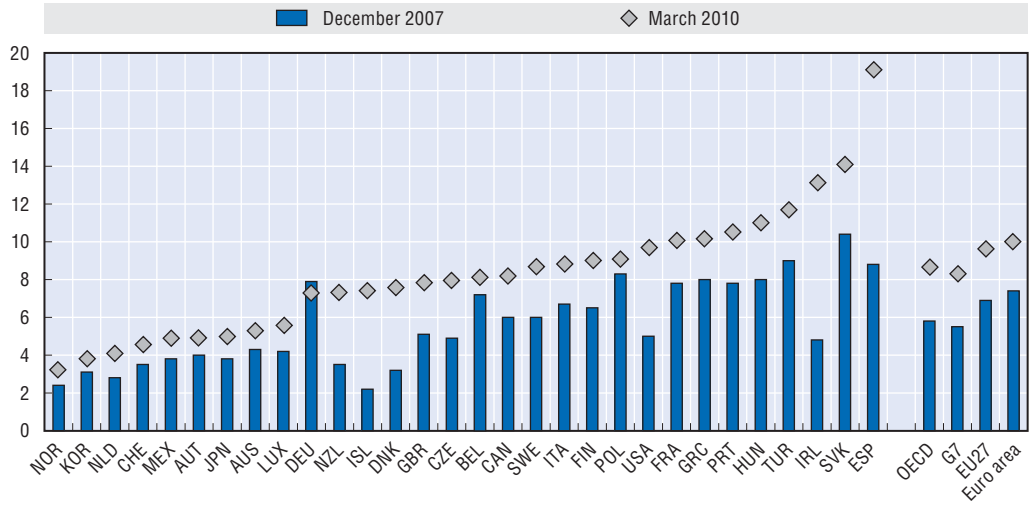
Even if unemployment has peaked, OECD projections indicate that the recovery is unlikely to be sufficiently vigorous to rapidly reabsorb quickly the currently high levels of labour market slack. Indeed, the level of slack exceeds the rise in unemployment because hours worked have been cut for workers who have remained employed, while other potential workers have withdrawn from (or remained outside of) the labour market in response to poor job-search prospects. Estimates of these other forms of slack are discussed later in this section, after a fuller analysis of the impact of the recession on conventional employment and unemployment measures.

The 2.9 percentage-point increase in the unemployment rate for the OECD area in the wake of the 2008-09 recession masks very divergent impacts on different national labour markets (Figure 1.2). The increase in unemployment has been especially sharp in Spain and Ireland, just over 10 and 8 percentage points, respectively. Denmark, Iceland, New Zealand, the Slovak Republic and the United States also experienced relatively large increases in unemployment. At the other extreme, the unemployment rate in Germany was 0.6 percentage point lower in March 2009 than in December 2007, although the unemployment rate in Germany did increase by 0.6 percentage point between December 2008 and June 2009, partially off-setting earlier and later declines. The unemployment rate rose in all other countries, but the increase was less than a percentage point in Austria, Belgium, Norway and Poland.[9] The reasons why unemployed has evolved very differently in different OECD countries will be studied in detail below. Before investigating that question, additional information will be provided about which workforce groups have borne the brunt of the recession and the different ways that the recessionary has affected workers.

Figure 1.2. **The unemployment impact has differed greatly across countries**

OECD harmonised unemployment rates as a percentage of labour force,[a] December 2007 to March 2010[b]



a) All data are seasonally adjusted.

b) December 2009 for Greece and Turkey; January 2010 for Norway and the United Kingdom; 2009 Q4 for New Zealand and Switzerland, and 2010 Q1 for Iceland (OECD harmonised unemployment rate data are not available on a monthly basis for the last three of these countries).

Source: OECD Main Economic Indicators.

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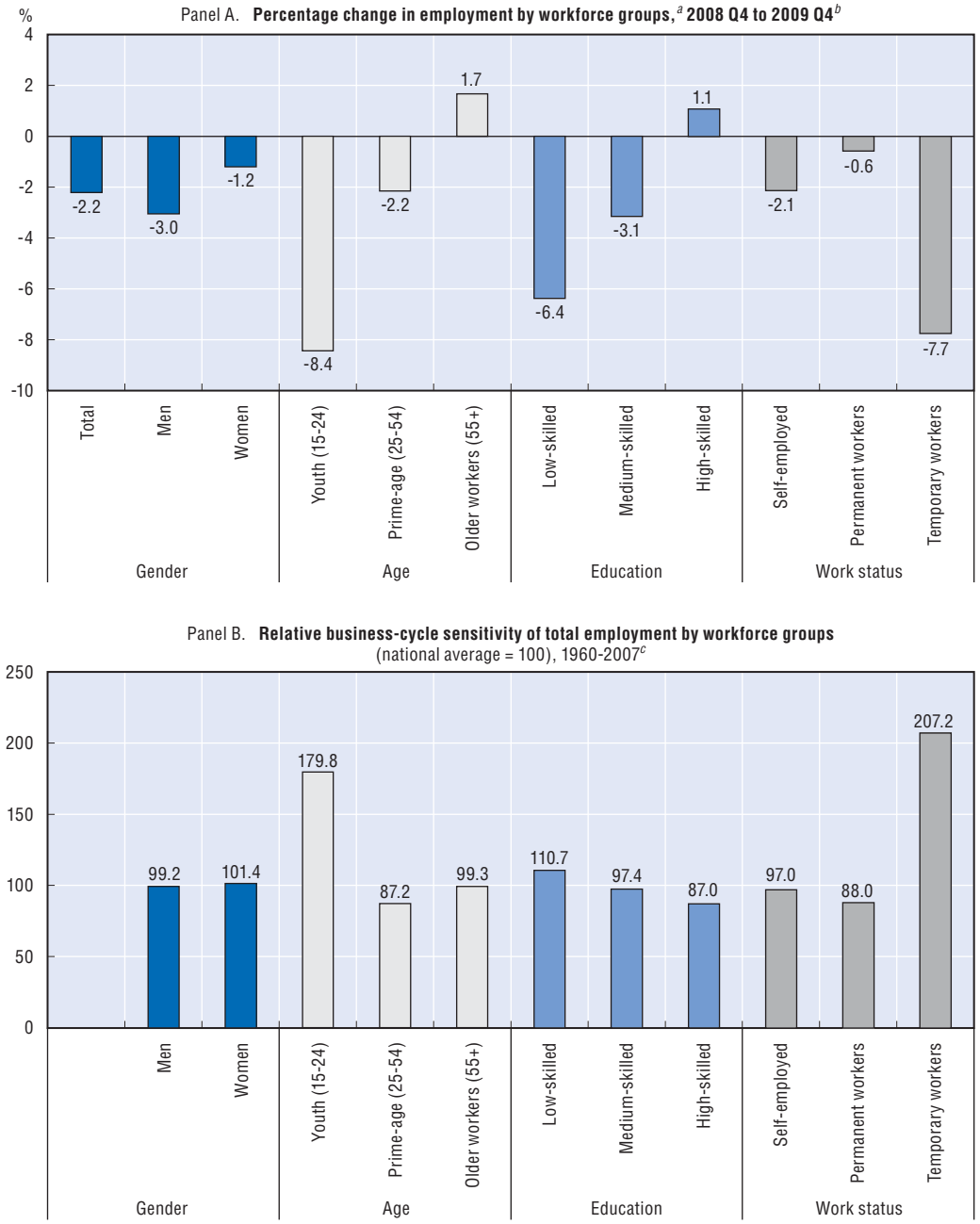
As in past recessions, job losses have been relatively larger for some workforce groups than for others.[10] Youth and workers with temporary employment contracts – groups that overlap to a considerable extent – have been hit particularly hard by the 2008-09 recession (Figure 1.3, Panel A). On average for the OECD area, employment for both of these groups fell by around 8%, nearly four times the decline in overall employment.[11] Youth unemployment rates always tend to be relatively high, but they have reached very high levels in some countries. For example, more than 40% of Spanish youth, who were active in the labour market in 2009, were unemployed. In marked contrast to the situation for youth, employment for prime-age workers fell by a little over 2% in the OECD area, while employment for older workers rose by nearly 2%. The difference in the risk of job loss between temporary and permanent workers was also very large, while employment for the self-employed fell by about as much as overall employment. Youth and temporary workers also have been disproportionately impacted by past recessions, showing cyclical sensitivities 80% and 107% greater than for total employment (Figure 1.3, Panel B). The employment of older workers was about as cyclical as overall employment in past recessions, so it is a notable departure from historical patterns that employment has increased for this group this time. This novel development may reflect, at least in part, labour supply responses in some countries to sometimes large losses in retirement savings consequent to the financial crisis (Coile and Levine, 2009; Gustman *et al.*, 2010; OECD, 2009g, h), as well as the lesser availability of early retirement options in national pension and social protection systems.

As in past recessions, employment fell most sharply for the least skilled workers (6.4%, nearly three times the overall rate). Employment losses were also above-average for medium-skilled workers and men, groups whose employment had previously been about as cyclical as overall employment. This probably reflects the sectoral composition of the

Figure 1.3. **Some workforce groups have been hit especially hard, while women, older and high-skilled workers have fared better**



a) Unweighted averages based on the following countries: Australia, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Japan, Korea, the Netherlands, Portugal, Spain, Sweden, the United Kingdom and the United States for gender and age groups; Austria, Belgium, Denmark, Finland, France, Germany, Italy, the Netherlands, Spain, Sweden, the United Kingdom and the United States for education; and Belgium, Denmark, France, Germany, Greece, Ireland, Italy, the Netherlands, Portugal, Spain and the United Kingdom for work status.

b) Data on employment by work status refer to the period 2008 Q2 to 2009 Q2.

c) Shorter annual time series are used for some countries and workforce groups. See OECD (2009e) Annex 1.A3 for further details on sample coverage and the methodology.

Source: OECD estimates based on the European Union Labour Force Survey (EULFS) and national sources for Panel A; and OECD estimates based on the European Union Labour Force Survey (EULFS) for gender, age and work status and EUKLEMS database for education in Panel B.

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negative shock to aggregate demand, especially that associated with the unprecedentedly deep fall in world trade that began in late 2008 (Baldwin, 2009) and which particularly affected medium-skilled production workers in durables manufacturing, who also tend to be males. The sharp contraction of construction activity in countries where a housing price bubble burst likely reinforced the relative vulnerability of men to job loss. Employment also declined quite sharply in mining and quarrying, another sector where males are disproportionately employed.

Employment losses have been particularly large in mining and quarrying, manufacturing and construction (Figure 1.4, Panel A). Employment in these sectors has also been significantly more cyclical than total employment historically, but the relative impact on mining and manufacturing appears to be stronger during the 2008-09 recession than would have been predicted from previous recessions (Figure 1.4, Panel B).[12] As mentioned above, the greater-than-usual impact on jobs in manufacturing is probably related to the trade collapse. The relatively large employment losses in mining may reflect the commodity boom that peaked in the Summer of 2008 before prices tumbled. Perhaps surprisingly, considering the turbulence in the banking and real-estate sectors during the downturn, these sectors did not experience especially large employment losses across the OECD area, and employment in construction, while hit hard, conformed to historical patterns.

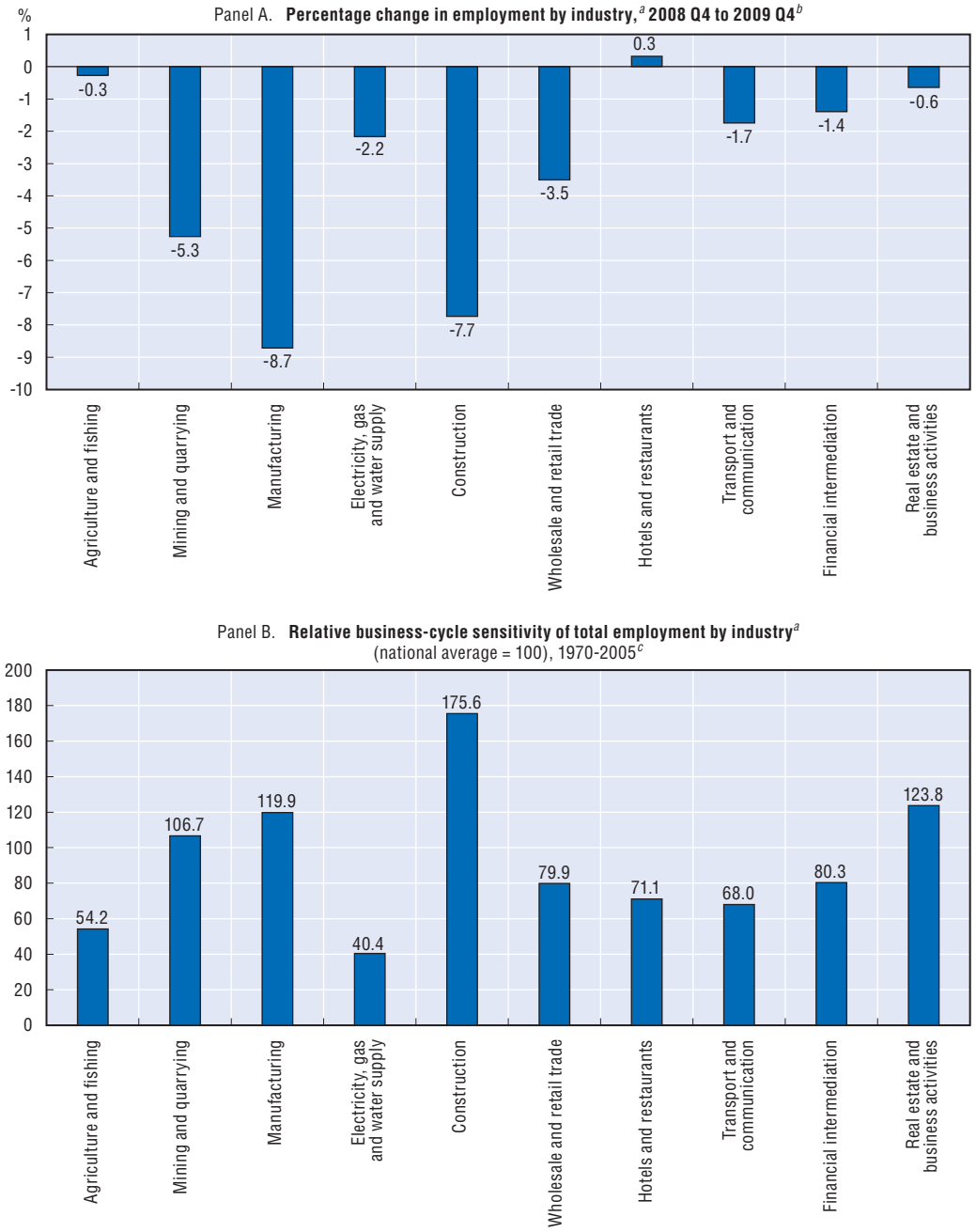
1.2. How bad has this crisis been according to less conventional measures of labour market slack?

In order to obtain a more complete portrait of how the 2008-09 recession has affected workers, it is useful to supplement conventional employment and unemployment statistics with additional measures of labour market slack. For example, a key question policy makers currently face is: how much employment and hours growth must be achieved during the recovery to restore labour market conditions to those prevailing prior to the crisis? In order to assess the scope of this challenge it is necessary to account for additional factors such as changes in average hours worked and participation rates.

Table 1.1 provides estimates of how much higher employment would have to have been in the fourth quarter of 2009 in order for the same proportion of the working-age population to be employed as was the case when the recession began. The "jobs gap" estimate for the OECD area is nearly 18 million or 3.3% of employment.[13] The jobs gap exceeds the increase in the number of unemployed by a modest 5% for the OECD area as a whole, due to a small average reduction in the labour force participation rate (discussed below) and a small increase in the size of the working-age population.[14] The jobs gap estimates modify somewhat country comparisons concerning the challenge facing policy makers. For example, the 17% jobs gap in Ireland is substantially higher than the 11% gap in Spain, even though the Irish unemployment rate rose somewhat less than the Spanish rate (*cf.* Figure 1.2). As will be discussed below, this largely reflects differences in how labour force participation rates have responded to worsening economic conditions, namely, declining in Ireland but rising in Spain. It probably also reflects the impact of the economic downturn on migration patterns for Ireland.[15]

Is the recovery likely to generate sufficient (net) job creation to quickly close these jobs gaps? According to the most recent OECD projections (released in May 2010), the recovery is likely to be too timid to restore pre-crisis employment performance levels quickly in most countries. As shown in the final column of Table 1.1, the current projections imply that the OECD area jobs gap in the fourth quarter of 2011 will be 2.7% of employment.

Figure 1.4. **Some industries have been hit harder than others, largely in keeping with historical patterns**



a) Industry based on ISIC classification at one-digit level.

b) Unweighted average for the following countries: Australia, Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Japan, the Netherlands, Norway, Portugal, Spain, Sweden, the United Kingdom and the United States.

c) Shorter annual time series are used for some countries and industries. See OECD (2009e) Annex 1.A3 for further details on sample coverage and the methodology.

Source: OECD estimates based on the European Union Labour Force Survey (EULFS) from Eurostat for the European countries and on national sources for the other OECD countries for Panel A; and OECD estimates based on EUKLEMS database for Panel B.

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Table 1.1. **How many jobs are needed to restore pre-crisis employment rates?**

	Increase in unemployment 2007 Q4-2009 Q4 (thousands)	Jobs gap in 2009 Q4 relative to 2007 Q4[a]			Projected jobs gap[a] in 2011 Q4
		Level (thousands)	Percentage of the increase in unemployment	Percentage of actual employment in 2009 Q4	Percentage of projected employment in 2011 Q4
	(1)	(2)	(3) = (2) / (1)	(4)	(5)
OECD	**16 923**	**17 797**	**105.2**	**3.3**	**2.7**
G7	**10 998**	**13 221**	**120.2**	**3.9**	**3.0**
European union	**5 396**	**4 555**	**84.4**	**2.3**	**2.7**
Euro area	**3 915**	**3 651**	**93.3**	**2.6**	**3.1**
Australia	158	148	93.8	1.4	–0.1
Austria	35	–18	. .	–0.4	–0.5
Belgium	46	45	97.2	1.0	2.2
Canada	473	511	107.9	3.0	1.5
Czech Republic	136	107	78.3	2.2	2.3
Denmark	111	153	137.7	5.5	4.7
Finland	54	97	177.8	4.0	4.3
France	629	496	78.9	1.9	2.0
Germany	–250	–464	. .	–1.2	–0.4
Greece	117	50	43.2	1.1	7.1
Hungary	117	111	95.0	3.0	2.2
Iceland	9	12	136.2	7.0	7.0
Ireland	164	318	193.6	17.0	19.8
Italy	482	657	136.2	2.9	2.7
Japan	830	462	55.6	0.7	–0.6
Korea	90	282	313.8	1.2	–0.4
Luxembourg	5	2	34.9	0.7	0.2
Mexico	902	955	105.9	2.2	1.9
Netherlands	94	98	104.0	1.1	2.0
New Zealand	86	89	103.8	4.1	2.4
Norway	24	60	251.9	2.4	2.7
Poland	20	–270	. .	–1.7	–1.8
Portugal	124	170	137.3	3.4	4.0
Slovak Republic	102	86	84.3	3.7	3.4
Spain	2 415	2 047	84.8	11.0	10.7
Sweden	150	193	129.3	4.3	4.2
Switzerland	51	37	73.4	0.9	0.8
Turkey	916	–576	. .	–2.6	–0.7
United Kingdom	845	780	92.4	2.7	3.3
United States	7 988	10 439	130.7	7.6	5.5

. .: Denotes value not shown because the employment rate has increased (*i.e.* the jobs gap is negative).

a) The jobs gap at a particular date is defined as the increase in employment required to restore the ratio of total employment to the working-age population to its value in 2007 Q4.

Source: OECD calculations based on *OECD Economic Outlook No. 87 Database*.

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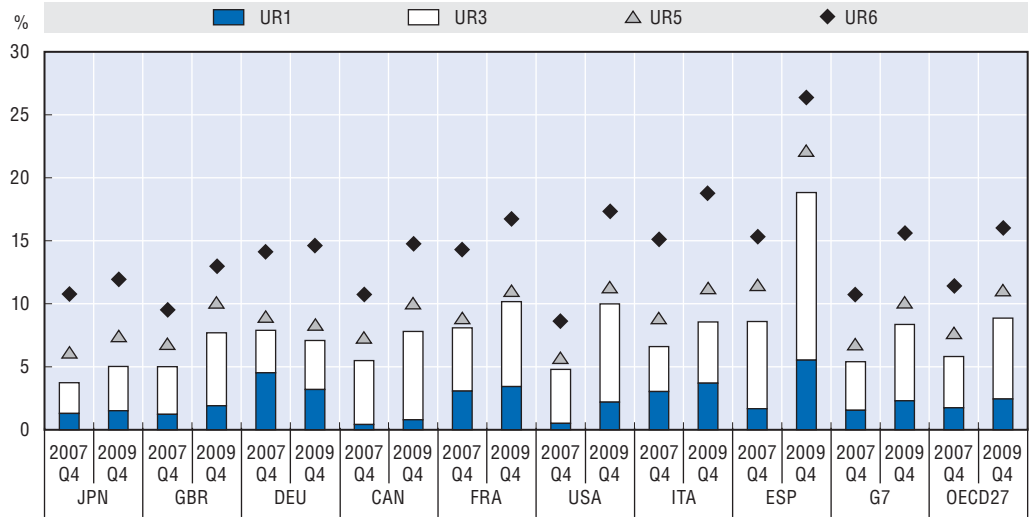
Progress in closing the jobs gap is also expected to be uneven. Whereas the 7.6% gap in the United States is projected to decline slowly to 5.5%, a considerable number of European countries are projected to experience a further rise in the jobs gap with the average for the Euro area rising from 2.6% to 3.1%.[16] This exercise suggests that one of the key policy priorities going forward is to create the conditions for more vigorous employment growth in the recovery, so as to avoid a protracted period of high labour market slack. Some combination of a faster rebound in GDP and a higher employment intensity of the rebound in output will be required to meet this challenge (*cf.* Section 5).

Building on the work (and terminology) of the US Bureau of Labor Statistics, Figure 1.5 juxtaposes the changes in the standard unemployment rate (UR3) in the two years to the fourth quarter of 2009 with the contemporaneous evolution of three additional measures of labour market slack.[17] The first of these measures (UR1) corresponds to the sub-set of the unemployed who have been jobless for at least one year. This long-term unemployed group is of particular concern since they tend to have pressing needs for income support and are at an elevated risk of experiencing large earnings losses when they become re-employed or permanently disconnecting from the labour market. Two broader measures of labour market slack are also considered. UR5 augments the conventional definition of the unemployed by adding persons who are marginally attached to the labour force, that is, persons who want a job and are available to work, but are not actively seeking a job.[18] Finally, UR6 broadens UR5 by also including underemployed persons, defined as persons wanting to work full-time but working less than full-time for economic reasons (*e.g.* because they cannot find a full-time job or their hours have been temporarily reduced by their employer).

Figure 1.5. **The increase in unemployment was accompanied by growth of other forms of unemployment and underemployment**

Alternative measures of labour market slack, 2007 Q4-2009 Q4[a]



UR: Unemployment rate.

Alternative measures of labour market slack:

UR1: Long-term unemployed (one year or more) as a percentage of the labour force.

UR3: Unemployment rate (ILO definition).

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

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

Underemployed persons: defined as persons who are either: *i)* full-time workers working less than a full-week (less than 35 hours in the United States) during the survey reference week for economic reasons; or *ii)* part-time workers who want but can not find full-time work.

Persons marginally attached to the labour force: refers to persons not in the labour force who did not look for work during the past four weeks, but who wish to work, are available to work and – in the case of Australia, Canada, Italy, Japan, New Zealand and the United States – have looked for work sometime in the past 12 months. Discouraged workers are the sub-set of marginally attached workers who are not currently searching for a job because they believe none are available.

a) Countries shown in ascending order of UR6 in 2009 Q4. Seasonally unadjusted data, except for the United States. OECD27 and G7 are weighted averages. The OECD area excludes the following countries: Korea, Mexico and Switzerland.

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

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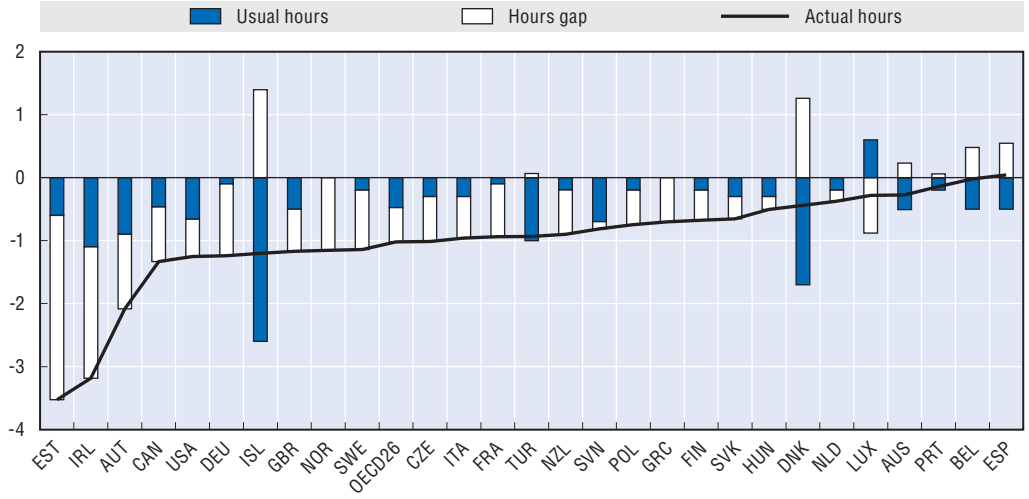
Comparing the levels of the four measures in 2007 Q4, before the crisis had affected labour market conditions, provides several insights. First, the share of the long-term unemployed varies from around 10% of total conventional unemployment in Canada and the United States to approximately 50% in Germany and Italy, suggesting that the re-employment prospects of job losers differ significantly across countries due to structural factors affecting labour market flows (see Chapter 3 in this publication). Nonetheless, the unemployed face a significant risk that the return to employment will be difficult in all of the countries analysed, especially if account is also taken of the possibility that long-term unemployed will give up on job search. Indeed, the values for UR5 are about one-third larger than UR3 on average, indicating that a significant number of potential workers are discouraged from actively seeking a job by the perception that it would be difficult or impossible to find one. If underemployed workers are also considered, as in UR6, then labour market slack affects more than twice as many workers as are included in conventional unemployment statistics.

Of most interest for assessing the impact of the 2008-09 recession, the two measures of labour market slack that are broader than the conventional unemployment rate grew at a similar rate as the conventional measure during the past two years. This suggests that the additional labour market slack that has been created by the recession exceeds significantly the increase in the conventional unemployment rate. Indeed, the broadest measure of labour market slack (UR6) even increased in Germany, where the three narrower measures declined.[19] During the period considered, long-term unemployment grew slightly less rapidly than total unemployment, but is likely to continue growing for some time even after total unemployment has begun to decline. Whereas the number of recent job losers rises quickly following the onset of a recession but already begins to taper off even before the trough is reached, the pool of long-term unemployed only gradually builds up and then is very slow to recede during the recovery. Indeed, it is notable that the share of long-term unemployment in total unemployment has already grown sharply in Spain and the United States.

Figure 1.6 provides another look at underemployment in the form of reduced hours of work. The change in weekly hours worked in the two-year period to the fourth quarter of 2009 is estimated based on responses to labour force surveys, with the total change being decomposed into changes in workers' usual weekly hours and changes in the "hours gap", defined as the gap between usual hours and the hours actually worked in the survey reference week.[20] Average hours worked for persons remaining employed fell in all of the countries included in the analysis except for Belgium and Spain, where they were essentially unchanged. Weekly hours worked fell by over 3 hours in Estonia and Ireland, and by around two hours in Austria. The average reduction for the countries analysed was one hour. While that is a relatively small change, it should be borne in mind that it represents over 2% of average total hours worked and, hence, represents a significant reduction in labour input that is additional to that associated with the decline in employment (*e.g.* the 3.3% jobs gap presented in Table 1.1). Interestingly, the fall in weekly hours varies significantly across the countries that have made the greatest use of short-time work (STW) schemes to protect existing jobs, namely Belgium, Germany, Italy, Japan, Luxembourg and Turkey (see Section 3). That need not imply that STW has little impact in lowering hours on continuing jobs, since hours worked can also be reduced on continuing jobs not participating in STW schemes (*e.g. via* a reduction in overtime hours) or *via* increased numbers of workers who would prefer full-time jobs but have been forced

Figure 1.6. **Hours worked fell for those who remained employed in almost all countries**

Changes in average hours worked decomposed into changes in usual weekly hours and changes in the hours gap between actual and usual hours,[a] 2007 Q4-2009 Q4[b]



a) Actual hours worked during the survey reference week can differ from usual hours due to overtime hours, short-time work and absences from work. Countries shown in ascending order of the change in actual hours.

b) Seasonally unadjusted data. OECD26 is the weighted average of the countries shown in this figure except: Estonia and Slovenia.

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

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to accept part-time jobs instead. The fact that the mix of hours adjustments between changes in usual weekly hours and changes in the hours gap varies considerably across the countries considered, also suggests that the overall fall in average hours is the combined effect of a number of different types of adjustments to work schedules.

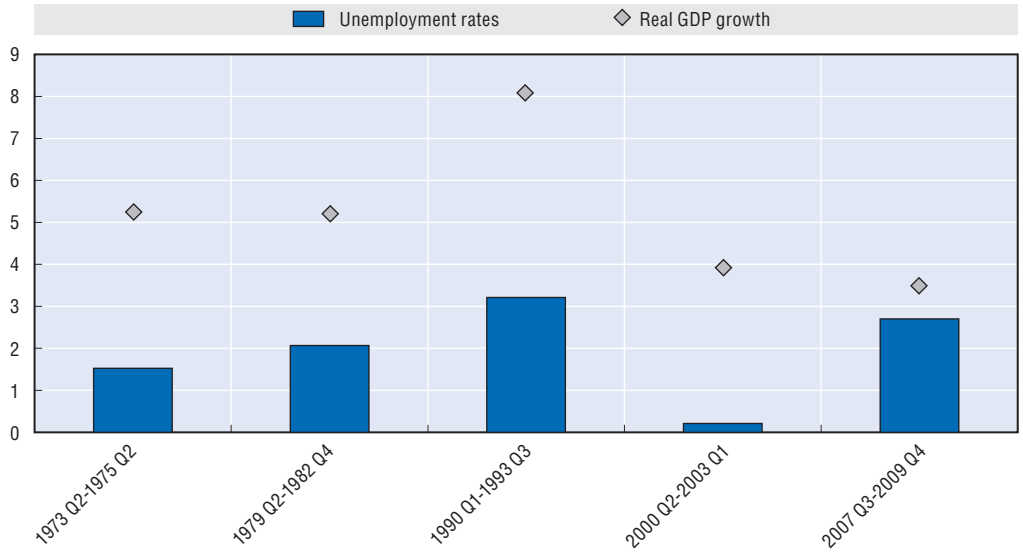
1.3. Why has the impact been so uneven across OECD countries?

Among the notable features of the financial crisis that became acute in the fall of 2008 were its global reach and severity (OECD, 2009b). The resulting declines in GDP and trade were also notable for their high degree of synchronisation, as well the abruptness with which production and export demand fell. This pattern suggested that the 2008-09 recession would be unusually deep across the OECD and its impacts on employment and the labour market both widespread and severe. Consistent with this reasoning, the analysis of the jobs crisis in the 2009 issue of this publication concluded that unemployment was likely to rise sharply in virtually all OECD countries, even while noting that the initial hike had been muted in a number of countries (OECD, 2009a, Chapter 1). The data presented in Figure 1.2, show that it was still the case that unemployment had risen very little in a number of countries in March 2010, suggesting that it is timely to reconsider whether the unemployment impact of the recession might end up being relatively mild in some countries. If that should turn out to be the case, it would be important to understand whether the small increase in unemployment observed in some countries is largely due to a smaller negative shock to aggregate demand or is also the result of policy responses that allowed the national labour market to weather a period of recession without large job losses or a build-up of longer-term unemployment, although potentially at the cost of reduced working hours among the employed or hourly productivity.

Figure 1.7 compares the 2008-09 recession with four previous recessions in terms of how uneven the impacts on GDP growth and the unemployment rate have been across OECD countries. A first finding is that the cross-country standard deviation of the growth rate of real GDP was lower in the 2008-09 recession than in the four previous recessions, consistent with the view that the current recession has been highly synchronised. Shock heterogeneity, at least as regards differences in the size or timing of the impact on total output, has thus been unusually low. By contrast, the cross-country dispersion in the change of unemployment rates is relatively high, exceeding that for the two recessions associated with oil price shocks in the 1970s and the "dot com" recession in 2000-03, but moderately lower than was observed during the 1990-93 recession.[21] This suggests that the 2008-09 recession may have been characterised by an unusually high degree of heterogeneity in the response of labour markets, at least as captured by changes in the overall unemployment rate, to negative shocks in GDP. Indeed, the cross-country correlation coefficient between the changes in real GDP and unemployment was –0.70 in the 1990-93 recession, suggesting that output shock heterogeneity across countries accounted for most of the differences in how strongly unemployment rose, whereas the corresponding value in the 2008-09 recession is only –0.35, suggesting much more labour market response heterogeneity (*i.e.* that cross-country differences have been greater in the size of the Okun's law coefficient relating changes in GDP to changes in unemployment).

Figure 1.7. **The unemployment impact of the recession has been surprisingly uneven across countries**

Cross-country standard deviations of the percentage change in real GDP growth and the percentage-point change in unemployment rates, quarterly data[a, b]



a) Dates of recessions are defined using the business-cycle peak and trough of the output gap of the OECD area.
b) Calculations based on the following countries: Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Ireland, Italy, Japan, Korea, Luxembourg, the Netherlands, New Zealand, Norway, Portugal, Spain, Sweden, the United Kingdom and the United States.

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

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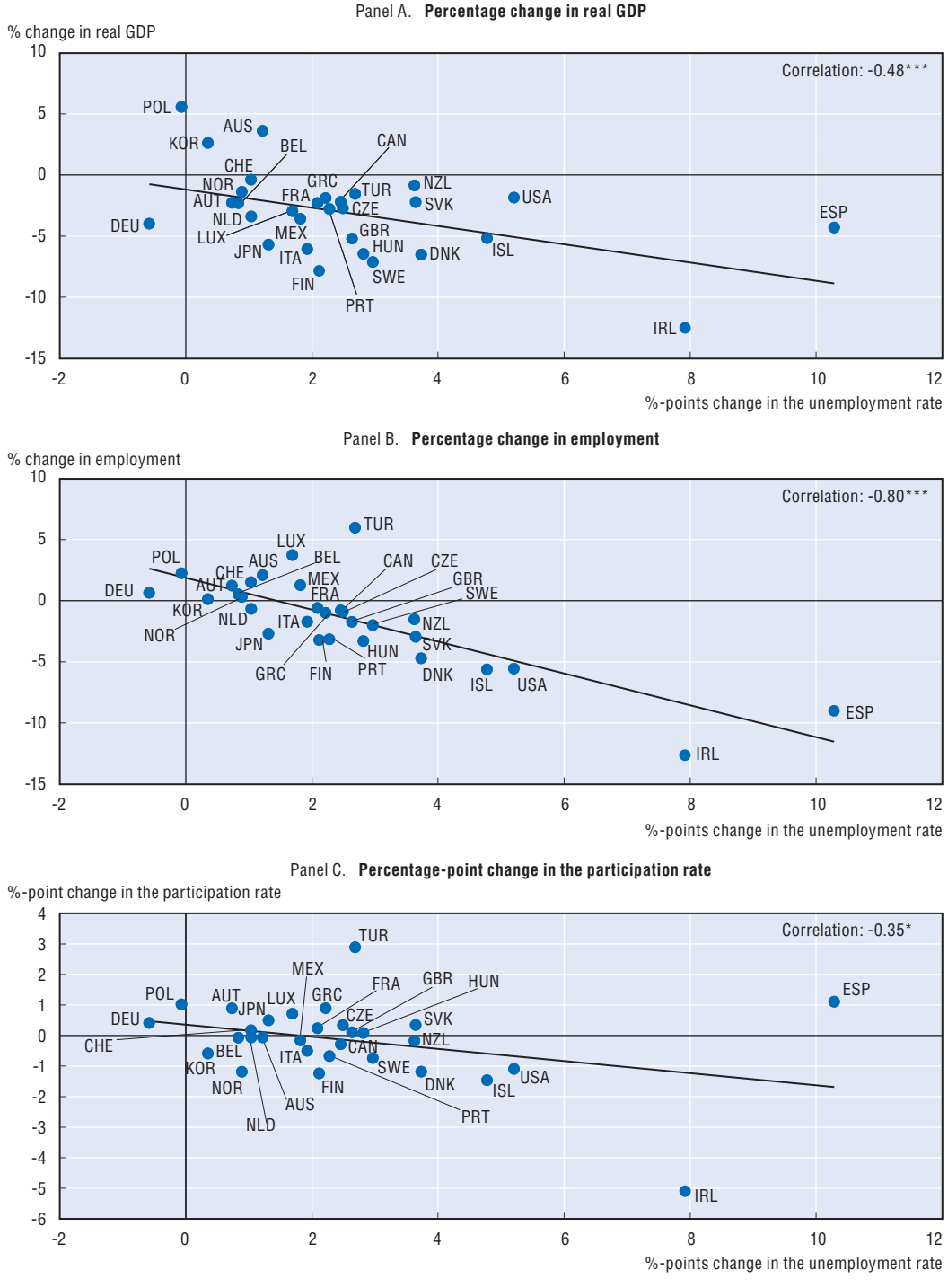
Figure 1.8 examines cross-country heterogeneity in the response of the unemployment rate to the 2008-09 recession by juxtaposing percentage-point changes in the unemployment rate between 2007 Q4 and 2009 Q4 with contemporaneous changes in

Figure 1.8. **Recent unemployment developments reflect diverse impacts of the recession on real GDP, employment and participation**

Changes between 2007 Q4 and 2009 Q4



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

Source: OECD Economic Outlook Database.

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real GDP,[22] employment and participation rates. Panel A shows that the average relationship across OECD countries was for the unemployment rate to increase by one-half of a percentage point for each additional percentage reduction of real GDP. While there is a highly significant negative association between real GDP growth and changes in the unemployment rate, there is also considerable dispersion of the countries around the regression line.[23] Countries that are far above and to the right of the regression line have been characterised by unusually large increases in unemployment relative to the size of the fall in output. Spain and the United States stand out in this respect. Conversely, the increase in unemployment has been unexpectedly low in Germany, as well as Finland, Italy and Japan, all countries that are substantially below and to the left of the regression line.[24] One of the key questions for policy analysts that has emerged from the 2008-09 recession is whether the relatively limited rise in unemployment in this latter group of countries is attributable to particular labour market policies or institutions. A closely related question is whether the relatively modest response of unemployment reflects success at keeping the economic and social costs of the recession below the levels that would normally be associated with negative GDP shocks of the sizes that they experienced.

Panels B and C of Figure 1.8 help to explain why the link between declining GDP and rising unemployment has been much stronger in some countries than in others. Panel B shows that much of the explanation lies in differences in how strongly employment has reacted to changes in output, an issue that will be analysed in-depth in Section 2.[25] Whereas the correlation between real GDP growth and the increase in unemployment was only –0.48, the correlation between employment growth and unemployment is a much stronger –0.80. Nonetheless, decreases in employment do not map one-for-one into increases in unemployment. One of the reasons this is so is that the labour force participation rate can change in response to deteriorating labour market conditions.[26] Panel C shows that participation rates have both risen and fallen during the 2008-09 recession depending on the country, with a weak overall tendency for participation rates to decline more in countries where unemployment rose more sharply. However, Ireland and Spain, the two countries that have experienced the sharpest decreases in employment and the largest increases in unemployment, illustrate well that there is no mechanical relationship between participation rates and labour market conditions: participation rose significantly in Spain, even as it fell in Ireland.[27]

Table 1.2 provides a classification of OECD countries in terms of the labour market impact of the 2008-09 recession. The classification of countries into three rows is intended to highlight the importance of a key dimension of shock heterogeneity, namely whether the negative shock to output was small, medium or large. The three columns provide an analogous classification of countries according to how much unemployment has risen. Countries assigned to the three boxes located along the principal diagonal conform, at least approximately, to Okun's law which posits that a negative output shock of a given size increases unemployment by about one-half as much (Okun, 1962). The off-diagonal cases correspond to countries where the unemployment rate either responded particularly strongly to the output shock (countries in boxes above the diagonal) or particularly weakly (countries in boxes below the diagonal). Additional aspects of shock heterogeneity are captured by the letters C, X, L and H, which denote, respectively, unusually large concentrations of the decline in output in the construction and export sectors, a relatively long duration of the recession, or a sharp fall in housing prices. The letter P denotes a large decline in output per worker and is intended to indicate that employers may have strongly hoarded labour (*i.e.* that the employment reduction

Table 1.2. **Cross-country differences in the impact of the recession on real GDP are only one of the factors determining how sharply unemployment rose**[a]

		Change in unemployment rates from peak to trough[b]		
		No/small unemployment impact (Less than a 1.5 pp increase)	Medium unemployment impact (At least a 1.5 pp increase but less than a 3.5 pp increase)	Large unemployment impact (At least a 3.5 pp increase)
Change in GDP from peak to trough[b]	No/small GDP shock (Less than a 3 pp decline)	Australia	New Zealand (H)	
		Norway		
		Poland		
		Switzerland (X, S)		
	Medium GDP shock (At least a 3 but less than a 7 pp decline)	Austria (X)	Canada (X, L)	Spain (L, H)
		Belgium (X, S)	Czech Republic (X, S)	United States (H)
		France	Greece (L)	
		Germany (X, P, S)	Hungary (X)	
		Italy (X, P, S)	Portugal (X)	
		Korea (X)	United Kingdom (H)	
		Netherlands (X)		
		Slovak Republic (X, P)		
	Large GDP shock (At least a 7 pp decline)	Japan (X, P, S)	Denmark (X, L, H, P)	Iceland (L, P)
		Luxembourg (X, P)	Finland (X, P, S)	Ireland (C, L, H)
		Mexico (X)	Sweden (X, L)	Turkey (C, P, S)

pp: Percentage point.

a) Letters in parentheses following countries names indicate that the recession has been characterised by: **C**: A decline of at least 1 percentage point in the share of construction in total value added; **H**: A decline of housing prices of at least 10%; **L**: At least six quarters between the prior GDP peak and the trough; **P**: A decline of labour productivity of at least 5 percentage points; **S**: At least 1% of total employees participating in short-time work schemes during 2009; **X**: A decline in exports as a share of GDP of at least 5 percentage points.

b) Peak and trough defined in terms of real quarterly GDP.

Source: OECD calculations based on *OECD Economic Outlook* and *OECD Quarterly National Accounts Databases* and national sources.

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was small relative to the fall in output), while S denotes that at least 1% of total employees was participating in a short-time work scheme on average during 2009.

New Zealand, Spain and the United States are the only three countries above and to the right of the diagonal in Table 1.2, indicating that employers were particularly aggressive about shedding labour in response to deteriorating business conditions. Even though the fall in GDP was not especially big in these countries, a sharp increase in unemployment occurred, especially in Spain, where the decline in employment was more than double that in GDP (*cf.* Figure 1.8). Negative product market shocks will tend to result in stronger employment contractions when employers view the decline in demand as unlikely to reversed quickly or even as permanent. In particular, all three countries where the intensity of labour shedding was relatively high appear to have experienced a significant boom-bust cycle in housing prices (H) which could imply that a substantial part of the contraction in output is thought to represent a structural decline in the relative size of the construction sector, rather than a purely cyclical decline. The decline in GDP has also been relatively long in Spain (L).

As has been widely noted, employers have been restrained about shedding workers in a number of OECD countries. These countries can be found below and to the left of the

diagonal in Table 1.2. Japan, Korea and Mexico are in this group along with eleven European countries, including Germany, Finland and the Slovak Republic. Consistent with employers engaging in significant labour hoarding, output per worker fell significantly in half of these countries (P), as compared to none of the countries above the diagonal. It is also notable that all of these countries except France experienced a very steep fall in export demand which might plausibly have been viewed as being a largely transitory phenomenon, since the reduction in demand reflected global conditions rather than structural imbalances in the domestic economy.[28] Along with differences in the composition and expected duration of the negative shock to product demand, it is likely that labour market policies and institutions also played an important role in determining the strength of the employment response to the negative output shock, as well as their choice of how much to rely on labour shedding *versus* average hours reductions when adjusting to lower product demand. Consistent with this conjecture, participation in STW schemes was high during 2009 (S) in five of the 14 countries below the diagonal. Labour demand adjustment along the employment and hours dimensions is analysed in detail in Section 2 while Section 4 considers the impact of STW schemes on labour adjustment.

2. Comparisons of labour demand adjustment across countries, recessions and types of firms

This section takes a closer look at cross-country differences in how labour demand has adjusted to the fall in aggregate demand during the 2008-09 recession – particularly, the relative importance of labour shedding *versus* hours reductions – and how the patterns of adjustment compare to those observed during previous recessions.[29]

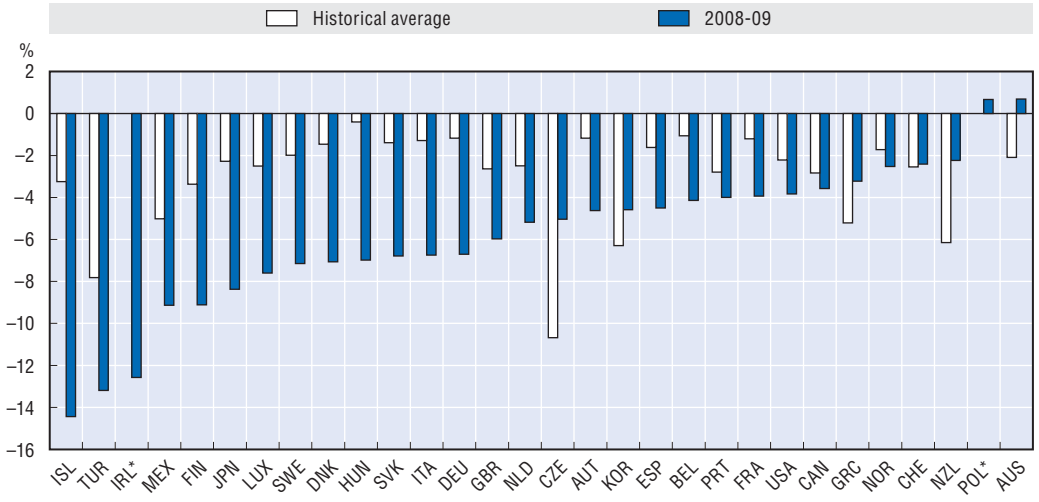
2.1. Most OECD economies have suffered large negative shocks with highly variable impacts on employment, unemployment and labour productivity

Judged in terms of its impact on output, the 2008-09 recession was large by historical standards in nearly all OECD economies (Figure 1.9).[30] Twenty-eight out of the 30 OECD countries analysed, with the exception of Australia and Poland, suffered a recession.[31] Furthermore, the recession was larger than the average historical experience in all of them except the Czech Republic, Greece, Korea, New Zealand and Switzerland.[32] As noted above, the downturn had a highly varied impact on unemployment rates across the OECD (Panel A of Figure 1.10) and this pattern is not fully explained by the variance in the size of the negative output shock across countries. For example, although the decline in output in Spain and the United States during the recession was smaller than the OECD-average, the rise in unemployment has been above-average, while in Germany, where output declined by more than in both these economies, the unemployment rate actually fell slightly during the recession.

The response of labour markets to the shock – as summarised by the Okun's coefficient (*i.e.* the ratio of the percentage-point increase in the unemployment rate to the percentage fall in real GDP) – has not only varied across countries but also marks a strong break with past patterns in a number of cases (Panel B of Figure 1.10). Whereas an Okun's coefficient value of approximately one-half has often been observed, the values for the United States and Spain were much higher in the 2008-09 recession, at around 1 and 2, respectively. The extremely strong reaction in Spain meant that the climb in its unemployment rate was even larger than that observed in Ireland, which suffered an output shock that was nearly three times larger. The Okun coefficient was smaller, but still

Figure 1.9. **Change in output in the 2008-09 recession in historical comparison: a deep recession in most countries**[a, b]

Percentage decline in real GDP from peak to trough



*: Historical average not available.

a) Australia and Poland did not have a recession in the 2008-09 period but are shown for comparison purposes over the period 2008 Q3 to 2009 Q2.

b) The number of recessions used to calculate the historical average varies across countries depending on data availability and the frequency of recessions. Recessions that occur in the period from approximately 1960 until 2006 are included.

Source: OECD Economic Outlook Database.

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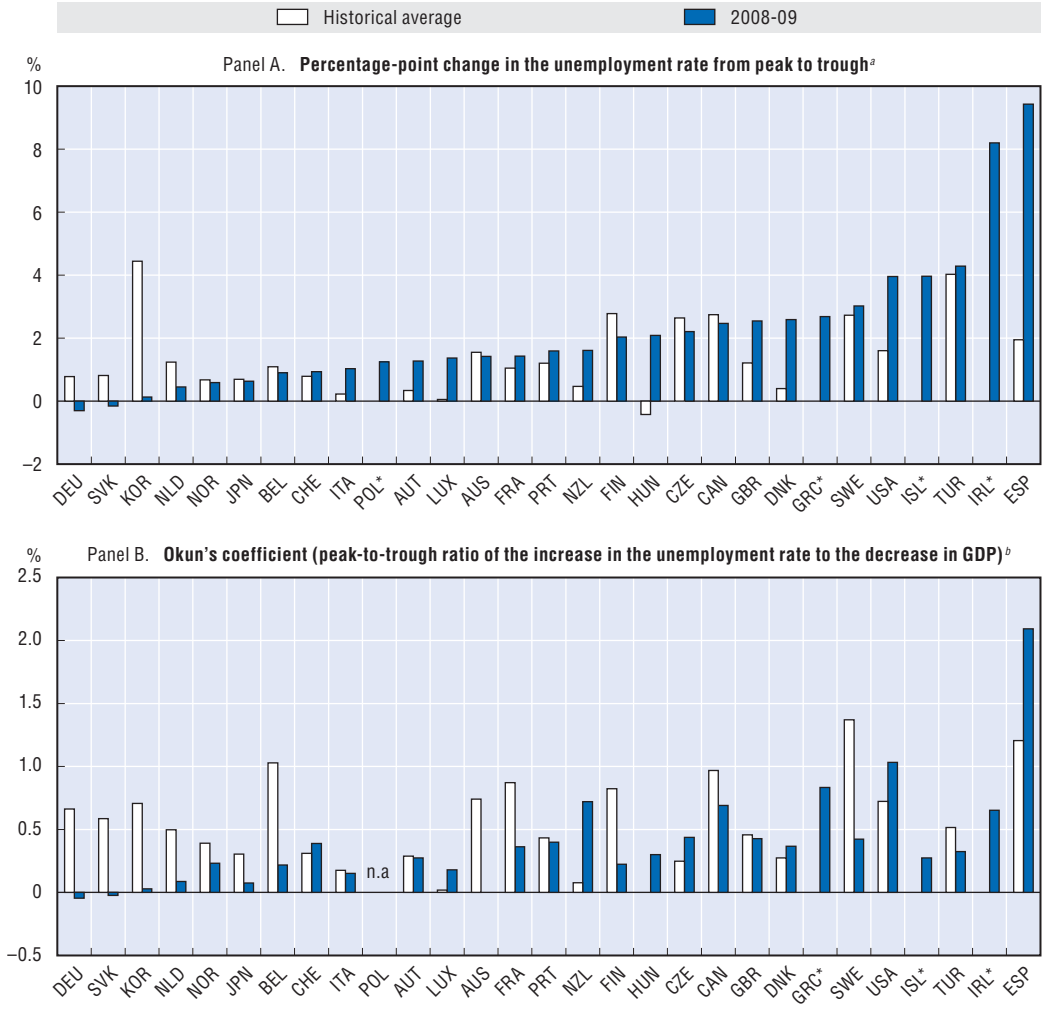
exceeded 0.5 in Canada, Greece, Ireland and New Zealand. By contrast, the unemployment response in the 2008-09 recession was muted in most European countries (including Belgium, Finland, Germany, Italy, the Netherlands, Norway and the Slovak Republic), as well as in Japan and Korea. The responsiveness of unemployment to the decline in GDP was small by comparisons to earlier recessions in the majority of countries for which the Okun's coefficient could be calculated for at least two earlier episodes.[33]

The employment response to the fall in GDP has also been smaller in most countries during this recession than in previous episodes, resulting in faster declines in labour productivity on a per employee basis (Figure 1.11). Some exceptions to this include the United States, New Zealand, Portugal and Spain, where the employment declines relative to output have been faster than historical norms (see Box 1.1 for a discussion of the US case). In the case of Spain, labour shedding has been so great relative to the fall in output that productivity, which typically falls during a recession, actually rose sharply, while it was essentially constant in the United States. Although the link between a smaller employment response to recessionary shocks and a larger fall in labour productivity is purely algebraic, it does provide a useful reminder that measures to preserve existing jobs in a recession are likely to imply significant costs and need to be subject to careful benefit-cost assessments. Who bears the costs resulting from productivity declines during recessions is also important and depends in large part on how real wages adjust (see discussion below).

Figure 1.10. **Change in unemployment in the 2008-09 recession in historical comparison: an unusually large increase in some countries, but a muted impact in others**



*: Historical average not available.
n.a.: Not available.
a) Australia and Poland did not have a recession in the 2008-09 period but are shown for comparison purposes over the period 2008 Q3 to 2009 Q2.
b) Since real GDP rose between 2008 Q3 and 2009 Q2 in Australia and Poland, the Okun's coefficient value would be negative (not shown).

Source: OECD Economic Outlook Database.

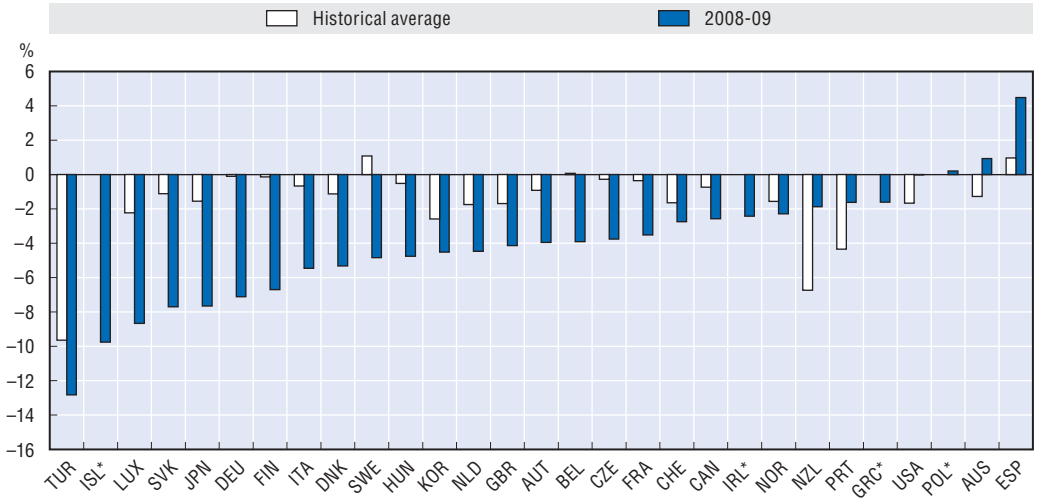
StatLink http://dx.doi.org/10.1787/888932292213

2.2. The choice between employment and hours adjustment underlies many of these patterns

The variation of employment responsiveness to the output decline reflects in large part the different ways total labour input (measured as average hours multiplied by employment) has adjusted downwards across OECD countries (Figure 1.12).[34] With very few exceptions – Spain where average hours rose slightly, and Germany and the Slovak Republic where employment rose – the reduction in labour input during the recession was accomplished *via* a combination of employment shedding and hours reductions. However, the share of the adjustment coming from a reduction of average hours ranged widely from under 20% in Denmark, Portugal and Spain to over 95% in Korea, Norway, Australia,

Figure 1.11. **Change in labour productivity in the 2008-09 recession in historical comparison: unusually steep declines in many countries**[a]

Percentage change in productivity per employee



* Historical average not available.

a) Australia and Poland did not have a recession in the 2008-09 period but are shown for comparison purposes over the period 2008 Q3 to 2009 Q2.

Source: OECD Economic Outlook Database and OECD calculations.

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Box 1.1. **Why did Okun's law break down in the United States during the 2008-09 recession?**

Okun's law refers to the tendency for cyclical fluctuations in GDP growth to translate into smaller fluctuations in the unemployment rate (Okun, 1962). While this is a purely statistical relationship, it has been quite stable over time in the United States and widely relied upon for making forecasts. Using quarterly US data for the period 1949-2009, Daly and Hobijn (2010) show that percentage changes in the output gap have been about twice as large as the associated percentage-point changes in the cyclical unemployment rate. This relationship has fit the data relatively well at all points of the business cycle and over the entire post-war period up until the 2008-09 recession. During the early phase of the recession (2008 Q1-2009 Q1), the rise in the unemployment rate was about half of decline in the output gap, but unemployment subsequently increased much more than would have been predicted based on the evolution of GDP. As of the fourth quarter of 2009, the unemployment rate was about 1.5 percentage points higher than the level implied by Okun's law. Panel B of Figure 1.10 confirms that unemployment has responded more strongly to the decline in output in the United States during the 2008-09 recession than in past recessions, even as the unemployment response has been weaker than in the past in the large majority of OECD countries.

In order to understand the reasons for the recent departure from Okun's law in the United States, it is instructive to examine how each of the major factors explaining the less than one-for-one response of unemployment to cyclical fluctuations in output have evolved during the 2008-09 recession. Okun (1962) highlighted two such factors, namely, procyclical variations in labour force participation and labour productivity. The strong response of unemployment to the recent decline in GDP suggests that either participation or labour productivity fell less during this recession than would have been expected. Daly and Hobijn (2010) examine the evidence and find that:

Box 1.1. **Why did Okun's law break down in the United States during the 2008-09 recession?** *(cont.)*

- Although the *participation rate* was somewhat slow to fall during 2008-09 recession, the decline became quite steep during 2009 as long-term unemployment rose sharply. By the end of 2009, the cumulative fall in participation was somewhat stronger than the historical average. Accordingly, the particularly sharp rise in US unemployment cannot be ascribed to an unusual labour supply response to the recession.
- In a break with the historical procyclicality of productivity, *output per hour* has increased sharply during the 2008-09 recession. This unusual surge in productivity was concentrated in the second half of 2009 and was only partly offset by a steeper than usual decline in average hours worked. The combination of rising hourly productivity and declining output implied a sharper that normal fall in employment during the recession, despite the reduction in average hours.

In an accounting sense, Okun's law broke down in the United States due to the unusually vigorous labour shedding that was associated with strong growth in hourly labour productivity. It is not straightforward to explain why US firms shed jobs more aggressively during the 2008-09 recession than in earlier recessions, even as the opposite pattern is observed in most other OECD countries. Nonetheless, some possible explanations can be suggested:

- One possible explanation is that the nature of the negative demand shock in the United States was different from that during previous downturns or in other countries in ways that encouraged aggressive labour shedding. To the extent that *financial stress* was particularly acute in the United States, this may have a played a role. Several studies have shown that economic downturns that are associated with financial crises tend to have a larger impact on unemployment (Reinhart and Rogoff, 2009; IMF, 2010). In part, this reflects the fact that financial crises have a larger impact on GDP than other recessions. Financial crises also appear to increase the response of unemployment to output by reducing the ability of firms that are heavily dependent on external finance to retain workers (Sharpe, 1994). The discussion of the role of shock heterogeneity in Section 1 (*cf.* Table 1.2) further indicates that countries, such as the United States, where the 2008-09 recession was associated with a significant *boom-bust cycle in housing prices* also tended to experience a larger than average unemployment response to the decline in output. IMF (2010) shows that house price bursts tend to raise Okun's coefficient more strongly than financial crises that are not associated with house price bursts.
- A second explanation may be that structural changes in the US labour market are changing how labour demand adjusts to aggregate demand shocks. The table below compares the percentage changes in employment and average hours, along with the relative contribution of employment shedding to total labour input adjustment, during the five most recent recessions. These data suggest that US firms have come to rely increasingly upon labour shedding during recessions. Gordon (2010) documents that US labour productivity has also evolved in recent decades, ceasing to be procyclical since the mid-1980s. It is not clear what explains these developments, though Gordon identifies a number of possible factors, including evolving human resource practices, changes in labour and product market regulations or the increasingly competitive nature of the US labour market as a result of globalisation and technological change.

Box 1.1. **Why did Okun's law break down in the United States during the 2008-09 recession?** *(cont.)*

A growing role for employment adjustment in US recessions?

From peak to trough

	Change in total employment (%)	Change in average hours worked (%)	Employment share of total labour input adjustment
1973 Q4-1975 Q1	–1.02	–2.45	0.29
1980 Q1-1980 Q3	–0.96	–1.13	0.46
1981 Q3-1982 Q1	–0.77	–1.14	0.40
1990 Q2-1991 Q2	–1.02	–0.58	0.64
2008 Q2-2009 Q2	–3.82	–1.78	0.68

Source: OECD Economic Outlook Database.

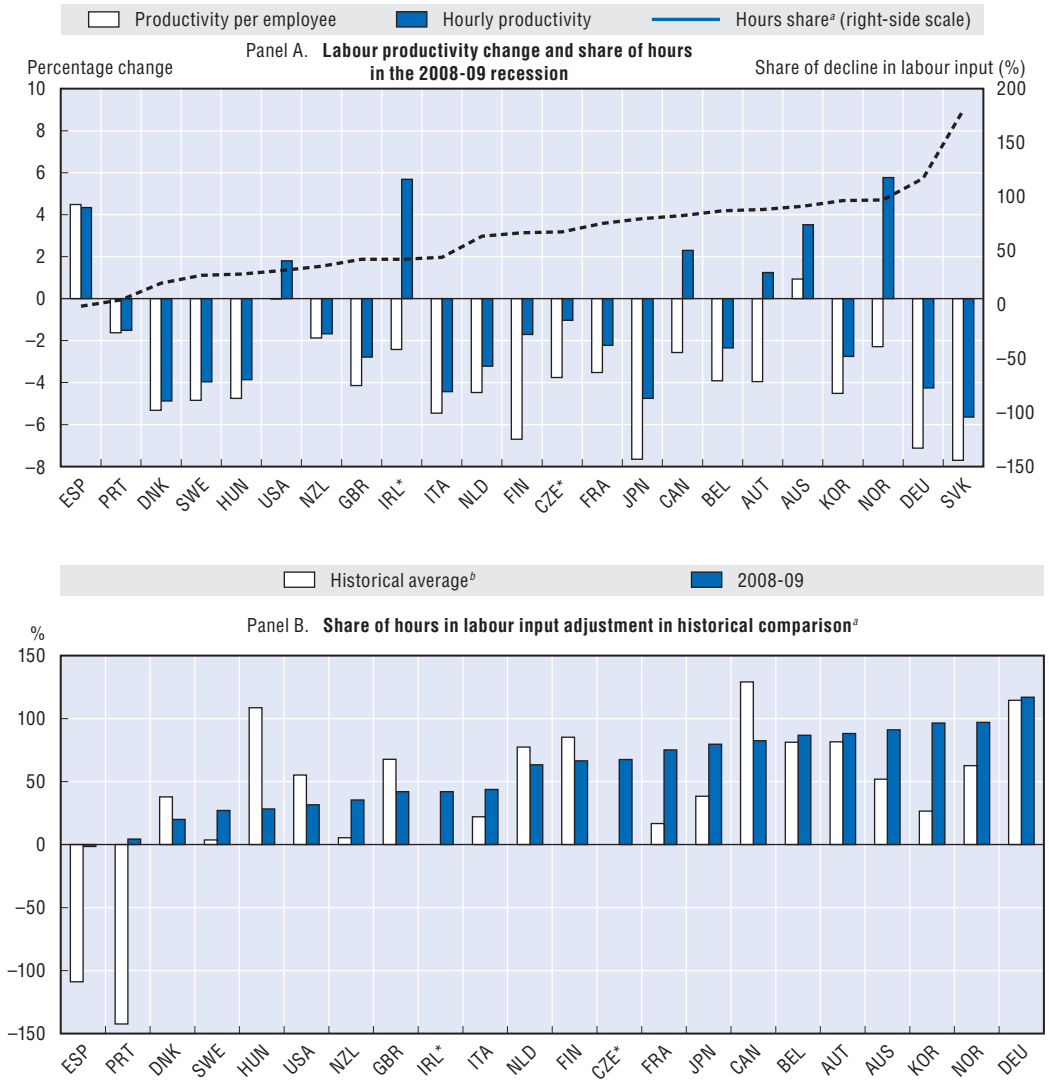
StatLink http://dx.doi.org/10.1787/888932303423

Germany and the Slovak Republic. Employers in countries where the rise in unemployment has been muted relative to the fall in GDP relied relatively heavily on hours reductions, so that the correlation between the Okun's coefficients reported in Figure 1.10 and the hours share was –0.59. This underlies how labour hoarding need not imply that total labour input is inflexible. The decline in labour productivity also has been considerably less severe on a per hour basis than on an employee basis in countries where the hours share of the adjustment was relatively high. Nonetheless, there is still a tendency for greater reliance on hours adjustment to be associated with a greater decline in hourly productivity.[35] Among the 20 countries with data for several previous recessions available for comparison, the share of hours adjustment was lower in this recession in seven countries, including Canada, Hungary, the United States and the United Kingdom; higher in twelve, including France, Japan, New Zealand and Norway; and essentially the same in Germany.

Some of the current differences in the share of hours worked in labour input adjustment observed across OECD countries may reflect varying lengths of labour adjustment. For example, driven by a decline in hours, labour input began to decline in the United States in the autumn of 2007, perhaps a leading indicator of a weakening economy, whereas in Germany labour input only started declining a year later.[36] With the passage of time one might expect more convergence in the duration of adjustment and therefore in these shares. Indeed, an examination of labour adjustment across 68 recession episodes in 18 OECD countries reveals that adjustments in hours, such as cutting back on overtime, tend to make the greatest contribution to changes in overall labour input at the start of a downturn. As the recession progresses, the scope for further adjustments of working time diminishes, employers increasingly cut employment and the contribution of hours to adjustments of labour input typically falls (Figure 1.13). This suggests that countries where the hours share of the adjustment has been high could see a large wave of layoffs should the recovery falter.

Simple panel regressions explaining the contribution of hours to total labour input adjustment tentatively suggest that some countries including Austria, Germany and Norway rely more on adjusting hours during recessions.[37] In other countries, including New Zealand, Spain and the United States, employment has played a stronger role in adjusting labour input.[38] While cross-country differences were even larger that usual in

Figure 1.12. **Labour productivity growth and contribution of hours worked to overall labour adjustment**



* Historical average not available.

a) The hours share is equal to the percentage of total net change in labour input from the peak to trough in GDP that is attributable to reduced hours per worker. A negative share arises when average hours worked rose during the recession.

b) In some cases (Austria, Finland, Hungary, Italy, the Slovak Republic, Spain and Sweden), there is only one previous episode with declining labour input available for comparison.

Source: OECD Economic Outlook Database, national statistical authorities and OECD calculations.

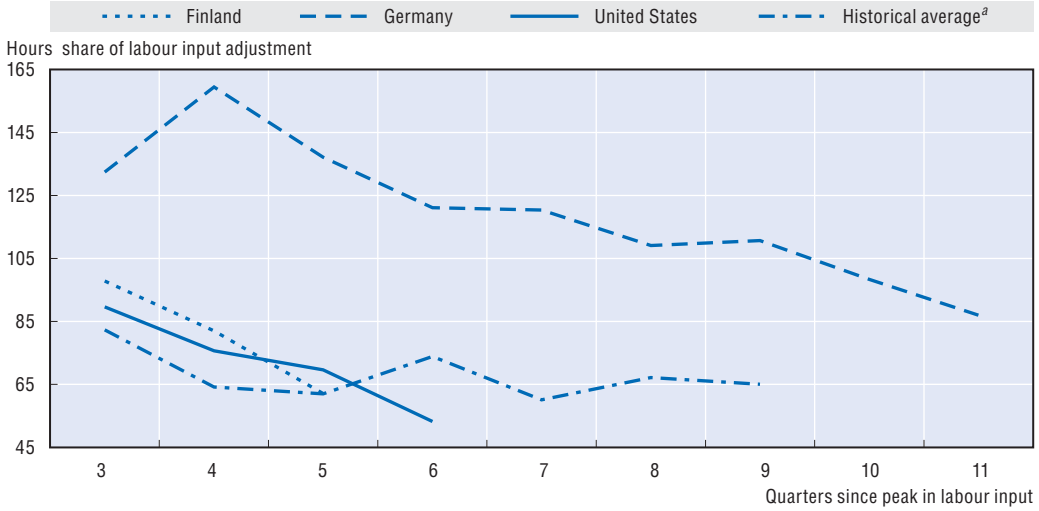
StatLink http://dx.doi.org/10.1787/888932292251

this recession, the *average* contribution of hours across the OECD was in line with past recessions, although it was higher than during the early 1990s recessions.

Box 1.2 reports analysis based on firm-level data which illustrates the role of structural factors in influencing the share of hours worked in labour input adjustment. It shows that the propensity to hoard labour and concentrate adjustment along the hours margin varies with a number of firm characteristics such as size, debt leverage and technology intensity. Differences in the mix of firm types could thus explain some of the differences in the hours share of adjustment, both between countries and over time within countries. National

Figure 1.13. **The share of hours worked in total labour input adjustment tends to fall over the course of a recession**

Share of net percentage change in labour input from the peak of labour input



a) Historical average based on 68 recession episodes in 18 OECD countries.

Source: OECD Economic Outlook Database, national statistical authorities and OECD calculations.

StatLink http://dx.doi.org/10.1787/888932292270

labour market policies and institutions, including short-time work schemes, could also account for some of these differences, as is discussed in Section 4.

2.3. Implications for total labour input adjustment and wages

The combined response of employment and average hours worked can be measured by the elasticity of labour input (total hours worked) to the output shock. This shows that the overall response to the shock was highest in Austria, Canada, Ireland, Norway, Spain and the United States during the current recession, where the elasticity of labour input to GDP exceeded unity (Figure 1.14). This group includes countries with both high and low contributions of hours adjustment, revealing that a high response of labour input to output shocks is not limited to countries where employment adjusts sharply. By contrast, the elasticity was below 0.5 in twelve of the 21 countries analysed, including Germany, where the low overall adjustment of labour input to the output shock reflected offsetting movements in employment and hours. The correlation between the hours share of the reduction in labour input with the elasticity of labour input to the output shock is very small (–0.07), implying that there is no strong link between the form that labour input adjustment takes and how

Box 1.2. **Labour hoarding across different types of firms**

Understanding how labour hoarding varies across different types of firms is important from a policy perspective as it sheds light on the capacity and the incentives of firms to retain workers during periods of reduced output demand. In the present analysis, labour hoarding is proxied by the standard deviation of labour productivity over time within firms. This measure provides for a broad interpretation of labour hoarding as it captures cases where the cost of smoothing employment over time is entirely borne by employers, as well as cases where the cost is shared with employees through work-sharing arrangements.

Box 1.2. **Labour hoarding across different types of firms** *(cont.)*

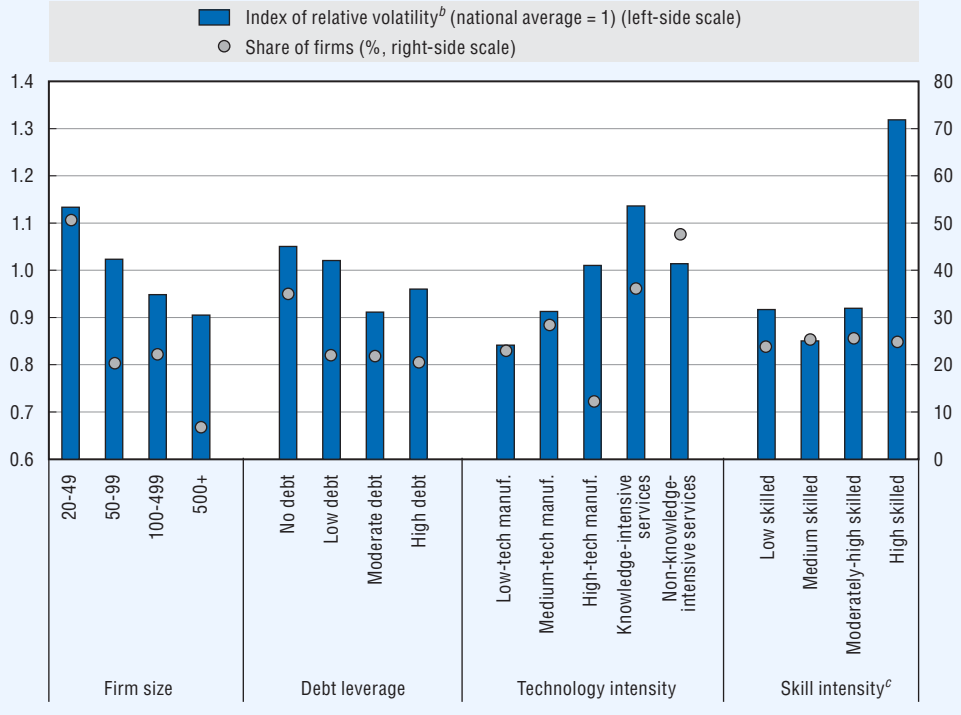
One possible determinant for explaining the capacity of firms to retain workers during periods of reduced output demand is credit constraints; a determinant of the incentives of firms to hoard labour is hiring and firing costs that depend on the production technology of firms and the skill-intensity of the workforce. The analysis below looks at these issues by comparing the tendency to hoard labour across different types of firms according to their debt leverage, employment size, the technology-intensity of industries and the skill-intensity of firms.[1] The analysis is based on a sample of over 230 000 firms across ten European countries. The results are reported in the figure below. See Annex 1.A4 of OECD (2010b) for details on the methodology and some further background statistics.

- *Debt leverage*. Labour productivity is more volatile in firms without external debt than in firms with at least some debt. This provides suggestive evidence that firms without debt have a greater capacity to hoard labour. This is broadly consistent with Sharpe (1994) who, using firm-level data for the United States, finds that leverage has a significant impact on the response of employment to the business cycle.[2] There is no strong evidence to suggest that labour hoarding decreases with the level of external debt to total assets.
- *Firm size*. Labour productivity is less volatile in large than in small firms suggesting that the degree of labour hoarding decreases with firm size. It is not straightforward to interpret these results as firm size may be related to different factors that affect labour hoarding. Traditionally, firm size has often been treated as an inverse proxy for credit constraints because informational frictions tend be more pronounced for small firms.[3] However, Moscarini and Postel-Vinay (2009) suggest that firm size may also affect the incentives for firms to retain workers during a downturn. Larger firms tend be more productive and offer higher wages and as a result may find it easier to recruit new workers during the recovery. The authors provide evidence for a number of countries that employment in large firms is more sensitive to the business cycle than employment in small firms.
- *Technology-intensity*. The technology-intensity of production in the industry is positively related to the tendency to hoard labour. Since firms in such industries tend to make more intensive use of highly qualified employees and employees on permanent contracts, and hiring and firing costs for such workers tend to be greater, firms in such industries may be expected to face stronger incentives to hoard labour. Indeed, OECD (2009a) shows that young workers (*i.e.* workers with low levels of experience), workers with low skills and workers on temporary contracts are more sensitive to changes in the economic cycle than other types of workers. In this context, the relative importance of technology-intensive manufacturing in Germany may help to explain the modest response of employment to the decline in output.
- *Skill-intensity*. The results with respect to skill intensity suggest that firms with relatively high levels of average skill intensity tend to smooth employment more than other firms. This is likely to reflect the possibility that more skilled workers possess higher levels of firm-specific human capital.

1. The role of export status was also considered but did not yield any conclusive results.
2. Sharpe (1994) suggests that the response elasticity of high-leverage firms may be interpreted as an indication of the short-run returns to labour (*e.g.* labour productivity). The difference between high-leverage and low-leverage firms may then give an indication of the degree of labour hoarding in low leverage firms.
3. This is because small firms tend to have shorter credit histories, tend to be subject to higher levels of idiosyncratic risk and are less likely to have adequate collateral (Gertler and Gilchrist, 1994).

Box 1.2. **Labour hoarding across different types of firms** *(cont.)*

Labour hoarding by firm type[a]



a) "Debt leverage" is based on the distribution of the share of debt leverage over operating revenue across firms where "No debt" refers to zero debt, "Low debt" refers to the first tercile, "Moderate debt" to the second tercile, and "High debt" to the third tercile; "Technology intensity" is based on the industry affiliation of the firm. The industry aggregation is based on *OECD Science, Technology and Industry Scoreboard* (2005). "Low-tech manufactures" corresponds to food, beverage and tobacco; textiles, clothing and leather; wood and wood products; publishing, printing and reproduction of recorded media; and other manufacturing. "Medium-tech manufactures" corresponds to coke, petroleum products and nuclear fuel; rubber and plastic products; non-metallic mineral products; metal and metal products; and machinery and equipment. "High-tech manufactures" corresponds to chemicals and chemical products; electrical and electronic equipment; precision instruments; and motor vehicles and other transport equipment. "Knowledge-intensive services" corresponds to transport, storage and communications; finance; business activities. "Non-knowledge-intensive services" corresponds to electricity, gas and water supply; construction; trade; hotels and restaurants. "Skill intensity" is based on the distribution of average wages across firms where "Low skilled" refers to the first quartile, "Medium skilled" to the second quartile, "Moderately-high skilled" to the third quartile and "High skilled" to the fourth quartile.

b) Volatility is measured as the standard deviation of first-differences of log labour productivity. Standard deviations are first averaged within each group and country, and subsequently averaged across the following countries: Belgium, the Czech Republic, Finland, France, Germany, Italy, the Netherlands, Spain, Sweden, and the United Kingdom. Using weights by firm size category and industry within each country does not qualitatively change the results. Instead of first-differencing, the analysis was also conducted in terms of within differences (*e.g.* deviations from the mean). This also led to very similar results.

c) Unweighted average of the following countries: Belgium, the Czech Republic, Finland, France, Italy, the Netherlands, Spain, Sweden, and the United Kingdom.

Source: OECD estimates based on *Amadeus Database*. See Annex 1.A4 in OECD (2010b) for further details on sample and methodology.

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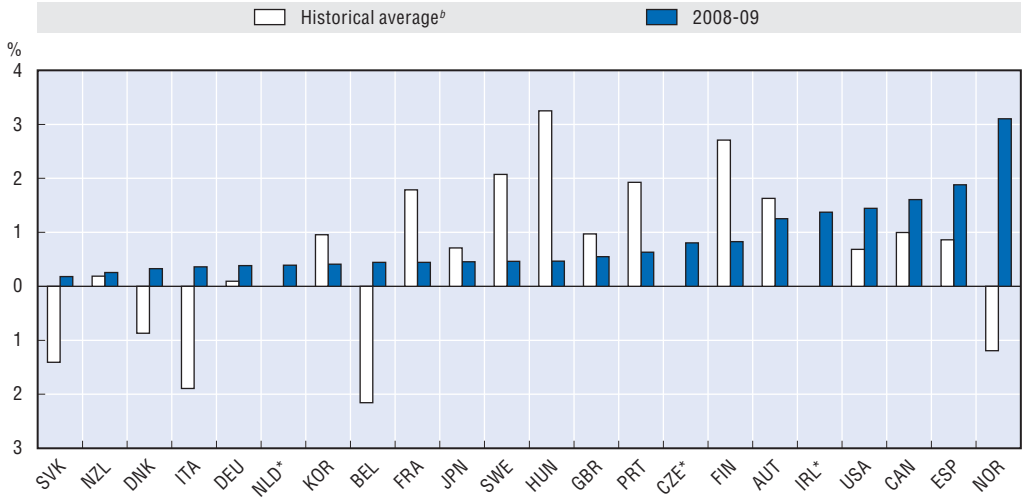
Figure 1.14. **Response of labour input to GDP from peak to trough in historical comparison: high variability across countries and recessions**[a]

Ratio of percentage change in total hours worked to percentage change in real GDP



* Historical average not available.

a) Peaks and troughs are determined using real GDP series in levels.

b) "Historical average" is the average of previous recession episodes. In some cases (Austria, Belgium, Finland, Hungary, the Slovak Republic, Spain and Sweden), there is only one previous episode available for comparison.

Source: OECD Economic Outlook Database, national statistical authorities and OECD calculations.

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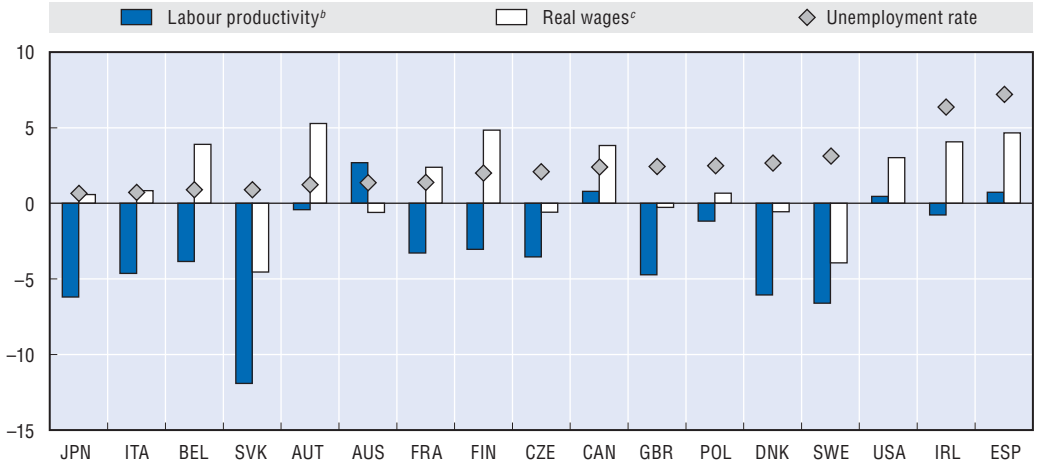
strongly labour input reacts to cyclical changes in production. Among countries with several previous episodes available for comparison, the response of labour input in Canada, Spain and the United States was stronger this time around. By contrast, Korea, Japan and a considerable number of European countries, including France, Portugal and the United Kingdom, all experienced a more muted response of labour input in this recession.[39]

Figure 1.15 juxtaposes changes in the real hourly wage during the 2008-09 recession with the changes in unemployment and hourly productivity in 17 countries for which the necessary data are available, with all of these variables expressed relative to pre-crisis trends so as to zero in on how wage setting adjusted to unexpected changes in labour market conditions. A first observation is that there is a lot of cross-country heterogeneity in how real hourly wages have reacted to the recession, with wage growth rising relative to trend in about one-half of the countries while it is stable or declining in the others. There is a weak positive association between the rise in unemployment and wage growth (correlation of 0.24), contrary to the negative relationship posited by the Phillips Curve. This may reflect composition effects, with the average hourly wage tending to rise in countries where large numbers of youth, low-paid and temporary workers have been laid off. There is some tendency for wage growth to be more restrained where hourly productivity was weaker, as reflected in the 0.67 correlation between between wage and productivity changes. While this suggests some sensitivity of wage setting to cost concerns, it is notable that wage growth accelerated relative to productivity growth in all of these countries except Australia suggesting that upward pressure on unit labour costs may be squeezing profit margins.[40] This quick look at wage developments makes it clear that the impact of the recession on average wages, like its impact on average hours, reflects a complex combination of adjustments along different margins, as well as compositional effects (*e.g.* whether low-paid workers are hardest hit by layoffs). Box 1.3 uses a Japanese

Figure 1.15. **Changes in unemployment, real wages and productivity relative to trend during the 2008-09 recession**[a]

Percentage changes



a) Trends based on the five years prior to the crisis.
b) Labour productivity is defined as real gross output divided by total hours worked.
c) Real wages are nominal hourly compensation per employee in the private sector deflated by the private consumption deflator.

Source: *OECD Economic Outlook Database* and OECD calculations.

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Box 1.3. **Hours and pay reductions in Japan reflect adjustments along many different margins**

The economic impact of the global crisis in Japan has been large, with GDP declining from peak to trough by more than 8%, yet the unemployment rate increased only modestly by 0.6 percentage points. The weak response of unemployment to the decline in aggregate demand reflects the high degree to which Japanese firms have held on to their workers during the downturn. To an important extent this can be explained by the relative flexibility of hours and wages in Japan.

According to the Monthly Labour Survey, average hours worked fell by 3.3% from 2008 to 2009 (almost 6% in manufacturing). The total reduction in working time can be decomposed approximately into adjustments along the following three margins:

- One sixth of the reduction in working time is accounted for by *the reduction in working time among part-time workers*. Part-time employment accounts for about one-fourth of total employment and the proportional reduction in the working hours of part-time workers is similar to that of full-time workers. The role of working-time reductions among part-time workers is much smaller in manufacturing, accounting for just 4% of the total reduction of working time. This reflects the lower incidence of part-time work in manufacturing (14%) and the smaller proportional reduction in hours worked during the crisis.[1]
- One-third of the reduction in average hours worked is accounted for by *the reduction in overtime among full-time workers*. In part, this was made possible by the marked increase in the use of overtime in the period immediately before the crisis. In manufacturing, the role of overtime has been even more important accounting for about half of the reduction in working time.[2] This reflects both the greater incidence of overtime in manufacturing before the crisis (almost one in ten hours) and the concentration of the decline in output demand in the manufacturing sector.

Box 1.3. **Hours and pay reductions in Japan reflect adjustments along many different margins** *(cont.)*

- One half of the reduction in working time represents *the reduction in standard hours for full-time workers*. The relative importance of reductions in standard hours reflects the limits of the overtime margin in the context of a severe decline in aggregate demand. Reductions in standard hours have been achieved through both short-time work schemes and employer-initiated reductions in working time, but it is difficult to pin down the relative contributions of these two types of hours adjustments:
  - Employment adjustment subsidies which are intended to preserve existing jobs by encouraging *short-time work* (*Koyo-chosei-jyosei-kin*) appear to account for between one-sixth and one-third of the total reduction in working time, and a considerably larger share of the adjustment in the manufacturing sector (35% to 45%). It is not possible to put precise figures on the role of short-time work as comprehensive data on the total number of hours subsidised are not publicly available, but a plausible range of impacts could be estimated by making alternative assumptions.[3]
  - The remaining one sixth to one-third of the overall reduction in working time is likely to reflect *employer-initiated reductions in working time*. Such reductions do not automatically translate in reductions in monthly earnings, but instead have to be negotiated separately from wages and usually at a different point in time. This means that employer-initiated average-hours reductions may result in higher average hourly wages.

The reduction in working time in Japan has coincided with a similarly sized reduction in real monthly earnings. While this appears to have been driven to a considerable extent by the reductions in working time discussed above, real hourly wage reductions are also likely to have played a significant role. Data from the Basic Survey of Wage Structure can be used to provide an approximate decomposition of the reduction in real monthly earnings in the manufacturing sector:

- About two-thirds of the reduction in average real earnings can be attributed to *the reduction in overtime hours and hence overtime pay*. The overtime premium helps to explain why overtime accounts for a larger share of the reduction in monthly earnings than of the reduction in average hours (about one-half). A second likely reason for the disproportionate impact of the reduction in overtime is that employer-initiated reductions in standard hours are associated with less than proportional reductions in monthly earnings.
- About one quarter of the reduction in real average earnings can be ascribed *to the reduction in standard monthly pay*. If it were assumed that standard-hours reductions translate one-for-one into lower standard earnings, it would follow that 60% of the reduction in standard monthly pay is due to reduced standard hours and 40% to real hourly wage reductions. However, reductions in standard working time are likely to translate only partially into lower monthly earning, implying that the role of real hourly wage reductions is likely to be greater in practice.[4]
- Only about 5% of the reduction in real average earnings is due to lower bonuses. The reason for this small figure is that bonuses paid in 2009 reflected business conditions during the entire year of 2008, while the economic crisis only erupted towards the end of 2008.

1. Full-time workers switching to part-time jobs can play an important role in reducing average hours during a recession. However, the impact of this channel has been negligible in Japan during the 2008-09 recession, because the incidence of part-time work has remained fairly stable during recent years at around 26%, after having increased sharply from the early 1990s to the mid-2000s.
2. This corresponds to a reduction in overtime hours of about one-third.

Box 1.3. **Hours and pay reductions in Japan reflect adjustments along many different margins** *(cont.)*

3. In the absence of publicly available data on the number of hours subsidised, the total number of subsidised hours were estimated using information on total public expenditure on short-time work (*Koyo-chosei-jyosei-kin*) and the average hourly wage. Two scenarios were considered based on different modeling assumptions with respect to the co-financing of short-time work by firms and the replacement rate: a high-cost low-impact scenario and a low-cost high-impact scenario. The *high-cost low-impact scenario* assumes that the cost of one hour of short-time work to the government equals 90% of the average hourly wage. This value is derived from information in Annex 1.A1 which specifies that firms have to share at least 10% of the cost and the replacement rate can be as much as 100%. Under this assumption, short-time work would account for a sixth of the total reduction in working time (or one-third of the reduction in average standard hours) and 40% in manufacturing (or 75% of average standard hours). The *low-cost high-impact scenario* assumes that the cost of one hour of short-time work to the government equals 40% of the average hourly wage. This value is derived from information in Annex 1.A1 which specifies that firms share up to one-third of the cost and the replacement rate is at least 60% of the previous wage. This alternative assumption implies that short-time work accounts for about 35% of the total reduction in working time (or 70% of the reduction in average standard hours) and 90% in manufacturing (or 170% of the reduction in average standard hours). The true impact of short-time work probably lies between the estimates based on these two scenarios. As it seems unlikely that standard hours would have increased substantially in the manufacturing sector in the absence of the short-time work subsidy, the estimates based on the high-cost low-impact scenario is likely to be somewhat closer to the true values.
4. If job losses during the crisis are concentrated among low-earning workers than a composition effect would tend to raise average hourly wages, implying a larger role for real hourly wage reductions in explaining overall changes in the average wage. As the impact of the crisis on employment has been relatively weak in Japan, this possibility is ignored here.

case study to illustrate the complex interaction of the institutional arrangements affecting both hours worked and compensation adjustments during the recession.

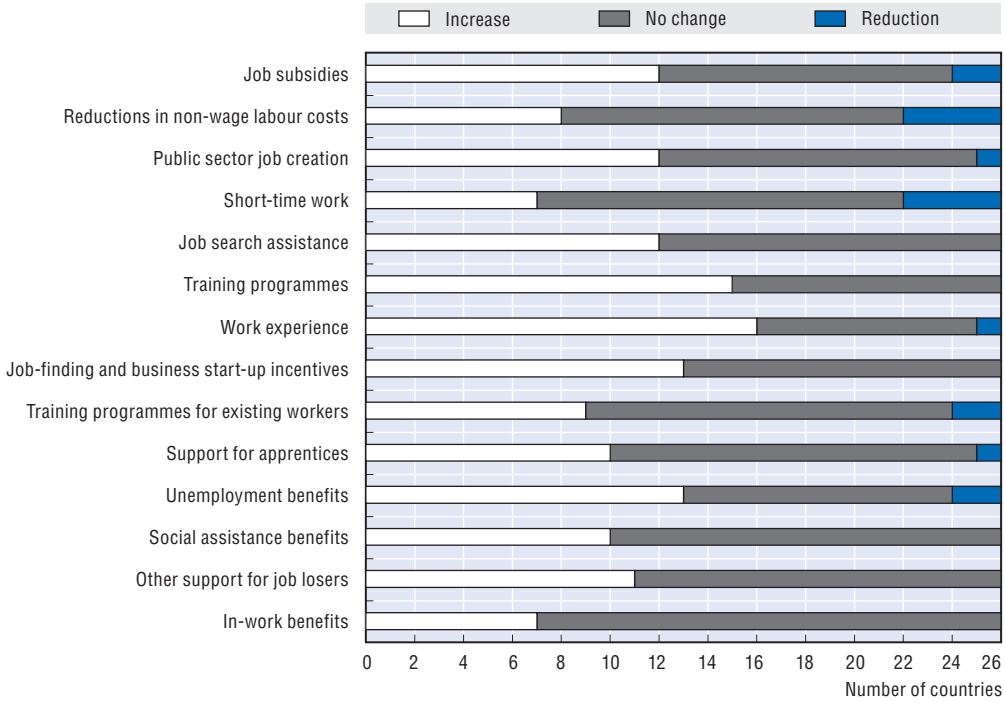
3. The policy response to the jobs crisis in OECD countries: an update

3.1. The policy stance in 2010

OECD (2009a) surveyed the early response of countries to the jobs crisis, noting that most countries were undertaking measures across a broad range of labour market policy areas. New information collected in a joint questionnaire by the OECD/European Commission in early 2010 shows that few countries intend on cutting back on the resources devoted to labour market policy in 2010 at that time (Figure 1.16).[41] Indeed, half or more expect to put more resources into some active labour market programmes and unemployment benefits, and a large minority will put more resources into job-search assistance, job subsidy schemes and public sector job creation. Resources devoted to short-time work schemes and reductions in social security contributions are set to remain fairly constant, and even decline in several countries as these schemes are wound back and temporary measures expire.

The relative policy stance depends to a large extent on how labour market conditions have evolved during the downturn and early phase of the recovery and governments' budget situation (Table 1.3). Countries which expect to see a sizeable (further) increase in the unemployment rate over the next two years have a more expansionary stance on job-search assistance and active labour market programmes than the country average. They are also less expansionary when it comes to resources devoted to short-time work schemes. Countries with current unemployment rates of over 8% but where the unemployment rate is expected to decline or remain stable over the next two years are channelling above-average resources into measures to create new opportunities for the large pool of unemployment through work-experience and public sector job creation

Figure 1.16. **Anticipated change in resources devoted to labour market policy, 2010 compared with 2009**



Source: OECD calculations based on responses to OECD/EC questionnaires on labour market policy response to the economic downturn.

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programmes. Spending on unemployment benefits and social assistance is expected to increase on average, as is spending on in-work benefits. Countries with large government deficits are typically less expansionary than average on active labour market measures (with the exception of work-experience programmes), but slightly more expansionary on labour demand measures such as short-time work schemes and job subsidies.

While few countries are cutting back on resources devoted to labour market policy during 2010, the current timetable for withdrawal of temporary, crisis-related measures in the major OECD economies shows that the situation will be quite different in 2011. Many measures to stimulate labour demand and provide extended unemployment benefits for jobseekers are due to be withdrawn at the end of 2010 or early in 2011 as employment starts to increase and fewer people move into unemployment. Other temporary measures designed to help jobseekers find new work are likely to be in place longer, as countries try to help the large stock of unemployed people move back into work. Of course, these timetables are subject to change as the unfolding labour market and fiscal situation becomes clearer. Many governments have already extended crisis-related discretionary measures during 2009 and early 2010, notably those related to unemployment benefit duration and generosity.

3.2. Measures to stimulate labour demand

Job subsidies and public sector job creation

Many OECD countries implemented new job or hiring subsidy schemes during 2009 in response to the crisis, often targeting vulnerable jobseekers such as youth, older workers or the long-term unemployed. A number of countries extended existing public-sector job

Table 1.3. **Relative policy stance by labour market and government budget situation, 2010 compared with 2009**

Compared with average for all countries

	Countries with high projected unemployment growth	Countries with high but stable/falling unemployment	Countries with large government budget deficits
Job subsidies	0	–	+
Reductions in non-wage labour costs	0	0	0
Public sector job creation	+	+	0
Short-time work	–	–	+
Job search assistance	+	–	–
Training programmes	0	–	–
Work experience	+	+	+
Job-finding and business start-up incentives	+	0	–
Training programmes for existing workers	0	–	–
Support for apprentices	+	0	–
Unemployment benefits	0	+	+
Social assistance benefits	0	+	–
Other support for job losers	0	0	0
In-work benefits	–	+	–

Note: "+" means more expansionary than the average for all countries; "–" means less expansionary; "0" means about the same.
Countries are classified using December 2009 data from the *OECD Labour Force Statistics Database* and European Union Labour Force Survey (EULFS), and OECD (2009c) projections that date from November 2009.
High projected unemployment growth: Belgium, Finland, Germany, the Netherlands, Sweden and Turkey.
High but stable/falling unemployment: Canada, France, Hungary, Italy, Portugal, the Slovak Republic and the United States.
Large government budget deficit: France, Ireland, Japan, the United Kingdom and the United States.
Source: OECD calculations based on responses to OECD/EC questionnaires on labour market policy response to the economic downturn.

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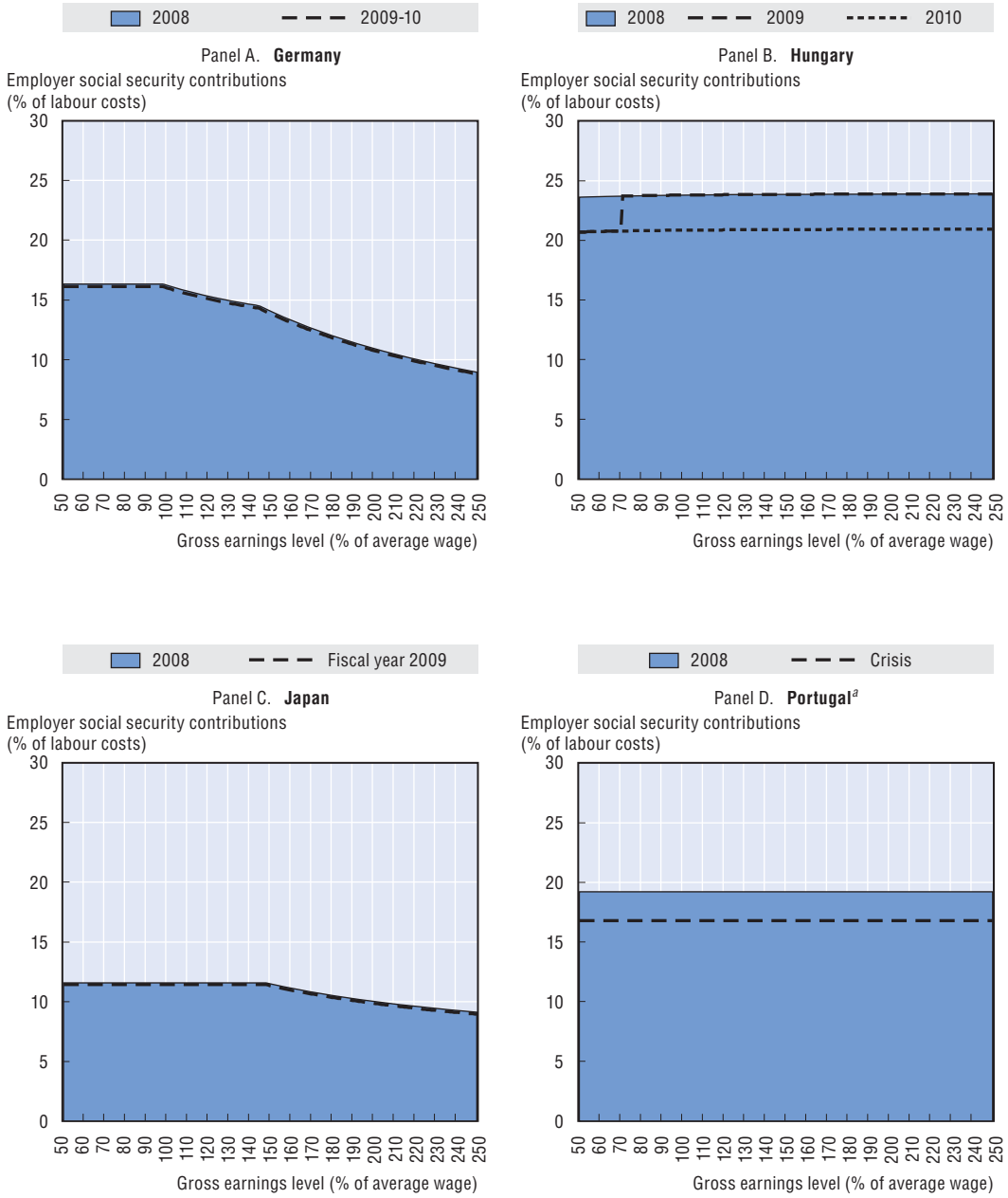
creation schemes to private-sector firms or announced additional public-sector job placements (see OECD, 2009i, for full details). Since mid-2009, hiring subsidies were introduced or scaled-up in a number of countries or targeted more clearly at specific groups. For example, hiring subsidies for the long-term unemployed were introduced (Austria, Korea, Portugal) or made permanent (Sweden). Disabled people (Korea), youth (Austria, Finland, Portugal, Switzerland) and older workers (Korea) were targeted by additional hiring subsidies. Furthermore, wage subsidy programmes were scaled-up for youth (United Kingdom, Finland, New Zealand, France, Greece) and older workers (France). New job subsidies were made available to save jobs which are under specific threat of being terminated (Ireland) or for employers moving to or expanding employment in regions with deteriorating employment conditions (Korea). Japan expanded public-sector job creation for nursing, medical care, agriculture, environment, energy, tourism and the local community. Mexico strengthened the targeting of public-sector job creation at districts with higher job loss. Switzerland will enact a public-sector job creation scheme if the national unemployment rate reaches 5% (currently at 4.6%).

Reductions in non-wage labour costs

Reductions in non-wage labour costs enacted in response to the downturn fall into two distinct groups: *i)* general reductions in employer social security contributions that apply to both continuing workers and new hires (and which may or may not be targeted at particular groups of new and continuing workers); and *ii)* those targeted solely at new hires. Some examples of general reductions in employer social security contributions for new and continuing workers implemented since the start of the downturn are shown in

Figure 1.17. **Reductions in employer social security contributions for continuing and new workers in selected countries**

Employer social security contributions as a percentage of labour costs by gross earnings level (as a percentage of average wage)



a) Workers aged 45 years or more in firms with less than 50 employees.

Source: OECD (2008), *Taxing Wages* 2008, and OECD calculations based on responses to OECD/EC questionnaires on the labour market policy response to the economic downturn.

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Figure 1.17. In Germany and Japan, temporary reductions in employer contributions to unemployment insurance schemes have resulted in very little change in average labour costs (–0.2 percentage points in both countries at the level of the average wage), mainly because unemployment insurance contributions make up a relatively small proportion of total labour costs in both countries, compared with other social security contributions.

Employer social security contributions fell more substantially – from 24% to 21% of total labour costs – in Hungary as part of a permanent restructuring of the tax system implemented in 2009 for employers of low-wage workers and in 2010 more broadly. Employer social security contributions for continuing workers also fell in Portugal – from 19% to 17% of labour costs – but only for employers with less than 50 employees for continuing or new employees aged 45 years and over.

In other countries, reductions were targeted at new hires (Figure 1.18). For example in Portugal, in addition to its overall cut in employer social security contributions (discussed above), employer social security contributions were eliminated for the first three years of employment (or for the first two years in addition to a EUR 2 000 hiring subsidy) for new hires on permanent contracts of certain groups of disadvantaged jobseekers. Firms must have net hiring over a three-year period. A 50% reduction in employer social security contributions applies for new hires of people aged 55 years and over who have been unemployed for at least six months. In this case, there is no requirement for a permanent contract or net hiring; although, under the scheme, employers cannot rehire their former employees (those with whom they have had an employment relationship in the previous three years).

Ireland has eliminated employer social security contributions for one year for new hires (in addition to existing staff) of people unemployed for six months or more. France and Spain have also reduced employer social contributions for new hires, with larger relative reductions for employers of low-wage workers. In France, small firms are fully exempted from employer social security contributions for new hires at the minimum wage and contributions are progressively increased to reach the standard rate at 1.6 times the minimum wage. In Spain, a EUR 1 500 per year social contribution rebate applies for two years to new hires of workers with family responsibilities on permanent contracts. In all cases, these reforms have significantly reduced labour costs for the targeted groups, although in some cases, the target groups are likely to be relatively small.

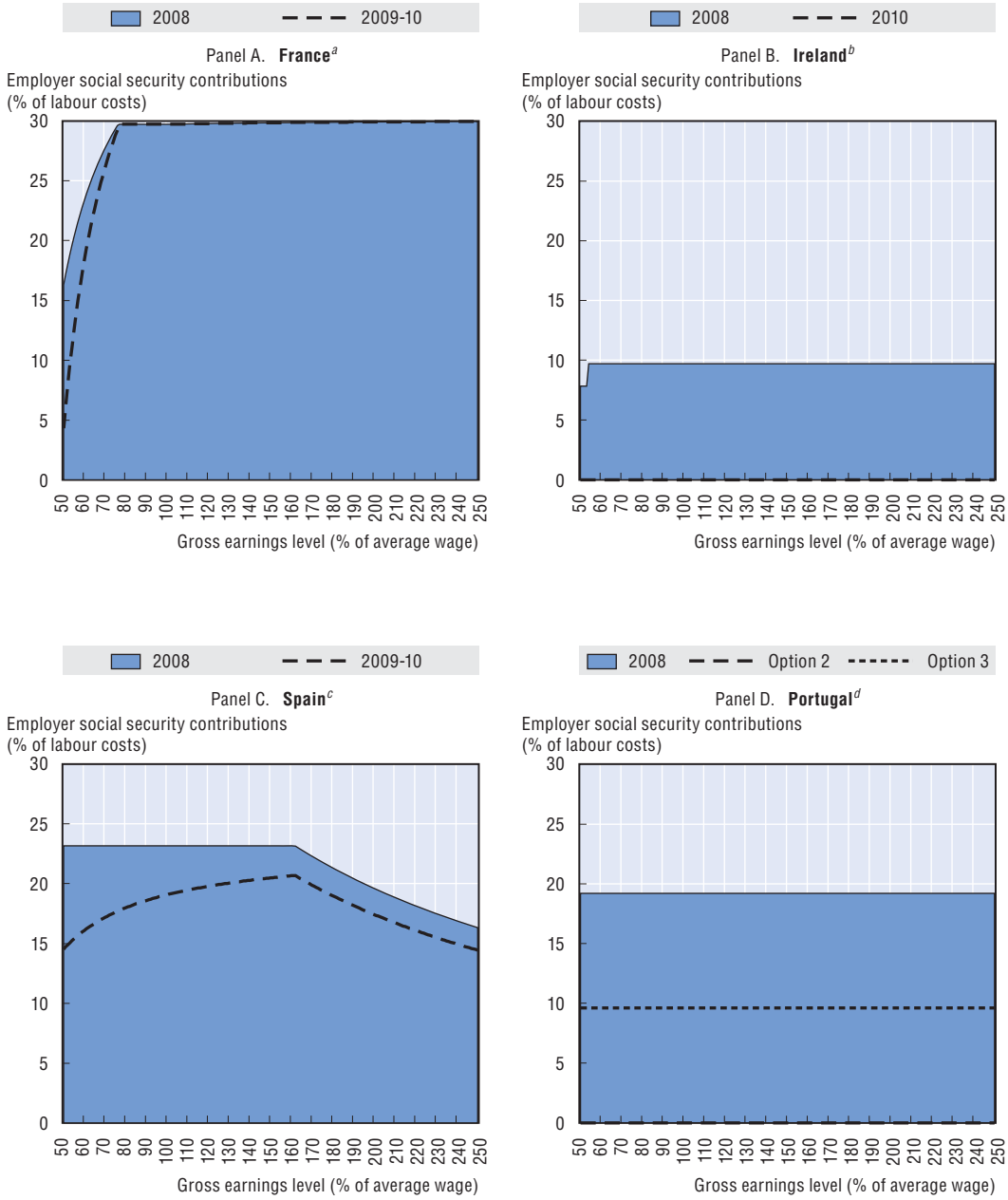
Over the past year, a number of countries have implemented additional measures to reduce non-wage labour costs. In addition to the changes in France, Portugal and Ireland discussed above, measures to reduce employer social contributions for all new hires were introduced or extended focusing on groups such as mid- to longer-term unemployed (Hungary, Turkey) and peripheral regions (Finland). In the United States, firms making new hires from February to December 2010 of people who have been unemployed for at least two months will be exempted from payroll taxes. Public finance issues have forced the Czech Republic to terminate temporary reductions in non-wage labour costs targeted at low-wage workers.

Short-time work arrangements

Countries that have short-time work or partial unemployment schemes, or have introduced them in response to the crisis, have seen participation in such schemes escalate dramatically since 2007 (Figure 1.19). Take-up has been highest in Belgium, Turkey, Italy, Germany and Luxembourg, accounting for over 3 to almost 6% of all employees. With the exception of Belgium, few employees were participating in short-time work schemes prior to the onset of the crisis. Participating in training is compulsory for workers on short-time work in the Czech Republic, Hungary, the Netherlands and Portugal.[42] While training is not compulsory, it is publicly-subsidised for short-time workers in Finland, Belgium, Austria, Portugal, Poland, Germany, Hungary, Japan, Norway and Switzerland. In general, however, few short-time workers have participated in training during the current

Figure 1.18. **Reductions in employer social security contributions for new hires in selected countries**

Employer social security contributions as a percentage of labour costs by gross earnings level (as a percentage of average wage)



a) New hires by firms with less than ten employees, applies until December 2010.
b) New hire must be unemployed for at least six months, applies for one year.
c) New hires of workers with family responsibility on permanent contracts, applies for two years.
d) Option 2: new hires of long-term unemployed on permanent contracts with net hiring during three years, applies for two or three years. Option 3: new hires of unemployed at least six months, aged 55 or more years on fixed-term contract.

Source: OECD (2008), *Taxing Wages* 2008, and OECD calculations based on responses to OECD/EC questionnaires on the labour market policy response to the economic downturn.

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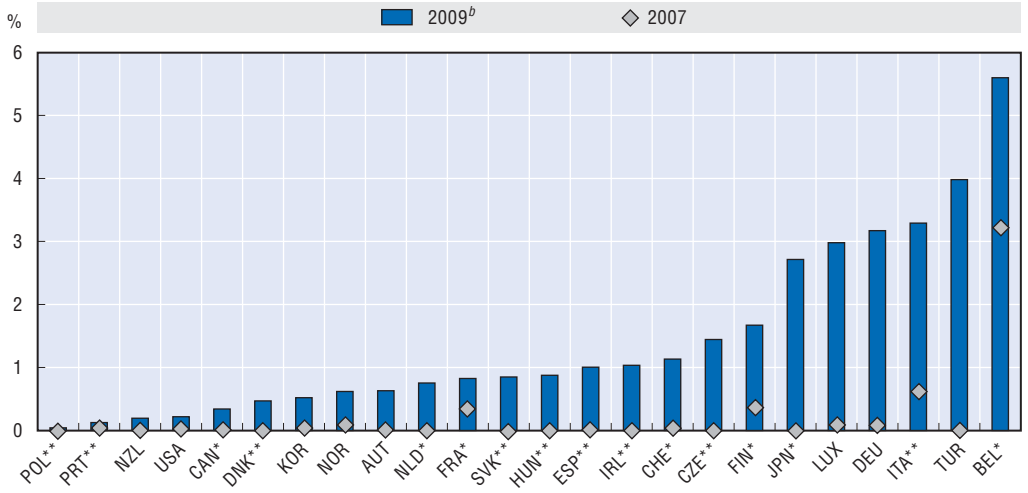
Figure 1.19. **Annual average stock of employees participating in short-time work schemes as percentage of all employees**[a]



a) Countries shown in ascending order of the share of participants in short-time work schemes in 2009.
b) Until 2009 Q3 for Austria and the Netherlands; August 2009 for Portugal and Spain; September 2009 for the Slovak Republic; and October 2009 for Luxembourg and New Zealand.

Source: Data on short-time workers are from the OECD-EC questionnaire, except in the following cases: * indicates that data are from national sources; ** indicates that data are OECD estimates using flows data from the OECD-EC questionnaire or from national sources. Data on employees are from *OECD Main Economic Indicators Database*.

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crisis where it is not compulsory: less than 10% in Belgium, Denmark, Finland, Italy, Korea, Germany and Switzerland; and 10-25% in Austria and Japan.

Over the past year, a number of countries have extended existing programmes. Replacement rates have been increased (Finland), durations extended (France, Switzerland, Turkey), eligibility criteria relaxed (Canada, Japan) or additional groups of firms (Belgium, Korea) given access to short-time work arrangements. In other countries, support for short-time work schemes is being wound back. In Germany, the first temporary extension of duration of short-time work subsidies from six to 24 months expired at the end of 2009, and was replaced by another temporary extension of duration from six to 18 months during 2010. Hungary suspended applications to two of its three short-time work schemes at the end of 2009. No other countries have reported termination of short-time work arrangements to date. However, many additional measures introduced during the crisis (such as extended duration, eligibility or generosity of subsidies) are due to finish at the end of 2010.

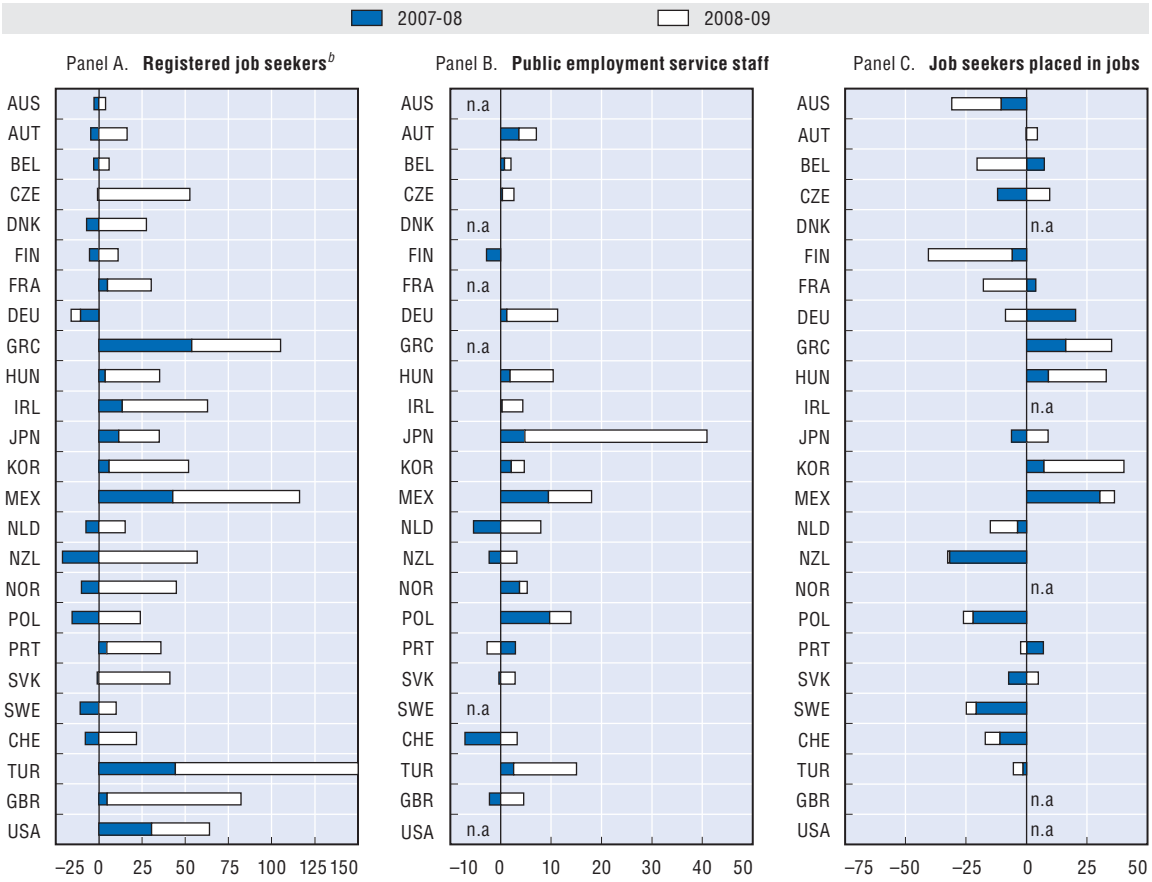
3.3. Re-employment measures and training

Job-search assistance and activation measures

The economic crisis has placed much greater demands on public employment services (PES).[43] The number of jobseekers registered with the PES began increasing quickly in 2008 in Greece, Mexico, Turkey and the United States, and then surged in most countries in 2008-09 (Figure 1.20). Most countries responded by increasing PES staff levels, with net increases of 10% or more over the past three years in Germany, Hungary, Japan, Mexico, Poland and Turkey.[44] Despite these additional resources, the average staff caseload increased in most countries, more than doubling between 2007 and 2009 in Turkey and increasing by around 50% or more in the United Kingdom, Czech Republic, New Zealand

Figure 1.20. **Percentage change in PES workload, staffing and outcomes, 2007-09**[a]

Annual change as a percentage of 2007 level



n.a: Not available; PES: public employment service.

a) No data on PES staffing in 2009 are available for Finland.

b) Registered unemployed for the Czech Republic and Poland.

Source: OECD calculations based on responses to OECD/EC questionnaires on labour market policy response to the economic downturn.

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and Mexico.[45] In contrast, caseloads fell slightly in Germany and Japan where an increase in staffing accompanied a decline (Germany) or a small increase (Japan) in registered jobseekers.

Since mid-2009, additional PES resources have been allocated to provide job-search assistance to particular groups such as youth (Finland, Austria, Japan, New Zealand), immigrants (Finland), people with short-term contracts (Belgium) or people not receiving benefits (France). Several countries have expanded the role of private employment agencies to provide much-needed additional capacity (Italy, Poland, France, Korea). A number of PES organisations have been reorganised, for example into centres merging several actors involved in providing re-employment or other support services (Finland, Netherlands, Japan). However, given the sharp declines in registered vacancies – by 6% from 2007-08 and a further 16% from 2008-09 on average – high caseloads resulted in a reduction in the number of jobseekers being placed in jobs from 2008-09 in several countries, with the largest percentage declines in placements in Finland, New Zealand, Australia, Poland and Sweden.

Over the past year, several countries have implemented additional measures to reflect the need for earlier interventions and to put greater emphasis on job seekers' responsibilities. Assessment and intake procedures for job-search assistance have been brought forward in the unemployment spell (Finland), even helping some workers into new jobs before they have lost their current job (United Kingdom). Furthermore, job search services are being delivered in phases with increasing levels of commitment required from job seekers (United Kingdom). Regarding activation requirements, job seekers have been required to take more responsibility in some countries. Jobseekers are now denied benefits if, for no justified reason, they refuse to accept a suitable job (Poland) and they are required (Finland) to look for jobs in wider geographical areas. Elsewhere, obtaining certificates showing qualification levels is being subsidised in order to stimulate mobility (Austria, Netherlands). Immediate activation into training or work-experience places is implemented for youth directly upon registering for social assistance (Netherlands, Denmark for 18-19-year-olds). Australia has introduced a new requirement for unemployed early school-leavers aged under 21, who must undertake education and/or paid employment or voluntary experience to qualify for unemployment benefits.

Training and work-experience programmes and business start-up incentives

In the first OECD/EC questionnaire, most countries reported an increase in resources devoted to active labour market measures including training, work experience and business start-up incentives. Several also reported measures to provide training to existing workers at risk of job loss or support for apprentices. Many measures were focused on the most disadvantaged groups of jobseekers – youth, the low-skilled and workers in industries most affected by the downturn (see OECD, 2009i, for full details). Training measures have been further intensified over the past year. Among others, these are taking the form of subsidising more training places (Poland, Sweden, Ireland), creating quicker access to training slots after being registered as a job seeker (United Kingdom, Finland) or in the shape of pre-employment training. In some countries, new training places are aimed more specifically at those at risk of being laid off or indigenous people (Australia) or youth (Austria, United Kingdom, Portugal, New Zealand, Switzerland), while in France, firms are required to provide career plans, including training activities, for older workers. Training measures have also been focussed more on sectors with potential high-growth prospects, such as health and social care (Belgium, Austria, United Kingdom) or energy-efficient construction or green industries (Switzerland, Greece, Australia).

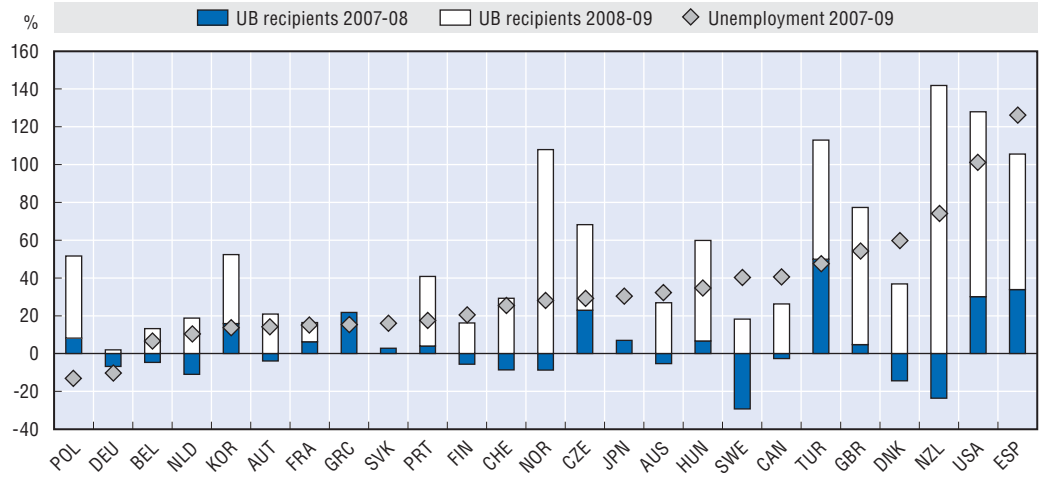
Since mid-2009, additional work-experience, internship and/or apprenticeship places have been created through subsidy measures or other financial incentives for employers such as hiring or completion grants (Poland, France, Germany, Greece, Denmark, Australia, Canada, Japan, Korea, New Zealand, Norway, Turkey). Also, more sectors of the economy are eligible to supply these subsidised places (Ireland). Some countries have focused in particular on creating apprenticeship places in the social and health sectors (United Kingdom) or other industries that have not traditionally used apprenticeship (United States). These subsidised places have been made available sooner after registering as job seeker (Ireland, United Kingdom) and are allowed to last longer – up to nine months in Ireland. Business start-up incentives for job seekers and encouragement to take up self-employment have been brought forward in time (United Kingdom) or increased in value (Poland).

3.4. Income support for job losers and low-income earners

In most countries, spending on unemployment benefits and social assistance increases automatically during economic downturns as a response to the increase in unemployment and low-income households. The increase in spending is likely to have been accelerated by discretionary measures adopted during 2009 in many countries that increased generosity or duration of benefits or extended eligibility to groups of job losers not usually covered by benefits, notably temporary or irregular workers. Measures were also adopted in many countries to provide additional support for job losers through social assistance, housing, health or childcare (see OECD, 2009i, for full details). Not surprisingly, the number of people receiving unemployment benefits has grown in most countries since 2007 (Figure 1.21). Growth was strongest in Turkey, New Zealand, Norway, Spain and the United States. However, expanding benefit recipiency has failed to match the pace of growth of unemployment in some countries, suggesting that coverage of the unemployed by benefits may have fallen. In contrast, several countries experienced an increase in the number of benefit recipients that outpaced the growth in unemployment (Czech Republic, Hungary, Korea, New Zealand, Norway, Poland, Portugal, Turkey, United Kingdom, United States). In some cases, this may have been the result of measures designed specifically to increase benefit coverage or eligibility (*e.g.* United States, Korea) or to extend benefit duration or generosity (*e.g.* Turkey, United States).

Figure 1.21. **Growth in unemployment benefit recipients and unemployment**

As a percentage of 2007 level



Note: "UB recipients" is the sum of recipients of unemployment insurance (UI) and unemployment assistance (UA), but does not include social assistance or workers in receipt of partial unemployment benefits for reduced working time. It is possible that some people could receive both UI and UA in a single year and so be counted twice. Annual unemployment data for 2007 and 2009 are used, except for New Zealand, the Slovak Republic, Switzerland, Turkey and the United Kingdom, which use data for 2009 Q3. Data on unemployment benefit recipients are not available for 2009 for Japan and the Slovak Republic.

Source: OECD calculations based on responses to OECD/EC questionnaires on labour market policy response to the economic downturn. Unemployment data from the European Union Labour Force Survey (EULFS) and *OECD Main Economic Indicators Database*.

StatLink http://dx.doi.org/10.1787/888932292422

Over the past year, further changes have been made to income support policies to assist job losers. Benefit eligibility has been expanded: among others to improve access for young people (Finland) and parents (Slovak Republic). Benefit levels have been increased in

general terms (Austria) or specifically for lay-offs (Finland, Belgium). Benefit duration was extended in several countries (Switzerland, United States and Canada). Greece made lump-sum payments to job losers, low-income families and other vulnerable groups. The Czech Republic cancelled plans to temporarily increase duration and replacement rates for some unemployed because of pressure on public finances. Poland continued with a reform to improve the effectiveness of activation by increasing benefit levels in the first three months of receipt (a change in early 2009 reduced duration from 18 to 12 months). Since mid-2009, income support specifically targeted at workers receiving training was introduced or extended in several countries (Australia, Japan, Turkey and the United States). Housing support for job losers have been expanded, either through a housing allowance (Japan) or postponement of mortgage payments (Poland, Hungary, Slovak Republic). Free health insurance was provided for some social benefit recipients in Austria. New initiatives to make work pay have been reported only sporadically. For example, Sweden has increased in-work benefit incentives.

4. The role of short-time work schemes in limiting job losses during the 2008-09 recession

During the current downturn, the majority of OECD countries have taken steps to create or expand public short-time work (STW) schemes as a way to limit job losses (see Section 3). The aggregate analysis in Section 2 showed that the decline in employment has been small in many countries compared with what would have been expected given the size of the decline in output, due in large part to reductions in average hours having accounted for an unusually high share of the total adjustment in labour input. Not surprisingly, a number of observers have conjectured that the vigorous promotion of work sharing *via* STW schemes deserves much of the credit for keeping the rise in unemployment from being even more dramatic. Whether that is in fact the case remains uncertain, because there has been little systematic evaluation of the effectiveness of STW schemes in preserving jobs during the crisis.

This section attempts to begin to fill this evidence gap by estimating the impact of STW schemes on employment, average hours and wages during the 2008-09 recession. As a preliminary to that econometric analysis, the main features of short-time work schemes in 22 OECD countries are reviewed. It is shown that national practices vary widely and that these differences probably play an important role in explaining the wide variation in STW take-up rates during the recession (*cf.* Figure 1.19) and may also influence how effectively take-up translates into net jobs saved. The impact of STW schemes is then assessed by relating cross-country variation in take-up rates during the crisis to variation in the strength of employment, hours and wage responses to the decline in output. A key aspect of the analysis is that it makes use of an explicit and economically realistic counterfactual, against which the role of STW schemes can be assessed. This is essential for drawing reliable inferences about the causal impact of these schemes. As the OECD area is only just starting to emerge from the crisis, it is still too early to assess the impact of STW schemes in the longer term, which is also crucial for an overall assessment. Indeed, the main concerns about short-time work schemes relate to their potentially adverse impacts on the vigour of employment growth during the recovery and economic restructuring in the longer run.

4.1. Overview of short-time work schemes in OECD countries and previous evidence on their effectiveness

Short-time work programmes are public schemes that are intended to preserve jobs at firms experiencing temporarily low demand by encouraging work sharing, while also providing income-support to workers whose hours are reduced due to a shortened workweek or temporary lay-offs. More precisely, the purpose of STW schemes is to avoid "excessive" layoffs, that is, the permanent dismissal of workers during a business downturn whose jobs would be viable in the long-run. In principle, a well-designed STW scheme can promote both equity and efficiency: *i)* equity, by sharing the burden of adjustment more equally across the workforce; and *ii)* efficiency, by preventing transitory factors from destroying valuable job matches (OECD, 2009a). A crucial aspect of all STW schemes is that the contracts of participating employees with their firms are maintained during the period of short-time work or the suspension of work.

The design of short-time work schemes has important implications for their effectiveness

STW schemes are a particular type of a job subsidy and they are also subject to *deadweight* and *displacement* effects that reduce their cost effectiveness. Deadweight occurs when STW subsidies are paid for jobs that employers would have retained even in the absence of the subsidy, implying that this spending is a pure transfer which does not limit total job losses. Displacement effects can be said to occur when STW schemes preserve jobs that are not viable without the subsidy, even after business conditions recover. If these subsidies are maintained they lock workers in low productivity job matches and thus represent a barrier to job creation by firms with the potential to grow and efficiency enhancing labour mobility (see Chapter 3 of this publication). These potential efficiency costs are likely small during a recession, but they become more of a concern as the recovery takes hold. As is the case with conventional job subsidies, STW schemes confront a trade-off between cost-effectiveness, on the one hand, and scale on the other (Martin and Grubb, 2001). For example, tight eligibility requirements and relatively low subsidies can reduce deadweight and displacement effects, but are also likely to discourage take-up by some firms where it would be socially efficient.

The majority of OECD countries operate a public short-time work scheme, but there are important differences in their design. Annex 1.A1 presents an overview of the main features of these STW schemes in 22 OECD countries, organised around work-sharing requirements, eligibility requirements, conditionality requirements and generosity. Considerable diversity is present in all of these areas and these differences in national practice appear to reflect different strategies for balancing concerns about assuring adequate take-up and limiting deadweight and displacement effects:

- *Work-sharing requirements* specify how working-time reductions are to be distributed across the workforce of participating firms, including by setting a minimum number or share of workers who must participate, or limits on the minimum or maximum hours reductions. Fifteen of the 22 countries set a minimum hours reduction limit which ranges from 40% in Norway to 10% or less in Austria, Germany, Switzerland and the Slovak Republic. Relatively high minimum reductions, together with the requirements that a minimum number or proportion of workers participate in six countries, are probably intended to limit STW participation to firms experiencing a significant deterioration in business conditions. However, minimum participation requirements, along with

maximum limits on hours reductions, can also be justified as encouraging broader sharing of the hours reduction across the workforce. In the majority of countries, there is no maximum hours reduction per worker, implying that short-time work can take the form of temporary layoffs (*i.e.* actual hours are reduced to zero), as well as partial reductions in working time.[46] Austria, Canada, Luxembourg, the Netherlands, New Zealand and some US states have placed limits on the maximum reduction in working time in order to exclude the possibility of temporary layoffs. This may be motivated by the desire to encourage work sharing and thereby spread the burden of adjustment across a larger group of workers. Denmark and Switzerland promote this goal directly by requiring that short-time work apply to at least an entire production unit. In countries where the maximum duration of STW participation is relatively long, work-sharing requirements may also reflect concerns about the impact of long temporary layoffs on future employability, since valuable work experience may be lost. The implications of work-sharing requirements for take-up are not clear *a priori*. While restrictions on working-time reductions may reduce take-up by employers, encouraging work-sharing across a larger group of workers within participating firms may raise take-up as measured by the number of workers affected, if not in terms of the total reduction in hours worked.

- *Eligibility requirements* set conditions that employers or workers must meet in order to participate in the programme. In most countries with a STW scheme, firms must provide proof of economic need, such as a minimum reduction in production and/or sales. An explicit agreement between the social partners is also often a requirement. Both requirements are likely to reduce deadweight losses. When business activity declines sharply, firms are less likely to be capable of preventing job losses by themselves. Similarly, trade unions and other worker representatives are more likely to agree to short-time work, despite the loss in income that this typically entails for workers, when the only alternative for the firm is to dismiss workers. Requirements for firm eligibility thus limit take-up in a way that is intended to increase cost-effectiveness.[47] However, to the extent that eligibility requirements create important administrative costs, there is also a risk that they deter some firms from participating in STW schemes even though doing so would allow viable jobs to be preserved. Worker eligibility for STW is sometimes conditional on meeting the eligibility requirements for regular unemployment benefits, typically minimum social security contribution thresholds. Where they apply, these requirements are likely to limit the eligibility of workers in temporary or part-time jobs for STW programmes.[48]
- *Conditionality requirements* set behaviour requirements for employers and workers participating in STW schemes. Behavioural requirements for firms include prohibitions of dismissals during or, in some cases, for a short period after participation in STW schemes (Austria, France, Hungary, the Netherlands, New Zealand and Poland) and the development of recovery plans (Italy, Luxembourg, Poland, Spain and for white-collar workers in Belgium).[49] Behavioural requirements for workers most frequently take the form of job-search requirements, particularly in countries where STW is, in effect, a partial benefit administered by the UB system. During the 2008-09 recession, the Czech Republic, Hungary, the Netherlands and Portugal introduced a requirement that workers participate in training during their idle hours. These conditionality requirements on workers may help to reduce *displacements effects* that arise when short-time work schemes support unviable jobs, since they have the potential to enhance either the viability of the current jobs (*via* up-grade training) or worker mobility (*via* job search or

general training). However, there would appear to be an inherent tension between targeting STW subsidies to preserve the most valuable job matches, where it is presumably the case that the workers' skills already correspond well to job requirements, and requiring further training or job search.[50] More generally, conditionality requirements risk excessively reducing take-up, by increasing the costs to firms of programme participation. To minimise this risk, most of the countries that have made training compulsory during periods of short-time work, provide additional subsidies for training (Czech Republic, Hungary and Portugal), as have a larger number of countries in which training is not compulsory.

- The *generosity* of a STW programme determines the cost of participation for both firms and workers, as well as the maximum duration for which income support is available. The extent to which firms share in the cost of short-time work differs considerably across countries. Even though requiring firms to share in the cost of short-time work appears to be an effective way of reducing deadweight loss, firms do not bear any part of the cost of STW in Belgium, Canada, Denmark, Finland, Ireland, Spain and Turkey.[51] In all other countries, firms bear a part of the wage costs for hours not worked (France, Hungary, Japan, Korea, Poland, Portugal, Slovak Republic) or pay full wages for an initial period of short-time work (Norway, Switzerland). Many countries also require firms to pay at least part of normal social security contributions for hours not worked.[52] Income replacement rates for workers also vary considerably across countries. The generosity of income support to workers on short-time work is likely to be an important factor in explaining the relative ease with which social partners are willing to accept a short-time working agreement in countries where this is required. The maximum duration for which STW subsidies are available is also likely to be an important determinant of take-up, in particular in countries where the administrative costs associated with programme entry are relatively high.

Expanding take-up in a recession probably makes sense, but only up to a certain point

The discussion above makes it clear that eligibility and conditionality requirements, and programme generosity are likely to have an important impact on take-up. While higher take-up is not necessarily better, excessively low take up is a concern, particularly in the context of a deep recession. Most STW schemes contain specific design requirements that directly (through eligibility requirements) or indirectly (through conditionality requirements) reduce take-up, in order to increase cost-effectiveness. More specifically, eligibility requirements seek to lower the unit cost per viable job saved, but are likely to do so at the expense of some desirable take-up. This may mean that in countries with strict eligibility conditions, the proportional impact of short-time work on jobs may be larger, but that its absolute impact may be smaller. Conditionality requirements are likely to reduce take-up and, therefore, reduce the direct impact of short-time working in preserving jobs. However, by enhancing the viability of some continuing jobs and worker mobility, the medium-term impact of short-time working on employment and economic restructuring may be more positive. Finally, greater generosity is likely to increase take-up and, as a result, strengthen the absolute jobs impact of short-time working in the short run. However, this may come at the expense of a lower cost effectiveness in the short run and lower employment and job reallocation in the medium run, especially if support for short-time work is maintained for too long into the recovery.

During the 2008-09 recession, most OECD countries that already had a short-time work scheme at the start of the crisis made temporary adjustments to their schemes intended to encourage greater take-up, including by weakening eligibility and conditionality requirements and increasing generosity (see Section 3 and OECD, 2009i for details). This suggests that governments judged that the correct balance between assuring adequate take-up and avoiding deadweight and displacement effects had temporarily shifted towards placing a greater emphasis on expanding STW participation. This seems reasonable *a priori* since many more viable jobs are at risk in a steep recession, especially one in which firms' access to credit is limited, while the social cost of locking workers in unviable jobs is temporarily lower since there is little prospect they could move quickly into more productive jobs. The same reasoning suggests that these crisis measures should be phased out during the recovery, as firms become better able to retain viable jobs without public subsidies and the efficiency cost of retaining workers in non-competitive jobs increases. The increasingly tight fiscal constraints confronting many OECD governments provides an additional reason to shift progressively towards emphasising greater cost-effectiveness. While adapting the design of STW schemes over the course of a recession and early recovery in this manner appears desirable *a priori*, empirical evidence about the actual effectiveness of such a policy stance is lacking.

There is considerable uncertainty how many viable jobs short-time work schemes can save

A limited number of studies have used firm-level data from administrative sources to assess the impact of STW schemes on different outcome variables of interest, including their potential for preserving jobs. The main challenge confronting such studies is the selection bias that arises due to participating firms tending to be less competitive than other firms that can serve as a control group. If the selection pattern is not appropriately addressed, it may be falsely concluded that short-time work subsidies result in lower job stability and employment. Calavrezo *et al*. (2009) make use of firm-level data to analyse the impact of the French system of *chômage partiel* on layoffs. They find that *chômage partiel* tends to increase layoffs. This may indicate that despite the use of sophisticated econometric methods, the problem of selection bias has not been entirely removed. Berkeley Planning Associates & Mathematica Policy Research, Inc. (1997) provide a comprehensive assessment of short-time compensation programmes in the United States using a variety of methods and conclude that the available firm-level data do not allow one to reliably attribute differences in outcomes between participating and control firms to short-time compensation.

The aggregate approach taken by Abraham and Houseman (1994) and other studies that they cite provides a potentially fruitful alternative to micro studies based on comparisons between participating and non-participating firms. Abraham and Houseman compare aggregate adjustment patterns in employment and hours worked across countries and over time using quarterly time-series data for Belgium, France, Germany and the United States. They show that adjustment in total hours worked is fairly similar across the four countries, even though employment adjustment is much slower in the three European countries. This suggests that average hours worked adjust more strongly in the three European countries than in the United States. In order to obtain an indication of the role of short-time work, Abraham and Houseman estimate adjustment speeds based on total hours worked and show that the speed of adjustment is substantially higher in the

presence of short-time work, which suggests that STW schemes make an important contribution to hours flexibility in Belgium, France and Germany. While very instructive, this study provides little insight into how effectively STW schemes preserved jobs in the 2008-09 recession. One limitation is that Abraham and Houseman do not assess the quantitative impact of STW schemes on labour market outcomes, nor do they explicitly relate short-time work to employment stability. The fact that the analysis is limited to a small number of countries also means that disentangling the impact of STW schemes on labour demand adjustment from other factors that differ across countries is very difficult. Finally, Abraham and Houseman's evidence is now rather dated since STW schemes and labour market structures more generally have evolved significantly since the 1980s and early 1990s.

A first indication of the potential job saving impact of STW schemes, as they operated during the 2008-09 recession, can be derived from a simple accounting exercise: using information on the number of workers participating in STW schemes and the average reduction in hours worked, the total subsidised reduction in hours worked can be calculated and converted into full-time equivalent workers. For example, of calculations of this type suggest that about 60 000 and 350 000 jobs could have been saved during the current downturn in France and Germany, respectively.[53] However, this exercise should be considered as yielding an upper limit on the number of jobs potentially saved, because it takes no account of the fact that subsidies may support jobs that would have been maintained anyway (deadweight) or that some of the jobs supported by short-time work subsidies may be terminated during the programme or soon after its completion. These leakages may be quite large. For example, an evaluation of the Canadian *Work Sharing Programme* shows that about half of the jobs that were initially maintained by the programme were lost soon after its termination (HRDC, 2004). Similarly, an *ex ante* evaluation of the new Dutch scheme (CPB, 2009) suggests that deadweight cost could amount to 50% of the total cost.[54]

The fundamental limitation of the accounting exercises just discussed is that they do not rely upon a realistic no-STW counterfactual, against which observed outcomes in employment and hours can be assessed.[55] In order to draw reliable conclusions about the effectiveness of short-time work programmes in preserving jobs during an economic downturn, it is essential to construct a realistic counterfactual. The next sub-section attempts to do so for the operation of STW schemes during the 2008-09 recession.

4.2. New OECD evidence

This section presents new OECD evidence on the impact of STW schemes on employment, hours and wages during the 2008-09 recession. The analysis makes use of quarterly data for the period 2003 Q1 to 2009 Q3 for 19 countries and four industries (manufacturing, construction, distribution and business services). The agricultural and non-market sectors are excluded from the analysis.[56] Of the 19 countries included in the analysis, 11 countries operated a short-time work scheme during the entire period, five countries introduced a new scheme during the crisis period and three countries never had a short-time work scheme.

The basic idea underlying this analysis is to relate differences in labour-adjustment patterns across countries to differences in the intensity with which STW schemes are used. This involves making comparisons across countries with and without short-time work schemes, as well as across countries with short-time work schemes that differ in economic scope.[57] It is assumed that conditional on economic conditions, the STW take-up rate provides a proxy for the attractiveness of participating in a country's short-time work

scheme, which is effectively exogenous to labour demand adjustment patterns during the downturn. Consequently, the cross-country variation in take-up rates can be used to analyse the causal impact of STW schemes on the labour market response to the global crisis.[58]

This appears to be the first study to exploit the cross-country variation in take-up rates to analyse the quantitative impacts of STW schemes on labour market outcomes. Exploiting the variation in the intensity of the use of short-time work across countries has a number of advantages. First, it allows one to construct a realistic counterfactual against which the role of STW schemes can be assessed. Second, exploiting the variation across countries, rather than between participating and non-participating firms within countries, avoids the selection problem that characterises firm-level studies. Third, the approach used here focuses on the *net* effects of short-time working on labour market outcomes, after taking account of its effects on both participating and non-participating firms. To the extent that short-time working also affects labour market outcomes in non-participating firms, for example, by reducing labour mobility, this could be potentially important.[59]

Using cross-country variation to identify the causal impact of STW schemes also raises a number of difficulties. Most fundamentally, countries differ in many ways that affect labour-demand adjustment in addition to whatever impact STW schemes may have. Regulations affecting dismissals and hours flexibility are of particular concern in this respect. Box 1.4 provides an overview of policies that affect the relative ease of making adjustments along the employment and hours margins in OECD countries. National practices differ substantially and there is also a tendency for strict employment protection (EP) to be associated with both STW schemes and alternative arrangements that provide additional flexibility on the hours margin such as hours averaging and the use of overtime. This probably reflects the greater perceived need to enhance internal flexibility when external flexibility is discouraged by relatively strict EP. To the extent that short-time work programmes tend to be more important in countries with strict EP legislation and more flexible hours regulations, this may lead to an upward bias in the estimated impact of short-time work in encouraging greater work sharing during a recession. Since EP and working time flexibility regulations tend to be fairly stable over time and are difficult to adjust rapidly in response to changes in the business cycle, this potential bias may be avoided in the econometric framework used here since the baseline specification includes country fixed effects that control for country-specific factors that have been constant during the 2008-09 recession. The OECD indicator for EP is also added to the model as a robustness check.

Another important feature of the analysis is that it distinguishes between permanent and temporary workers. Temporary workers are typically the first to lose their job in an economic downturn and adjustments in temporary employment in terms of overall employment have been substantial in a number of OECD countries (*cf.* Figure 1.3). Despite their elevated risk of job loss in a recession, temporary workers appear to participate very little in STW schemes. One reason for this is that some countries limit eligibility to workers meeting social security contribution thresholds few temporary workers meet (Annex 1.A1). While several countries have temporarily extended the coverage of STW schemes to temporary workers (*e.g.* France), this remains rare. Moreover, even if temporary workers are eligible for short-time work, in principle, the incentive for firms to place temporary workers on short-time work are likely to be considerably weaker than for their core workforce. Participation in these schemes tends to be costly for employers, while hiring and firing costs tend to be low for temporary workers. As a result of these differences in

Box 1.4. **Policies affecting the choice between the internal and external margin of labour input adjustment**

Along with the STW schemes, the relative stringency of regulation of hiring and firing ("employment protection") and working time adjustments is likely to affect how much firms adjust along the internal or external margins during a downturn (*i.e.* whether employers rely principally on reductions of average hours worked or labour shedding). There is some evidence of a cross-country trade off in regulations affecting internal and external flexibility (see Table below). Many countries with strict employment protection have relatively flexible rules for hours adjustment, notably the Czech Republic, France, Germany, Greece, Italy and Spain. Everything else equal, hours reductions are likely to play a more important role than dismissals in these countries when firms need to reduce their labour inputs. In contrast, Korea, Hungary and Iceland are less strict when it comes to employment protection, but relatively inflexible on hours adjustment. There is also evidence of a trade-off between different types of hours flexibility. In Belgium, Denmark, Finland, Norway, Sweden, the United States and most Canadian jurisdictions, overtime premia are relatively high, but normal hours can be averaged over a long period. In Australia, Ireland, Luxembourg, the Netherlands, New Zealand, Switzerland, Turkey and the United Kingdom, averaging is more difficult, but overtime premia lower. In general, STW schemes are more developed in countries with stricter employment protection regulation. However, during the current recession, a number of countries with relatively weak employment protection, including the Slovak Republic, Hungary and New Zealand, introduced such schemes.

Regulation of internal and external adjustment

Employment protection
<—— Internal margin/External margin ——>

Working-time regulation <—— External margin/Internal margin ——>	Stricter employment protection[a]		Less strict employment protection	
Low overtime premium[b] AND long averaging period[c]	Czech Republic		Japan	
	France		Slovak Republic	
	Germany			
	Greece			
	Italy			
	Spain			
Low overtime premium OR long averaging period	Long averaging period:	Low overtime premium:	Long averaging period:	Low overtime premium:
	Belgium	Luxembourg	Canada	Australia
	Finland	Turkey	Denmark	Ireland
	Norway		Sweden	Netherlands
			United States	New Zealand
				Switzerland
				United Kingdom
High overtime premium AND short averaging period	Austria		Hungary	
	Mexico		Iceland	
	Poland		Korea	
	Portugal			

a) Employment protection is measured using the OECD Summary Indicator of Employment Protection (see *www.oecd.org/employment/protection* for details). Stricter employment protection is defined as above the OECD median.

b) Overtime premium is measured as average hourly overtime compensation as a percentage of the normal hourly wage for an employee working an additional hour of overtime per day for five weekdays (additional five hours per week in total). Where data on overtime compensation in collective agreements are available, the average of statutory and collectively-bargained overtime compensation is taken, weighted by collective bargaining coverage. Low overtime premium is defined as below the OECD median.

c) Averaging period is the maximum number of weeks over which an increase in weekly hours of ten hours per week can be averaged. Where averaging periods differ depending on whether averaging takes place inside or outside collective bargaining, the average of periods is taken, weighted by collective bargaining coverage. Long averaging period is defined as above the OECD median.

Source: Employment protection: Venn (2009); Working-time regulation: Annex 1.A5 in OECD (2010b).

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eligibility and hiring-and-firing costs across, short-time work schemes may have a tendency to increase labour market segmentation by raising employment stability among permanent workers while leaving it constant or even reducing it among temporary workers.[60] Given their differential participation in STW schemes, it is important to distinguish, as much as possible, between temporary and permanent workers when analysing how these schemes affect labour demand adjustment.

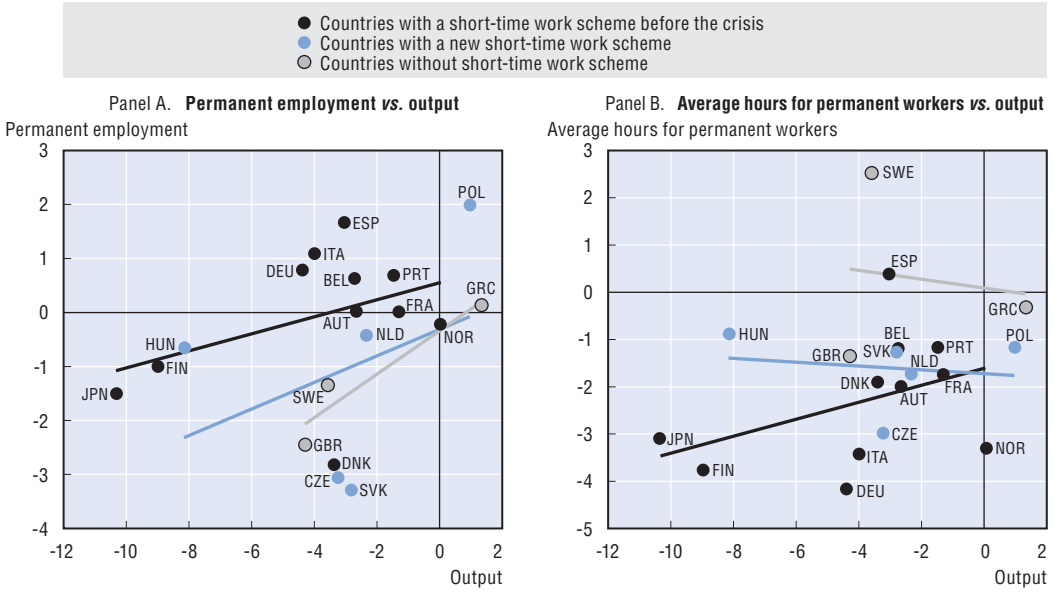
A first look at the data

In order to provide a first look at the possible role of short-time work schemes in shaping labour market adjustment during a recession, Figure 1.22 presents a scatter plot of the percentage changes in employment and average hours of permanent workers against those in output during the period 2008 Q3 and 2009 Q3, differentiating between countries that already operated a short-time work scheme at the onset of the crisis, countries that established a new short-time work scheme in response to the crisis and countries that do not operate a STW scheme. These data suggest that countries with STW schemes experienced smaller reductions in permanent employment in response to the decline in aggregate demand than other countries, but larger reductions in average hours, although these scatter plots clearly indicate that many other factors influence the strength of these responses:

- Panel A of Figure 1.22 shows that the response of permanent employment to the decline in output tended to be weakest in countries that operated a STW scheme at the onset of

Figure 1.22. **Did short-time work schemes affect labour market adjustment during the 2008-09 recession?**

Percentage change between 2008 Q3 and 2009 Q3[a]



a) Based on 19 countries of which 16 with short-time work schemes. Agriculture and non-business services are excluded.

Source: OECD estimates based on the European Quarterly National Accounts and the European Union Labour Force Survey (EULFS) for the European countries and the Ministry of Economy, Trade and Industry (METI) and the national labour force survey for Japan.

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the crisis, somewhat stronger in countries that established a short-time work scheme in response to the crisis and strongest in countries without such schemes.

- Panel B shows that the average hours response to the decline in output tended to be strongest in countries that already operated a STW scheme before the start of the crisis and that average hours also tended to fall during the recession in countries that established such a scheme during the downturn, although the size of the hours reduction was not systematically related to the size of the fall in output. Average hours evolved erratically in the three countries without a STW scheme, but were approximately unchanged on average.

Short-time work schemes helped preserve permanent jobs during the 2008-09 recession

The simple associations highlighted in Figure 1.22 could reflect the causal impact of short-time work schemes, but it is also possible that countries where STW schemes operate also have other labour market institutions that favour adjustment along the intensive margin. The remainder of this section discusses the results from an econometric analysis that is better suited to identify the causal impact of STW schemes on labour market adjustment during the recent downturn. The following outcome variables are considered: employment, average hours and average hourly wages. When looking at employment and average hours, the analysis consistently distinguishes between permanent and temporary workers. This is not possible in the case of hourly wages due to data limitations. Box 1.5 presents the data and the methodology in greater detail, while key

Box 1.5. **Assessing the role of short-time work schemes during the 2008-09 recession**

In order to estimate the impact of short-time work schemes on employment, average hours and average hourly wage adjustments during the 2008-09 recession, a model of labour market adjustments is estimated that allows the responsiveness of outcomes to declines in output to vary across countries according to differences in the intensity with which STW schemes are used within the same broad industry. The empirical model can be represented as follows:

$$\Delta lnl_{ikt} = \alpha_0 + \alpha_1 \Delta lny_{ikt} + \alpha_2 \Delta lny_{ikt} * D_{kt}^{crisis} + \alpha_3 \Delta lny_{ikt} * D_{kt}^{crisis} * T_{kt}^{stw} + \alpha_4 D_{kt}^{crisis} + \alpha_5 T_{kt}^{stw} + \beta_{it} D_{it} + \gamma_k D_k + \varepsilon_{ikt} \quad [1]$$

where subscripts i, k, and t refer to industry, country and time, respectively; l refers to the outcome variable of interest, which may be permanent or temporary employment, average hours worked of permanent or temporary workers, or the average real hourly wage (for permanent and temporary workers together); and y refers to gross real output. The model, thus, treats output as exogenous. While this assumption would be inappropriate in many contexts, it appears to be reasonable in the context of a deep economic downturn, when changes in aggregate demand conditions drive the variation in output and hence labour demand. In order to allow for the possibility that the impact of output differs during the crisis period, output is interacted with a country-specific crisis dummy, D_{kt}^{crisis}, which equals one from the last peak in quarterly GDP to the end of the sample (2009 Q3). T_{kt}^{stw} is the country-specific STW take-up rate averaged over the period of the crisis during which the short-time work programme operated. It lies between zero and one in countries with a STW scheme and equals zero in countries without a scheme. Conditional on the change in

Box 1.5. **Assessing the role of short-time work schemes during the 2008-09 recession** *(cont.)*

output, the intensity of short-time work may be interpreted as a proxy for the attractiveness of participating in a country's STW scheme. The attractiveness of a short-time work scheme may reflect its relative generosity in terms of the level and maximum duration of compensation for reduced working time, as well as administrative features that affect the ease with which firms can enter and exit the program (see discussion in main text). D_{it} represents a full set of industry-by-time dummies, D_k a full set of country dummies and ε_{ikt} an idiosyncratic error term. The industry-by-time dummies control for technology differences within industries and over time that are common across countries. Their inclusion implies that identification is achieved by making comparisons within industries across countries. The inclusion of country dummies controls to some extent for the role of common factors within countries across industry-and-time groups such as employment and hours regulations.

The impact of STW schemes on the responsiveness of labour market outcomes to output shocks during the crisis period is captured by the interaction term of the change in output, the crisis dummy and the short-time take-up rate. Countries without STW schemes provide the counterfactual against which the impact of short-time work is assessed. More precisely, the average marginal effect of a change in output during the crisis period on the outcome variable of interest in countries without a STW scheme can be obtained by taking the sum of the coefficients on the change in output and the interaction term of the change in output and the crisis dummy. The average marginal effect of a change in output during the crisis period in countries with a STW scheme is given by the sum of the coefficient on the change in output, the coefficient on the interaction term of the change in output and the crisis dummy, and the coefficient on the interaction term of the change in output, the crisis dummy and the take-up rate multiplied by the average take-up rate in the sample during the crisis period. Country-specific marginal effects can be obtained by using the average take-up rate within a country during the crisis period instead of the sample average. The total proportional impact of the change in output during the crisis period within a country can be obtained by multiplying the country-specific marginal effects with the corresponding changes in output during the crisis period. In countries that have newly introduced a short-time work scheme during the crisis, the change in output during the period in which the scheme was operational is used. The absolute impact of short-time work can be obtained by multiplying its proportional impact by the actual level of the outcome of interest at the start of the crisis.

The analysis is based on an unbalanced panel of quarterly data across 19 countries and four industries for the period 2003 Q1 to 2009 Q3. The core database on employment, hours, wages and output is derived from Eurostat's Quarterly National Accounts and the European Labour Force Survey for the European countries and the Ministry of Economy, Trade and Industry (METI) and the national labour force survey for Japan. A country is considered to have a short-time work scheme when it has a programme of partial unemployment benefits for economic reasons where partial unemployment benefits refer to benefits that are paid to compensate for the loss of wage or salary due to formal short-time working arrangements, intermittent work schedules or temporary layoffs. Countries that only have a partial unemployment benefit programme to compensate shortfalls in the demand for seasonal or exceptional reasons are not considered as having a short-time work scheme here (*e.g.* Greece). Five countries included in the analysis established new short-time work schemes in response to the economic crisis (dates of entry into force in brackets): the Czech Republic (2008 Q4), Hungary (2009 Q2), the

Box 1.5. **Assessing the role of short-time work schemes during the 2008-09 recession** *(cont.)*

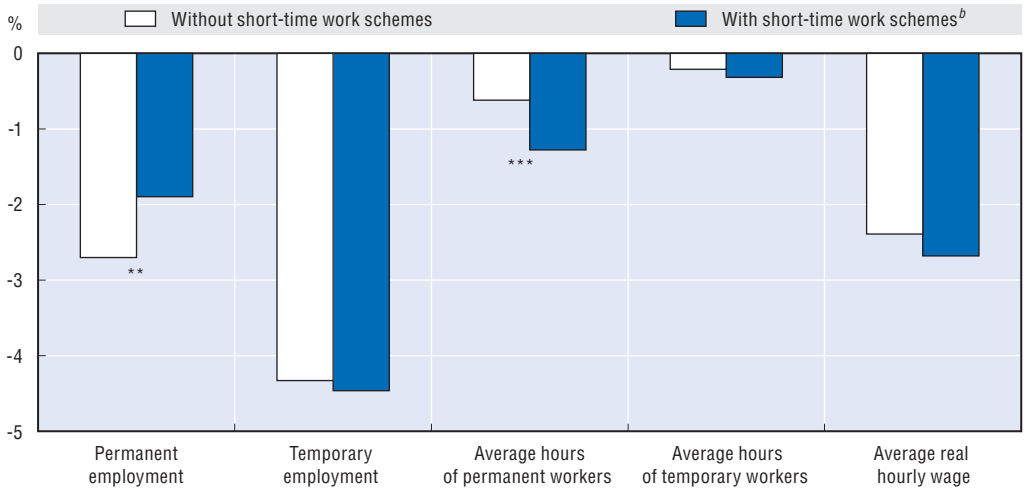
Netherlands (2008 Q4), Poland (2009 Q3) and the Slovak Republic (2009 Q2). Countries that have modified their STW schemes as a response to the crisis are Belgium, Germany, Finland, France, Italy (all 2009 Q1), the Netherlands and Norway (2009 Q2). Data on participation in short-time work schemes are obtained partly from Eurostat and partly from national sources. Take-up of short-time work is measured as the ratio of the average number of participants to the number of employees during the crisis period or, in the case of schemes that were established in response to the crisis, during the period when the scheme was operational. Considerable efforts were made to render take-up rates comparable across countries. For details on take-up rates and their definitions across countries, see Annex 1.A6 of OECD (2010b).

In order to account for the seasonality in the data differences in the model refer to year-on-year differences rather than quarter-on-quarter differences. Standard errors are clustered within countries in order to correct for the possibility that standard errors are downward biased due to the cross-sectional correlation that arises from the inclusion of variables at the country level (Moulton, 1990). Ireland was excluded from the analysis. The reasons for doing so are discussed in detail in the main text.

estimation results are highlighted in Figure 1.23 which reports the average marginal effects of a 10% decline in output during the crisis period for typical countries with and without STW schemes. Table 1.4 reports the full results for the baseline model and several alternative specifications.

Figure 1.23. **Short-time work schemes reduced the output sensitivity of employment, but increased that of average hours**

The impact of short-time work schemes on the responsiveness of employment, hours and real wages to a 10% reduction in output[a]



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

a) Based on 19 countries of which 16 with short-time work schemes. Estimates over four industries: manufacturing, construction, distributive services and business services (agriculture and non-business services are excluded).

b) Take-up rate assumed to equal the average across countries operating a short-time work scheme during the 2008-09 recession.

Source: OECD estimates based on Panel A of Table 1.4.

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Table 1.4. **The impact of short-time work schemes**

OLS estimates, dependent variable expressed in year-to-year percentage change[a]

	Employment of permanent workers	Employment of temporary workers	Average hours for permanent workers	Average hours for temporary workers	Average real hourly wage
	Panel A. **Baseline specification**				
Output[b]	0.114**	0.054	0.016	0.069	0.325***
Crisis dummy	–0.015	–0.042	–0.003	–0.004	0.012
Average take-up rate	0.148	2.284	–0.305	–0.500	–2.913
Interaction term of output[b] and crisis dummy	0.156***	0.379	0.046	–0.048	–0.086
Interaction term of output,[b] crisis dummy and average take-up rate	**–8.628****	**1.422**	**7.050*****	**1.164**	**3.098**
Observations	1 724	1 724	1 724	1 632	1 564
R-squared	0.43	0.21	0.32	0.11	0.29
	Panel B. **Baseline specification with take-up rate defined at industry level**				
Output[b]	0.092***	0.039	0.012	0.063*	0.342***
Crisis dummy	0.013**	–0.092***	–0.003	–0.004	0.003
Average take-up rate	–0.107	0.789	0.001	–0.315*	0.209*
Interaction term of output[b] and crisis dummy	0.117*	0.865***	0.071	0.061	–0.413***
Interaction term of output,[b] crisis dummy and average take-up rate	**–3.911*****	**13.958**	**2.428*****	**–1.703**	**1.099**
Observations	988	988	988	988	1 012
R-squared	0.55	0.28	0.37	0.16	0.35
	Panel C. **Baseline specification plus EP interaction**				
Output[b]	0.113**	0.055	0.016	0.069	0.326***
Crisis dummy	–0.015	–0.041	–0.003	–0.004	0.012
Average take-up rate	0.191	1.487	–0.270	–0.500	–2.884
Interaction term of output[b] and crisis dummy	0.210	–0.606	0.090	–0.048	–0.026
Interaction terms of output,[b] crisis dummy and					
average take-up rate	**–8.690****	**2.562**	**7.000*****	**1.163**	**3.120**
average EP	–0.031	0.562	–0.025	0.000	–0.035
Observations	1 724	1 724	1 724	1 632	1 564
R-squared	0.43	0.22	0.32	0.11	0.29

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

EP: employment protection.

a) Regressions include a full set of country dummies along with a full set of industry-by-time dummies, based on 19 countries of which 16 with short-time work schemes. Estimates over four industries: manufacturing, construction, distributive services and business services (agriculture and non-business services are excluded).

b) Year-on-year percentage change of log real gross output.

Source: OECD estimates based on the European Quarterly National Accounts and the European Union Labour Force Survey (EULFS) for the European countries and the Ministry of Economy, Trade and Industry (METI) and the national labour force survey for Japan.

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The estimation results for the baseline specification provide the following insights into the impact of STW schemes during the 2008-09 recession:

- The results provide clear evidence that short-time work schemes helped preserve permanent jobs during the economic downturn, while also increasing average hours reductions among permanent workers. This is indicated in Figure 1.23 by the smaller (in absolute value) average marginal effect for permanent employment of a 10% reduction in output during the crisis period in countries with short-time work schemes relative to countries without such schemes and the larger (in absolute value) average marginal effect for the average hours of workers with a permanent contract. In Panel A of Table 1.4, this can be seen by looking at the significant coefficients of the interaction

terms for the change in output, the crisis dummy and the take-up rate (in bold) in the columns for the employment and average hours of permanent workers.

- There is no evidence that STW schemes had a significant impact on the employment and average hours of temporary workers.[61] However, the results indicate that even in the absence of short-time work, temporary employment is much more sensitive to economic downturns relative to workers with a permanent or open-ended contract and average hours much less sensitive. This is a clear sign that the labour markets of temporary and permanent workers tend to be segmented. By helping to preserve the jobs of workers with permanent or open-ended contracts, without providing additional job stability to temporary workers, STW schemes have a tendency to enhance the position of insiders relative to outsiders and may thereby further increase the degree of labour market segmentation.
- Short-time work does not have a significant effect on the responsiveness of average wages to output, although the point estimate that real hourly wages are more strongly downward responsive to output declines in the presence of STW schemes is plausible. Any impact of STW on average wage adjustment is likely to operate through a composition effect. For example, Vroman and Brusentsev (2009) argue that the alternative to work sharing supported by short-time compensation is likely to be layoffs of relatively junior and low-paid workers which would tend to raise average wages for the part of the workforce remaining employed. Although their argument referred to US institutions, the relatively high vulnerability of low-skilled workers to layoffs in a recession (*cf*. Figure 1.3) probably means that the additional work sharing induced by STW schemes disproportionally preserves the jobs of workers with below-average wages in their industry, if not the lowest wage workers.

Sensitivity analysis

The results for the baseline specification raise two concerns. First, it is possible that the statistically significant results are driven by cross-industry correlations within countries that arises due to measuring STW take-up at the country level. A second concern is that the analysis does not take sufficient account of the role of employment protection and hours regulations in influencing employers' choices between adjusting employment and average hours. In principle, both concerns have been addressed in the econometric framework described in Box 1.5, respectively, by clustering standard errors within countries and through the inclusion of country-fixed effects. However, these concerns are addressed more directly in the specifications that are reported in Panels B and C of Table 1.4. These supplementary estimation results suggest that the baseline estimates are qualitatively robust:

- In the specification in Panel B of Table 1.4, take-up is defined at the industry-level rather than at the country level. This directly addresses concerns about the statistical significance of the results being driven by the cross-sectional correlation of take-up rates across industries within countries. The main drawback to defining take-up at the industry-level is that the necessary data are only available for eight countries,[62] thus greatly reducing the generality of the results. Nonetheless, the qualitative results are very similar to those reported in Panel A, even though the quantitative impact of short-time working on the employment and the average hours of permanent workers is substantially reduced. While the statistical significance of the baseline results does not appear to be spurious, there is considerable uncertainty about the quantitative impact of short-time working.[63]

- In the specification that is reported in Panel C of Table 1.4, an interaction term between the change in output, the crisis dummy and the average level of employment protection is added to the baseline model, which is intended to control for how employment protection influences the impact of a change in output during the crisis period on the outcome variable. Country-fixed effects continue to account for the general effect of cross-country differences in employment protection – as well as other time-invariant features of the institutional environment – on the output variable. The results in Panel C do not suggest that employment protection had a significant impact on the pattern of labour demand adjustment during the downturn. Moreover, the results with respect to the intensity of STW are qualitatively and quantitatively similar to those reported in Panel A.

Ireland was excluded from the entire analysis because it proved to be a strong outlier that affected estimation results in an erratic manner. For example, including Ireland in the estimation sample used to generate the baseline results substantially increases the estimated impact of short-time work on permanent employment, but the opposite is true for estimates based on industry-level take-up rates where including Ireland leads to STW having no discernable effect on permanent employment. This instability probably indicates that the empirical model used here fails to account satisfactorily for the specificities of the Irish jobs crisis which were noted in Sections 1 and 2 of this chapter. In particular, the size and persistence of the decline in real GDP experienced in Ireland is significantly greater than that in the 19 countries retained in the estimation sample. It may well be that the severity of the Irish recession was such as to overwhelm the normal capacity of STW schemes to encourage employers to make greater use of work sharing in the context of declining demand.

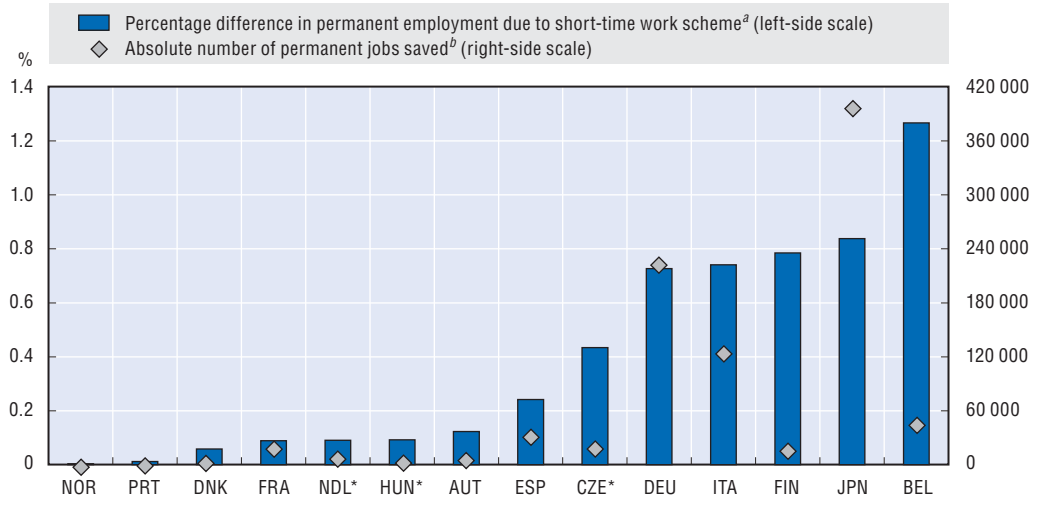
The contribution of short-time work to preserving jobs differed importantly across countries

The results presented so far provide evidence that short-time work schemes helped to preserve permanent jobs during the 2008-09 recession by inducing firms to reduce average hours worked. However, they do not provide much insight in the quantitative importance of STW schemes. Figure 1.24 uses the regressions coefficients in Panel A of Table 1.4 to provide estimates of the additional permanent employment in 2009 Q3 that may be attributed to the operation of STW schemes during the crisis period. Both proportional and absolute job impacts are reported. The proportional job estimates are obtained by the product of three terms: *i)* the coefficient of the interaction term for the change in output, the crisis dummy and average take-up rate in Table 1.4, Panel A; *ii)* the total change in output during the crisis period; and *iii)* the average level of the STW take-up rate over the same period. Differences in the proportional impact of short-time work across countries reflect both differences in the size of the decline in output during the crisis period and differences in the average take-up rate. The absolute number of permanent jobs saved is calculated by multiplying the proportional change in permanent employment by the level of permanent employment at the onset of the crisis. Cross-country differences in the absolute jobs impact of short-time thus reflect differences in country size in addition to differences in the size of the shock and the intensity of short-time work. In countries where short-time work schemes were only established after the start of the crisis, the impact of short-time work programmes is calculated from the time after the scheme became operational. The following patterns emerge:

- The Belgian short-time work scheme is estimated to have had the largest proportional impact on permanent employment during the recession. The estimates suggest that the decline in permanent employment from the start of the crisis to the end of 2009 Q3 was

Figure 1.24. **Short-time work schemes helped to preserve permanent jobs in the 2008-09 recession**

Proportional and absolute impact on permanent employment due to short-time work schemes from the start of the crisis to 2009 Q3



* indicates countries that introduced a new short-time work scheme in response to the crisis. The estimated jobs impacts refer to period from which the short-time work scheme became operational until the end of 2009 Q3.

a) The proportional impact of the crisis due to short-time working is calculated by multiplying the coefficient on the interaction term of the change in output, the crisis dummy and average take-up rate in Panel A of Table 1.4 by the total change in output and the average national take-up rate during the crisis period.

b) The absolute number of jobs saved due to short-time working is calculated by multiplying the proportional impact of the crisis due to short-time working by the level of permanent employment at the onset of the crisis.

Source: OECD's calculations based on Panel A of Table 1.4.

StatLink http://dx.doi.org/10.1787/888932292479

1.3 percentage points smaller than what it would have been in the absence of the STW scheme. However, this estimate is based on the implicit assumption that short-time work is used exclusively as a crisis measure, so that the counterfactual take-up rate is zero. Since the pre-crisis take-up values was low or zero in most countries, that appears to be the appropriate baseline for judging the impact of STW schemes during the recession (see Figure 1.19). However, Belgium is an exception because short-time work was already being used quite extensively prior to the start of the crisis. This means that the jobs impact of crisis-related short-time work in Belgium may be overestimated substantially. Unfortunately, it is not straightforward to correct for this as this would require detailed data on take-up during the pre-crisis period which are not available for most countries.

- Short-time work schemes in Finland, Germany, Italy and Japan are also estimated to have substantially reduced the proportional impact of the crisis on permanent employment. The reduction in permanent employment is likely to have been about 0.75 percentage points smaller than it would have been in the absence of short-time work. In Finland, the relatively large proportional impact of STW is primarily attributable to the large reduction in output during the crisis period. The fall in output and the STW take-up from the start of the crisis to the end of 2009 Q3 are quite similar in Germany, Italy and Japan with the fall in output amounting to about 5% and the average take-up rate being about 1.7%. Among the countries that established a new STW scheme during the crisis period, the proportional impact is estimated to have been largest in the Czech Republic.
- The absolute jobs impact is estimated to have been particularly large in Germany and Japan, a reflection of their large populations and moderately large proportional impacts

of STW schemes in preserving permanent employment. Short-time work is estimated to have reduced the loss of permanent employment by over 200 000 in German and by almost 400 000 in Japan.

These estimates support the conclusion that short-time work schemes had an economically important impact on preserving jobs during the economic downturn. Comparing these estimates of the net effect of STW schemes in preserving permanent jobs with the potential number of jobs preserved, as indicated by translating the total hours reductions that were subsidised (*i.e.* using the accounting calculation introduced above), provides an indication of the size of deadweight effects. The accounting calculation for Germany suggests that the potential employment impact from STW in 2009 Q3 was 350 000.[64] Comparing this value with the estimate for Germany in Figure 1.24 suggests that deadweight losses accounted for about a third of the subsidy.[65]

In addition to the specification issues discussed above, two additional caveats apply to the country-specific estimates of the jobs saved by STW schemes. First, country-specific jobs estimates are based on estimates of the *average* impact of short-time work across countries. The cross-country differences in the jobs impact of short-time work shown in Figure 1.24 reflect differences in the size of the decline in output and the intensity of short-time work, but no account is taken of how the effectiveness of any particular country's STW scheme is affected by the design choices discussed above and documented in Annex 1.A1. A second caveat relates to the definition of the STW take-up variable in terms of the number of participating workers rather than the number of full-time equivalent participants. A bias in the country-specific estimates of the impact of short-time working may thus be introduced to the extent that the average reduction in working time, as a result of short-time work, differs across countries. More specifically, the estimated jobs impact is likely to be underestimated in countries where the average reduction in working time per worker is relatively large (*e.g.* in countries where short-time work tends to take the form of temporary layoffs such as Finland and Norway) and overestimated in countries where the average reduction in working time is relatively small (*e.g.* Germany and Japan).

The effectiveness of new and modified STW schemes in the crisis

A particularly interesting question in the context of this chapter is whether it is effective to introduce a new STW scheme in response to a deep recession or to make temporary changes that are intended to encourage greater take-up. In order to assess whether the effectiveness of new or newly modified STW schemes differs from existing schemes that are not modified, the baseline empirical model was generalised to allow the impacts of STW schemes to differ across these three cases (albeit *via* pair-wise comparisons). The supplementary regressions ask a lot of the limited data available and should be considered highly preliminary. The following patterns emerge (see Annex 1.A6 of OECD, 2010b, for the full results):

- Existing STW schemes helped to limit the reduction in permanent employment while increasing the reduction in average hours, but no such effects were found for the new schemes introduced in three countries. The negative finding for newly established schemes may simply reflect the very small country sample for newly introduced schemes. Nevertheless, the finding that having a programme already in place before the crisis is more effective in preserving jobs than a newly introduced scheme may indicate real difficulties in quickly setting up a STW scheme after a recession has started. Timing is likely to be critical because short-time work is probably most effective in the early

phase of an economic downturn, when the rate of layoffs tends to be highest (see Figure 1.25 in Section 5). The fact that take-up was quite low in newly introduced schemes (Figure 1.19) also suggests that it may have proven difficult to get them set up and running quickly enough to be fully effective.[66]

- A comparison of the impacts of pre-existing STW schemes before any modifications with their impacts after changes were made in response to the crisis suggests that both helped to preserve permanent jobs by reducing average hours, both before and after any modifications, although not all coefficients are statistically significant. The quantitative differences in the estimated effectiveness of these schemes in their original and modified forms are rather small and should be interpreted with caution.[67] If anything, these results suggest that the proportional impact of the pre-existing STW schemes on employment was somewhat larger after they were modified, but their impact on hours was somewhat smaller, suggesting that changes to encourage greater take-up may have made the schemes somewhat more effective at preserving permanent jobs. This suggests that relaxing eligibility requirements and increasing generosity may have encouraged greater participation while having little impact on deadweight in the short-run.

While this econometric evidence on the effectiveness of introducing a new STW scheme in a recession or modifying an existing scheme should be considered as highly preliminary, it does raise interesting questions about the optimal use of STW schemes over the course of the business cycle. For example, is it preferable to maintain a small scheme during growth periods in order to reap maximal benefit during an economic downturn or is it preferable to set up temporary STW schemes in the event of a particularly severe recession, while avoiding the risk that operating a scheme during growth periods when they are more likely to interfere with efficiency enhancing job reallocation? If it is decided to maintain a STW scheme over the course of the business cycle, the question then becomes how optimally to vary the programme rules in response to the onset of a severe recession and then again as the recovery commences and gathers strength. In order to address these questions properly it is not sufficient to have an understanding of the short-run impact of STW schemes on labour market adjustment, such as those presented above. It is also necessary to understand how STW schemes function during a recovery, including how optimally to scale down STW schemes as labour market slack is absorbed. The implications of STW schemes for job reallocation and economic growth in the longer term would also have to be incorporated into the analysis. In sum, the econometric evidence presented above suggests that STW schemes can limit job losses during a recession, but falls far short of providing either an overall assessment of the benefits and costs of these schemes in a recession or an evaluation of their optimal use over the full business cycle.

Other institutional arrangements also play a significant part in explaining the reduction in average hours

In addition to short-time working, other institutional arrangements appear to have contributed to the flexibility in average hours that was observed in many countries during the 2008-09 recession. A recent study by the Federal Employment Agency in Germany (IAB) suggests that *Kurzarbeit*, the German STW scheme only accounts for about 20% in the total reduction in average hours during the crisis, while employer-initiated reductions in working time account for about 40% of the decline in average hours and reductions in overtime and reduced working time through hours averaging for 20% each. (The German example is discussed in detail in more detail in Box 1.6). Policies intended to encourage employers to make increased use of hours adjustments to vary labour input over the business cycle should not focus exclusively on STW schemes.

Box 1.6. **The reduction in average working time in Germany**

In Germany, average hours worked fell by about 3.5% during the period 2007 Q3 to 2009 Q3, while employment rose by 1.2%. Even if attention is focused on developments since 2008 Q3, when the full force of the recession hit Germany, it is still the case that the decline in employment has been very limited by comparison with the decline in total hours worked. This apparent success in preserving jobs in Germany is often attributed to *Kurzarbeit*, the German short-time work scheme. With 1.5 million workers participating in this scheme at its peak in mid-2009, *Kurzarbeit* indeed played a significant role in cushioning the extent to which an approximately 5% fall in GDP translated into higher unemployment. However, the large role that has been played by average hours reductions in Germany also results from other institutional arrangements that encourage "internal adjustment" over employment adjustment in response to cyclical shocks.

A recent study by the Federal Employment Agency in Germany (IAB) analyses the different sources behind the overall reduction in working time between 2008 and 2009. The overall decline in total hours worked during the period amounted to 4%, and only 0.3% of that was due to lower employment. The rest of the reduction in total hours worked reflects lower average hours of work which can be decomposed along four different margins: *Kurzarbeit*, employer-initiated reductions in working time, reduced over-time and debiting individual working-time accounts. Adjustments along all four margins played a significant role (see also the table below):

- *Kurzarbeit* accounts for only 25% of the total reduction in average hours. Consequently, short-time work alone does not account for all of the difference between countries such as Germany and Japan – where most of the reduction in the demand for labour input has been achieved *via* reductions in average working time – and countries such as Spain and the United States – where most or all of the adjustment has occurred *via* reductions in employment.
- The largest source of flexibility in average hours has been employer-initiated reductions in working time which can be implemented within many collective agreements in Germany. These reductions appear to account for approximately 40% of the recent reduction in working time. In general, these reductions in working time are associated with proportional reductions in pay, at least for hourly workers. According to Bosch (2009), the most influential model for these contract provisions was Volkswagen during the early 1990s recession, which used working-time reduction tied to lower pay to avoid redundancies. Since that time, it has become standard practice in Germany for collectively negotiated employment contracts to specify an hours' band, around the standard working week, within which employers can vary working hours while adjusting pay according to the standard hourly wage rate. This is intended to provide employers with an improved ability to adapt to temporary variations in product demand while providing a high level of employment security.
- Even before having recourse to *Kurzarbeit* or a shortened working week, German employers achieved substantial reductions in average hours by reducing the volume of paid over-time work (20% of the total reduction) and encouraging employees to run down the positive balances in their individual working-time accounts (another 20%). These two types of adjustments were initially quite effective for adjusting to the negative demand shock since employers had relied quite heavily on over-time (both paid and that giving rise to credit hours in working-time accounts) in the years immediately preceding the crisis.

It is still too early to assess whether a heavy reliance upon average hours adjustments will prove to be an overall advantage for Germany and other countries where the labour market has responded similarly to the economic crisis. There appear to be clear gains thus

Box 1.6. **The reduction in average working time in Germany** *(cont.)*

far in terms of lower unemployment and the success of firms in retaining their workforce intact in anticipation of a recovery. However, Germany also experienced its first reduction in hourly labour productivity observed since data first were collected in 1970 and a steep rise in unit labour costs. Should product demand not recover strongly soon, a large wave of delayed layoffs could occur. There is also the risk that too heavy a reliance on protecting existing job matches will become a brake on efficiency-enhancing labour mobility (see Chapter 3).

Average hours reductions in Germany, 2008-09

Proportion of average hours reduction due to:	
Increased short-time work (*Kurzarbeit*)	25%
Employer-initiated reductions in working time	40%
Reduced over-time	20%
Debiting working-time accounts	20%

Note: As not all factors that affect working time are taken into account the decomposition is not exact.
Source: IAB (2009).

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5. What can be done to minimise the persistence of high labour market slack?

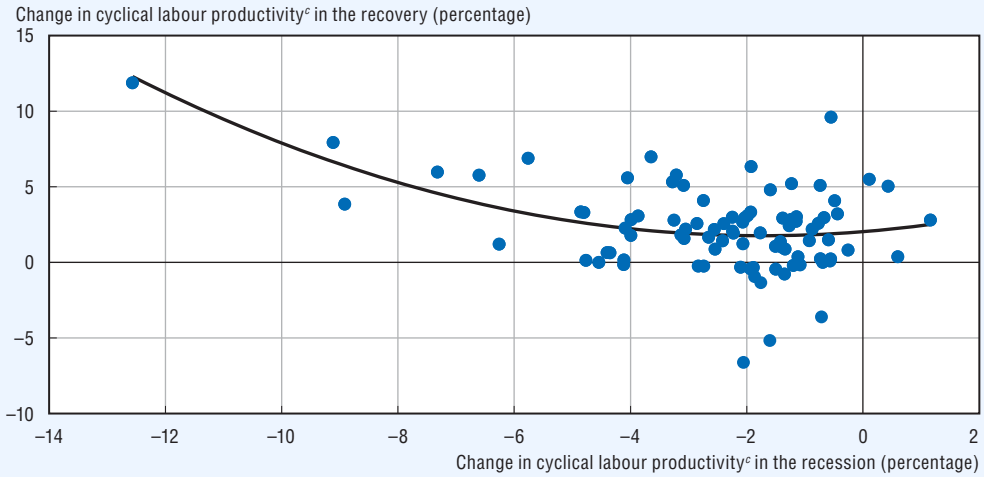
The analysis in Sections 1 and 2 shows that the 2008-09 recession has left a high level of labour market slack in most OECD countries which takes multiple forms (*e.g.* unemployment, reduced hours of work and labour force withdrawal) and threatens to persist far into the economic recovery if job growth is less than vigorous. Consistent with this diagnosis, the overview of the actions governments have taken in Section 3 reveals that, at the beginning of 2010, many countries anticipated further expansion of passive and active measures to assist the unemployed in 2010, even though the economic recovery appears to have begun already in late 2009 in many cases. This section analyses the risk that labour market slack will persist, as well as various labour market measures which may be able to foster a faster or more complete labour market recovery, whether by accelerating job creation and hiring in the economic recovery or by reducing hysteresis effects in unemployment and labour force participation.

It is too soon to know how persistent the labour market slack created by the 2008-09 recession ultimately will prove to be or to evaluate how successfully different measures that countries have taken in response to the recession will be at speeding recovery in labour markets. Accordingly, the discussion that follows relies largely on historical evidence. It should be emphasised at the outset that care needs to be taken in applying historical evidence to the current crisis for a number of reasons. First, labour market slack is exceptionally large in many countries and thus outside of most recent experience. Another difficulty in applying historical evidence to the current recovery period is the very different composition that it takes in different countries. Whereas massive labour shedding led to large increases of unemployment and inactivity in some countries, an unusually high share of the total decline of labour input has been achieved through hours reductions in a larger number of countries (*cf.* Section 2). The need for vigorous employment growth is evident for the former group of countries. However, the risk that job creation will be particularly weak during the early recovery period (a so-called "jobless recovery") is also a concern for the latter group. Box 1.7 shows that there is some

Box 1.7. **Is labour hoarding during the recession likely to imply jobless recoveries?**

A simple comparison of cyclical productivity developments during 85 historical recession and initial recovery episodes across 24 OECD countries suggests that in the more extreme cases of labour hoarding, the risk of a jobless recovery may be higher (Figure 1.1).** In particular, countries that experienced significant labour hoarding and a sharp fall in labour productivity during a recession (*i.e.* were on the far left of the chart) generally recorded a high rate of labour productivity growth in the recovery period, implying relatively jobs-poor growth. In 5 out of 6 historical episodes with the falls in cyclical labour productivity greater than 6%, cyclical labour productivity was high in the subsequent recovery. The remaining episode involved a supply shock (the first 1970s oil shock) where the large fall in labour productivity was due in part to a permanent fall in labour productivity and incomes, rather than cyclical labour hoarding. This conclusion is tempered by the limited number of observations but it may well be very relevant to the current recession where many countries, including Germany, Japan, the United Kingdom and Turkey, have experienced a similar sharp drop in labour productivity. Indeed, there are more episodes of such a sharp fall in this recession than in the entire historical sample. More generally, cross-country experience is highly heterogeneous in this recession with other countries, including Spain and the United States, experiencing no or very little hoarding. For these countries, history provides less of a guide to future hiring patterns because for smaller falls in labour productivity during the recession (below 4%), productivity growth in the recovery and the recession appear to be largely independent.

Cyclical labour productivity during recessions and the recoveries that followed[a, b]



a) Recessions are defined as the period between the peak and trough in the level of GDP. The recovery is the eight-quarter period following the trough in GDP.
b) An illustrative second order polynomial (quadratic) trend line is shown.
c) Cyclical labour productivity is the difference between actual and trend labour productivity per employee, where trend productivity is defined as the OECD measure of potential output for each country divided by trend employment.

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

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Box 1.7. **Is labour hoarding during the recession likely to imply jobless recoveries?** *(cont.)*

These results tentatively suggest that countries, such as Germany and Japan, which have experienced stronger labour hoarding and greater falls in labour productivity in the recession may face a higher risk of a jobless recovery than others where there has been very little labour hoarding, such as the United States.

* Labour hoarding is inferred from temporary (cyclical) falls in labour productivity during the recession that should eventually be reversed in the recovery. This is distinct from a permanent fall (or at least permanently lower growth) in labour productivity in the recession due to a fall (or lower growth) in the potential output of the economy, which is not labour hoarding but rather a permanent shock to incomes.

historical evidence that job creation and hiring has tended to be relatively weak in economic recoveries that followed recessions during which employers had aggressively hoarded labour. If this pattern is repeated following the 2008-09 recession, one result could be worsened re-employment prospects for the unemployed in countries where most or all of the adjustment has been along the hours margin. However, this need not be the case because the reduced level of new job openings could be offset by a reduction in the number of unemployed persons competing for each new vacancy.[68] Another danger for these countries is that large hours reductions can only be sustained so long and a delayed wave of labour shedding could occur if the recovery stalls or is particularly weak.

5.1. *Promoting a job-rich recovery: what role for job subsidies?*

Given the extent of labour market slack at the beginning of 2010 in most OECD countries, one of the key policy priorities going forward is to create the conditions for a job-rich recovery. This requires both a return to vigorous GDP growth and a sufficiently high employment-intensity of output growth. Macroeconomic policies play an essential role in supporting the rebound in GDP, but further expansionary measures are likely to be constrained by rising concerns about the deteriorating fiscal position of many countries (OECD, 2010a). Even when aggregate stimulus measures are applied effectively, employers have a tendency to delay hiring early in a recovery period due to their uncertainty about how sustained and strong the recovery will be. In this context, more targeted employment policies may be able to jumpstart job creation, thereby creating a more labour-intensive recovery. This sub-section discusses the potential role of temporary job subsidies to increase the labour intensity of output growth in the early stages of the recovery.[69]

Policy makers can choose from a variety of different forms of job subsidies to promote employment in the recovery. A first strategic choice to be made is whether the subsidy should apply to the full stock of jobs (stock subsidies), only to jobs at risk of being destroyed (short-time work subsidies), or only to new hires or the subset of new hires associated with net employment gains (gross and marginal hiring subsidies, respectively). A second strategic choice is whether the subsidy is limited to the employment/recruitment of designated groups of disadvantaged workers (*e.g.* the long-term unemployed) or employers (*e.g.* SMEs). These choices should be made in light of labour market needs and the policy goals being pursued, both of which are likely to vary with the stage of the business cycle.

Policy goals are likely to evolve over the business cycle. In a recession and the early stages of a recovery a high priority should probably be given to expanding overall employment, and this suggests a relatively large role for measures intended to increase

overall employment and a more a limited role for targeting job subsidies on disadvantaged workers or firms. By contrast, focusing on disadvantaged workers and reducing deadweight are likely to become key objectives as the recovery gathers speed and/or fiscal consolidation becomes more urgent. Targeting subsidies on disadvantaged groups is also likely to be more appropriate when the concern is to improve the employment and earnings prospects of groups who face structural barriers in the labour market. However, targeting can also be of salience in recessions and early recovery phases to prevent the burden of unemployment from being borne disproportionately by certain workforce groups and to reduce the risk of disadvantaged groups becoming permanently disconnected from the labour force.[70] This will be discussed in Section 5.2. As a preliminary to the policy discussion, it is useful to review how labour market needs evolve over the course of a recession.

Figure 1.25 documents changes in the unemployment inflow and outflow rates during the first and second years of the 2008-09 recession. During the first year of the recession (2007 Q4 to 2008 Q4), both an increased rate of unemployment inflows and a reduced rate of unemployment outflows (associated with a positive sign in the figure) contributed to the sharp increase in the unemployment rate that was observed in many OECD countries, with the rise in the unemployment inflow rate (*e.g.* layoffs) dominating the fall in the unemployment outflow rate (*e.g.* hiring) in 11 of the 20 countries for which appropriate data are available.[71] In the second year of the downturn (2008 Q4 to 2009 Q4), the reduction in the rate of unemployment outflows and hence the lengthening duration of unemployment spells had become the main driving force raising unemployment in 16 of the 20 countries. The fall in the unemployment outflow rate likely reflects the large number of unemployed job searchers for each vacancy, due to both the expansion of the pool of unemployed and employers' caution about taking on new staff in the early phase of the recovery. Another factor contributing to a low rate of job creation is the considerable scope that exists for raising output without increasing employment in many countries (*i.e.* through increases in labour productivity and working time).

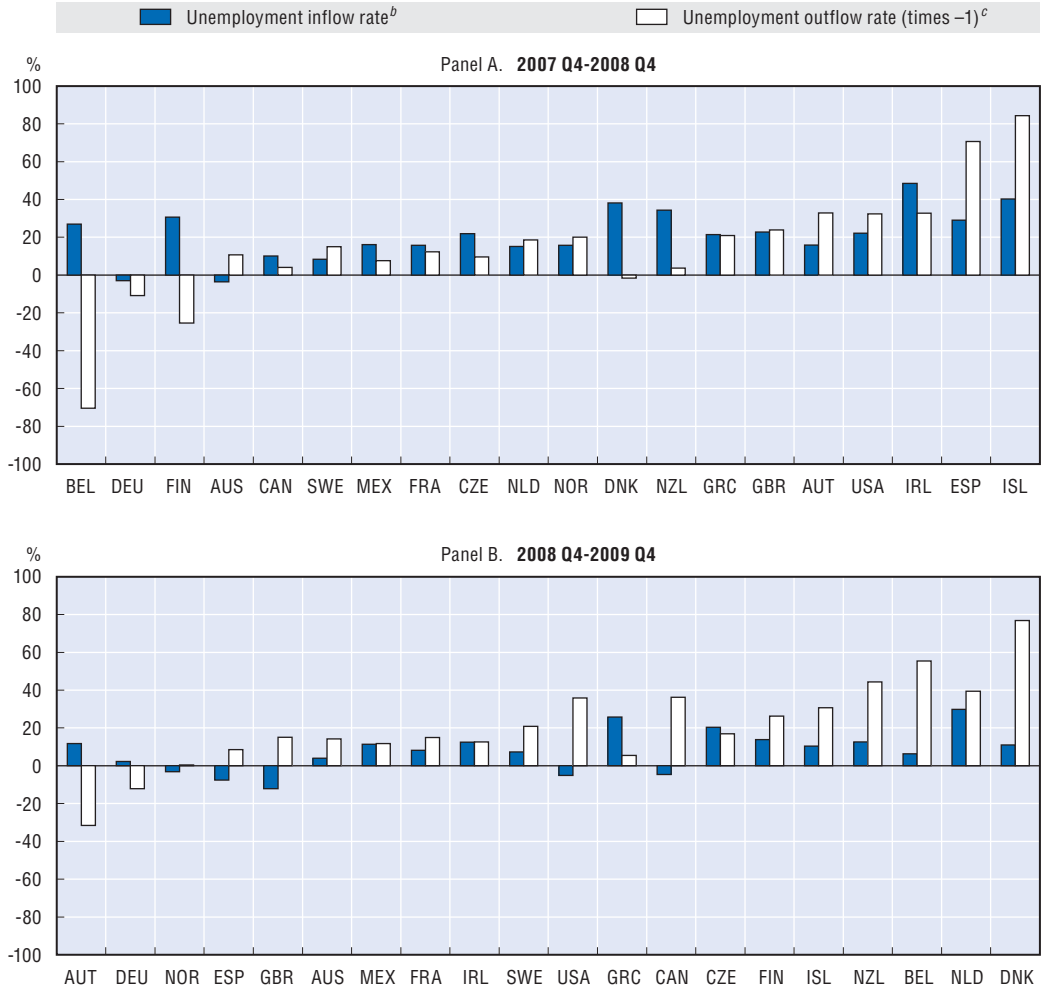
These patterns in unemployment dynamics provide a rationale for progressively shifting the mix of active labour market measures used to confront the jobs crisis. While increased layoff rates played an important role in raising unemployment during the initial phase of the recession, their importance gradually diminished as the downturn bottomed out and recovery began. This suggests that policy makers concerned with reducing unemployment or limiting its rise should shift their efforts from protecting viable jobs at risk of being terminated towards re-integrating the unemployed into the workforce and encouraging hiring by firms. This could imply a shift in emphasis from general employment subsidies (stock subsidies) or subsidies directed at jobs at risk (short-time work subsidies) to hiring subsidies. This is also consistent with the changes in the policy stance documented in Section 3 of this chapter.

Stock subsidies may be effective in the short run but are very expensive

The fiscal stimulus packages enacted by a majority of OECD counties included broad cuts in employer social security contributions intended to support overall labour demand. OECD (2009a) shows that reductions in employers' contributions are likely to have a significantly larger short-term impact on employment than is indicated by a simple multiplier analysis for a tax cut, due to the relative price effect associated with a general reduction in unit labour costs. However, the long-run effect of a reduction in employer

Figure 1.25. **Changes in unemployment inflows and outflows during the downturn and early recovery in OECD countries, 2007 Q4-2009 Q4**

Year-on-year percentage change to the fourth quarter[a]



a) The change in unemployment inflow and outflow rates in the figure are normalised so that positive (negative) changes are unemployment increasing (decreasing).

b) The unemployment inflow probability (*I*) is defined as the ratio of the number of unemployed who have been unemployed for less than a month, over the number of employed one month earlier. The unemployment inflow rate is then defined as $-ln(1 - I)$.

c) The unemployment outflow probability (*O*) is defined as one minus the ratio of the number of unemployed who have been unemployed for more than a month over the total number of unemployed one month earlier. The unemployment outflow rate is then defined as $-ln(1 - O)$.

Source: OECD estimates based on the Labour Force Survey for Australia, Canada and the United States (Current Employment Situation), the Encuesta Nacional de Ocupación y Empleo (ENOE) for Mexico, the Household Labour Force Survey for New Zealand, and the European Union Labour Force Survey (EULFS) for the European countries.

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social security contributions on equilibrium employment is likely to be small, due to offsetting real wage adjustments. A "back-of-the-envelope" calculation suggests that a 1% reduction in unit labour costs, as a result of a reduction in employers' contributions, may increase employment by only 0.2% in the long-run. This means that the cost per additional job created is 1.7 times average total compensation costs per job in the short-run and seven times average compensation in the long-run (OECD, 2009a).

The low cost-effectiveness of stock subsidies, particularly in the long-run, and their large budgetary cost underlies the importance of ensuring that such reductions are temporary, when they are undertaken as an anti-recessionary measure, rather than being viewed as a structural reform to the tax system. This consideration is all the more compelling currently since fiscal consolidation has become urgent for many OECD countries. However, there may be a stronger case for retaining reductions of employer contributions which are *targeted on low-wage workers* since they may have important long-run benefits by permanently raising employment rates of some groups on the margin of the labour force (Phelps, 1994).

Gross hiring subsidies are less expensive but typically not very effective in promoting net employment gains

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

Past evaluations indicate that gross hiring subsidies can be quite effective, but also that performance has been highly variable (Martin and Grubb, 2001).While it appears to be possible to enhance their effectiveness through careful targeting on disadvantaged groups and stricter conditions for employers in some cases (see below), the overall effectiveness of such measures to improve net employment appears to be quite limited, whereas they appear to be more effective in bringing about a more equal distribution of unemployment across labour force groups. This equity consideration may be of considerable importance in recessions, when the chances of regaining employment after displacement are particularly low for disadvantaged groups, due to the large inflows of newly unemployed, including increased numbers of well-qualified job losers. Targeted recruitment subsidies may also be needed in a deep recession to keep job-search requirements associated with UI credible, at a time when the immediate returns to job-search assistance is likely to be unusually low for harder-to-place job seekers.

Marginal employment subsidies may be a cost-effective way to promote aggregate employment

Marginal employment subsidies refer to labour demand policies that are explicitly targeted at raising net employment *via* either the preservation of jobs at risk or the creation of new jobs. This suggests that they have the potential to be more cost-effective in raising total employment, than either stock or gross hiring subsidies because leakages *via* deadweight and displacement effects may be largely avoided (OECD, 1982). While this would appear to be a programme design that is especially well suited for strengthening job creation in the early phases of a recovery (*i.e.* in preventing a "jobless recovery"), there has been only relatively limited use of such schemes during the current downturn and recovery, many of them targeting vulnerable jobseekers such in the long-term unemployed or youth (see Box 1.8). This probably reflects the relative complexity of such schemes and

Box 1.8. **Marginal employment subsidy schemes in OECD countries**

Belgium has marginal hiring subsidies that pre-date the 2008-09 recession. An employer who hires a first, second or third employee pays reduced social security contributions (with the largest reduction for the first employee and successively smaller reductions for subsequent employees) if the new employees do not replace someone who resigned or was dismissed in order to receive the subsidy.

Between 2007 and 2011, *Finland* is conducting an experiment with marginal employment subsidies in peripheral regions with difficult employment situations or those that have suffered from large job losses due to the closure of a local factory. A subsidy of 30% of wage costs in the first year and 15% in the second year is paid to self-employed people who hire their first paid employee. The job has to have a permanent contract and working time must be at least 25 hours per week.

Portugal has introduced a temporary programme called the *Programa Iniciativa Emprego* during 2009 and 2010, which eliminates employer social contributions for net new hires of long-term unemployed (registered with PES for more than six months) or young people (aged up to 35 years looking for their first job) for the first three years of employment (or for the first two years in addition to a EUR 2 500 hiring subsidy). Firms must have net hiring over a three-year period, meet certain accounting standards, fulfill tax and social security obligations and not have wage arrears.

The *Employer Jobs (PRSI) Incentive Scheme* in *Ireland* eliminates employer social security contributions for one year for new hires in addition to existing staff of people unemployed for six months or more. The new job must last for at least six months, otherwise the firm must pay back the subsidy. Participation is capped at 5% of the existing workforce.

Hungary's SME+ programme exempts small businesses and non-government organisations from social security contributions for one year for net employment increases resulting from new hires of employees affected by collective layoff, someone who has been registered as a jobseeker for at least three months or who has not been employed for at least one year. Firms must employ the subsidised employee for at least twice as long as the duration of the subsidy.

Turkey waives employer social contributions for the first five years of employment for employers that hire women or youth (18-29 years) who have been unemployed for at least six months before July 2008 or in December 2008 and January 2009. Employment must be additional to average employment in the firm over the past 12 months.

the widespread impression that the marginal employment schemes which operated in a number of countries in earlier decades proved to be difficult to administer effectively.

However, the recent apparent success in operating STW schemes suggests it may also be timely to reconsider whether new marginal employment schemes could be operated substantially more effectively than their historical antecedents. The new schemes in Portugal, Ireland, Hungary and Turkey – where employers are exempt from social security payments for net hires of unemployed people – are similar in spirit to programmes that were operational in Canada and Ireland during the late 1970s and early 1980s. These programmes were less generous than the new schemes but were targeted somewhat more broadly on workers unemployed for a couple of weeks or more. A formal evaluation of the Canadian scheme concluded that only one-third of the jobs covered by the programme were additional (Gera, 1987).

The marginal employment subsidy that has been most extensively evaluated is the New Jobs Tax Credit (NJTC) that was operational during 1977 and 1978 in the United States.[72] The NJTC represented a subsidy of 50% over the increase in an employer's wage base beyond 102% of the previous year. The amount of the subsidy was limited to USD 100 000 per firm and USD 2 100 per employee. As a result, the reduction in marginal cost of hiring an additional employee was particularly large for low-wage and part-time workers. At its peak, the program provided subsidies for 2.1 million workers. The available evaluation evidence suggests the NJTC may have had a substantial positive impact on net job creation, although different studies have reached rather different estimates of its impact.[73]

A key question that is particularly important for governments who are considering to implement a similar scheme at present but face increasingly tight fiscal constraints, is whether such schemes should be targeted at all workers or only at the unemployed. Restricting eligibility to the unemployed will reduce the total cost of the programme by reducing its scope (*i.e.* the number of subsidised jobs), but also the cost per worker as many of the additional hires will result in a reduction in public expenditure on UI or other income-transfer benefits. However, restricting eligibility in this way is also likely to reduce the impact of the scheme in raising employment. This could happen if restricting eligibility increases the effective cost of recruiting workers under the scheme by reducing the pool of potential candidates. Nonetheless, the Canadian experience with the Employment Tax Credit Program suggests that restricting eligibility to unemployed workers is compatible with achieving a significant scale when subsidies are sufficiently generous.

A related question is to what extent such schemes should target specific types of firms or workers. For example, small firms may not be able to hire as many workers as they would like early in the recovery because they are more likely to face tight credit constraints. However, Section 2 suggests that small firms have stronger incentives to hoard labour during recessions and, hence, may not be the top priority for hiring subsidies during recoveries. The effectiveness of subsidies may also differ across different groups of workers. To the extent that the responsiveness of the demand for workers with low hiring and firing costs to changes in labour costs is larger – this is likely as such workers tend to compete in more competitive markets – there may be a rationale for targeting hiring subsidies at workers that are least likely to be hoarded, *i.e.* low wage workers and workers with limited experience and skills. However, it is also possible that subsidies targeted at such workers will be less effective because they end up at the back of the hiring queue or because they reduce employer take-up.

5.2. Reducing unemployment and labour force withdrawal hysteresis

How big is the risk of hysteresis effects in the labour market?

Labour market recovery following a severe recession can be not only slow, but also incomplete in the sense that unemployment remains permanently elevated or labour force participation rates permanently depressed, so-called "hysteresis" effects. Unemployment hysteresis attracted considerable attention from researchers after being put forth by Blanchard and Summers (1986) as the most plausible explanation for the upward ratchet effect, whereby many western European countries had seen each successive recession, from the early 1970s onwards, result in a rise in the unemployment rate that was only partially reversed in the subsequent recovery. More recently, structural reforms in many of these countries appear to have reversed much of the previous rise in unemployment rates

and researchers have tended to focus on analysing how institutions and policies affect structural unemployment (the so-called NAIRU), rather than the extent to which temporary shocks to unemployment may have permanent effects (Bassanini and Duval, 2006; Gianella *et al.*, 2009; OECD, 2006). Nonetheless, there continues to be considerable interest in persistence effects in the labour market in the wake of negative macroeconomic shocks (Ball, 2009). Indeed, the onset of the 2008-09 recession has led to an upsurge of empirical research studying the medium and long-term costs of banking crises and severe recessions. Many of these studies conclude that severe recessions cause persistent declines in potential output, in part due to hysteresis effects in the labour market (Blöndal and Pain, 2010; Cerra and Saxena, 2008; Furceri and Mourougane, 2009).

The OECD is monitoring closely signs of how the 2008-09 recession will influence potential output in OECD countries in the coming years. There is great uncertainty surrounding these impacts, but the current estimate is that the peak area-wide reduction in potential output will be approximately 3% (OECD, 2010a).[74] Approximately one-third to one-half of the projected reduction in potential output is attributable to hysteresis effects in labour input, namely, increases in structural unemployment and decreases in labour force participation, while a reduction in the capital-labour ratio and productivity due to higher capital costs accounts for the rest. Whereas the capital cost effect is expected to be permanent, past recessions suggest that the reduction in labour input will reach its peak five to eight years after the onset of the recession and then gradually reverse thereafter. The methodologies used to assess the strength of hysteresis effects in unemployment and participation are somewhat different. Each will now be briefly summarised since they provide some insights into the influence of policy settings on the degree of hysteresis affecting labour input.

Hysteresis effects for unemployment are estimated in two steps based on the close relationship between the incidence of long-term unemployment and structural unemployment (Machin and Manning, 1998; Furceri and Mourougane, 2009). In the first step, historical data are used to estimate simple dynamic regressions relating the level of long-term unemployment to the contemporaneous (overall) unemployment rate and first and second lags of both unemployment variables (*i.e.* the overall and long-term unemployment rates). These equations – which are estimated on a country-by-country basis to make allowance for differences across national labour markets in the extent to which a sustained increase in overall unemployment raises long-term unemployment – are then used to translate projected changes in the unemployment rate into projections of long-term unemployment. The second step is to convert the projected changes in long-term unemployment into changes in structural unemployment. This conversion also takes account of historical differences in the strength of this relationship in different countries, as indicated by the available empirical studies.[75] Using somewhat different methodologies, Furceri and Mourougane (2009) and Guichard and Rusticelli (2010) present complementary evidence that unemployment hysteresis effects tend to be stronger in countries where product market competition is less supportive of competition and long-term unemployment benefits more generous, but weaker where greater use is made of active labour market policies to keep the long-term unemployed better connected to the labour market.

Table 1.5 classifies countries according to OECD estimates of the sensitivity of structural unemployment to a cyclical increase in unemployment (table rows) and how much unemployment had increased as of the end of 2009 (table columns). Ireland, Spain and Turkey stand out for combining a large shock to unemployment with a strong susceptibility to unemployment hysteresis. These countries appear to be particularly at

Table 1.5. **Potential vulnerability to an increase in structural unemployment varies by country**

		Change in unemployment rates from peak to trough[a]		
		No/small unemployment impact (less than a 1.5 pp increase)	Medium-small unemployment impact (at least a 1.5 pp increase but less than a 3.5 pp increase)	Large unemployment impact (at least a 3.5 pp increase)
Estimated relative sensitivity of structural unemployment to a cyclical increase in aggregate unemployment[b]	Low	Korea	Canada	Iceland
		Mexico	Denmark	United States
			New Zealand	
			Sweden	
	Medium	Australia	Finland	
		Austria	Hungary	
		France	United Kingdom	
		Germany		
		Japan		
		Luxembourg		
		Norway		
	High	Belgium	Czech Republic	Ireland
		Italy	Greece	Spain
		Netherlands	Portugal	Turkey
		Switzerland		

pp: Percentage point.
a) Peak and trough defined in terms of real quarterly GDP.
b) Based on OECD estimates of how the impact of recessions on structural unemployment is affected by cross-country differences in labour market institutions and policies (see Guichard and Rusticelli, 2010).
Source: OECD calculations based on *OECD Economic Outlook Database* and Guichard and Rusticelli (2010).
StatLink http://dx.doi.org/10.1787/888932303366

risk of experiencing a large increase in structural unemployment. Unemployment has also increased relatively sharply in Iceland and the United States, but these countries have exhibited relatively weak unemployment hysteresis following past recessions and may thus be at a somewhat lower risk of seeing structural unemployment rise than countries where the rise in unemployment has been smaller so far, but there appears to be a greater propensity for cyclical unemployment to persist (*e.g.* the six European countries in the middle cells of the bottom two rows of Table 1.5).[76]

In order to analyse possible hysteresis effects for participation, the OECD Secretariat has estimated impulse-response models of the impact of recessions on labour force participation rates. Preliminary results from this on-going work are presented in Table 1.6. A first finding is that significant reductions in participation are detected following only severe recessions, in which the output gap falls by least 6 percentage points. The impact on participation is both stronger and longer-lasting following very severe recessions, but in all cases tends eventually to decay. While the negative impact of recessions on participation has been quite even between men and women, it appears to be strongly concentrated on the youngest and oldest workers. Labour market policy settings also appear to influence how strongly participation rates are reduced by recessions. The estimation results indicate larger medium-run declines in participation in countries where employment protection regulation is relatively strict or the generosity of unemployment benefits drops off sharply with the duration of unemployment. The tendency for recessions to lower participation rates for youth is also greater in countries where tertiary enrolment rates were already relatively high prior to the downturn and opportunities for post-secondary education – as

Table 1.6. **Estimated impacts of recessions on participation rates**[a]

Percentage-point change in labour force participation rate

Panel A. **Variation of the impact by the severity of the recession**

Severity of the recession according to the percentage-point decrease in the output gap	Peak impact on participation rates	Lag between recession on-set and the peak impact (years)
Moderate (3-6 pp decrease)	–0.4	4
Severe (6-9 pp decrease)	–1.6***	5
Very severe (more than 9 pp decrease)	–2.5***	8

Panel B. **Variation of the impact by gender and age**[b]

Age groups	Men	Women
All	–2.2***	–1.8***
Ages 20-24	–4.6***	–3.9***
Ages 40-44	–0.8	–0.3
Ages 60-64	–4.1***	–3.4***

Panel C. **Variation of the impact by institutional and policy settings**[b]

Institutional and policy settings	Difference in the peak impact on participation between the 1st and 3rd quartile policy settings
Strictness of employment protection legislations	1.0 (all workers)
Fall-off in net replacement rate for unemployment benefits	0.5 (all workers)
Implicit tax on continued work for 60-year-olds	4.0 (60-64-year olds)
Tertiary education enrolment rates for 20-29-year-olds	2.3 for men, 1.5 for women (20-24-year olds)

*** denotes statistical significance at the 1% level.
pp: Percentage point.
a) Least-squares dummy variables (LSDV) estimates of impulse response functions that were estimated using an unbalanced panel of annual data for OECD countries from 1960 to 2008.
b) Estimated impacts of a severe recession.
Source: OECD estimates. For further details, see OECD (2010e).

StatLink http://dx.doi.org/10.1787/888932303385

an alternative to searching for a job in a depressed labour market – may be greater.[77] Participation rates for older workers have been particularly sensitive to severe recessions in countries where the tax and pension system are structured so as to blunt the financial incentive to remain in employment beyond age 60.

Might this recession be different?

There are some grounds to believe that good policy choices may be able to reduce unemployment and labour force withdrawal hysteresis following the 2008-09 recession relative to what would be expected based on the historical record discussed above. The labour market and social policy responses to the crisis, as summarised in Section 3, suggest that many governments are taking actions that might help to reduce hysteresis effects (and avoiding Malthusian actions that could exacerbate them). In part, this appears to reflect a widespread resolve to prevent the gains achieved by structural reforms in recent years from being reversed during the recession. Four examples appear to be particularly noteworthy:

- In an effort to maintain effective re-employment services in the context of often large increases in the numbers of job seekers and a relative paucity of job openings, many OECD governments have significantly scaled up resources for ALMPs. While it is too early to assess how effective this effort will prove to be, it is encouraging that the historical

tendency for ALMP budgets to remain relatively constant or only expand a little during recessions appears to have been avoided (OECD, 2009a).

- As was discussed in Section 2, an unusually large share of the recessionary drop in labour input is being achieved *via* reductions in average hours, rather than layoffs, in a number of countries. In part, this reflects the extensive use governments have made of STW schemes as a way to preserve existing jobs, as was shown in Sections 3 and 4. The diffusion of flexible working time arrangements in recent decades (*e.g.* hours banking) also appears to have played a role in encouraging adjustment along the hours margin. Finally, employers in some countries appear to be showing a greater propensity to hoard labour than in past recessions.[78] By reducing the increase in unemployment, greater reliance on hours adjustment may tend to reduce the build-up of the number of long-term unemployed during the recession and the number of workers withdrawing from the labour force (or postponing labour market entry) due to poor job-search prospects, indirectly reducing hysteresis effects. However, that need not be the case. Labour market segmentation could be further heightened by increased labour hoarding, if the resulting reduction in labour turnover rates places unemployed job seekers at a heightened risk of long-term unemployment, even though there are fewer of them. This possibility suggests that governments expanding STW schemes should be particularly vigilant to assure that suitable re-employment assistance is available to job seekers, including expanded training and work-experience programmes.[79]
- In several countries where the maximum duration for the receipt of unemployment insurance benefits is relatively short, temporary extensions have been put in place, notably the United States where the usual limit of 26 weeks has been raised to nearly two years in some states. Since unemployment durations rise during recessions, these measures can be justified as a response to job losers' increased need for income support. A second rational for these measures is that the job search requirements and re-employment measures associated with these benefits may help to keep job losers attached to the labour market and, hence, improve their chances of benefiting from the recovery when it arrives. The more numerous cases where countries have extended eligibility for unemployment benefits to workers who would not normally qualify, such as temporary and part-time workers, might have a similar benefit. It is vital, however, that such extensions are temporary, since a number of studies have found that more generous and longer duration benefits raise the structural rate of unemployment in the long run.
- At least at the level of explicit national policy, no OECD government appears to have repeated the mistakes sometimes made in some past recessions of taking measures to lower labour supply, such as expanding options for early retirement or granting easier access to disability benefits. Indeed, employment rates have actually tended to rise during the recession for older workers (*cf.* Figure 1.3). While that departure from past patterns may reflect, in part, policy choices not to encourage early retirement as a way to mute the rise in (open) unemployment, it also reflects the impact of sometimes large losses in retirement savings in causing potential retirees to remain in the labour market longer than they had anticipated (Coile and Levine, 2009). The impact of the sharp fall in asset prices during the 2008-09 recession in encouraging older workers to remain in the labour market is likely to have been particularly strong in countries where a significant share of pension wealth is invested in equities, such as the Netherlands, Canada and the United Kingdom (OECD, 2009g, h), or where housing prices have fallen sharply.

While there are reasons to hope that there may be less unemployment and labour force withdrawal hysteresis following the 2008-09 recession than is suggested by recent history, that is far from certain. In particular, the risk of hysteresis effects is likely to increase rapidly should the economic recovery be too timid to absorb the currently high level of labour market slack within a few years. It has been emphasised that short-time working, as an alternative to labour shedding, becomes increasingly problematic the longer the period of low demand. That probably is also true for the other three broad measures mentioned above (*i.e.* up-scaling active labour market programmes, extending eligibility for unemployment benefits and preventing the unemployed from drifting onto other social protection benefits). Policy measures to limit hysteresis effects should thus be combined with measures to speed the economic recovery and make it as rich in employment as possible. However important, these policy challenges must be pursued in a manner that is consistent with also meeting the pressing need for fiscal consolidation (OECD, 2009c and 2010a).

Conclusions

The labour market impact of the 2008-09 recession confronted employment and social policy makers with a major challenge that is still ongoing, despite governments having taken vigorous policy measures and the global economic recovery being underway. This chapter updates the assessment in the 2009 *OECD Employment Outlook* of the labour market impact of the recession and the labour market and social policy responses to the resulting jobs crisis. Whereas early policy responses to the crisis necessarily emphasised the provision of prompt assistance to job losers and other workers adversely affected by the severe economic downturn, this chapter documents some subsequent shift of emphasis towards fostering a prompt and complete labour market recovery.

As the severity of the global economic slowdown became apparent in late 2008, there was widespread agreement that the labour market and social policy responses adopted during past recessions had left much to be desired, particularly as concerned avoiding the persistence of excessive levels of unemployment and inactivity far into and even beyond the subsequent economic recoveries. The structural labour market reforms enacted in many countries during the decades preceding the 2008-09 recession, had created a more solid foundation for limiting the social costs of severe recessions and fostering strong recoveries. Nonetheless, there was much uncertainty concerning best practice responses to rising labour market slack. For example, the guidelines for employment policy contained in the *Reassessed OECD Jobs Strategy* of 2006 emphasise the structural prerequisites for strong employment performance in the long run, but do not provide guidance for how employment and social policies should be modulated in a deep recession. The analysis in this chapter and its antecedent last year begin to fill that lacuna.

The labour market and social policy response of OECD governments to the 2008-09 recession differs from responses to earlier recessions, both in terms of the vigour of the response and the mix of policy measures taken. While it is still too soon to reach a final verdict about how effective this policy activism ultimately will prove to be, there appear to be grounds to hope that the labour market shadow cast by the 2008-09 recession will be shorter and less dark than would have been expected given its severity. Even should this prove to be the case, it is essential to continue monitoring both the good and bad results obtained from employment policy initiatives taken during the crisis since this is the only way to determine how policy choices affected the evolution of labour market conditions.

Three examples of somewhat novel policy initiatives emerge from this chapter as being particularly likely to shed new light on policy strategies for reducing the social costs associated with recessions and supporting strong labour market recoveries. First, many countries have introduced or significantly expanded short-time work schemes in order to preserve existing jobs. The chapter's analysis suggests that these schemes have had considerable success in limiting layoffs, at least through most of 2009, but it is too early to judge how they will affect the vigour of hiring and productivity growth going forward. Second, a considerable number of countries have vigorously expanded PSE staffing levels and ALMP offerings for job seekers in order to maintain an active stance in the operation of unemployment benefits and labour market programmes through the recession. This represents a determination to avoid repeating past experiences where recessions led to a large build up in the pool of long-term unemployed whose connections to the labour market became tenuous. Finally, governments are taking a number of steps to promote a full and rapid labour market recovery, including fiscal measures to raise the employment content of the early stages of the recovery and a variety of policies intended to minimise hysteresis effects in unemployment and participation.

Despite these encouraging developments, the jobs crisis resulting from the 2008-09 recession will continue to occupy policy makers for a long time to come. It seems increasingly likely that many OECD governments will embark upon fiscal consolidation before labour markets have recovered. In this difficult context, it will become all the more important to assure that labour market programmes retain adequate resources and are opertated in the most cost-effective manner possible.

Notes

1. Even though it is somewhat imprecise, this chapter will use "2008-09 recession" as a convenient, short-hand designation for the economic downturn associated with the global financial crisis that became acute following the bankruptcy of Lehman Brothers investment bank in September 2008. The turmoil in financial markets led to steep global declines in production and trade in the final months of 2008 and early 2009, but the rate of decline eased rapidly thereafter and an economic recovery began in most OECD countries during the second half of 2009. Although most OECD countries experienced a recession during 2008-09, the downturn in a few countries may not be considered to have been deep or long enough to qualify as a recession, whereas the recession had already begun in late 2007 or continued into 2010 for other countries.
2. The final *communiqué* of this ministerial meeting is available from the OECD website, *www.oecd.org/document/29/0,3343,en_2649_34487_43790301_1_1_1_1,00.html*.
3. Chapter 2 of this publication is also part of this monitoring exercise, but it focuses on nine emerging economies (including three OECD countries), whereas this chapter focuses on OECD countries. The analysis of the labour market dimension of the global crisis presented in the 2009 and 2010 issues of this publication is part of a broader effort by the OECD to assess the impact of the 2008-09 recession and identify best policy responses. This effort includes assessments of the impact of the crisis on potential output and how structural reforms can minimise that impact (OECD, 2009b, c and 2010a, c), as well as analyses of many other policy areas, such as the implications for immigration policy (OECD, 2010d), pension policy (OECD, 2009g, h) and sickness and disability benefits (OECD, 2009d).
4. The questionnaire responses reflect policy stances as of early 2010. It is possible that heightened pressures for fiscal consolidation have led governments subsequently to reduce planned spending on crisis-related labour market measures.
5. These projections are reported in OECD (2010a) which was released on 26 May 2010. Most of the aggregate data used in this chapter come from the *OECD Economic Outlook No. 87 database* which underlies these projections.

6. The overview of the labour market impacts of the 2008-09 recession in this section of the chapter makes use of a common dating scheme based on average developments for the OECD area. The more detailed analysis of labour market adjustment in Section 2 makes use of country-specific dating that takes account of differences in when the recession began and ended in different countries.

7. These estimates are based on national definitions of unemployment that differ from the internationally harmonised definition in some countries. OECD harmonised unemployment rates also indicate a 2.9 percentage-point increase between December 2007 and March 2010, when it reached 8.7%. (see Annex Tables 1.A2.1 and 1.A2.2 of OECD, 2010b). The increase in the number of unemployed persons according to the harmonised definition was also about 17 million.

8. Unemployment increased dramatically during these two recessions in certain countries (*e.g.* in Finland in the early 1990s), but the downturn was much milder in other countries muting the increase in average unemployment. It should be noted, however, that the proportionate increase in OECD area unemployment exceeded 60% in the 16 quarters following 1979 Q3, due to the cumulative impact of two closely-spaced recessions in many countries. The increased volatility of sovereign debt markets in the second quarter of 2010 indicates that a "double-dip" recession that could further push up unemployment rates remains a risk (OECD, 2010a).

9. The increase in the Korean unemployment rate between December 2007 and March 2010 was also less than 1%, but unemployment in January 2010 was 1.7 percentage points above the pre-crisis level. The upsurge in unemployment during the first two months of 2010 was probably due to the temporary expiration of a crisis-related public works programme.

10. Reductions in employment may result from either increased job losses or reduced hiring. Analysing data for the United States, Elsby *et al.* (2010) find that differences across workforce groups in the current downturn have been driven largely by differences in the risk of job loss, rather than differences in the probability of finding a job.

11. Whereas changes in employment by gender, age and education are calculated for the period between the fourth quarters of 2008 and 2009, changes by work status (*i.e.* the type of employment contract) are calculated between the second quarters of those two years to account for the much more rapid response of temporary employment to both downturns and recoveries. The reduction in temporary employment using fourth quarter data is only 2.2%, because temporary employment had already begun to recovery strongly in the second half of 2009, even as permanent jobs continued to be lost.

12. Whereas construction employment has been considerably more cyclical than manufacturing employment historically, job losses were steeper in manufacturing during the year to 2009 Q4.

13. Annex Table 1.A2.3 of OECD (2010b) provides comparable estimates for earlier recessions. The jobs gap in 2009 Q4 is somewhat smaller for the OECD area that that at the trough of the 1979-1982 "double-dip" recession, but larger than those for all other recessions since 1970.

14. The working-age population shrank in Austria, Germany and Japan, reducing the jobs gap estimates in these countries relative to that implied by the changes in the unemployment and participation rates.

15. Ireland appears to have experienced a shift from net in-migration to net out-migration with the foreign-born, working-age population declining between 2008 and 2009 (OECD, 2010d). This could lead to an overestimate of the employment gap in Table 1.1 since the estimates of the working-age population used in the calculation do not take account of the post-crisis shift in net migration and hence overestimate potential labour supply.

16. The already high jobs gap in Ireland is projected to rise further to nearly 20%, but this estimate is probably too dire since it does not adjust for the recent shift from net in-migration to net out-migration.

17. See Annex Table 1.A2.4 of OECD (2010b) for a full set of country results. Since seasonally-adjusted versions of most of these measures are not available, two-year changes are calculated with respect to 2007 Q4.

18. Discouraged workers are the sub-set of marginally attached workers who say that they are not actively searching for a job because they believe none are currently available. Annex Table 1.A2.4 of OECD (2010b) provides estimates of UR4, which augments conventional unemployment by adding only discouraged workers, for the relatively few countries where this concept could be estimated.

19. This reflects the heavy reliance of German employers on labour hoarding in combination with hours reductions, as is discussed in Section 2.

20. The LFS data charted in Figure 1.6 are based on the responses of adults who were interviewed as part of national household surveys. Actual hours worked on the main job, as reported in the LFS, are subject to considerable reporting error and take no account of multiple job holding. Section 2 analyses data on hours worked that is largely based on employers' reports. The two sources provide somewhat different assessments of how much hours have fallen during the 2008-09 recession. For example, the recent fall in average hours worked in Germany is only a little over 1% in Figure 1.6, but around 3% when calculated using the alternate data source.

21. The very large increase in unemployment in Finland (and to a lesser extent Sweden) in the early 1990s, which reflected localised banking crises and the breakup of trading patterns with the ex-Soviet bloc, contributed to the high standard deviation of changes in both real GDP and unemployment.

22. Real GDP grew between 2007 Q4 and 2009 Q4 in Australia, Korea and Poland. In part, this is an artefact of adopting a timing scheme based on turning points in the output-gap measure for the OECD area. Section 2 analyses labour market responses to the recession making use of country-specific dating.

23. Consistent with Okun's Law, these data suggest a cross-country Okun coefficient of approximately 0.5, well below 1. However, Okun's Law is more typically applied to the association between changes in output and unemployment *within* countries. The analysis of labour demand adjustment in Section 2 examines this relationship.

24. Ireland is also located substantially below and to the left of the regression line, indicating a low Okun's coefficient value. As mentioned above, Ireland has experienced a large shift in net migration that may help to explain why the increase in unemployment has been relatively small compared with the reductions in GDP and employment: a substantial number of job losers and other job seekers may have emigrated and hence do not show up in the statistics for Irish unemployment.

25. The correlation between real GDP growth and employment growth is 0.63 and highly statistically significant, confirming that labour demand does vary with output demand. Nonetheless, the extent to which employers have cut jobs as product market demand fell has varied considerably. Of particular interest is whether employers have been more inclined to retain staff in excess of current production needs ("hoard" labour) in some countries and, if so, why this has happened and what it implies for the costs of the recession and the strength of the coming economic recovery.

26. For example, some workers may withdraw from the labour market as employment opportunities diminish in a recession (the so-called "discouraged worker effect"), causing the increase in unemployment to be smaller than the fall in employment. It is also possible that additional workers will enter the labour market to try to compensate for the income losses that occur when other family members lose their jobs or experience partial earnings losses (the so-called "added worker effect").

27. Recall that the data for Ireland are potentially misleading since the impact of international migration on the size of the working-age population has not been accounted for. This omission will tend to exaggerate the decline in the labour force participation rate if, as seems plausible, participation rates are very high among the persons whose migration choices have been affected by the economic crisis.

28. The decline in export demand fell particularly strongly on durables manufacturing (Baldwin, 2009). This sector is likely to rely more heavily on firm-specific skills than construction, and hence have a greater tendency to hoard labour following a drop in product demand.

29. No attempt is made here to determine the optimal mix of labour demand adjustment along the employment and hours margins during a recession, although this is an important issue for future study. Greater reliance upon adjustments in average hours worked has the potential to preserve specific human capital while also avoiding most of the social costs associated with unemployment. However, labour hoarding also tends to raise unit labour costs in the short run and could also reduce long-run productivity growth if it serves as a brake on the reallocation of workers towards more productive employment (see Chapter 3). Another possible drawback to an excessive use of hours adjustment could be to heighten labour market segmentation between core workers, who are offered a high degree of protection from layoffs in cyclical downturns, and other workers who employers view as easily replaceable.

30. Whereas Section 1 examined labour market impacts of recessions using a common, OECD-wide dating, based on turning points in OECD area output, the aggregate analysis of labour demand adjustment in this section relies upon country-specific dating of recessions (see Table 1.A3.1 in OECD, 2010b). Recessions are considered to occur between local peaks and troughs of real GDP series in levels. A local peak (trough) occurs at time *t* when $y_t > (<) y_{t \pm k}$ where k = 1, 2. The turning points

are further refined by the following requirements: the peaks and troughs must alternate, each cycle must have a minimum duration of five quarters and each phase (expansion, recession) must be at least two quarters long.

31. Australia and Poland experienced a fall in real GDP in 2008 Q4 after which GDP growth resumed. Even though these two countries did not experience a recession, according to the definition used here, growth did slow sufficiently to cause unemployment to increase. For comparison purposes, data for Australia and Poland are included in Figure 1.9 and some of the analysis that follows, with changes being calculated over the period 2008 Q3 to 2009 Q2.

32. A historical average is not available for Ireland, but it is clear that the current downturn is particularly deep. Thus, 24 out of the 30 OECD countries analysed in Figure 1.9 experienced a historically deep recession.

33. Unweighted averages for the countries shown in Figure 1.10 indicate an average historical Okun's coefficient of 0.46, as compared with 0.39 during the 2008-09 recession. This overall decline is all the more notable because Chapter 3 of IMF (2010) reports evidence that structural reforms during the 20 years preceding the crisis (*e.g.* less strict employment protection regulation and the expansion of temporary employment) had increased the responsiveness of unemployment to cyclical variation in real GDP. This study also presents evidence that Okun's coefficient tends to be larger in recessions associated with a financial crisis or a housing price bust.

34. See Table 1.A3.2 of OECD (2010b) for further details on the definitions and sources of the hours worked series.

35. The hours share of adjustment is quite strongly negatively associated with the change in output per worker (correlation of –0.57), whereas the correlation with hourly productivity is considerably weaker (–0.20).

36. A comparison of peaks and troughs in labour input and GDP reveals that the decline in both series usually starts in around the same quarter. In some cases, the decline GDP may lead labour input by a quarter or two. Perhaps more surprising is that a decline in labour input, usually due to a fall in hours, sometimes leads GDP recessions. In recovery phases, an increase in labour input almost always lags an increase in GDP.

37. The panel regressions take the form $\theta_{ie} = \lambda_i + \lambda_e + \varepsilon_{ie}$, where θ_{ie} is the contribution of hours to total labour input adjustment from the peak to the trough of GDP (i.*e.* during the recession), *e* denotes recession episodes, i denotes countries, λ_i is a country dummy and λ_e is a recession episode dummy for each of the periods 1970-75, 1976-85, 1986-95, 1996-2005 and 2005 onwards.

38. It is important to note that this inference is based on relatively few data points for each country.

39. The output elasticity of labour input also appears to be very high in Norway, but this may reflect a problem with the hours series used in this analysis.

40. Since output is deflated by the GDP deflator and wages by the deflator for private consumption, and these two deflators may have evolved differently, the data displayed in Figure 1.15 may not provide an accurate gauge of how unit labour costs evolved.

41. Since the questionnaire responses were submitted in early 2010, a number of OECD governments have come under increased pressure to accelerate fiscal consolidation and announced spending cuts. The analysis is this chapter does not incorporate those initiatives.

42. In the Czech Republic, a wage subsidy (plus training subsidy) is only paid for workers on reduced hours who participate in the "Educate Yourself" programme. Participation in training in Hungary is compulsory for workers taking part in the short-time work scheme financed by the European Social Fund. Training is not compulsory for short-time workers financed by national funds. Nationally-funded schemes were suspended at the end of 2009. In total, around 25-50% of short-time workers have participated in training in Hungary during the current downturn. In the Netherlands, workers receiving *Deeltijd-WW* must either participate in training or undertake a secondment to another firm or production unit.

43. Throughout this section, references to the PES include equivalent private-sector employment services providers in countries where PES activities are contracted out to private providers (*e.g.* Australia).

44. The increase in PES staffing in Poland between 2007 and 2008 was not in response to the recession but due to a legislative change in 2007 requiring staffing levels to adjust according to, among other factors, numbers of registered unemployed and vacancies. Local employment offices increased staffing substantially until mid-2008 to meet the new requirement.

45. Growth in the caseload is proxied by the growth of the ratio of registered jobseekers (or registered unemployed in Poland and the Czech Republic) to total PES staff.

46. The empirical analysis below takes account of both temporary layoffs and reduced working time.

47. Another way to reduce deadweight is to require firms to share in the cost of short-time work, as is discussed below.

48. In light of their differential coverage by STW schemes and the likely greater tendency of employers to attempt to retain their core workers, the empirical analysis of the impact of STW in the 2008-09 recession below distinguishes between temporary and permanent workers to the extent possible.

49. Participating firms in the Work Sharing programme in Canada were previously required to develop a recovery plan. However, this requirement has been suspended until at least March 2011 in response to the 2008-09 recession.

50. Take-up of training during STW tends to be low in countries where it is not compulsory. While this may provide a rationale for governments seeking to reduce displacement effects to make training compulsory, it could also indicate that training often is not appropriate or cannot easily be organised as was concluded by a Canadian study of STW (HRDC, 2004).

51. While firms in the United States are not required to share wage or social security costs for hours not worked, firms may face higher unemployment-insurance premia in the future as a result of participating in short-time work, due to the experience-rating system for unemployment insurance.

52. Firms may also top-up benefits to workers to match their normal wage, either voluntarily or in accordance with collective agreements.

53. The figures were obtained from the OECD/EC questionnaire responses. See Section 1.3 for further details.

54. The length of the recession may increase or reduce deadweight loss. In a short and shallow recession, short-time work schemes may be more likely to support jobs that would have been maintained anyway, while in a long and deep recession, there is a greater risk that jobs supported by short-time work are lost during the programme or soon after its termination (CPB, 2009).

55. Put differently, perfect substitution is assumed between each hour of STW and an hour of layoff.

56. The use of short-time work in those sectors tends to be relatively small and it typically is not for economic reasons, which is the focus here.

57. More precisely, comparisons are made across countries within broad economic sectors, rather than at the aggregate country level. This should help to reduce the role of aggregation bias due to technology differences across industries.

58. Take-up rates are measured in terms of the number of participants. Ideally, take-up would be measured in terms of total hours or the number of full-time equivalent (FTE) employees. Unfortunately, data on the number of hours subsidised or FTE employees are not available for the majority countries considered here.

59. However, the size of such spill over effects cannot be isolated with the current data.

60. Increased employment stability among permanent worker may come at the expense of lower job stability among temporary workers when STW schemes shift the burden of adjustment from insiders to outsiders.

61. When concentrating exclusively on manufacturing, there is weak evidence that short-time work has increased the employment response to output shocks of temporary workers during the crisis.

62. Industry take-up data are also available for Ireland, but as is explained below Ireland has been excluded from the econometric analysis.

63. The change in the sample and the definition of take-up at the industry level both account for about half of the reduction in the (absolute size of the) estimated coefficient of the interaction term for the change in output, the crisis dummy and the average take-up rate.

64. Accounting for the possible impact of short-time work schemes on temporary employment would, if anything, increase the difference as the present analysis suggests that short-time work schemes had a tendency to increase job losses among temporary workers. However, the estimated contribution of temporary work to the overall jobs impact of short-time work schemes is very small and not statistically significant. The total number of jobs saved as a result of short-time work after taking account of its potential impact on temporary employment is 215 000 for Germany and 385 000 for Japan (instead of 220 000 and 395 000, respectively).

65. The discrepancy between the net number of jobs preserved and the total potential number of jobs preserved actually represents the sum of deadweight and displacement effects. However, it is unlikely that displacement effects had been very large as of 2009 Q3.

66. Chapter 2 of this publication reaches a similar conclusion regarding the importance of social protection programmes already being in place and functioning prior to the onset of a recession.

67. The timing of the modifications to pre-existing STW schemes tended to coincide with the period when output was falling most steeply, complicating the identification of the impact of modified schemes relative to the counterfactual of no STW scheme.

68. Even if unemployed job seekers are not disadvantaged generally, particularly vulnerable groups such as new entrants (*e.g.* youth) may find it particularly difficult to gain a foothold in a labour market where labour hoarding has reduced the flow of new job openings.

69. It should be emphasised that a high employment intensity of growth generally is not an appropriate policy goal, since it implies a downward pressure on labour productivity. However, in a period of very high labour market slack and in which firms are likely to be particularly cautious about hiring, there may be a case to be made for policies that bring forward employment growth.

70. Targeting also has the potential to lower NAIRU if it favours groups with lower bargaining power.

71. This is consistent with findings by Elsby *et al.* (2010) for the United States that both unemployment inflows and outflows account for a substantial part of the recent increase in unemployment. This is in contrast to recent work by Shimer (2007) which concludes that the decline in unemployment inflows accounts for the bulk of the rise in unemployment during earlier recessions. The importance of unemployment inflows during the recent recession is likely to reflect its particular severity. Davis *et al.* (2006) have shown that in sharp recessions more firms adjust to declines in product demand through increased layoffs and fewer firms through reduced hiring.

72. In early 2010, the Obama administration proposed a revised version of the NJTC before reversing course and supporting a alternative proposal for a gross hiring subsidy that had greater support in Congress. The Hiring Incentives to Restore Employment (HIRE) Act of 2010 was enacted in March and it provides subsidies to employers hiring workers during 2010 who have been unemployed for at least 60 days.

73. Perloff and Wachter (1979) found that employment in firms that knew about the scheme grew 3% faster than in firms that did not. This implies that up to one-third of the jobs covered by the program were additional, while the remaining two-third would also have been created in the absence of the subsidy. However, their estimates should be considered as upper bounds as *i*) firms that were growing more quickly may also have been more likely to learn about the programme; *ii*) the study does not account for displacement effects. Bishop and Haveman (1979) and Bishop (1981) conduct various difference-in-differences experiments to analyse the effectiveness of the programme by comparing employment growth before and during the program across eligible and non-eligible industries, small and large firms and part-time and full-time workers. They focus on industries instead of firms as the unit of observation to capture the potential effects of displacement effects. They also find that the programme had a significant impact on aggregate employment. To the extent that employment in eligible industries, small firms and part-time workers is more sensitive to the cycle this could also account for some of the observed differences in employment growth.

74. These estimates were developed as part of the OECD programme of macroeconomic projections as reported bi-annually in the *OECD Economic Outlook*. For an explanation of the methods used to estimate the impact of the recession on potential output, see OECD (2009c, 2009f and 2010a).

75. The relative importance of short- and long-term unemployment for wage setting is a key determinant of the strength of the relationship between increases in long-term unemployment in a recession and the resulting increases in structural unemployment. For example, Llaudes (2005) finds that an increase in long-term unemployment has only about one-fourth as much impact on prices and wages as an equal increase in short-term unemployment in most European countries, suggesting that three-quarters of a rise in long-term unemployment can be considered as representing an increase in the NAIRU. The corresponding ratio appears to be lower in non-European OECD countries.

76. It is possible that the US labour market has become more vulnerable to unemployment hysteresis since it has seen an unprecedented rise in long-term unemployment the past several years (*cf.* Figure 1.5).

77. The welfare effect of the lower youth participation rates following recessions is unclear since it depends on the extent to which they are led to make additional human capital investments that pay off in increased future productivity and earnings (McMahon, 1984). It is known that recessions tend to increase education enrolment and, with a lag, attainment (Helyen and Pozze, 2007; and

Furceri and Zdzienicka, 2010), but also that cohorts entering the labour market during recessions experience long-lasting reductions in their earnings capacity (so-called "scarring" as analysed by Oreopoulos *et al*., 2008; and Kahn, 2010).

78. Möller (2010) analyses the situation in Germany and concludes that many employers in the industries making the greatest use of STW have been particularly keen to retain skilled workers because they have recently faced labour shortages and anticipate that these shortages will quickly re-emerge during the recovery.

79. As was mentioned above, it is also important to minimise the extent to which STW and other forms of labour hoarding impede efficiency-enhancing labour mobility. This risk should be lower for temporary measures taken during recessions then when STW is used to assist firms and workers in sectors facing structural decline, as happened in the former East Germany following reunification (Möller, 2010) and in some other European countries in the past. In the context of structural decline, STW measures send misleading signals to workers that may inhibit them from voluntary mobility and engaging in additional training (Mosley and Kruppe, 1996).

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ANNEX 1.A1

*The institutional features of short-time work schemes in place during the recession in OECD countries**

* Several countries have extended eligibility, duration or generosity of short-time work schemes during the current recession. The information in the table refers to schemes as they are operating during the recession. For full details on recession-related changes, see OECD (2009i).

The institutional features of short-time work schemes in place during the recession in OECD countries

		Work-sharing requirements			Eligibility			Conditionality				Generosity			
	Name of scheme	Minimum number/ proportion of workforce participating	Minimum hours reduction	Maximum hours reduction	Firm must provide justification of economic need	Social partner agreement	Participating workers must be eligible for UB	Compulsory training	Recovery plan	No dismissal	Job search requirement for employee	Maximum duration	Subsidised training	Cost to employer for hours not worked	Employee receives for hours not worked
Austria	*Kurzarbeitsbeihilfe* (short-time working allowance)	No	10%	90%	Yes	Yes	No	No	No	Yes	No	Six months with extension up to 24 months (18 months from 2011)	Yes	Employer's share of SSC for first six months	Flat rate per hour not worked equal to to 1/8th of daily UB plus health and pension insurance
Belgium	*Chômage temporaire pour causes économiques* (partial unemployment, for blue collar workers only); régime temporaire et collectif de suspension totale ou partielle de l'exécution du contrat de travail (for white collar workers in private sector)	No	0%	100%	Yes	Blue collar: no White collar: yes (or business plan)	No	No	Blue collar: no White collar: yes	No	No	Blue collar: four weeks (full layoff); 12 months (3+ days work/week); three months (<3 days work/week) White collar: 16 weeks (full layoff); 26 weeks (2+ days of work/week)	Yes	None	UB "majorées" (70-75% of normal wage)
Canada	Work Sharing	At least two employees	20%	60%	Yes	Yes	Yes	No	No	No	No	52 weeks (2009); 78 weeks (2010)	No	None	UB (55% of normal wage)
Czech Republic	Subsidised training for workers on partial unemployment (educate yourself "Vzdělávejte se")	No	0%	100%	Yes	Yes	No	Yes	No	No	No	Six months	Yes	SSC	60% of normal wage
Denmark	*Arbejdsfordelingsordning* (work sharing)	Must cover either a firm, division or production unit	Minimum two days per week receiving benefits or one week work and one week receiving benefits		No	Yes	No	No	No	No	Yes (when receiving UB)	26 weeks (more than 13 weeks must be authorised by regional employment council)	No	None	UB
Finland	Adjusted unemployment allowance for partial unemployment	No	25%	100%	Yes	Consultation	Yes	No	No	No	Yes	No maximum	Yes	None	Adjusted UB (= full daily UB – 50% of daily part-time wage)

		Work-sharing requirements			Eligibility			Conditionality				Generosity			
	Name of scheme	Minimum number/ proportion of workforce participating	Minimum hours reduction	Maximum hours reduction	Firm must provide justification of economic need	Social partner agreement	Participating workers must be eligible for UB	Compulsory training	Recovery plan	No dismissal	Job search requirement for employee	Maximum duration	Subsidised training	Cost to employer for hours not worked	Employee receives for hours not worked
France	*Chomâge partiel* (partial unemployment)	No	0%	100%	Yes	Yes	No	No	No	Yes	No	1 000 hrs per employee per year	Yes (by social partners)	Partial wages	60% of gross wage without SSC (75% of net wage), not lower than min wage
Germany	*Kurzarbeit § 170 SBG III* (structural short-time working)	No (see note)	10%	100%	Yes	Yes	Yes	No	No	No	Yes	24 months (2009); 18 months (2010)	Yes	50% of SSC for first six months; none after six months or if employees are in training (see note)	60-67% of foregone net wage
Hungary	ESF-financed short time working scheme	At least two employees	20%	100%	Yes	No	No	Yes	No	Yes	No	12 months (min. duration three months or 96 hours in total spent in training)	Yes	Wages and SSC over 500% of min. wage plus partial training costs	Normal wage
Ireland	Systematic short time working	No	Two days per week	100%	No	No	Yes	No	No	No	Yes	Varies depending on contribution history	Yes	None	UB
Italy	*Cassa Integrazione Guadagni Ordinaria & Straordinaria* (Wage Compensation Fund)	No	0%	100%	Yes	CIGO: no; CIGS: consultation	No	No	Yes	No	No	3-24 months	Yes	Partial SSC	80% of previous earnings (with monthly ceiling)
Japan	Employment Adjustment Subsidy	No	0%	100%	Yes	Yes	Yes	No	No	No	No	300 days over three years	Yes	10-33% of wages + SSC	More than 60% of most recent average wage
Korea	Employment Retention Subsidy Scheme	50% of workers	1/15 of total hours	100%	Yes	Consultation	Yes	No	No	No	No	180 days over one year (90 day extension for vocational training)	Yes	25% of wages (SMEs) or 33% of wages (larger firms)	Normal wage
Luxembourg	*Indemnisation de chômage partiel* (partial unemployment)	No	0%	50%	Yes	Yes	. .	No	Yes	No	. .	Six months within 12-month period	No, but higher wage subsidy	SSC (at 80% of normal wage)	80% (90% if undergoing training) of normal earnings capped at 250% of minimum wage

		Work-sharing requirements			Eligibility			Conditionality				Generosity			
	Name of scheme	Minimum number/ proportion of workforce participating	Minimum hours reduction	Maximum hours reduction	Firm must provide justification of economic need	Social partner agreement	Participating workers must be eligible for UB	Compulsory training	Recovery plan	No dismissal	Job search requirement for employee	Maximum duration	Subsidised training	Cost to employer for hours not worked	Employee receives for hours not worked
Netherlands	*Deeltijd WW* (partial unemployment benefits)	No	20%	50%	No	Yes	Yes	Yes (or secondment)	No	Yes	No	See note	No	Training costs. Employers often pay difference between UB and normal wage to employees	UB
New Zealand	Job Support Scheme	No	0%	10 hrs/ fortnight (cannot work fewer than 30 hrs/week)	No	Yes	No	No	No	Yes	No	Six months	Yes	Reduced SSC	Adult minimum wage up to five hours per fortnight
Norway	Unemployment benefit for temporary layoffs	No	40%	100%	Yes	No	Yes	No	No	No	Yes	52 weeks in 18 month period	Yes (ALMP possible but not obligatory)	Full wage for first five days	UB
Poland	Guaranteed Employee Benefits Fund – for temporary work stoppage and reduced hours	No	0%	100%	Yes	Yes	No	No	Yes	Yes	No	Six months	Yes	Work stoppage: difference between minimum wage and UB; reduced hours: difference between minimum wage and 70% of UB or 120% of UB if employee participates in training	Work stoppage: minimum wage; reduced hours: minimum wage with respect to the normal working time shedule
Portugal	*Suspensão ou redução temporaria da prestação de trabalho* (temporary suspension or reduction of employment)	No	0%	100%	. .	. .	. .	Yes	No	No	. .	12 months with extension of six months	Yes	30% of reduced wage	2/3 of normal wage (between 1-3 times minimum wage)
Slovak Republic	Support for maintenance of employment	No	4% of established weekly working time	100%	Yes	Yes	No	No	No	No	No	60 calendar days per year	No	At least 60% of normal wage (SSC are reimbursed)	At least 60% of normal wage plus employee SSC

	Name of scheme	Work-sharing requirements			Eligibility			Conditionality				Generosity			
		Minimum number/ proportion of workforce participating	Minimum hours reduction	Maximum hours reduction	Firm must provide justification of economic need	Social partner agreement	Participating workers must be eligible for UB	Compulsory training	Recovery plan	No dismissal	Job search requirement for employee	Maximum duration	Subsidised training	Cost to employer for hours not worked	Employee receives for hours not worked
Spain	*Prestaciones por desempleo parcial de nivel contributivo* (partial unemployment benefit)	No	33%	100%	Yes	No	No	No	Yes	No	Yes	24 months	No	None	UB
Switzerland	*Chômage partiel* (partial unemployment benefits)	Must apply to entire unit of firm	10%	100%	Yes	Individual agreement with employee	No	No	No	No	No	12-24 months	Yes	Full wage for one day per month + part of SSC	80% of normal earnings
Turkey	Short-time working	No	33%	100%	Yes	No	Yes	No	No	No	No	12 months	Yes	None	60% of gross earnings up to 120% of minimum wage
United States	Short Time Compensation/Work Sharing (operating in 17 states with just over half of the US labour force)	At least two employees	Varies: typically 10-20%	Varies: typically 40-60%	Yes	Yes	Yes	No	No	No	No	Varies: typically 26-52 weeks	No	Can increase future UI premia	UB

. .: Information not available; ALMP: active labour market programme; UB: unemployment benefit; UI: unemployment insurance; SSC: social security contribution; STW: short-time work.
Austria: no check of individual eligibility for UB, but calculation of STW allowance is on basis of notional UB. Some exemptions from no dismissal requirement during STW. Can agree to up to four month retention period after STW. Employer must also pay partial wage costs in case of more favourable social partner agreement for employees.
Canada: a recovery plan is usually required, but this requirement has been suspended until March 2011.
France: the social partners are responsible for funding vocational training initiatives.
Germany: generally one-third of the workforce, but this requirement does not currently need to be met. Employer must also meet other costs such as statutory holidays, sick leave, vacations, etc.
Hungary: three schemes were in operation during the recession. Two nationally-financed schemes finished in 2009. The ESF-financed scheme discussed in the table finished in early 2010.
Italy: training is not compulsory, but regions provide training for workers on CIG "in deroga". Training may be funded by Interprofessional Funds.
Luxembourg: usually the employer is required to pay wage cost for the first 16 hours per month of hours not worked, but this has been waived during 2009 and 2010.
Netherlands: the outflow date is fixed at either 31 December 2009, 31 March 2010 or 30 June 2010. This outflow date depends in the number of employees in the scheme relative to the number of employees in the company. Therefore the maximum duration depends on the date of inflow and the number of employees. More employees in the scheme imply a shorter duration. Minimum duration 26 weeks.
Source: Information collected from a variety of sources verified by national authorities.

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Chapter 2

The Global Crisis in Emerging Economies: The Jobs Impact and Policy Response

This chapter examines the impact of the global economic crisis on labour markets in emerging economies and the role of employment and social policies to support workers and their families affected by the crisis. The increase in unemployment and underemployment has put considerable pressure on existing social support systems in all emerging economies. Even in normal times, social safety nets in emerging economies have great difficulty in providing effective support to all those who need it. This raises concerns about the administrative capacity and fiscal resources available to scale up social safety nets rapidly enough to meet the increase in needs, while maintaining their effectiveness. Most emerging countries are also facing the challenge of providing support to workers directly affected by the global crisis while also helping poor households that may have become ever poorer. This means that employment and social policies should be prepared to address the needs of very different groups. Three different types of employment and social policy measures are considered: unemployment compensation schemes; cash transfers programmes and public works programmes. The most important lesson from this chapter is that in order to respond effectively to the sudden increase in social needs, it is crucial to already have social protection programmes in place.

Introduction

The world economy is now emerging from the worst economic downturn since the Great Depression. The consequences of the crisis have been felt in virtually all economies, although the extent of the economic impact differs significantly across countries. This chapter examines the impact of the global crisis on labour markets in emerging economies and the role of employment and social policies to support the incomes of those affected by the crisis. The focus is on key emerging economies, in particular, Brazil, Chile, China, India, Indonesia, Mexico, the Russian Federation, South Africa, and Turkey. These countries are either member of the OECD (*e.g.* Chile, Mexico and Turkey) or in a process of "enhanced engagement" with the OECD.[1] 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. Moreover, all countries except Chile are members of the G20.

The global crisis presents important challenges for employment and social policies in these emerging economies.[2] First, the overall increase in unemployment and underemployment has put considerable pressure on existing social support systems. Even in normal times, social safety nets in emerging economies have great difficulty in providing effective support to all those who need it. This raises concerns about the administrative capacity and fiscal resources available to scale up social safety nets rapidly enough to meet the increase in needs, while maintaining their effectiveness. Second, most emerging countries are also facing the challenge of providing support to workers directly affected by the global crisis while also helping the households that may have become ever poorer. This means that employment and social policies should be prepared to address the needs of very different groups.

The remainder of this chapter is organised as follows. Section 1 provides an initial assessment of the economic and social impact of the global economic crisis in the nine emerging economies. In order to get a better understanding of the mechanisms involved, Section 2 reviews previous crisis episodes in the selected emerging economies and discusses to what extent these past episodes are comparable with the most recent downturn. It also analyses the sensitivity of different groups to macroeconomic shocks and their risk of becoming informal during the recent crisis. Section 3 analyses the role of employment and social policies in times of crisis. The discussion is structured around three policy areas that have a major role to play in addressing the needs of different groups of workers in times of crisis: unemployment compensation schemes, cash transfers and public works programmes.

Main findings

- *The economic impact of the global financial crisis differs significantly across the nine emerging economies and between them and the OECD average*. It should be stressed at the outset that the global crisis was transmitted to emerging markets mainly through the collapse of world trade and the sharp reduction of capital inflows. The impact of the global crisis

has been greatest in Turkey and Russia where the slowdown in economic growth has been more than twice that of the OECD area. In the Latin American countries considered in this chapter and South Africa, the economic impact has been similar to that of the OECD average or somewhat larger (*e.g.* Mexico). In emerging Asia, the economic impact has been considerably smaller than in the OECD area.

- *The social impact of the global economic crisis may have been particularly severe in emerging economies* as workers tend to be more vulnerable to shocks than their counterparts in advanced economies. Absolute poverty is still a major concern in several emerging economies and poor households have a more limited ability to cope with adverse income shocks. Moreover, employment and social policies have a more limited reach due to widespread labour informality and their effectiveness to protect the incomes of those covered tends to be more limited. Finally, the social consequences of the crisis may be long-lasting due to the presence of poverty traps (*e.g.* education, health).
- *Sound macroeconomic policies in most emerging economies prior to the crisis have helped to mitigate the economic impact of the crisis* by reducing the extent of the credit crunch and by creating the conditions for adopting of effective counter-cyclical macroeconomic policies. Crisis-related fiscal stimulus measures have been particularly important in China, the Russian Federation and South Africa. Compared with the typical pattern in OECD countries, discretionary measures have been more heavily weighted towards infrastructure and social transfers and less towards personal income tax cuts. In contrast to previous economic downturns, social spending levels have generally been maintained.
- The current crisis had a strong impact on labour markets in most of the emerging economies considered in this chapter:
  - *The employment rate declined and the unemployment rate increased in all emerging economies except Indonesia*. However, the response of the employment and unemployment rates to the fall in aggregate demand has been relatively weak in the majority of the emerging economies compared with the OECD. This reflects to an important extent the weakness of social protection systems in emerging economies and the strong incentives for workers to stay in employment, even if this is only possible at a reduced income. As a result, changes in employment and unemployment tend to hide a significant part of the labour market adjustment that has taken place in emerging economies.
  - *Cyclical adjustments in real earnings have been relatively important in some emerging economies* compared with the OECD average (*e.g.* Mexico, Russian Federation, South Africa, Turkey). In some countries, particularly in Turkey, this is driven by substantial reductions in average hours worked. It is still too early to assess to what extent job losses and lower earnings have had an impact in reversing the recent progress in reducing absolute poverty. However, consumption growth has suffered substantially in five of the emerging economies, both in absolute terms and relative to the size of the shock.
- The recent economic downturn differs significantly from previous crisis episodes, and as a result may have a very different impact on the labour market. *While the current crisis originated from abroad, previous crisis episodes in emerging economies tended to have primarily domestic causes*. They typically took the form of balance-of-payments crises resulting from unsustainable current account and fiscal deficits in a context of fixed exchange rates. As a result, they tended to be associated with massive currency devaluations and

high inflation which dampened the relative impact of the fall in aggregate demand on exporting firms and firms with high levels of debt.

- Simulation evidence for Brazil and Mexico suggests that *the negative impact of the crisis of 2008-09 on formal employment is likely to be much larger than that during previous crisis episodes*. In Brazil, this reflects both the larger size of the recent shock compared with the crisis of 1998 and 1999 and the substantially larger concentration of the current shock in the tradable sector. In Mexico, the size of the recent shock is similar to that of the mid-1990s crisis. The larger expected decline in formal employment in the recent crisis is, therefore, entirely driven by the greater concentration of the 2008-09 crisis in the tradable sector.
- The simulations further suggest that, similar to past crisis episodes, *the risk of becoming informal increased particularly for disadvantaged groups*. More specifically, young and relatively low-skilled formal workers in Brazil and Mexico were at high risk to lose their jobs, while the risk of job loss among high-skilled and older formal workers was comparatively limited. The quantitative differences in the risk of job loss among formal workers across population groups are large. For example, the expected increase in the risk of job loss among formally employed youth is more than three times that of formal high-skilled workers in Brazil or that of formal older workers in Mexico.
- *Policy should work on various fronts to address the needs of the different groups affected by the crisis:* the newly unemployed, households who experienced large income losses and are at risk of poverty and households that were poor prior to the crisis and even have experienced further deteriorations in their incomes. However, limited budget resources on the one hand and the availability of existing programmes on the other, have often forced policy makers to give priority to the poorest groups that already benefited from income support prior to the crisis.
- Although there are substantial differences in the level of public social spending across emerging countries, *social protection is generally much lower in these countries than in most OECD countries*, leaving workers and their families more vulnerable to the consequences of the income shock. Contributory insurance schemes account for the bulk of public social expenditure in most emerging countries, but, as they cover only formal workers, their protection tends to be limited, especially in India and Indonesia. Social assistance expenditure, which provides the only safety net available to workers outside the formal sector, remains limited, despite increases over the past decade.
- *The coverage of unemployment compensation systems is low as is generally the benefit level, both reducing the capacity of the systems to provide adequate safety nets during a severe economic downturn*. However, efforts have been made to improve income support to formal-sector job losers. Measures were taken to extend coverage in Chile, to temporarily increase the benefit duration in Brazil and Chile and to raise the benefit level in Chile, Russia and Turkey. However, no measures to ease the very strict eligibility conditions to unemployment insurance have been taken in Turkey. In Mexico, Indonesia and India, dismissed formal workers have no unemployment compensation scheme to rely on.
- *Countries which have cash transfer programmes in place are in a better position to provide some protection to the poorest segments of their populations and this applies also in times of crisis*. Cash transfer programmes tend to reduce the long-term impact of the crisis on the chronically poor through income provision and, when conditional, promote continued investment in children's education and health outcomes. Reforms introduced in 2008-09

by Brazil and South Africa as part of their long-term anti-poverty strategy are likely to alleviate the crisis impact for the programmes' beneficiaries. In addition, existing programmes enable making exceptional payments to those households already identified as poor, as was the case in Chile, China and Indonesia during the recent crisis. However, due to budget constraints and limited administrative capacity, it may be difficult to reach those outside the pre-identified target population that may be at risk of poverty.

- Public works programmes (PWPs) are better placed to provide a post-crisis safety net to the newly unemployed who are not covered by unemployment compensation schemes and are at risk of poverty. Contrary to cash transfer programmes, targeting is generally not an issue because participants are self-selected on the basis of low wages. *Extending existing PWPs can provide quick support to the most needy, as it avoids start-up costs and reduces implementation challenges*. PWPs were scaled up substantially in Mexico and South Africa in 2008-09, and to a lesser extent also in Chile. In Russia and Turkey, new programmes were launched to provide income support to the unemployed. In times of crisis, PWPs should favour labour-intensive projects and limit non-labour costs in order to maximise the number of jobs created and provide a more effective safety net.

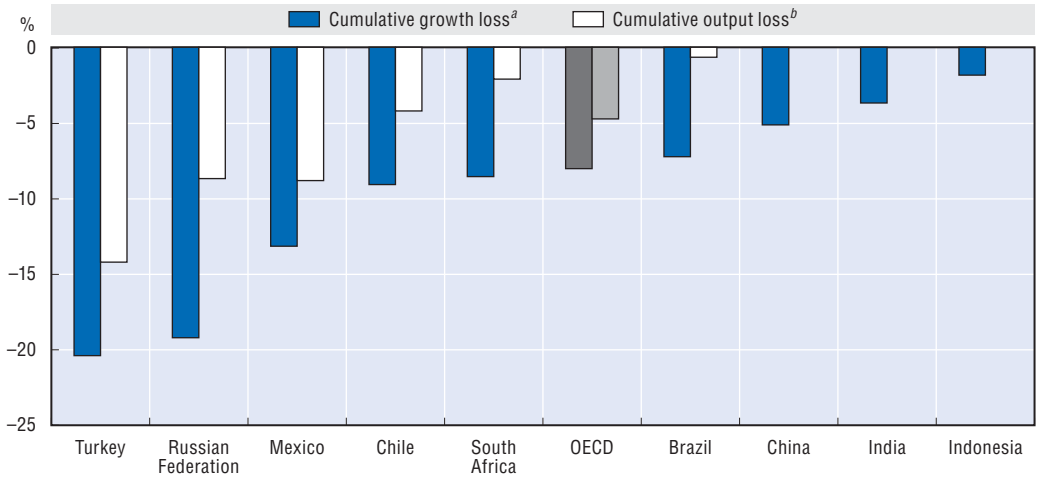
1. The economic and social impact of the global financial crisis

1.1. *The economic crisis in emerging economies*

The world economy is now emerging from the worst economic downturn since the Great Depression. The downturn was exceptional in terms of its depth as well as its synchronised nature. Between 2008 and 2009, the world economy contracted by 0.8% (IMF, 2010), the first such drop since World War II. The consequences of the crisis have been felt in virtually all economies irrespective of their direct exposure to the turmoil in financial markets that led to the crisis. A concise way to summarise the economic impact of the crisis in the nine emerging economies is by means of the cumulative output and growth losses. The *cumulative output loss* captures the total loss in output during the recession period, while the *cumulative growth loss* captures the total loss in output relative to the growth in output that would have occurred in the absence of the global crisis. The two measures provide the same qualitative picture (see Figure 2.1).[3, 4]

The cumulative output loss varies widely across countries. In Turkey, Mexico[5] and the Russian Federation, the total output loss was largest, amounting to 14.2%, 8.9% and 8.8% respectively. This is considerably larger than the equivalent output loss of 4.6% for the OECD as a whole. In the other emerging countries, the recession tended to be shallower than for the OECD average. Three countries, China, India and Indonesia, never went into recession – defined as having at least two consecutive quarters of negative output growth – although India's output growth dipped briefly into negative territory during 2008 Q4. However, looking at the cumulative output loss associated with recessions is potentially misleading as it does not take account of the very different starting points at which countries were hit by the global crisis. Indeed, all selected countries tended to outperform the OECD area in terms of their underlying GDP growth at the onset of the global economic downturn, with average growth rates ranging from 4.0% in Mexico to 11.4% in China during the three years before the crisis compared with 2.9% for the OECD area as a whole. As a result, the absolute output loss tends to understate the economic impact of the global crisis in the countries considered in this chapter.

Figure 2.1. **All countries have been affected to some extent by the global crisis of 2008-09**



a) The cumulative growth loss is defined as the total loss in output relative to the output level that would have been attained in the absence of the global crisis based on the pre-crisis trend growth. Trend growth is defined as the average annual growth rate over the period 2005-08. See Annex 2.A2 of OECD (2010c) for details on pre-crisis trends and the start and end of the slowdown in economic growth.

b) The cumulative output loss is defined as the total loss in output during the period in which output growth was negative.

Source: OECD calculations based on *OECD Main Economic Indicators* and World Bank for China.

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The economic impact of the global crisis is considerably larger when looking at the cumulative growth loss which takes account of cross-country differences in pre-crisis growth rates at the onset of the global crisis.[6] As before, this measure singles out the Russian Federation and Turkey as the most severely affected economies. Using GDP trends from 2005 Q1 to the start of the crisis as a benchmark, GDP was about 20% smaller in those countries than what would have been in the absence of the crisis. This is approximately 2.5 times the cumulative growth loss of the OECD as a whole which amounted to about 8%. The growth loss in Mexico was also substantially larger than that for the OECD, amounting to 13%. In Chile, South Africa and Brazil, the cumulative growth loss was similar to that of the OECD. In China, India and Indonesia, the growth output loss was relatively modest, ranging from 2% in Indonesia to 5% in China. As the cumulative growth loss provides a more accurate description of the economic impact of the global crisis, a similar method is also used to assess the cyclical impact of the crisis on labour markets in Section 1.2.

The remainder of this sub-section discusses how the global crisis was transmitted to emerging economies and why its economic impact has been so different across countries.[7] It will first discuss the main channels of transmission in the form of trade and financial linkages and conclude with a brief discussion of the macroeconomic policy response.

Export demand plummeted…

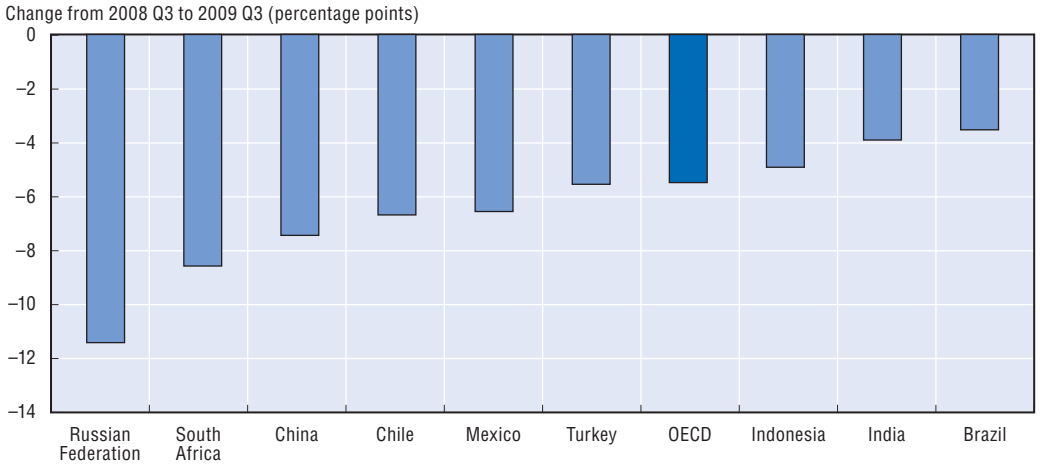
The first main channel through which the economic downturn in advanced economies has been transmitted to emerging economies is international trade. The importance of trade has increased across the globe in recent decades, but particularly so for the emerging economies. Due to a combination of political, economic and geographic factors, many of these economies were not closely linked to the world economy in the

early 1980s. However, as a result of significant political changes, increasingly export-oriented economic policies and declining trade costs, these countries have all become important trading economies. Yet, the increased integration in the world economy has also meant that they have become more vulnerable to adverse economic shocks in advanced countries. This may be particularly important for Chile and China where exports accounted for about 40% and 35% of GDP respectively in 2008, considerably above the OECD average, while the vulnerability to trade shocks of Brazil and India remains modest, with exports accounting for around 15% of GDP. While the ratio of exports to GDP may provide a first indication of the exposure of emerging economies to economic shocks in advanced economies, a full understanding of the role of trade also requires an examination of bilateral trade patterns and the domestic content of exports.[8]

As a result of the economic crisis in the US and other advanced economies, world trade plummeted during the last quarter of 2008 and the beginning of 2009. The contraction in world trade was more than eight times larger than that in world output. The proportional response of world trade to world demand also appears to have been substantially stronger than that observed in the past. This is attributed to the growing importance of international production networks and the impact of the credit crunch on trade finance (Cheung and Guichard, 2009; Freund, 2009). Consequently, foreign demand for domestic production has been hit hard in all emerging economies. In addition, large net exporters of natural resources and agricultural commodities such as Chile and the Russian Federation also suffered from a substantial deterioration in the terms of trade brought about by the fall in prices for primary commodities. Over the year to 2009 Q3, the decline in the value of exports in terms of 2008 Q3 GDP ranged from almost 4 percentage points in Brazil to more than 11 percentage points in the Russian Federation compared with almost 6 percentage points in the OECD area (Figure 2.2).[9] The relatively modest decline in Brazil, India and Indonesia reflects a combination of relatively low export openness at the onset of the crisis (particularly the former two) and relatively high importance of South-South

Figure 2.2. **Impact of the global financial crisis on exports**

Percentage of 2008 Q3 GDP



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

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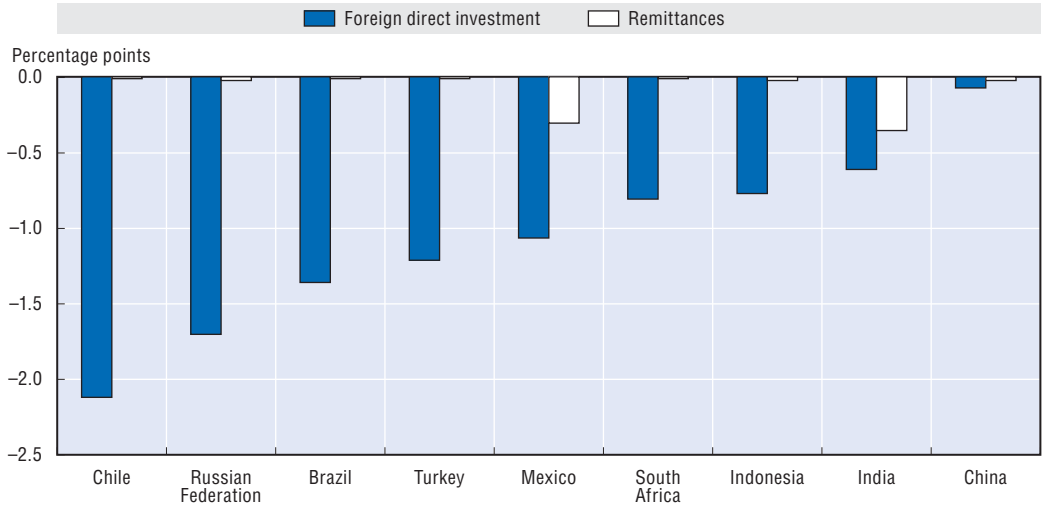
trade for those countries. Despite the sharp fall in world trade, world exports have rebounded fairly quickly.

… and credit has been severely restricted in some emerging economies

Financial linkages represent the second main channel through which the crisis was transmitted to emerging economies. While the direct effect of the credit crunch in advanced economies on the availability of domestic lending in emerging economies has been relatively modest due to the lack of exposure of domestic financial institutions to subprime mortgages and other complex derivatives, credit has been severely restricted in a number of emerging economies, due to "sudden stops", the rapid and drastic decline in international private capital inflows.[10] The largest proportional declines are observed for bank lending and portfolio investment (IMF, 2009a). However, even foreign direct investment inflows, which traditionally have tended to be less sensitive to the business cycle and tended to be the most important source of external finance in emerging economies before the crisis, have declined sharply between 2008 and 2009 in all countries except China (see Figure 2.3).[11] This is particularly important for Chile and the Russian Federation where FDI inflows as a percentage of 2008 GDP fell by around 2 percentage points, reflecting the relatively high importance of FDI for those economies before the crisis. In emerging Asia, the decline in the availability of external finance, as measured by FDI inflows, has been limited. These trends play an important role in explaining the steep decline in private sector investment and output growth.[12]

Figure 2.3. **Impact of the global financial crisis on foreign direct investment and remittances inflows**

Change from 2008 to 2009 as percentage of 2008 GDP



Source: World Bank staff estimates of remittances flows based on the International Monetary Fund's Balance of Payments *Statistics Yearbook 2008*; National Central Banks or UNCTAD estimates for FDI flows.

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International transfers in the form of remittances or public aid also declined during the economic downturn. While the overall importance of remittances in emerging economies in terms of GDP tends to be relatively limited, a decline in such transfers may have important distributional implications as they tend to be more important for poor households. The

World Bank estimates that remittances declined in all selected emerging economies between 2008 and 2009 (see Figure 2.3). The reduction in remittances inflows in terms of 2008 GDP was most important in India and Mexico, which are also the two emerging economies that relied most heavily on remittances inflows before the crisis. The recent decline stands in contrast to the experience in previous economic downturns during which migrants tended to increase remittances to support the incomes of their relatives. This reflects the global nature of the 2008-09 crisis, as migrants in advanced economies and their relatives in emerging economies are both suffering from the crisis.[13] Moreover, development aid may also be expected to decline. An obvious reason for this is that the level of official development aid (ODA) is tied to the level of GDP, which has declined in most donor countries. However, according to OECD estimates, several large donors are also expected to fall short in 2010 of their aid commitments made at Gleneagles in 2005, which may partly be a result of the large increase in fiscal deficits in these donor countries.

Macroeconomic stabilisation efforts prior to the crisis helped to dampen the impact of the global crisis

Most emerging economies considered in this chapter have made significant progress towards macroeconomic stability. This helped to dampen the economic impact of the global crisis. Low current account and fiscal deficits have helped to limit the reduction in capital inflows, re-establish financial stability and prevent wider systematic damage (IMF, 2009a). Moreover, low inflation levels at the onset of the crisis enabled a strong monetary policy response whereas relatively low fiscal deficits enabled countercyclical fiscal policies to operate. Compared with OECD countries, where policy interest rates soon approached zero, there has generally been more scope for monetary easing in emerging economies.[14] Table 2.1 provides an overview of the role of fiscal policy during the global crisis in the selected emerging economies. It shows that, while the role of counter-cyclical fiscal policy has tended to be more important in advanced economies, fiscal policy also has been

Table 2.1. **Fiscal policy during the global financial crisis**

	Overall fiscal balance			Overall change in fiscal balance from 2007					
				2009			2010		
	(Pre-crisis)	2009	2010	Total	Crisis-related discretionary measures	Other factors	Total	Crisis-related discretionary measures	Other factors
Brazil	–2.8	–3.8	–1.2	–1.0	–0.6	–0.4	1.6	–0.6	2.1
China	0.9	–3.9	–3.9	–4.8	–3.1	–1.7	–4.8	–2.7	–2.1
India	–4.4	–10.4	–10.0	–6.0	–0.6	–5.4	–5.6	–0.6	–5.0
Indonesia	–1.2	–2.6	–2.1	–1.4	–1.4	0.0	–0.9	–0.6	–0.2
Mexico	–1.4	–4.9	–3.7	–3.5	–1.5	–2.0	–2.3	–1.0	–1.3
Russian Federation	6.8	–6.6	–3.2	–13.4	–4.1	–9.3	–10.0	–1.3	–8.6
South Africa	1.2	–4.4	–4.7	–5.6	–3.0	–2.6	–5.9	–2.1	–3.8
Turkey	–2.1	–7.0	–5.3	–4.9	–1.2	–3.7	–3.2	–0.5	–2.7
Advanced economies	–1.9	–9.7	–8.7	–6.3	–1.9	–4.4	–6.5	–1.6	–4.8
Emerging economies	0.3	–5.1	–4.1	–5.4	–2.2	–3.2	–4.4	–1.6	–2.8

Note: Advanced economies: GDP PPP-weighted average of advanced G20 countries. Emerging economies: GDP PPP-weighted average for emerging economies in the G20.
Source: IMF (2009b).

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strongly counter-cyclical in emerging economies. The larger overall reduction in fiscal balances in advanced economies is likely to reflect the role of automatic stabilisers as the role of discretionary fiscal stimulus measures related to the crisis has tended to be somewhat more important, on average, in emerging economies. Discretionary fiscal stimulus packages have been particularly important in China, the Russian Federation and South Africa.[15] Compared with advanced economies, discretionary measures are more heavily weighted towards infrastructure (*e.g.* China and South Africa) and social transfers (*e.g.* the Russian Federation) and less towards personal income tax cuts (IMF, 2009b). Importantly in the context of this chapter, social spending levels have generally been maintained, although it is not clear to what extent social spending has also increased in proportion to the increase in needs (see Section 3).

1.2. The impact of the crisis on labour markets in emerging economies

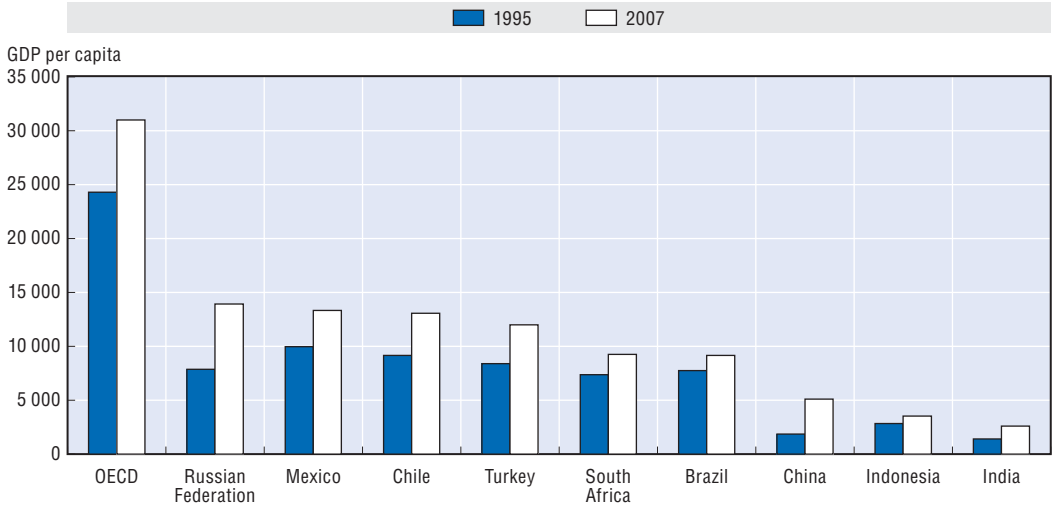
While the economic impact of the global crisis differs widely across the emerging economies considered in this chapter, they all have been adversely affected. This section focuses on the social implications of the crisis. It first discusses why workers in emerging economies may be more vulnerable to shocks than their counterparts in advanced economies. It subsequently proceeds with a discussion of the actual impact of the economic slowdown on labour markets in emerging economies.

Poverty remains worrisomely high in emerging economies despite good progress in recent years

The emerging economies considered in this chapter all have substantially lower levels of GDP per capita than the OECD area as a whole (see Figure 2.4). In the Russian Federation, the most developed of the emerging economies, GDP per capita amounted to just 45% of the OECD average (or slightly less than USD 14 000 at 2005 constant prices), while in India, the least developed of the selected countries, GDP per capita only amounted to 8% of the OECD

Figure 2.4. **GDP per capita is much lower in emerging economies than in the OECD area**

Constant dollars, PPP 2005



Source: World Bank, *World Development Indicators Database*.

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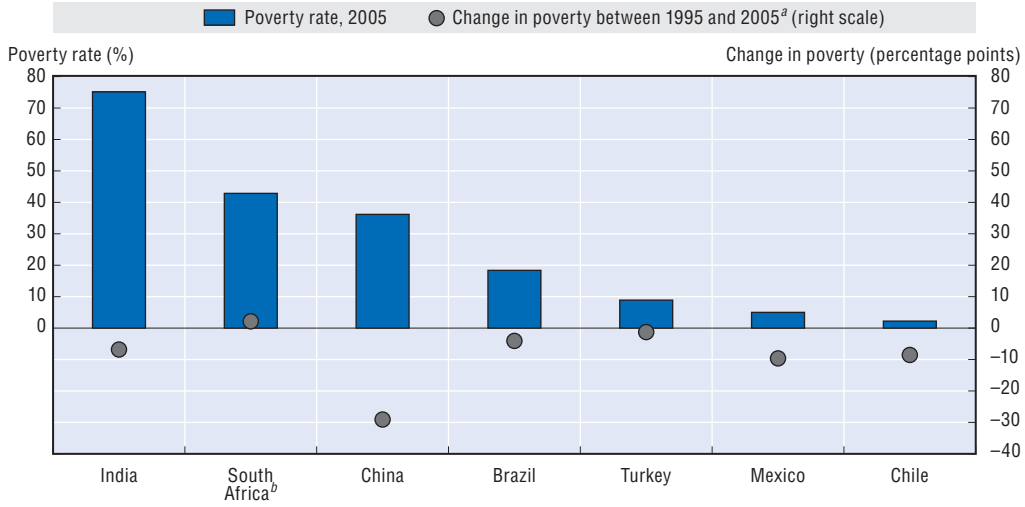
average (or USD 2 600). Nevertheless, most emerging economies have made significant progress during recent years. In China, GDP per capita increased by 175% over the period 1995-2007 (equivalent to 15% per year), raising its GDP per capita relative to the OECD from 8% in 1995 to 16% in 2007. In India and the Russian Federation, GDP per capita also increased rapidly by 86% and 77%, respectively (or 7% and 6% per year), while in Chile, Turkey and Mexico, it grew substantially more rapidly than in the OECD as a whole. In Brazil, Indonesia and South Africa, growth was somewhat slower than that of the OECD average.

High levels of *absolute poverty* provide another indication of the potential vulnerability of households in emerging economies to aggregate shocks as poor households tend to have a more limited ability to cope with adverse income shocks. Figure 2.5 presents the share of the population living on less than USD 2 a day, a standard benchmark of absolute poverty, in 2005, as well as the percentage-point change between 1995 and 2005. In 2005, absolute poverty was most widespread in India, South Africa and China where respectively 76%, 43% and 36% of the population was living below the poverty line. In Brazil and Turkey, absolute poverty also remains substantial with respectively 18% and 9% of the population living on less than USD 2 a day. In Chile and Mexico, absolute poverty is relatively limited with absolute poverty rates below 5%. Despite these often high levels of absolute poverty, all the emerging economies in Figure 2.5 but South Africa have made significant progress over the past decade. The reduction in absolute poverty in China has been spectacular. In just nine years, the proportion of the population living on less than USD 2 a day has declined from 65% to 36%.[16]

Figure 2.5. **Absolute poverty rates are high in some emerging economies**

Share of the population with an income of less than USD 2 a day



a) China: 1996-2005; India 1994-2005; Chile, Mexico, Turkey: 1994-2006.

b) Data refer to period 1995-2000.

Source: World Bank, *World Development Indicators Database*.

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The global financial crisis may reverse the positive trends in GDP per capita and poverty reduction that characterised most emerging countries since the early 1990s.[17] The World Bank (2009) estimates that an additional 120 million people may be pushed into absolute poverty by the end of 2010 in the developing world. Moreover, it is not necessarily the case that countries will automatically return to pre-crisis levels in poverty as the

economy recovers due to the presence of poverty traps. Families that fall into poverty may feel forced to take their children out of school or economise on preventive health care. As such decisions may be difficult to reverse, this could permanently compromise the future labour market prospects of children and the health situation of households (see Section 3). As a result, a temporary rise in poverty may have long-lasting effects for the welfare of households and the growth potential of the economy as a whole.

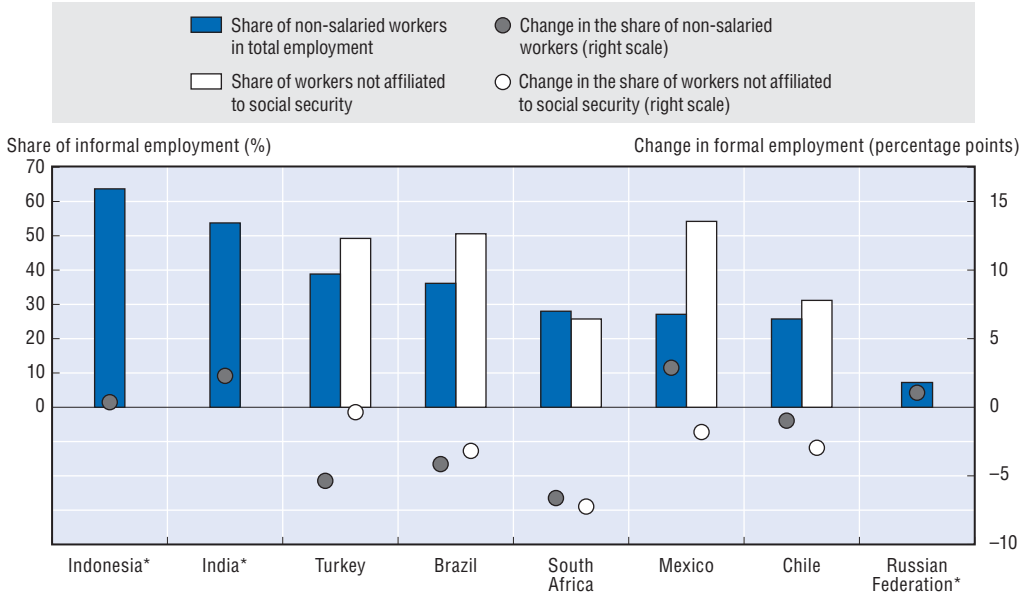
Large parts of the workforce are left unprotected by labour market institutions and social security

The second reason why the social impact may be particularly large in emerging economies is because of widespread *informal employment*. There is no universally accepted definition of informal employment (see Jütting and Laiglesia, 2009; OECD, 2004 and 2008a; and Perry *et al.*, 2007, for an overview). For the present purposes, informal employment is defined as "employment engaged in the production of legal goods and services where one or more of the legal requirements usually associated with employment (such as registration for social security, paying taxes or complying with labour regulations) are not complied with" (OECD, 2008a, p. 84). In the context of an economic downturn, the main concern with informal employment is that the needs of informal workers and their families are difficult to address with the main instruments of labour market and social policy (*e.g.* employment regulation, social assistance, unemployment insurance, and active labour market programmes).

In order to provide empirical content to the conceptual definition of informal employment presented above, two measures of informality are used in this chapter. The first measure focuses on *social security registrations*. This is the preferred definition for the purposes of this chapter as it gives an indication of the extent to which workers can access social security provisions when they confront adverse labour market outcomes.[18] The main limitation is that information on social-security registrations is not available for all countries. To address this shortcoming, a second definition is used based on the *occupational status of workers*, and in particular, the share of self-employed in total employment. While this definition is often used for cross-country comparisons, it only provides a very rough indication of the importance of precarious jobs in the economy.[19] Figure 2.6 presents the level of informality according to the two definitions in 2005, as well their evolution during the past decade. For details on the precise definitions for each country, see Annex 2.A3 of OECD (2010c).

Figure 2.6 confirms that informality is widespread in emerging economies irrespective of the particular measure used. The share of workers at the onset of the crisis not affiliated to any social security programme in total employment ranges from 26% in South Africa to 54% in Mexico, while the share of self-employment over the total ranges from 7% in the Russian Federation to almost 64% in Indonesia. There is some evidence of a decline in informality in recent years as illustrated by the decline in the share of workers not affiliated to any social security programme,[20] although the share of non-salaried workers has tended to increase in some countries.[21] The rise in the share of workers affiliated to social security programmes is encouraging in its own right as this means that an increasing share of the workforce will be entitled to social security benefits, but also may indicate that average job quality has increased as workers who are entitled to social security benefits also tend to benefit from better wages and working conditions. Indeed, the growing formalisation of emerging economies in recent years is likely to have contributed to the decline in poverty documented in Figure 2.5.

Figure 2.6. **Informal employment is widespread in most emerging economies**[a]



* Data on the number of workers affiliated to social security are not available in Indonesia, India and the Russian Federation.

a) Data refer from 1995 to 2005 for Brazil, 1996 to 2006 for Chile, 1994 to 2003 for urban areas in Mexico, 1994 to 2004 for India, 1996 to 2004 for Indonesia, 1996 to 2005 for Russia, and 2000 to 2005 for Turkey and South Africa.

Source: OECD calculation based on national labour force surveys: Brazil (PNAD), Chile (CASEN), Indonesia (SAKERNAS), Mexico (ENEU), Turkey (LFS), Russian Federation (LFS), South Africa (LFS) and India (Employment and Unemployment Survey of Households). For more details on the definitions used, see Annex 2.A3 of OECD (2010c).

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Bearing in mind the often widespread informality and persistent poverty among working households, aggregate labour market indicators hide significant differences among emerging economies and with respect to the OECD (see Table 2.2). In most emerging economies, the share of the working-age population in employment tends to be somewhat lower than that for the OECD as a whole and in some cases much lower (*e.g.* Turkey and India).[22] Lower employment rates typically reflect lower female participation in the labour force related to cultural norms and high fertility rates.[23] In most of the emerging economies considered here, unemployment rates tend to be similar or slightly higher than that of the OECD. A notable exception is South Africa where high and persistent unemployment presents a major social concern, with unemployment rates consistently above 20%.[24]

Cyclical unemployment increased in all emerging economies except Indonesia

In order to get an idea of the impact of the global financial crisis, Figure 2.7 represents the cyclical changes in the employment and unemployment rates during the slowdown in economic growth.[25] Cyclical changes are calculated as deviations from the pre-crisis trend over the period during which output growth declined. Annex 2.A2 in OECD (2010c) provides data on pre-crisis trends, cyclical changes in labour market outcomes during the growth slowdown, and the cyclical response in labour market outcomes to the slowdown in economic growth.

- All countries for which comparable data are available except Indonesia, where the economic impact of the crisis was marginal,[26] experienced a cyclical reduction in employment. The cyclical decline in employment has been particularly strong in South

Table 2.2. **Recent trends in labour market outcomes**

Population aged 15 and above, not seasonally adjusted

	Annual						Quarterly							
	1995	2000	2005	2007	2008	2009	2008 Q1	2008 Q2	2008 Q3	2008 Q4	2009 Q1	2009 Q2	2009 Q3	2009 Q4
	Panel A. **Employment rate**													
OECD average	55.0	56.3	56.9	57.7	57.8	56.1	57.1	57.9	58.0	57.3	56.0	56.3	56.3	55.8
Brazil[a]	64.2	61.1	62.9	63.0	63.7	. .	56.9	57.4	57.9	58.7	56.8	56.7	57.4	57.8
Chile	50.8	49.1	50.4	51.0	51.7	50.5	52.1	51.6	51.3	51.8	51.3	50.3	49.8	50.6
China	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .
India	47.7	46.8	48.0	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .
Indonesia	. .	. .	60.0	60.7	61.6	. .	61.6	61.6	61.5	61.8	62.1	. .	. .	. .
Mexico	54.8	58.1	57.2	58.0	57.7	56.7	57.7	58.3	57.6	57.0	56.2	56.4	56.9	57.4
Russian Federation	59.0	58.5	61.1	63.0	63.4	62.1	62.1	64.0	64.5	63.1	60.6	62.0	63.3	62.4
South Africa	. .	45.7	43.4	44.5	44.6	42.5	44.5	44.7	44.3	44.8	44.0	43.0	41.3	41.6
Turkey	50.4	46.7	41.5	41.5	41.7	41.2	39.6	42.9	43.2	41.1	38.8	41.4	42.7	41.8
	Panel B. **Unemployment rate**													
OECD average	8.1	6.6	7.1	5.8	5.8	7.8	5.9	5.7	5.7	6.1	7.6	7.8	7.9	8.1
Brazil[a]	6.0	9.6	9.3	8.1	7.1	. .	8.4	8.1	7.8	7.3	8.6	8.6	7.9	7.2
Chile	7.3	9.7	9.2	7.1	7.8	9.6	7.4	8.0	8.1	7.5	8.6	10.2	10.6	9.2
China[b]	. .	8.7	8.1	6.1	5.7	. .	. .	. .	. .	. .	. .	. .	. .	. .
India	2.7	2.8	3.2	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .
Indonesia[c]	. .	. .	10.8	9.3	8.4	. .	8.5	8.4	8.4	8.3	8.1	. .	. .	. .
Mexico	6.2	2.5	3.6	3.7	4.0	5.5	3.9	3.5	4.2	4.3	5.0	5.2	6.3	5.3
Russian Federation	8.3	10.5	7.6	6.1	6.4	8.4	6.7	5.7	5.9	7.1	9.1	8.5	7.8	8.0
South Africa	. .	23.3	23.9	22.3	22.9	24.0	23.5	23.1	23.2	21.9	23.5	23.6	24.5	24.3
Turkey	7.3	6.5	10.6	10.3	11.0	14.0	11.5	9.5	10.2	12.6	15.8	13.8	13.2	13.2
	Panel C. **Participation rate**													
OECD average	59.9	60.1	60.5	61.0	61.1	61.3	60.5	61.3	61.4	60.9	60.5	61.0	61.1	60.9
Brazil[a]	68.3	67.7	69.3	68.6	68.6	. .	62.1	62.4	62.8	63.3	62.1	62.0	62.4	62.3
Chile	54.8	54.4	55.5	54.9	56.0	55.9	56.2	56.1	55.9	56.0	56.1	56.1	55.7	55.7
China	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .
India	49.0	48.1	49.6	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .	. .
Indonesia	. .	. .	67.2	66.9	67.3	. .	67.3	67.3	67.2	67.4	67.6	. .	. .	. .
Mexico	58.9	59.7	59.3	60.2	60.0	60.0	60.1	60.4	60.2	59.5	59.2	59.4	60.7	60.6
Russian Federation	65.1	65.5	65.8	67.1	67.7	67.8	66.8	67.6	68.5	67.8	66.9	67.8	68.7	67.8
South Africa	. .	59.5	56.9	57.3	57.8	55.9	58.2	58.1	57.7	57.4	57.5	56.3	54.8	55.0
Turkey	54.4	49.9	46.4	46.2	46.9	47.9	44.8	47.3	48.2	47.0	46.1	48.1	49.2	48.2

a) Quarterly data refer only to the metropolitan areas and are therefore not representative of the entire labour market. Annual data come from a different source and refer to the entire economy.

b) The unemployment rate is measured as a percentage of the estimated urban non-agricultural labour force.

c) Data for Indonesia are not harmonised. The unemployment rate is higher than it would be based on the harmonised definition as it includes discouraged workers.

Source: National labour force surveys. Data for Mexico prior to 2005 for employment and participation come from the *SEDLAC Database*. Annual data for Brazil come from the PNAD (*Pesquisa Nacional por Amostra de Domicilios*); quarterly data come from PME (*Pesquisa Mensal de Emprego*).

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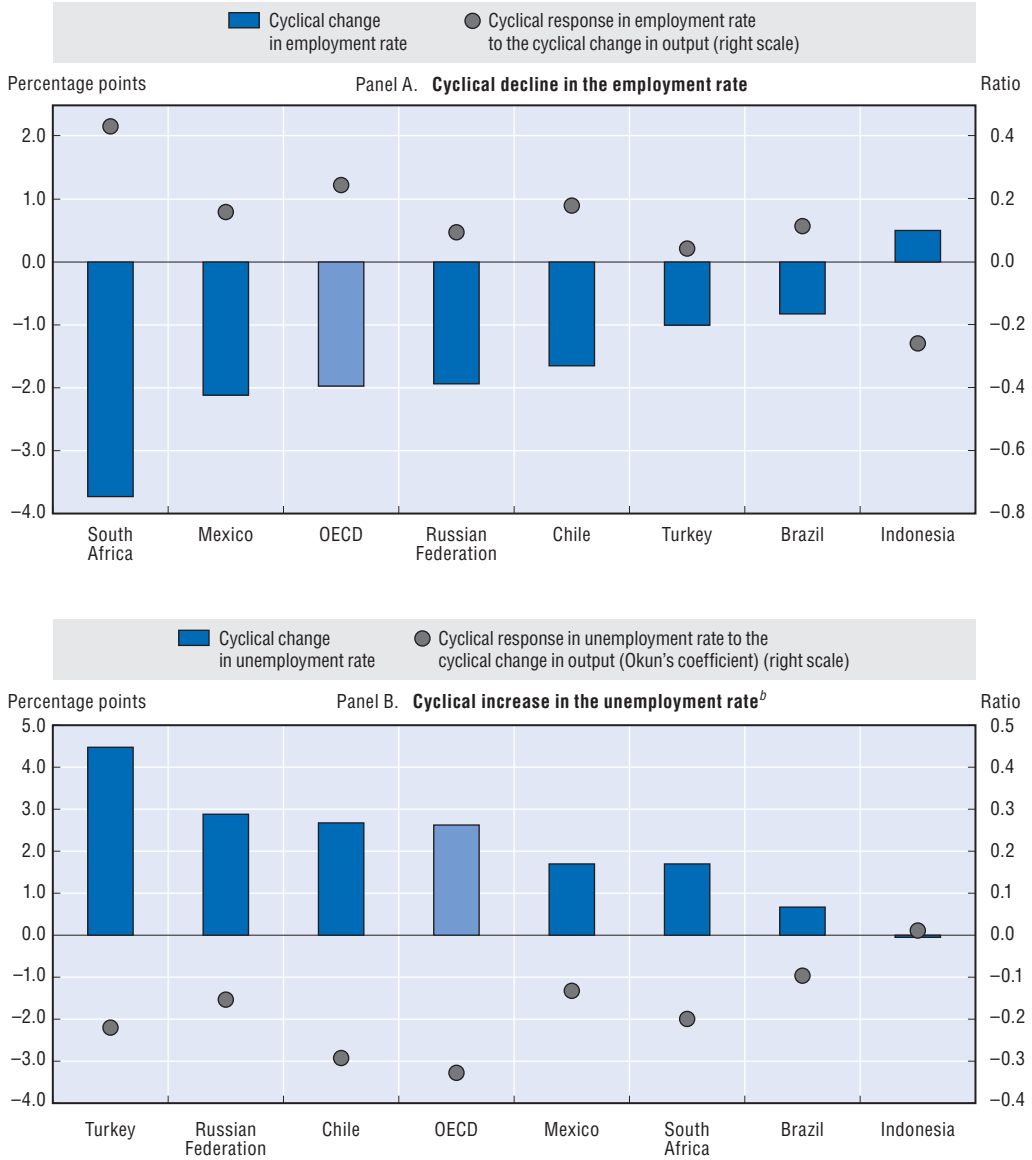
Africa, where the decline was largest in absolute terms (*e.g.* over 3.5 percentage points) as well as relative to the size of the economic shock. In Mexico, the absolute decline in the cyclical employment rate was slightly above that of the OECD average, while the decline relative to the size of the shock was somewhat smaller. In all the other emerging economies for which comparable data are available, the decline in the cyclical

Figure 2.7. **Impact of the growth slowdown on employment and unemployment**[a]



a) The cyclical change in output corresponds to the cumulative growth loss documented in Figure 2.1. Cyclical changes are calculated over the economic slowdown period with respect to the pre-crisis trend. Data are seasonally adjusted.

b) Harmonised unemployment rates except for Indonesia for which the national definition is used that considers discouraged workers as unemployed.

Source: OECD calculations based on *OECD Main Economic Indicators Database* and national labour force surveys.

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employment rate was smaller than that in the OECD area, both in absolute terms and relative to the size of the shock.

- All countries in Figure 2.7 that experienced a cyclical decline in the employment rate also experienced a cyclical increase in the unemployment rate. However, there is no strong correspondence between increases in the employment rate and decreases in the unemployment rate. To a large extent this reflects the role of changes in labour force

participation. For example, in South Africa and Mexico, the cyclical increase in the unemployment rate is rather small compared with the rise in the employment rate. This may reflect the role of "discouraged-worker effects", which arise when workers withdraw from the labour force because of lacking employment opportunities, thereby reducing the impact of the crisis on unemployment. By contrast, Turkey which experienced the weakest response in the employment rate to the growth slowdown, suffered from a cyclical rise in the unemployment rate of 4.5 percentage points, the largest rise among the emerging economies considered here. In part, this may reflect the importance of "added-worker effects" which arise when additional workers enter the labour force to compensate for the loss of household income, thereby magnifying the impact of the crisis on unemployment. However, it also reflects the relatively low level of labour force participation at the onset of the crisis.

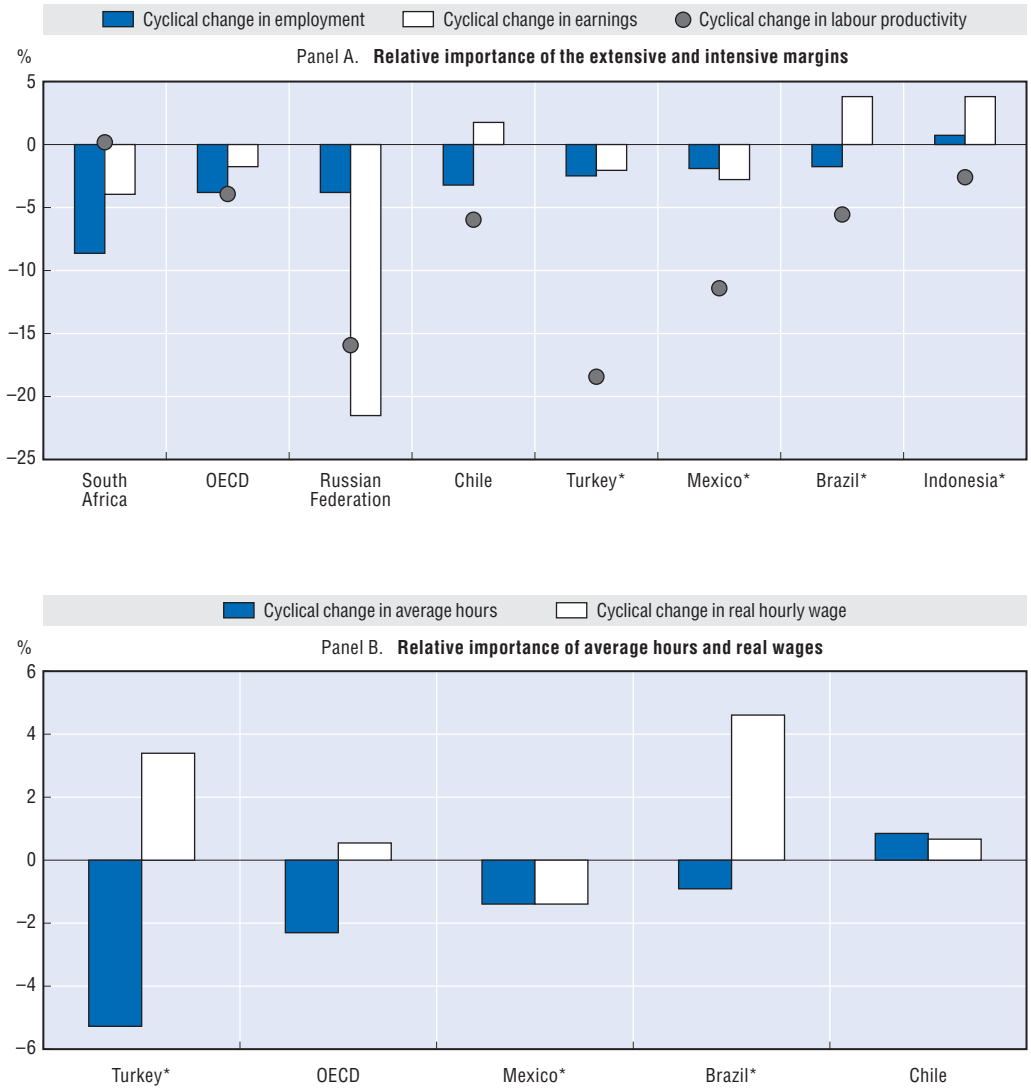
- The relatively weak response of the employment and unemployment rates to the fall in aggregate demand in the majority of the emerging economies relative to that in the OECD is likely to reflect the relatively greater importance of adjustment on the earnings margin.[27] In countries where unemployment insurance does not exist or its coverage is poor (see Section 3), job losers in the formal sector may move into informal employment in order to maintain some income during the slowdown. However, it may also reflect the relative importance of adjustments on the *intensive* margin such as reductions in average hours and pay in accommodating the slowdown in output growth. As a result, changes in employment and unemployment may hide a significant part of the labour demand adjustment that has taken place in emerging economies.[28]

In a number of emerging economies cyclical adjustments in real earnings have been quite important

The relative importance of adjustments on the employment and earnings margins differs considerably across countries (Figure 2.8, Panel A). In some countries, the cyclical change in real earnings relative to that of employment has been more important than in the OECD (*e.g.* Russian Federation, Mexico, Turkey and South Africa),[29] while in other emerging economies most of the adjustment appears to have taken the form of job losses (*e.g.* Chile, Brazil). The absence of a systematic pattern across emerging economies during the 2008-09 crisis is noteworthy. During previous crisis episodes a substantial part of the adjustment in these economies has tended to take place on the earnings margin. This largely reflects the fact that most previous crisis episodes in those countries were associated with high price inflation, which enhanced the scope for adjustment on the earnings margin without requiring a reduction in nominal wages.[30] As a result, in the past, labour productivity was not only more variable over the cycle, but earnings were also more responsive to changes in labour productivity. The relatively smaller scope for adjustments on the earnings margin during the 2008-09 crisis may have increased the relative importance of adjustments on the employment margin compared with the past. Nevertheless, the relative importance of cyclical adjustments earnings in some countries suggests that the policy response should not just focus on job losers but also on workers who managed to stay in employment during the slowdown (not necessarily in the same job), but have seen their incomes substantially reduced.[31]

The cyclical changes in earnings can be decomposed in the cyclical reduction in average hours worked and the cyclical reduction in average hourly wages. These are represented in Panel B of Figure 2.8. The role of changes in average hours worked in labour

Figure 2.8. **Adjusting the wage bill to the economic slowdown**[a]



* Data for earnings and hours only refer to manufacturing.

a) Cyclical changes are calculated over the economic slowdown period with respect to the pre-crisis trend. Data are seasonally adjusted.

Source: OECD calculations based on national sources.

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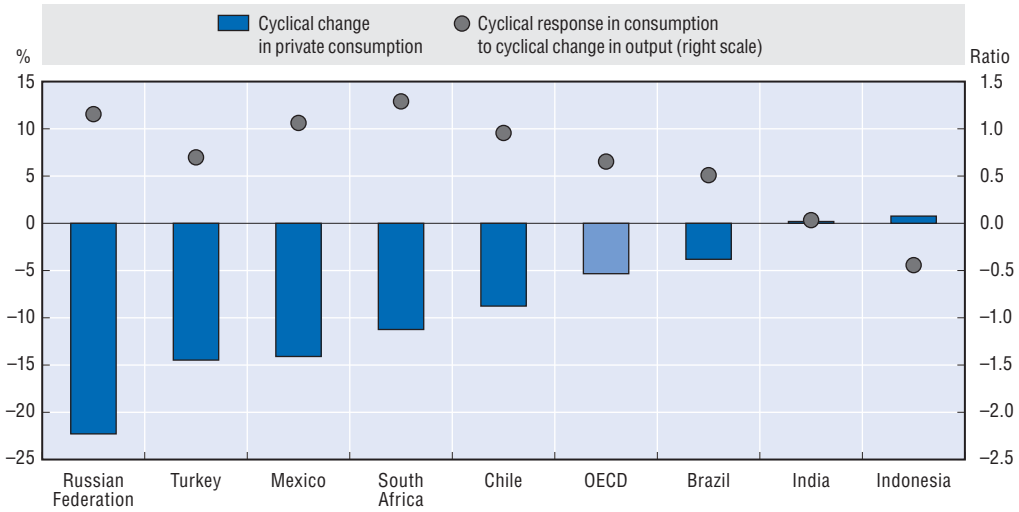
demand adjustment differs greatly across the countries for which comparable data are available. In Turkey, the cyclical reduction in average hours during the economic slowdown amounted to more than 5%, more than double the average cyclical decline in the OECD area, while average hours worked also declined in Mexico and Brazil.[32] Except for Mexico, where the cyclical decline in average hourly wages was similar to that in average hours worked, average hourly wages increased relative to the pre-crisis trend in the emerging economies for which comparable data are available as well as in the OECD area. This is most likely to reflect a change in the composition of the workforce due to the concentration of job losses among low-wage workers.

Job losses and reductions in real earnings have important social implications for workers and their families who see their incomes reduced. It is still too early to assess to what extent jobs losses and lower earnings have had an impact in reversing the recent progress in reducing absolute poverty and changing recent trends in inequality. One may be able to get a first indication of the impact of the crisis on poverty by looking at the impact of the global crisis on average consumption trends.[33] Figure 2.9 shows that consumption growth has suffered substantially in a number of emerging economies. Consumption suffered most in the Russian Federation, Turkey and Mexico where the economic impact of the crisis was most severe. In South Africa and Chile, consumption also declined more than for the OECD average, while in Brazil and India the decline was very small and in Indonesia consumption continued to increase. However, a full understanding of the implications of the crisis for poverty would also require information about the way the *distribution* of consumption growth has been affected by the slowdown.

Figure 2.9. **Cyclical changes in consumption during the crisis**[a]



a) Cyclical changes are calculated over the economic slowdown period with respect to the pre-crisis trend. Data are seasonally adjusted.

Source: OECD calculations based on *OECD Main Economic Indicators* and *National Quarterly Accounts Databases*.

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The impact of the crisis on the labour market may be expected to be highly uneven across sectors and economic groups. The discussion in Section 1.1 suggests that the direct impact of the slowdown may be concentrated among formal workers as such workers represent a disproportionate share of the workforce in exporting firms and firms with high levels of leverage. To the extent that such workers tend to have better access to social security provisions, this may help to reduce the impact of the global crisis on average consumption relative to previous crisis episodes. However, it also raises important questions about the effectiveness of social security programs in supporting formal workers who lose their jobs or see their earnings seriously reduced. The indirect effects beyond exporting or leveraged firms are more difficult to predict. However, the social consequences are potentially important as the scope of formal mechanisms to mitigate the impact of shocks among informal workers is much more limited. Given the precariousness of informal work, it will be crucial to ensure that informal workers do not fall back into

poverty. It will be a major challenge to ensure that both the needs of those most affected and those of the most vulnerable are addressed effectively.

2. The impact of previous crisis episodes on labour markets and demographic groups

The 2008-09 slowdown, as described in the previous section, is expected to have had profound effects on labour markets in emerging economies. Unfortunately, no up-to-date data exist that provide information on the way job quality and formal employment have evolved during the crisis or that allow one to identify which population groups have been hurt the most. One may, however, be able to get some handle on these issues by looking at previous crisis episodes. Although there are important differences between past crises and the recent one, careful comparisons can help identifying the mechanisms through which demand shocks are transmitted to the labour market and identify the groups that are the most vulnerable.

The analysis in this section focuses on recent economic downturns in five out of the nine countries covered in this chapter.[34] The objective of this section is three-fold: *i)* to discuss the nature of previous crisis episodes and their implications for labour markets; *ii)* to document which groups are most vulnerable in normal times and which groups were most affected in past crises; and *iii)* to simulate the possible impact of the current crisis on the share of *formal* employment in total employment by population group.

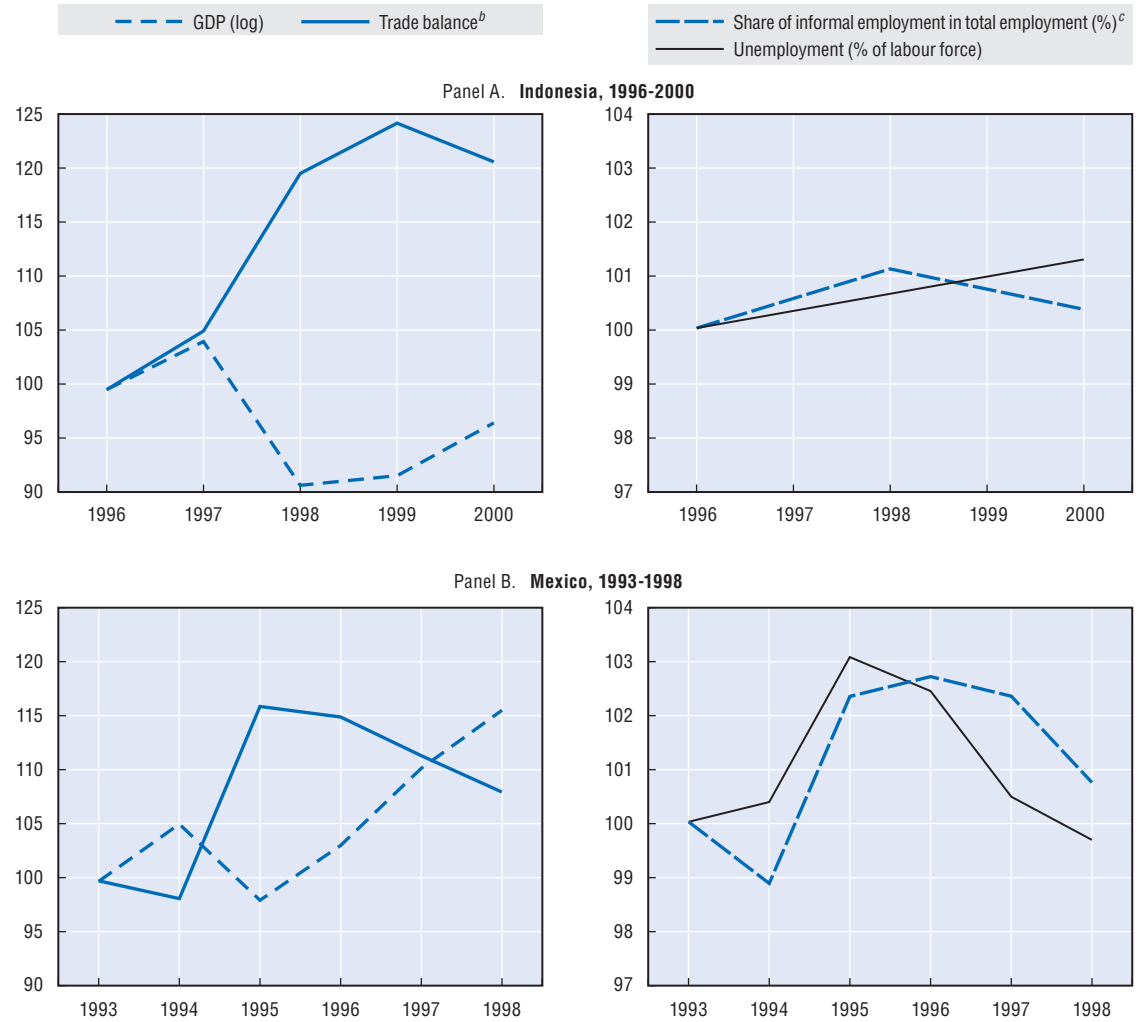
2.1. How did past crisis episodes affect aggregate labour market outcomes?

As the current crisis originated from abroad, it is quite different in nature from past demand shocks experienced by many of the emerging economies over the past decade which had primarily internal origins. Indeed, the crises in the mid- to late 1990s in Brazil, Chile, Indonesia and Mexico, were balance-of-payments crises triggered by broader economic developments in Asia in the first three, and domestic imbalances in Mexico. Importantly, all these crises resulted in large currency devaluations, resulting in high inflation and a boost to net exports. The left panels of Figure 2.10 show that the declines in aggregate demand between 1997 and 1998 in Indonesia and between 1994 and 1995 in Mexico were both associated with an improvement in the trade balance. A similar pattern is observed during previous crises in Brazil, Chile and Turkey (see Annex 2.A4 of OECD, 2010c).

Past crises have had profound effects on labour markets in emerging economies, which can be summarised as follows:

- Financial crises hit first cyclical sectors, such as construction and manufacturing, and were associated with increases in unemployment. The magnitude and duration of the impact on unemployment varied greatly across countries (see the right panels of Figure 2.10 for Indonesia and Mexico and Annex 2.A4 of OECD 2010c, for Brazil, Chile and Turkey). While Chile, Mexico and Turkey experienced substantial increases in unemployment, in Indonesia and Brazil, the demand shock translated into only mild increases in unemployment.[35]
- The share of *informal* employment in total non-primary sector employment increased in all countries.[36] It increased substantially in Mexico and Turkey and moderately in Brazil, Chile and Indonesia during the years following the economic downturn. Among emerging economies, Mexico experienced the most important and persistent rise in the

Figure 2.10. **The Indonesian and Mexican 1990s crises**[a]



a) Percentage change for GDP and percentage-point change for the other three measures. Base year is 1996 for Indonesia and 1993 for Mexico.

b) Trade balance is defined as net exports over total trade.

c) The non-primary sector is excluded for the measurement of informal employment. Informal employment is defined on the basis of social security coverage for Mexico and as the share of the self-employed and non-paid workers in total employment for Indonesia. See Annex 2.A3 of OECD (2010c) for more details on the definition of informal employment.

Source: GDP data from the *OECD Main Economic Indicators Database*; labour market statistics are OECD Secretariat calculations based on SAKERNAS (1996, 1998 and 2000) and ENEU (1993-98) microdata for Indonesia and Mexico, respectively.

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share of workers not covered by social security as well as in the share of the self-employed in total employment.[37]

- In countries where past crises were accompanied by currency devaluations and high inflation, the adjustment through declines in real wages was relatively more important than that through changes in (un)employment. This was especially the case in Indonesia and Mexico, where real wages declined by 30% and 13% between 1997 and 1998 and between 1994 and 1995, respectively (Dhanani *et al.*, 2009 on Indonesia; and McKenzie, 2003 on Mexico).

- Part of the adjustment operated through declines in hours worked. Average hours fell as a result of the Asian crisis in Indonesia, with the proportion of those working less than 35 hours increasing from 35.8 to 39.1% in 1998 (Dhanani *et al.*, 2009).

The recent global crisis and past crises both represent substantial reductions in aggregated demand associated with a credit crunch – even if for different reasons – but differ in one important dimension: previous crisis episodes were balance-of-payments crises, whereas the current crisis is not. This has two important implications. First, the global crisis in emerging economies is not systematically associated with higher levels of price inflation, as was the case during balance-of-payments crises in the past. This is likely to reduce the scope for adjustment on the wage margin and may have increased the role of other margins of adjustment (*e.g.* employment reductions, formal job losers moving into informal jobs, average hours reductions). Second, the sharp reduction in external demand combined with the absence of large currency devaluations/depreciations during the global crisis in emerging economies implies that the tradable sector has been hit much harder during this crisis than during previous crisis episodes (see Section 1).[38] As workers in the tradable sector are much more likely to be formal than workers in the rest of the economy (see Annex 2.A4 of OECD, 2010c), this suggests that the adverse impact of the global crisis on the share formal employment in the total may be even larger during the recent downturn than during the earlier episodes described above.

2.2. Which groups were most vulnerable and which groups most affected during previous crises?

This section uses historical data for past recessions to assess which population groups tend to have the weakest labour market performances and, as a result, may be most vulnerable to negative income shocks and which population groups are most sensitive to the business cycle in terms of their labour market outcomes.

Which groups are the most vulnerable in terms of their initial labour market position?

In order to identify the most vulnerable groups in terms of their initial labour market position, Figure 2.11 presents data on the main labour market outcomes for different population groups in emerging economies, *e.g.* formal employment, informal employment, unemployment and inactivity. Population groups are defined by age, education, gender and rural/urban location.[39] For expositional purposes, the figure represents averages across three countries: Brazil, Chile and Mexico.[40]

- *Gender*. Similar to the situation in some OECD countries, women in emerging economies face barriers to employment. Not only do they have a higher probability of being out of the labour force relative to men, but they are also more likely to have an informal job when employed. Moreover, Chen *et al.* (2004) argue that they tend to be more represented in the lower segment of the informal sector, implying lower earnings relative to informal male workers. In addition, subcontracting, especially to home-based workers, may further contribute to the lower coverage of social protection among women and their limited protection by labour laws.[41]
- *Age*. As in OECD countries, youth in emerging economies fare worse than prime-age and older persons in terms of their labour market outcomes. Youth have the highest unemployment and inactivity rates compared with prime-age and older workers. In countries with a small formal sector, many youth are queuing for formal jobs and, during the wait, are often pushed into precarious and informal employment.

Figure 2.11. **Labour market performance across different population groups**[a]
(Brazil, Chile and Mexico)

a) Samples include persons aged 15-64. The three educational groupings are defined in Annex 2.A1 in OECD (2010c). Reported data are averages across the years and countries considered. The data on rural and urban locations are based only on Brazil and Chile. The definitions of formal and informal employment are based on social security coverage (see Annex 2.A3 of OECD 2010c, for details).

Source: OECD estimates based on PNAD (1990, 1992-93, 1995-99 and 2001) for Brazil, CASEN (1991, 1992, 1996, 1998, 2000, 2003 and 2006) for Chile, and ENEU (1993-98) for Mexico.

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- *Skill*. The low- and semi-skilled are more likely to be inactive relative to the high-skilled, and also have lower employment rates. Moreover, the probability of being employed in an informal job decreases strongly with higher skills.
- *Location*. Workers in rural areas face lower unemployment rates compared with their urban counterparts but substantially higher rates of informality.

In sum, women, youth, and the low-skilled tend to have weaker labour market outcomes compared with other groups. As a result, such individuals are more likely to be poor and are more vulnerable to income shocks. However, due to the relatively weaker level of labour market engagement, they may also be less exposed to cyclical fluctuations in the labour market, especially if these are concentrated in the formal sector.

Which groups were affected most during past crises?

In order to identify which groups were affected most during previous crises, this section documents the business-cycle sensitivity of different population groups in terms of various labour market outcomes. Business-cycle sensitivity is measured by relating the time variation in labour market outcomes to the time variation in economic conditions at the regional level within a country.[42] The analysis focuses on regional demand shocks rather than national ones to ensure sufficient variation in the data. This is appropriate in the present context as the focus is on large emerging economies, with substantial regional differences in economic structure and labour market conditions, which implies that the magnitude of a demand shock can vary dramatically across regions. As above, socio-demographic groups are identified on the basis of gender, age, education and location. The analysis covers Brazil, Chile and Mexico (for more details on the data and the years included in the analysis, see Annex 2.A1 in OECD, 2010c).[43] Table 2.3 summarises the

Table 2.3. **How sensitive to the business cycle are the labour market outcomes of different groups?**[a]

Sensitivity of labour market outcome to GDP for:	Employment	Unemployment	Inactivity	Share of formal non-primary employment[b]
		Brazil		
Population	0.059	–0.007	–0.045	0.157**
Men	0.039*	–0.009	–0.030**	0.163**
Women	0.058	–0.006	–0.043	0.140**
15-24	0.060	0.004	–0.051	0.274***
25-54	0.063	–0.010	–0.046*	0.103**
55-64	0.059	–0.019	–0.040	0.161*
Low-skilled	0.099*	–0.015	–0.078*	0.168**
Semi-skilled	0.021	0.001	–0.015	0.103**
High-skilled	0.004	0.004	–0.006	0.090*
		Chile		
Population	0.078	–0.057*	–0.019	0.064
Men	0.044	–0.028	–0.008	0.092
Women	0.094	–0.117**	–0.026	0.019
15-24	–0.033	–0.044	0.064	0.353*
25-54	0.121	–0.071*	–0.041	–0.020
55-64	0.178	0.066	–0.191	0.465**
Low-skilled	0.068	–0.069	0.012	0.161
Semi-skilled	0.088	–0.048	–0.052	0.057
High-skilled	0.096	–0.060	–0.031	–0.069
		Mexico		
Population	0.029	–0.083***	0.043	0.344***
Men	0.088**	–0.074***	–0.011	0.354**
Women	–0.012	–0.097*	0.060	0.332***
15-24	–0.027	–0.141*	0.111	0.422***
25-54	0.104	–0.076***	–0.033	0.367***
55-64	0.034	–0.009	–0.030	0.108
Low-skilled	–0.104	–0.053	0.161*	0.324***
Semi-skilled	0.056	–0.116***	0.035	0.466***
High-skilled	0.109	–0.030	–0.067	0.181

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

a) Each cell in the table corresponds to a separate regression of the outcome of interest on regional GDP, of which only the marginal effect on the regional GDP variable is reported. In addition to regional GDP each regression controls for education, age, gender, a rural dummy (for Brazil, Chile and Indonesia), time and region dummies. The analysis is conducted at the individual level with samples including persons aged 15-64. Standard errors have been corrected for clustering at the regional level. The three broad educational groupings are defined in Annex Table 2.A1.2 in OECD (2010c).

b) Formal employment is defined on the basis of social security coverage. See Annex 2.A3 in OECD (2010c) for more details.

Source: OECD estimates based on the PNAD (1990, 1992-93, 1995-99 and 2001) for Brazil, the CASEN (1991, 1992, 1996, 1998, 2000, 2003 and 2006) for Chile, and the ENEU (1993-98) for Mexico.

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estimated level of business-cycle sensitivity for each group in terms of different labour market outcomes.

- In all three countries, employment is found to be pro-cyclical, as is the case in more advanced economies with small informal sectors and more effective social safety nets. However, the estimated coefficients tend to be statistically insignificant. This, however, hides significant differences in the business cycle sensitivity of formal *versus* informal

employment. Indeed, formal employment is found to be strongly pro-cyclical in both Brazil and Mexico.[44] Unemployment is found to be counter-cyclical as was expected.

- Despite certain differences in the results by population group for the different countries, certain common patterns are found. Overall, the most vulnerable groups in normal times are also those that are most hurt by downturns, especially in Brazil and Mexico. For instance, youth, semi-skilled and women's unemployment in Mexico, women's unemployment in Chile and employment and participation of the low-skilled in Brazil are more sensitive to changes in GDP relative to the population as a whole. Moreover, in Brazil and Mexico, the share of formal employment in total employment is more sensitive to the cycle for youth relative to the population as a whole. In Chile, the share of formal employment is more sensitive for both young and older workers relative to total population.

Overall, the evidence suggests that already disadvantaged groups, such as youth and the low- or semi-skilled, are also most likely to enter into informal employment in an economic slowdown.[45] New entrants into the labour market, such as youth, have smaller chances of finding employment in the formal sector in times of crisis, because of the low hiring rates and the strong competition they face from more experienced and qualified job seekers (see Maloney, 1999, on Mexico). This evidence is even more worrying considering that the probability of leaving informal employment declines over time, suggesting the existence of an "informality trap", as has been found for Brazil by Szerman and Ulyssea (2006). These results for the emerging economies are in many ways similar to those found for the OECD countries, pointing to youth and the low-skilled as the demographic groups that are most likely to be adversely hit by the economic slowdown (OECD, 2009a).

2.3. The implications of past crisis episodes for the crisis of 2008-09

To simulate the impact of the crisis on the evolution of the share of formal employment during the period 2008-09, account is taken of both the overall economic impact of the global crisis (this is referred to as the "scale effect") and the sectoral distribution of the shock (the "trade effect"). The scale effect measures the impact of the overall contraction in GDP on the share of formal employment under the assumption that the shock is evenly distributed between the tradable and the non-tradable sector. In practical terms, the scale effect can be calculated by multiplying the marginal effect of a 1% increase in GDP on the overall share of formal employment as documented in Section 2.2 by the total change in GDP over the period of interest. The trade effect measures the impact of the crisis on the share of formal employment that can be attributed to the sectoral bias of the shock.[46] This requires information for the tradable and non-tradable sectors on the probability of being formally employed as well as on the sensitivity of workers to economic shocks. This information is reported in Annex 2.A4 of OECD (2010c) and provides the following insights:

- All population groups are more likely to have a formal contract when employed in the tradable sector. However, the effect of being employed in the tradable sector for the probability of being formally employed differs across population groups and is greater for younger and less skilled population groups. This implies that the different sectoral impact of the global crisis compared to previous crisis episodes may be particularly relevant for youth and low-skilled workers.
- The share of formal employment in total employment in the tradable sector is much more sensitive to change in the business cycle than in the non-tradable sector.[47] This

implies that a greater the concentration of the shock in the tradable sector will magnify the adverse impact of the crisis on the share of formal employment.

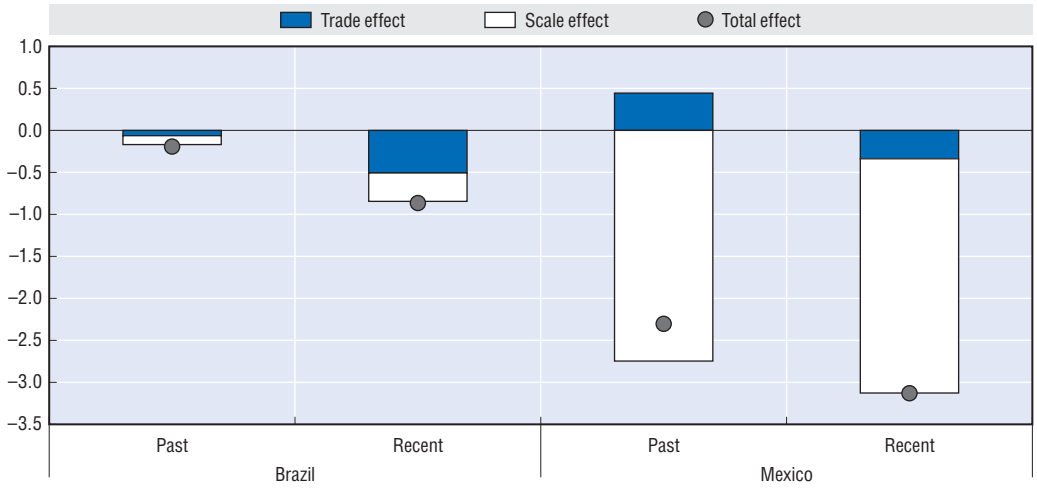
The simulation analysis is limited to Brazil and Mexico, the only two countries for which it has been possible to accurately identify the effects of aggregate shocks to the share of formal employment. In order to emphasise the nature of the global crisis, the simulated impact of the crisis of 2008 and 2009 is compared respectively with the Tequila crisis in Mexico (1994-95) and the crisis of 1998-99 in Brazil. The aggregate results are reported in Figure 2.12.

- The crisis of 2008 and 2009 is likely to have had a negative impact on formal employment in both Brazil and Mexico. More specifically, the simulations suggest that the share of formal employment may have declined by almost one percentage point in Brazil and over three percentage points in Mexico.
- The simulated negative impact on the share of formal employment is much larger during the 2008-09 crisis than during previous crisis episodes. In Brazil, this reflects both the larger size of the shock (*e.g.* the "scale" effect) and the substantially larger concentration of the shock in the tradable sector (*e.g.* the "trade" effect). In Mexico, the size of the shock is similar in the two crisis episodes. The larger negative impact in the recent crisis, therefore, exclusively reflects the role of the trade effect, which was positive during the crisis of 1994 and 1995 and negative during the most recent crisis.

The results from the simulation exercise by population group are reported in Figure 2.13.

Figure 2.12. **Simulated aggregate impact of the crisis of 2008-09 on formal employment in historical perspective**

Percentage point change in the share of formal employment in total employment one year after the peak in output



Notes: The "scale" effect refers to the impact of a crisis on the share of formal employment that is due to the economy-wide change in demand. The "trade" effect refers to the impact of the crisis on formal employment due to the sectoral distribution of the demand shock as well as the pre-crisis sectoral composition of the economy. The total effect refers to the sum of the scale and the trade effects.
"Recent" refers to changes in demand and sectoral output shares in the most recent crisis between 2008 and 2009. "Past" refers to changes in demand and sectoral output shares in earlier crisis episodes. For Brazil, this corresponds to the annual change between 1998 and 1999; for Mexico this corresponds to 1994-95.
Formal employment is defined on the basis of social security coverage (see Annex 2.A3 of OECD, 2010c, for more details on the definition).

Source: OECD estimates based on the PNAD (1990, 1992-93, 1995-99 and 2001) for Brazil and the ENEU (1993-98) for Mexico.

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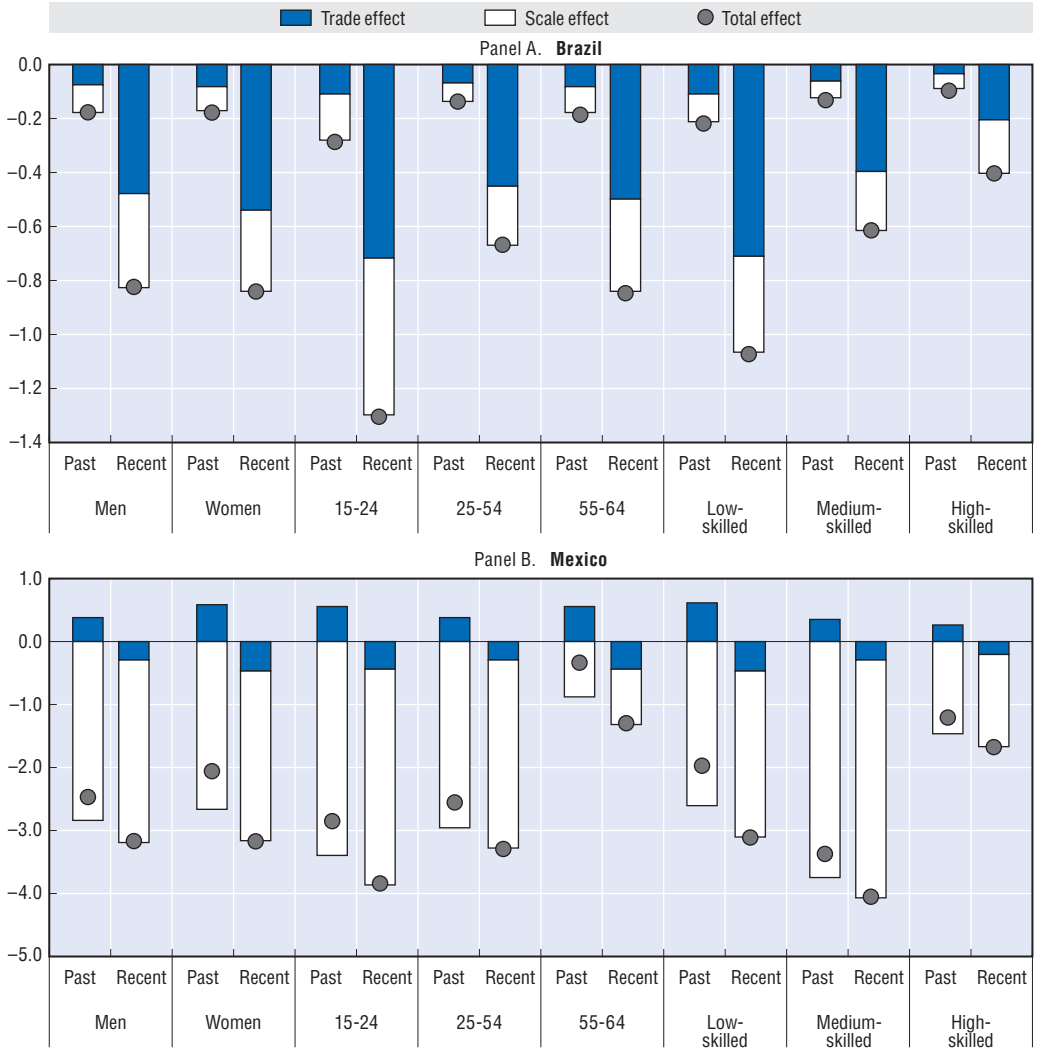
Figure 2.13. **Simulated impact of the crisis of 2008-09 on formal employment by population group in historical perspective**

Percentage point change in the share of formal employment in total employment one year after the peak in output



Notes: The "scale" effect refers to the impact of a crisis on the share of formal employment that is due to the economy-wide size change in demand. The "trade" effect refers to the impact of the crisis on formal employment due to the sectoral distribution of the demand shock as well as the pre-crisis sectoral composition of the economy. The total effect refers to the sum of the scale and trade effects.

"Recent" refers to changes in demand and sectoral output shares in the most recent crisis between 2008 and 2009. "Past" refers to changes in demand and sectoral output shares in earlier crisis episodes. For Brazil, this corresponds to the annual change between 1998 and 1999; for Mexico this corresponds to 1994-95.

Formal employment is defined on the basis of social security coverage (see Annex 2.A3 of OECD, 2010c, for more details on the definition).

Source: OECD estimates based on the PNAD (1990, 1992-93, 1995-99 and 2001) for Brazil and the ENEU (1993-98) for Mexico.

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- All population groups are likely to face an increased risk of becoming informal. However, there are large differences across groups. The negative effect of the demand shock on the share of formal employment is expected to be greatest for youth and the low-skilled in Brazil and youth and the semi-skilled in Mexico, while it is expected to be smallest for the high-skilled and prime-age workers in Brazil and the high-skilled and older workers

in Mexico. The quantitative differences in the risk of becoming informal across population groups within countries are large. For example, the expected decrease in the share of formal employment among youth is more than three times that of the high-skilled in Brazil or that of older workers in Mexico.

- The observed pattern across population groups for the global crisis is fairly similar to that observed in previous crises. The reasons for this differ across the two countries. For Mexico, this is because the variation across groups is mainly driven by the scale effect, which captures differences in the size of the shocks, but otherwise assumes that the past and current shocks are similar in nature. While the trade effect is fairly small, it has very different implications for the share of formal employment across different populations. The trade effect disproportionately raises the probability of becoming informal among women, young and older workers, and low-skilled workers.[48] In Brazil, where the trade effect slightly dominates the scale effect, the pattern across population groups looks similar to that during the previous crisis because the relative sensitivity to the business cycle across population groups in the tradable and the non-tradable sector is quite similar.

The relatively large expected decline in the share of formal employment during the 2008-09 crisis is likely to lead to higher informal employment and increased unemployment. Both may have important consequences for household income and transient poverty. Moreover, the increased absorption of formal job losers in the informal sector may also lead to a fall in the market wage in the informal sector, thereby extending the impact of the crisis to those in already precarious jobs. Protecting the poor from the effects of the crisis is important because income declines would further deteriorate their situation, which may have long-lasting consequences. Hence, policy needs to respond to the downturn with different measures for different groups. The following section discusses the range of policy instruments available in emerging economies, with the objective of identifying the most suitable ones to tackle the adverse effects of the global crisis.

3. Labour market and social policies at times of crisis

The discussion so far suggests that the social impact of the global crisis may be substantial due to the relative vulnerability of the working population in emerging economies. As in previous downturns, one of the main risks is a substantial deterioration in labour income for those who manage to keep their job and a reduction in job quality for those who are forced to take up a low-quality job in the informal sector. However, compared with previous downturns, the risk of job loss and increased labour informality may be larger at present, reflecting the specific nature of the current shock. Addressing these risks effectively clearly represents a major challenge for employment and social policies.

The social and labour market impact of the crisis is determined by the overall institutional framework. After a review of the key features of social protection systems in the emerging countries studied in the chapter, to keep the scope of the chapter manageable, this section focuses on three specific types of employment and social policies that may be used to support the incomes of households in time of crisis: *i)* unemployment compensation schemes which provide the first line of defence for jobs losers in formal employment; *ii)* the main cash transfers programmes which provide an essential source of support to the most vulnerable; and *iii)* public works programmes which provide temporary income support to those who lose their jobs while often involving them in a local development project.

However, this implies that a number of important employment and social policy instruments will not be discussed in detail. For example, most emerging economies have a variety of active labour market policies in place that provide support to help job seekers reintegrating into employment (*e.g.* training). Other institutions affecting labour market performance are not reviewed either. This is the case of employment protection legislation and minimum wages, which may not only affect the formal/informal employment distribution, but also may have important consequences for the way the labour market adjusts to the decline in aggregate demand.[49] Other important omissions include income-support specifically targeted at low-earning individuals, short-time work schemes which provide income support to workers whose hours are temporarily cut during recessions, and food programmes targeted at poor families.

3.1. A general overview of social protection in emerging economies

Social protection helps individuals, households and communities to better manage risks (of individual or collective nature) and support the critically vulnerable. Social protection includes contributory social insurance programmes, such as pensions and health and unemployment insurance, and non-contributory social assistance programmes financed out of general taxation, such as cash transfers (*e.g.* social pensions, child allowances), in-kind transfers, certain types of price subsidies, public works programmes and fee waivers for essential services (Grosh *et al.*, 2008).

Social protection is generally much lower in the emerging economies

Social protection is generally much weaker in terms of coverage and generosity in the emerging economies studied here than in most OECD countries. As shown in Figure 2.14, Panel A, public social expenditure as a share of GDP is consistently lower in all the emerging countries studied in this chapter than the OECD average.[50] But disparities among the countries are large, with public social spending being respectively about four and three times lower than the OECD average in India and China, while it represents about three quarters of the OECD average in Brazil and the Russian Federation.

There are large cross-country differences in the composition of public social expenditure across contributory insurance schemes financed out of employers and/or employees social contributions (*i.e.* social insurance) and programmes financed out of general taxation (*i.e.* social assistance) (Figure 2.14, Panel B). In most of the emerging economies considered here social insurance accounts for the bulk of non-health public social expenditure. To a large extent this reflects the role of contributory pension schemes, while unemployment insurance tends to account for a rather small part of total social insurance expenditure (see Section 3.2). Eligibility to social insurance programs differs across countries and programs but is crucially based on some kind of contribution requirement. By contrast, social assistance programmes tend to be means-tested and targeted to the most vulnerable individuals and households, independent of their labour market status.

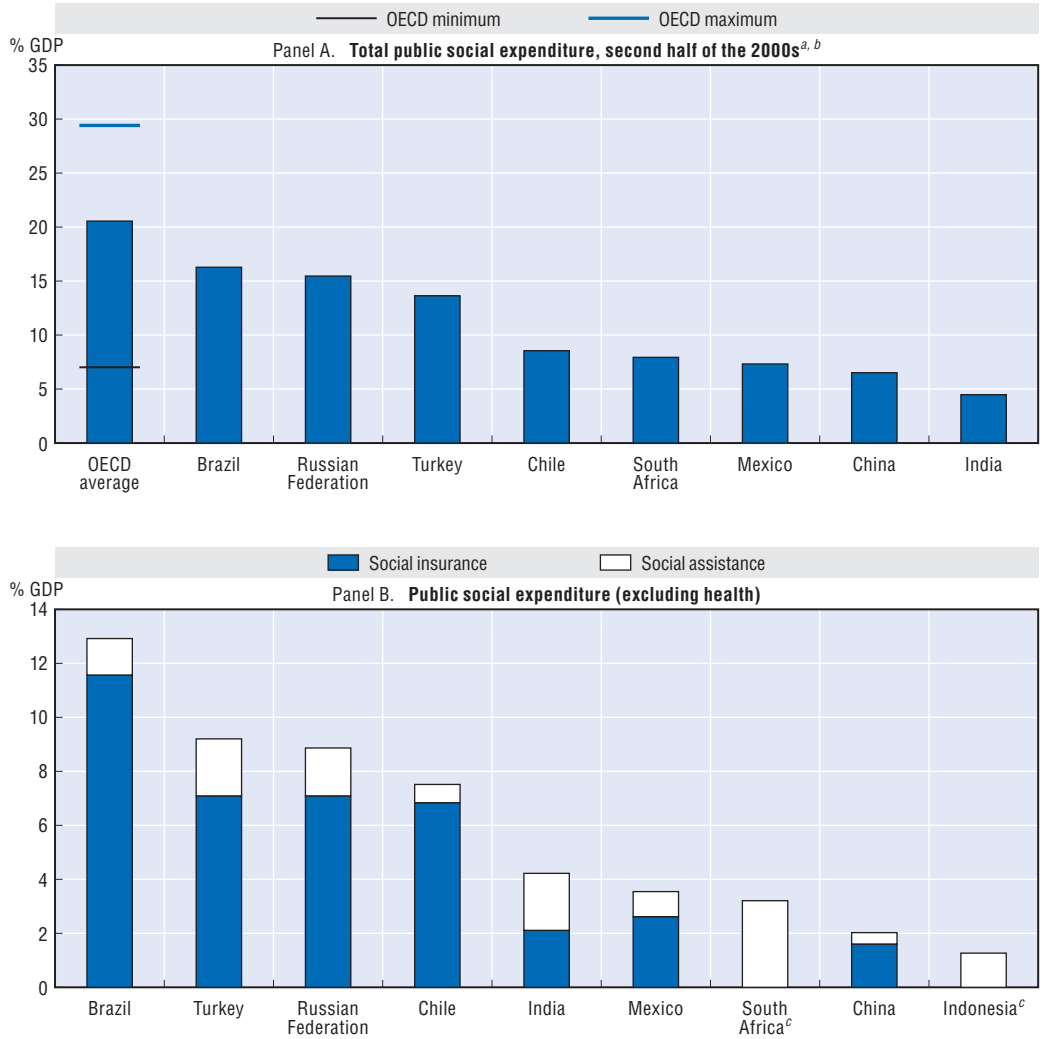
Coverage of social insurance tends to be limited…

There is considerable diversity across countries in terms of coverage, scope and degree of fragmentation of social insurance systems (see Box 2.1):

- Social insurance coverage is highest in Chile and South Africa, close to 80% of the employed population, but very limited in Indonesia and India. Extending social

Figure 2.14. **Public social expenditure**

Percentage of GDP



a) 2005 for Brazil, Mexico, Turkey and OECD average, 2006-07 for India and South Africa, 2007 for Chile and the Russian Federation, 2008 for China.

b) Data were taken and/or constructed from various sources, trying to approach as far as possible the definition retained in the *OECD Social Expenditure Database*, which covers old-age, survivors, incapacity-related benefits, family, health, active labour market policies, unemployment, housing and others.

c) Data on social insurance are not available for South Africa and Indonesia.

Source: Panel A: see Annex 2.A6 in OECD (2010c); Panel B: Weigand and Grosh (2008).

StatLink http://dx.doi.org/10.1787/888932292802

insurance coverage has been a priority in a number of countries, including by subsidising contributions for poor workers. Brazil and Turkey have made attempts at extending coverage under their single insurance scheme, while differentiated schemes have been set up for rural workers in China and informal workers in Mexico.

- Social insurance is most comprehensive in scope in Turkey, including health, old-age, unemployment, disability, etc., while it covers only unemployment in South Africa.[51]
- Social insurance schemes can be more or less unified. In China, despite growing coverage, the various schemes are fragmented, *de facto* limiting the pooling of risk across individuals and the redistributive impact (for example, there are three different medical

Box 2.1. **Main features of the social protection systems in the nine countries studied**

Social protection systems can be described using three main dimensions: *i)* the relative importance of social insurance *versus* general public expenditure and/or social assistance; *ii)* the overall coverage of the schemes; and *iii)* the unification/fragmentation of the schemes.

Brazil has a comprehensive social insurance scheme financed by social contributions, which covers old-age pensions, maternity, disability, and work-accident benefits for all private sector employees and the self-employed, and their dependents. There is also an unemployment insurance scheme. Most public servants are covered by their own social security schemes. According to PNAD data, 52% of the workers were affiliated to social security in 2007. Public health care is provided on a universal basis and financed out of general taxation. Social protection also includes a (rather generous) non-contributory basic old-age pension, as well as a conditional cash transfer scheme for the poorest (*Bolsa Família*).

Chile: the social protection system relies strongly on private schemes. The health system mixes public and private insurance (the employees can choose) and the pension system is private, mandatory and fully-funded. Free health insurance coverage is provided to low-income households. An unemployment benefit scheme based on individual accounts, combined with a subsidised solidarity fund providing under certain conditions complementary support to unemployed workers with low previous earnings, was also created in the early 2000s. According to CASEN data, 79% of the workers were covered by at least one insurance scheme in 2006. The government also provides social assistance in the form of additional support for health expenditures for low-income households, family benefits, as well as a conditional cash transfer programme for the poor (*Chile Solidario*) and small public works schemes.

China has various social insurance schemes for medical care, pension, unemployment, etc. Most schemes are administered at a decentralised level (county, municipality) and contribution rates often vary across provinces or even within the same province, thus limiting the scope for risk-pooling. Until recently, social insurance schemes covered only urban areas, but efforts have been made at increasing coverage in rural areas under distinct types of schemes, largely subsidised. According to Zhu (2009), coverage rates in 2008 were 55% for the urban basic pension and 85% for the urban and rural medical care. A means-tested minimum subsistence (*Dibao*) is also provided in urban and rural areas.

India has a very fragmented social protection system. A number of social insurance schemes exist, all of very limited coverage. The main one provides health insurance and maternity benefits to highly-skilled employees (earning wages above a certain ceiling) in large and medium-sized businesses (it covered 8.7 million workers in 2006 compared with about 400 million employed persons in 2004). A number of contributory schemes are also run by the States governments (often with funding from the central government) for workers in small enterprises, but their coverage is limited to certain areas and population groups (Mazundar, 2010). The most important non-contributory safety nets for poor households are the national rural public employment programme and the product subsidies (on rice and fuel). A large number of cash transfer programmes for poor households are also available, but most of them are of very limited coverage.

Indonesia: social insurance schemes based on social contributions were only recently established; they offer (low) old-age pensions, life and health insurance, and job-related disability and illness compensation. Participation in health insurance is optional, if the enterprise has alternative arrangements. The scheme covers only workers (and their families) employed in firms with more than ten employees or a payroll of more than one

Box 2.1. **Main features of the social protection systems in the nine countries studied** *(cont.)*

million rupiah (OECD, 2008c). In 2008, about 8% of the workers were registered to the scheme (*Jakarta Post*, 19/08/2009). Informal workers can register on a voluntary basis, but contribution rates are high, and only very few actually do. Some safety nets targeted at the poor have been in place since the 1997 Asian crisis, some with relatively high coverage, notably a food security programme providing subsidised rice and a cash transfer programme.

Mexico has a relatively comprehensive social security system based on social contributions, providing old-age pension, medical care, dental care, etc., to private sector employees. Self-employed workers can contribute on a voluntary basis, but very few actually do. Contributions to a fully-funded private pension scheme (second pillar) are also mandatory for employees. Public sector employees have their own social insurance scheme. However, there is no unemployment insurance scheme. About 46% of the workers were affiliated to social security at the national level in 2003. A subsidised health insurance programme providing a basic health care package (*Seguro Popular*) has also been created recently for poor households; coverage has been rising strongly and reached about 27% of the population in the first semester 2009. Social protection also includes direct health expenditure, a conditional cash transfer programme (*Oportunidades*), with relatively large coverage (18% of the population in 2007), and a public works scheme.

The Russian Federation has a number of social insurance schemes (pension, health, disability, etc.) covering employees and the self-employed, and financed out of a unified social contribution. Health insurance covers a minor part of public health expenditure. Data on the coverage of the social security system is not available. It was high at the beginning of the transition period, but is likely to have fallen, as employment in the unincorporated sector – less likely to be declared to social security – grew together with non-standard forms of employment (workers with civil or oral contracts). Social assistance includes some income-tested programmes for low-income families (child allowances and housing subsidies), food subsidies for children in full-time education and financial support towards children in kindergartens. In addition, there is a system inherited from the Soviet period of "privileges", (often in-kind) benefits, for specific categories of citizens including the disabled, special-merit categories (veterans) but also a large group of workers and retirees with a long employment record.

South Africa: the only social insurance scheme is for unemployment. The pension system is a fully-funded scheme managed by private pension funds. According to the labour force survey, about 75% of the workers were covered by a pension scheme or the unemployment insurance in 2007. Public health expenditure is financed out of general taxation. Social assistance is rather developed, notably through a (relatively generous) basic old-age pension, and means-tested child allowances and disability grants (covering respectively 5%, 10.5% and 3% of the population in 2008, source National Income Dynamics Study). A public works programme is also available for the unemployed.

Turkey has a comprehensive social security system based on social contributions, funding health care, pensions, disability, etc. The various existing funds have been recently unified under a single scheme meant to cover all employees and self-employed. Contributions for those deemed unable to pay premiums would be paid from public funds on the basis of a means-test. According to LFS data, 58% of the employed population was covered by the social security in 2008. There is also an unemployment insurance scheme. Social protection also comprises a (very small) basic old-age pension. A conditional cash transfer programme (the Social Risk Mitigation Programme) is available for children of poor families identified by the local authorities. A public works programme is also available for the unemployed.

insurance schemes for urban employees, non-salaried urban residents and farmers, managed by two different authorities, each with its own infrastructure; contribution rates and benefits of most schemes vary across provinces or even localities). Besides having a very low coverage, social insurance schemes are also very fragmented in India.

… and social assistance expenditure remains limited

Despite significant efforts aimed at improving the safety net for the poor in many of the nine countries studied, social assistance expenditure remains limited (Figure 2.14, Panel B), especially when considering the large share of the poor in the total population (Section 1.2). Social assistance is provided under various types of programmes: basic old-age pensions of varying size are provided to the elderly in Brazil, Chile, South Africa and Turkey; public works programmes of varying size also exist in Chile, India, Indonesia, Mexico, the Russian Federation, South Africa and Turkey; food programmes play an important role in India and Indonesia; means-tested cash transfers to the poor are available in China and Indonesia, as well as means-tested child support in the Russian Federation and South Africa; finally, conditional cash transfer programmes, aiming mainly at improving child school attendance and health status of mothers and children, have been implemented in Brazil, Chile, Indonesia, Mexico and Turkey.

Overall, the weak social protection systems and the (often very) limited automatic stabilisers built into the system imply that governments have generally had to use discretionary spending to respond to the employment and social consequences of crises. Considerable efforts have been made to maintain social spending levels during the crisis which was not always the case in the past in Latin American countries (Green *et al.*, 2010).[52] The increase in social spending reflects the relatively sound state of public finances in most emerging economies compared with that during previous crisis episodes (Section 1). However, it is not clear to what extent more strongly counter-cyclical fiscal policies also have helped to preserve the level of support available given the increase in needs. In addition to fiscal constraints, there may also be institutional constraints to scale up social programmes in times of crisis. Indeed, available research suggests that in times of crisis, the social policy response to shocks is likely to be more effective if it consists in expanding existing programmes rather than implementing new and untested programmes (Paci *et al.*, 2009; and Green *et al.*, 2010). The lack of existing social programs may explain why some fiscal stimulus packages have tended to mitigate the social impact of the economic downturn indirectly through the use of labour-intensive infrastructure projects rather than social spending directly.

In order to get a more comprehensive overview of the role of employment and social policies to protect the incomes of the most vulnerable and those most affected during the present crisis, this section draws on the responses to country questionnaires submitted to the nine emerging economies to consolidate information on their policy responses.[53] Table 2.4 provides a schematic account of the programmes in each of the three subject areas (unemployment compensation schemes, cash transfers and public works programmes) at the onset of the crisis and whether any measures have been taken or announced in response to the crisis. In addition, it distinguishes, when possible, between temporary measures that were taken as a short-term response to the crisis and those with a longer horizon.

Most policy measures introduced in 2009 consisted in expanding or modifying already existing programmes. Only Russia and Turkey introduced a new public works programme

Table 2.4. **Existing programmes, new programmes and reforms**

	Unemployment compensation scheme			Public works programmes			Cash transfers (non-pension)		
	Exists before the crisis	Temporary measure	Permanent measure	Exists before the crisis	Temporary measure	Permanent measure	Exists before the crisis	Temporary measure	Permanent measure
Brazil	X	X					X		X
Chile	X	X	X	X	X		X	X	
China	X						X	X	
India			X	X					
Indonesia				X		X	X	X	
Mexico				X	X		X		X
Russia	X		X		X				
South Africa	X			X		X	X		X
Turkey	X		X			X	X		

Source: OECD Secretariat.

to mitigate the impact of the crisis. The information available does not always allow distinguishing between temporary and permanent measures. Temporary changes made to the unemployment compensation schemes in Chile and Brazil, as well as the exceptional cash transfers introduced in Chile, China and Indonesia all constitute short-term responses to the crisis. By contrast, the permanent changes in the cash transfer schemes in Brazil, Mexico and South Africa and in the unemployment compensation scheme in Chile were often the result of structural development of the programmes. Yet, although not conceived as specific answers to the crisis, these measures have nevertheless played some role in alleviating the crisis impact for their beneficiaries. By contrast, the permanent change to the unemployment scheme in Russia was motivated by the crisis.

3.2. Unemployment compensation schemes

In most OECD countries, unemployment benefits have historically played an important role in reducing the social costs of a recession. Being strongly counter-cyclical, they serve as an important automatic stabiliser during a downturn while providing income support to the rising numbers of unemployed (OECD, 2009a). The situation differs in the group of emerging economies reviewed in this chapter, as coverage and/or benefit levels are generally quite limited. In fact, only six of the nine countries considered in this chapter can actually be considered to have such schemes in place, with Indonesia and Mexico having no unemployment compensation system and India a scheme with extremely limited coverage.[54]

Coverage and benefit levels are often limited

China, South Africa and Turkey have unemployment insurance schemes financed out of social contributions, quite comparable in principle to those existing in most OECD countries. Brazil has a similar scheme, but financed only by employers through a levy on business revenues.[55] The Russian scheme is financed out of general taxes and also includes an unemployment assistance benefit accessible to unemployed workers running out of rights or not meeting the entitlement conditions. Finally, the Chilean scheme differs significantly from all the others: it combines *individual accounts* from which the accumulated contributions are paid out on job separation and a *subsidised solidarity fund* providing complementary supports to those unemployed dismissed for economic reasons with modest previous earnings (Box 2.2).

Box 2.2. **The Chilean unemployment compensation scheme***

Chile's unemployment compensation scheme consists mainly of individual accounts from which the accumulated contributions are paid out on job separation for any reason, most often as a lump-sum. The accounts are financed by contributions from employers and employees (Table 2.5), at rates implying that a permanent and temporary worker would accumulate respectively 26% and 36% of a monthly wage per contribution year (before adjustment for financial returns, administrative costs and changing wages). The funds are managed by special bodies connected with the pension funds. After twelve and six months of contributions for permanent and temporary workers respectively, withdrawals must be made in as many monthly payments as the number of years of service, up to a maximum of five.

If the account balance is too low to permit a certain level of compensation, claimants who are dismissed from indefinite-duration jobs for economic reasons and become unemployed can apply for an additional benefit from the Solidarity Fund (financed by state subsidy and part of the employer contribution). This can be done twice in a five-year period. Replacement rates and ceilings imply that a complement from the Solidarity Fund is relevant only to workers with moderate job tenures and modest wages.

In June 2008, benefits were paid to 135 000 workers, *i.e.* about one third of the survey-based unemployed. Half of the recipients were temporary workers receiving lump-sums. The average benefit was about 30% of the average wage. Due to the strict eligibility rules, the Solidarity Fund was involved in only 6% of all benefit cases.

A reform was passed in August 2008, which made the Solidarity Fund's benefit somewhat more generous and provides access to the Solidarity Fund to unemployed workers previously on temporary contract.

* This box draws mainly on OECD (2009c).

The coverage of the schemes – defined as the share of the unemployed effectively getting unemployment benefits – is limited, ranging from about 23% in Russia to 6% in Turkey (Table 2.5) and almost nil in India. Four main factors concur to explain the limited access to benefits:

- As seen in Box 2.1, a significant share of the workers is not affiliated to the social security schemes in Brazil, China and Turkey.
- Eligibility conditions are very strict in Turkey, where workers should have contributed 20 months to the scheme in the previous three years, and relatively strict in Chile and China.
- A large share of the unemployed are either long-term unemployed or without work experience in South Africa (respectively 25 and 55% in 2007), and thus not entitled to benefits.[56]
- Despite very open access, the very low level of benefits in the Russian Federation simply discourages unemployed workers to apply for it.

The generosity of unemployment benefits depends both on the benefit level and its duration. Compared with most OECD countries, initial replacement rates of previous incomes and maximum benefits are relatively low in the nine countries considered (Table 2.5).[57] There is substantial cross-country variation, however, with very low benefits in the Russian Federation (due to a very low cap) and relatively high benefits in Brazil and South Africa. The maximum duration of benefits also tends to be lower than in most OECD

Table 2.5. **Unemployment compensation schemes: contribution requirements, benefits and coverage**

	Contributions/financing		Benefits				Share of unemployed receiving benefits
	Rates (% of gross wage unless specified otherwise)	Entitlement period	Initial replacement rate	Minimum (% of AW)	Maximum (% of AW)	Duration	
Brazil 2008	E: 0.65% of gross revenue in service sector or 1.65% of value added in the industry sector	Six months in three years	From 80% to 50% of previous earnings, decreasing with the earnings level	36 (1 MW)	67 (1.87 MW)	• Three months if 6-11 months of prior employment • Four months if 12-23 months of prior employment • Five months if more than 24 months of prior employment	8% 2007-08
Chile 2008	E: 3.2% for permanent workers (2.4% for individual accounts and 0.8% for Solidarity Fund) and 3% for temporary W: 0.6% for permanent workers	12 months in two years for permanent workers 6 months for temporary workers	Depends on the amount accumulated on the individual account If Solidarity Fund involved 50% of previous wage for permanent workers	-	If Solidarity Fund involved, 41% in the first month and subsequently less	Depends on the amount accumulated on the individual account; 5 months maximum 2 months for temporary workers on the Solidarity Fund	20%
China 2008	E: 2% W: 1%	12 months	Fixed amount ranging from 60 to 70% of the minimum wage, as determined by local governments	-	-	• Up to 12 months if less than five years of prior employment • From 12 to 18 months if five to ten years of prior employment • Up to 24 months if more than ten years of prior employment	Less than 16%
India	Covering also sickness and work injury E: 4.75% W: 1.75%	Five years	50% of the insured's average wage	-	-	Up to six months	Close to 0%
South Africa 2008-09	E: 1% capped W: 1% capped Government: up to 25% of E and W contributions capped at 7 million rand a year	Three months in 12 months	38% to 58% of average earnings over the previous six months depending on the length of contribution	-	-	Up to eight months depending on contribution records (one day of benefit for every six days of contribution)	Significantly less than 10%
Russian Federation 2008	None. Financed from federal and local government budgets	26 weeks in 12 months; if not, unemployment assistance	• 75% of previous earnings • Minimum benefit for those who do not meet the entitlement conditions	4.5%	18%	• 12 months after which entitled to unemployment assistance • 12 months for unemployment assistance	23%
Turkey 2007	E: 2% W: 1%	600 days in three years, and 120 days of continuous contributions	50% of average net wage, based over the last four months	15%	30%	Six to ten months according to contribution period	6% in 2008

AW = average wage; E: employer; MW = minimum wage; W: worker
Source: OECD Secretariat based on various sources (see Annex 2.A6 in OECD, 2010c).

countries, where it typically ranges between 12 and 24 months (the shortest being six months[58]). Benefit duration is particularly short in Chile and Brazil (two to five months), while it is close to OECD standards in China and the Russian Federation. Table 2.6 schematically summarises the relative generosity of unemployment benefits in the six countries.

Table 2.6. **Relative generosity of unemployment benefit schemes before the crisis**

		Duration		
		Short	Medium	Long
Replacement rate	Low			Russia
	Medium	Chile	Turkey	China
	High	Brazil	South Africa	

Note: Duration is qualified as short when it is less than or equal to five months, medium when it is comprised between six and 11 months, and long when it is equal to or more than 12 months; the replacement rate level is assessed considering the initial replacement rate and the maximum level of benefits (Table 2.5); for Chile, it describes the replacement rate when the Solidarity Fund is involved.
Source: OECD Secretariat.

The share of expenditure on unemployment benefits in GDP provides an indication of both the coverage and generosity of unemployment compensation systems, and of their capacity to cushion shocks, although it also depends on the level of unemployment. It is highest in Brazil (0.5%) and lowest in China (0.01%), with Turkey and the Russian Federation at respectively 0.06% and 0.04% of GDP.[59] In Chile, unemployment benefits amounted to 0.1% of GDP in 2008, out of which less than 4% came from the Solidarity Fund. By comparison, OECD countries spent about 0.6% of GDP on average on unemployment benefits in 2007.[60]

The scope of the response to the crisis varies across countries

The relatively low coverage of unemployment compensation systems limits their capacity to provide adequate safety nets during the economic downturn. Nevertheless, some of the countries have taken measures during this crisis to improve the shock absorption capacity of their schemes. This is the case of Chile and Russia, two countries that have experienced a strong increase in unemployment during this crisis (Figure 2.7) – although in Chile the measures were part of a structural reform of the scheme planned before the crisis (Box 2.2). By contrast, in Turkey, despite surging unemployment, no measure was taken to ease the strict eligibility conditions to unemployment benefits.

In most of the countries studied, a substantial share of the unemployed – even of those previously working for the formal sector – do not qualify for unemployment benefits. This is especially the case for workers under non-standard forms of contracts, such as temporary or sub-contracted workers, which may be excluded by law (*e.g.* the so-called "falsely" self-employed), or simply *de facto* because they are less likely to meet contribution requirements. Although hard empirical evidence is scarce, as in most OECD countries,

non-standard forms of employment seem to have increased significantly over past decades in the countries studied. They are particularly important in Chile and South Africa, where non-permanent employees represented about 25% and 30% of all the employees with a contract respectively in 2006 and 2007, against 12% on average in the OECD in 2008.[61] Non-standard contracts are also widespread in China and India (see Annex 2.A5 in OECD, 2010c). Given that non-standard workers are typically more easily fired, they are likely to experience a more-than-proportional share of overall job losses, which is likely to heighten the problems of non-coverage by unemployment compensation schemes. In Chile, as part of the May 2009 reform, workers on temporary contracts were permanently given access to the Solidarity Fund, although only for two months to minimise work disincentives.[62] This measure, combined with a slight easing of the contribution requirements to access the Solidarity Fund has allowed a slight increase in the coverage rate (from 20% in the first quarter of 2009 to 21% in the last three quarters; see Figure 2.15).

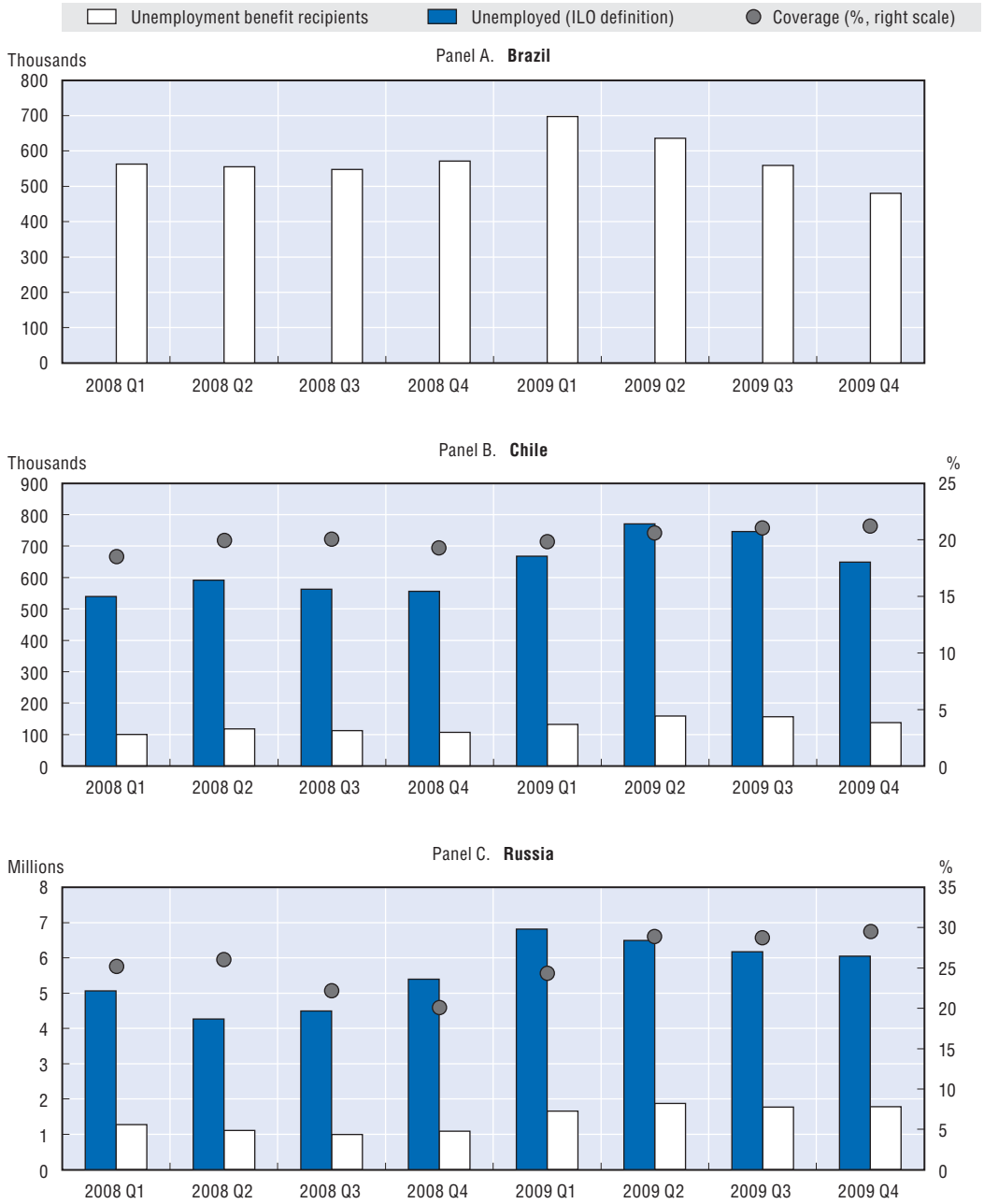
Traditionally, in a crisis period, the combination of increased layoffs and reduced hiring results in longer unemployment spells. As unemployment spells lengthen, beneficiaries are confronted with expiring entitlements and/or declining benefit payments. While, in general, this is likely to increase job-search incentives, the effect is likely to be less effective in recession periods, as job vacancies dry up and demand-side restrictions become more binding (OECD, 2009a). This is especially the case for countries where benefit duration is short, such as Brazil and Chile. In fact, both countries have implemented a temporary extension of the benefit duration in response to the global financial crisis. In Brazil, as made possible by the law, the benefit duration was temporarily increased by two months for laid-off workers in a list of specific sectors determined at the state level. This was done only for workers laid-off in the months of December 2008 and January 2009, a short period which is probably to be related with the relatively small and short-lived increase in unemployment experienced in Brazil.[63] Available data show that this has not resulted in an increased average duration of benefit in 2009.[64] In Chile, as part of the May 2009 reform of the scheme, the benefit duration of recipients drawing from the Solidarity Fund is automatically extended by two months when the unemployment rate is 1 percentage point higher than the average unemployment rate over the previous four years.[65]

Finally, Chile, Russia and Turkey have increased the unemployment benefit level, thus improving the adequacy of support. In Chile, the aim was to permanently increase the replacement rate for workers benefiting from the Solidarity Fund to about 40%, and it was expected to concern about 8% of the unemployment benefit recipients. The change has been most important in Russia, where the maximum benefit, initially very low (Table 2.5), was increased by almost 60% in January 2009. This has resulted in a strong growth in the number of benefit recipients (more than 50% in the first quarter of 2009 compared with the previous quarter), more than proportional to that of unemployment, thus allowing increased coverage of the scheme (from 20% in the last quarter of 2008 to about 30% from the second quarter of 2009 to the end of the year). Although it was introduced as a response to the crisis, this measure is permanent. As it started from a very low initial level, the replacement rate remains low compared with OECD standards.

Long-term reforms to unemployment compensation schemes involve difficult trade-offs

By highlighting structural vulnerabilities, the crisis may also promote structural reforms to unemployment compensation systems or reinforce the debate about the need to establish such a scheme. When considering more long-term reforms to unemployment

Figure 2.15. **Unemployment insurance in crisis times in Brazil, Chile and Russia**



Note: For Brazil, it is not possible to compare the number of unemployment benefit recipients to the number of unemployed because recent unemployment data are available only for the five main urban areas.

Source: Superintendencia de Pensiones and Encuesta Nacional de Empleo for Chile; Rosstat for Russia; Seguro-Desemprego (SAEG) for Brazil.

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compensation schemes, emerging economies face the same trade-off as more developed OECD countries. On the one hand, by providing an adequate replacement income, unemployment benefits allow unemployed workers to search for a suitable job to match their skills. They also allow smoothing consumption, reducing poverty and avoiding dynamic poverty traps (Vodopivec, 2009). On the other hand, unemployment benefits may reduce the job-search intensity of the worker and reduce work incentives of family members. In most OECD countries, this trade-off can be partly reduced by investing in active labour market policies (ALMP) (through close follow-up of the unemployed job search, participation to training, etc.). But this is more difficult to achieve in emerging economies. First, widespread opportunities to work informally make it easier for the unemployed to fraud the system, *i.e.* receive the benefits while working undeclared. Second, the administrative capacity and the budget of the public employment service is more limited, implying that it is difficult to monitor properly benefit entitlement, enforce job-search requirements and to provide effective active labour market programmes (*e.g.* job-search assistance, training and work-experience programmes).

Systems based on *individual savings accounts*, such as the Chilean scheme, are often considered an appropriate alternative to traditional systems of unemployment insurance and/or severance payments (which are sometimes the only form of income support available to dismissed workers from the formal sector) for developing and emerging countries (see *e.g.* Vodopivec, 2009). By mandating individual savings to be mobilised in case of job separation, such schemes promote income smoothing for the individual worker over his/her working life rather than pooling unemployment risk over the total working population at a point in time (Ferrer and Riddel, 2009). Their main advantage is to remove the moral hazard problem as the worker internalises the cost of the benefits and has no incentives to prolong unemployment. This, combined with the fact that they are available on job separation for any reason, reduces the monitoring requirements and thus lowers the administrative costs. Another advantage would be that they allow extending unemployment protection of workers without expanding public deficits.

However, such schemes also present problematic intrinsic features. First, the absence of risk pooling across workers implies that individual savings accounts do not provide adequate coverage to the workers most in need of it, *i.e.* those who experience frequent and possibly long-lasting spells of unemployment and are most likely not to be able to accumulate enough savings on their account. This is particularly the case in emerging economies where job tenure is lower and job turnover much greater (Berg and Salerno, 2008). This is the reason why the Chilean scheme combines individual accounts with a publicly-funded Solidarity Fund. However, not surprisingly, Hartley *et al.* (2010) find that this redistributive part of the scheme reintroduces the moral hazard problem. There is hence no easy way out of this adequate coverage/employment disincentives trade-off. Keeping benefit duration relatively short is probably part of the solution. In reaction to this problem, Brazil is also considering to introduce training requirements for unemployed workers receiving benefits.[66]

3.3. Cash transfers

Cash transfers can provide income support to the unemployed individuals not covered by the unemployment compensation scheme, either because they have not accumulated enough rights, exhausted their rights, or because they were informal workers. They can also mitigate the effect of the income deterioration induced by the crisis (see Section 1) on those who were already on very low income before the crisis. Cash transfers operate

through two main channels: consumption smoothing and avoiding strong increases in poverty rates with possible long-term negative impacts on health and children's education that would aggravate chronic poverty and lead to irreversible losses in human capital.

Cash transfer schemes targeted at poor households have been developed in the emerging economies studied here since the 1990s. However, compared with most OECD countries, permanent programmes with appropriate finance and/or guaranteed countercyclical finance, which can act as automatic fiscal stabilisers, remain rare (Grosh *et al.*, 2008). Some of the schemes, *e.g.* conditional cash transfers (CCT), not only provide income support to poor families in the short run, but also aim to improve the health and education status of children, thus forming part of the overall investment in human capital. Most of the cash transfer schemes are permanent, but there are also examples of one-off/temporary transfers to mitigate the effects of a specific shock.[67]

Coverage and generosity varies a great deal across countries

The coverage of the main cash transfer programmes vary a great deal in scope, from 5.5% of the households involved in the Turkish Social Risk Mitigation Project (SRMP), to 36.6% of the households for the Child Support Grant (CSG) in South Africa (see Table 2.7). At 34%, coverage was also relatively high for the one-off cash transfer distributed in 2005-06

Table 2.7. **Main (non-pension) cash transfer programmes**

	Name (date of creation)	Targeted population	Conditionality attached	Number of beneficiaries	Share of households covered	Expenditure (% of GDP)
Brazil	Bolsa Familia (2003)	Extremely poor families and poor families with children	Yes	12.1 million households (March 2010)	20%	0.4 (2008)
Chile	Chile Solidario (2002)	Extremely poor and poor families	Yes	270 000 households (April 2008)	6% of total population (2006)	0.15 (2008)
Chile	Subsidio Unico Familiar	Poor families	Yes	2.7 million dependents (children, widowed mothers, disabled spouses, students and/or grandchildren)		
China	Dibao (1999)	Poor households	No	23.3 million individuals in urban areas; 43 million in rural areas (December 2008)	3.9% of the population in urban areas; 6.7% of the population in rural areas (2008), 5.3% nationally; Source: OECD (2010), *OECD Economic Survey: China*	0.24 (2008)
Indonesia	Program Keluarga Harapan (2007)	Poorest households	Yes	633 000 households (2008)		
Indonesia	Bantuan Langsung Tunai (2005/06)	Poor and near-poor households	No	19.2 million households (2005/06)	34% (Source: World Bank, 2008)	0.66 (2006)
Mexico	Oportunidades (started as PROGRESA in 1997, renamed in 2004)	Poor families with children	Yes	5.2 million families (2009)	18.5% (2008)	0.4 (2007)
Turkey	Social Risk Mitigation Project (2001)	Extremely poor households with children from birth to age 6, school-aged children aged 6-17, and women of child-bearing age	Yes	2.6 million individuals or 919 500 households in 2007 (Source: World Bank, 2008, p. 23, Implementation and Completion Report	About 5.5%	0.6 (2008)
South Africa	Child Support Grant (1998)	Poor households with children aged below 14	Yes	8.7 million children	36.6% of households (2008; Source: Leibbrandt *et al.*, 2010); 54% of children aged less than 15	1.1 (2008)

Source: OECD Secretariat based on various sources; see Annex 2.A6 in OECD (2010c).

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in Indonesia to compensate for the reduction in fuel price subsidies. *Bolsa Família* in Brazil (Box 2.3) and *Oportunidades* in Mexico, two CCT schemes originally set up in the 1990s, also cover about a fifth of the total household population. By contrast, the coverage of the Chilean CCT programme and of the Chinese *Dibao* programme (Box 2.3) is more limited, significantly below 10% of the households.[68] Coverage has substantially increased for some programmes over the past decade, notably in Brazil, China and Mexico.

The cost of these programmes depends on the number of beneficiaries as well as the benefit level. Among the conditional cash transfers programmes discussed here, *Oportunidades* and *Bolsa Família* are relatively generous. The transfers under *Oportunidades* represented about 29.3% of total pre-transfer consumption among all beneficiaries in 2004 (33.4% among poor beneficiaries) and those under *Bolsa Família*, 6.1% of total pre-transfer consumption in 2006 (11.7% of the poor beneficiaries).[69] By contrast, in *Chile Solidario*, both the coverage and the benefit level are relatively low because the programme places a lower weight on the direct cash transfer relative to the psycho-social support and the design of a strategy to exit extreme poverty. Total expenditure ranges from a minimum of 0.15% of GDP for *Chile Solidario* to a maximum of 1.1% of GDP for the CSG in South Africa. *Oportunidades*, SRMP and *Bolsa Família* represent about 0.4% of GDP, whereas total expenditure in the Indonesian *Bantuan Langsung Tunai* (BLT) amounted to 0.7% of GDP in 2006. In the Chinese *Dibao*, total expenditure more than doubled between 2007 and 2008, reaching 0.2% of GDP.

Many programmes condition the cash transfer both on enrolment and regular attendance of the household's children in school and on regular health centre visits for the younger children and for pregnant women. This is the case of all CCT programmes (*Bolsa Família*, *Chile Solidario*, *Subsidio Unico Familiar*, *Oportunidades*, PKH, and SRMP), but the Child Support Grant in South Africa – not identified as a CCT – also has school enrolment and attendance requirements. Because of this conditionality and the fact that women tend to spend a higher share of the benefits they receive on children and house-related expenditure than men, all the CCT programmes reviewed here pay the benefits to mothers. The frequency of verifying compliance varies widely, from every week in the first two months in *Chile Solidario* to once a year in the Chilean *Subsidio Unico Familiar*, depending in part on the type of conditions that a programme imposes (Fizbein *et al.*, 2009). The type of sanctions in case of non-compliance and the degree of enforcement also vary quite substantially across programmes.[70]

Targeting is important but costly

All the cash transfer programmes reviewed are means tested and try to target the poor (Table 2.7). This is especially desirable in countries with scarce public funds and many competing demands on public budgets, since proper targeting increases the benefits the programmes can achieve with a given budget or, alternatively, allows to achieve a given impact at the lowest cost (Grosh *et al.*, 2008). However, given the relatively low levels of literacy and administrative registration among the targeted population, most of the programmes are based on *proxy means-tests*, relying on characteristics of the households[71] to estimate an income, based on a formula generally derived from statistical analysis of household surveys. South Africa and Brazil are the only countries where targeting is made through a means-test based on actual income declarations. In the case of CCT programmes, the proxy means-test is often preceded by a geographical zoning, identifying the regions with high poverty levels, and conditioning eligibility to living in such regions.

Box 2.3. ***Bolsa Família* and *Dibao*: two examples of cash transfer programmes**

China: started as a pilot programme in Shanghai in 1993, the Dibao programme was implemented in all Chinese cities in 1997, and progressively extended to the whole country until 2007. The aim was to provide some assistance to workers laid off by state-owned enterprises in their restructuring process and avoid social unrest related to rapid economic transformation (Chen and Barriento, 2006). The amount of the benefit equals the households size times the gap between per capita household income and a locally determined minimum living standard. The Dibao is financed by the central government and the municipalities, with a share that varies according to the financial capacity of municipalities (in the wealthy coastal region, municipalities pay most of the expenditure, while poor municipalities, such as in the west of the country, bear almost none of the expense; Solinger, 2008).

The very rapid increase in coverage is a significant achievement, but a majority of poor households remains uncovered (Figure 2.16). Rural migrants are explicitly excluded, due to the urban registration system (*hukou*). Fiscal constraints enter into the determination of local poverty lines by local governments, with the implication that entitlements cover only part of the poverty gap. This also implies that the benefit does often not cover the basic needs of the poor. Intrusive methods used to determine eligibility and administer the benefit might also discourage people from applying (Cai *et al.*, 2010). For example, the house of the individual applicant is searched and the family and neighbours are questioned. The results of the scrutiny are to be posted upon a public board set in the midst of the community's common grounds, in order to solicit the views not just of immediate neighbours but of everyone in the community acquainted with the applicant family's true state of eligibility, and of everyone in a position to see the targeted family members' daily comings and goings (Solinger, 2008). Some features of the *Dibao* programme may also be seen as preventing recipients from exiting poverty. In some cities, households having a computer or a car, using a cell phone, and arranging a child to enrol in special classes for training and studies are not eligible to the programme (Solinger, 2008). Besides, the method of calculation of the benefit implies that any increase in income results in a reduction of the benefit, implying a 100% marginal tax on labour income.

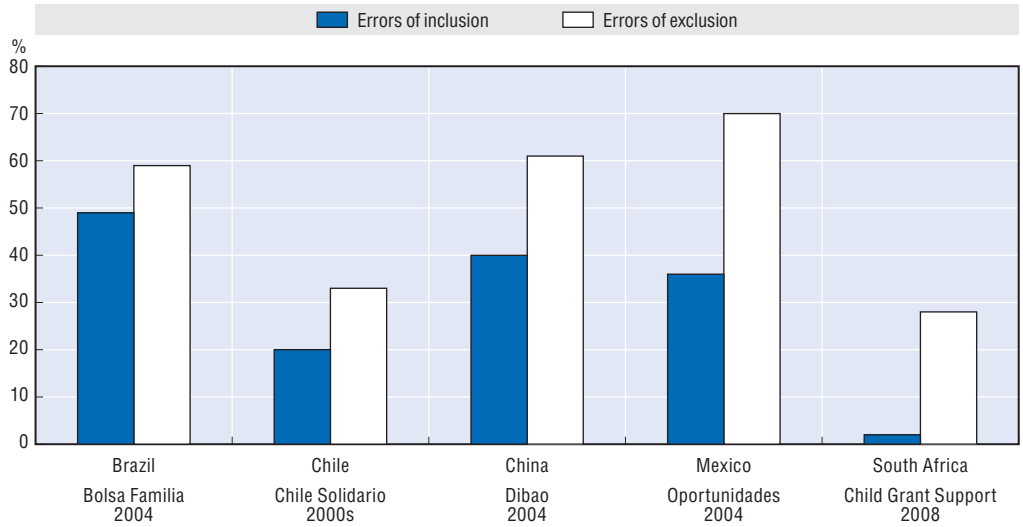
Brazil: the Brazilian *Bolsa Família* was created in 2003 by bringing together four already existing federal schemes boosting school attendance, improving maternal nutrition, fighting child labour and providing a cooking gas subsidy. The programme targets two groups on the basis of self-declared income: the very poor and the poor. Both groups are eligible for monthly payments for each child below the age of 15 up to a maximum of five children. The very poor also receive a flat payment regardless of household composition. The payment of the benefit is conditional to children fulfilling school enrolment and health visits requirements and pregnant women undergoing medical check-ups. However, the conditions are intended to encourage beneficiaries to take-up their rights to free education and free health care, and non-compliance is taken to be a manifestation of some kind of obstacle that the family cannot overcome to access the service rather than an unwillingness to comply (Fizbein and Schady, 2009). Hence, it is only after three warning notices and a possible visit of a social worker that the benefit will be temporarily withdrawn.

Overall, the programme is generally considered as having successfully increased consumption, reduced poverty and raised children attendance at school among the poor families (see below). However, the selection method has often been criticised on the grounds that it can lead to selection distortions such as patronage and leakage. Hall (2008) reports cases of clientelism and manipulation for electoral ends. It is also leading to relatively high inclusion errors compared for example with the Mexican CCT programme (Figure 2.16).

Box 2.3. ***Bolsa Família* and *Dibao*: two examples of cash transfer programmes** *(cont.)*

Although *Bolsa Família* has no impact on consumption levels of the beneficiary households, it affects the allocation of expenditure towards food, educational materials and children's clothing (Soares *et al.*, 2007). The programme has been successful at raising enrolment rates, but at the same time, more children are falling behind in schools. There is also no significant impact on the vaccination of children. This points to the limits of programmes intervening on the demand side due to supply constraints in the provision of public services. The capacity of *Bolsa Família* to serve its objectives is limited by the country's capability to meet the demand for social policies. The lack of investment in the quality of education available to disadvantaged children (Soares *et al.*, 2007), and the lack of access to a set of public services (Paes Souza and Pacheco Santos, 2009) prevent breaking the inter-generational transmission of poverty.

Figure 2.16. **Targeting errors**



Source: Soares *et al.* (2007) for Brazil and Mexico; Contreras *et al.* (2008) for Chile; Wang (2007) for China; based on Leibbrandt *et al.* (2010, forthcoming) for South Africa.

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This is the case in Brazil, Indonesia and Mexico, which are large countries with wide regional inequalities.

However, there are potential costs associated with close targeting.[72] First, it is expensive for the public institutions in charge to gather the information required for the means-test (or proxy-means test). Second, applying to the programme is also costly for the applicants in terms of time, cash cost to gather the information, travelling to the registration site etc. Third, social costs may arise if programme participation carries some sort of stigma. Hence, in practice, targeting is never completely successful.

One way to measure targeting accuracy is through errors of inclusion, *i.e.* the percentage of households who are included in the programme when they should not be, and errors of exclusion, *i.e.* the percentage of households who are eligible in principle but are not covered by the programme. Among the five programmes for which such data are available, errors of inclusion range from 2% in the Child Support Grant to 49% in the

Brazilian *Bolsa Família* (Figure 2.16).[73] Errors of exclusion are generally larger (and often significantly so) than errors of inclusion, reaching up to 70% in the case of Mexico. Obviously, one important cause for errors of exclusion, or under-coverage, is the limited size of the budget that governments allocate to the programme. In fact, a trade-off exists between extending coverage (reducing exclusion errors) and improving efficiency in targeting (reducing inclusion errors).[74] In Indonesia, the BLT distributed in 2005-06 to mitigate the effects of the reduction in fuel price subsidy on poor households was found to have left 40% of the poorest households (belonging to the lowest two deciles) unattended (SMERU, 2006). Considering that budget limitations played no role there, this rate of exclusion is high. This might be explained by the fact that, to proceed quickly to the distribution of the benefit, targeting had been left to local authorities, with scant monitoring and technical assistance from the central authorities; and there was no involvement of communities and no possibility for households to verify and contest the local authorities' decisions.[75]

Cash transfer programmes play a role in smoothing consumption and reducing poverty and inequality…

The evaluation of cash transfers programmes is challenging for two main reasons. First, such programmes have multiple objectives and second, finding an appropriate control group for drawing comparisons is sometimes impossible with the available data. These challenges partly explain the great differences that exist in the number and quality of impact evaluation studies across programmes.[76]

The effect on immediate consumption is an important determinant of poverty alleviation in the short-run. Available evaluation studies point to a significant increase in per capita consumption for *Bolsa Família* and *Oportunidades*, of respectively 7 and 8% (Fizbein *et al.*, 2009). Skoufias (2002) and Satriana (2009) also respectively find that the Mexican and Indonesian programmes were quite successful in smoothing consumption for recipient households. In Indonesia, BLT allowed recipient households to compensate for up to 100% of the loss in income due to the increase in fuel prices in 2005, and the biggest proportion of BLT funds was used for food consumption (mainly rice).

In most of the countries covered, cash transfer programmes have also reduced poverty. This is especially the case of *Oportunidades* and *Bolsa Família*, notably when extreme poverty is considered (Soares *et al.*, 2007). A positive, albeit small, impact on reducing poverty is also found for *Dibao* in China (Cai *et al.*, 2010). All programmes are also found to reduce inequality significantly.[77]

… and in improving school attendance and health status for children

Overall, programmes seem to have fulfilled the objectives of raising school attendance of the children in households participating in the programmes and improving their health status, thus reducing the risk of poverty traps:

- Increases in enrolment rates and school attendance compared with control groups are found for most programmes.[78] An evaluation of the Mexican *Oportunidades* further shows that it also improved the enrolment of children that do not participate in the programme through spillover effects (Bobonis and Finan, 2009).[79] The Turkish programme, which pays higher benefit rates for girls' than for boys' school attendance, has resulted in a particularly large increase in school enrolment for girls.[80] Larger transfers are not consistently associated with larger effects on school enrolment. For example,

Oportunidades makes large payments, but the impact on enrolment is generally not that big (Fizbein *et al.*, 2009). Besides, no major impact on test scores for children in *Oportunidades* is found,[81] and this tends to be the case for other similar programmes as well.

- CCTs also improve certain health outcomes, although this depends importantly on the availability and quality of health infrastructure (Box 2.3 on Brazil). CCTs can improve health outcomes through the obligations they stipulate for benefit recipients, but also through increased awareness. In practice, evaluation results are mixed and vary across programmes and outcomes examined.[82]

CCTs can also improve the well-being of children and their future prospects by reducing child labour through *i)* the conditionality that requires children to attend school (and increases awareness among parents), and *ii)* the income effect which reduces the pressure on parents to put children at work. Results available for *Oportunidades* show that work among older children, aged 12-17, was reduced, especially among boys (for whom baseline levels of child work also were substantially higher). In the Mexican programme again, Skoufias and Parker (2001) show that domestic work decreased substantially, especially for girls.

Having means-tested programmes already in place makes it easier to mitigate the effects of the crisis

A number of countries (Chile, China and Indonesia) have introduced specific one-off cash transfers to cushion the impact of the shock on the poorest groups. In doing so, both Chile and China have made use of the already existing schemes to identify eligible households. In Chile, two payments equivalent to about 25% of the monthly minimum wage were made in March and August 2009, reaching respectively 3.7 and 3.9 million households already participating to the various social assistance programmes.[83] In China, in addition to the ongoing increase in coverage (see Box 2.3), a one-off transfer was provided to poor households, equivalent to the average *Dibao* monthly benefits in urban areas in 2008,[84] and to twice the average *Dibao* monthly benefit in rural areas (Cai *et al.*, 2010). 63 million Dibao recipients benefited from this exceptional transfer, as well as 11 million households not receiving the *Dibao*, which were probably already identified as vulnerable households by the local committees in charge of identifying households eligible to the *Dibao*.[85] In Indonesia, the BLT already used twice to mitigate the effects of reductions in fuel price subsidies in 2005 and 2008, was activated for a third time in March 2009.[86] A benefit equivalent to about 20% of the minimum wage in Jakarta should have reached 18.5 million households. It is not clear, however, whether changes have been made in the way households were selected compared with 2005 and 2008, when targeting problems were important (see above).

Some countries have introduced permanent reforms that were not specifically motivated by the crisis, but were part of a long-term anti-poverty strategy:

- In Brazil, for example, *Bolsa Família* has been significantly scaled up in 2009, but along the lines planned before the crisis. Following a change in the estimation methodology, the poverty line that was used to target poor families was revised upwards to better take into account the large income volatility of the poorest population groups due to their participation in the informal labour market. The 17% increase in the poverty line raised the estimated eligible population from 11.1 million to 12.9 million and, at the end of December 2009, 12.4 million households were effectively covered. The benefit level was also increased by 10%. Together, these two measures imply a 3.5% growth in the budget for *Bolsa Família*.[87]

- In Mexico, *Oportunidades* coverage was also scaled up by 4% in 2009 up to 5 million household, along the lines planned before the crisis. The benefit amount was significantly raised in response to the rise in food and energy prices. Overall, the *Oportunidades* budget increased by 16%.[88]
- In South Africa, also as part of the long-term programme strategy which aims to extend the CSG to children up to 18 by 2012, the CSG was extended to children aged up to 15 in 2009, instead of 14 as in 2008. As a result, the number of children covered by the programme increased by about 3%. The income threshold used for eligibility was also revised upwards. An additional measure was also taken in response to the crisis and increasing fuel and food prices: all social assistance grants were increased by 20 rands above the usual annual increase in October 2008, which represents an increase of about 10% in the case of the CSG.

Having cash transfers programmes in place is instrumental to alleviate the effects of the crisis on the chronically poor. First, as seen above, the transfers provided tend to reduce poverty and thus constitute a (partial) protection against shocks. In addition, conditional transfers reduce possible long-term consequences of the shocks on school attendance and health status of children. Second, having existing programmes in place makes it easier to introduce exceptional transfers for those already receiving benefits in case of temporary shocks.

However, cash transfer programmes in emerging economies are less appropriate to reach those who fall into poverty as a direct consequence of the crisis. Apart from possible budget constraints, the administrative capacity in these countries is too low for the programmes to automatically register new households falling into poverty as eligible recipients. Means tests would have to be administered at high frequency to keep pace with changing household circumstances, which is far from being the case due to cost and capacity constraints.[89] Besides, proxy-means tests are geared towards indicators of chronic poverty and will not usually identify the newly poor, who may still fall outside the proxy-means test but experience a sudden drop in household income and can no longer afford to buy medicines or pay school fees (Grosh *et al*., 2008). Although this is likely to result in less accurate targeting, it is nevertheless possible to rely on the knowledge of local authorities, such as in China, or on community-based assessments, to identify those who have suffered significant income losses and may have become poor due to the crisis.

3.4. Public works programmes

Compared with cash transfer schemes, public works programmes (PWPs, or public employment programmes, or workfares) can be more easily mobilised to provide support to the newly unemployed workers who are not covered by unemployment compensation schemes. PWPs have been extensively used in emerging and developing economies,[90] and have in fact often been launched or scaled up during economic crises to tackle unemployment and poverty especially for the most disadvantaged groups (women, youth and the disabled).[91] They tend to have two objectives: *i)* provide a safety net to the poor segments of the population through labour-intensive public works; and *ii)* contribute to local development through infrastructure investment.[92] Both objectives imply that they differ from the public works programmes generally used in advanced economies. First, they tend to be more a social policy tool aimed at providing temporary income support to disadvantaged groups than an active labour market measure aimed at improving the employability of participants. Second, the projects undertaken should not only create employment but also benefit the local community, *e.g.* through road construction and maintenance, drainage maintenance projects, or public building maintenance (Grosh *et al*, 2008).

As shown in Table 2.8, the cost and coverage of PWPs vary greatly across countries (for a description of the different programmes,[93] see Annex 2.A6 in OECD, 2010c). Emerging economies spend a substantial amount of their GDP on PWPs. By far the largest programme, is the Indian Mahatma Gandhi National Rural Employment Guarantee (ex-Maharashtra Employment Guarantee Scheme/NREGA) (Box 2.4) with a spending of about 0.51% of GDP and a coverage of about 10% of the labour force in 2008-09, against respectively 0.05% of GDP and 0.6% of the labour force on average in the OECD in 2007. South Africa also spends much more than the OECD average and the coverage of the Expanded Public Works Programme (EPWP) was about 3.4% of the labour force in 2008-09. Chile and Indonesia spend a slightly higher share of GDP on direct job creation programmes than the OECD countries on average. While coverage is low in Chile and Turkey, it reached 5% of the labour force in Indonesia in 2000, which is significantly higher than in OECD countries; in Belgium, France, Ireland and the Slovak Republic which operate the largest direct employment programmes in OECD, they cover between 1.1% and 2.7% of the labour force.[94]

Table 2.8. **Main features of public works programmes (PWPs)**

	Name of the programme	Year	Number of beneficiaries	Beneficiaries as % of labour force	Expenditure as a share of GDP (%)	Wage share in total expenditure (%)	Average duration (days)
			Panel A. **Pre-crisis**				
Chile	Various programmes (PIC, PEE and PMU)	2003	16 161	0.3	0.06	. .	. .
India	NREGA	2006-07	21 016 099	4.7	0.21	68	43
Indonesia	Various programmes	2000	4 796 075	4.9	0.06	. .	. .
Mexico	Programa de Empleo Temporal (PET)	2003	817 000	2.3	0.02	79	87
South Africa	Expanded Public Works Programme	2006-07	316 814	1.82	0.10	11	80
OECD	Various programmes	2007	. .	0.6	0.05	. .	. .
			Panel B. **2008-09 crisis**				
Chile	Various programmes (PIC and PEE)	2009	45 186	0.6	0.09	. .	. .
India	NREGA	2009-10	47 902 280	10.3	0.51	68	50
Indonesia	PNPM (Rural)	2008	1 605 394	1.4	0.08	12.2	9.5
Mexico	Programa de Empleo Temporal (PET)	2009	699 000	1.6	0.02	. .	55
Russia	Public and Temporary Works Programme	2009	792 000	1.0	0.02	. .	50
South Africa	Expanded Public Works Programme	2008-09	570 000	3.4	0.25	11	80
Turkey	Toplum Yararina Calisma Programi	2009	45 445	0.2	0.01	65	90

Notes:
Chile: employment programmes include *Programa de Inversiones en la Comunidad* (PIC), *Programa de Emergencia de Empleo* (PEE) and *Programa de Mejoramiento Urban* (PMU); total beneficiaries do not include numbers for PMU; expenditure for 2009 only includes information from Proempleo and CONAF.
India: beneficiaries refer to number of households rather than persons; figure on wage share refers to 2007-08. *Source*: Chhibber *et al.* (2009).
Indonesia: beneficiaries in 2000 include total of all employment creation programmes and PDM-DKE; expenditure refers to all productive employment generation programmes and PDM-DKE.
Mexico: expenditure in 2008 and 2009 only includes wages and some materials and tools, but no administration costs.
OECD: unweighted average.
Russia: data refer to the period from January to October 2009; number of beneficiaries only includes the unemployed and excludes workers at risk of layoff and refers to those who have started and completed an assignment; average job duration refers to all beneficiaries; total expenditure for the two groups of beneficiaries is RUR 14.5 billion; the share of expenditure for the unemployed is estimated to 40% of the total.
South Africa: data for 2009 only refer to the period April 2009-December 2009; the number of total beneficiaries is calculated on the basis of the number of persons-year and the average job duration; job duration is calculated as an average for the period between April 2004 and March 2009.
Source: Annex 2.A6 in OECD (2010c).

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Box 2.4. **The Indian and South African PWPs**

India: the National Rural Employment Guarantee Scheme (NREGA) is India's largest public works' scheme and possibly one of the largest in the world in terms of coverage (10% of the labour force in 2008-09). It was initially established in 1978 in the state of Maharashtra and was slowly extended to reach complete coverage of the country in 2008-09. The scheme aims to provide to all rural households a guarantee of up to 100 days of unskilled manual wage employment (mainly in water conservation, land development and drought proofing) per year at the minimum wage for agricultural workers in the state. If no work offer is made 15 days after the demand is done, the claimant gains the right to receive an unemployment benefit of between 30 and 50% of the minimum wage. The scheme was significantly scaled-up in 2009, but this expansion is more likely to be linked to national elections than to the global economic downturn.

Although the NREGA can play an important role in reducing short-term poverty and smooth employment for rural labourers and income throughout the year, its enormous potential has not yet been fully explored (Chhibber *et al.*, 2009). Fund utilisation remains low especially in poorer states, possibly due to the funding design of the scheme. Fund allocation is not pre-determined based on state income levels, but instead it is based on each State's Annual Work Plan and Budget Proposal submitted to the Ministry of Rural Development. As a result, low-income states with more households below the poverty line, and lower than average capacity to plan, manage and forecast labour demand, tend to receive on average less resources (Chakraborty, 2007). In addition, the weak implementation capacity at the local level limits the benefits poor rural communities derive from the scheme. The average duration of jobs is only 50 days, possibly because rural labourers tend to participate in the scheme only in the lean season and in special drought conditions.

South Africa: the South African Expanded Public Works Programme (EPWP) was launched in 2004, as the new version of the National Public Works Programme (NPWP) and the Community Based Public Works Programme (CBPWP). It is the third-biggest infrastructure spending programme in the world and a key component of the South Africa's social protection strategy. The programme provides short-term work to the unemployed and to marginalised groups, mainly unskilled, poor and youth in four areas (infrastructure, economic sector, environment and social sector), with infrastructure being the most important. The scheme aims not only at providing a temporary job to poor, unemployed persons, but also at strengthening their skills through training and offering "exit" strategies at the end of their participation in the programme.

However, the EPWP has been criticised on the ground of limited capacity to pursue both objectives at the same time (Hemson, 2007). As a result, the second phase of the scheme announced in April 2009, places more emphasis on employment generation relative to training provision in order to maximise the benefits from job creation. The quality of jobs offered by the EPWP is fairly low both in terms of job duration and wages. As in the Indian scheme, average job duration is shorter than initially stipulated, especially in areas with high unemployment rates because of the pressure to rotate jobs (Lieuw-Kie-Song, 2009) and wages are low (Hemson, 2008). In addition, low actual spending, possibly due to unclear funding conditions at the moment that projects decisions are taken, in combination with weak implementation capacity further limit the effectiveness of the scheme. The second phase of the programme aims to address these challenges by improving co-ordination across governmental bodies and providing incentives to promote programme expansion and increase job duration.

The wage level is a self-selection mechanism

The maximum duration of jobs, the type of work to be performed, the timing of the projects[95] offered, especially in rural areas, and the level of wages paid[96] to the participants are key design features of the programmes and determinants of their success (Subbarao, 1997). The average duration of a job in the programmes covered here ranges from 9.5 days in Indonesia to 90 days in Turkey. Wage setting, is one of the most important elements of PWPs as it affects the selection of participants through (self-) selection and the composition of participants (Paci *et al.*, 2009). A high wage, relative to the average market wage in the area and sector of work, can create job disincentives among those already employed and lead to job rationing (for a summary of evidence on this, see Subbarao, 1997). In contrast, a relatively low wage operates as a self-selection device encouraging the participation of those who are most in need. The wages offered by the Mexican PET and the Indian NREGA are equal to the minimum wage, which ensures correct targeting as minimum wages are fairly low in these countries. Similarly, the Indonesian PNPM Rural is likely to provide appropriate targeting, as it offers wages that are lower than the prevailing market wages for unskilled labourers on construction projects. By contrast, evidence from the Indonesian *Padat Karya* programmes of the late 1990s suggests that setting the wage above market levels to attract workers creates disincentives for work among those already in work (Sumarto *et al.*, 2000; Betcherman and Islam, 2001). Similar evidence is found in the case of the PWP in Chile, where wages were equal to the minimum wage, which is fairly high by international standards. Nonetheless, the balance is difficult to find as setting the wage too low might go against the principal objective to provide a minimum income support to the poor.

PWPs have to find a balance between providing income support to the poorest and contributing to local development. The higher the labour intensity of the projects, the higher the probability of meeting the first objective and the lower the probability of meeting the second one. The higher the share of wages paid to participants in total expenditures, the larger is the impact of the programme in terms of income support provision. The wage share depends on the labour intensity of the programme, which, in turn, is determined by the type of work performed. Both the Indian NREGA, the Mexican PET and the Turkish *Toplum Yararina Calisma Programi* spend a substantial share on wages (68%, 79% and 65%, respectively). By contrast, in the Expanded Public Works Programme (EPWP), the wage share is only about 11% of total expenditure in 2008-09, implying that the benefits participants derive in terms of income per rand spent on the programme are rather limited. This is due to the high capital intensity of the projects in two of the sectors concerned (economic sector and infrastructure) (Box 2.4), and might also be related to the fact that the programme provides training to participants. However, this aggregate figure hides differences across the four sectors covered by the programme: in the social sector, despite the relatively low wages paid to participants, wages represent 43% of the total cost, while they represent only 9% of total expenditure in the more capital-intensive infrastructure sector.

Design and institutional setup determine the programme's success

The institutional framework and implementation design are key factors for the effectiveness of PWPs (Subbarao, 1997). Implementation of the programme by local communities and governments can be advantageous as they have a better knowledge of the needs of poor people in their areas and hence are in a better position to target specific groups and monitor the programme. Involving local communities in the identification of projects for implementation ensures that such projects respond to their needs (Ravallion

and Lokshin, 2008). Their involvement, as well as that of civil society groups, in the design, implementation and monitoring of programmes is crucial and should start as early as possible. Furthermore, the programmes often involve various ministries and government departments as well as other institutions, and efficient co-ordination among those, although costly, is instrumental for the success of the programmes.[97] Examples of PWPs where the targeting and implementation are conducted at the local level are the NREGA in India and the late 1990s PDM-DKE in Indonesia. In the former, the implementation by local governments has been seen as an improvement of the scheme compared to its predecessors (Chhibber *et al.*, 2009). In the latter, funds were provided from the central government directly to the communities *via* local governments and were determined as a function of the number of poor and unemployed in the village. Targeting and monitoring were also conducted at the village level (Lubis, 1999). However, local-level implementation and monitoring entails the risk of corruption and nepotism. For example, the PDM-DKE was heavily criticised for being linked to national politics (1999 national elections) and associated to corruption.

Close monitoring of the operation and outcomes of the schemes are necessary for the evaluation of PWPs. The outcomes that are usually considered in evaluations include the share of the unemployed and the poor among beneficiaries, the impact on participants' incomes and the reintegration of the participants into non-subsidised employment following their participation in the programme. The way infrastructure projects were selected in the Indonesian PWPs of the late 1990s did not favour the poorest groups of the communities (Perdana and Maxwell, 2004). This has been successfully addressed by the PNPM-Rural, introduced in 2007, with 73% of rural workers participating in the programme being classified as very poor by their communities (Ministry of Home Affairs, 2008). The coverage of the programmes among disadvantaged groups such as women, ethnic minorities and scheduled castes and tribes (in India) are also important parameters of their success. The Indian programme has achieved an increase in the share of women's participation from 40% in 2006 to 49% in 2009 across the country (OECD, 2010d). A high participation of women (about 49%) in village and sub-district planning meetings is also recorded for the PNPM rural (Ministry of Home Affairs, 2008), whereas the late 1990s employment programmes in Indonesia were characterised by low female coverage (Betcherman and Islam, 2001).

No single programme discussed in this section has been successful on all grounds. While the Chilean direct employment programmes have been quite successful in increasing the incomes of participants' households and the employment prospects of participants (Bravo *et al.,* 2004), they are thought to have created disincentives for work among the old and increased school drop-out rates for the young (Chumacero and Paredes, 2007). Similarly, the Indian NREGA which is considered successful in terms of jobs creation, including for marginalised groups (Chhibber *et al.*, 2009), has nonetheless been criticised for misuse of programme funds, ghost workers, and underpayment of wages and corruption (Ajwad, 2007). In addition, high administrative costs and uncertain returns to infrastructure investment projects contribute to the debate on its effectiveness (Chhibber *et al.*, 2009). Ajwad (2007) argues that guidelines for the identification of workers and projects are not always followed and days of work and wages are often lower than the ones stipulated in the programme (100 days and minimum wage, respectively). The effectiveness of the late 1990s *padat karya* (employment) programmes in Indonesia was also rather poor, as it covered only 8.3% of poor households in late 1998 and 70% of the

participants were not poor, a result which can largely be attributed to the failure of the self-selection mechanism due to the high wage proposed to participants (Sumarto *et al*., 2003). Furthermore, limited long-term planning and weak capacity building reduced the effectiveness of those schemes (AusAID, 1998; URDI, 1999). Limited evidence (Papanek, 2007) on the *PNPM* Rural suggests that for the programme to have a substantial impact on the poor, it should provide additional funds to the sub-districts (as currently planned) so as to increase the average job duration from 9.5 days in 2008 to at least 60 days of work.

More generally, the effectiveness PWPs in combating poverty relative to other safety nets is debatable. For instance, Murgai and Ravallion (2005) argue that the Indian PWP is quite costly and that an unconditional cash transfer to all households in rural areas in India may be more successful in reducing poverty compared with an employment scheme that aims to support the poor. A similar argument is made by Agarwala and Khan (2002) who question the effectiveness of the Indian NREGA in increasing net employment and reducing poverty, in comparison with general programmes to increase growth.

Scaling up existing PWPs can be useful in times of crises

While PWPs are not the most appropriate tools to tackle endemic poverty, they can nevertheless be quite useful instruments in times of crisis. Contrary to cash transfers programmes, a low wage ensures self-selection into PWP and hence minimises targeting errors. Along the lines of OECD countries (OECD, 2009a), Chile, Mexico and South Africa, extended the coverage of existing public employment programmes and increased the funds allocated to them to mitigate the effect of the global crisis. The expansion of the EPWP in South Africa led to a 20% increase in the number of jobs created between April and December 2009, relative to the same period in 2008. The authorities have announced a target of 4.9 million jobs from 2010 until 2014,[98] amounting to a tripling of the number of jobs created in the first five years of the programme's operation. It is not clear whether this increase was already planned before the crisis, but it was in any case brought forward to respond to the recent increase in unemployment. The Mexican Government scaled up the PET to cover about 700 000 persons, implying an increase in coverage by about 90% and expenditure by 71% relative to 2008. Chile has also scaled up the already operating public works schemes, such as the PEE (*Programa de Emergencia de Empleo*), PIC (*Programa de Inversiones en la Comunidad*) and PMU (*Programa de Mejoramiento Urban)*, to tackle rising unemployment due to the crisis, but these programmes remain substantially smaller than those in Mexico and South Africa.[99]

Russia and Turkey, for their part, launched new programmes. The Public and Temporary Works Programme (PTWP) launched in 2009 in Russia, consists in fact of two schemes: *i)* a short-time work scheme for workers at high risk of dismissal involving a minimum wage payment for works done by employees at their enterprises, and *ii)* a public works programme in municipalities for the unemployed, with no investment content.[100] As a result, only a small part of the overall programme would qualify as a public works programme similar to the ones operating in the other countries covered in this section. The component of the programme for the unemployed covers almost 1% of the labour force and its expenditure stands at 0.02% of GDP. The programme targets in priority unemployed not receiving unemployment benefits and those who have been unemployed for more than six months. Participation to the programme does not remove access to other benefits (unemployment benefits or social assistance). The main objective of the programme is to provide additional income support to participants.

Turkey also introduced a PWP (*Toplum Yararina Calisma Programi*) in 2009 which created about 46 000 jobs in infrastructure projects. The maximum job duration was of six months, and the programme is expected to continue in 2010 aiming to create 45 000-50 000 additional jobs for a cost of about 150 million Turkish liras.

The selection of projects to be undertaken is particularly important in times of crisis: projects that entail high non-labour cost should be avoided, whereas labour-intensive ones would be more appropriate (Maloney, 2001). Comparing experiences during the 1990s crisis, Grosh *et al.* (2008) found that scaling-up the existing PWP, as was the case in Mexico, was more efficient than introducing a new one, as happened in Indonesia. Having schemes already in place avoids start-up costs and reduces implementation challenges, and this has allowed Chile, Mexico and South Africa to provide a quick, and easier to implement, response to the increase in the numbers of the unemployed resulting from the recent downturn.

Conclusions

All emerging economies reviewed in this chapter have been affected by the global economic crisis of 2008-09. However, its economic impact has been very different across countries: while some, such as Indonesia, largely managed to steer clear from the global crisis, others, such as Turkey, saw total output declining by about 14%. Interestingly, most of the emerging economies considered in this chapter have now made a full recovery to their pre-crisis output growth rate.[101] While this is clearly a positive sign, the economic costs have been huge in some countries. In Turkey and the Russian Federation, for example, the size of the total economy may be up to a fifth smaller than what it would have been had output growth continued at pre-crisis trends. More importantly in the context of this chapter, unemployment and underemployment have increased substantially during the downturn and may remain high for some time to come. This means that the labour market and social implications of the global crisis continue to affect the lives and welfare of many workers and households during the recovery in some of the emerging economies considered here.

The way labour markets have adjusted to the global crisis differs strikingly across the emerging economies considered in this chapter. A similar conclusion was reached based on a detailed analysis of labour-adjustment patterns in the OECD countries in Chapter 1 of this publication. However, in all the emerging economies for which comparable data are available the employment response to the slowdown in output growth has been weaker than in the OECD area. This suggests that an important part of the labour market response has taken the form of increased underemployment through a combination of reduced working time, lower on-the-job wages or a reduction in average job quality (*e.g.* increased informal employment). An accurate assessment of the relative importance of these margins, however, remains elusive. Comparable data on average hours and job quality are only available for few emerging economies, while macroeconomic data on cyclical changes in real wages are difficult to interpret due to the importance of composition effects that arise when low-wage workers are the first to lose their jobs during a recession period (Bils, 1985).

Nevertheless, this chapter has shown that the risk of increased informal employment may be particularly important during the global crisis due to its disproportionate impact on the tradable sector where jobs are more likely to be formal and formal jobs are more sensitive to aggregate demand shocks. Consequently, countries have to confront the challenge of

providing support to workers directly affected by job losses or earnings cuts while also helping poor households which may see their income falling further, even if they were not directly affected by the crisis. However, it is also shown that those most affected by the crisis and those most likely to experience economic difficulties even before the crisis share many of the same characteristics. For example, youth and low-skilled workers both have an elevated risk of being poor in normal times, but are generally also among the most affected by the crisis. This does not mean though that the poorest are also the most affected, but rather that the same characteristics that increase the risk of poverty may also help explain why certain groups are the first to lose their jobs when the economy is going down.

Perhaps, the most important lesson from this chapter is that the most effective response to the sudden increase in social needs may be to develop and improve labour market and social policy frameworks. Having social protection programmes in place obviously helps mitigating the social impact of the crisis through the existing mechanisms. However, it also allows governments to more easily and more effectively scale up or adjust such programmes to respond to the changing nature in needs. The three employment and social measures discussed in this chapter, unemployment compensation schemes, cash transfer programmes and public works programmes, all have a structural role to play in the emerging economies considered. Developing and adjusting these systems in the context of a long-term structural agenda that fits the major economic and social transformations that are taking place within the emerging economies considered in this chapter should be a first priority. By highlighting the structural vulnerabilities of social protection systems in the different emerging economies, the global crisis may provide additional momentum for making progress on the structural employment and social policy agenda.

Notes

1. The Russian Federation has formally engaged in the process of becoming a full member and the OECD has established "Enhanced Engagement" programmes with Brazil, China, India, Indonesia and South Africa. "Enhanced Engagement" is a unilateral initiative by the OECD to strengthen co-operation with the countries in question.
2. Counter-cyclical macroeconomic policies also have a crucial role to play in mitigating the economic and social costs of the global crisis.
3. The growth loss figures for China are preliminary as, at the time of writing, this country had not made a full recovery relative to its pre-crisis trend.
4. In addition to benchmarking recent emerging economies to the OECD area as a whole, it may also be of interest to consider different OECD-country groupings. Two different country groupings were considered for this chapter: *i)* low-income OECD countries with below-average levels of GDP per capita and high-income countries with above-average income levels; and *ii)* OECD countries with a below-average trade shock, and countries with an above-average trade shock, where the trade shock is defined in terms of the change in exports over the year to 2009 Q3 as a % of 2008 Q3 GDP relative to the median change in the OECD. The results from this exercise are reported in Annex 2.A2 of OECD (2010c). As can be seen in the annex, distinguishing between these different groups does not appear to be very effective in capturing the substantial degree of heterogeneity in labour demand adjustment patterns across the OECD, as documented in Chapter 1 of this publication. These additional groupings are, therefore, not taken up in the various figures presented in this section.
5. In Mexico, the swine flu epidemic also contributed to the output loss.
6. For details on the pre-crisis trends and the duration of the growth slowdown, see Annex 2.A2 of OECD (2010c).
7. So far, only a few studies that have attempted to assess the relative importance of different explanations. See Berkmen *et al.* (2009) and Rose and Spiegel (2010).

8. Indeed, the view that the increased integration of emerging economies in the world economy has increased their vulnerability to adverse economic shocks in advanced countries has been challenged by the "decoupling hypothesis" which gained popularity in the run-up to the global financial crisis. The decoupling hypothesis argues that business cycles in emerging economies have grown more independent in recent years, because of the increased importance of domestic demand, the relatively low domestic content of exports and South-South trade. The modest slowdown in output growth during the global financial crisis in emerging Asia and Brazil (see Figure 2.1) may be a first indication that this is the case. Kose *et al.* (2008) provide empirical evidence in support of the decoupling hypothesis.

9. The OECD area includes Mexico and Turkey, which both experienced an above-average decline in the value of exports. Excluding Mexico and Turkey from the OECD average would, thus, further reinforce the impression that emerging economies are hit particularly hard by the decline in exports during the global crisis.

10. Reinhart and Rogoff (2008, 2009) suggest that the vulnerability of emerging economies to *sudden stops* may explain why output contractions in the past have tended to be greater in emerging markets than in developed countries, but also more short-lived.

11. The absolute reduction in the value of FDI inflows between 2008 and 2009 in the other eight emerging economies ranged from about 20% in India, Chile and South Africa to between 40% and 50% in the Russian Federation, Indonesia, Mexico and Brazil and to about 60% in Turkey.

12. In five of the selected countries, the growth rate of gross fixed capital formation has fallen sharply over the year to 2009 Q2 and substantially more than in the OECD area as whole. However, in emerging Asia and South Africa, investment growth has kept up fairly well and there is little evidence that the global economic crisis has had a large impact on the availability of credit in those countries.

13. Indeed, migrants tend to be affected much more than their native counterparts (OECD, 2009b).

14. At least, in those emerging economies with fully flexible exchange rates. The scope for using monetary policy to stimulate aggregate demand may have been more limited in Russia and China as lowering policy interest rates may not necessarily be consistent with the monetary policy objective of maintaining stable exchange rates.

15. In Chile, not included in Table 2.1, the overall package of fiscal stimulus accounts for about 1.8% of GDP, excluding recapitalisation measures (OECD, 2010c). This is close to the OECD average. Chile increased spending on several temporary programmes (public works, a one-time cash allowance for low-income households, a temporary increase in subsidies for training measures) and various tax reductions. The government also brought forward more permanent reforms including the extension of unemployment benefits to workers with fixed-term contracts and the introduction of a wage subsidy for young low-wage workers.

16. In Chile and Mexico, the share of the population living in absolute poverty has fallen by about two thirds. In India, the poverty rate has fallen modestly by 6% percentage points between 1994 and 2005 and poverty remains very high. In the transition period following the end of Apartheid in South Africa in 1994, the poverty rate increased by almost 5% percentage points.

17. In addition to the global financial crisis, the global food crisis may also have important implications for absolute poverty rates in emerging economies.

18. The share of workers affiliated to social security is measured across all groups of workers (*e.g.* salaried, self-employed, own-account). As a result the empirical definition of formal employment is not fully consistent with the conceptual definition based on compliance for Chile, China, India, Indonesia and Mexico, as self-employed and own-account workers are not required to register for social security in these countries. Social security coverage will become mandatory for self-employed in Chile between 2012 and 2015, and it is already mandatory in Brazil, South Africa, Russia and Turkey.

19. The self-employed are a notoriously heterogeneous group consisting of entrepreneurs, professionals and subsistence workers (see Perry *et al.*, 2007; Bargain *et al.*, 2010). As a result, in some countries average earnings among the self-employed exceed those of salaried workers, which may indicate that self-employment may well be a voluntary choice of such workers and not just the exclusion from formal sector employment. Moreover, the occupation-based definition implicitly assumes that all salaried workers have access to social security provisions, which is far from being the case in practice.

20. To an important extent, this decline may be attributed to the ongoing process of urbanisation that characterises many of the emerging economies considered here. However, also within the

agricultural and non-agricultural sectors, there is some evidence that informality has declined (see Annex 2.A3 of OECD, 2010c).

21. However, it is more difficult to interpret changes in the share of self-employed given the wide heterogeneity in individuals included in this group.

22. In four out of the seven countries for which data on the share of the population aged 15 and above in employment are available, the employment rate does not appear to be substantially lower than that of the OECD average. However, cross-country comparisons based on the population aged 15 and above are misleading as life expectancy tends to be considerably higher in the OECD area than in emerging economies. As employment rates among the elderly tend to be very low, this causes the OECD employment rate to look much lower than it really is. Changing the focus from the population aged 15 above to the working-age population (15-65) increases the OECD's employment rate from 58% in 2008 to 66%. For Mexico and Turkey, where life expectancy is lower, restricting the focus to the working-age population only marginally increases the employment rate (from 58% to 60% in Mexico and from 42% to 45% in Turkey).

23. China may be an important exception among emerging economies by having higher labour force participation than the OECD. The latest *OECD China Economic Survey* suggests that the employment rate may be close to 85%, considerably higher than the OECD average. This may be based on the implicit assumption that the entire rural working-age population is in employment (OECD, 2010b).

24. This largely reflects the geographic fragmentation of the economy that was inherited from the Apartheid regime (OECD, 2008b).

25. That is the period during which output growth fell below trend.

26. While the cyclical employment rate continued to rise during the decline in output growth in Indonesia, the World Bank reports that most new jobs are of low quality and concentrated in the informal sector.

27. Panel B of Figure 2.7 shows that the cyclical response in the unemployment rate to the cyclical decline in output (also called Okun's coefficient) has been smaller in all the emerging economies for which comparable data are available than in the OECD. The difference would have been even starker when considering the percentage change in unemployment instead of the percentage point change as labour force participation tends to be considerably smaller in most emerging economies than in the OECD area.

28. For a more detailed discussion of the role of labour hoarding during the global crisis in OECD countries, see Chapter 1 of this publication.

29. The very large growth loss in earnings in the Russian Federation documented in Figure 2.8, Panel A, reflects mainly the exceptionally fast growth in real earnings during the period 2005-08, although real earnings have also declined substantially during the crisis period in absolute terms. Nevertheless, the figure also indicates that the slowdown in earnings growth exceeds that in labour productivity growth which is somewhat odd. This may reflect the fact that the various data series do not cover exactly the same population. For example, earnings only cover the manufacturing sector whereas labour productivity covers the entire economy.

30. However, nominal wage rigidities may also be less important in emerging markets due to the weaker role of trade unions and the greater importance of informal employment (Dickens *et al.*, 2007).

31. Moreover, the cyclical changes in earnings in Panel B of Figure 2.8 are likely to understate the full extent of the reduction in earnings for workers who stay in employment due to the changes in the composition of the workforce that may arise when job losses are concentrated among low-earner workers. A similar argument applies in the context of average hourly wages below.

32. The large cyclical reduction in average hours observed in Turkey, in part, reflects the increasing trend in average hours worked in the three years preceding the crisis and, in part, an absolute reduction in average hours worked during the crisis period. The cyclical increase in average hours worked in Chile is driven by the trend decline in average hours worked in the period immediately preceding the crisis.

33. Aguiar and Gopinath (2007) suggest that, during previous crisis episodes, consumption tended to be more strongly affected in emerging economies than in advanced economies because of the absence of effective insurance markets and social safety nets. For five out of eight emerging economies for which comparable data are available, the cyclical decline in consumption was larger – in absolute terms and relative to the shock – than for the OECD average.

34. The review of past crisis episodes and their effects on labour markets in Section 2.1 includes all countries which experienced a recent crisis prior to the global crisis: Brazil, Chile, Indonesia, Mexico

and Turkey. The analysis in Section 2.2 is restricted to Brazil, Chile and Mexico as regional GDP data are not available for Turkey and no comparable definition of formal employment for Indonesia is available in the data. The simulations in Section 2.3 are limited to Brazil and Mexico as only for those two countries statistically significant results were found in the analysis of Section 2.2.

35. The rise in unemployment during times of crisis is not only due to job losses among formal-sector workers. Indeed, a number of studies have shown that informal workers, who lose their job, account for a substantial part of the rise in unemployment during an economic downturn (Vodopivec, 1995; Grogan and Van den Berg, 2001; Kupets, 2006).

36. Informal employment outside the primary sector is proxied by the number of workers not covered by social security in total non-primary employment for Brazil, Chile, Mexico and Turkey and the share of the self-employed and unpaid and family workers in total non-primary employment for Indonesia. See Section 1 and Annex 2.A3 of OECD (2010c) for more details on definitions and data sources.

37. These patterns are broadly in line with the existing literature. Studies for many of the countries examined here have shown that formal employment declines in times of crisis, whereas at least some forms of informal employment tend to be counter-cyclical (Bosch and Maloney, 2008; Carneiro and Henley, 1998; Maloney, 1998; Carneiro, 1997; Saavedra and Chong, 1999; Saavedra and Torero, 2000; Perry *et al.*, 2007). Thus, there is some evidence that the informal sector acts as a shock absorber for formal workers who lose their jobs.

38. Mexico and Turkey both experienced currency depreciations during the current crisis, but these are substantially smaller than the devaluations observed during the past crises.

39. The data by location refer to location refer to Brazil and Chile only as the ENEU for Mexico only covers urban areas. The lack of data for the rural areas may affect the other descriptive statistics age, gender and skill, but is unlikely to affect the qualitatively pattern.

40. The respective labour market statistics for the three countries are presented in Annex 2.A4 of OECD (2010c). Although there are cross-country differences in labour market outcomes across these groups, the overall patterns tend to be similar.

41. Although trade liberalisation and economic restructuring in emerging economies may have boosted the work opportunities of women through manufacturing expansion (especially in sectors such as garments, shoes, and crafts), it is likely that the majority of these new jobs are not fully formal (Ghosh, 2004).

42. The probability of observing a certain labour market outcome (employment, unemployment, inactivity and formal employment) is regressed against regional GDP, demographic variables and a full set of time and regional dummies.

43. The analysis was also conducted for Indonesia, but the low variation in the labour market outcomes has provided statistically insignificant results.

44. The share of formal employment in total employment is measured on the basis of social security coverage.

45. It is a stylised fact that youth, women and low-skilled persons are more likely to be in informal employment even in normal economic conditions (see for instance the discussion in Jütting and de Laiglesia, 2009; and Perry *et al.*, 2007).

46. More specifically, the trade effect is calculated as the sum of the employment-weighted impact of the sectoral shock (measured as a deviation from the national average) and the changes of the employment shares in each sector times the corresponding probability of being formal.

47. In Brazil, the pattern of relative business-cycle sensitivity across population groups is similar in the tradable and the non-tradable sectors. In Mexico, the pattern of relative business-cycle sensitivity is quite different across the two sectors, but the business-cycle sensitivity in the tradable sector is always larger to that in the non-tradable sector.

48. This is primarily driven by differences in the relative sensitivity to the business cycle across population groups within the tradable and the non-tradable sector.

49. For a description of employment protection in the nine emerging countries studied in this chapter, see Annex 2.A5 of OECD (2010c).

50. A number of the countries considered here have mandatory contributions to private social insurance schemes. As a result, private social expenditure tends to represent an important component of total social expenditure in those countries. However, this could not be included in the figure due to data limitations.

51. As data on social insurance are not available for South Africa and Indonesia, this could not be included in Figure 2.14, Panel B.

52. On the pro-cyclicality of social spending in previous crisis, see Braun and Di Gresia (2003). Looking at the composition of fiscal stimulus packages further indicates that the emerging economies have placed a greater weight on social spending than advanced economies. This has been particularly important in the Russian Federation and Mexico (IMF, 2009b).

53. The chapter makes use of: *i)* the ILO Survey that was circulated in Spring 2009 on new measures for employment and social protection announced or taken by countries between mid-2008 and 30 July 2009; *ii)* answers to a new country-tailored questionnaire circulated by the OECD Secretariat in late 2009 and early 2010 that was specifically designed for the purposes of this chapter and was concerned with new measures that were taken or announced in response to the crisis in three policy areas: unemployment compensation schemes, cash transfers, and public works programmes, for Brazil, Chile, India and South Africa. Two joint EC/OECD questionnaires were circulated in late 2008 and late 2009 to all OECD countries, including Mexico and Turkey. The responses to these questionnaires are summarised in OECD (2009a) and Chapter 1 of this publication. Complete answers to these questionnaires were received from Brazil, Chile and Mexico, partial answers from South Africa and Turkey, and no answer from India.

54. The Indian scheme is available only to workers covered by the social insurance scheme, which, as seen in Box 2.2, is of extremely limited coverage. The measures introduced in 2009 to *i)* ease eligibility conditions and *ii)* lengthen the benefit duration have not modified this situation.

55. The levy is allocated to a fund for the protection of workers, which also finances job-search assistance and active labour market programmes.

56. *Source:* Leibbrandt *et al.* (2010).

57. See Table 1.1 of *OECD Benefits and Wages 2007*, characterising OECD countries unemployment insurance benefits in 2005.

58. This was the case in the Czech Republic, Slovak Republic, United Kingdom and United States before the crisis.

59. See Annex 2.A6 of OECD (2010c) for sources.

60. *Source:* OECD (2009a), Annex Table J.

61. For a more in-depth discussion of non-standard forms of work in Chile, see OECD (2009c). Although starting from a low level, the share of non-permanent employment increased also significantly in Russia over the past decade to exceed 12% in 2007. It also increased in Mexico, where it represented about 17% in 2008.

62. 4 500 temporary workers received benefits from May to October 2009.

63. About 190 000 workers were concerned by this extension. This represents slightly more than a quarter of unemployment benefit recipients in January 2009.

64. The average benefit duration for formal employees was 3.9 months in 2009, just as in 2008. After a 22% increase in the first quarter of 2009 compared with the previous quarter, the number of benefit recipients has been continuously decreasing until the end of the year.

65. From May to October 2009, 3 000 persons had benefited from it. The replacement rate for each of these two extra months is 25%.

66. *Jornal do Brasil* (28/01/2010). No decision has been taken yet. The Brazilian authorities hope that the external evaluation of the unemployment insurance scheme, which was to be delivered at the end of February 2010, will provide operational elements in this area.

67. This Section reviews only the main cash transfers (in terms of coverage and expenditure) that exist in the nine countries studied. Non-contributory old-age pensions are not included, as they are not of direct help to working-age households affected by the crisis.

68. Coverage figures provided for China concern individuals and not households. Hence, they provide an absolute upper limit for household coverage.

69. *Source:* Grosh *et al.* (2008).

70. A temporary reduction of all or part of the benefit is applied in Mexico, followed by an eventual termination of the benefit for repeated non-compliance. But, because they are targeted at the poorest groups of the population, conditional programmes do not always take a hard line on compliance. It is only after three warning notices and a possible visit of a social worker that the

benefit will be temporarily withdrawn. In the same spirit, in case of non-compliance with the school attendance requirement in South Africa, a social worker will put in place steps to ensure that the child attends, but punitive measures such as stopping the grant are not envisaged (SARS, 2010).

71. Characteristics typically include the location and quality of the dwelling, its ownership of durable goods, its demographic structure, and the education and possible the occupations of its adult members (Grosh *et al*., 2008).

72. For a detailed discussion of those costs, see Grosh *et al*. (2008).

73. In the Brazilian case, data on the average income of recipients suggest that most of these people are only slightly above the programme's poverty line (Kerstenetzky, 2008). Fizbein *et al*. (2009) also note that, in addition to differences in the quality of the proxy means-test itself, there is also significant variation in how implementation is done (whether households are visited or not; whether some variables are verified or not, comprehensively or for a sample). In addition, while the proxy means-testing system is led by a central agency, the day-to-day staffing for it is delegated, often to municipalities, with considerable variability in independence and quality control. The relatively low inclusion error in the case of Child Support Grant can be partly explained by the fact that the income threshold for the means test appears quite high compared with similar programmes in other countries. In addition, a relatively large share of the households receiving the CSG do not report information on their income in the household income survey – on which these estimates are based – and it is likely that part of them are among those who fraud the system.

74. In South Africa, Leibbrandt *et al*. (2010) report that the lack of correct documentation requested for the means-test is the most common reason for people not applying to the Child Grant Support. The Mexican programme has more efficient targeting than *Bolsa Família*, but at the price of having fewer poor households covered (Soares *et al*., 2007). Overall, however, when looking at the ratio of transfers to pre-transfer income at different income percentiles, the three Latin American and the Turkish programmes seem to be well targeted (Soares *et al*., 2007; and Grosh *et al*., 2008).

75. Satriana (2009) notes that levies were also applied on the benefits by local authorities, often to redistribute to poor households who were not selected.

76. For example, the experimental design of *Oportunidades* and its continuous evaluation by an external institution has led to a large number of thorough studies analysing the impact of the programme on various measures, while only little is known about the Indonesian BLT.

77. Soares *et al*. (2007) show that about 21% of the fall in income inequality measured by the Gini coefficient over 1995-2005 in Brazil and Mexico can be associated to *Bolsa Família* and *Oportunidades*, respectively. Similar positive effects on inequality for the two programmes are found by Fiszbein *et al*. (2009) and Barros *et al*. (2006) for Brazil only. In contrast the impact of Chile Solidario on inequality was smaller, most likely because of the low benefit paid to participants (Soares *et al*., 2007) and the fact that the cash transfer is seen as a way to motivate people making use of social workers' services rather than supporting their income.

78. *Oportunidades* has had large effects on school enrolment and attendance (see Fiszbein *et al*., 2009 for a review of different studies), especially for children that move from primary to secondary school and has achieved its objective of increasing schooling and reduced child labour by 15% (Parker and Skoufias, 2000; Skoufias and di Maro, 2006). Positive effects on school attendance, lower probability of absence and dropping out are found for *Bolsa Família* (Soares *et al*., 2007). In South Africa, Case *et al*. (2005) find that receipt of the child support grant benefit results in an 8.1% increase in school enrolment for the 6-year-olds, and a 1.8% point increase for those aged 7 years in two regions (Leibbrandt *et al*., 2010). Galasso (2006) shows that *Chile Solidario* has improved education outcomes for participant households in terms of school enrolment but also adult literacy.

79. Angelucci and de Giorgi (2009) analyse the potential spillover effects of *Oportunidades* and find a positive effect on consumption for ineligible households living in treatment communities. In addition, these indirect programme effects are larger for households facing a negative shock.

80. The girls' secondary-school attendance rate rose by 5.4 percentage point, and by 1.3 percentage point in the primary school (a smaller increase due to already high attendance rate in primary school) (Ahmed *et al*., 2007).

81. Behrman *et al*. (2005) find that children in the random sample that received *Oportunidades* transfers for two more years only had marginally higher schooling grades and wages than those in the control group.

82. Positive effects on various health outcomes are found for *Oportunidades* (Gertler, 2004; Rivera *et al*., 2004; and Behrman and Hoddinott, 2005) and on immunisation for the Turkish SRMP (Grosh *et al*., 2008). Agüero *et al*. (2007) find that children in South Africa receiving the Child Support Grant

during the first three years of their lives are likely to have significantly higher height-for-age than those who have not. The lack of access to health services for the benefit recipients explains why the initial requirement on immunisation for children receiving the CSG was subsequently dropped in South Africa (Leibbrandt *et al*., 2010).

83. *Source:* Answer by the Chilean authorities to the OECD questionnaire.

84. It is equivalent to about 15% of the minimum wage in Shanghai in 2009.

85. They are likely to include registered unemployed, *wubao* families in rural areas (*i.e.* elderly without children who are already provided some benefits), and those who applied for the *Dibao* but were rejected, despite being also likely quite vulnerable to income shocks.

86. Information comes from a post on the Indonesian Ministry of Social Affairs website dated from November 2008 *http://en.depsos.go.id/modules.php?name=News&file=article&sid=82* and from answers to the ILO questionnaire.

87. *Source:* Answer by the Brazilian authorities to the OECD questionnaire.

88. *Source:* Answer by the Mexican authorities to the OECD questionnaire.

89. They are done every two years in Chile (OECD, 2009c), and every three years in Mexico (Grosh *et al*., 2008). They should in principle be reviewed every two years by municipalities in Brazil (Lindert *et al*., 2007).

90. They also have a long history in OECD countries, even if they have fallen somewhat out of function in recent years as a result of poor evaluations.

91. The emergency employment programmes were introduced in Chile in 1982 as a response to the crisis and were revived with the direct employment programme as a response to the 1999 crisis. Likewise, the Mexican *Programa de Empleo Temporal* (PET) was initiated at the time of the tequila crisis in 1995, and the Indonesian *Padat Karya* and PDM-DKE (*Pemberdayaan Daerah Dalam Mengatasi Dampak Kekeringan dan Masalah Ketenagakerjaan*, Regional Empowerment in Overcoming the Impact of Drought and Labour Problems) were also adopted at the time of the Asian crisis in 1997-98.

92. See Grosh *et al*. (2008) for an extensive review of public employment programmes.

93. Similarly to Section 3.3, this section only covers the main PWPs.

94. These are 2007 data from OECD (2009a).

95. The timing of the scheme can play an important role as, for example, in the case of farmers that can rely on the PWP in the low season. Although the Maharashtra Employment Guarantee Scheme doubled the wage offered in 1988 (to follow the increase in minimum wage) to levels above market wages and hence led to job rationing, it still had a beneficial impact on income smoothing for the participants' households (Subbarao, 1997). A low-season-only employment scheme may be more efficient and effective than a programme that operates throughout the year if one takes into account its impact on income smoothing as well as its costs (Murgai and Ravallion, 2005).

96. Moreover, the mode of payment may have an impact on targeting and selection of participants. Subbarao (1997) argues that payments in-kind, such as in the *Sampoorna Grameen Rozgar Yojana* (Village Full Employment Programme – SGRY) programme in India, may attract more women than men.

97. The Indonesian Padat Karya is a typical example of a set of uncoordinated PWPs, ran by various government departments stretching administrative capacity. McCord (2007) argues that the management of the South African EPWP within the Department of Public Works is responsible for its institutional isolation from other components of the South African social safety-net system.

98. This corresponds to a total of just over two million full-time equivalent jobs. Source: answers to OECD questionnaire.

99. In India, as a response to a severe drought that affected parts of the country in 2009, the government extended the target duration of NREGA from 100 to 200 days per year in 272 drought-affected districts out of the 624 Indian districts (ILO, 2010).

100. *Source:* World Bank and Russian Public Employment Service Agency (2010).

101. Only China has not returned yet to its pre-crisis annual growth rate of over 11%.

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Chapter 3

Institutional and Policy Determinants of Labour Market Flows

Many new firms are created every year. At the same time, many existing firms expand, while others contract or even shut down. In the process, many jobs are created and workers are hired; even as many positions are suppressed and workers separate from their employers. Labour reallocation is an important driver of productivity growth, insofar as less productive firms tend to destroy more jobs and more productive ones to create more jobs. What determines cross-country differences in hiring and separation rates? Can policies enhance growth by removing barriers to labour reallocation across industries, firms and jobs? Drawing from internationally harmonised data, the chapter analyses the impact of policies and institutions on gross worker flows in order to better inform policy makers on the channels through which policies affect productivity. However, enhancing labour reallocation can have distributional effects insofar as those workers that lose their job usually suffer from substantial declines in earnings and working conditions, in particular during periods of contracting economic activity. What are the effects of different policies on the likelihood and costs of losing a job? The chapter also examines the impact of policies on the incidence of, and wage premia and losses associated with, different types of labour market transitions.

Introduction

A continuous reallocation of labour and other productive resources is the lifeblood of a market economy. New firms are created; existing firms expand, contract or shut down. Many new firms do not survive their first few years in the market, while other successful young businesses develop rapidly. In the process, large numbers of jobs are created and destroyed. At the same time, many individuals enter the market and fill new job vacancies, while others change jobs or leave employment. As documented by the *2009 OECD Employment Outlook*, each year more than 20% of jobs, on average, are created and/or destroyed, and around one-third of all workers are hired and/or separate from their employer.

Labour reallocation is an important driver of productivity growth, insofar as less productive firms tend to destroy more jobs and more productive ones create more jobs (OECD, 2009). More generally, a growing body of evidence suggests that the process of firm birth and death, as well as the reallocation of resources from declining to expanding businesses, contribute significantly to productivity and output growth (*e.g.* Griliches and Regev, 1995; Foster *et al.*, 2001; and Bartelsman *et al.*, 2009). However, the positive correlation between job flows and productivity growth by no means implies that all labour reallocation is efficiency-enhancing. While removing barriers to reallocation is likely to be consistent with the policy objective of increasing growth, one needs to be cautious in drawing conclusions from this simple correlation, insofar as the efficiency of labour reallocation may vary greatly and be affected by institutions. For example, a growing body of evidence suggests that countries that implemented partial reforms of employment protection legislation, whereby regulations on temporary contracts were weakened while maintaining stringent restrictions on regular contracts, have indeed experienced greater labour reallocation but also slower productivity growth (*e.g.* Bentolila *et al.*, 2008; Bassanini *et al.*, 2009).

Job and worker flows are very different across countries: in some countries annual job and worker reallocations are as large as 25% and 45%, respectively, of dependent employment. By contrast, in a number of other countries, less than 15% of jobs are created and/or destroyed, and about 25% of all workers are hired or separate from their employer in a given year. This suggests that country-specific policies and institutions are likely to play an important role in determining the level of job and worker reallocation. However, there is little cross-country comparative evidence on the way labour market institutions shape these flows, by and large because comparable data for many countries are scarce. By using harmonised data on hirings and separations at the industry level for a large number of countries, this chapter fills this gap, by analysing the role of a number of labour and product market institutions in shaping cross-country differences in labour reallocation. As some of these policies and institutions – namely employment protection, unemployment benefits and minimum wages – have already been found to affect productivity growth (*e.g.* OECD, 2007), this chapter aims at deepening the policy maker's understanding of the role of labour reallocation in accounting for the already documented links between these policies and institutions and long-run productivity performance.

A dynamic labour market nevertheless represents both an opportunity and a cost for workers. Some workers quit their jobs because they have decided to search for jobs that better match their skills and needs and are hired to fill new positions or to replace previous employees. In the process, these workers typically progress in their career and pay (*e.g.* Postel-Vinay and Robin, 2002; Connolly and Gottschalk; 2004; Contini and Villosio, 2007). But other workers are dismissed, either because of post suppressions or because their employers decided to replace them with other workers. For those who are dismissed or have been asked to leave, it may take time to find another job and, even when this is accomplished, the new job might not offer comparable pay (*e.g.* OECD, 2004), in particular in times of severe downturns as in the recent global crisis (see Chapter 1). For this reason, the chapter also traces out key distributional implications of productivity-enhancing labour market reforms through documenting their impacts on the transitions from job to job, the transitions from job to non-employment and the transitions from non-employment to jobs. In the same vein, the chapter also considers how institutions affect the wage premium/penalty associated to these transitions. However, available data only allow to analyse long-run structural relationships. Therefore the results must be seen as referring to a "normal" period of activity and their implications for periods of significant downturns, as in the recent 2008-09 crisis, remain unclear.

The chapter is organised as follows. Section 1 recalls a few stylised facts on different types of labour market transition. Section 2 examines the impact of policies and institutions on worker flows. Conclusions follow.

Main findings

- *The large cross-country variation in gross worker reallocation is associated with large cross-country variations in both job-to-job flows and flows between jobs and non-employment and* vice versa. Nevertheless, at the cross-country level, greater labour reallocation is associated with a lower incidence of long-term unemployment.
- *Large gross job and worker flows partially reflect better job opportunities available to workers* due to an enhanced job-matching process. Available evidence suggests that wage premia to job changes are positive and sizeable in many countries. *However, workers facing involuntary separations typically suffer from wage penalties at re-employment*, even if they do not experience spells of unemployment between jobs.
- *Stringent employment protection for regular contracts is estimated to have a large and statistically significant negative effect on worker reallocation.* As a result, differences in the degree of stringency of employment protection legislation explain between 20% and 30% of the difference in worker reallocation rates across countries. However, in periods of normal economic activity, *employment protection regulations affect mainly job-to-job transitions*, while transitions from jobs to non-employment are unaffected. But this finding might not hold during a jobs crisis, due to labour market congestion. A detailed look at the impact of different employment-protection provisions indicates that high severance pay, long trial periods and strict reinstatement rules strongly compress gross worker flows.
- Less stringent employment protection appears to be associated with greater wage premia in the case of a voluntary job change. Moreover, for those losing their jobs, the evidence suggests that flexibility-enhancing reforms of employment protection are unlikely to worsen wage penalties at re-employment. *However, these reforms might increase the fraction of workers experiencing involuntary job separations who will therefore suffer from a wage penalty at re-employment.*

- *Unemployment benefit generosity appears to have a positive impact on average gross worker flows*. A ten-percentage-point increase in the average net benefit replacement rate – a large reform from a historical perspective – would increase, on average, gross worker reallocation by about 1 percentage point.
- Employed workers are likely to benefit from generous unemployment benefits in the form of higher average wages, brought about, at least partially, by greater productivity growth. In addition, for those experiencing unemployment spells, adequate benefits sustain income during job search and might also promote better job matches, thereby mitigating the wage penalty at re-employment. This suggests that *the provision of adequate unemployment benefits*, if they are made conditional on strictly-enforced work-availability conditions and are part of a well-designed "activation" package to promote quick re-integration into employment, *could be part of a policy package geared at increasing labour reallocation and productivity* that also includes reforms of overly-strict employment protection.
- Among the other policies considered in this chapter, *anti-competitive product market regulations have a moderate depressing effect on labour reallocation*, at least in typically-regulated non-manufacturing industries, possibly due to their dampening impact on firm entry and exit. By contrast, *statutory minimum wages do not seem to have any sizeable effect on gross worker flows*.
- What are the lessons for the current labour market outlook that emerges from these results? *In a period of jobs crisis,* the fraction of workers losing their jobs in total separations tends to increase significantly. As many applicants compete for scarce job offers, these workers are likely to experience protracted unemployment spells and substantial wage penalties at re-employment. Under these circumstances, *it is important to put in place an adequate policy mix to sustain incomes during job search and support the transition towards new jobs*, in particular in countries with less stringent employment protection regulations, where separations tend to be higher.

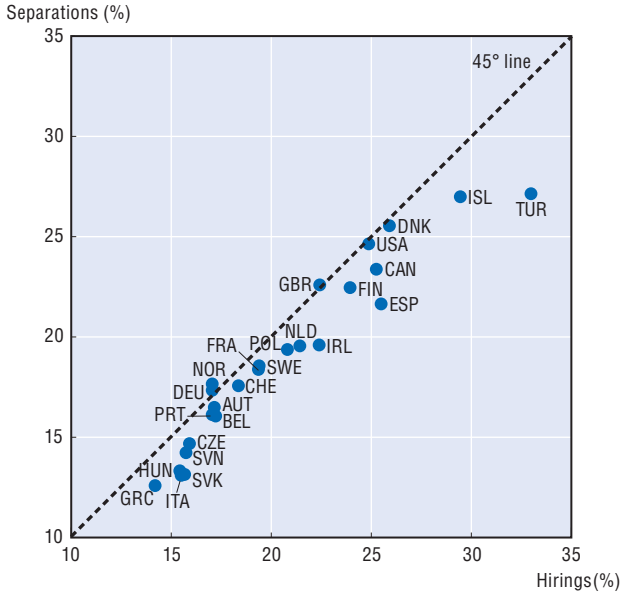
1. Cross-country differences in labour reallocation

Cross-country variation in gross job and worker flows is large

On the basis of harmonised data for 22 countries for the first half of the current decade, OECD (2009) highlighted that the cross-country variation of gross job and worker flows is very large, even after controlling for the characteristics of firms (such as industry affiliation, firm age and firm size) and workers (such as gender, age, and educational attainment). Figure 3.1 shows updated figures for gross worker flows, adjusted for industry composition,[1] for a larger number of countries and a longer time span (2000-07; see Box 3.1 for definitions, sources and data construction methodology). In countries such as Turkey, Iceland, Denmark, Spain, Canada or the United States, 25% or more employees were hired on average in each year, and a comparable percentage separated from their employer in the same period (Figure 3.1). By contrast, these flows were almost half as small in certain eastern and southern European countries.

While gross worker flows are in principle driven by both demand and supply factors, gross job flows are usually interpreted as reflecting essentially the dynamics of labour demand (see *e.g.* Davis and Haltiwanger, 1999; Pries and Rogerson; 2005; Haltiwanger *et al.*, 2008). But, the cross-country/cross-industry distributions of job and worker flows have been shown to be closely interrelated (see Box 3.1), while churning flows – that is, worker flows in excess of job flows – vary little across countries (see Bassanini and Marianna, 2009; Centeno

Figure 3.1. **Gross worker reallocation rates in OECD countries, 2000-07**



Note: Country averages of reallocation rates expressed in percentage of total dependent employment and adjusted for industry composition. Austria: 2002-07; Belgium: 2000-07; Canada: 2000-06; the Czech Republic: 2001-07; Denmark: 2000-06; Finland: 2000-07; France: 2000-06; Germany: 2000-06; Greece: 2000-05; Hungary: 2000-05; Iceland: 2002-07; Ireland: 2000-05; Italy: 2000-06; the Netherlands: 2000-07; Norway: 2000-04; Poland: 2004-05; Portugal: 2000-06; the Slovak Republic: 2002-06; Slovenia: 2002-07; Spain: 2000-05; Sweden: 2000-06; Switzerland: 2000-07; Turkey: 2007; the United Kingdom: 2000-07; and the United States: 2000-06.

Source: OECD estimates. See Annex 3.A1.

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Box 3.1. **Definitions, sources and accounting identities concerning gross worker flows**

In this chapter, *hirings* are defined as the number of workers who are with the firm at time *t*, but were not with it at time *t – 1*, and *separations* as the number of workers who were with the firm at *t – 1*, but not at *t*. *Total worker reallocation* is simply the sum of hirings and separations defined as above, while their difference is equal to *net* employment growth. At a greater level of aggregation (*e.g.* the industry or the whole economy) it is possible to define also *excess worker reallocation* as the difference between worker reallocation and the group's absolute net change in employment. This provides a useful measure of the number of hirings and separations that occur simultaneously, over and above the minimum necessary to accommodate net employment growth. Excess worker reallocation, thus, reflects the reshuffling of workers and jobs within the same group. In addition, *job creation* is defined as the employment growth at expanding firms and *job destruction* as the absolute value of employment contraction at declining firms.

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

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

Consistent with the literature (see *e.g.* Davis and Haltiwanger, 1999), all labour market flow measures from *t – 1* to *t* are expressed here as rates and are calculated by dividing the flow totals by the average of employment in *t – 1* and *t*.

Box 3.1. **Definitions, sources and accounting identities concerning gross worker flows** *(cont.)*

Except when otherwise specified, data used for this chapter are aggregated at the industry level from European and national labour force surveys, harmonised using large cross-country comparable national-account-based industry databases such as the *OECD STAN Database* and EU KLEMS. In practice, hiring rates at the industry level are obtained from job tenure data in labour force surveys, while separation rates are obtained by subtracting net employment growth rates from hiring rates, the former derived from STAN and KLEMS (see Annex 3.A1 for more details).

Industry-level data constructed for this chapter allow distinguishing between job-to-job transitions and transitions from, and to, non-employment. In this chapter, *job-to-job transitions* count workers that are in employment at both *t* and *t – 1* but who changed employer between these two dates. By contrast, *job-to-jobless transitions* occur when a worker is in employment at *t – 1* but not at *t*, and *vice versa* for *jobless-to-job* ones. As a consequence, for each industry and country, the hiring rate can be decomposed into *job-to-job* and *jobless-to-job hiring rates* – that is, the percentage ratios of the number of job-to-job and jobless-to-job transitions, respectively, concerning workers with an employer in that industry and country at time *t*, to the average of employment in *t – 1* and *t* for the same industry and country. In the same way, it is possible to decompose the separation rate into *job-to-job* and *job-to-jobless separation rates*, except that information on the industry of the employer at *t – 1* will be used. Job-to-job separations can be further decomposed into *same-industry* and *other-industry separations*, depending on whether industries at time *t* and *t – 1* are the same or different, while job-to-jobless separations can be decomposed into *employment-quitting* and *employment-losing separations*, depending on whether they were voluntary or involuntary.[1]

Country (and industry) rankings in terms of job or worker flows have been shown to be very similar (OECD, 2009). In addition, for data aggregated at the country and industry level, a simple regression of total worker reallocation on total job reallocation (including a constant) gives a coefficient of 0.98, insignificantly different from unity. In other words, a one-percentage-point increase in job reallocation is associated with an equal increase of worker reallocation, with no increase in worker churning (Bassanini and Marianna, 2009). All this suggests that, to a large extent, job and worker flows can be used as substitutes in cross-country analysis and conclusions drawn on the basis of one type of data can be applied to the other. For this reason, and for reasons of data availability, this chapter focuses essentially on worker flows.[2]

1. Unfortunately, available data do not allow distinguishing between voluntary and involuntary job-to-job separations.
2. See OECD (2009) for further discussion of these concepts and definitions.

et al., 2009). Churning flows have also been shown to vary little across firms (Burgess *et al.*, 2001; Davis *et al.*, 2006; Centeno *et al.*, 2009). This suggests that, by and large, the country rankings highlighted in Figure 3.1 in terms of gross worker flows reflect country rankings in terms of gross job flows. As a consequence, cross-country differences in both worker and job reallocation are likely to be mainly driven by the dynamics of labour demand.

The magnitude of gross job and worker flows is not systematically related to employment performance…

There is no evidence that increasing worker reallocation in the labour market is associated with changes in employment in the short run (see *e.g.* Baldwin *et al.*, 1998; Burgess *et al.*, 2000; Centeno *et al.*, 2009; OECD, 2009). Moreover, there does not seem to be

any compelling evidence that the cross-country distribution of gross job and worker flows has any correlation with unemployment rates (see *e.g.* Blanchard and Portugal, 2001; and Wolfers, 2010). Nevertheless, there is much evidence that flows into and out of unemployment are strongly related to unemployment levels (see for example Petrongolo and Pissarides, 2008; Elsby *et al.*, 2008; Boeri and Garibaldi, 2009).

… but gross worker reallocation tends to be positively associated to productivity growth…

By contrast, there is quite a lot of evidence that gross job reallocation and productivity growth are positively correlated. In particular, several single-country studies based on dynamic accounting decompositions have shown that jobs tend to be reallocated from firms with lower labour productivity to firms with higher labour productivity (see *e.g.* Griliches and Regev, 1995; Haltiwanger, 1997; Foster *et al.*, 2001, 2006; Disney *et al.*, 2003; Baldwin and Gu, 2006; Bottazzi *et al.*, 2010). This result has been confirmed by multi-country studies (*e.g.* Bartelsman *et al.*, 2009), and appears to be even stronger when efficiency levels are measured through multi-factor productivity – MFP hereafter (*e.g.* Brown and Earle, 2008). In addition, the observed association between efficiency levels and labour reallocation does not appear to be due to firm heterogeneity (OECD, 2009). As a result, aggregate productivity growth tends to be greater, the greater the labour reallocation.

… although this does not mean that greater flows are always synonymous with greater efficiency

This observation, however, does not imply that greater labour reallocation is always conducive to greater productivity growth in the long-run. For example, an excessive degree of reallocation can discourage the accumulation of firm-specific human capital, thereby hampering firm-level productivity growth. In particular, a growing body of evidence suggests that productivity growth and innovation tend to be smaller in countries where labour market flexibility is reached through an overwhelming use of temporary contracts while maintaining compressed reallocation rates of workers on open-ended contracts (see for example, Bassanini *et al.*, 2009; Dolado and Stucchi, 2008; Griffith and Macartney, 2010). Indeed, the evidence suggests that temporary workers are less likely to participate in job-related training (OECD, 2002; Albert *et al.*, 2005; Bassanini *et al.*, 2007; Draca and Green, 2004), are more prone to workplace accidents (Guadalupe, 2003) and tend to provide less effort when the probability of conversion of their contract into open-ended relationships is low (Dolado and Stucchi, 2008), although they might be more motivated when the latter is high (Engellandt and Riphahn, 2005).

On average, a dynamic labour market partially reflects better job opportunities…

Large gross job and worker flows partially reflect better job opportunities available to workers. By accepting job offers that better match their skills and needs, many workers quit their existing jobs voluntarily for new, often better paid, positions (*e.g.* Postel-Vinay and Robin, 2002; Connolly and Gottschalk, 2004; Contini and Villosio, 2007). For example, for 13 countries and the period 1995-2001,[2] Table 3.1 shows cross-country comparable micro-econometric estimates of the wage premium to changing jobs obtained on the basis of longitudinal household data and controlling for individual heterogeneity (see Box 3.2 for the methodology). While estimates are insignificant in one-third of the countries when focusing on all job changes, wage premia are positive and significant in all the others and

Table 3.1. **Estimated wage premia to job change, 1995-2001**

	All job changes		Voluntary job changes, business sector	
	Wage premium	t-stat	Wage premium	t-stat
Austria	. .		3.43*	*1.76*
Belgium	. .		. .	
Denmark	. .		2.38**	*2.19*
Finland	3.94***	*3.05*	6.41***	*3.07*
France	. .		. .	
Germany	2.94***	*3.37*	. .	
Greece	. .		5.25**	*2.26*
Ireland	9.26***	*6.06*	12.40***	*6.35*
Italy	3.45***	*3.17*	7.28***	*3.90*
Netherlands	3.50***	*4.00*	2.09*	*1.85*
Portugal	3.43***	*3.45*	6.40***	*3.86*
Spain	4.02***	*4.69*	7.10***	*4.37*
United Kingdom	5.13***	*6.31*	4.03***	*3.66*

Note: Percentage-point estimated differences between wages at the new and previous jobs, based on wage and salary employees only.
*, **, ***: statistically significant at the 10%, 5% and 1% levels, respectively.
. .: statistically insignificant estimate (not reported).
Source: OECD estimates.

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Box 3.2. **Wage premia to job change: estimation method**

For the purpose of this chapter, wage premia to job changes were estimated using individual longitudinal data from the European Community Household Panel (see Annex 3.A1 for more details on data description). The following specification was fitted to the data:

$$\log w_{icjt} = X_{icjt}\beta + \gamma_i m_{icjt} + \eta_{ct} + \eta_{cj} + \eta_i + \varepsilon_{icjt}$$

where w is the gross hourly wage of worker i in country c and industry j at time t, m is a variable (that will be called counter hereafter) that increases by 1 each time a worker change employer, X stands for a vector of additional controls, the ηs represent individual, country-by-time and country-by-industry fixed effects (estimated by including the corresponding one or two-dimensional dummies in the specification), ε is the standard error term and β and γ are parameters to be estimated. The parameter of interest is γ that is assumed to be country-specific in Table 3.1 and represents the wage premium to job change. In Figure 3.4, in order to provide a more efficient estimate of the average wage premium, this parameter is assumed to be homogeneous across countries. As the equation is estimated only if the individual is in employment, the average wage premium includes also the average wage loss at re-employment, but earning losses during unemployment spells are not included.

In order to avoid that the acquisition of new diplomas confounds the estimate of the wage premium, when an individual increases his/her educational attainment, a new individual fixed effect is applied. As a result, the estimated wage premia are net of the effect of simultaneous changes in educational attainment. The same treatment applies to individuals with missing observations, for whom a new fixed effect is generated for all years above the one with missing values. As the main interest is on the effect of different types of separations, industry affiliation is based on that of the previous employer. Other

Box 3.2. **Wage premia to job change: estimation method** *(cont.)*

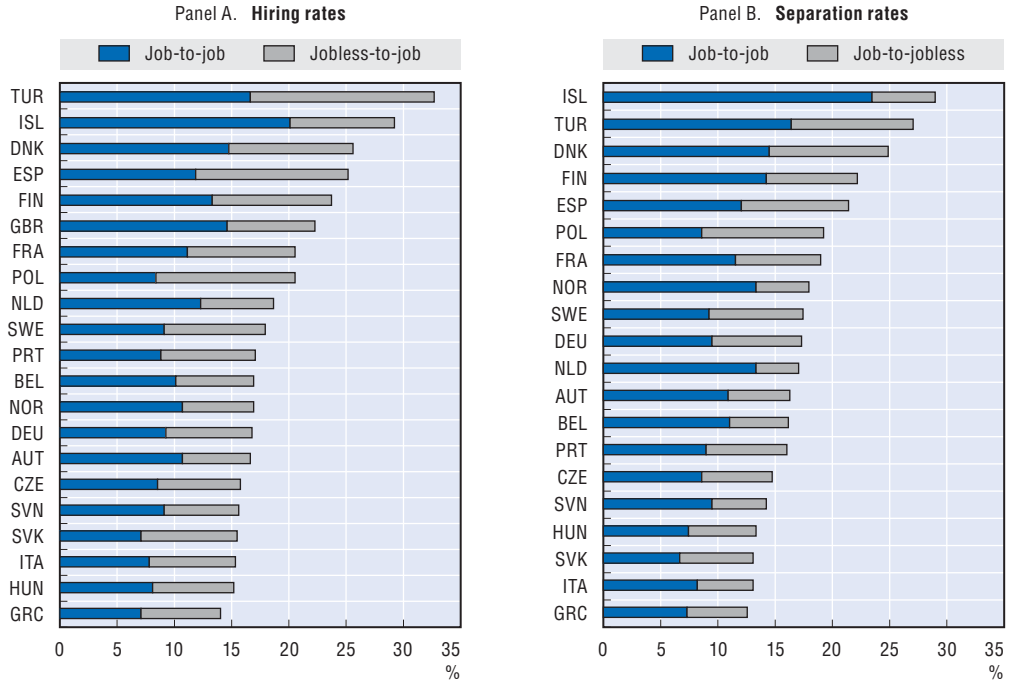
controls are kept to a minimum in order to preserve comparability with worker-flow statistics presented in this chapter and include age classes, a public sector dummy and a temporary contract dummy.

Wage premia are also estimated for voluntary and involuntary separations. In this case, two counters *m*, one for each type of transition, are simultaneously included in the same equation. The same occurs when the premium is decomposed into a premium to job-to-job transition and a penalty at re-employment to job-to-jobless transition.

in a few more when focusing on voluntary job changes.[3] A 3-4 percentage-point premium appears to have been the norm in most cases in the period under study, and premia are usually larger when only voluntary job changes are considered.

For the unemployed, or those with limited attachment to employment, a more dynamic labour market is also likely to provide better access to jobs (see *e.g.* Petrongolo and Pissarides, 2008). Figure 3.2 in fact shows that, on average, about 44% of all hires in one year concerns workers that were not in employment at the beginning of the year – jobless-to-job hires, according to the definition in Box 3.1.[4] Moreover, the cross-country variation in hiring rates is strongly associated to that of the jobless-to-job transition rate – that is, to the

Figure 3.2. **Job-to-job, jobless-to-job and job-to-jobless flows, 2000-07**



Note: Country average rates expressed in percentages and adjusted for industry composition. Differences from Figure 3.1 are due to missing values for certain years in certain countries. Austria: 2002-07; Belgium: 2000-07; Canada: 2000-06; the Czech Republic: 2001-07; Denmark: 2000-06; Finland: 2000-07; France: 2000-06; Germany: 2000-06; Greece: 2000-05; Hungary: 2000-05; Iceland: 2002-07; Ireland: 2000-05; Italy: 2000-06; the Netherlands: 2006-07; Norway: 2000-04; Poland: 2004-05; Portugal: 2000-06; the Slovak Republic: 2002-06; Slovenia: 2002-07; Spain: 2000-05; Sweden: 2000-06; Switzerland: 2000-07; Turkey: 2007; the United Kingdom: 2000-07; and the United States: 2000-06.

Source: OECD estimates. See Annex 3.A1.

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pace at which non-employed individuals get (or get back) a foothold into employment.[5] As a result, there is a negative association across countries between gross worker reallocation and the percentage of the labour force that has been unemployed for more than one year.[6]

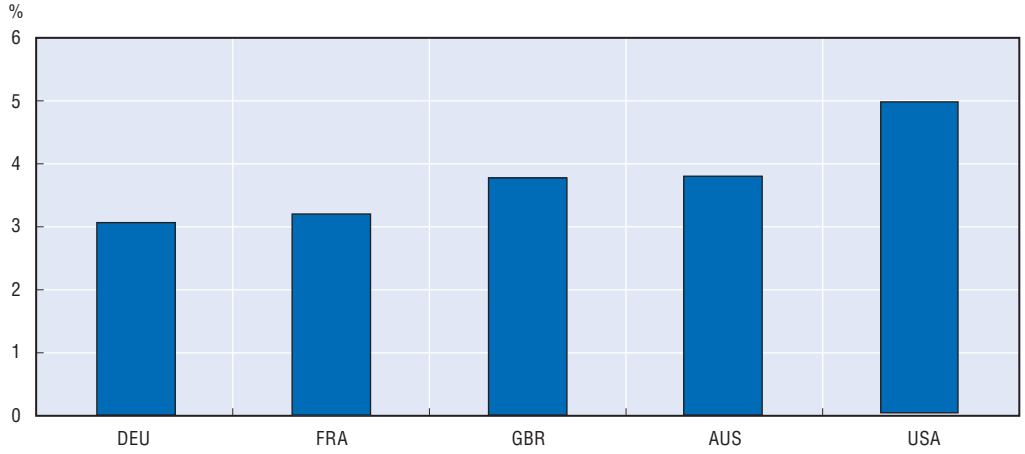
In practice, the empirical evidence suggests that, in normal times, workers take advantage of a more dynamic labour market by securing better matches between their skills and aspirations and employers' needs; this better matching allows them to progress in their careers. But, more generally, workers are likely to benefit in the long-run from greater reallocation when the latter enables faster productivity growth, to the extent that productivity gains are shared with workers through higher real wages. There is indeed some, albeit limited, empirical evidence suggesting that job flows and wage growth are correlated. For example Faberman (2002) shows that US metropolitan areas with larger job flows tend to have greater growth rates of average wages, while Belzil (2000) finds a positive impact of job creation on wages using Danish matched employer-employee data, although this effect is weaker at longer tenure.

… but those who are dismissed or are forced to leave might find it difficult to find an equally suitable job

Not all workers benefit from the dynamism of the labour market in the same way, however. Workers who separate from their employer against their will are likely to experience difficulties in finding a job with comparable pay and working conditions. This is particularly likely to be the case during a deep recession and early phase of the subsequent recovery, due to congestion of the labour market brought about by the soaring number of unemployed and job applicants (see Chapter 1).

Comparative data on dismissals are scarce. Yet, looking at the five countries for which they are available, it appears that, on average, about 5% of dependent workers are dismissed each year in high-reallocation countries – such as the United States – against about 3% in middle-to-low reallocation countries – such as Germany (Figure 3.3). In addition, it is possible to have a rougher but more extensive assessment of this relationship, by looking at those who separate from their employer in a given year and are

Figure 3.3. **Dismissal rates in selected countries, 1995-2007**



Note: Country average rates expressed in percentages and adjusted for industry composition. Australia: 1995-2001; France: 2006-07; Germany: 2003-07; the United Kingdom: 1997-2005; the United States: 1996-2006.

Source: OECD (2009), *OECD Employment Outlook*, OECD Publishing, Paris.

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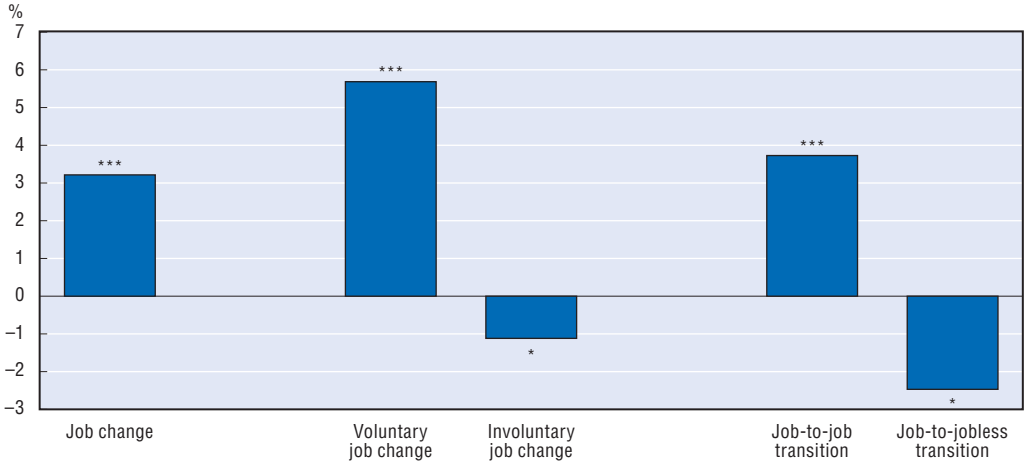
still jobless at the end of that year – job-to-jobless separations, according to the definition in Box 3.1. In fact, even though these separations include also voluntary quits leading to retirement or other types of voluntary withdrawal from the labour market, they are likely to be correlated with the rate of involuntary separations.[7] Perhaps not surprisingly, job-to-jobless separations tend to be more frequent in countries with larger average separation rates (*cf.* Panel B of Figure 3.2). Overall, this evidence suggests that higher rates of reallocation bring about larger shares of employees who are constrained to separate involuntarily from their employer in a given year.

Displaced workers typically suffer from substantive losses in terms of post-displacement earnings and working conditions. Several US studies argue that displaced workers are more likely to end up in precarious jobs and, in general, tend to have much smaller earnings, once re-employed (see *e.g.* Podgursky and Swaim, 1987; Farber, 1999, 2003). Moreover, Kletzer and Fairlie (2003) show that significant wage losses can persist for up to five years after displacement. In particular, immediate wage losses are greater in the case of older workers with long pre-displacement tenure, but young workers suffer from displacement in terms of reduced wage growth prospects. Post-displacement wage and consumption losses are also observed for many European countries and Canada (*e.g.* Burda and Maertens, 2001; OECD, 2003; Houle and van Audenrode, 1995; Browning and Crossley, 2008).[8] These effects persist even when sorting and selective mobility are taken into account (von Wachter and Bender, 2006).[9] The negative impact of job loss appears to be particularly large if it leads to protracted unemployment spells (Ruhm, 1991; Gregory and Jukes, 2001) and in the case of white collars (Schwerdt *et al.*, 2010).

Overall, the empirical literature suggests that those workers who are dismissed or forced to leave suffer from significant wage and welfare losses. Figure 3.4 graphically highlights this conclusion. For the same 13 countries and years for which wage premia are presented in Table 3.1, the figure shows that, in the period under study (1995-2001), while

Figure 3.4. **Average wage premia to job change, 1995-2001**



Note: Percentage-point estimated average differences between wages at the new and previous jobs (see Table 3.1 for the list of countries), based on wage and salary employees only. Voluntary job changes occur when the reason to stop the previous job is that the worker obtained a better/more suitable job. An involuntary job change occurs when the reason why the worker stopped the previous job was: obliged to stop by employer or end of temporary contract.
*, ***: statistically significant at the 10% and 1% levels, respectively.

Source: OECD estimates.

StatLink http://dx.doi.org/10.1787/888932292916

the average wage premium was almost 6 percentage points in the case of a voluntary job change, in the case of an involuntary separation wages after re-employment were, on average, about 1 percentage point smaller than what they would have been if the job match had not been destroyed. In addition, and consistent with the "scarring" effect of unemployment, the wage loss at re-employment was about twice as large in the case of job-to-jobless transitions, no matter whether voluntary or involuntary.

2. What role for labour market policies and regulations?

By affecting labour reallocation, labour market policies and regulations can raise productivity and wage growth…

What determine cross-country differences in gross job and worker flows? Can policies enhance growth by removing barriers to labour reallocation across industries, firms and jobs? The large cross-country variation in the rates of labour reallocation suggests that national policies and institutions play a key role in shaping the patterns of gross job and worker flows in OECD countries. Moreover, to the extent that, cross-country differences in worker reallocation are essentially due to differences in job reallocation, one can expect that labour reallocation will be particularly affected by those policies that economic theory suggests as likely to affect labour demand. OECD (2007) has already analysed the impact of a number of these policies on productivity growth (including employment protection, unemployment benefit generosity and minimum wages) by estimating growth models on industry-level data for a large number of countries, using a difference-in-difference identification strategy. However, the channels through which policies and institutions affect growth remain, by and large, a black box. In particular, although economic theory suggests that the enhancing or dampening effect that policies and institutions have on labour reallocation is likely to be one of the main channels through which they affect growth, there is limited cross-country evidence on their impact on labour reallocation.[10] The remainder of the chapter aims at shedding some light on this issue, by estimating the impact of these policies on worker reallocation, using mainly a difference-in-difference strategy on industry-level data (Box 3.3). This section focuses essentially on those that were found to have a significant impact on productivity growth in previous OECD work – that is, as noted above, employment protection, unemployment benefit generosity and the minimum wage (see OECD, 2007), although other labour market institutions are likely to affect labour reallocation.[11] For ease of presentation, empirical findings will be discussed separately for each policy, even though the various effects are estimated simultaneously in a multivariate framework.

The empirical literature suggests that about one-third of job creation and an almost equal amount of job destruction are due to the process of firm entry and exit (see OECD, 2009). In addition, surviving firms are characterised by high rates of employment growth in the first few years following entry (see *e.g.* Bartelsman *et al.*, 2005). This suggests that barriers to entrepreneurship and, more generally, barriers to product market competition are also a key determinant of labour reallocation. Much OECD work has analysed the relationship between anti-competitive product market regulation and productivity growth, reaching the conclusion that lifting barriers to competition is growth-enhancing (*e.g.* OECD, 2003). For these reasons a separate sub-section will also look at the impact of these regulations on gross worker flows as one of the possible channels through which deregulation affects productivity.

Box 3.3. **Estimating the effect of policies on labour reallocation: model specification**

OECD (2009) showed that gross worker flows vary dramatically across industries. Estimating the relationship between labour market policies and worker reallocation through standard cross-country/time-series techniques can therefore be quite misleading as changes in overall labour reallocation might be affected by the evolution of the industry composition of each country. In addition, available time-series are short, which would suggest caution in interpreting results based on time-series variation. Moreover, as it is almost impossible to include in the empirical analysis a full list of all aggregate policies and institutions that are likely to affect gross worker flows, standard cross-country/time-series estimates are likely to suffer severely from omitted-variable bias. Last but not least, the possibility of reverse causation is likely to confound the interpretation of certain policies, notably employment protection and unemployment benefits. In fact, when countries are hit by negative shocks, workers may well lobby for more generous unemployment insurance, while firms might lobby to relax dismissal regulations.

For the purpose of this chapter, the effects of employment protection, unemployment benefits and minimum wages on gross worker flows have been estimated using a reduced-form difference-in-difference model on industry-level data. As the time-series dimension of the data is short and affected by measurement error, this strategy will be mainly applied to averaged data, thereby suppressing the time dimension. However, most of the results are replicated using time-series variation as a sensitivity exercise (see Bassanini *et al.*, 2010, for full details). This approach is based on the assumption that the effect of particular policies on gross job flows is greater in industries where the policy is more likely to constrain firm behaviour – hereafter called "policy-binding industries". For example, employment protection is more likely to be binding in industries where the propensity to make staff adjustments on the external labour market is high. If firms need to lay off workers to restructure their operations in response to changes in technologies or product demand, high firing costs are likely to slow the pace of reallocation of resources. By contrast, in industries where firms can restructure through internal adjustments, changes in employment protection can be expected to have a more limited impact on labour reallocation.

This difference-in-difference estimation strategy has the advantage that it controls for policies or institutions that influence gross worker flows 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 gross worker flows in policy-binding industries as in other industries can be controlled for by country dummies. In practice, the following specification is estimated:

$$REAL_{cj} = X_{cj}\beta + \delta B_j POL_c + \eta_c + \eta_j + \varepsilon_{cj} \qquad [A]$$

where *REAL* stands for the gross worker flow rate – used as dependent variable – in country *c* and industry *j*, *B* is a industry-specific and country-invariant variable (called benchmark measure hereafter) that measure the likelihood that a policy *POL* be binding,* *X* stands for a vector of additional controls (which can include other policies and institutions interacted with *B*), the η s represent country and industry fixed effects (estimated by including the corresponding one-dimensional dummies in the specification), ε is the standard error term and β and δ are parameters to be estimated. The parameter of interest is δ. The sign of δ provides an indication of the direction of direct demand effects – that is the partial-equilibrium effect on gross worker flows due to the behavioural response of firms in reaction to a change in *POL* – if it is assumed, as done in this chapter (see above), that these effects are larger in policy-binding industries than in other industries – that is, assuming

Box 3.3. **Estimating the effect of policies on labour reallocation: model specification** *(cont.)*

that these effects are larger, the higher the value of *B*. For the average industry, it is then possible to derive a quantitative estimate of the direct demand effect of the policy by simply multiplying δ by the average value of *B*, if it is further assumed that there are no direct effects in a hypothetical industry whose benchmark measure *B* would be equal to 0. Quantitative estimates presented in this chapter are based on this assumption.

The disadvantage of this difference-in-difference approach is that it might be difficult to derive the aggregate effect of those policies that are likely to affect worker flows by affecting both demand and supply simultaneously, or where general equilibrium effects can offset direct (partial equilibrium) demand effects (such as in the case of unemployment benefits). For that reason, the analysis is complemented by a more standard cross-country/time-series analysis on annual data. As already mentioned, the latter type of analysis, however, has the disadvantage of being based on more noisy data and short time series. Nevertheless one can draw relatively robust conclusions from the consistency of results from difference-in-difference and cross-country/time-series experiments. In the case of cross-country/time-series regressions, the following general specification is estimated:

$$REAL_{cjt} = X_{cjt}\beta + \gamma POL_{ct} + \delta(B_j - \overline{B})POL_{ct} + \eta_c + \eta_{jt} + \varepsilon_{cjt} \qquad [B]$$

where *B* has been demeaned so that γ captures the general-equilibrium within-industry effect of the policy *POL* for the average industry (a bar over a variable indicates its global sample mean). If general equilibrium effects, over and above direct, partial-equilibrium effects, are minor, one would expect the estimate of γ to be close to that of δ*B* in equation [A].

In the case of product market regulation, however, the relevant provisions are also industry-specific and a more standard regression approach, including country-by-time dummies to control for aggregate institutions as in the equation above, appears preferable. OECD industry-specific indicators of the degree of stringency of anti-competitive regulation are available only for five non-manufacturing industries (energy, retail trade, transports, communications, and professional services) for all countries. Restricting the attention to these industries for available years would result in an excessively small sample, given the short available time-series for the worker reallocation data. By contrast, after the implementation of the European Single-Market Programme (SMP) in the early 1990s, before-enlargement European Union countries share essentially the same regulations in manufacturing, including the same trade barriers, except for economy-wide provisions applying to all industries (such as administrative barriers to start-ups). As suggested by Bassanini and Brunello (2010), it is therefore possible to enlarge the sample to manufacturing industries for these countries, by setting regulation equal to an arbitrary value in manufacturing, provided that industry-by-time and country-by-time dummies are included, the former to control for industry-specific regulations applying to all countries in the sample (such as trade barriers) and the latter for country-specific regulation (applying to all industries).

* For example, in the case of employment protection *B* could be the US worker reallocation rate of each industry, to proxy for the natural propensity of industries to adjust on the external labour market in the absence of regulations. Note, however, that in order to avoid endogeneity biases, *B* must not be affected by the level of the policy *POL* in each country. It must therefore be country-invariant and industry-specific.

… but distributional consequences of these policies must be taken into account

As discussed in the previous section, however, enhancing labour reallocation can have distributional effects insofar as those that are forced to leave a job usually suffer from substantive declines in earnings and working conditions, in particular during periods of contracting economic activity (see Chapter 1). Examining the effect of different reforms on the likelihood and cost of losing a job is therefore necessary to guide the selection of the right policy mix by decision makers. For this purpose, this chapter will also analyse the impact of policies on different types of transitions, exploiting the advantage of using harmonised data on gross worker flows (see Box 3.1), and discuss the effect of policies on wage premia and wage losses following different types of transitions.

2.1. Employment protection

Economic theory predicts that strict employment protection should reduce worker flows…

There is a large theoretical literature that looks at the impact of firing restrictions on labour flows with, by and large, consensual predictions. In the presence of dismissal restrictions, firms have an incentive to reduce both job creation and destruction, with an ambiguous effect on average employment levels. Moreover, if temporary contracts are less costly than open-ended contracts, employers will substitute temporary for regular workers, with greater worker turnover (see Box 3.4).

… and the burgeoning empirical literature points in the same direction…

There are a large number of country-specific studies that investigate the impact of EP legislation and jurisprudence on job flows on the basis of micro data. Autor *et al.* (2007) study the impact of the adoption of wrongful-discharge protection norms by state courts in the United States on several performance variables constructed using establishment-level data. By using cross-state differences in the timing of adopting stricter job security provisions, they find a negative effect of these provisions on job flows and firm entry. Using Italian firm-level data, Boeri and Jimeno (2005) exploit exemption clauses exonerating small firms from job security provisions. Their estimates confirm a significant effect of employment protection on job turnover and job destruction in particular. Similar findings are obtained by Schivardi and Torrini (2008), using an Italian matched employer-employee dataset, and by Kugler and Pica (2008), who exploit an Italian reform that in 1990 increased firing restrictions for small firms. Marinescu (2009) exploits a 1999 British reform that reduced the trial period for new hires from 24 to 12 months of tenure, thereby directly affecting only employees within this window. She finds that the firing hazard for these employees decreased by 26% with respect to that of workers with two to four years of tenure. Moreover, the risk of job loss of new hires with less than one year of tenure also decreased by 19%, which is consistent with more selective recruitment practices. Kugler *et al.* (2010) study the effects of a 1997 Spanish reform, which lowered dismissal costs for older and younger workers, and find that it was associated with a relative increase in worker flows for these groups. Finally, Venn (2010) analyses the impact on hirings of a recent Turkish reform of dismissal costs that applies differently to small and large firms, and reports large negative effects, especially for workers in the formal sector.

Box 3.4. **Employment protection and workers' flows: theory**

There is a large theoretical literature that looks at the impact of firing restrictions on labour flows with, by and large, consensual predictions. The rationale of dismissal regulations is that financial market imperfections might limit the ability of risk-averse workers to get insurance against dismissal (see *e.g.* Pissarides, 2010). However, by imposing implicit or explicit costs on the firm's ability to adjust its workforce to optimal levels, employment protection (EP hereafter) may inhibit efficient job separations and, indirectly, reduce efficient job creation (*e.g.* Mortensen and Pissarides, 1994). In principle, inefficiencies implied by firing regulations can be offset by private payments, wage adjustments or the design of efficient contracts (Lazear, 1990). However, wage rigidities, financial market imperfections or uncertainty about the future of the firm may prevent the effective operation of these channels. Standard equilibrium models of the labour market such as those of Nickell (1978), Bentolila and Bertola (1990) and Bertola (1990) describe firms' optimal behaviour in the presence of positive firing costs and show that the best strategy for firms is to reduce both job creation and destruction, with an ambiguous effect on average employment levels. Nevertheless, stricter EP implies a slower adjustment towards equilibrium employment levels. Search and matching models such as those of Garibaldi (1998) and Mortensen and Pissarides (1999) come to similar conclusions about job mobility being negatively affected by EP.

The theoretical analysis of the effect of regulation on temporary contracts is more straightforward. If the use of temporary contracts is liberalised while maintaining strict EP regulations for open-ended contracts, firms will react by substituting temporary for regular workers, with no long-run effect on employment, due to the smaller cost involved with the termination of the employment relationship at the end of a temporary contract (see *e.g.* Boeri and Garibaldi, 2007; Bentolila *et al.*, 2008). This also implies that the effect of regulation on temporary contracts cannot be seen in isolation, but it is conditional to the degree of stringency of EP for regular contracts. In the presence of protected insiders, covered by job security provisions, those under temporary contracts (often youth and other disadvantaged groups) will bear the main burden of employment adjustment (Saint Paul, 1996).

… although it is not always clear to what extent estimated effects are general and robust

In contrast with these findings, a few micro studies find no impact of dismissal regulations on job or worker flows. Insignificant effects are found by Bauer *et al.* (2007), who look at changes of small-firm exemption thresholds on worker turnover using German matched employer-employee data. Similarly, Venn (2010) looks at the effect of a recent threshold increase for small firms in Australia and finds no impact on hiring, firing or working hours, possibly because employment protection rules in Australia were already among the least strict in the OECD prior to the reform. The small economic significance of certain specific exemptions perhaps could also explain why exemptions from procedural requirements for dismissal have not been found to have a significant effect on hiring or firing in exempted firms in Portugal (Martins, 2009) and Sweden (von Below and Thoursie, 2010).

Micro-studies can be complemented by cross-country studies, in particular to the extent that differences in the type of microeconomic reforms limit the comparability of their findings. Few studies look at the impact of employment protection on labour reallocation from a multi-country perspective and they mainly focus on gross job flows. Boeri and Garibaldi (2009) estimate an aggregate cross-country/time-series regression

model on a small aggregate panel for 13 European countries covering the 1990s and find a negative impact of employment protection for temporary contracts on job-to-job transitions but no impact of provisions for regular workers. Gomez-Salvador *et al.* (2004) estimate the effect of different degrees of stringency of employment protection legislation using a classical cross-country/time-series regression analysis based on European firm-level data and find a negative effect on job reallocation controlling for the effect of other labour market institutions. On the same data, Messina and Vallanti (2007) find that strict employment protection significantly dampens job destruction over the cycle with mild effects on job creation. The negative impact of employment protection on job reallocation, job creation and job destruction is found to be larger in industries where total employment is contracting and where firms cannot achieve substantial reductions in employment levels purely by relying on voluntary quits.

As discussed in Box 3.3, standard cross-country/time-series studies that try to identify the effect of aggregate policies on labour reallocation through over-time variation are likely to suffer from endogeneity and omitted-variable biases. More relevant for this chapter, Micco and Pages (2006) and Haltiwanger *et al.* (2008) use a difference-in-differences estimator on a cross-section of industry-level data for more than 15 countries. They find that the negative relationship between layoff costs and job flows is more negative in industries with greater propensity to reallocate labour (proxied by the US reallocation rates), that is where it can be expected that EP effects are, if any, stronger. However, their samples include only few OECD countries, with data coming from different national sources,[12] so that it is difficult to generalise their result to the OECD as a whole. Equivalent results are obtained by Cingano *et al.* (2010), who apply a similar difference-in-differences methodology on firm-level data for 14 European countries, except that they use an estimate of the predicted job turnover that would occur in the absence of employment protection to identify the industry specific reallocation propensity.[13] Yet, their data exclude job reallocation due to entry and exit of firms.[14] Besides, their results become insignificant if France is excluded from the sample or if UK reallocation rates rather than predicted values are used to classify industries.

There is less – albeit more consensual – evidence on the effects of regulation for temporary contracts, perhaps because its effects are more straightforward. Kahn (2010) uses longitudinal microdata for nine European countries and finds that recent policy reforms making it easier to create temporary jobs on average raised the probability that a worker will be on a fixed-term contract. However, he finds no evidence that such reforms increased overall employment: they rather appear to have encouraged substitution of temporary for permanent work. In a similar vein, several studies focus on major Spanish reforms in the early 1980s that liberalised temporary contracts without changing dismissal costs for regular contracts and find, in general, that this led to a very large increase of fixed-term contracts and a reduction in employment on permanent contracts (see *e.g.* Bentolila *et al.*, 2008; Aguirregabiria and Alonso-Borrego, 2009). Finally, several papers find that the difference in the cost of adjusting the stock of workers on different types of contract explains both the share of temporary workers and their relative volatility (see, for example, Goux *et al.*, 2001). This suggests that, ceteris paribus, stringent regulation on regular contracts should encourage the use of temporary contracts, a prediction which is confirmed by the literature (see *e.g.* OECD, 2004; Pierre and Scarpetta, 2004; Boockmann and Hagen, 2001).

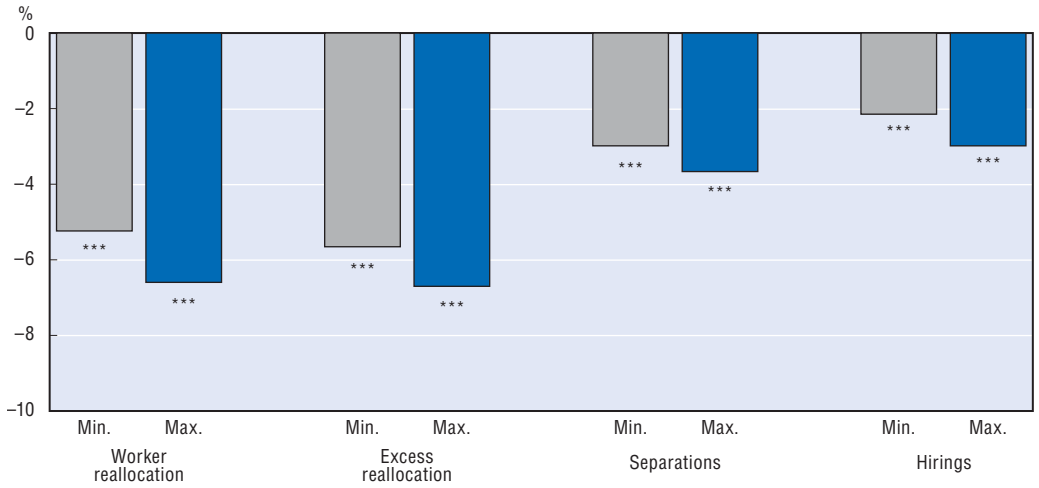
Firing restrictions are estimated to have a large negative impact on gross worker reallocation…

For the purpose of this chapter, the impact of EP for regular contracts (including additional restrictions for collective dismissals) on gross worker flows is estimated using the difference-in-difference procedure described in Box 3.3, for a sample of 24 business-sector industries and 23 OECD countries and Slovenia.[15] The main sample includes a simple cross-section of industry-level data averaged over the period 2000-07 (see Figure 3.1). Following previous OECD research (see *e.g.* OECD, 2004; 2006a, 2007), EP is measured here using a cardinal index varying from 0 to 6 from least to most stringent (data are from Venn, 2009). The estimation procedure is based on the assumption that EP is more binding on firms' behaviour, thereby potentially having stronger effects on gross worker flows, in industries that, in the absence of regulation, have greater propensity to adjust on the external labour market, as measured by worker reallocation rates. In order to reduce bias due to the possible relationship between EP stringency and the cross-industry distribution of gross worker flows, worker reallocation rates by industry in the United States, the least regulated country, are used as a benchmark to measure external-adjustment propensity in the absence of regulation. However, several alternative benchmark measures of this propensity are also considered, including UK reallocation rates, US dismissal rates, and the predicted value of reallocation when the EP index is equal to zero, estimated on the basis of all countries in the sample (see Bassanini *et al.*, 2010, for more discussion of data, estimation methods and detailed results).

EP on regular contracts is estimated to have a statistically significant negative direct demand effect on worker reallocation – that is, the direct effects emerging because EP provisions create potentially binding constraints on firm behaviour (see Box 3.3) – once the impact of demographic characteristics and the share of temporary workers have been controlled for (Figure 3.5). By controlling for the share of temporary contracts, it is possible to obtain estimates that are close to the effect of EP on the reallocation of workers on open-ended contracts. This is key from a policy perspective: as discussed above, there is in fact much evidence in the literature that high rates of reallocation due to extensive use of temporary contracts yield inefficient outcomes in terms of productivity growth. Figure 3.5 presents the estimated average impact of EP for regular workers, obtained under the assumption that EP would have no direct effect in an hypothetical industry whose benchmark measure – the US worker reallocation rate, in this case – would be equal to zero (see Box 3.3).[16] Under this assumption, a one point increase in the index of EP stringency for regular workers – roughly corresponding to two-thirds of the difference between the OECD average and the country with the lowest value of the EP index (United States)[17] – appears to reduce, on average, both total and excess worker reallocation by between 5.2 and 6.7 percentage points, depending on which confounding factors are included in the specification. Similarly, the same variation in EP stringency is estimated to reduce separation rates by between 3 and 3.6 percentage points, and hiring rates by between 2.2 and 3 percentage points.

Rigorously speaking, the estimates presented in Figure 3.5 refer only to partial-equilibrium labour demand effects. In principle, general-equilibrium mechanisms can enhance or offset these effects (see Box 3.3). In order to shed light on this issue, for a smaller group of 20 countries, the above analysis is complemented with a standard cross-country/time-series investigation using annual industry-level data for the period 1995-2007. The effect of EP provisions is identified in this case through its over-time variations

Figure 3.5. **Impact of regulation for individual and collective dismissals, controlling for the share of temporary workers**



Note: Based on difference-in-difference OLS estimates. For each gross flow measure, minimum and maximum indicate the smallest and greatest estimate (in absolute terms), respectively, obtained in different specifications, of the average effect of a one-point increase from the OECD average in the EP index for regular workers (including additional restrictions for collective dismissals). Estimates are obtained by assuming that, in each industry, the impact of employment protection is greater, the greater the US reallocation rate for that industry. All specifications control for the shares of age groups and of temporary workers. Estimates are based on 24 business-sector industries for the countries reported in Figure 3.1, except Turkey. Data are averaged over the period 2000-07.
***: statistically significant at the 1% level.

Source: OECD estimates.

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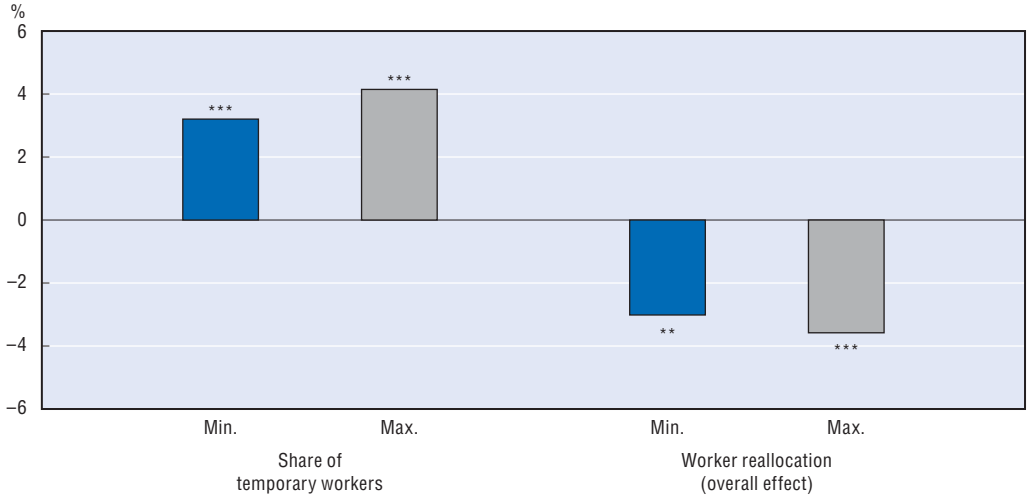
only and thus it is possible, in principle, to capture the overall impact of EP resulting from both general and partial equilibrium effects. But, these estimates might well suffer from an omitted-variable bias as well as they are likely to be more plagued by measurement error, given the limitations of available data. Nonetheless, the estimated effects of a one-point change in the index of regulations for individual and collective dismissals obtained in this way vary between 6 and 10 percentage points (see Bassanini *et al.*, 2010, for full results). Despite all the limitations of the time-series analysis, the consistency of results with the difference-in-difference analysis is reassuring and suggests that, by and large, general-equilibrium effects over and above partial-equilibrium direct effects are, if any, of the same sign and average estimated effects presented in Figure 3.5 can be taken to provide a lower bound to the actual general-equilibrium effect of employment protection.

… even taking into account that they induce more extensive use of temporary contracts

Estimates presented above are not directly comparable to Figure 3.1, mainly because the effect of EP for regular workers on the share of temporary workers has not yet been quantified. A better comparison is made possible by estimates presented in Figure 3.6, which show that a reform involving a one-point reduction in EP for regular workers, if taken at face value, would bring about a reduction in the share of temporary workers of between 3.2 and 4.2 percentage points. Adding this to the direct effect would translate in an overall positive impact on worker reallocation of between 2.9 and 3.6 percentage points.[18] These are indeed large effects from an economic point of view, even though a one-point change of the index corresponds to an unusually large policy change from a historical perspective (see Venn, 2009). To have a better idea of the magnitude of these

Figure 3.6. **Regulation for individual and collective dismissals, share of temporary workers and overall impact on worker reallocation**



Note: Based on difference-in-difference OLS estimates. For each dependent variable, minimum and maximum indicate the smallest and greatest estimate (in absolute terms), respectively, obtained in different specifications, of the average effect of a one-point increase from the OECD average in the EP index for regular workers (including additional restrictions for collective dismissals). Estimates are obtained by assuming that, in each industry, the impact of employment protection is greater, the greater the US reallocation rate for that industry. The overall impact on total worker reallocation is the algebraic sum of the direct impact and the indirect one that occurs through the share of temporary contracts, simultaneously estimated. All specifications control for the shares of age groups. Estimates are based on 24 business-sector industries for the countries reported in Figure 3.1, except Turkey. Data are averaged over the period 2000-07.

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

Source: OECD estimates.

StatLink http://dx.doi.org/10.1787/888932292954

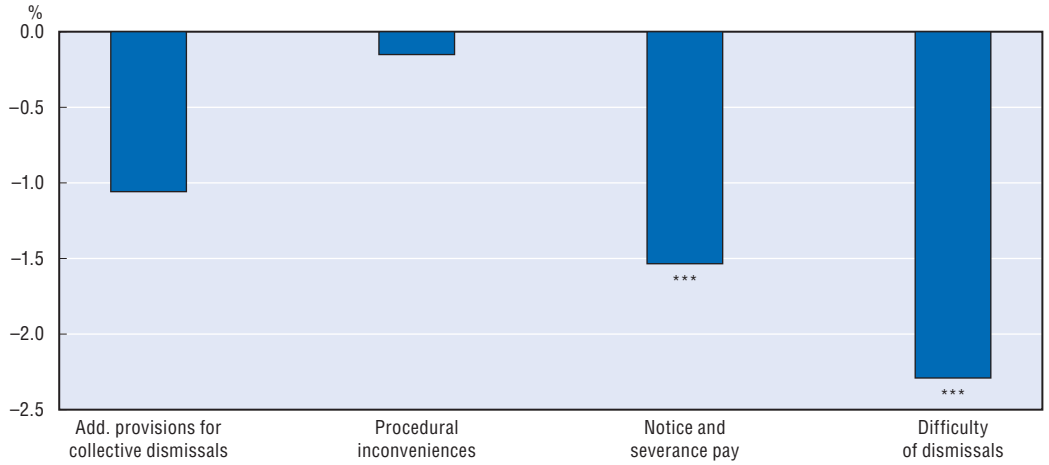
effects, it is possible to observe that, if linear estimates were taken at face value, they would explain between 20% and 30% of the difference in reallocation rates between Greece (the country with the lowest rate in Figure 3.1) and the United States.[19]

These results are very robust to various sensitivity checks, namely to: *i)* changes in the sample of countries used in the estimation; *ii)* changes in the choice of the benchmark measure used to identify the natural propensity to make staffing adjustments on the external labour market; and *iii)* changes in the functional form of the impact of EP, including the possibility that EP has a proportional rather than linear effect on worker flows (see Bassanini *et al.*, 2010).

High severance pay, long trial periods and strict reinstatement rules appear to strongly compress gross flows

Employment protection includes quite heterogeneous provisions that are unlikely to have the same economic importance as well as the same impact on gross job flows. Although different components of the EP index receive different weights in the OECD scoring protocol in order to mitigate this problem (see Venn, 2009), looking at the separate impact of each of them can better inform policy makers of the likely consequences of reforming specific provisions, even though it must be kept in mind that the effect of interactions among provisions cannot be estimated and the greater the disaggregation of EP indexes, the greater the measurement error. When the effect of specific components is simultaneously estimated, procedural inconveniences, including notification delays and procedures, do not have any significant impact on worker reallocation (Figure 3.7). This

Figure 3.7. **Impact of selected EP components on gross worker reallocation**



EP: Employment protection.

Note: Based on difference-in-difference OLS estimates. Average effect of a one-point increase from the OECD average in the indexes for each EP component on total worker reallocation. Estimates are obtained by assuming that, in each industry, the impact of employment protection is greater, the greater the US reallocation rate for that industry. Estimates are based on 24 business-sector industries for the countries reported in Figure 3.1, except Slovenia and Turkey. The specification controls for the shares of age groups and of temporary workers. Data are averaged over the period 2000-07.

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

Source: OECD estimates.

StatLink http://dx.doi.org/10.1787/888932292973

result might be the outcome of the greater difficulty of scoring this component and, therefore, the greater measurement error associated to it – because of the cross-country heterogeneity of the procedures that are requested in the case of dismissals. However, it appears also consistent with micro studies for Portugal and Sweden that find no significant impact of exemptions from procedural requirements for dismissals (see Martins, 2009; von Below and Thoursie, 2010). By contrast, the EP components that have the greatest and most significant impact on gross worker flows are notice and severance payments and the difficulty of dismissals, including the length of the trial period at recruitment, the breadth of the definition of fair dismissals, and the costs for the employer that are associated to being convicted for unfair dismissal. Disaggregating further the effect of the difficulty of dismissals, it appears that the most relevant components of the latter are the length of the trial period (especially for hirings)[20] and the extent to which reinstatement is ordered by courts (especially for separations; see Bassanini *et al.*, 2010, for detailed results).[21]

By inducing more efficient reallocation, more flexible job security provision can benefit the average worker through higher wages

Do employees benefit from the greater reallocation that is brought about by less stringent employment protection? Even though the literature has not come to a clear-cut conclusion on the optimal level of flexibility from an efficiency viewpoint, the empirical evidence (see *e.g.* OECD, 2007; Autor *et al.*, 2007; Bassanini *et al.*, 2009; Cingano *et al.*, 2010) is now relatively consensual in suggesting that, for countries close to the OECD average, reforms relaxing provisions for individual and collective dismissals would increase productivity growth. Taking into account the equally strong empirical link that is found between gross job flows and productivity growth (see the previous section), and given the magnitude of the effects estimated here, it can be cautiously concluded that the enabling

role, which lighter restrictions on dismissals have for labour reallocation, is the main channel through which EP affects productivity growth. To the extent that EP reforms do not simultaneously reduce workers' bargaining power, thereby depressing the wage share of value added, wage and salary employees will benefit from greater productivity growth through higher wages.

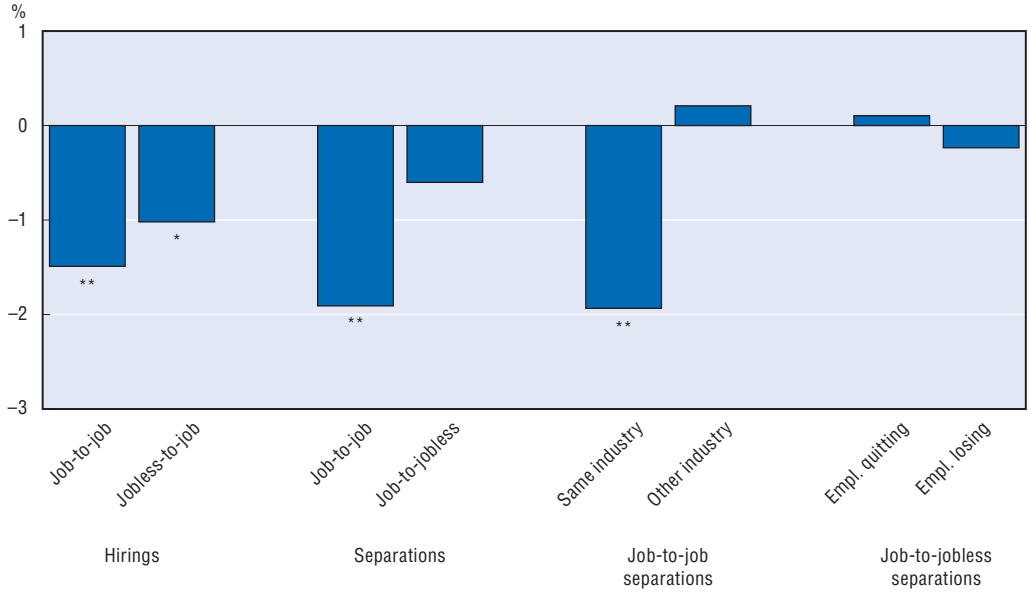
There is surprisingly little research studying the effect of EP on the wage share. The main exception is perhaps Checchi and Garcia-Peñalosa (2008), who estimate a standard static cross-country/time-series model for OECD countries, and find no impact of EP controlling for other institutions. At the micro level, Leonardi and Pica (2007) analyse the effect of monetary compensation for unfair dismissal on male wages by exploiting an Italian reform that introduced this type of compensation for establishments with less than fifteen employees. They find that the reform had no impact on entry wages, although returns to tenure decreased, as suggested by Lazear (1990). Although an exhaustive analysis of this issue is beyond the scope of this chapter, a cross-country/time series empirical model of the determinants of the wage share is estimated and no significant impact of EP emerges, consistent with the literature (see Bassanini *et al*., 2010). This suggests that, on average, wage and salary employees are likely to benefit in the form of higher wages from the productivity boost induced by the removal of barriers to reallocation by means of EP reforms.[22]

Flexibility-enhancing reforms are likely to affect especially the incidence of job-to-job transitions…

Reducing firing restrictions is however quite likely to increase the percentage of workers that experience involuntary separations (although this will reduce the number of workers under short-term contracts). If this occurs, how difficult will it be for this additional fraction of displaced workers to find another job? Unfortunately data on the reason of job separation are not available for all types of transitions. Nevertheless, in order to shed some light on this question, the above analysis is replicated by using different types of transition as dependent variables. From this analysis, it appears that the effect of more stringent EP on separation rates is almost exclusively reflected in lower job-to-job separations, with little and insignificant impact on job-to-jobless separations (Figure 3.8). This cautiously suggests that, in normal periods of activity, those workers, who end up being displaced in the aftermath of a reform aimed at reducing EP for regular workers but would not have been displaced without the reform, are likely to find another job within a relatively short period of time.[23] Obviously this statement might not hold during a severe downturn, because of congestion in the labour market (see Chapter 1). Moreover, flexibility-enhancing EP reforms appear to be entirely associated to more frequent same-sector transitions, which are typically associated to greater wage premia in the case of voluntary job changes and lower wage penalties in the case of displacement (see *e.g.* Neal, 1995). By contrast, the impacts on job-to-job and jobless-to-job hirings are not significantly different (even though both are negative and significant), which suggests that more flexible EP regulations facilitate the transition from non-employment to employment.

Using the same identification strategy and the micro-data underlying Table 3.1 and Figure 3.4, it is also possible to estimate the impact of employment protection for regular workers on the wage premium to job changes. However, in the case of individual wages, general-equilibrium effects might be more important[24] and caution must be exerted in interpreting the results. Nevertheless available evidence suggests that EP for regular

Figure 3.8. **Impact of regulation for individual and collective dismissals on worker reallocation, by type of transition**



Note: Based on difference-in-difference OLS estimates. Average effect of a one-point increase from the OECD average in the indexes for each EP for regular workers (including additional restrictions on collective dismissals). Estimates are obtained by assuming that, in each industry, the impact of employment protection is greater, the greater the US reallocation rate for that industry. Estimates are based on 24 business-sector industries for the countries reported in Figure 3.2, except Slovenia and Turkey. The specification controls for the shares of age groups and of temporary workers. Data are averaged over the period 2000-07.
**, *: statistically significant at the 5% and 10% levels, respectively.

Source: OECD estimates.

StatLink http://dx.doi.org/10.1787/888932292992

workers have no significant effect on the average wage premium to job change. Moreover, EP appears to have substantially larger negative effects on the wage premium to voluntary separations and the wage penalty at re-employment to involuntary separations (see Bassanini *et al.*, 2010). Overall, this cautiously suggests that greater flexibility induced by EP reforms, by creating more job opportunities, improves career tracks for those in employment who wish to search for better jobs, and, conditional on displacement, does not worsen, and possibly improves, job perspectives for displaced workers.

… but the fraction of workers being displaced and suffering from income losses is likely to increase

Milder dismissal regulations, however, are likely to increase the number of workers experiencing involuntary separations. Indeed, the fact that the impact on the average wage premium to job changes is smaller than the corresponding averages of the impacts concerning wage premia/penalties to voluntary and involuntary separations cautiously suggests that flexibility-enhancing EP reforms might increase the fraction of workers suffering from involuntary separations, and this is particularly likely during severe recessions (see Chapter 1). Even though, as discussed above, the evidence suggests that those workers, who would have not been dismissed in the absence of reforms, are unlikely to experience protracted joblessness, at least in normal times, they will nonetheless suffer from an income loss during the possible post-displacement unemployment spell and from the wage penalty at re-employment associated with involuntary separations. As a

consequence, for equity reasons, governments might wish to compensate those who inevitably will experience earning losses after the implementation of this type of reform. More generally, in countries where EP regulations are less stringent, governments might wish to put in place an appropriate policy mix to accompany workers in the transition towards new jobs.

2.2. Unemployment benefits

Unemployment benefits can affect gross worker flows through a variety of channels

There are a number of channels through which unemployment benefits (UBs hereafter) could affect labour reallocation (see Box 3.5). From an empirical point of view, there is mixed evidence on whether generous UBs are associated with higher-quality subsequent job matches: the micro-evaluation literature typically finds small and sometimes insignificant effects both when match quality is measured through wages at re-employment and when it is measured as post-unemployment job tenure (for recent

Box 3.5. **Unemployment benefits and workers' flows: theory**

Unemployment benefits (UBs) can affect gross worker flows through a variety of channels. *First*, generous UBs, by reducing search effort, may increase the duration of unemployment spells and the overall level of unemployment (see OECD, 2006a, for a survey of recent literature). This will tend to slow the transitions from unemployment to employment and therefore gross worker flows. Moreover, generous UBs (in terms of either duration, replacement rate or both) may provide a buffer of time and resources to allow the unemployed to find a job that better matches their skills and experience, resulting in higher quality matches between the unemployed and available job vacancies (Marimon and Zilibotti, 1999). In turn, higher quality job matches are likely to last longer, thereby depressing worker flows. However, the impact on reallocation rates is ambiguous: they could even increase if the effect on employment levels is larger than the effect on flows. *Second*, in a standard equilibrium matching model of the labour market (*e.g.* Mortensen and Pissarides, 1994, 1999), more generous UBs, by increasing the reservation wage, will increase the sensitivity of job-matches to productivity shocks, thereby increasing job destruction in the short-run. If raising benefit entitlements does not affect the productivity of newly-created matches, job destruction will increase also in the long-run and greater unemployment, by increasing the number of applicants per vacancy, will progressively reduce recruitment costs, thereby raising hirings. However, if greater reservation wages increase the productivity threshold at which new job matches are created, thereby increasing the number of low-productivity potential matches that are turned down, the overall long-run effect on gross job and worker flows is *a priori* ambiguous. *Third*, UB generosity might affect firm recruitment behaviour (Pries and Rogerson, 2005). Due to asymmetric information, firms might be unaware of the productivity potential of prospective job applicants. If wages are low with respect to the expected worker performance, the employer can afford to hire and discover on the job the worker's productive abilities. Whenever the newly hired worker turns out to be not suitable for the position, the match is destroyed and the firm issues a new vacancy. By contrast, to the extent that higher replacement rates raise reservation and bargained wages, firms might become choosier in selecting successful candidates. This in turn will reduce experimentation and mismatch, with consequent reduction in hirings, separations and short job spells, without necessarily reducing job creation and destruction. *Fourth*, it is also

Box 3.5. **Unemployment benefits and workers' flows: theory** *(cont.)*

possible that the provision of generous UBs encourages the creation of higher productivity jobs that are located in more volatile, innovative activities, or require workers with more specific skills and, therefore, carry greater risk of job mismatch (Acemoglu and Shimer, 1999, 2000). Job-matches created in this way would be exposed to greater destruction hazards, thereby increasing the pace of labour reallocation.

findings and surveys, see Lalive, 2007; van Ours and Vodopivec, 2008; Caliendo *et al.*, 2009). A few micro studies also suggest that UBs increase the desirability of high-risk jobs. Topel (1984) shows that high-risk jobs pay higher wages in the United States, but this compensating differential is dampened when UBs become more generous. Similarly, Barlevy (2001) shows that even though workers who change jobs during economic booms tend to be hired in high-risk industries where they receive higher wages, UBs reduce the pro-cyclicality of their wages. From a cross-country perspective, there is also some evidence that the generosity of UBs has a positive effect on relative levels of multi-factor and labour productivity in high-risk industries compared with low-risk industries, which is consistent with generous benefits inducing greater creation of high-skilled jobs in risky industries (Bassanini and Venn, 2007).

There is, however, surprisingly little cross-country empirical literature that looks directly at the effect of UBs on gross job or worker reallocation rates. Boeri and Garibaldi (2009) estimate the impact on worker flows using aggregate cross-country/time-series data for 13 European countries and find a negative association of average gross replacement rates with employment-unemployment transitions but little association with job-to-job transitions. Gomez-Salvador *et al.* (2004) find a negative relationship between job creation and benefit duration – but no impact on job destruction – using a classical linear regression analysis based on European firm-level data and controlling for the effect of other labour market institutions, even though not for the level of the replacement rate. By contrast, Sjöberg (2007) finds a positive association between UB generosity and worker flows, by using a cross-section of individual data on job-to-job transitions drawn from Eurobarometer that are, however, simply regressed on aggregate average net replacement rates, with few other institutional controls. Finally, Boeri and Macis (2010) study the effect of reforms that introduced for the first time UB schemes in countries that previously did not have any such scheme. Using a large number of countries that had UBs throughout the period as a control group, they find that the introduction of benefits significantly increases between-industry job reallocation, although the estimated effect fades over time. Nevertheless, the relevance of this result remains limited since between-industry reallocation accounts for only a small fraction of total reallocation (see OECD, 2009).

Unemployment benefit generosity appears to have a positive impact on average gross worker flows…

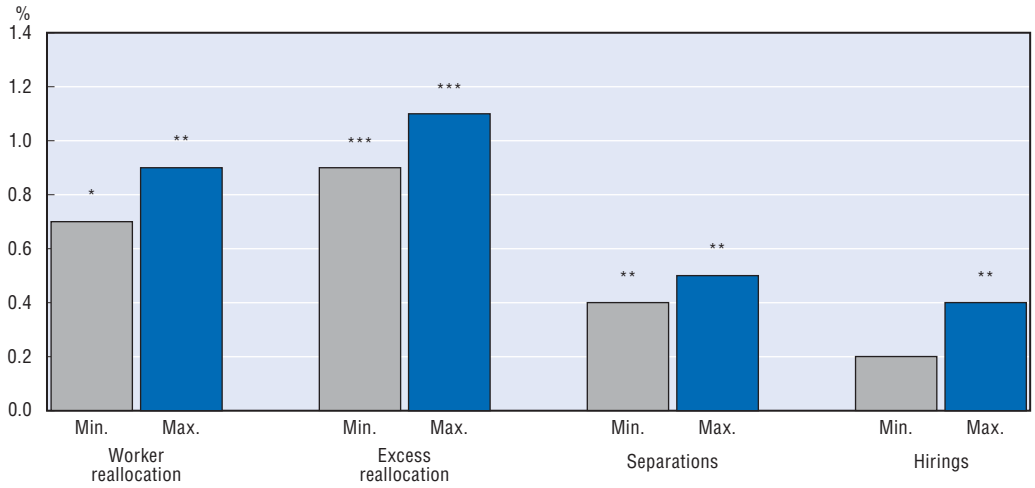
For the purpose of this chapter, the impact of average UB *net* replacement rates, excluding social assistance, on gross worker flows is estimated using the difference-in-difference procedure described in Box 3.3, for the same sample used for EP, except that Slovenia is excluded due to lack of UB data. The estimation procedure is based on the assumption that UBs have stronger direct demand-side effects on gross worker flows, be they positive or negative, in industries that are more naturally exposed to productivity

shocks requiring workforce adjustments and/or have a greater tendency to experiment with new recruits. It can be argued that the cross-industry distribution of gross worker flows is closely associated with the frequency of idiosyncratic productivity shocks on businesses and the need of experimenting with new recruits. Therefore, worker reallocation rates by industry in the United States – that is, the country with the lowest benefit generosity – appear to be a reliable measure of workforce adjustment needs. However, several alternative benchmark measures of this propensity are also considered, including the predicted value of labour reallocation at zero net UBs, estimated on the basis of all countries in the sample,[25] and UK firm turnover rates[26] (see Bassanini *et al.*, 2010, for more details on the data, estimation methods and detailed results).

Figure 3.9 presents difference-in-difference estimates of the average direct effect on worker reallocation of UB generosity – measured through the average of net replacement rates across different family types, income levels and unemployment durations – that appear to be positive and statistically significant in almost all cases. Nevertheless, similar coefficients are estimated by using time-series variation only within a standard cross-country/time-series regression framework over annual industry-level data for the period 2001-07. Even though the time period on which the latter estimates are obtained is very short, this finding cautiously suggests that additional general-equilibrium effects (including labour supply effects) offset each other, so that estimates presented in Figure 3.9 can be interpreted as representative of the overall effect of net UBs on gross worker flows.

A ten-percentage-point increase in the average net replacement rate – a large reform from an historical perspective, roughly corresponding to two standard deviations of the time-series variation of the indicator observed over the period (that is, obtained netting out

Figure 3.9. **Unemployment benefit generosity and gross worker flows**



Note: Based on difference-in-difference OLS estimates. For each gross flow measure, minimum and maximum indicate the smallest and greatest estimate (in absolute terms), respectively, obtained in different specifications, of the average effect of a ten-percentage-point increase from the OECD average in the average net replacement rate (computed for different earnings level, family situations and unemployment durations up to five years). Estimates are obtained by assuming that, in each industry, the impact of unemployment-benefit generosity is greater, the greater the US reallocation rate for that industry. All specifications control for the shares of age groups and of temporary workers. Estimates are based on 24 business-sector industries for the countries reported in Figure 3.1, except Slovenia and Turkey. Data are averaged over the period 2000-07.

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

Source: OECD estimates.

StatLink http://dx.doi.org/10.1787/888932293011

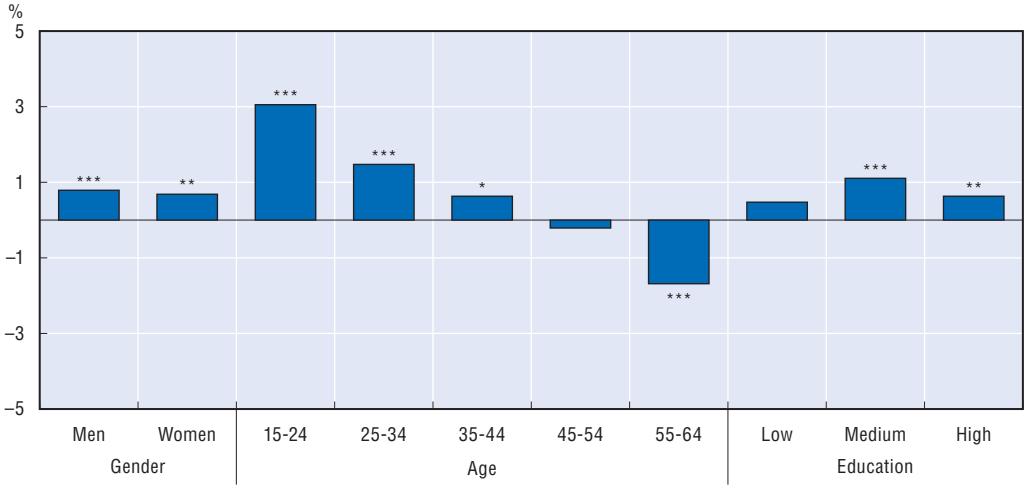
cross-sectional variation) or a 25% change from the OECD average – appears to increase, on average, both total and excess worker reallocation by about 1 percentage point. These results are reasonably robust to various sensitivity checks: *i)* changes in the sample of countries used in the estimation; *ii)* changes in the choice of the benchmark measure used to classify industries; and *iii)* changes in the functional form of the impact of UBs, including the possibility that EP has a proportional rather than linear effect on worker flows.

A slightly greater elasticity is found in the case of separations. By contrast, the link with hirings is not always significant, when estimated partial-equilibrium effects are obtained through difference-in-difference cross-section estimates, but it is as large as the effect on separations when general-equilibrium effects estimated in time-series are considered. This appears consistent with the prediction of search and matching models (see Box 3.5), for which the main direct effect of any increase in the reservation wage is on job destruction, but there is an indirect general-equilibrium effect on job creation as raising the number of job applicants makes filling vacancies less costly for firms. Clearly, the latter effect can only partially be captured by difference-in-difference estimates.

... but it has a negative impact on flows of mature and older workers

Looking at differences across groups in the association between cross-industry differences in gross job flows and average net replacement rates sheds additional light on the channels through which UB generosity affects labour reallocation. In fact, the positive relationship between UB generosity and gross worker flows is confined to relatively young workers (Figure 3.10). As age increases, this relationship becomes progressively weaker and becomes negative for older workers, so that for workers aged

Figure 3.10. **Impact of unemployment benefit generosity on worker reallocation, by group**



Note: Based on difference-in-difference OLS estimates. Average effect of a ten-percentage-point increase from the OECD average in the average net replacement rate (computed for different earnings level, family situations and unemployment durations up to five years). Estimates are obtained by assuming that, in each industry, the impact of unemployment-benefit generosity is greater, the greater the US reallocation rate for that industry. Specifications control for the share of temporary contracts, age classes, gender, educational attainment and the interaction of other institutions with industry US reallocation rates. Data are averaged over the period 2000-07.

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

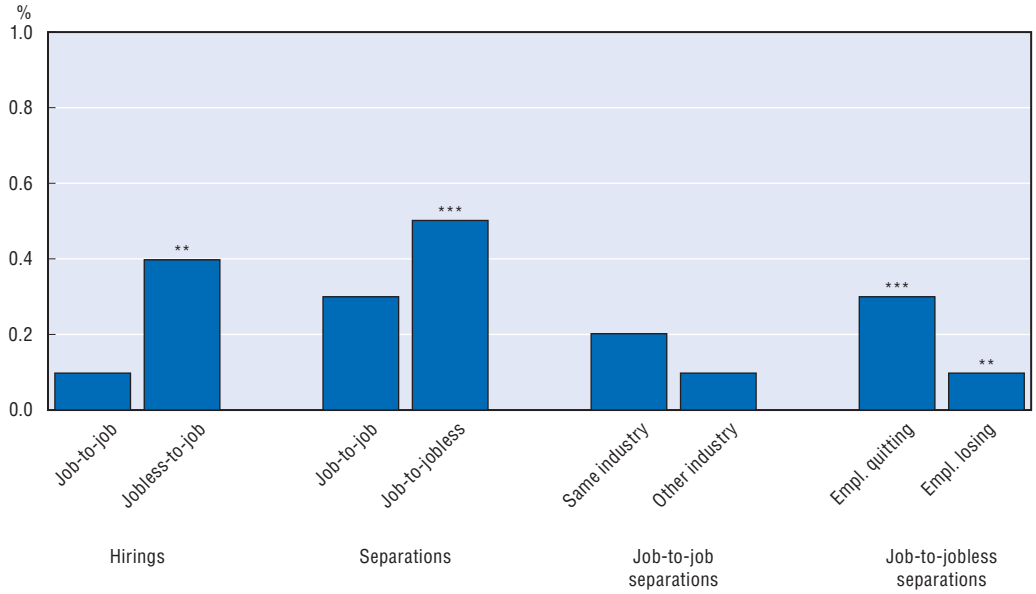
Source: OECD estimates.

StatLink http://dx.doi.org/10.1787/888932293030

55 years or more a ten-percentage-point increase in unemployment benefits would reduce gross worker reallocation by more than one and a half percentage points. This evidence could reflect the fact that generous benefits might represent a post-displacement route to *de facto* early retirement in the case of older workers thereby reducing their hiring rate. Indeed, this effect is likely to be larger in industries where separations are more frequent. Nevertheless, it might also suggest that higher reservation and bargained wages induced by generous UBs make firms more selective in their recruitment policies, thereby reducing experimentation with new recruits, as predicted by Pries and Rogerson (2005). In fact, this effect is theoretically predicted to occur only for workers eligible for benefits, thereby excluding most of youth. By contrast, the direct job-destruction effect, predicted by standard equilibrium matching models, applies at any age,[27] and the same occurs for indirect general-equilibrium effects for hirings. All these effects add up, generating the age pattern shown in Figure 3.10.

Consistent with the microeconometric literature (see above), generous UBs appear to increase job-to-jobless transitions while they do not appear to have any major impact on job-to-job transitions, reflecting the fact that unemployment spells tend to become longer when UBs are more generous (Figure 3.11). More surprising is perhaps the fact that a symmetric effect appears on the hiring rates of workers that were jobless at beginning of the survey year. However, this is likely to reflect the age patterns discussed above, insofar as jobless-to-job transitions are particularly large among inexperienced youth

Figure 3.11. **Impact of unemployment-benefit generosity on worker reallocation, by type of transition**



Note: Based on difference-in-difference OLS estimates. Average effect of a ten-percentage-point increase from the OECD average in the average net replacement rate (computed for different earnings level, family situations and unemployment durations up to five years). Estimates are obtained by assuming that, in each industry, the impact of unemployment-benefit generosity is greater, the greater the US reallocation rate for that industry. Estimates are based on 24 business-sector industries for the countries reported in Figure 3.2, except Slovenia and Turkey. The specification controls for the shares of age groups and of temporary workers. Data are averaged over the period 2000-07.
, *: statistically significant at the 5% and 1% levels, respectively.

Source: OECD estimates.

StatLink http://dx.doi.org/10.1787/888932293049

– particularly those undergoing the school-to-work transition – who are not eligible for benefits and whose reservation wage is unaffected by them.

Greater replacement rates appear also to be positively associated to both employment-losing and employment-quitting separations, suggesting a direct effect on both, even though the former is much larger than the latter. The former effect is likely to reflect the impact of UBs on unemployment spells for eligible workers. In addition, generous UB coverage might facilitate separation agreements between employers and workers, reducing the risk that the latter challenge their dismissals in courts. By contrast, the significant effect of UBs on employment-quitting separations is more surprising as, in principle, workers who quit a job voluntarily are not eligible for benefits. One possible explanation is that these coefficients reflect a greater number of consensual separations in which employers accept to formally dismiss workers in order to grant them benefit eligibility, even though the latter are willing to leave their job anyway. Alternatively, this might reflect the fact that more generous UBs could induce firms to issue more high-risk/high-paid vacancies (as suggested by Acemoglu and Shimer, 1999, 2000; see above), which might prompt more workers to quit their current jobs to search more easily for these better positions. If this interpretation were correct, one would expect that other workers might prefer to search for better positions without quitting their job, thereby implying a relationship between UBs and job-to-job transitions. But, in contrast with this expectation, the effect of UBs on job-to-job separations is insignificant, even if this effect is also insignificantly different from that of employment-losing separations. Available data do not allow being more conclusive on these issues.

Generous unemployment benefits might help sustain post-displacement earnings

Overall, the effect of UBs on labour reallocation is likely to be one of the channels through which UBs positively affect productivity, although probably not the only one (see OECD, 2007, for a discussion of other channels linking UBs to productivity and for estimates of the impact of UBs on growth). Nevertheless, employed workers are likely to benefit from the productivity gains induced by more generous UBs in the form of higher wages.[28] There is no doubt, however, that those who take the greatest advantage of extensive unemployment insurance are eligible workers when they end up being unemployed after an involuntary separation. In the short-run, generous UBs help workers cope with earnings losses in the post-displacement unemployment period. But what is the long-run effect of generous UBs on post-unemployment earnings? Do they raise earnings at re-employment through improved match quality as theory would suggest? The microeconometric literature discussed above is inconclusive on this issue (see above for references). Typically, this literature looks at the effect of a given policy reform on the wage loss at re-employment (with respect to pre-displacement wages) of workers who had been on benefit prior to re-employment. The causal effect of the policy reform is often identified by exploiting group-differences in the changes of potential benefits entailed by the reform (see *e.g.* van Ours and Vodopivec, 2008). The disadvantage of this approach, however, is that it is unable to capture demand-side effects that might affect both treatment and control groups. For example, if more generous benefits push firms to open more high-wage/high-risk positions, as suggested by Acemoglu and Shimer (1999, 2000), this will increase wages at re-employment for all new hires, independently of their benefit entitlements during the unemployment spell, biasing downwards standard micro-evaluation estimates.

This empirical evidence, however, can be complemented by using the individual data underlying Table 3.1 and Figure 3.4 and adopting the same difference-in-difference strategy as above to estimate the impact of UBs on the wage premia/penalties to job changes. As this identification strategy exploits cross-industry differences in the relationship between UB generosity and the wage premia/penalties of the average worker independently of his/her entitlements, evidence gathered in this way is less likely to overlook demand-side effects that apply to all workers[29] and can, therefore, complement micro-evaluation studies in informing policy makers. However, as already discussed as regards EP, general-equilibrium effects on individual wages might be important and caution must be exerted in interpreting the results from this exercise. Keeping this caveat in mind, available estimates obtained through this strategy suggest that an increase in UB generosity is associated with a lower wage penalty at re-employment (see Bassanini *et al*., 2010), providing some additional evidence that adequate benefits might also promote better job matches

2.3. Minimum wages

Economic theory yields ambiguous predictions on the link between the minimum wage and labour reallocation…

Only few theoretical papers discuss directly the impact of minimum wages on gross worker flows. Burdett and Mortensen (1998) argue that in the presence of employer monopsony power, the distribution of wages can be inefficiently dispersed and separations rates excessively large. In such a case, minimum wages, by compressing the distribution of wage offers, could reduce voluntary separations and improve tenure. By contrast, Pries and Rogerson (2005) argue that high minimum wages, by increasing hiring wages, raise the productivity threshold at which job matches are created and make firms more selective in their recruitment practices. This will inefficiently reduce both hirings and separations. By running different simulations with their model, the authors predict a much greater effect of changes in the minimum wage than of changes in EP.

By contrast, the theoretical literature on the effects of wage rigidity on gross job and worker flows typically predicts a positive correlation between rigidity and labour adjustments. For example, Bertola and Rogerson (1997) argue that in the presence of downward wage rigidity, firms hit by negative shocks, being unable to adjust labour costs, will increase labour shedding, implying greater separations and subsequent re-hiring when their prospects improve. To the extent that binding minimum wages do not adjust as a function of economic conditions and firm performance, this argument can easily be applied to minimum wages as well.

There is a large empirical literature on the impact of statutory minimum wages on worker flows based on individual data from the United States. While early studies tend to find negative impact of minimum wages on job retention for individuals at, or close to, the minimum wage, more recent studies, by improving the sources of identification, have generally found no significant impact (Zavodny, 2000; Abowd *et al*., 2005). Evidence for other countries is scarcer. Abowd *et al*. (2005) find no impact of real minimum wages on entry into employment in France, but a strong positive impact on exit from employment. By contrast, Portugal and Cardoso (2006), exploiting a specific Portuguese reform that in 1987 lifted dramatically minimum wages for very young workers, find that raising minimum wages had a significant negative effect on both separations and hirings. Finally Draca *et al*. (2008), using a difference-in-difference methodology similar to that adopted in

this paper but on firm-level data, find that the introduction of a minimum wage in the United Kingdom in 1999 lead to insignificant changes in firm entry and exit patterns. Anyway, the degree to which this empirical evidence simply reflects short-time adjustment to a new equilibrium with different employment levels is unclear.

… and no significant effect emerges from empirical estimates

In order to complement the inconclusive findings of the micro-econometric literature, a cross-country analysis of the impact of statutory minimum wages on gross worker flows is estimated using the difference-in-difference technique used above (see also Box 3.3) for a sample of 14 OECD countries.[30] Two alternative identifying assumptions, derived from the theoretical arguments underlined above, are considered. On the one hand, minimum wages are particularly likely to prevent downward adjustment of wages for workers that are paid the minimum wage or only slightly more. As a consequence, industries that, because of their technological characteristics, are more heavily reliant on low-wage labour are likely to be more affected by any change in the minimum wage. Following Bassanini and Venn (2007), in order to reduce bias due to the possible relationship between minimum wages and the distribution of low-wage employment, the incidence of low-wage workers by industry in the United Kingdom prior to the introduction of statutory minimum wages in 1999 – when there was virtually no floor on wages, except for constraints imposed by collective bargaining – is used as an indicator of the propensity of industries to employ low-wage labour.[31] Alternatively, as done for UBs, it can be argued that the effects of minimum wages, be it positive or negative, is likely to be larger in industries where gross worker flows tend to be larger, since greater flows are related to the frequency of idiosyncratic productivity shocks on businesses and the selectivity of firm recruitment policies. For this reason, US industry-level gross worker reallocation is used as an alternative benchmark measure to classify industries.[32] Minimum wages are measured as the economy-wide ratio of the gross statutory minimum wage to the median wage (see Annex 3.A1 for more details). Available evidence obtained on this basis suggests, however, that the ratio of the statutory minimum wage to the median wage is associated with no significant alteration of gross worker flows. Estimates appears also robust to changes in the sample of countries used in the estimation (see Bassanini *et al.*, 2010). Overall, taking also into account the micro-econometric literature, this suggests that statutory minimum wages have at best second-order impacts on labour reallocation.

2.4. Anti-competitive product market regulation

Barriers to firm entry are predicted to reduce gross worker flows…

There is a large consensus in the economic literature that regulations increasing the cost for firms of establishing new businesses in a specific market reduce both entry and exit of firms. If entry costs are lowered by a regulatory reform, ex-ante expected benefits from entry will be higher, thereby lowering the expected-productivity threshold at which a firm decides to set up its business. However, if the same regulatory reform does not affect each firm's potential operating costs, net of starting costs, productivity shocks will more frequently force low-productivity newly entered firms out of the market (*e.g.* Hopenhayn and Rogerson, 1993). Given that entry and exit account for about one-third of gross job flows (see OECD, 2009), barriers to entry are likely to have an important impact on labour reallocation. Moreover, entering firms might be more efficient than incumbents, thereby forcing the latter to downsize and, possibly, exit the market (*e.g.* Aghion and Howitt, 1998).

Finally, entering firms are likely to progressively expand, as they learn-by-doing how to run their business efficiently (*e.g.* Bahk and Gort, 1993).

… but other types of regulations might increase them…

Other types of regulation, such as price controls and public authorisation of strategic decisions, by potentially affecting normal operating costs of firms, have theoretically ambiguous effects on gross job reallocation. In fact, changes in these costs can increase or decrease the reactivity of firms to productivity shocks. On the one hand, an increase in operating costs also makes entry less attractive, which by reducing the number of firms increases equilibrium prices. On the other hand, each firm has to spend more on operating costs, which reduces net profits. In equilibrium, the net effect on profits is likely to be less negative/more positive for the most efficient firms, which gain more from higher prices. This might imply that, in order to survive, firms need to be more efficient in more regulated markets with higher operating costs, which would imply a greater sensitivity to productivity shocks (Asplund and Nocke, 2006; Koeniger and Prat, 2007). Finally, the increase in trade competition due to globalisation and trade liberalisation is generally considered to increase restructuring at least in the short-run, thereby increasing job destruction but also job creation (see Melitz, 2003; and OECD, 2007 for a survey).

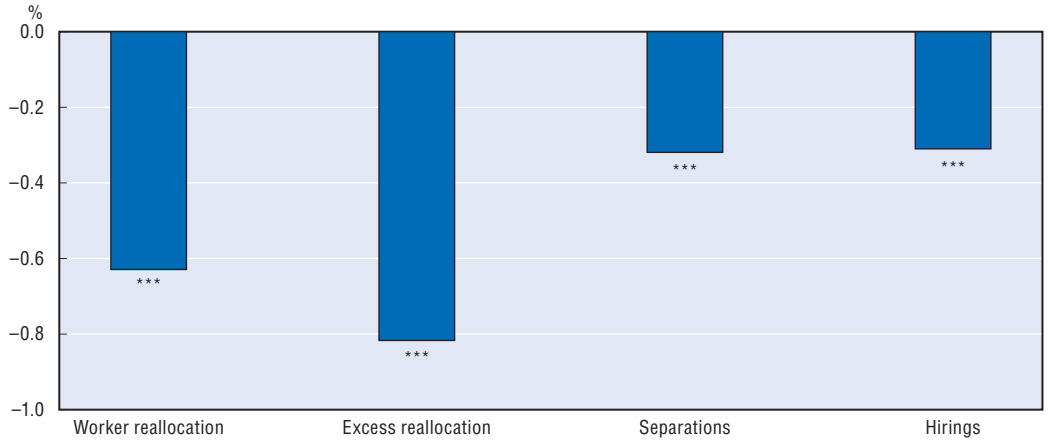
… and there is only limited evidence on the impact of product market regulation on labour reallocation

There is extensive cross-country empirical evidence on the negative association between product market regulation and firm entry and exit (see Schiantarelli, 2008, for a survey). This evidence is supported by the microeconometric literature, which typically tries to identify the impact of deregulation by evaluating the effects of specific reforms (see *e.g.* Aghion *et al.*, 2008). However, while there is abundant research on deregulation and employment and earnings (see *e.g.* Hirsch and Macpherson, 2000; Black and Strahan, 2001; Wozniak, 2007), there are fewer studies that look directly at the effect of deregulation on gross job and worker flows, and most of this literature focuses on the impact of trade with mixed results, particularly on job-to-job transitions (see *e.g.* OECD, 2007; Bloom *et al.*, 2010). Using a difference-in-differences estimator on a cross-section of industry-level data for several OECD and non-OECD countries, Haltiwanger *et al.* (2008) find a weakly-positive relationship between overall product market regulation and job turnover.

Product market deregulation appears to have raised labour reallocation in concerned industries

For the purpose of this chapter, the relationship between product market regulation and gross worker flows is estimated through standard regression techniques,[33] by using time-varying industry-level regulatory indicators, and data for 13 European countries, 18 manufacturing and non-manufacturing industries and the period 1996-2007.[34] The choice of the countries is due to data availability and issues of data comparability (see Box 3.3). Figure 3.12 suggests that deregulation of typically-regulated non-manufacturing industries, which were heavily liberalised in the period under study in most countries, significantly increased gross worker reallocation in the concerned industries. However, the magnitude of this effect is small. Taking the estimates at face value, a regulatory reform entailing a one-point reduction in the indicator – which corresponds approximately to the average change observed in these industries in the period and countries under analysis –

Figure 3.12. **Anti-competitive product market regulation and gross worker flows**



Note: Average effect of a one-point increase from the OECD average in the overall indicator of industry-specific anti-competitive product market regulation, based on OLS estimates with country-by-time and industry-by-time fixed-effects. Estimates are based on 18 business-sector industries for 13 European Union countries. The specification controls for the shares of age groups and of temporary workers. Based on annual data for the period 1996-2007.

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

Source: OECD estimates.

StatLink http://dx.doi.org/10.1787/888932293068

would generate an increase in total worker reallocation of about 0.6 percentage points in the industries affected by the policy change (see Bassanini *et al.*, 2010 for full regression results). However, the effect of economy-wide regulations on entry (*e.g.* administrative regulations on start-ups) is controlled for but not identified in these specifications, since they do not vary across industries. Insofar as these are the regulatory provisions that are likely to have the strongest impact on firm entry (see above), estimated effects presented in Figure 3.12 are likely to underestimate the true overall impact of regulation.

Conclusions

This chapter analyses the impact of specific policies and institutions on labour reallocation by using harmonised industry-level data for several OECD countries. Previous OECD research suggested that labour reallocation is one of the main drivers of productivity growth and showed that several labour and product market policies and institutions have a significant impact on productivity growth. The evidence presented in this chapter provides a further step towards understanding the mechanisms through which labour reallocation shapes the relationship between these policies and institutions and productivity growth. In this respect, one of the main findings of the chapter is that employment protection for regular workers (including additional restrictions on collective dismissals) significantly depresses gross worker flows, and its cross-country variation can explain up to 30% of the cross-country variation in total flows. By contrast, generous unemployment benefits are found to promote labour reallocation.

The chapter's findings, nevertheless, do not imply that flexibility-enhancing reforms are always desirable. In particular, the experience of those countries that implemented partial reforms of employment protection legislation, whereby regulations on temporary contracts were weakened while maintaining stringent restrictions on regular contracts, shows that specific reforms fostering labour reallocation might have offsetting effects on the efficiency of the reallocation process resulting in no or negative overall productivity

gains. Indeed, the possible trade-offs between the quantity and quality of the reallocation process and the possible policy influences on these trade-offs deserve further research, whose results would be of a fundamental importance in helping policy makers identifying the optimal policy mix from an efficiency viewpoint.

More research is also needed on the way productivity – and, more generally, welfare – gains from efficiency-enhancing reforms are shared within a society. There is some evidence suggesting that the likely effect of selected labour and product market policies and institutions (including employment protection, unemployment benefits, and product market regulation) on the wage share in value added is limited, which cautiously leads to the conclusion that the benefits of productivity-enhancing reforms in this area are likely to be shared with workers in the form of higher average wages. However, not all workers are likely to gain from these reforms in the same way. In particular, the evidence presented in the chapter also suggests that reforms involving the relaxation of regulatory provisions on individual and collective dismissals are likely to increase the number of workers who are affected by labour mobility at the initiative of the employer. Even if the evidence suggests that, in normal times, those who lose their jobs in the aftermath of these reforms – but would have not lost their jobs otherwise – are likely to find another job relatively quickly, these workers are nonetheless likely to experience income losses both during their job search and at re-employment. Moreover, in a severe economic downturn as recently, finding a job is likely to be harder, due to labour market congestion, and wage penalties at re-employment larger (see Chapter 1). For equity and political-economy reasons, therefore, in countries where employment protection legislation is relatively flexible and/or where relaxation of these regulations is envisaged, governments might wish to put in place an adequate policy mix to reduce these individual losses. Providing adequate unemployment benefits could be part of such a policy mix if they are made conditional on strictly-enforced work-availability conditions and part of a well-designed "activation" package, as suggested by the restated *OECD Jobs Strategy* (see OECD, 2006b). Indeed, without impairing labour reallocation, unemployment benefits designed in this way will sustain income during job search and might promote better job matches and hence reduce wage losses at re-employment – albeit the evidence is not conclusive on the latter effect. However, a reform package involving relaxing overly stringent employment protection provisions coupled with adequate unemployment benefits, properly-enforced job-search requirements and effective re-employment services can be costly and would require adequate administrative capacity.

Notes

1. The aggregate data presented in this section (except for data on unemployment and long-term unemployment) are adjusted for industry composition and refer to the non-agricultural business sector. Adjusted rates are estimated as average rates that would be observed in each country if it had the same industry composition as the average country in the sample. Simple comparisons of country-specific averages would in fact be erroneous for two reasons: *i)* because, given the importance of the cross-industry variation, countries that specialise in low-mobility industries could have low unadjusted reallocation rates even if they had above-average reallocation rates in all industries; and *ii)* because data are not available for certain industries in certain countries. See Annex 3.A1 for details on the adjustment method.
2. The choice of countries and years is dictated by the availability of a common household panel for a long time span.
3. Statistically insignificant estimates are not reported (see Bassanini *et al.*, 2010, for full estimates).

4. Note that, given the definition of worker reallocation (see Box 3.1), job-to-job transitions concern those who separate from one employer after *t* – 1 and are in employment at *t*. A proportion of these workers might well have experienced a spell of unemployment between these dates.
5. Indeed, the cross-country correlation between the jobless-to-job and hiring rates in Figure 3.2 is 0.8.
6. The correlation coefficient is -0.44.
7. In the case of job-to-jobless separations, the information on the reason of separation is available and can be used to validate the statement above. Almost 40% of job-to-jobless separations are, on average, due to dismissals, plant closure or end of temporary contract – job-losing separations (see Box 3.1) – and this percentage is roughly constant across countries, so that the cross-country correlation between job-losing and job-to-jobless separations is very high (0.83). As a matter of comparison, in countries for which data are available, about 20% of all separations are due to dismissals or plant closure (see OECD, 2009).
8. Job displacement appears also to have strong negative consequences on mental health (see *e.g.* OECD, 2008; Kuhn *et al.*, 2009).
9. Von Wachter and Bender (2006) find, however, that when sorting and negative selection are taken into account, young displaced workers experience significant wage losses only in the first five years after displacement.
10. The few studies that look at the cross-country impact of institutions on labour reallocation are usually confined to overall employment protection, consider a very small number of OECD countries and often use data that are not comparable across countries (see the next sub-section for a discussion).
11. For example active labour market programmes (ALMPs) and wage-bargaining institutions, which are used as controls in a number of specifications. Short-time working schemes might also have an important impact on gross worker flows (see Chapter 1). However, they are not included in the regressions because of lack of comparable data on them for many countries for the period for which data on worker flows are available.
12. Data in Haltiwanger *et al.* (2008) are, however, harmonised *ex post* using the same definitions and extraction procedure, which makes them in principle comparable.
13. As suggested by Ciccone and Papaioannou (2007).
14. An additional issue concerning Gomez-Salvador *et al.* (2004), Messina and Vallanti (2007) and Cingano *et al.* (2010) is that none of these studies reports information on the data-cleaning treatment, despite using firm-level data from the Bureau van Dijk's Amadeus database where small businesses are severely under-represented and employment data are often inconsistent (see *e.g.* OECD, 2009).
15. Countries are those of Figure 3.1, except Turkey, for which data are available only for one year and therefore, at the industry level, suffer excessively from measurement error.
16. This might sound a very stringent assumption. Yet, this assumption is validated below by showing that standard cross-country/time-series estimates (see next paragraph) yield similar coefficients of the average impact of EP on worker reallocation.
17. One point corresponds also to 1.5 standard deviations in the cross-country distribution of the EP index for regular contracts (including additional restrictions on collective dismissals), as well as to one-third of the difference between Portugal (the country with the most stringent average index in the sample period) and the United States (the country with the least stringent regulations).
18. In principle, this statement should refer only to partial-equilibrium labour demand effects. However, given the results of the cross-country/time-series analysis discussed above, these point estimates may well be a reasonable approximation of general-equilibrium effects with a sufficient precision.
19. Similarly, with these estimated coefficients, it is possible to conclude that cross-country variation in EP for regular workers (including additional restrictions on collective dismissals) explains between 20% and 23% of the cross-country variation in gross worker reallocation, as measured by standard deviations in the respective distributions (adjusted for industry composition in the latter case, as in Figure 3.1).
20. This appears consistent with the findings of Marinescu (2009) on the 1999 British reform that significantly reduced the length of the trial period (see above).
21. Interestingly, this might explain why EP is perceived to be extremely rigid in a country like Italy (*e.g.* Ichino *et al.*, 2004), despite a relatively low score as regards overall EP against individual dismissals. Italy appears, in fact, to score the highest as regards the extent of reinstatement (Venn, 2009).

22. Nevertheless, within the same firm, those workers who are better protected by dismissal regulations are likely to enjoy greater bargaining power and therefore, *ceteris paribus*, greater wages. Indeed, van der Wiel (2010) identify intra-firm effects of employment protection by exploiting a 1999 Dutch reform, which eliminated age-based terms-of-notice rules but implied the coexistence within the same firm of workers under different rules for a transitory period. She finds that those under more stringent rules received higher wages.

23. Notice, however, that, given the definition of job-to-job transitions allowed by the data (see Box 3.1), this finding does not imply that EP reforms would not increase the number of displaced workers that experience short unemployment spells after the separation.

24. For example, because of collective bargaining, wage increases in one industry are likely to boost wages in other industries.

25. Unemployment insurance premia in the United States are, in part, dependent on past layoffs (experience-rating). It cannot be excluded that, despite low average replacement rates, experience-rating creates a distortion in the structure of worker turnover. The use of predicted worker reallocation at zero net replacement rates, estimated on the basis of the whole sample, reduces the risk that the benchmark measure is biased by specific features of the US economy.

26. Firm turnover rates are likely to capture the riskiness of business activities in each industry. Even if the United Kingdom is not the country with the lowest UBs, this country is likely to provide the most adequate firm-turnover benchmark measure since firm turnover is mainly determined by entry regulations, and the United Kingdom is the OECD country where these regulations are less stringent (see Woelfl *et al*., 2009).

27. If any, the direct productivity-shock/job-destruction effect occurs mainly for workers that were not eligible for benefits at the time of recruitment but have become eligible as they get seniority on the job. For these workers, in fact, one can assume that UBs do not affect the productivity threshold at which efficient job-matches are created.

28. As more generous UBs are likely to increase reservation and bargained wages, it is likely that these productivity gains will translate into higher wages. Indeed, estimates presented in Bassanini *et al*. (2010) shows that higher average net replacement rates are associated with a larger wage share.

29. Albeit it is more likely to suffer from confounding factors at the individual and aggregate levels as well as from composition effects.

30. The sample of previous analyses is restricted to countries in which there was a statutory minimum wage in the period 2000-07.

31. Similar results to those presented in this section are obtained if the UK share of workers with less than upper secondary education prior to 1999 is substituted for the share of low-wage workers.

32. Due to missing observations, UK worker reallocation rates before 1999 cannot be computed for all industries. Therefore, average rates from the United States appear to be the best alternative benchmark, given the low minimum wage and the flexible employment-protection rules in that country. Results are however similar if UK reallocation rates, averaged over 2000-07, are used.

33. In principle, a difference-in-difference analysis of the type developed before could be undertaken. Yet, product market regulation concerns industry-specific as well as economy-wide provisions, and the aggregate OECD indicator of the degree of stringency of anti-competitive product market regulation includes an average of both economy-wide and industry-specific aspects, which would make results difficult to interpret. Nevertheless, the average of this indicator, which is available for three years (1998, 2003 and 2008), is included, interacted with the benchmark measures used to classify industries, as a control variable in difference-in-difference analyses of previous sub-sections, particularly because aggregate indicators of product market regulation are highly correlated with EP indicators across countries (see Woelfl *et al*., 2009).

34. The sample includes before-enlargement European Union countries, excluding Luxembourg and the Netherlands.

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ANNEX 3.A1

Data Construction and Sources

Worker reallocation

In order to estimate gross worker flows among dependent employees, data from different labour force surveys (LFS hereafter) for 25 countries are used. These data include the European Labour Force Surveys, the bi-annual Displaced workers/Job tenure supplement of the US Current Population Surveys, and the Canadian Labour Force Survey. These data are complemented with national accounts data at the industry level (drawn from EU KLEMS and OECD STAN).

The ratio of annual hirings to employment is computed from job tenure data available in LFS. Workers with tenure shorter than one year are unambiguously new hires according to the definition spelled out in Box 3.1. Separations are then obtained as the difference between hirings and employment changes between two years. As different waves of labour force surveys are hard to compare at disaggregate industry level because the industry dimension is not taken into account in the LFS sampling design, employment level and growth data at the industry level from EUKLEMS or STAN are used for all countries where they are available (all countries except Iceland, Slovenia and Turkey). Hirings and separations are therefore re-scaled on the basis of the discrepancies between LFS and national accounts. Then final reallocation rates are obtained by dividing hirings or separations for the average of employment levels of the two consecutive years, which transitions refer to. More details on this procedure are available in OECD (2009).

For each industry, rates for other types of transitions are obtained by multiplying the hiring or separation rate of that industry, as appropriate, by the corresponding share of each type of transition in total hirings or separations. An additional consistency rule, requiring that job-to-job hirings and separations be equal at the level of the whole economy, is also imposed. The same re-scaling method is used to compute hiring and separation rates by education, gender and age classes.

Other benchmark variables, not based on reallocation data

The US dismissal rate is from OECD (2009) and it is based on 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. Dismissal rates for other countries used to construct Figure 3.3 are also from OECD (2009), to which the reader is referred to for details.

The UK firm turnover rate is defined as the ratio of job creation by entry plus job destruction by exit to average employment. Data are from Hijzen *et al.* (2007).

The UK share of low-wage workers is the share of wage and salary employees working at least 30 hours per week with gross monthly wages less than two-thirds of the median wage in total workers, averaged over 1994-98. The source is the British Household Panel Survey module of the European Community Household Panel.

Other industry-level data

Several industry level variables are derived directly from LFS. These are the shares of temporary workers, self-employed workers, specific age classes, women and specific educational-attainment classes. In all cases they are obtained as the ratio of the specified group of employees divided by total employees in the same country, industry and year, excluding individuals with missing observations. When data are also disaggregated by gender, age class and educational attainment classes (that is regressions used to compute Figure 3.10 in the main text), the share of temporary workers is obtained as the ratio of employees on temporary contracts divided by total employees in the same country, industry, age class, educational-attainment class, gender and year, excluding individuals with missing observations.

Multi-factor productivity (MFP) growth rates are from EU KLEMS. The wage share in value added is defined as the ratio of gross labour compensation in value added. It is from EU KLEMS except for Canada, Switzerland and Norway, for which it is from OECD STAN. For recent years, EU KLEMS data are extrapolated on the basis of predicted wage-share growth rates from OECD STAN.

Adjustment for industry composition

All figures presented in Section 1 are adjusted for industry composition except when industry-level data are not available (in the case of unemployment data). The following procedure is used to make the adjustment: first, employment shares of each industry are computed for each country and then averaged across countries; second, a weighted regression of industry/country rates on industry and country dummies is estimated using frequency weights proportional to employment shares and imposing the constraint that the average of the coefficients of country dummies is equal to the global average. Estimated coefficients of country dummies will then correspond to the adjusted rates. This can be considered an application of the Frisch-Waugh theorem (*e.g.* Frisch, 1995), which allows retrieving, in a multi-variate regression, the coefficients of a group of independent variables of interest by first separately regressing the dependent variable and the other variables of interest on the remaining group of variables and then fitting a regression on the residuals from the first-stage regressions.

Institutional variables

EP indicators come from the OECD Indicators of Employment Protection (*www.oecd.org/employment/protection*). The index of employment protection for regular workers including additional provisions for collective dismissals is obtained as the weighted average of the indexes for individual and collective dismissals (with weights equal to 5/7 and 2/7, consistent with the overall indicator of EP stringency; see Venn, 2009). All indicators vary from 0 to 6 from the least to the most stringent. UB generosity is

measured on the basis of average replacement rates, defined as average unemployment benefit replacement rates 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 are net of taxes and transfers, but exclude means-tested social assistance. The source is the *OECD Benefits and Wages Database*. Industry-specific indexes of anti-competitive product market regulation come from the *OECD Regulatory Database*. Minimum wages are measured as the ratio of the statutory minimum wage to median wage of full-time workers, in per cent from the *OECD Employment Database* (*www.oecd.org/els/employment/data*).

Individual data

All individual data are from the European Community Household Panel. Wages are gross hourly wages obtained as gross monthly earnings in the main job divided by 52/12 and then by usual weekly hours of work for employees working for at least 15 hours a week and not in education. Overtime pay and hours are included.

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Chapter 4

How Good is Part-Time Work?

Part-time work is becoming more important in OECD countries, particularly as some groups with traditionally low labour force participation – such as mothers, youth and older workers – take up work in greater numbers. Despite recent regulatory changes to improve the quality of part-time jobs, workers holding these jobs still face a penalty compared with full-time workers in terms of pay, job security, training and promotion, have higher risk of poverty and are less likely to have access to unemployment benefits or re-employment assistance if they become unemployed. However, in terms of job satisfaction, these disadvantages appear to be offset by more family-friendly working-time arrangements and better health and safety. Overall, part-time work promotes higher labour force participation and can be a viable alternative to inactivity for many, if appropriate incentives are in place. In countries with a high share of part-time employment, few part-timers move into full-time work and many stay in part-time jobs for long periods. This may be by choice, but can also have adverse long-term impacts for individuals, and for aggregate labour supply in ageing OECD societies. It is important to remove barriers to moving into full-time work. Notably, tax and benefit systems often reduce the gain from working more hours and can hinder transitions between part-time and full-time work.

Introduction

Part-time work continues to increase inexorably in many countries but the debate continues as to whether this is a desirable trend or not.[1] The rapid growth of part-time work during the 1980s and early 1990s prompted a raft of research highlighting its disadvantages: lower wages, less training and fewer opportunities for career advancement (see OECD, 1999, for a survey). However this negative view of part-time jobs clashes with an important reality: one in four women and almost one in ten men working in OECD countries work part-time, the vast majority of them on a voluntary basis. As a result, governments have gradually moved away from viewing part-time work as a form of labour market dualism and instead have sought to promote it as a way to mobilise into the labour market groups with traditionally low labour market participation, such as women with young children, individuals with health problems and older workers (*e.g.* OECD, 2006, 2007, 2009a).

The upshot is that labour market and social policy settings have become more favourable towards part-time work. Since the late 1990s, three-quarters of OECD countries have made changes to working-time regulations to require that part-time and full-time workers receive comparable wages and working conditions and/or make it easier for workers to move between full-time and part-time work as their personal situation changes. Many countries have also eased restrictions on work for recipients of unemployment, disability or social assistance benefits by allowing them to earn more from part-time work before their benefits are reduced or cut altogether. Part-time work, alongside job search and participation in active labour market programmes, is increasingly encouraged as part of a strategy to "activate" jobseekers back into work.

This chapter assesses whether part-time work implies a range of penalties for those workers, and if so, why so many people still opt for part-time work. It highlights the trade-off between full-time work, part-time work and inactivity – both at the individual and macroeconomic level – and examines barriers that prevent part-time workers from moving back into full-time work. Section 1 looks at recent trends in part-time work and provides an overview of working-time regulations designed to encourage part-time work. Section 2 examines the quality of part-time jobs and the factors that may lead to economic hardship among part-time workers. Section 3 looks at the relationship between full-time work, part-time work and inactivity, and its implication in terms of aggregate labour supply. It also examines transitions from part-time work into full-time jobs and the role of the tax and transfer system in affecting these transitions.

Main findings

- *Despite regulatory changes to ensure equal treatment between part-timers and full-timers in terms of wages and working conditions, significant differences remain.* Part-time jobs, on average, carry a *penalty* in terms of wages, training, promotion, job security and union membership, but a *premium* in terms of control over working time and health and safety.

Taking into account individual and job characteristics, the penalty tends to be lower in countries where part-time work is most widespread; while the premium remains.

- *There is some evidence that the penalty is compensated by the premium for many part-time workers.* Women who voluntarily work part-time appear to be satisfied to trade off wages, future earnings potential and job security for more family-friendly working-time arrangements. However, for other part-time workers, the premium does not compensate for the penalty, at least in terms of its impact on job satisfaction. In addition, the "bargain" between penalties and premia struck by some part-time workers may be motivated by short-term time constraints and may fail to take into account the longer-term adverse impacts of part-time work on poverty risk, career progression and retirement income.
- *The poverty rate among part-timers is more than twice as high as that observed among full-timers*, on average across the OECD countries for which data are available. International comparisons show that this poverty penalty is closely related to the greater job instability experienced by part-time workers. By contrast, the average number of hours worked by part-timers does not explain much of the cross-country difference in poverty penalties. Moreover, in a number of countries, part-timers face a double income security penalty that can increase their risk of poverty. Not only are they less likely to have a permanent contract, but they also experience weaker coverage by unemployment insurance systems because of their shorter periods of work and shorter working hours, that make them less likely to meet the eligibility conditions for these insurance schemes.
- *Overall, part-time work promotes higher labour force participation:* countries with a greater share of part-time work have lower inactivity rates. However, a closer look shows that prime-age women may be substituting part-time for full-time work. Countries where the part-time share for prime-age women is highest have less full-time work, and the total labour supply, measured in full-time equivalents, is lower.
- *Part-time work can be a viable alternative to inactivity if appropriate incentives are in place*. The main reasons for inactivity and part-time work are closely aligned, but vary over the life cycle: study for youth, caring responsibilities for prime-age women and sickness or retirement for older workers. However, many prime-age women aged over 40 work part-time long after caring responsibilities have diminished, mainly because they prefer part-time work.
- *Only a small proportion of part-timers moves to full-time employment each year, notably fewer in countries where part-time work is widespread*. Therefore, the growth of part-time work appears to be associated with better quality part-time jobs, longer part-time spells and a smaller proportion of workers cycling into part-time employment in order to reconcile work and other demands on their time. In all countries for which data are available, there are even fewer transitions towards full-time employment among the working poor, who move out of work more frequently than other part-time workers.
- *While the vast majority of workers stay voluntarily in a part-time job, there are some barriers to working longer hours in many OECD countries.* In particular, tax and benefit systems lower the payoff from taking up a full-time job, sometimes considerably, and for short-time workers in particular. Estimates made for the purpose of this chapter show that such financial disincentives reduce the probability of returning to full-time employment and increase the probability of moving out of work, as compared with remaining in part-time work. Moreover, the most needy part-time workers may not always receive adequate support from employment services to find a full-time job.

1. Part-time work: recent developments

1.1. Part-time work has further increased over the past decade and is predominantly voluntary

In 2007, prior to the economic downturn, part-time employment accounted for 16.7% of total employment on average across OECD countries, with substantially higher shares in Australia, Germany, the Netherlands, New Zealand, Switzerland and the United Kingdom (Figure 4.1).[2] In a majority of countries, more than half of part-timers are prime-aged women (Annex Figure 4.A2.1). Youth make up a significant proportion of part-time workers in several countries, in most part due to high employment rates among students. This notwithstanding, the demographic composition of part-time work has evolved over the last decade in many countries, with an increase in the share of older workers in total part-time employment and an associated decrease in the share of prime-aged women.

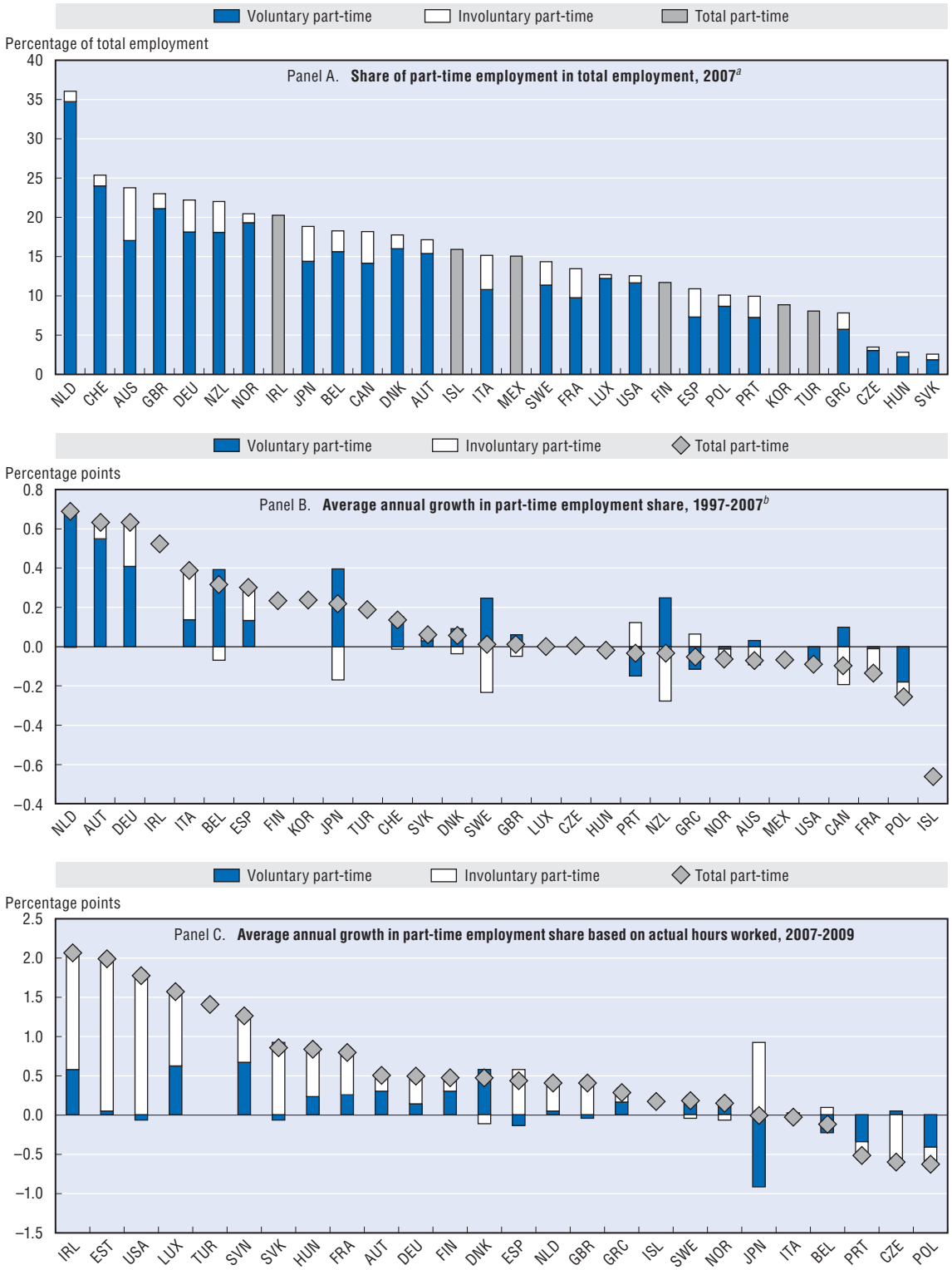
Part-time workers who would prefer to work full-time are termed "involuntary" part-timers (see Box 4.1 for discussion of the caveats on the distinction between voluntary and involuntary part-time work). On average, 17% of part-time workers were involuntary in 2007. Even in the countries where the rate of involuntary part-time work was highest – Australia, Italy, Japan, Portugal and Spain – at most one-third of part-time workers would prefer a full-time job. However, there are clear differences between demographic groups. Men working part-time are, on average, 1.3 times more likely to be involuntary than women, whereas older workers are less than half as likely as others to be working part-time involuntarily.

Strong growth in part-time employment in many OECD countries during the 1980s and early 1990s has continued, or at least not reversed, over the decade preceding the current economic downturn. Growth was strongest in the Netherlands, Austria, Italy, Germany and Ireland – countries which already had moderate or high levels of part-time work in the late 1990s. With the exception of Italy, Germany and Spain, growth has been predominantly voluntary. This is largely due to strong growth of part-time work among demographic groups with a high propensity for voluntary part-time work, notably older workers and prime-aged women. For the most part, the growth of part-time work has not come at the expense of full-time job growth, but as a result of increased labour force participation (see Section 3 for more details).

Existing research shows that labour supply factors explain most of the growth of part-time employment since the 1980s. In particular, increasing women's labour force participation explains more than half of the growth in part-time employment in western Europe and the United States in the 1980s and 1990s (Buddelmeyer *et al.*, 2008). Relaxation of regulations governing the use of part-time employment were important drivers of part-time growth in the 1990s in Belgium, France and Spain, while reform of employment protection laws in Portugal and Spain reduced the part-time employment share by making regular contracts relatively less expensive for employers. However, the magnitude of these effects was much smaller than of supply-side factors. The weak role of demand-side factors in explaining the increase in part-time employment is also highlighted in a number of country-specific studies, which find that the shift towards the service sector accounted for only 10-20% of the growth of part-time employment during the 1980s and 1990s (Euwals and Hogergrugge, 2006; Abhayaratna *et al.*, 2008; Allaart and Bellmann, 2007).

According to the Establishment Survey on Working Time (ESWT) conducted by the European Foundation for the Improvement of Living and Working in 2004-05 in

Figure 4.1. **Part-time employment in OECD countries**



a) Consistent definition of part-time employment (< 30 hours per week). Data on involuntary employment share are not available for Finland, Iceland, Ireland, Korea, Mexico or Turkey.

b) Data refer to changes from 2001 to 2007 for Australia and Poland, 2002 to 2007 for Japan and 1997-2004 for Mexico.

Source: Panels A and B: *OECD Labour Force Statistics Database*. Panel C: Unpublished data from the European Labour Force Survey; Japanese Labour Force Survey; Current Population Survey (United States).

StatLink http://dx.doi.org/10.1787/888932293087

Box 4.1. **Some caveats on the definition of "voluntary" part-time work**

The assessment of the voluntary or involuntary nature of part-time work is somewhat subjective, and some caveats are needed. The definitions of involuntary part-time work used in the *OECD Labour Force Statistics Database* are not completely harmonised across countries. In most countries, involuntary part-time workers are identified based on the response of individuals to a question about reasons for working part-time. Responses can vary from school or caring responsibilities to the inability to find a full-time job, and only those individuals who give the latter response are classified as involuntary part-timers. In a few countries (*e.g.* Australia, Japan, New Zealand), involuntary part-time workers are identified as those who work part-time but would prefer to work more hours.

Only a small proportion of part-time workers typically cite the inability to find a full-time job as the primary reason for working part-time. However, for many "voluntary" part-time workers, the choice to work part-time may be driven by external constraints, such as a lack of time to devote to work due to caring or study responsibilities or inability to work longer hours due to illness or disability (see Section 3 and Box 4.4). For families, the working-time preferences of one partner may be determined to a large extent by the other partner's employment status. Fewer workers might be identified as voluntary part-timers if they had been asked "if better and more affordable childcare facilities were available, then would you want to work full-time?" However, it is very difficult to disentangle policy-related constraints to full-time work from personal preferences, and these distinctions may be somewhat arbitrary in practice. Gash (2008) reports that women who report working part-time for caring reasons are no more or less likely to leave part-time work than those who are involuntarily part-time in France and the United Kingdom, and no more or less likely to move into inactivity in Denmark, suggesting that preferences data may not be strong predictors of behaviour.

The voluntary/involuntary distinction may also fail to fully capture workers' satisfaction with their working time situation. The voluntary nature of part-time work, as it is measured in this Chapter and in most studies on part-time work, does not necessarily mean that those part-timers classified as working part-time on a voluntary basis are fully satisfied with their current working time. For example, on average across European countries, 17.5% of women working part-time voluntarily would like to work more hours (but not full-time) (Eurofound, 2009).

21 European countries, economic or organisational needs were the main reason for introducing part-time work in only one-third of establishments (Eurofound, 2007). Instead, the wishes of employees, or a combination of both business needs and employees' wishes were more often viewed as the primary rationale for part-time work. However, the reasons given by managers for introducing part-time work also vary according to the size of the company and the sector of activity. Business needs are predominantly reported as the main reason for introducing part-time work in small establishments, as well as in industries such as hotels and restaurants, community, social and personal services, education, health and social work and transport, storage and communication. Interestingly, establishments where managers considered that part-time work was introduced in response to organisational needs also reported a high incidence of working practices that are less compatible with work-life balance (*e.g.* work at night and weekends, changeable working hours and limited possibility to adapt employees' working time), suggesting a clustering of working-time arrangements to suit the establishment rather than the employees.

The share of part-time work varies significantly over the business cycle. In particular, the part-time employment share tends to increase when economic conditions are slack as employers cut back hours and the hiring of full-time workers, and more second-earners (with typically greater propensity for part-time work) enter the labour market to bolster household incomes (Euwals and Hogerbrugge, 2006; Buddelmeyer *et al.*, 2008). Policies to encourage firms to reduce working hours rather than dismiss workers during a downturn are also likely to play a role in increasing the number of people working short hours (see Chapter 1 for a discussion of hours reduction, short-time work schemes and their impact during the current downturn). The experience of previous downturns has shown that involuntary part-time employment is more sensitive to economic conditions than voluntary part-time employment, suggesting that demand-side factors dominate during a downturn (Buddelmeyer *et al.*, 2008; Brender and Gallo, 2008; Partridge, 2003). The sensitivity of involuntary part-time employment to economic conditions is two to three times larger for prime-aged men than for other demographic groups that traditionally have a high propensity for part-time work (*e.g.* prime-aged women, youth and older workers).

During the current downturn, the proportion of workers working less than 30 hours a week has increased in more than half of the countries for which data are available (Panel C of Figure 4.1). Most of the increase in part-time employment is involuntary, due either to more full-time workers temporarily working fewer hours, or a growing number of workers being hired on part-time contracts but who would prefer full-time work. However, the impact of hours reduction during the downturn on measured part-time employment is likely to be more modest. The *OECD Labour Force Statistics Database*, and most national labour force surveys, identify part-time workers based on their reported *usual*, rather than *actual*, hours of work. Hence, workers who usually work full-time but work fewer hours during the economic downturn will not be identified as part-time. On average in the European countries shown in Figure 4.1, 80% of involuntary part-time employment during the downturn has been due to full-time workers working fewer hours, rather than workers who usually work part-time wanting more hours. This suggests that the current downturn will have only a small impact on the *measured* part-time employment share.

1.2. New regulations for part-time work

Since the early 1990s, most OECD countries have introduced new laws aimed at encouraging high-quality part-time work opportunities and reducing involuntary part-time work, by: *i)* requiring part-time workers to receive comparable wages and working conditions to full-time workers; *ii)* allowing full-time workers to reduce their hours in certain circumstances; or *iii)* giving existing part-timers preferential treatment when hiring full-time. Much of the impetus for these regulatory changes came from international agreements on part-time work, notably the European Directive on Part-time Work (1997) and the ILO Convention (C156) and Recommendation (R182) on Part-time Work (1994).[3] However, the growing importance of part-time work and awareness of the difficulties workers face in balancing work and caring responsibilities have also played a role.

Table 4.1 outlines the statutory rights for part-time work and part-time workers in place in OECD countries and the accession countries.[4] In most countries, part-timers are entitled to receive the same contractual pay and working conditions as equivalent full-time workers, on a pro-rata basis.[5] These so-called "equal treatment provisions" were generally introduced in the 1990s and early 2000s. Around half of OECD countries require employers to notify part-time employees who want to work longer hours of full-time

Table 4.1. **Statutory rights for part-time work and part-time workers**

	Equal treatment for part-time workers since:	Rights to work part-time or request part-time work (acceptable grounds for refusing requests: N = none; SB = serious business grounds; AG = any grounds)						Rights for existing part-time workers	
		Parents	Carers of adults	Sick or disabled workers	Education or training	Older workers	Automatic reversion to full-time hours	Notification of full-time vacancies	Preferential treatment for full-time vacancies
Australia	–	SB	–	–	–	–	No	No	No
Austria	1992	SB	–	–	–	–	Yes	No	No
Belgium	2002	N	SB	SB	SB	SB	Yes	Yes	Yes
Canada	1990 (QC) 1995 (SK)	–	–	–	–	–	–	No	No
Chile	2001	–	–	–	–	–	–	No	No
Czech Republic	–	SB	SB	–	–	–	No	Yes	Yes
Denmark	–	AG	–	–	–	–	. .	. .	. .
Estonia	1992	AG	AG	AG	AG	AG	No	Yes	No
Finland	2001	SB	AG	AG	. .	AG	Yes	No	Yes
France	1982	N	SB	SB	N	SB	Yes	. .	. .
Germany	2001	SB	SB	SB	SB	AG	Yes	Yes	Yes
Greece	1998	N, SB	–	–	–	–	Yes	Yes	Yes
Hungary	2003	N, SB	AG	AG	AG	AG	No	Yes	No
Iceland	. .	–	–	–	–	–	. .	. .	. .
Ireland	2001	AG	–	–	–	–	Yes	. .	. .
Israel	. .	–	–	–	–	–	–	No	No
Italy	2000	AG	AG	AG	AG	AG	. .	. .	. .
Japan	2007	N	N	–	–	–	Yes	Yes	Yes
Korea	2007	AG	AG	AG	AG	AG	No	No	Yes
Luxembourg	1993	AG	–	–	–	AG	Yes	. .	. .
Mexico	–	–	–	–	–	–	–	No	No
Netherlands	1996	N	SB	SB	SB	SB	Yes	No	No
New Zealand	–	SB	SB	–	–	–	No	No	No
Norway	2006	SB	SB	SB	SB	SB	Yes	Yes	Yes
Poland	2004	N	–	–	–	–	Yes	Yes	No
Portugal	1971	SB	–	–	–	–	Yes	Yes	No
Russian Federation	. .	SB	SB	–	–	–	. .	. .	. .
Slovak Republic	2002	SB	SB	SB	. .	. .	No	No	No
Slovenia	1990	N	–	N	–	N	Yes	Yes	No
Spain	2001	N	N	AG	AG	AG	No	Yes	Yes
Sweden	2002	SB	–	–	SB	–	Yes	No	Yes
Switzerland	–	–	–	–	–	–	–	No	No
Turkey	2003	AG	AG	AG	AG	AG	No	Yes	No
United Kingdom	2000	SB	SB	–	–	–	No	No	No
United States	–	AG	N	N, SB	–	–	No	No	No

Notes: "–" indicates that the policy does not apply; ". ." indicates that information is not available. Many countries have additional eligibility criteria for requesting part-time work (*e.g.* length of service, size of firm). Acceptable grounds for rejecting requests assume that the employee has met these criteria. See OECD (2010) for full details.

Australia: While there is no specific statutory requirement for equal treatment, all permanent employees have the same safety net of minimum entitlements for wages, leave, dismissal protection, etc. Casual employees are not always entitled to paid leave (but receive a loading on their hourly rate in lieu of this) and are entitled to unfair dismissal protection in certain circumstances.

Belgium: Equal treatment rules have applied since 2000 in collective agreements.

Canada: Québec: Right to equal treatment applies to wages if employees earn less than twice the minimum wage. Saskatchewan: right to equal treatment applies to pro-rated non-statutory health and life insurance benefits after qualifying period, only applies to employers with 10+ full-time equivalent employees.

Denmark: Right to equal treatment applied through collective agreements since 2001.

France: Employers cannot refuse requests for parental leave to be taken as part-time work, but can choose the number of hours worked (16-32 hours/week). Employers cannot refuse requests for part-time work for educational purposes, but can postpone the period of part-time work.

Germany: older workers do not have an automatic right to revert to full-time hours.

Greece: There are no grounds for refusing requests for a one-hour per day reduction in working time. Requests for other arrangements must be agreed to by the employer.

Hungary: Requests from employees in the public sector cannot be refused and they have automatic reversion to full-time work.

Japan: The employer must accommodate requests for part-time work or allow another flexible work arrangement as a substitute.

Korea: The right to equal treatment was introduced progressively by enterprise size since 2007 and applies to enterprises with fewer than 100 employees from 2009.

Portugal: There is no statutory right to preferential treatment for part-time workers when filling full-time vacancies but employers are obliged to consider requests for full-time work from part-time employees.

Slovenia: Right to revert to full-time hours does not apply to older workers.

United States: Workers with serious health conditions can work a reduced schedule without their employer's agreement. Workers with a disability can work part-time unless it will cause undue hardship. If it causes undue hardship, the employer must reassign the employee if there is a suitable vacant position.

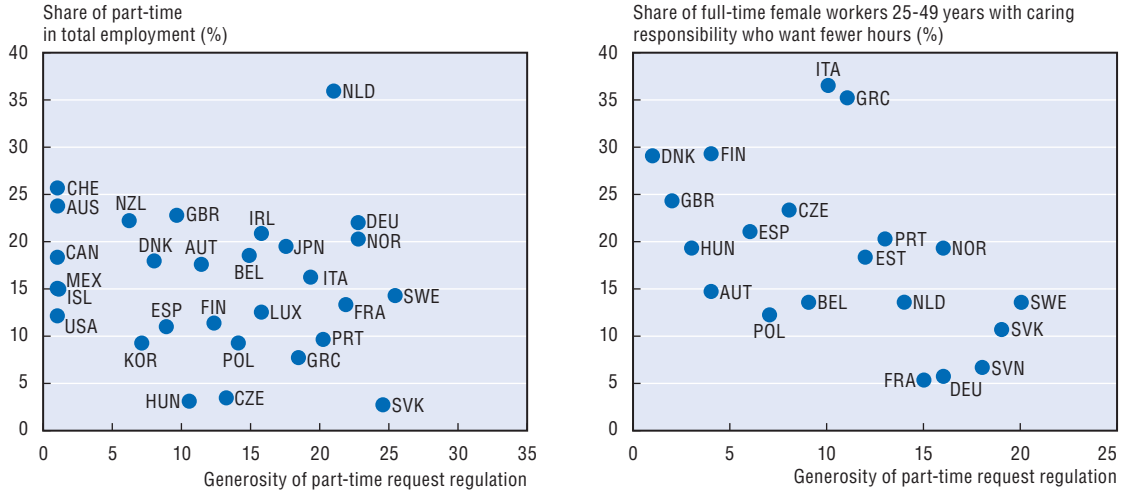
Source: Responses to OECD Part-time Work Questionnaire; *ILO Working Time Database*; *ILO Maternity Protection Database*.

vacancies when they arise. Some also require employers to give existing underemployed part-time workers preferential treatment when filling full-time vacancies.

Rights for full-time workers to request part-time work are also widespread in OECD countries.[6] In eight out of ten OECD countries, parents can request part-time work, either by taking parental leave as a period of part-time work or requesting a reduction in working hours. In most cases, employers can only refuse requests for part-time work from parents on serious business or operational grounds, if at all, and the period of part-time work must be taken before their child reaches school age. Rights to work part-time for non-parents are less common. Several countries have provisions that allow workers to request part-time work for any reason (in France and the Netherlands, this right only applies to workers in larger firms), although employers can generally refuse requests on any grounds. Other countries give specific rights to part-time work to carers of adults (Belgium, Czech Republic, Japan, Russia, United Kingdom), workers who are sick or disabled (Norway, Slovak Republic, Slovenia, United States), those pursuing education or training (France, New Zealand, Norway, Sweden) or older workers (Belgium, Finland, France, Luxembourg, Norway, Slovenia).

From a cross-country perspective, there is no clear relationship between the generosity of laws granting employees a right to work part-time and the incidence of part-time work (Figure 4.2).[7] However, among the group most likely to be eligible to request part-time work – mothers of young children – it appears that European countries with more generous rights to work part-time have less unmet demand for part-time work among full-time workers. This suggests that statutory rights to part-time work may be achieving at least one of their aims: helping workers with caring responsibilities to reduce their working hours. However, the few studies which examine the impact of the laws suggest that their impact may be modest, at best (see Box 4.2).

Figure 4.2. **Rights to work part-time and the spread of part-time work**



Note: Generosity of part-time request regulation is a ranking of countries from least (ranking equal to one) to most generous towards employees based on the information included in Annex 4.A1 for rights to work part-time for parents. Countries are ranked as more generous if their regulation has been in place for a longer period of time, covers a larger group of parents (in terms of the age of children for which part-time work can be requested), allows employers fewer grounds for refusal and has an automatic right to revert to full-time hours at the end of the period of part-time work.

Source: *OECD Labour Force Statistics Database*, 2008 data; European Labour Force Survey supplement on Work and Family, 2005.

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Box 4.2. **Existing evidence on the impact of part-time regulations**

While statutory rights to work part-time are widespread, there has been relatively little formal evaluation of their effectiveness in increasing access to part-time work for those who want it. Buddelmeyer *et al.* (2008) found that the easing of restrictions on part-time work (including rights to request part-time work, but also the lifting of direct restrictions on the use of part-time work) in Europe during the 1980s and 1990s was associated with an increase in the part-time employment share. However, the impact was relatively small and dwarfed by the impact of changes to child benefits and employment protection.

Fouarge and Baaijens (2009) examined the impact of statutory changes in the Netherlands on job mobility. They hypothesise that statutory rights to work part-time should reduce the number of employees who have to change jobs in order to adjust their working hours. However, they found that employees were no less likely to change jobs when they change hours after the new laws were introduced than before. Munz (2004, cited in Fouarge and Baaijens, 2009) finds similar results for Germany.

Holt and Granger (2005) find that 81% of employees who made a request to work flexibly in the United Kingdom (around 25% of requests are for part-time work) had their request fully or partly accepted. However, it is not clear whether the statutory right to request flexible work had much impact on the availability of part-time work. On the one hand, requests for flexible work were more likely to be accepted when made by employees with children under school age (the group targeted by the statutory right). On the other hand, only 16% of requests for flexible work were made in writing, a requirement under legislation, and written requests were more likely to be rejected than those made through discussion with the employer. It is possible that employees only exercise their statutory rights when they are uncertain about having their request for part-time work accepted through more informal channels, so that written requests made under the legislation are to employers that are more likely to reject applications. Nevertheless, the rate at which applications for flexible work are accepted rose only slightly after the statutory right was introduced.

2. Are part-time jobs worse than full-time jobs?

As noted in the previous section, virtually all OECD countries have enacted equal-treatment laws for part-time workers. In part, this important legislative effort has been driven by fears that part-time work may negatively affect concerned workers, with a number of studies pointing to the lack of career development opportunities offered by part-time jobs. Moreover, the incidence of in-work poverty is, in large part, dominated by part-timers. Although the impact of equal treatment provisions can hardly be evaluated, this section examines where OECD countries stand as regards the so-called "part-time penalty", and investigates further the link between part-time work and in-work poverty.

2.1. Job quality

Job quality is an increasingly important indicator of labour market performance, as evidenced by the ILO's Decent Work agenda and the European Employment Strategy, which has employment quality as one goal. However, job quality has several dimensions and there is no universally-accepted summary indicator of it. Previous cross-country studies of job quality have examined pay, working time, job security, job satisfaction, promotion, training, skills, health and safety conditions, gender equity, job content, representation and work/family balance, among other factors (*e.g.* Davoine *et al.*, 2008; Clark, 2005). The choice of indicators is necessarily limited by data availability, particularly when comparing a large number of countries.

Existing cross-country research on the quality of part-time jobs has tended to focus on only one aspect of job quality (*e.g.* Bardasi and Gornick, 2008; and O'Dorchai *et al.*, 2007 on wages; Arulampalam *et al.*, 2004, on training) or to review average job quality without fully taking into account differences in the characteristics of part-time and full-time workers (*e.g.* OECD, 1999). This section provides a cross-country comparison of the quality of part-time jobs using a range of indicators – wages, training, promotion opportunities, union membership, job security, contract type, working-time flexibility, anti-social working-time arrangements, health and safety and stress at work[8] – first as the raw average difference between part-time and full-time workers and then the gap after controlling for differences in the personal and job characteristics of part-time and full-time workers. The results show very consistent patterns of job quality across OECD countries. Compared with full-time workers, there is typically a penalty to part-time work in terms of earning potential, representation and job security, but a premium in terms of working time and health, even after controlling for job and personal differences.

The part-time penalty: earnings potential, representation and job security

On some measures of job quality, part-time workers are clearly worse off than full-time workers (Figure 4.3). Part-time workers have lower hourly wages, on average, than full-time workers in almost all OECD countries. Part-time workers are also less optimistic about promotion prospects and less likely to participate in training than full-time workers. The training deficit is greatest in countries with less training on average. Trade union membership is generally lower among part-time than full-time employees. The difference is particularly large in countries with low-to-medium union density. Finally, part-time workers tend to have less job security than full-time workers, whether measured *objectively* (by whether they have a permanent contract) or *subjectively* (by whether they feel that their job is secure). The job security gap is generally larger for men than for women and smallest in countries where average levels of job security are highest.

At least part of the difference in job quality between full-time and part-time employees can be explained by differences in their personal and job characteristics. For example, part-time workers are more likely to work in smaller firms with poorer access to training and opportunities for promotion, or have lower levels of education and so earn less on average. Figure 4.4 splits the job quality penalty into the components due to differences in individual characteristics (*e.g.* age, education, work experience and family situation) and job characteristics (*e.g.* occupation, industry, firm size and contract type) of part-time and full-time workers and the component that cannot be explained by these differences. The unexplained component can be interpreted as the gap in job quality if part-time workers and jobs had the same observable characteristics as full-time workers and jobs (see Annex 4.A1 for further details on this analysis). Differences in individual and job characteristics explain only part of the part-time penalty. Concerning the factors affecting current and future earnings (wages, training, promotion), differences in personal characteristics play a minor role in explaining the part-time penalty. Differences in job characteristics – occupation for women and industry and contract type for men – are far more important. For example, if women in part-time jobs had the same occupational profile as women in full-time jobs, the part-time penalty would be around 4 percentage points lower on wages and training and 3 percentage points lower on promotion.[9] Overall, however, there remains a considerable gap between full-time and part-time employees after controlling for observable characteristics. These results are broadly consistent with most of the existing literature (*e.g. on wages*:

Figure 4.3. **Earnings potential, representation and job security, ratio of part-time to full-time employees**

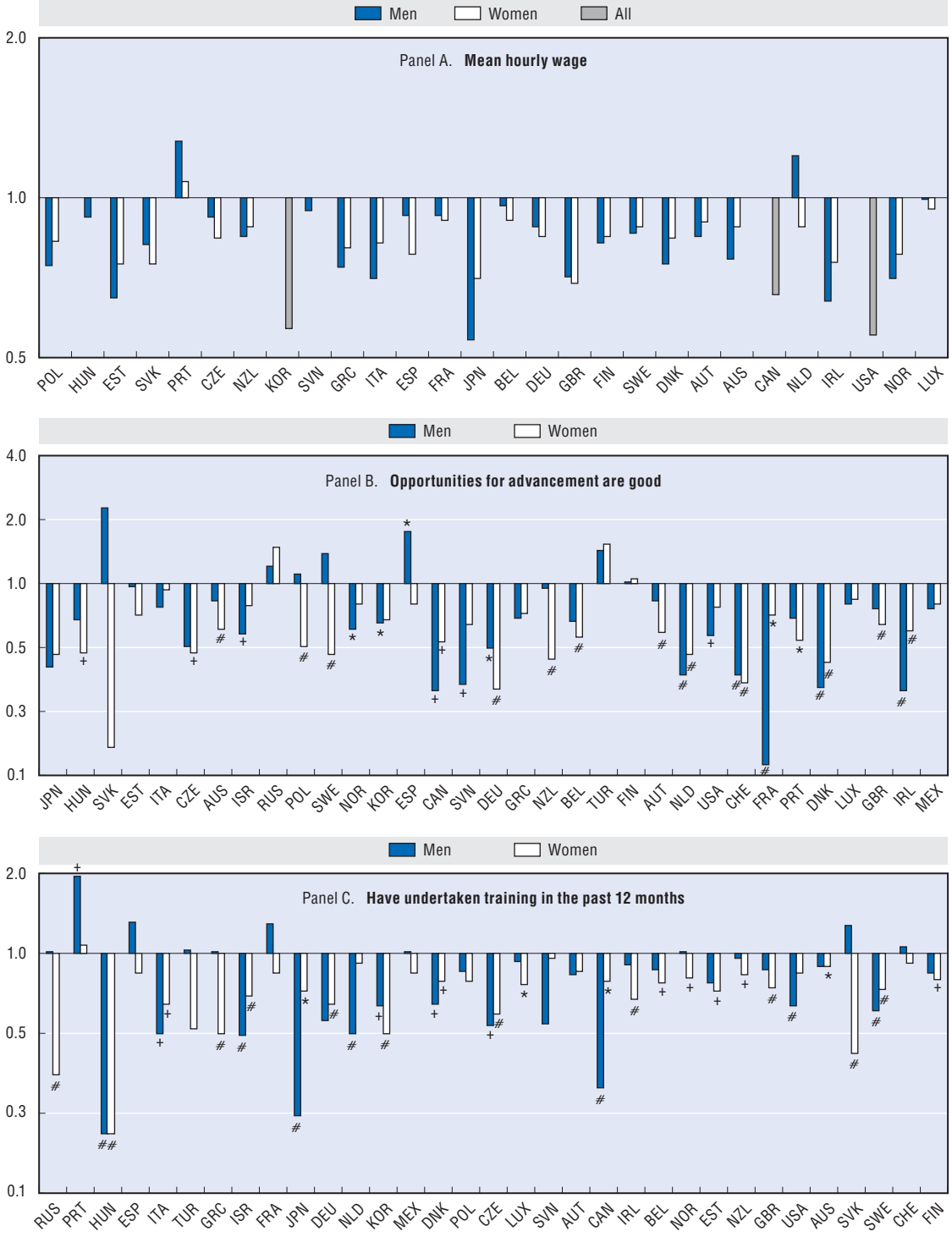
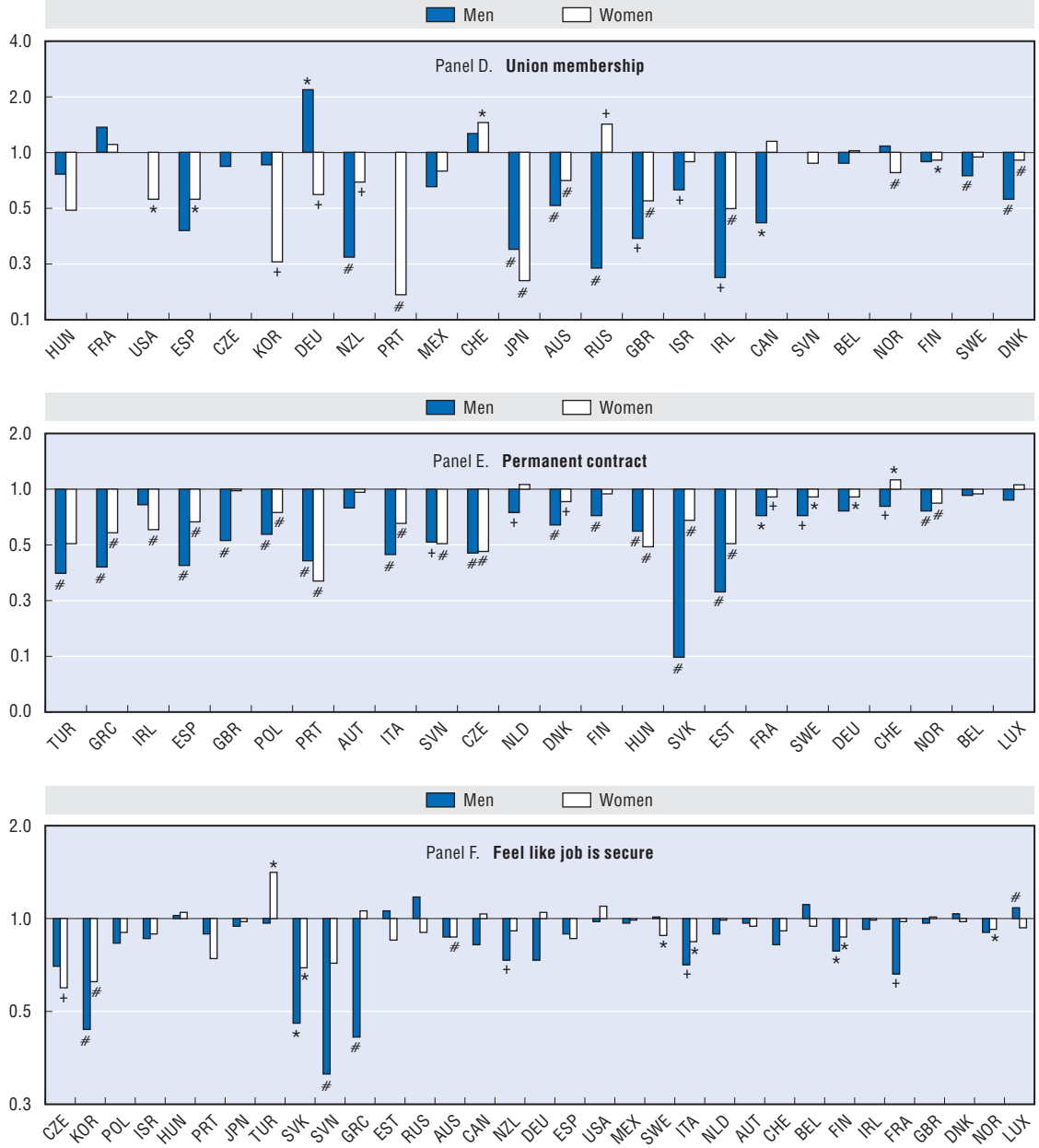


Figure 4.3. **Earnings potential, representation and job security, ratio of part-time to full-time employees** *(cont.)*



Note: No estimates of statistical significance are available for wage data. Separate wage estimates for men and women are not available for Korea, Canada or the United States. For other panels: *, +, # indicate that values for full-time and part-time employees are significantly different at 10%, 5% and 1% level respectively. Countries are ordered from left to right from lowest to highest average job quality for full-time and part-time workers combined using the measures shown in each chart. For the chart on wages, countries are ordered from lowest to highest GDP per capita. There are no male part-time union members in the sample for the United States or Portugal, nor female union members in the Czech Republic.

Source: Wage data are from the European Structure of Earnings Survey and national sources. Working conditions data are OECD calculations using data from the European Working Conditions Survey (2005) and the International Social Survey Programme (2005).

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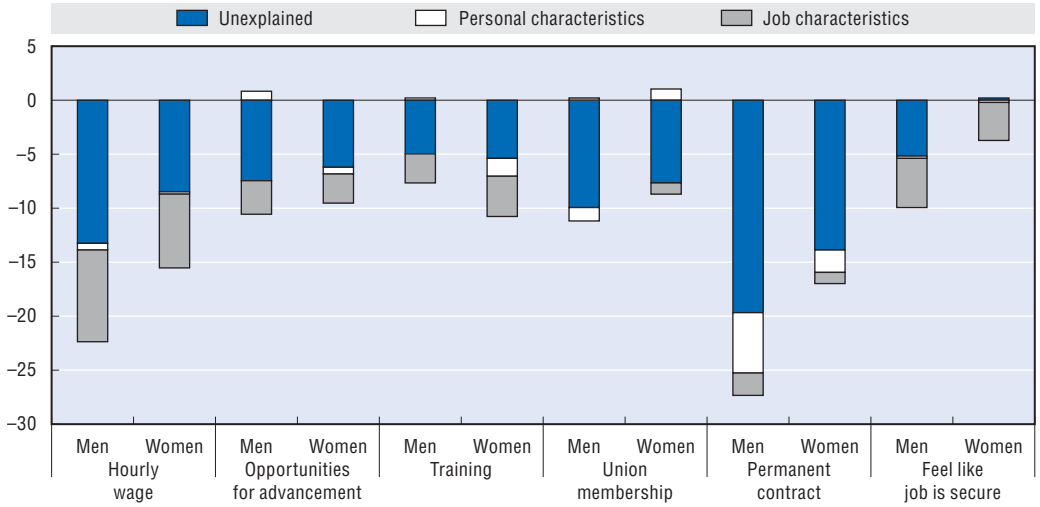
Figure 4.4. **Explaining the part-time penalty**

Job quality gap (part-time minus full-time) in percentage points



Note: Hourly wage is the ratio of hourly wage to median hourly wage to allow comparison across countries.

Source: OECD calculations using data from EU-SILC (2007), European Working Conditions Survey (2005) and International Social Survey Programme (2005). See Annex 4.A1 for more details.

StatLink http://dx.doi.org/10.1787/888932293144

Bardasi and Gornick, 2008; Hirsch, 2005; Jepsen *et al.*, 2005; Manning and Petrongolo, 2008; O'Dorchai *et al.*, 2007; *on wages and promotion*: Russo and Hassink, 2008; *on training*: Nelen and de Grip, 2009; Almeida-Santos and Mumford, 2004, 2005; Ericson, 2008; Arulampalam *et al.*, 2004; *on career prospects*: Eurofound, 2007).[10]

Personal and job characteristics explain very little of the difference in union membership between full-time and part-time employees. Historically, trade unions have been reluctant to push for better working conditions for part-time workers and have in some cases actively campaigned against the spread of part-time work. However, the gap in union membership between full-time and part-time workers has declined over the past two decades (Hernandez, 1995; Machin, 2002; Akyeampong, 2004; Nätti, 1995) as unions reassessed their approach towards part-time workers and became more successful in recruiting them as members (Kirton and Greene, 2005; Jackson *et al.*, 2002; Walters, 2002; Broadbent, 2001; Goslinga and Sverke, 2003).

Only 20-25% of the gap between part-time and full-time workers with respect to permanent contract coverage can be attributed to differences in individual and job characteristics, with the relatively shorter work experience of part-time workers being the most important factor. However, the gap in permanent contract coverage explains most of the difference in perceived job security (5.3 percentage points for both men and women). After controlling for differences in characteristics, the gap in perceived job security is 5 percentage points for men and essentially zero for women. This is consistent with research by Petrongolo (2004) who finds that, after controlling for the type of contract (temporary *vs.* permanent), having a part-time job *in itself* is not a significant determinant of satisfaction with job security for women in most European countries.

The part-time premium: working time and health

Not all aspects of job quality are worse for part-time workers. Figure 4.5 shows that part-time employees tend to be more likely to have control over their working time than full-time employees, particularly in countries like Portugal, Greece, Hungary and Russia where the average level of control over working time is lowest. Part-time work is no more likely than full-time work to involve anti-social working hours, such as Sunday or night work or long days. Indeed in many countries, part-time employees (particularly women) are less likely to work at anti-social times and in all countries except those with few long-hours workers, part-time workers are far less likely to work more than ten hours per day. Part-time employees are also less likely to report that their jobs are stressful or present a risk to their health and safety than full-time employees.

The advantages of working-time arrangements for part-time workers remain even after controlling for individual and job characteristics (Figure 4.6). In fact, the advantage of control over working hours that part-time workers enjoy over full-timers comes *despite* part-time workers having characteristics – low-level occupations, temporary contracts and concentration in small firms for women and lower levels of education for both genders – that tend to be associated with less control over working hours. Likewise, the industry and occupational spread of part-time workers means that they should be more likely to work on Sundays than full-time workers, all other things equal. Most of the "unexplained" gap in working long days is undoubtedly due to the shorter weekly hours of part-time workers. Around 20-30% of the stress/health premium enjoyed by part-time workers is due to their characteristics, notably age, occupation and firm size.

Is there a penalty/premium trade-off?

The analysis in the previous section suggests that part-time workers tend to be paid less per hour than full-time workers, even after taking into account differences in their personal and job characteristics. Part-time workers are also worse off when considering factors that contribute to *future* earnings potential, such as training, promotion and union membership, and have less job security than full-time workers, due mainly to the high concentration of part-time workers among those on temporary contracts. On the other hand, part-time workers tend to have equivalent or better working time arrangements than full-time workers. Their shorter hours of work also contribute to health/safety and "no-stress" premiums over full-time workers.

These penalty/premia between full-time and part-time workers persist despite regulatory reforms over the past decade designed to ensure that full-time and part-time employees are treated equally (see Box 4.3). Nevertheless, cross-country differences in job quality suggest that the spread of part-time employment has not been associated with an increase in the quality gap between full-time and part-time jobs. In fact, Figure 4.7 shows that in countries with a greater part-time employment share, the penalty to part-time work in terms of wages, having a permanent contract and, for women, access to training is lower, even after controlling for differences in the characteristics of part-time and full-time workers and jobs. The lower part-time penalty is not necessarily accompanied by a lower part-time premium in terms of working-time arrangements. In countries with a medium-level part-time share, the working-time advantages of part-time work are close to zero once characteristics are taken into account. However, in countries with a high part-time share, the part-time premium remains.

Figure 4.5. **Working-time arrangements and health, ratio of part-time to full-time employees**

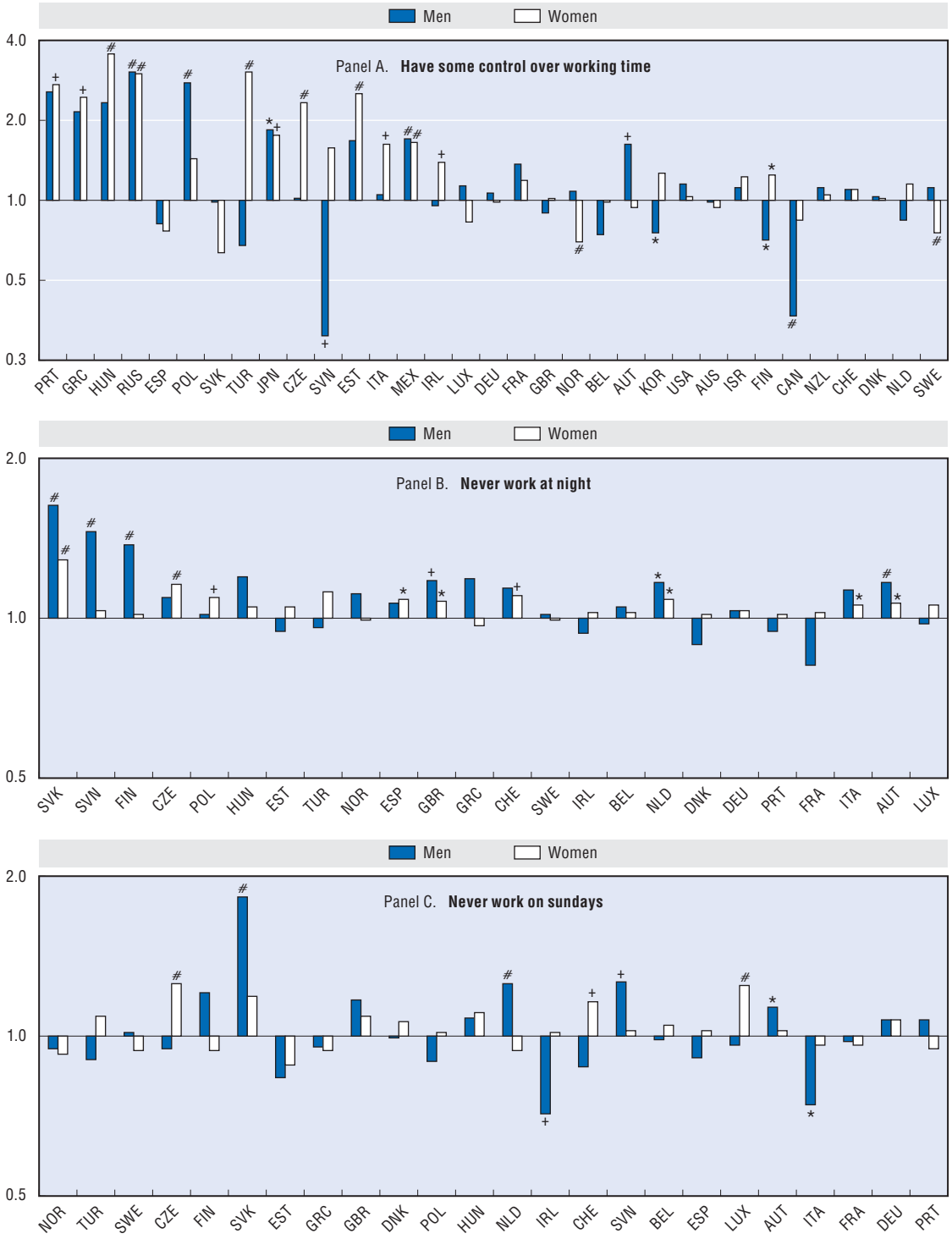


Figure 4.5. **Working-time arrangements and health, ratio of part-time to full-time employees** *(cont.)*

Note: *, +, # indicate that values for full-time and part-time employees are significantly different at 10%, 5% and 1% level respectively. Countries are ordered from left to right from lowest to highest average job quality for full-time and part-time workers combined using the job quality measures shown in each chart.

Source: OECD calculations using data from the European Working Conditions Survey (2005) and the International Social Survey Programme (2005).

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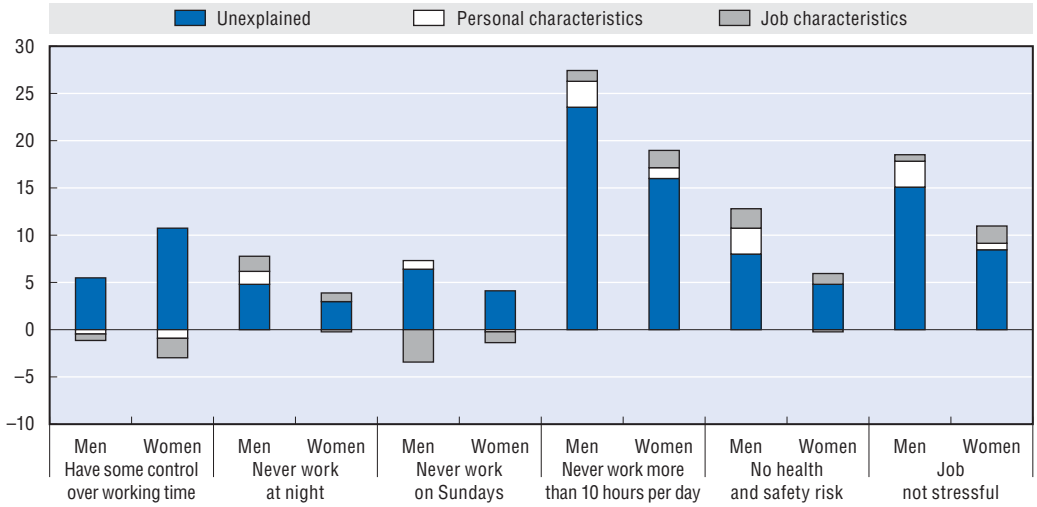
The simultaneous existence of a penalty and premium for part-time work suggests that part-timers may be trading off better working-time arrangements and less stress for lower earnings potential and less job security. The theory of compensating differentials (Rosen, 1986) argues that, on average in competitive labour markets, workers will accept lower wages for more desirable working conditions and firms will have to pay higher wages

Figure 4.6. **Explaining the part-time premium**

Job quality gap (part-time minus full-time) in percentage points



Source: OECD calculations using data from EU-SILC (2007), European Working Conditions Survey (2005) and International Social Survey Programme (2005). See Annex 4.A1 for more details.

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Box 4.3. **Have equal-treatment laws improved job quality for part-time workers?**

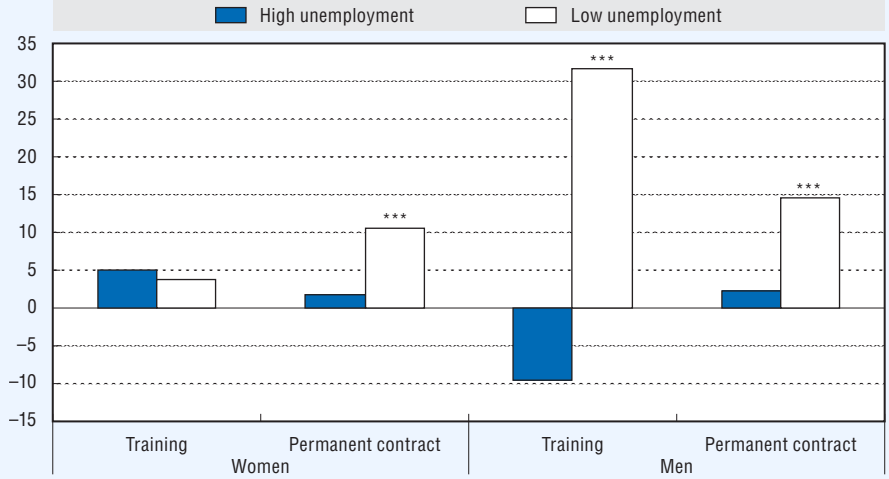
As discussed in Section 1, during the past decade many countries introduced regulations designed to improve the quality of part-time jobs. Equal-treatment laws, which require part-time workers to receive the same pay and conditions as comparable full-time workers, are designed to directly improve job quality. However, there has been little, if any, evaluation of the success of these laws in achieving their aims. Evaluating the impact of equal-treatment laws on the quality of part-time jobs is complicated by policy endogeneity: countries where part-time work is particularly bad quality might be more likely to enact equal-treatment laws to improve its quality. Alternatively, in countries where part-time workers are paid less and have fewer benefits than full-time workers, employers might lobby governments to prevent the introduction of equal-treatment laws. However, the European Directive on Part-time Work (EDPW) in late 1997 provides an exogenous policy change in those countries required to implement the directive.

Prior to 1997, ten EU member countries (Belgium, Denmark, Finland, Germany, Greece, Ireland, Italy, Spain, Sweden and the United Kingdom) did not have equal-treatment laws. Using data from before and after the introduction of equal-treatment laws, it is possible to examine their impact on two aspects of job quality where a part-time penalty exists: training and the likelihood of having a permanent contract. The analysis uses a difference-in-difference approach by assuming that the introduction of equal-treatment laws affected working conditions for part-time workers, but had no effect on full-time workers (part-time workers are the "treatment group" and full-time workers are the "control group"). Data are from the 1995, 2000 and 2005 cross-sectional samples of the European Working Conditions Survey. The regressions are run separately for low- and high-unemployment countries because the ability or desire of workers to enforce their rights to equal pay and conditions may be influenced by prevailing labour market conditions. The results are shown in the figure below.

Box 4.3. **Have equal-treatment laws improved job quality for part-time workers?** *(cont.)*

Impact of equal-treatment laws on training and job security

Probability of part-time compared to full-time employees, percentage points



Note: *** statistically significant at 1% level. Sample includes private sector employees only. Treatment group is employees working 15-29 hours per week, control group is employees working 30+ hours per week (results are similar with different hours cutoffs). Low unemployment countries are Denmark, Ireland and the United Kingdom. High unemployment countries are Belgium, Finland, Germany, Greece, Italy, Spain and Sweden. Regressions includes country dummies as well as controls for average level of job quality measure for full-time employees, industry, firm size, occupation, age and marital status (control for permanent job in regressions of training). Robust standard errors are adjusted for clustering at the country level.

Source: OECD calculations using data from the 1995, 2000 and 2005 European Working Conditions Survey.

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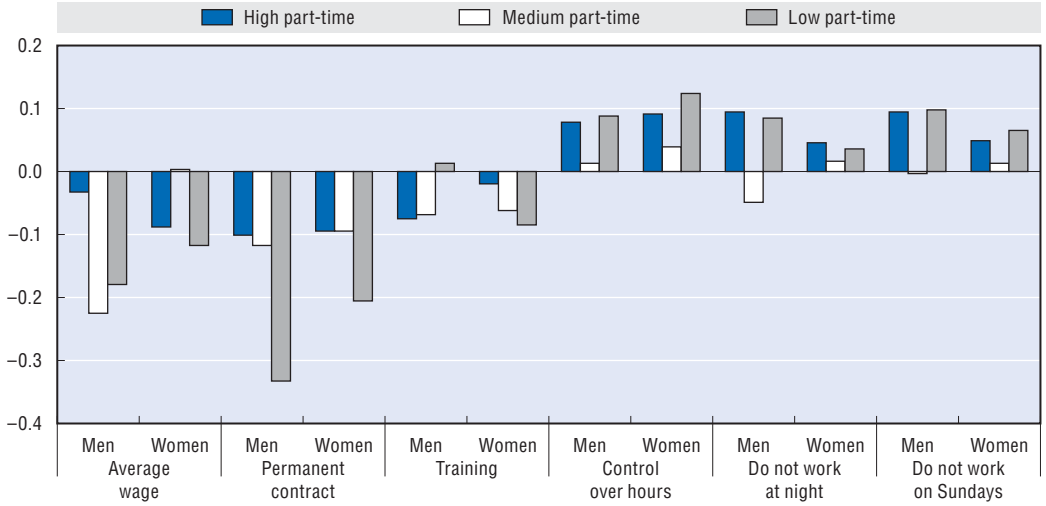
In countries with tight labour market conditions, the introduction of equal-treatment laws was associated with an increased likelihood of having a permanent contract for men and women and an increased likelihood of participating in training for men, reducing the job quality gap between full-time and part-time workers. In contrast, equal-treatment laws had no statistically-significant impact in countries with relatively high unemployment rates. This suggests that the effectiveness of equal-treatment laws in improving job quality is strongly related to employees' willingness to enforce their rights, which is likely to be greater when their alternative job options are better. The fact that equal-treatment laws are enforced by employees making a complaint against their employer also means that workers who are more satisfied with their working arrangements are less likely to make use of the laws, even if they do not receive the same wages or conditions as full-time workers. This could explain why the impact of the laws was smaller for women than for men, as women are more likely to be satisfied with part-time work (see main text).

to entice workers into jobs with undesirable working conditions. Indeed, there is some empirical evidence (albeit not entirely conclusive) of the existence of wage premiums to compensate for job insecurity (Bonhomme and Jolivet, 2009) and dangerous/unhealthy working conditions (see Viscusi and Aldy, 2003, for a survey) and wage penalties in jobs with desirable or family-friendly working-time arrangements (*e.g.* McCrate, 2005; Daniel and Sofer, 1998; Villaneuva, 2007; Heywood *et al.*, 2007).[11]

Figure 4.7. **Unexplained job quality gap by level of part-time employment**



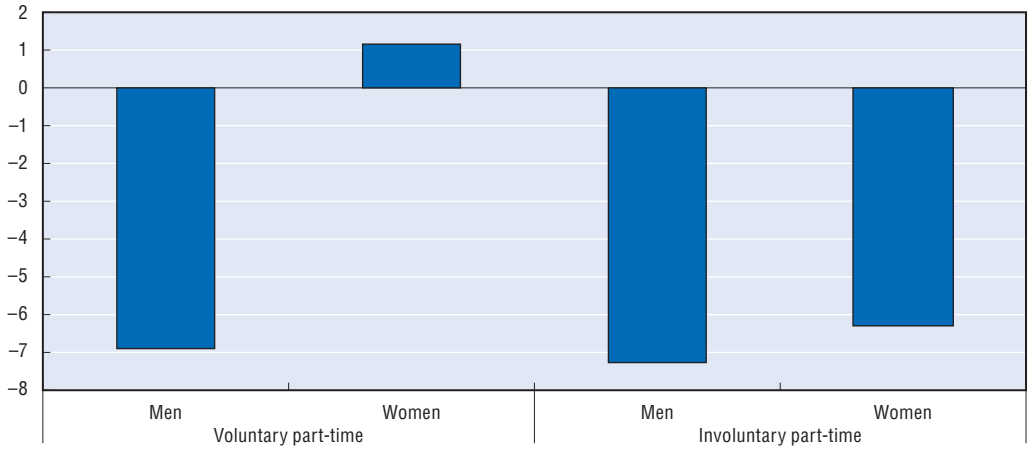
Note: High part-time countries are Australia, Austria, Belgium, Germany, Ireland, Italy, Japan, Netherlands, New Zealand, Switzerland and United Kingdom; medium part-time countries are Canada, Denmark, France, Luxembourg, Mexico, Norway, Spain, Sweden, Turkey and United States; low part-time countries are Czech Republic, Finland, Greece, Hungary, Korea, Poland, Portugal and Slovak Republic. Not all countries are included for every job quality measure. See Annex 4.A1 for more details.

Source: OECD calculations using data from EU-SILC (2007), European Working Conditions Survey (2005) and International Social Survey Programme (2005).

StatLink http://dx.doi.org/10.1787/888932293201

Unfortunately, the existence of compensating differentials for part-time work cannot be tested directly because there is no available cross-country dataset containing both reliable hourly wage data *and* information on a broad range of working conditions. However, an examination of relative job satisfaction sheds some light on the existence of compensating differentials for part-time work. If part-time workers are trading off wages and conditions in accordance with the theory of compensating differentials, they should be indifferent between working full-time and part-time. Figure 4.8 shows that for women there

Figure 4.8. **Unexplained gap in likelihood of being satisfied with job (part-time minus full-time) after controlling for individual and job characteristics**



Source: OECD calculations using data from International Social Survey Programme (2005). See Annex 4.A1 for more details.

StatLink http://dx.doi.org/10.1787/888932293220

is little difference in job satisfaction between full-timers and those who work part-time voluntarily, after controlling for differences in individual and job characteristics. In contrast, for men and for women who work part-time involuntarily, part-timers are 6-7 percentage points less likely to be satisfied with their jobs than full-timers. These results suggest that women who work part-time voluntarily are relatively happy with the trade-off they make when accepting a part-time job: lower earnings potential and job security are the "price" of more flexible working-time arrangements, less stress and shorter hours of work. However this is not the case for all part-time workers. For men and for women who work part-time involuntarily, the penalties appear to outweigh the premia, at least when it comes to their effect on job satisfaction.

If all part-timers were voluntarily trading off between the good and bad aspects of part-time work, then it could be argued that equal-treatment laws, which require full-time and part-time workers to receive comparable wages and conditions, are counterproductive. If employers are obliged to pay the same hourly wage to full-timers and part-timers, it could be difficult for part-timers to negotiate the working-time flexibility they desire, if such flexibility usually commands a wage penalty. However, it is clear that some part-time workers are not sufficiently compensated for the penalties associated with part-time work. For these workers, equal-treatment laws could be an important means of addressing this disadvantage. As the laws are enforced by employees making a complaint against their employer, those employees who have voluntarily accepted a trade-off between wages and working conditions are unlikely to make a complaint. Indeed, the analysis presented in Box 4.3 suggests that part-timers' job security and access to training improved more for men than women after the introduction of equal treatment laws. Further evaluation of the impact of equal-treatment laws is warranted to establish whether the laws are having any adverse effects by discouraging employers from hiring part-time workers.

In a broader sense, the existence of compensating differentials for part-time work does not mean that policy makers should be unconcerned about the quality of part-time jobs. Many workers take up a part-time job in response to temporary constraints on their time due to caring responsibilities, study or illness. For these people, a lower wage may be the price they are willing to pay for working-time flexibility, shorter working hours and a better work-life balance in the short term. A potential reduction in longer-term earnings resulting from fewer opportunities for advancement or training may be a secondary consideration if they think that part-time work is a temporary state. However, many workers spend a large part of their career in part-time work, accumulating and magnifying the effects of lower wages and fewer hours. The next section will examine the implications of part-time work for poverty and income security.

2.2. Do part-time workers face economic hardship?

Part-timers loom large among the working-poor (OECD, 2009b). Moreover, although economic factors are not the only (or even the main) determinants of well-being, the fact that economic poverty strongly affects life satisfaction is also well documented. Thus, the economic well-being of part-time workers needs to be taken into account when assessing the overall quality of part-time jobs.

There is a clear part-time penalty in terms of economic poverty…

In all countries for which data are available, the proportion of part-time workers living in a poor household (*i.e.* a household with income less than half the median disposable

income) is larger than it is for their full-time counterparts (Figure 4.9). And the gap is substantial: on average, part-timers face a poverty rate that is more than twice as high as that observed among full-timers. However, while there is a clear part-time penalty in terms of poverty incidence, the picture as regards the *severity* of poverty is mixed. The depth of poverty, as measured by the distance between the median disposable income among the poor and the poverty threshold (*i.e.* half the median household disposable income), is much more severe for part-time workers than for their full-time counterparts in a small number of countries – mostly Mediterranean and eastern European countries – but on average, there is no significant difference between the two groups.

Cross-country comparison shows that the relative situation of part-time workers, in terms of both incidence and depth of poverty, tends to deteriorate when more part-timers are involuntary. On the other hand, as with the other part-time penalties highlighted

Figure 4.9. **Part-time work and in-work poverty**

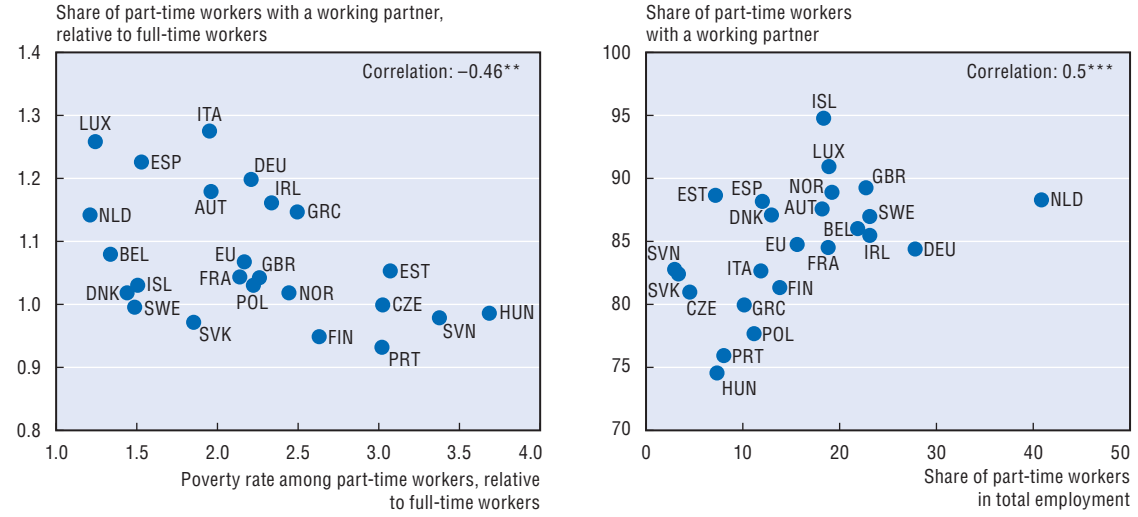
***, **, *: statistically significant at 1%, 5%, 10% levels, respectively.

Source: EU-SILC, cross-sectional files 2005-07.

StatLink http://dx.doi.org/10.1787/888932293239

above, the poverty penalty appears to be smaller in countries where part-time employment is widespread. Poverty risk for part-time workers is strongly affected by household composition. For example, in a study of part-time workers in the United States, Schaefer (2009) reports that 29% of part-timers who are primary earners fall below the federal poverty line for a family of three, compared with just 4% of part-timers who are secondary earners. Figure 4.10 shows that, as the share of part-time work increases, the population of part-timers increasingly comprises second-earners, whose earnings do not necessarily constitute the main component of household incomes. The poverty rate among part-time workers is much higher in countries where part-time workers are more likely to be primary earners. This contributes to explain the smaller part-time poverty penalty in countries with a relatively high part-time share (Figure 4.10).

Figure 4.10. **In-work poverty among part-timers and household composition**



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

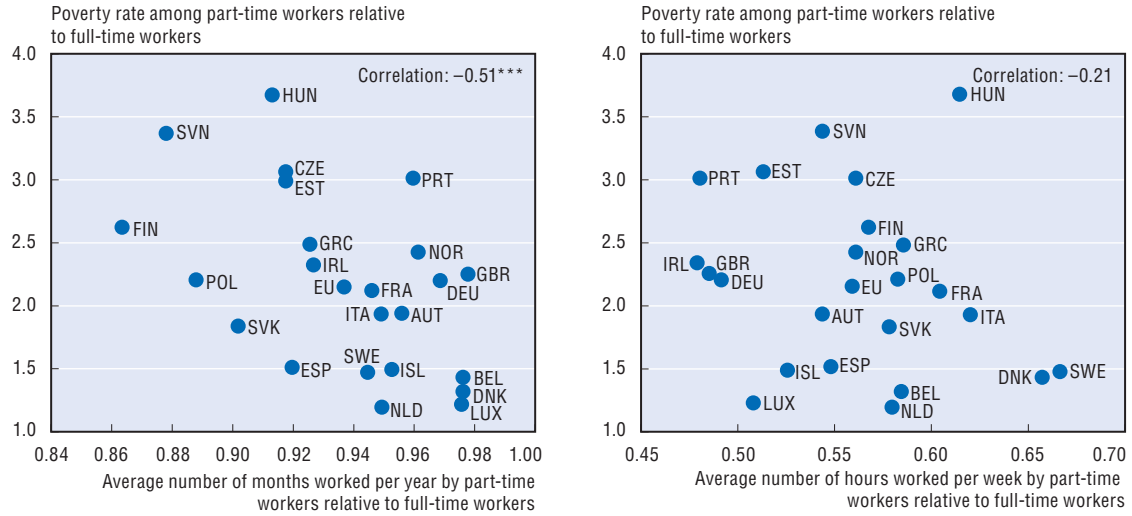
Source: EU-SILC, cross-sectional files 2005-07.

StatLink http://dx.doi.org/10.1787/888932293258

... explained in large part by job instability

Work intensity (reflected by the number of months worked over the year and weekly hours worked when employed) is a key factor in explaining in-work poverty. The average weekly hours usually worked by part-timers, relative to their full-timer counterparts, vary widely across countries. However, the part-time poverty penalty is not necessarily larger in countries where part-timers work shorter hours (Figure 4.11). While negative, the cross-country correlation coefficient between relative working hours and relative poverty rate of part-time workers is rather weak and not statistically significant. By contrast, the part-time poverty penalty seems to match, to a much larger extent, the job security gap highlighted in the previous section. In international comparison, the relative incidence of in-work poverty among part-timers increases when the number of months spent at work over the year by part-timers, relative to their full-time counterparts, decreases (the correlation coefficient between these two variables is negative and statistically significant). And out-of-work episodes tend to be relatively shorter for part-timers in countries where

Figure 4.11. **In-work poverty among part-timers and employment intensity**



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

Source: EU-SILC, cross-sectional files 2005-07.

StatLink http://dx.doi.org/10.1787/888932293277

part-time employment is widespread. This also contributes to explaining why the part-time poverty penalty is lower in these countries (Annex Figure 4.A2.2).

Moreover, in a number of countries, part-timers face a double income security penalty that can increase their risk of poverty. Not only are they less likely to have a permanent contract, but they are also less covered by unemployment insurance systems since they cumulate two factors, shorter periods of work and shorter working hours, that make them less likely to meet the eligibility conditions for these insurance schemes.

There are two broad types of condition that can restrict the access of part-timers to unemployment benefits (Table 4.2). First, in countries such as Belgium, Canada, Iceland and the Russian Federation, the qualifying period is defined in terms of working hours. This means that the length of the employment period required to qualify is twice as long for a half-time worker as it is for a full-time worker. Second, some unemployment insurance systems incorporate a minimum hours or earnings threshold on top of the usual eligibility conditions based on the length of service. These additional requirements exclude those part-time workers with the most precarious employment status, working very few hours or paid a low hourly wage. Unemployment insurance systems that operate with hours/days thresholds are found in Finland, Japan, Korea, Netherlands and Sweden, while earnings thresholds can be found in countries such as Norway, Poland, the United Kingdom and the United States.

The few existing empirical studies focusing on unemployment-related benefits among part-time and temporary workers generally find a clear penalty to non-standard employment in terms of coverage. Part-timers are especially disadvantaged in countries that operate earnings or hours thresholds (*e.g.* Leschke, 2007; Grimshaw and Rubery, 1997). However, Leschke (2007) also underlines that differences across countries in UI coverage rates among non-standard workers are first and foremost linked to the overall coverage rate, reflecting the generosity of the whole UI system. Moreover, in a number of countries, earnings or hours thresholds are, to some extent, compensated by the fact that those part-

Table 4.2. **Unemployment benefit coverage for part-time workers**

	Qualifying period based on length of service[a]	Additional qualifying conditions based on previous hours or earnings	Minimum hours per week equivalent at average wage[b]	Minimum benefit amount for part-time workers
Australia (UA)	None	No	. .	UA = flat-rate payment
Austria	52 weeks/2 years	EUR 358/month	4.6	Yes
Belgium	468 days/27 months	Qualifying period based on full-time equivalent work	Qualifying period longer for part-time workers	Yes
Canada	Based on hours	420-700 hours/52 weeks	8.1-13.5	No
Czech Republic	12 months/3 years	No	. .	No
Denmark	34 weeks/3 years	Qualifying period based on full-time work	. .	No
Estonia	1 year/3 years	No	. .	Yes
Finland	43 weeks/28 months (34 weeks/28 months from 2010)	18 hours/week	18	UB includes a flat-rate component
France	122 days or 610 hours/28 months	No	. .	Yes
Germany	1 year/2 years	No	. .	Yes
Greece	200 days/2 years or 125 days/14 months	No	. .	UB = flat rate-payment, in part adjusted for working hours
Hungary	365 days/4 years	No	. .	Yes
Iceland	10 weeks/1 year	Qualifying period based on full-time work with min. 25% of full-time for 3 months	10	UB = flat-rate payment, in part adjusted for working hours
Ireland	39 weeks/1 year or 26 weeks/current year + 26 weeks/previous year	Reduced benefit if earnings less than EUR 150/week	7.6 (reduced amount)	UB = flat rate payment
Israel	12 months/18 months (300 days for daily workers)	No	. .	No
Italy	52 weeks (contributions)/2 years	No	. .	Yes
Japan	12 months/2 years	11 days/month in at least 12 months of the past 2 years	. .	Yes
Korea	180 days/18 months	60 hours/month or 15 hours/week	15	Yes
Luxembourg	26 weeks/1 year	No	. .	Yes
Netherlands	26 weeks/36 weeks	1 day per week	. .	Yes
New Zealand (UA)	None	No	. .	UA = flat-rate payment
Norway	Based on earnings	NOK 100 218/year or 200 436/3 years	6.6-9.9	No
Poland	365 days/18 months	Above full-time minimum wage	16.9	Yes
Portugal	450 days/2 years	No	. .	Yes
Russian Federation	26 weeks/12 months	Qualifying period based on full-time equivalent work	Qualifying period longer for part-time workers	Yes
Slovak Republic	3 years/4 years	No	. .	Yes
Slovenia	12 months/18 months	No	. .	Yes
Spain	1 year/6 years	No	. .	Yes
Sweden	6 months/12 months or based on hours	80 hours/month or 480 hours/6 consec. months with min. 50 hours/month	12.2-19.5	Yes, if worked more than 50% of full-time hours
Switzerland	1 year/2 years	No	. .	Yes
Turkey	600 days/3 years, with continuous work over last 120 days	No	. .	Yes
United Kingdom	2 years	GBP 87/week	5.5	UB = flat-rate payment
United States	Minimum earnings needed to qualify (qualifying requirements vary by state)	Yes		

UA = unemployment assistance; UB = unemployment benefits.

a) For example, 52 weeks/2 years = employee must have worked for 52 weeks in the past 2 years to qualify.

b) OECD calculation.

Notes:

Austria: Workers earning less than EUR 358 per month are also exempted from paying any contributions to unemployment insurance, pension insurance and health insurance. They can however opt in for health and pension insurance but not for unemployment insurance.

Canada: Conditions for receipt vary with the regional unemployment rate. Requirements are 420-700 hours/52 weeks for those who have worked for at least 490 hours in the year prior to the 52-week qualifying period; if not, the qualifying criterion is 910 hours/52 weeks.

Ireland: Tax year, not calendar year.

Norway: There is no explicit minimum benefit amount, but the minimum earnings required to be eligible for unemployment benefits means that there is a minimum level of benefits in practice.

Source: Responses to the OECD Part-time Work Questionnaire. See OECD (2010).

time or temporary workers who remain entitled to unemployment insurance receive relatively generous benefits as compared with the contributions they make. This is notably the case in Finland, Iceland and the United Kingdom, where UI benefits consist, at least in part, of flat-rate payments, unrelated to previous hours worked or earnings. The same redistributive trade-off also applies in countries where the minimum benefit amount is relatively high (and in particular, higher than social-assistance benefits). Finally, in a number of cases (*e.g.* Austria, United Kingdom and United States), earnings or hours thresholds exclude from the UI system very short part-time workers, earning low monthly wage, for whom UI benefits would have been very low (given statutory replacement rates in force), and in particular, not necessarily higher than the benefits they get from social-assistance regimes. Therefore, the overall effect of these entitlement restrictions on poverty cannot be assessed in isolation and is not entirely clear: there are both winners and losers, and for the latter, the loss can be very limited in countries where social-assistance benefits are relatively generous.

3. Can part-time work help mobilise under-represented groups in the labour market?

The findings of the previous section provide conflicting views of the role that part-time work plays in encouraging labour market attachment. The fact that many part-timers attach a strong value to shorter, more flexible working hours and a better work-life balance suggests that at least some of them would not work at all if they could not work part-time. At the same time, the penalty to part-time work in terms of career prospects may in itself damage labour market attachment and reduce future full-time job prospects. In brief, while the availability of high-quality part-time employment may provide a solution to the trade-off between inactivity and employment, it may also lead to a second trade-off, between part-time and full-time employment over the working life.

Existing evidence show that the past trends in part-time work has been associated with greater labour market participation of women, and overall, higher employment rates (*e.g.* Jaumotte, 2003; Genre *et al.*, 2005). And in the current context of population ageing, part-time work would have even greater potential to encourage labour market participation of under-represented groups, as witnessed, for example, by a number of recent initiatives taken by OECD governments to facilitate access of older workers to part-time employment (OECD, 2006). But by making part-time work more appealing, is there a risk that too many workers will be attracted by, and sometimes trapped in, part-time work, with a perverse effect on overall labour utilisation, as measured by the total number of hours worked in the economy? While this section does not provide a definitive answer to this question, it suggests that such a trade-off exists and may already weigh on labour utilisation among some categories of workers, notably prime-aged women, the group with the highest propensity to work part-time. While total labour utilisation is not, in itself, an indicator of welfare or well-being, with an expected decline in the working-age population and soaring numbers of elderly people in OECD countries, policies that *actively* discourage labour utilisation could be damaging to future economic growth and public finances. Thus, it is also crucial that policies put the right incentives in place to avoid creating barriers for part-timers moving to full-time employment. This section explores one aspect of this question, namely the way tax and benefit systems affect transitions from part-time work to full-time employment or non-employment.

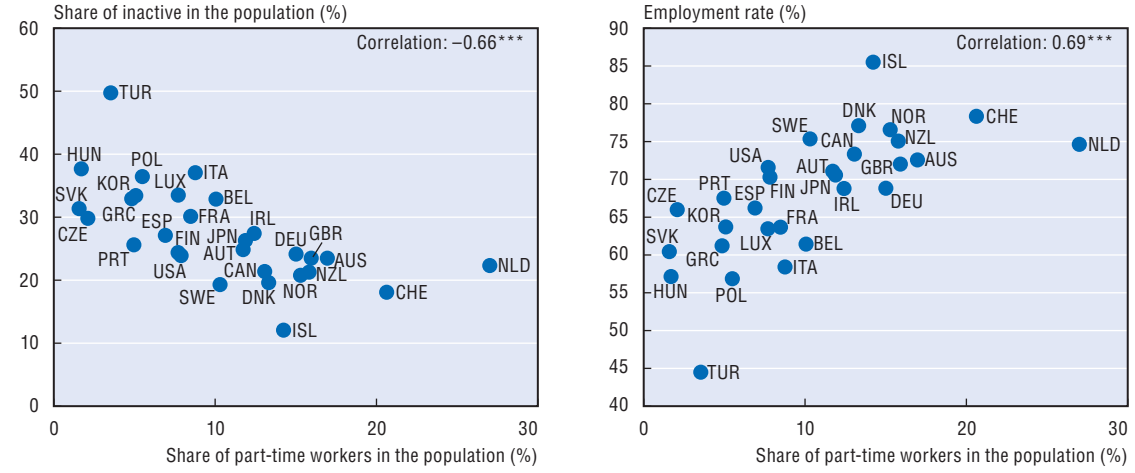
3.1. How is part-time employment related to full-time employment and inactivity?

On average, more part-time employment is associated with a higher employment rate, but not for all groups…

Cross-country comparisons between, on the one hand, the share of part-timers among the working-age population, and on the other hand, the share of full-time workers and the rate of inactivity, provide a visual impression of the two trade-offs mentioned above (Figure 4.12). In countries where part-time employment is widespread, inactivity rates are much lower (the correlation coefficient is both negative and statistically significant). At the same time, part-time work has not developed at the expense of full-time employment. Indeed, employment rates tend to be higher in countries where part-time employment is widespread. More interestingly, this positive relationship still holds, albeit more weakly, when national employment rates are adjusted for hours worked. The last column of Table 4.3 shows that the correlation coefficient remains positive and statistically significant over the whole period 1990-2008, although the strength of the relationship varies somewhat depending on what assumptions are made about the average number of hours worked by part-timers.[12]

Figure 4.12. **Population shares in part-time jobs, full-time jobs and inactivity: is there a link?**

Population aged 20-64, 2007



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

Source: OECD Labour Force Statistics Database.

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Of course, these simple correlations do not necessarily mean that part-time work, *per se*, provides a full answer to the trade-off between full-time employment and inactivity that some workers with time constraints, or a preference for short working-time, may face. Indeed, they do not take into account other factors that could influence both activity and working-time choices (as for instance, the public provision of childcare services in the case of women, or more generally, all policies that foster employment). This notwithstanding, the results suggest that part-time work has developed within a policy framework where increased opportunities to work part-time have allowed more people to take up employment.

Table 4.3. **Relationship between part-time, full-time employment and inactivity among under-represented groups**

Cross-country coefficients of correlation with the share of part-time employment in total population,[a] 1990-2008[b]

	Youth (20-24)	Women (25-39)	Women (40-54)	Older workers (55-64)	Whole population (20-64)
Full-time employment, % population	0.13**	–0.27***	–0.37***	0.4***	–0.14***
Inactivity, % population	–0.7***	–0.35***	–0.25***	–0.66***	–0.47***
Employment rate					
Observed	0.71***	0.44***	0.29***	0.65***	0.54***
Adjusted, coefficient =0.6[a]	0.56***	0.21***	0.03	0.56***	0.33***
Adjusted, coefficient =0.5[a]	0.51***	0.14***	–0.04	0.54***	0.26***
Adjusted, coefficient =0.4[a]	0.45***	0.06	–0.11**	0.51***	0.18***
Number of observations	414	414	414	414	414

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

a) Employment rates are adjusted for hours worked, assuming that the average number of hours worked by part-timers amounts to, respectively, 60%, 50% or 40% of the average number of hours worked by their full-time counterparts. Thus, the adjusted employment rate is the sum of full-time employment and part-time employment multiplied by a correction factor (0.6, 0.5 or 0.4), divided by the population.

b) 1990-2008: Belgium, Canada, Denmark, France, Germany, Greece, Italy, Netherlands, New Zealand, Portugal, Spain, Turkey, United Kingdom and United States; as from 1991: Ireland, Korea; as from 1994: Slovak Republic; as from 1995: Austria, Mexico (up to 2004); as from 1998: Hungary; as from 2001: Australia; as from 2002: Japan, Sweden; as from 2004: Czech Republic, Finland, Norway, Poland, Sweden.

Source: OECD Labour Force Statistics Database.

StatLink http://dx.doi.org/10.1787/888932293657

However, the relationship between part-time work, full-time work and inactivity varies significantly across different demographic groups, namely young adults, prime-aged women and older workers. In particular, while inactivity rates among prime-aged women tend to be lower in countries where part-time is widespread, full-time employment rates are also lower among this group. This leads to a rather mixed picture in terms of labour utilisation: there is still a positive relationship between the observed employment rate of prime-aged women and the share of part-timers among the population, but this relationship is much weaker and even disappears or becomes negative for women aged over 40 when labour utilisation is measured in terms of full-time equivalent work. By contrast, a higher part-time share is unambiguously associated with a larger labour supply for youth and older workers.

… depending on the reason why people opt for part-time employment

For young people, education is by far the most important reason for both part-time work and inactivity, suggesting that part-time work can help solve the trade-off between working or not (Figure 4.13). Conversely, personal constraints are not the main reasons for inactivity or voluntary part-time work among older workers. Inactivity is mainly explained by retirement, while in many cases, personal preferences drive the choice for part-time work, which can be used as an alternative to retirement – and thus, inactivity – for older workers with eroded labour market attachment.

The story is somewhat different for prime-aged women. Most inactive women of prime-age do not work because of caring responsibilities for children or adults. This is also the main reason for part-time work among women aged 25-39 years, suggesting that part-time work can facilitate labour market participation for this group. But among women aged 40-54, a large number work part-time simply because they prefer it, and caring responsibilities are less important as a reason for part-time work. For these women, who

Figure 4.13. **Reasons for working part-time or being inactive**

Average over 21 European countries,[a] 2005-07

a) Austria, Belgium, Denmark, Estonia, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Poland, Portugal, Slovenia, Slovak Republic, Spain, Sweden, United Kingdom.

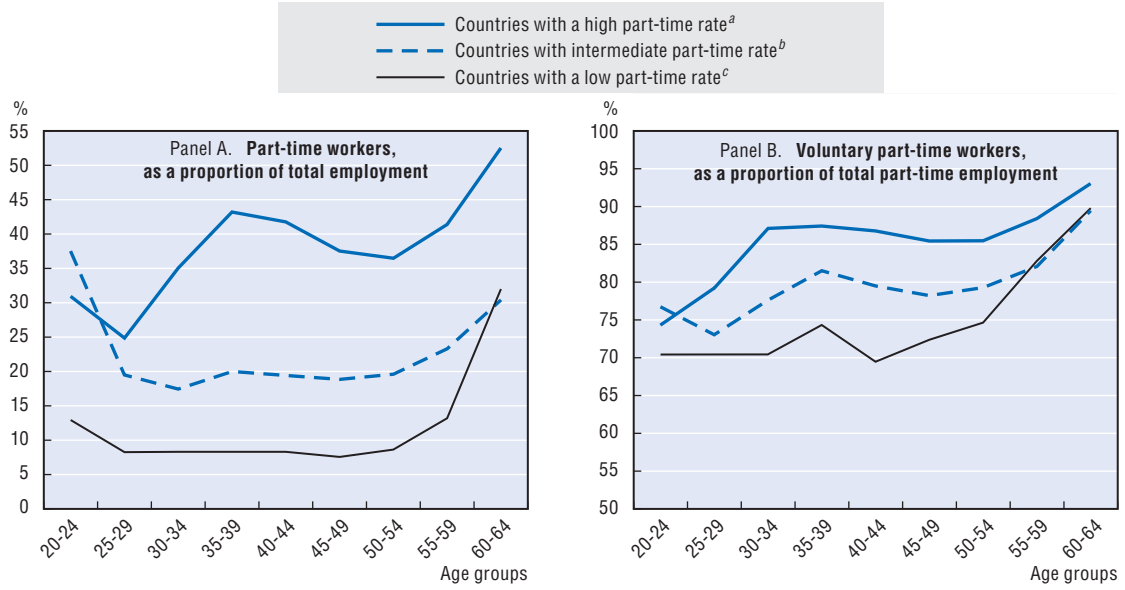
Source: EU-SILC, cross-sectional files 2005-07.

StatLink http://dx.doi.org/10.1787/888932293315

face less time constraints than their younger counterparts, part-time work is more likely to occur at the expense of full-time employment than being an alternative to inactivity. It is interesting to note that in countries where part-time employment is widespread, its incidence among prime-aged women rises sharply to peak at the age of 35-39 (Figure 4.14). In these countries, women continue working part-time in large numbers long after the prime age for caring responsibilities, and they do so on an overwhelmingly voluntary basis. By contrast, in countries with a lower part-time share, there is little change in women's part-time employment rates from their mid-20s until their mid-50s. In all cases, part-time work among women rises sharply after age 50. These patterns are, for the most part, insensitive to cohort effects.[13]

All in all, creating more opportunities for part-time work may still be an effective means of encouraging prime-age women's labour force participation because caring responsibilities remain the primary reason for inactivity among this group. While women's choice to work part-time rather than full-time may be influenced to some extent by the availability of child care, personal preferences about parenting and a lack of flexibility in men's work schedules also play important roles (see Box 4.4). However, women's preferences to remain in part-time work when their caring responsibilities recede could have adverse affects over the longer term. Long periods of part-time work could be damaging to individuals' career prospects and increase their risk of poverty in retirement.[14] At an aggregate level, substitution of part-time for full-time work could also have adverse effects on overall labour supply. It is important, therefore, to ensure that pathways back into full-time employment are not blocked.

Figure 4.14. **Women's part-time work over the life cycle**



a) Average over countries with more than 30% of women aged 20-64 working part-time: Australia, Austria, Germany, Italy, Netherlands, New Zealand and United Kingdom.

b) Average over countries with 15 to 30% of women aged 20-64 working part-time: Denmark, France, Norway, Spain and Sweden.

c) Average over countries with less than 15% of women aged 20-64 working part-time: Czech Republic, Finland, Greece, Hungary, Poland, Portugal and Slovak Republic.

Source: OECD Labour Force Statistics Database.

StatLink http://dx.doi.org/10.1787/888932293334

Box 4.4. **Parents, child care and part-time work**

The dominance of women in the part-time workforce is driven in large part by prime-aged women with children. As discussed in the main text, a large proportion of prime-aged women voluntarily work part-time due to caring responsibilities. However, this "voluntary" choice is likely to be strongly influenced by the availability of alternative sources of child care, particularly paternal and formal child care. This raises questions about the extent to which women's decisions to take up part-time rather than full-time work are constrained by the cost or availability of child care, and about the way men and women share work and caring responsibilities.

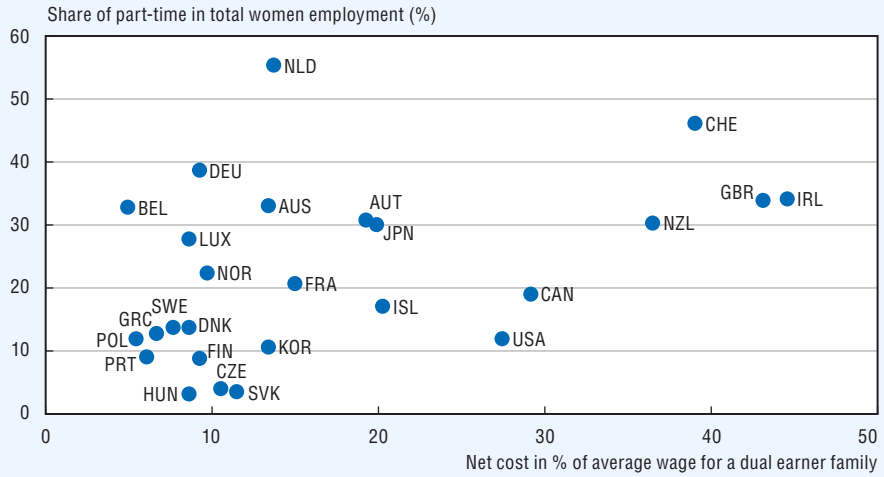
There have been numerous studies of the impact of child care costs on women's labour supply decisions. They typically model labour supply and demand for child care simultaneously, assuming that formal child care is both a cost of working and an "input" into child development. Studies that examine the impact of child care costs on hours of work (in addition to the decision to work or not) find that mothers' hours of work tend to fall in response to an increase in the cost of formal child care (*e.g.* Andren, 2003 for Sweden; Kornstad and Thoresen, 2007 for Norway; Wrohlich, 2009 for Germany; Powell, 1997 for Canada; Breunig and Gong, 2010a for Australia), with the response typically larger for mothers with younger children. Few studies directly examine the impact of child care costs on the likelihood of part-time, relative to full-time, work. Andren (2003) estimates that a reduction in child care costs would induce single mothers in Sweden to switch from part-time to full-time work, but have little impact on overall participation. By contrast,

Box 4.4. **Parents, child care and part-time work** *(cont.)*

Chone *et al.* (2003) find that an increase in household expenditure on child care (they cannot separate hourly cost and number of hours in their data) in France would reduce mothers' labour force participation and see part-time workers reduce their hours, but have no effect on full-time workers.

The figure below shows a generally positive cross-country relationship between the part-time employment share of prime-age women and the net cost of child care. While some countries with a large part-time share also have high child care costs (Ireland, New Zealand, Switzerland and the United Kingdom), this is not universally the case. In the Netherlands, Germany, Australia and Belgium, high rates of part-time work coexist with relatively inexpensive child care. With the exception of the United States, those countries where prime age women predominantly work full-time (if they work) typically have low net child care costs.

Women's part-time employment share and net child care costs



Source: OECD Labour Force Statistics Database; OECD Database on Family.

StatLink http://dx.doi.org/10.1787/888932293524

The quality and availability of child care, though harder to quantify, are also likely to influence parents' employment participation decisions. For example, widely available full-day and after-school care makes it easier for parents in the Nordic countries and France to work full-time, whereas in Austria, Germany, Luxembourg, New Zealand and Switzerland, kindergartens typically operate short days or have long breaks that may not be conducive with full-time work (OECD, 2007). Breunig and Gong (2010b) find that working married mothers who live in areas of Australia with poor quality or availability of child care are less likely to work full-time (and consequently more likely to work part-time). Del Boca and Vuri (2007) show that rationing in the Italian market for child care is a more important limitation on women's labour force participation than cost. Wrohlich (2009) finds similar results for Germany. She estimates that a reform to increase availability of child care places at the existing price would increase labour supply by more than one that reduced parents' child care fees for existing places.

Box 4.4. **Parents, child care and part-time work** *(cont.)*

If women's decisions to work part-time are influenced by the cost and availability of *formal* child care, alternative sources of care – notably that provided by fathers – are also likely to be important. However, there is little indication that men use part-time work to balance work and caring responsibilities to the same extent as women. Among the small number of prime-aged men who voluntarily work part-time, more do so for health or educational reasons than for caring reasons. The gender division of paid and unpaid work in couple households is likely to be influenced by a large number of factors, including the relative wage each partner can command in the workforce, the longer-term cost of taking time out of work to care for children and attitudes towards traditional gender roles. Despite gains in educational attainment, a gender pay gap remains in most OECD countries, making male specialisation in paid work an economically-rational decision for some households. However, perceptions (justified or otherwise) that it is easier or less costly to future career prospects for women than men to take time off, reduce working hours or use flexible work options to care for children surely contribute to the high rate of part-time work among women with children (OECD, 2007).

3.2. A closer look at transitions from part-time employment

Overall, while part-time work appears to be primarily a voluntary choice, for many workers this choice is driven by external constraints that are temporary in nature and specific to each demographic group. Thus, the need for part-time work tends to change over the working life, suggesting that part-time employment is likely to be a transitory labour market state for most workers. But, as discussed in the previous section, the relative lack of career development opportunities offered by part-time jobs may impair transitions towards full-time employment. Moreover, the policy framework that governs the labour market functioning in each country may affect transitions between part-time and full-time employment, as it does for job and worker flows in general (see Chapter 3). Therefore, it is important that the development of part-time employment takes place in a policy context that does not impede the ability of part-timers to take up or return to full-time employment.

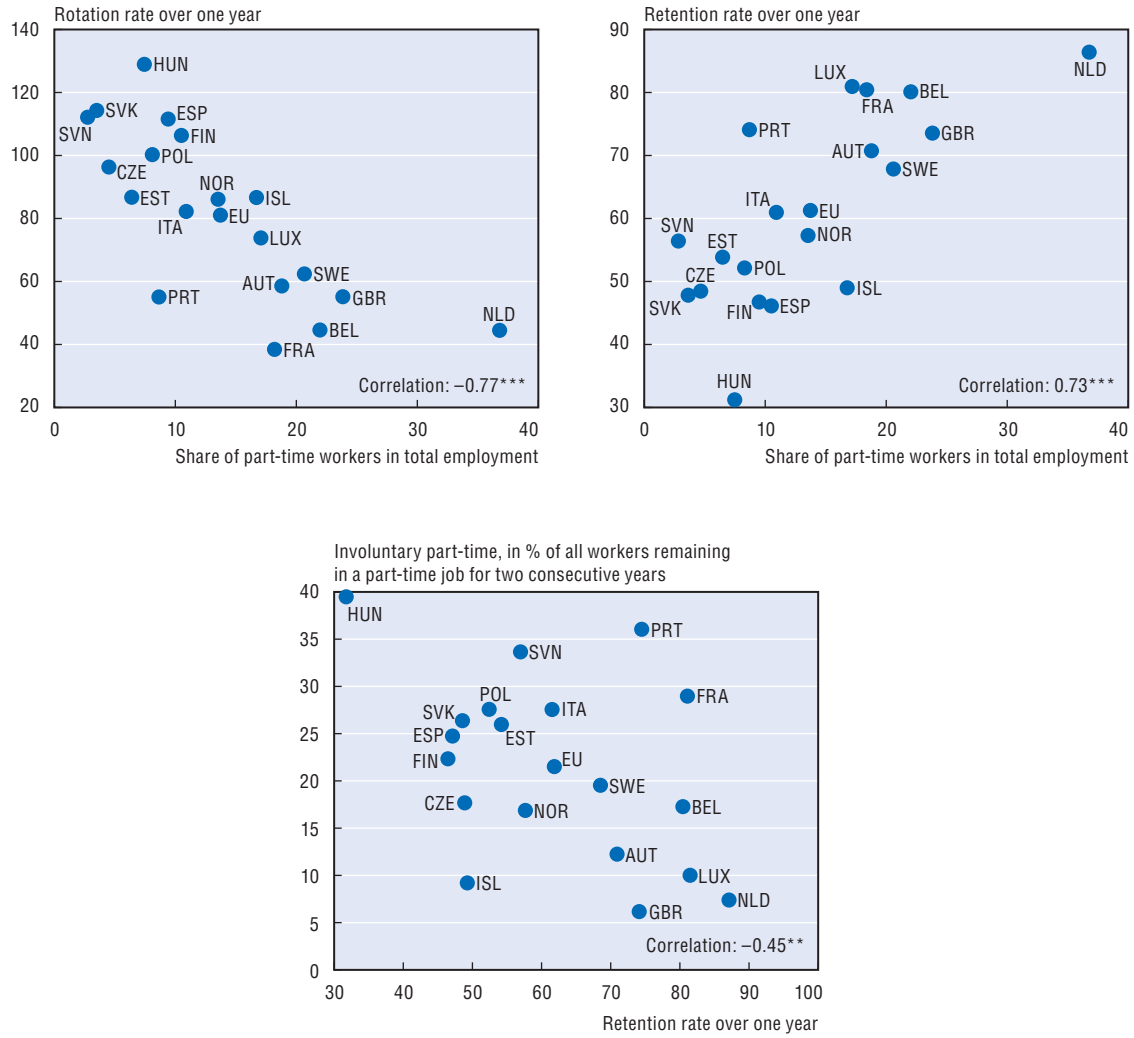
There are relatively few transitions from part-time to full-time work…

Existing empirical evidence tends to confirm that part-time employment is a transitory labour market state for most workers. For instance, Blank (1994) suggests that part-time work is essentially a temporary state in the United States: most women tend to either work full-time or not work at all over many years. Those women who take a part-time job as an alternative to full-time work tend to return to full-time employment after a period. Likewise, when they enter part-time work from inactivity, they leave it again after a part-time spell, part-time jobs being rarely used as a stepping stone towards full-time employment. Along the same lines, Buddelmeyer *et al.* (2005) examine labour market transitions in 11 European countries, and the same broad pattern emerges from their analysis. They notice, however, that both men and women tend to stay longer in part-time positions in Europe than in the United States, although there are considerable variations across European countries as well. And indeed, Figure 4.15 shows that there are large cross-country differences in the dynamics of part-time employment.

On average over the 20 European countries for which data are available, a substantial number of workers move in and out of part-time employment each year: *worker rotation*

Figure 4.15. **Is part-time work a transitory labour market state?**

Yearly transitions, average over 2005-06[a]



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

a) Rotation rates are defined as the sum of flows into and out of part-time employment in a given year, as a percentage of all part-time workers in that year (that is, new entrants, those who will remain on part-time and those who will move out). Rotation rates higher than 100% mean that a relatively large proportion of workers experience relatively *short* part-time spells over the year. Retention rates are defined as the percentage of part-time workers in year N who are still on part-time employment in year N + 1.

Note: The share of involuntary part-timers, as a percentage of all workers remaining in a part-time job for at least two consecutive years, is based on data taken from EU-SILC cross-sectional files (the involuntary/voluntary status of part-timers is not included in the longitudinal file).

Source: EU-SILC, cross-sectional files 2005-07, and longitudinal file 2007.

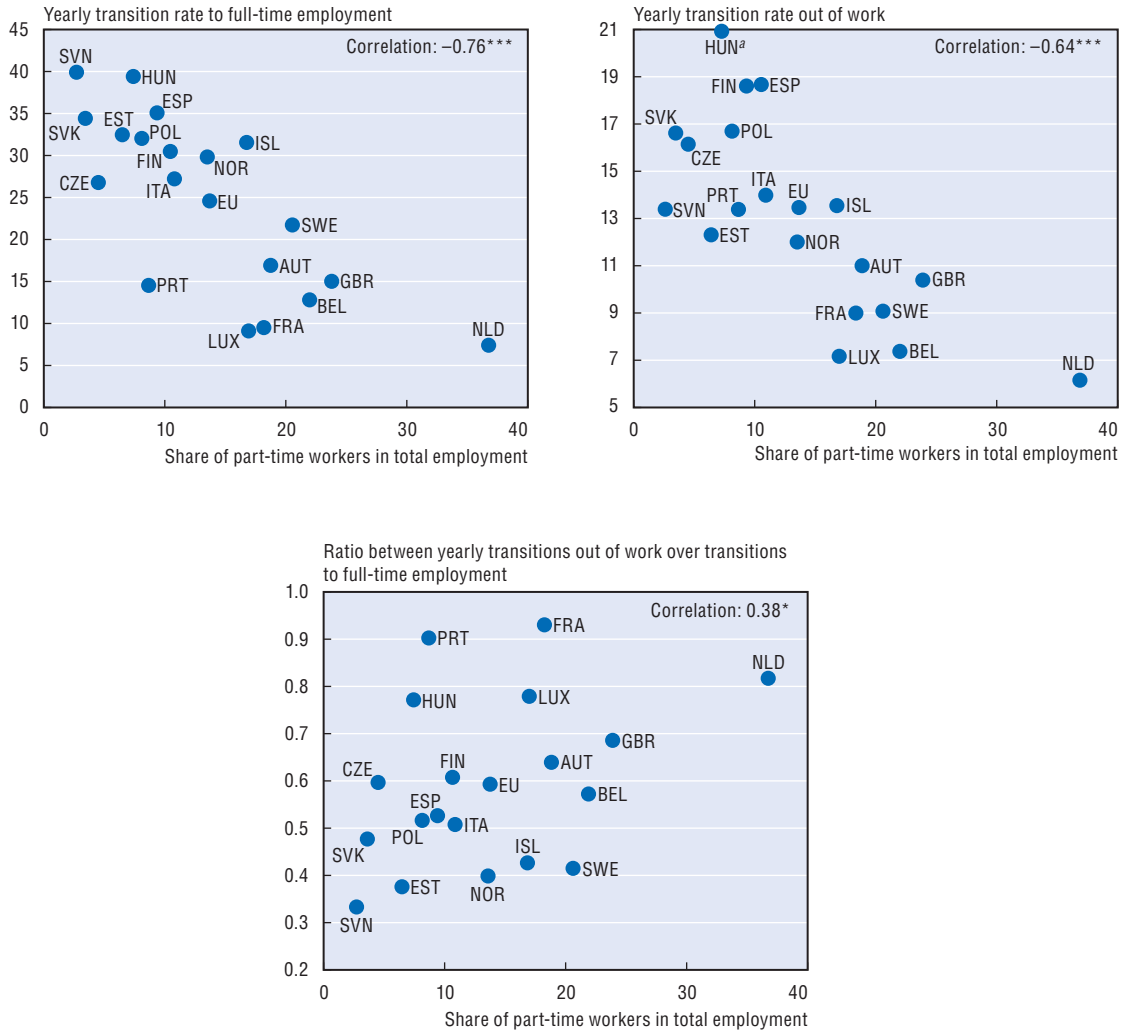
StatLink http://dx.doi.org/10.1787/888932293353

– that is, the sum of entries and exits in and from part-time work in one year – represents about 65% of part-time employment. Still, the average retention rate is quite high: about two-thirds of part-timers stay in part-time employment for more than one year. Interestingly, rotation rates are much higher – and retention rates much lower – in countries with low part-time shares and (often) a relatively large part-time penalty, while the opposite is observed in countries where part-time employment is widespread. And in these countries, the vast majority of people who remain in a part-time job for (at least) two consecutive years do so

voluntarily. On average, about 15% of part-timers take up or return to full-time employment each year, and slightly less move out of employment altogether (Figure 4.16). Here again, there are considerable variations across countries, notably as regards transition rates to full-time work. Overall, more part-time workers remain in employment for at least two consecutive years in countries where part-time work is widespread, but a much lower proportion of them move into full-time employment. As the part-time penalty tends be lower in these countries and a large number of part-timers (*i.e.* women who are voluntarily employed part-time) are as satisfied in part-time as full-time work, international comparisons suggest that the relative lack of career prospects offered by part-time jobs may not be the main barrier to moving towards full-time employment.

Figure 4.16. **Where do workers go when exiting part-time employment?**

Average over 2004-06[a]



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

a) Yearly rate of transition out of work in Hungary: 30%.

Source: See Table 4.A2.1, EU-SILC, longitudinal file 2007.

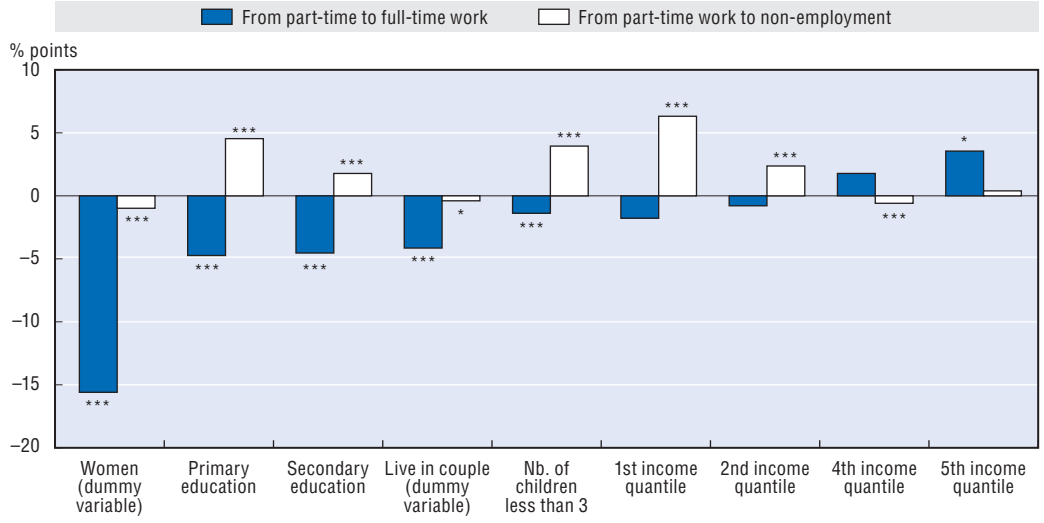
StatLink http://dx.doi.org/10.1787/888932293372

… notably among the working poor

Transition probabilities from part-time work to either full-time employment or inactivity are also affected by a number of individual characteristics. Multinomial probit regressions show that, over a two-year period, having young children, living in a couple and having a low educational attainment reduce the probability of moving to full-time employment, notably for women, and may increase the probability of moving out of work, as compared with the probability of staying in a part-time job (Figure 4.17). These results are consistent with the existing literature on labour supply decisions. More interestingly, everything else being equal, part-timers living in households with low disposable incomes are more likely to move out of work than to remain employed, either in a part-time job or a full-time job. Thus, for the most disadvantaged groups, not only does part-time work not appear to be a stepping stone towards full-time employment and greater economic self-sufficiency, but it does not always help maintain a connection to the labour market.

Figure 4.17. **Which workers are most likely to move out of part-time employment?**

Multinomial probit regressions, marginal effects of independent variables[a]



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

a) The coefficients can be interpreted as the % points change in the probability of transition from part-time work to either full-time employment or non-employment, as compared with remaining on part-time, given a one-unit change discrete or continuous variables, or given a discrete change in dummy variables (from 0 to 1).

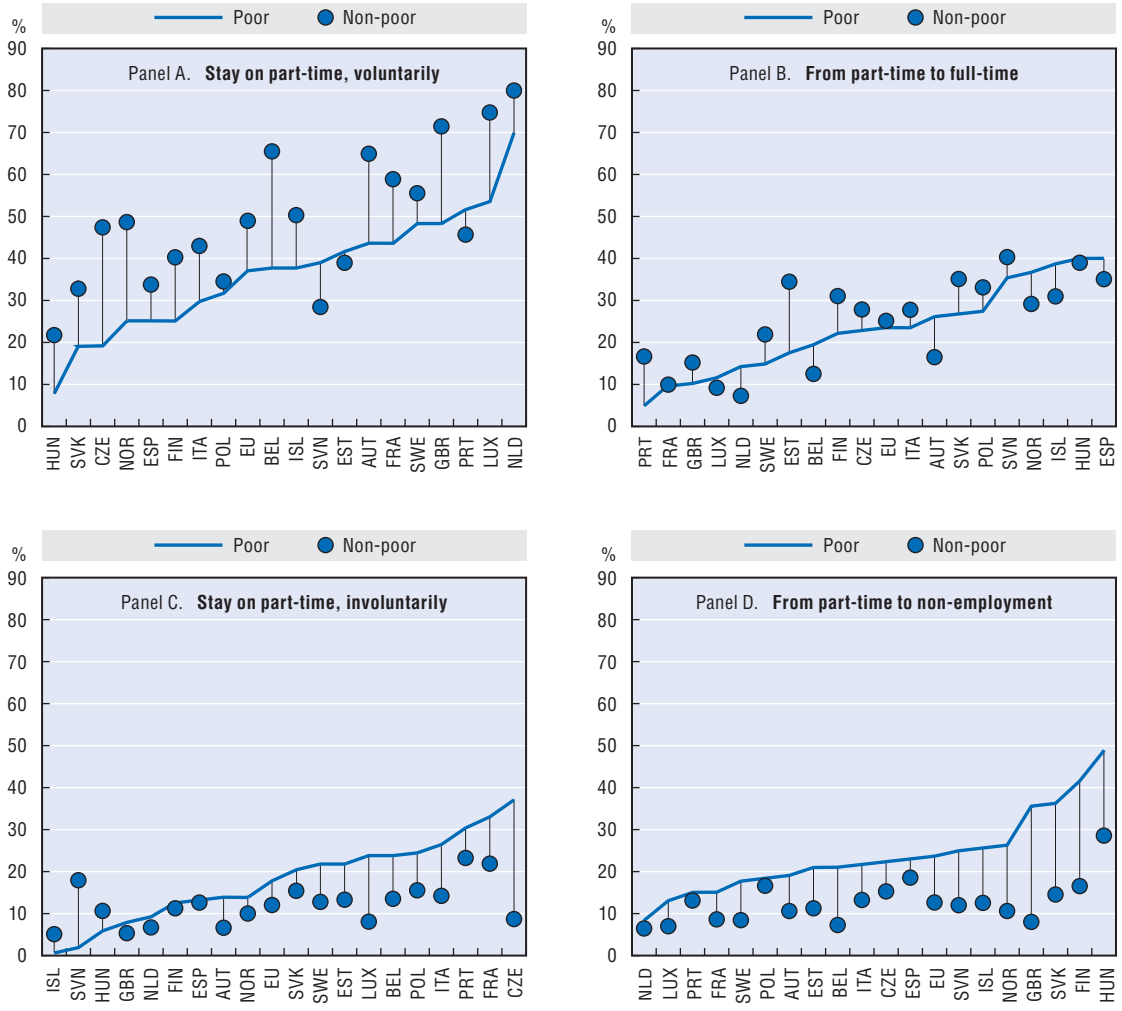
Source: Annex Table 4.A2.1.

StatLink http://dx.doi.org/10.1787/888932293391

And indeed, a closer look at transition patterns among part-time workers living in a poor household reveals that, although they stay less frequently in part-time employment, on a voluntary basis, than those not affected by poverty, this does not translate into higher transition rates towards full-time employment (Figure 4.18). Instead, the working poor end up more frequently in bad labour market states, that is involuntary part-time work and most often, non-employment. Moreover, it is noteworthy that the propensity of the working poor to stay *voluntarily* in part-time employment remains relatively high: on average over the 20 European countries for which data are available, more than one-third of poor part-time workers remain voluntarily in part-time work. This raises concerns as to

Figure 4.18. **Transition patterns among part-time workers by poverty status**

Yearly transition rate, average over 2005-07[a]



a) These transition rates correspond to the percentage of all part-time workers (*i.e.* voluntary and involuntary) in year N who are, in year N + 1, either: *i)* in part-time employment, on a voluntary basis (Panel A); *ii)* in full-time employment (Panel B); *iii)* in part-time employment because they cannot find a full-time job (involuntary part-timers, Panel C); or *iv)* out of work (Panel D). These transition matrixes have been calculated, separately for the part-time poor workers (in year N), and for non-poor part-timers (in year N).

Note: Due to sample size limitations, these two transition matrixes have not been calculated directly with longitudinal data. First, using cross-sectional data and retrospective employment calendars, transition rates from part-time work to each possible labour market state were computed for poor and non-poor part-timers, relative to transition rates among the whole population of part-time workers. The underlying assumption is that, if transition patterns obtained with cross-sectional data differ from those based on longitudinal data, transition rates will be affected in the same way for all population groups. Second, absolute transition rates for both poor and non-poor part-timers shown in the above figure were obtained by multiplying these relative transition rates by transition rates calculated for all part-timers with longitudinal data.

Source: EU-SILC, cross-sectional files 2005-07, and longitudinal file 2007.

StatLink http://dx.doi.org/10.1787/888932293410

whether national tax and benefit systems provide adequate financial incentives to take up a full-time job.

In a number of countries, financial incentives to work longer hours are low…

A combination of tax increases and benefit withdrawal can reduce the financial incentives for increasing working hours. Such disincentives are reflected in *marginal*

*effective tax rates (*METRs) that measure how much of a given change in gross earnings is taxed away through income tax, social security contributions and benefit withdrawal. The benefits that are taken into account in available OECD estimates of METRs include social assistance, unemployment, housing, family and in-work benefits. For low-income groups, METRs are useful indicators of so-called "low-wage traps": situations where increasing gross earnings results in little or no net income gain.

Figure 4.19 shows the decrease in net social transfers resulting from a move from part-time to full-time employment. For low-wage part-timers, the tax and benefit system appear to reduce substantially the payoff from taking up a full-time job: the average METR across the OECD countries for which data are available is close to 50%, meaning that almost half of the increase in total gross earnings is offset by increased social contributions or income taxes and reduced social transfers. METRs are particularly high for one-earner households as these are, for any given level of earnings, more likely to receive means-tested benefits such as social assistance. In many countries, these benefits are withdrawn at higher rates as earnings increase and this can therefore severely reduce the immediate financial reward of longer working hours. For the same reasons, METRs tend also to be higher for families with children and for short part-time jobs. The cross-country variation in the rewards from taking up full-time work is striking. Countries with a large part-time share (and typically high retention rates in part-time work) also tend to have METRs above the OECD average.

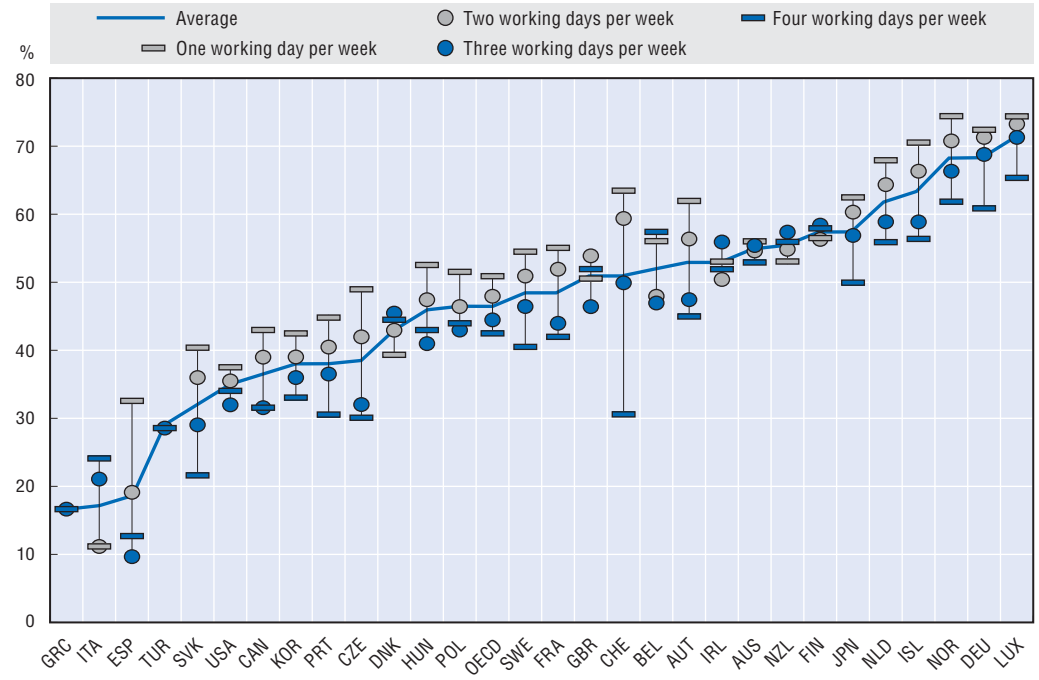
How do these high METRs affect transitions out of part-time employment? Using OECD tax and benefit models, it is possible to calculate, for each part-time worker, measures of the financial incentives to increase, or decrease, working hours. Then, these individual measures can be added to the set of explanatory variables used for the multinomial probit regressions presented above to provide an estimate of the impact of *net* social transfers on transitions out of part-time employment. More precisely, in order to take into account the various individual and household characteristics that may affect the tax and benefit situation of individual part-timers, net household incomes have been simulated for almost 9 000 different types of households in each country. These characteristics reflect three main dimensions: the household composition (single persons and one- or two-earner couples, all of whom may be childless or have two children, *i.e.* six possible household types); annual gross earnings of the part-timers (varying from 0 to 200% of the average wage in 1% increments); and partner annual gross earnings (varying from 0 to 200% of the average in 10% increments). Then, a METR for moving into full-time work can be calculated for each part-time worker, assuming that his/her annual gross earnings increase by 10% of the average wage. In addition, a net replacement rate can be calculated for each part-timer to measure incentives to exit employment from part-time work. This is the ratio between, on the one hand, the net household income corresponding to the situation where the part-timer moves out of work and gets social assistance benefits[15] – depending on partner earnings and the presence of children in the household – and, on the other hand, the current net income of the household.[16]

Figure 4.20 shows that the extent to which the tax and benefit system affects the payoff from working longer hours - and thus, earning higher work income – matters. Although higher METRs do not appear to affect the transition probability towards full-time employment, they tend to increase the probability of moving out of work, as compared with staying in part-time work. The effect is small however: a 10 percentage-point decrease in METRs would reduce the probability of moving out of work by only 0.5%. Yet, caution is needed when interpreting these estimates, since METRs used in the analysis do not

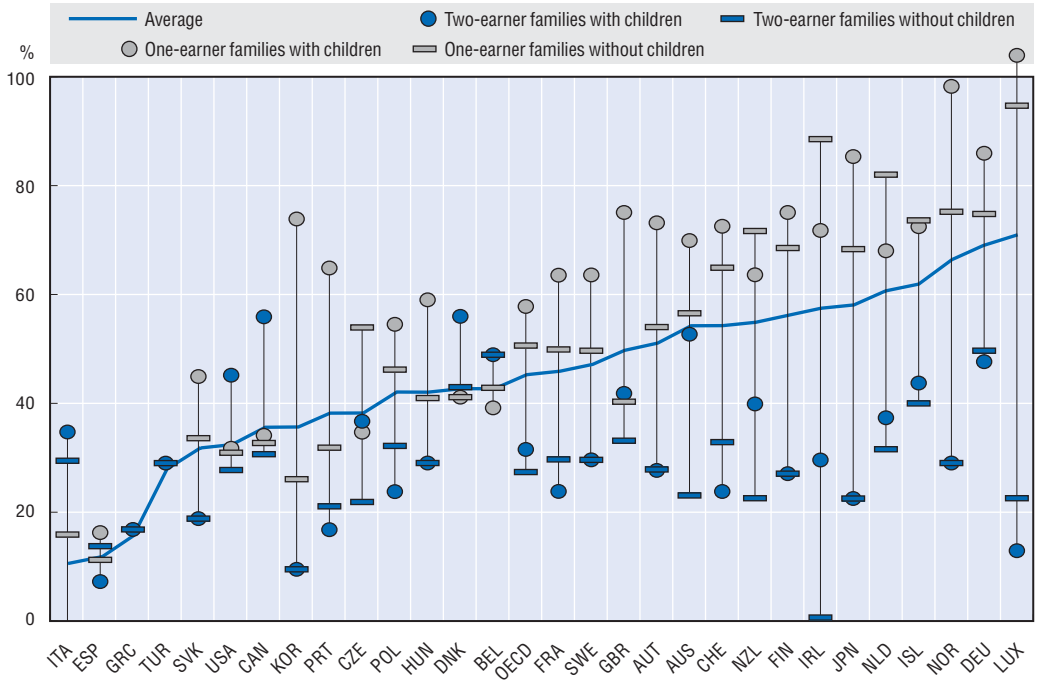
Figure 4.19. **Marginal effective tax rate for low-wage workers moving from part-time to full-time employment**

Decrease in net social transfers, as a percentage of the increase in total gross earnings[a]

Panel A. **By number of days worked in the part-time job**



Panel B. **By household composition**



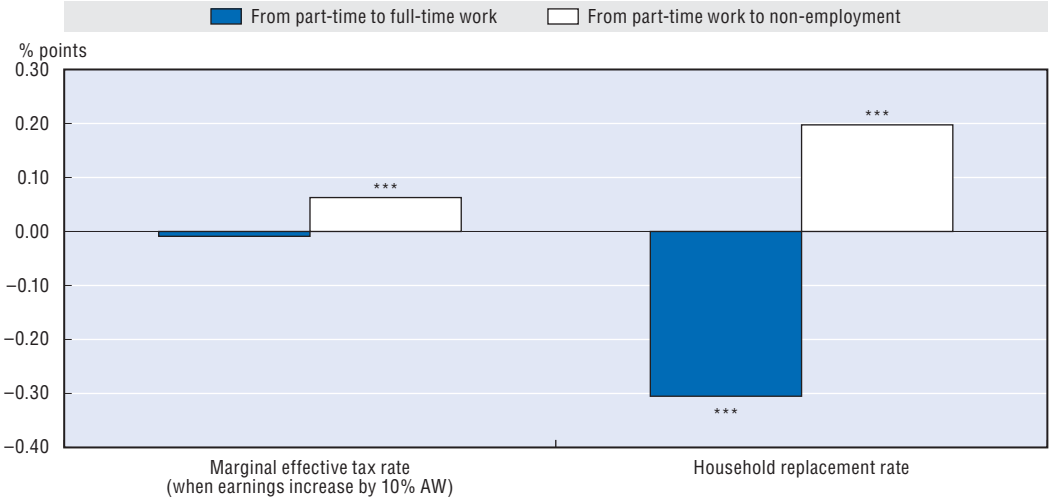
a) Full-time work corresponds to 40 hours of work per week (eight hours per day) and provides earnings equal to 50% of the average wage (AW). Social assistance and any other means-tested benefits are assumed to be available subject to the relevant income conditions. Children are aged four and six and neither childcare benefits nor childcare costs are considered. In-work benefits that depend on a transition from unemployment into work are not available since the person changing working hours is already in employment prior to the change. For married couples the percentage of AW relates to one spouse only; the second spouse is assumed to be "inactive" with no earnings in a one-earner couple and to have full-time earnings equal to 50% of AW in a two-earner couple.

Source: OECD tax and benefit models.

StatLink http://dx.doi.org/10.1787/888932293429

Figure 4.20. **An estimation of the impact of the tax and benefit system on transitions from part-time work to full-time employment or non-employment**

Multinomial probit regressions, marginal effects of independent variables[a]



***, **, *: statistically significant at 1%, 5%, 10% levels, respectively. AW: Average wage.

a) The coefficients can be interpreted as the % points change in the probability of transition from part-time work to either full-time employment or non-employment, as compared with remaining on part-time, given a one-unit change in the marginal effective tax rate, or in the household replacement rate.

Sources: Annex Table 4.A2.1.

StatLink http://dx.doi.org/10.1787/888932293448

precisely measure the change in net social transfers resulting from a transition towards full-time employment. As noted above, they measure the change in net social transfers that occurs when part-timers' gross earnings increase by 10% of the average wage. Therefore, these METRs do not entirely capture the effect of tax and benefits systems on financial incentives move from part-time to full-time work. Net replacement rates do not suffer from the same limitation, reflecting more accurately the impact on net household income of a transition from part-time work to non-employment. They are found to increase the probability of moving out of work and to decrease the transition probability towards full-time employment, as compared with staying in part-time work. Coefficient estimates are statistically significant in both cases and larger than those associated with METRs. Reducing household net replacement rates by 10 percentage points would indeed decrease the probability of moving out of work by 3%.

… and public employment services may not always provide adequate support for the most disadvantaged part-timers

A number of countries have developed strong activation policies that require benefit recipients to engage in active job search or participate in active labour market programmes (ALMPs) on the pain of a benefit sanction; they are also supposed to support the jobseeker with adequate re-employment services. This so-called "mutual obligation" approach has proved effective in mobilising jobseekers back into work, even in countries where financial incentives to do so are rather low. As noted above, the payoff from working longer hours tends to be relatively low for short part-time workers since they may receive substantial social transfers that are withdrawn rapidly as the number of hours worked increases. This raises important concerns, at least for those short-time workers at risk of poverty, and for whom strengthening labour market attachment is crucial. In this respect, the main concern

is that their employment status, albeit precarious, prevents them from fully benefiting from activation policies in place for "standard" jobseekers, who do not work at all.

With the exception of Greece, Slovenia and Spain, part-time workers who want more work – that is, the so-called involuntary part-timers – can register as a jobseeker with the public employment service or its private-sector counterpart and obtain assistance finding a job with longer hours (Table 4.4). In a few countries, involuntary part-time workers can only obtain assistance if they are also receiving unemployment benefits or assistance (*e.g.* Sweden, Switzerland), or if their income falls under a specified threshold (*e.g.* Czech Republic, Slovak Republic).

Involuntary part-timers often receive less assistance than the fully-unemployed, in part, no doubt, because they have less need for assistance. Activation measures, such as intensive interviews, may be mandatory for fully-unemployed people, but only voluntary for the underemployed. Participation in labour market programmes may also be more difficult for part-time workers given the time constraints imposed by their jobs. For example, in Mexico, some training programmes require full-time participation. Participation in subsidised jobs, particularly in the public sector, is often not open to underemployed workers.

Conclusions

This chapter provides a mixed picture of the advantages of part-time work. On the positive side, it shows that the increase in part-time work has been largely voluntary and associated with overall increases in participation of under-represented groups and more flexible, family-friendly working-time arrangements. Moreover, the quality of part-time jobs has not weakened with the increase in their number: more widespread part-time work is associated with a lower penalty in terms of wages, job and income insecurity, and opportunities for career development. The largest group of part-time workers – women who voluntarily work part-time – seem relatively satisfied to trade-off wages and future earnings potential for shorter and more flexible working hours. On the negative side, the development of part-time work has been associated with longer part-time spells, and an increase in the proportion of part-time workers – notably prime-aged women – whose working-hours preferences are not necessarily motivated by "traditional" constraints on labour market participation, such as education, caring responsibilities or illness. This pattern, if it continues, may have negative consequences for personal career prospects and poverty risk, and ultimately for aggregate labour utilisation.

A number of policy lessons emerge from these findings. In the context of population ageing, encouraging part-time work is still on the policy agenda of many countries, to allow young individuals to have an experience in the labour market while still in education, allow parents to combine work with family responsibilities and, not least, for older workers as part of a gradual transition to retirement. However, governments must make sure that part-time work develops in a context where there are not disincentives to take up or return to full-time employment, notably in tax and benefit systems. In terms of policy coherence, it could become difficult to promote part-time work for prime-aged women with few incentives to return to full-time employment, while at the same time, reforming pension systems to keep people in employment at older ages. Indeed, since mean-tested social benefits tend to subsidise part-time employment, there could be a trade-off between the individual well-being of part-timers and the collective well-being of ageing OECD societies

Table 4.4. **Eligibility for employment services for underemployed workers who are registered job seekers**

	Basic job search assistance and referral to vacancies	Intensive interviews and individual action plans	Training programmes	Subsidised private sector employment	Subsidised public sector employment
Australia	Yes	Yes	Yes	Yes	No
Austria	Yes	Lower priority	With conditions	With conditions	With conditions
Canada	Yes	Yes	No	No	No
Chile	Yes	Lower priority	Lower priority	No	No
Czech Republic	Yes	With conditions	With conditions	No	No
Denmark	Yes	Yes	Yes	Yes	Yes
Estonia	Yes	No	Yes	No	No
Finland	Lower priority	No	Lower priority	No	No
Germany	Yes	Yes	Yes	Yes	No
Greece	No	No	No	No	No
Hungary	Yes	Yes	With conditions	With conditions	With conditions
Israel	Yes	Yes	Yes	No	No
Japan	Yes	Yes	Yes	Yes	. .
Korea	Yes	No	Yes	Yes	Yes
Mexico	Yes	Yes	Some programmes	No	No
Netherlands	With conditions	With conditions	With conditions	With conditions	With conditions
New Zealand	Yes	Yes	Yes	Yes	Yes
Norway	Yes	Yes	Yes	Yes	Yes
Poland	Yes	Lower priority	Lower priority	No	No
Portugal	Yes	Yes	Yes	Yes	No
Slovak Republic	With conditions	With conditions	With conditions	With conditions	With conditions
Slovenia	No	No	No	No	No
Spain	No	No	No	No	No
Sweden	Yes	Yes	Yes	Yes	Yes
Switzerland	Lower priority	Lower priority	Lower priority	Lower priority	Lower priority
Turkey	Yes	No	No	No	No
United Kingdom	Yes	Yes	Yes	. .	. .
United States	Yes	Yes	No	No	No

Notes:
". ." indicates that information is not available. Lower priority means that underemployed workers are eligible, but with lower priority than fully unemployed persons.
Austria:"Marginal employees" earning less than EUR 357.74 per month qualify for assistance from active labour market programmes with the same priority as unemployed when registered as unemployed.
Czech Republic: Only those earning less than CZE 4000 per month are eligible to register as job seekers.
Hungary: Employed persons, whether working full-time or part-time, are eligible for training and subsidised employment if their job is expected to be terminated or if their employment cannot be maintained without further training.
Mexico: Some PES training programmes have the same eligibility conditions for unemployed and underemployed workers. In some programmes the participant requires full-time availability for training.
Netherlands: Part-time workers who work less than 12 hours per week and are actively seeking and available to work more than 12 hours per week can register for job-search assistance, intensive support and training programmes. While they are eligible for most employment services, at times of economic crisis, it is likely that services will be primarily focused on those who have recently become fully unemployed, given the high caseload. Participation in subsidised private and public sector jobs is only available if part-time workers are receiving social assistance, which is only possible if they earn less than the minimum income threshold (partner income thresholds also apply).
New Zealand: Participation in training programmes and subsidised employment is focused on those most disadvantaged.
Norway: Underemployed workers are eligible for training programmes and subsidised employment programmes, although it can be a challenge for the underemployed to combine work with labour market programme participation.
Slovak Republic: To be eligible to be registered as a job seeker, a part-time worker must earn a salary not exceeding 65% of the subsistance minimum plus advance payment of health insurance and social security contributions paid by employees and pre-tax income (up to EUR 136.36).
Sweden: Must be receiving benefits.
Switzerland: There are no systematic or administrative mechanisms which discriminate against part-time unemployed persons as long as they receive UI benefits.
United States: The Wagner-Peyser Employment Service Program provides employment services to jobseekers. It does not contain training programmes or subsidised employment.
Source: Responses to the OECD Part-time Work Questionnaire.

where social expenditures are forecast to increase significantly. While there should not be barriers to part-time work for individuals who strongly value shorter working hours for their work-life balance, it is also crucial to remove barriers to transitions from part-time to full-time employment. Widespread regulatory reforms aimed at encouraging high quality part-time work should also be better evaluated as there is little evidence on their effectiveness or if they are having unintended adverse effects on the hiring of part-time workers.

Notes

1. This is an old debate that the first edition of the *OECD Employment Outlook*, published in 1983, examined.
2. Part-time work is generally defined in this chapter as working less than 30 hours per week in the main job. This may differ from national definitions which use different hours thresholds. In addition, some workers with multiple part-time jobs may work full-time when hours in all jobs are taken into account. Multiple-job holding generally accounts for a very small proportion of all employees in OECD countries.
3. C156 has been ratified by only seven OECD countries: Finland, Italy, Luxembourg, the Netherlands, Portugal, Slovenia and Sweden.
4. In May 2010, OECD countries welcomed four new members – Chile, Estonia, Israel and Slovenia. The Russian Federation is currently undergoing an accession process.
5. Statutory (as opposed to contractual) pay and working conditions requirements (*e.g.* minimum wages) generally apply to both part-time and full-time workers.
6. In some countries, such as Japan and the United Kingdom, employees have a statutory right to request flexible working arrangements more broadly rather than just part-time work.
7. Indeed, part-time employment was already widespread before the introduction of part-time request regulations in a number of countries including Australia, the Netherlands, New Zealand and the United Kingdom.
8. Due to a lack of appropriate data, not all aspects of job quality could be examined in this section, notably access to fringe benefits and social protection. In all the figures in this section, relative job quality is measured as the ratio of a particular measure of job quality for part-time employees to that for full-time employees (the self-employed are excluded). When bars in the charts are below one, part-time employees have lower job quality than full-time employees, while when the bars are above one, part-time employees have higher job quality than full-time employees.
9. See Annex 4.A1 for a full breakdown of the impact of individual and job characteristics on the part-time penalty and premium.
10. Booth and Wood (2008) find a part-time wage premium for workers in Australia after controlling for unobserved heterogeneity. Possible reasons include the casual wage premium (part-time workers are more likely to have casual contracts than full-time workers), fewer hours of unpaid overtime or the possibility that high marginal effective tax rates and a tight labour market mean that employers that want to employ part-time workers have to pay more. Hardoy and Schone (2006) find no wage penalty for Norway after controlling for characteristics. Most studies of training find that part-time workers participate less in training than full-time workers, with a few exceptions. Arulampalam *et al.* (2004) examine training participation in Europe during the 1990s and find that part-time workers are less likely to participate in training only for the United Kingdom and Finland. Pischke (2001) finds no significant impact on part-time work of duration or participation in training in Germany.
11. Studies that fail to find evidence of compensating differentials, or that find that better working conditions are associated with higher wages include Gariety and Shaffer (2001) for flextime in the United States and Bockerman and Ilmakunas (2006) for a range of working conditions in Finland. Daniel and Sofer (1998) only find evidence of compensating differentials in non-unionised sectors in France and even then, not for work at night or shift work.
12. A range of values for the average hours worked by part-time workers (as a proportion of full-time hours) are used to calculate adjusted employed rates. In countries for which data are available, the relative average number of hours worked by part-timers varies significantly across countries (*cf. infra*). However, there is no significant relationship between this ratio and the share of part-time

work in total employment, only a weak negative cross-country correlation that is unlikely to affect strongly the findings presented in what follows.

13. Among the countries for which a long time-series of data on part-time employment by age group is available, the patterns of part-time work by women over the life course are remarkably consistent in successive five-year age cohorts in Canada, France, Germany, Greece, the Netherlands, New Zealand, the United Kingdom and the United States over the period 1980-2005. In Belgium, Spain and Italy, younger cohorts are more likely to work part-time than older cohorts at every age, while in Denmark and, to a much lesser extent, Portugal, younger cohorts are less likely to work part-time than older cohorts at every age. However, with the exception of Denmark, all these countries exhibit a similar pattern: participation in part-time work typically increases at the onset of childbearing, does not decline substantially as women enter their 40s and 50s and then peaks among workers older than 55.

14. Pension systems in OECD countries usually link retirement income to previous earnings, at least to some extent. Using data from D'Addio and Whitehouse (2010), it is possible to examine the impact of working part-time (50% of average earnings) on retirement income. The redistributive element of most pension systems means that the replacement rate is typically higher for part-time workers than for full-time workers (70% compared with 57%, respectively, of previous earnings on average for all OECD countries). However, because part-timers earn less, actual retirement income is much lower: 35% of average earnings.

15. OECD tax and benefit models do not allow simulating UI benefits for part-time workers.

16. Net incomes calculated for families with two children are used whenever children are present. This assumption would lead imputed METRs and net replacement rates to be either overestimated or underestimated, depending on the number of children. True METRs and replacement rates would likely be lower for those having only one child and higher for those having more than two children.

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ANNEX 4.A1

Job Quality Decomposition Methodology and Results

Methodology

It is useful to know how much of the difference in job quality between part-time and full-time workers is simply due to differences in their characteristics, and how much could be considered a true penalty or a premium to working part-time. That is, if part-time and full-time workers shared the same characteristics, would they have different wages and working conditions? Oaxaca-style regression methods for decomposing wage gaps between different groups (*e.g.* based on gender, race) are well-developed in the literature. The same methods have been widely used to examine the part-time/full-time wage gap (*e.g.* Jepsen *et al.*, 2005; Manning and Petrongolo, 2008). For a continuous variable, like the hourly wage, the average gap between full-time and part-time workers can be written as:

$$\ln \overline{W}_{FT} - \ln \overline{W}_{PT} = \left(\overline{X}_{FT} - \overline{X}_{PT}\right)\hat{\beta}_{FT} + \overline{X}_{PT}\left(\hat{\beta}_{FT} - \hat{\beta}_{PT}\right) \qquad [1]$$

where $\overline{W}_{FT}$ and $\overline{W}_{PT}$ are the average hourly wage of full-time and part-time workers, respectively, $\overline{X}$ is a vector of personal and job characteristics and $\hat{\beta}$ are estimated coefficients from OLS wage regressions run separately for full-time and part-time workers. The first term on the right-hand side of equation [1] is the part of the gap attributable to differences in the average characteristics of full-time and part-time workers, while the second term is the unexplained component. It is assumed that the coefficients of full-time workers represent the "true" returns to characteristics, although this assumption does not affect the conclusions reached. A similar method, modified for a non-linear probit model, is used to decompose differences in working conditions where the dependent variable is a zero-one indicator (Fairlie, 2003).

It is possible that some characteristics of workers that lead them to choose part-time work also affect how much they earn or their working conditions if they work part-time. If this is the case, estimates that do not take into account self-selection into part-time or full-time work can be biased. Unfortunately, with the data available, it is not possible to control for selection bias because of a lack of a suitable instrument that affects the decision to work part-time or full-time, but not the working conditions on offer in the job. The variable used most often to identify selection into part-time work for a wage equation is family situation. It is possible to imagine that having children affects the decision to work part-time, but not the wage. However, when extending the analysis to working conditions, this is far less obvious. For example, it is quite likely that having family responsibilities affects an employee's likelihood of taking part in training, their promotion prospects, their stress

levels and the likelihood of them working at anti-social times. The sample used for some of the estimation from the European Working Conditions Survey also includes only employees, so it is not possible to estimate a selection equation that includes an option for inactivity. Therefore, none of the analyses controls for selection into part-time work. Previous research suggests that failing to account for selection into part-time work should have only a small effect, if any, on the accuracy of full-time/part-time wage gap estimates (*e.g.* Manning and Petrongolo, 2008; Booth and Wood, 2008; Hardoy and Schone, 2006; Bardasi and Gornick, 2008).

Data description

Data for wages are from the 2007 cross-sectional file of the European Survey of Income and Living Conditions (EU-SILC). Data for working conditions are from the 2005 European Working Conditions Survey (EWCS) and the 2005 International Social Survey Programme (ISSP) Work Orientations Supplement. Due to differences in data availability, different samples of countries are used for different indicators. The sample coverage and sources are described below:

	Countries covered	Data source
Sample 1	Austria, Belgium, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Poland, Portugal, Slovenia, Slovak Republic, Spain, Sweden, United Kingdom	EU-SILC
Sample 2	Austria, Belgium, Czech Republic, Denmark, Estonia, France, Finland, Germany, Greece, Hungary, Ireland, Italy, Luxembourg, Netherlands, Norway, Poland, Portugal, Spain, Slovak Republic, Slovenia, Sweden, Switzerland, Turkey, United Kingdom	EWCS
	Australia, Canada, Israel, Japan, Korea, Mexico, New Zealand, Russian Federation, United States	ISSP
Sample 3	Austria, Belgium, Czech Republic, Denmark, Estonia, France, Finland, Germany, Greece, Hungary, Ireland, Italy, Luxembourg, Netherlands, Norway, Poland, Portugal, Spain, Slovak Republic, Slovenia, Sweden, Switzerland, Turkey, United Kingdom	EWCS
Sample 4	Australia, Belgium (Flanders), Canada, Czech Republic, Denmark, France, Finland, Germany, Hungary, Israel, Ireland, Japan, Korea, Mexico, New Zealand, Norway, Portugal, Russian Federation, Slovenia, Spain, Sweden, Switzerland, United Kingdom, United States	ISSP

Hourly wage (Sample 1)

Ratio of hourly wage to median hourly wage. Hourly wage is calculated from yearly earnings for the previous year, number of months worked full-time and part-time in the previous year and average hours of full-time and part-time employees in the current year.

Opportunities for advancement (Sample 2)

EWCS: Equal to one if respondent agrees or strongly agrees with statement "My job offers good prospects for career advancement" and zero if the respondent neither agrees or disagrees, disagrees or strongly disagrees with the statement.

ISSP: Equal to one if respondent agrees or strongly agrees with statement "Opportunities for advancement are high in my job" and zero if the respondent neither agrees or disagrees, disagrees or strongly disagrees with the statement.

Training (Sample 2)

EWCS: Equal to one if respondent answered yes to the following question "Over the past 12 months, have you undergone training paid for by your employer, yourself or on-the-job training to improve your skills or not?" and zero otherwise.

ISSP: Equal to one if respondent answered yes to the following question "Over the past 12 months, have you had any training to improve your job skills, either at the workplace or somewhere else?" and zero otherwise.

Union membership (Sample 4)

Equal to one if respondent is currently a member of a trade union, zero otherwise.

Permanent contract (Sample 3)

Equal to one if respondent has an indefinite contract, and zero otherwise.

Feels like job is secure (Sample 2)

Equal to one if respondent disagrees or strongly disagrees with statement "I might lose my job in the next six months" and zero if respondent neither agrees or disagrees, agrees or agrees strongly with the statement.

Equal to one if respondent agrees or strongly agrees with statement "My job is secure" and zero if respondent neither agrees or disagrees, disagrees or disagrees strongly with the statement.

Has some control over working time (Sample 2)

Equal to one if respondent can choose between several fixed working time schedules, can adapt working hours within certain limits or are entirely free to determine working time arrangements and zero if working time arrangements are set by the company with no possibility for changes.

Equal to one if respondent can decide working hours within certain limits or is entirely free to decide working hours and zero if respondent cannot change working hours or has fixed working time.

Never works on Sundays/at night/more than ten hours per day (Sample 3)

Never works on Sundays: Equal to one if respondent does not work at all on Sundays and zero if the respondent works at least once a month on a Sunday.

Never works at night: Equal to one if respondent does not work at all at night and zero if the respondent works at least once a month for at least two hours at night.

Never works more than ten hours per day: Equal to one if respondent does not work at all for more than ten hours per day and zero if the respondent works at least once a month for at least ten hours per day.

Does not feel that health and safety are at risk from job (Sample 3)

Equal to one if respondent answers yes to the following question "Do you think your health or safety is at risk because of your work?", and zero otherwise.

Job is not stressful (Sample 4)

Equal to one if respondent never or hardly ever finds work stressful, and zero otherwise.

Job satisfaction (Sample 4)

Equal to one if respondent is satisfied or very satisfied with main job, or zero if the respondent is neither satisfied nor dissatisfied, dissatisfied or very dissatisfied with main job.

Control variables

All decomposition regressions include controls for age (age in years, age squared), education (six categories for ISSP/EWCS, three categories for SILC), work experience, family (married, number of children) and occupation (nine categories for ISSP/EWCS, eight categories for SILC). Analysis using Samples 1 and 3 also include controls for firm size (four categories), industry (15 categories for EWCS, 12 categories for SILC) and permanent contract.

Results

Results shown in Figures 4.4 and 4.6 of the main text of the chapter are based on the samples which allow the most control variables to be included; usually, but not always, Sample 3.

Table 4.A1.1. **Explaining the part-time premium, detailed results**

Percentage of part-time job quality gap explained by individual and job characteristics

	Has some control over working time				Never works at night		Never works on Sundays	
	Men	Women	Men	Women	Men	Women	Men	Women
	Sample 2	Sample 3	Sample 2	Sample 3	Sample 3	Sample 3	Sample 3	Sample 3
Age	–3	–4	2	4	6	–1	–2	–9
Education	–13***	–12***	–15***	–20***	1	–1	4*	6
Work experience	–5	3	0	1	5	–2	5	–2
Family	–2	–3	–1	1	3	1	14	–6
Occupation	–2	7	–19***	–22***	6**	11	–29***	–20
Firm size	–	5	–	–4**	20***	29***	24***	44***
Industry	–	–12	–	9***	–11***	–16***	–73***	–68***
Permanent contract	–	–13	–	–7**	6	–2	–21**	–8
Gap (PT minus FT in percentage points):								
Unadjusted	4.7	4.2	8.8	7.7	7.7	3.7	3.6	2.5
Adjusted	5.9	5.3	11.8	10.7	4.9	2.9	6.4	4.0

	Never works 10+ hrs/day		No health/safety risk		Job not stressful	
	Men	Women	Men	Women	Men	Women
	Sample 3	Sample 3	Sample 3	Sample 3	Sample 4	Sample 4
Age	1	0	5	5**	13***	1
Education	1	6	0	–6**	–1	0
Work experience	3	0	10***	–1	0	3
Family	4	0	6***	–2	3***	2
Occupation	3*	11	13***	3	3***	18***
Firm size	0***	2***	1	12***	–	–
Industry	2***	–3***	6**	7	–	–
Permanent contract	–1	0	–4	–1	–	–
Gap (PT minus FT in percentage points):						
Unadjusted	27.5	19.0	12.7	5.7	18.5	11.0
Adjusted	23.7	16.0	8.1	4.7	15.1	8.4

FT: full-time; PT: part-time.

Table 4.A1.2. **Explaining the part-time penalty, detailed results**

Percentage of part-time job quality gap explained by individual and job characteristics

	Hourly wage		Good opportunities for advancement			
	Men	Women	Men		Women	
	Sample 1	Sample 1	Sample 2	Sample 3	Sample 2	Sample 3
Age	0***	10***	1	6	0	–2
Education	2	–7*	–2***	–4***	–6***	–8***
Work experience	0	0	6	8	1	4***
Family	–5***	–3*	–2	–1	0	0
Occupation	–8***	–28***	–5***	–3	–26***	–16***
Firm size	–3	–3	–	–8***	–	–8***
Industry	–11***	–8***	–	–14***	–	–5**
Permanent contract	–16***	–4***	–	–9	–	0
Gap (PT minus FT in percentage points):						
Unadjusted	–22.0	–17.2	–10.2	–9.8	–9.9	–9.6
Adjusted	–13.0	–9.5	–10.0	–7.4	–6.8	–6.3

	Training				Union membership	
	Men		Women		Men	Women
	Sample 2	Sample 3	Sample 2	Sample 3	Sample 4	Sample 4
Age	–6	0	0	–1	–15***	9***
Education	–5***	–8***	–13***	–14***	0	–6**
Work experience	11***	21***	–1	–2	7	1
Family	–7***	–10***	0	2	–3	8***
Occupation	–1	2	–30***	–19***	2	–13***
Firm size	–	–27***	–	–12***	–	–
Industry	–	–3	–	–3	–	–
Permanent contract	–	–9*	–	–2	–	–
Gap (PT minus FT in percentage points):						
Unadjusted	–9.6	–7.4	–12.3	–10.9	–11.0	–7.8
Adjusted	–8.8	–5.0	–6.8	–5.4	–10.0	–7.8

	Permanent contract		Feels like job is secure			
	Men	Women	Men		Women	
	Sample 3	Sample 3	Sample 2	Sample 3	Sample 2	Sample 3
Age	–5***	–1	1	2	14***	19***
Education	–1***	–5***	0	–1*	–15***	–17***
Work experience	–12***	–7***	–3	3	–16***	–4
Family	–2**	1	–5*	–6*	–1	–1
Occupation	0	–1	3	–2	–23***	–2
Firm size	–5***	–3***	–	–1	–	–11***
Industry	–3***	–1	–	11***	–	5
Permanent contract	–	–	–	–53***	–	–83***
Gap (PT minus FT in percentage points):						
Unadjusted	–27.5	–17.0	–9.6	–9.9	–5.2	–4.0
Adjusted	–19.7	–14.0	–9.1	–5.1	–3.1	–0.2

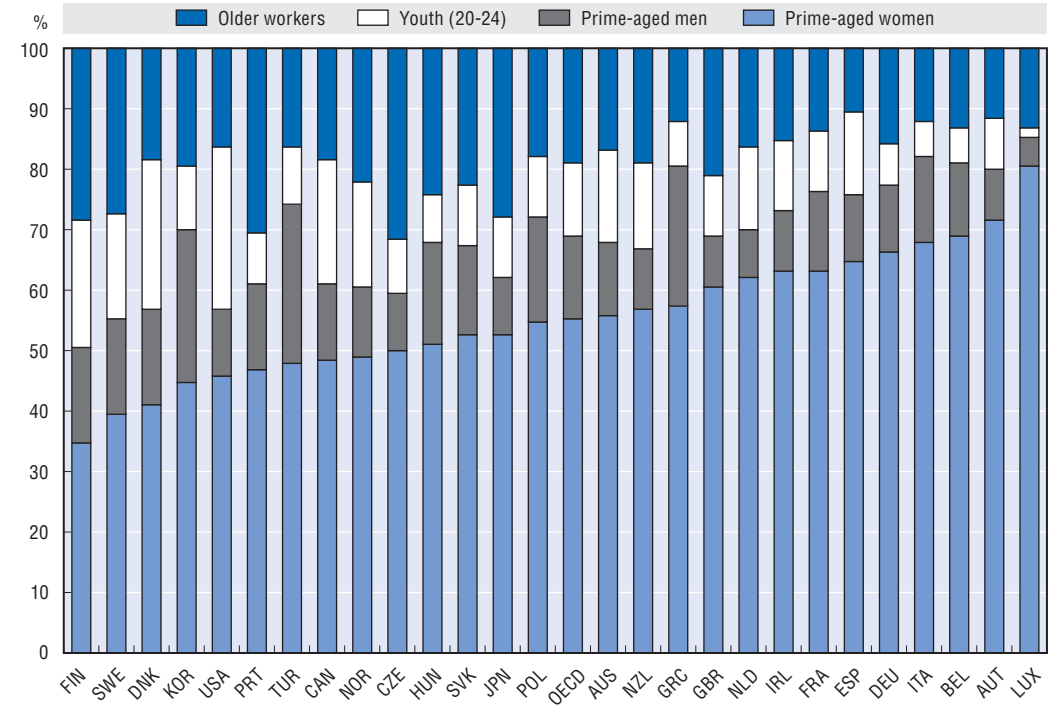
FT: full-time; PT: part-time.

ANNEX 4.A2

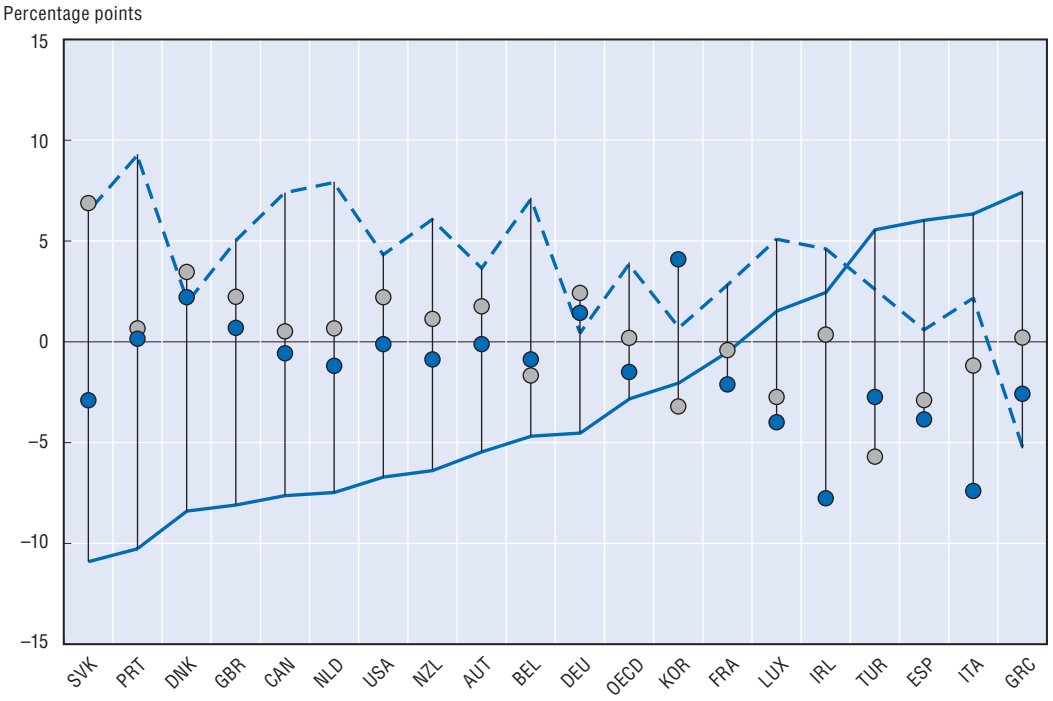
Supplementary Figures and Tables

Figure 4.A2.1. **Part-time employment by demographic group**

Panel A. **Share of various demographic groups in total part-time employment (percentage), 2007**



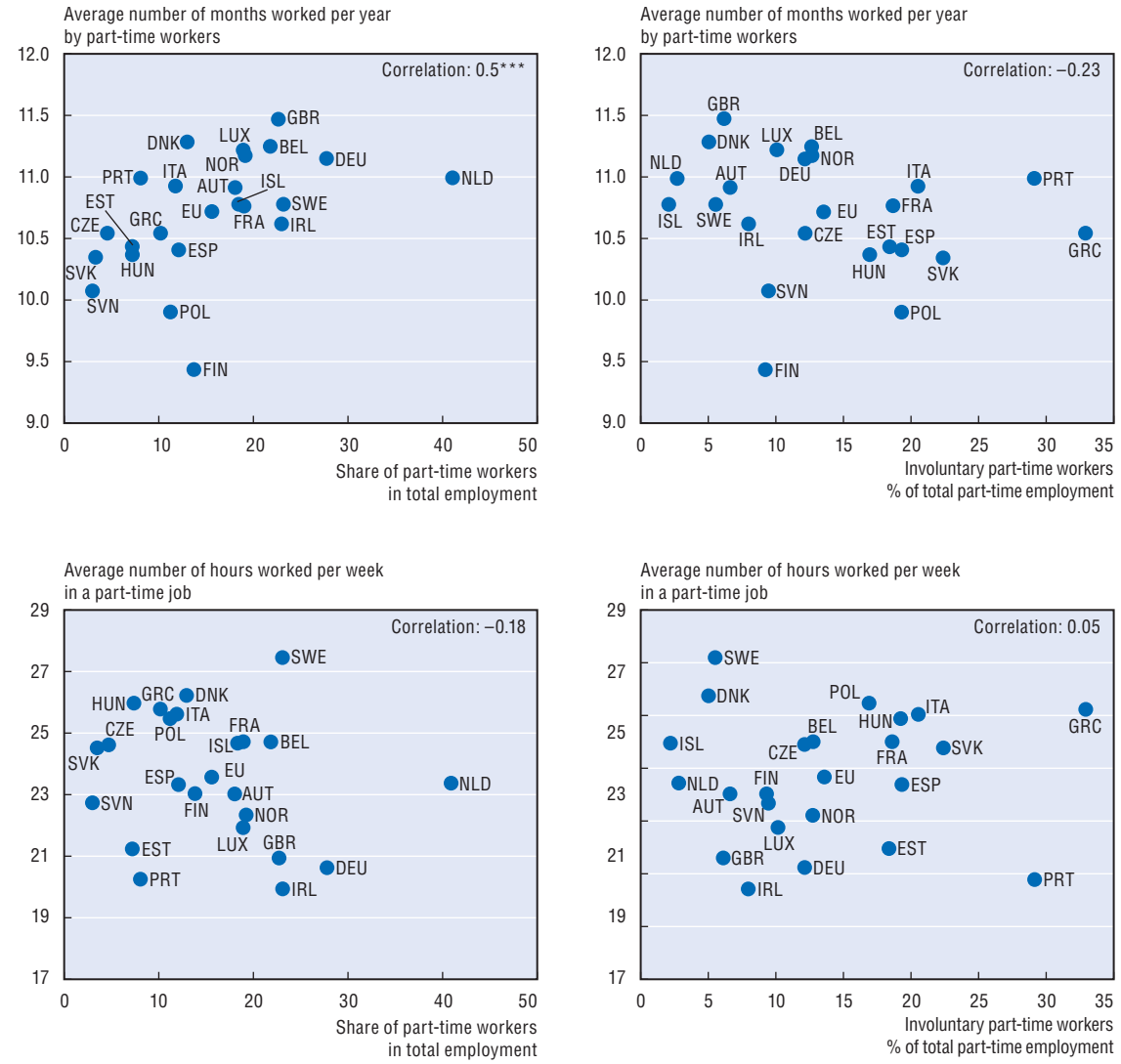
Panel B. **Change in the share of various demographic groups in total part-time employment (percentage points), 1997-2007**



Source: OECD Labour Force Statistics Database.

StatLink http://dx.doi.org/10.1787/888932293467

Figure 4.A2.2. **Work intensity of part-timers and incidence of voluntary and involuntary part-time employment**



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

Source: EU-SILC, cross-sectional files 2005-07.

StatLink http://dx.doi.org/10.1787/888932293486

Table 4.A2.1. **Determinants of transition probabilities of moving from part-time work to either full-time employment or non-employment over any two-year period between 2004 and 2007**

Multinomial probit regressions: Marginal effects of independent variables[a]
Reference labour market state: Staying on part-time work

	Full-time work	Out of work	Full-time work	Out of work	Full-time work	Out of work	Sample means
Gender and age							
Men	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.	17%
Women (dummy variable)	–15.84***	–1.08***	–15.93***	–0.88***	–13.66***	–2.09***	83%
Age	0.28	–2.53***	0.27	–2.42***	–0.03*	–2.21***	42.3
Age square	–0.01	0.03***	–0.01	0.03***	–0.01	0.03***	
Education (dummy variables)							
Primary education	–4.83***	4.40***	–4.84***	4.36***	–3.00*	2.63*	7%
Secondary education	–4.75***	1.69*	–4.74***	1.67*	–2.96***	0.61	65%
Tertiary education	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.	28%
Household composition							
Single persons	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.	22%
Live in couple (dummy variable)	–4.27***	–0.52***	–4.37***	0.11	–3.42***	–0.28*	78%
Nb. of children less than 3	–1.43	3.95***	–1.41	3.90***	–1.18	3.68***	0.11
Household disposable income (dummy variables)							
1st income quantile	–1.90	6.23***	–1.72	5.19***	1.55	3.38***	14%
2d income quantile	–0.82	2.32***	–0.78	2.19***	0.20	1.54**	20%
3rd income quantile	Ref.	Ref.	Ref.	Ref.	Ref.	Ref.	24%
4th income quantile	1.71*	–0.68	1.71*	–0.57	1.07	–0.11	23%
5th income quantile	3.42***	0.33	3.43***	0.42	2.27***	1.22**	19%
Tax and benefit system							
Marginal effective tax rate (when earnings increase by 10% AW)			–0.01	0.06***			43%
Household replacement rate					–0.30***	0.20***	72%
Country fixed effects[b]	Yes		Yes		Yes		
Time dummies	Yes		Yes		Yes		
Number of observations	20 905		20 905		20 905		20 905

***, **, *: statistically significant at 1%, 5%, 10% levels, respectively. AW: Average wage.

a) The coefficients can be interpreted as the % points change in the probability of transition from part-time work to either full-time employment or non-employment, as compared to remaining on part-time, given a discrete change in dummy variables (from 0 to 1), or given a 1 unit change in continuous or discrete variables (age, number of children less than 3, marginal effective tax rate or net replacement rate).

b) Countries included: Austria, Belgium, Czech Republic, Finland, France, Hungary, Iceland, Italy, Luxembourg, Netherlands, Norway, Poland, Portugal, Slovak Republic, Spain, Sweden, United Kingdom.

c) A sensitivity analysis was performed in order to assess the robustness of results to changes in country coverage, by eliminating one country at a time and re-estimating the equation including, either METRs or the net replacement rates. Point-estimates of the impact of these two variables always keep both the same sign and magnitude.

Source: EU-SILC, longitudinal file (2007).

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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, 1989-2009*.
- 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 (included for the first time in this annex), 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 for Chile, Estonia, Israel, Slovenia and the Russian Federation are included, for the first time, in several tables. They are annual averages of quarterly estimates based on labour force surveys. 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* 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).
  - 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.
  - 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:* 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 May 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

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Australia	8.2	8.3	7.7	6.9	6.3	6.8	6.4	5.9	5.4	5.0	4.8	4.4	4.2	5.6
Austria	4.3	4.4	4.5	3.9	3.6	3.6	4.2	4.3	4.9	5.1	4.8	4.4	3.8	4.8
Belgium	9.5	9.2	9.3	8.5	6.9	6.6	7.5	8.2	8.4	8.4	8.3	7.5	7.0	7.9
Canada	9.6	9.1	8.3	7.6	6.8	7.2	7.7	7.6	7.2	6.8	6.3	6.0	6.1	8.3
Czech Republic[a]	3.9	4.8	6.4	8.6	8.7	8.0	7.3	7.8	8.3	7.9	7.2	5.3	4.4	6.7
Denmark	6.3	5.2	4.9	5.2	4.3	4.5	4.6	5.4	5.5	4.8	3.9	3.8	3.3	6.0
Finland	14.6	12.6	11.4	10.2	9.8	9.1	9.1	9.0	8.8	8.4	7.7	6.9	6.4	8.2
France	11.5	11.4	11.0	10.4	9.0	8.3	8.6	9.0	9.3	9.3	9.2	8.4	7.8	9.5
Germany	8.7	9.4	9.1	8.3	7.5	7.6	8.4	9.3	9.8	10.6	9.8	8.4	7.3	7.5
Greece	..	..	..	12.0	11.2	10.7	10.3	9.8	10.5	9.9	8.9	8.3	7.7	9.5
Hungary	9.6	9.0	8.4	6.9	6.4	5.7	5.8	5.9	6.1	7.2	7.5	7.4	7.8	10.0
Iceland	3.7	3.9	2.8	2.0	2.3	2.3	3.3	3.4	3.1	2.6	2.9	2.3	3.0	7.2
Ireland	11.7	9.9	7.6	5.6	4.2	3.9	4.5	4.6	4.5	4.4	4.5	4.6	6.3	11.9
Italy	11.2	11.3	11.3	11.0	10.2	9.1	8.6	8.5	8.0	7.7	6.8	6.1	6.7	7.8
Japan	3.4	3.4	4.1	4.7	4.7	5.0	5.4	5.3	4.7	4.4	4.1	3.9	4.0	5.1
Korea	2.0	2.6	7.0	6.6	4.4	4.0	3.3	3.6	3.7	3.7	3.5	3.2	3.2	3.6
Luxembourg	2.9	2.7	2.7	2.4	2.2	1.9	2.6	3.8	5.0	4.6	4.6	4.2	4.9	5.4
Mexico	5.5	3.7	3.2	2.5	2.5	2.8	3.0	3.4	3.9	3.6	3.6	3.7	4.0	5.5
Netherlands	6.0	4.9	3.8	3.2	2.8	2.2	2.8	3.7	4.5	4.7	3.9	3.2	2.8	3.4
New Zealand	6.3	6.8	7.7	7.1	6.2	5.5	5.3	4.8	4.1	3.8	3.9	3.7	4.2	6.1
Norway	4.8	3.9	3.1	3.0	3.2	3.4	3.7	4.2	4.3	4.5	3.4	2.5	2.5	3.1
Poland	12.4	10.9	10.2	13.4	16.1	18.3	20.0	19.7	19.0	17.8	13.9	9.6	7.1	8.2
Portugal	7.3	6.7	5.0	4.4	4.0	4.1	5.1	6.4	6.8	7.7	7.8	8.1	7.7	9.6
Slovak Republic[a]	11.3	11.8	12.6	16.4	18.8	19.3	18.7	17.6	18.2	16.3	13.4	11.1	9.5	12.0
Spain	17.9	16.7	15.0	12.5	11.1	10.4	11.1	11.1	10.6	9.2	8.5	8.3	11.3	18.0
Sweden	9.6	9.9	8.2	6.7	5.6	5.8	6.0	6.6	7.4	7.6	7.0	6.1	6.2	8.3
Switzerland	3.9	4.2	3.5	3.0	2.6	2.6	3.2	4.3	4.4	4.4	4.0	3.6	3.5	4.4
Turkey	..	..	..	..	..	..	..	..	..	9.2	8.8	8.8	9.7	12.6
United Kingdom	7.9	6.8	6.1	5.9	5.4	5.0	5.1	5.0	4.7	4.8	5.4	5.3	5.6	7.6
United States	5.4	4.9	4.5	4.2	4.0	4.7	5.8	6.0	5.5	5.1	4.6	4.6	5.8	9.3
OECD[b]	7.2	6.9	6.8	6.7	6.2	6.5	7.1	7.3	7.0	6.8	6.2	5.8	6.1	8.3
Estonia	..	9.6	9.2	11.4	13.6	12.6	10.3	10.0	9.7	7.9	5.9	4.7	5.5	13.8
Slovenia	6.9	6.9	7.4	7.4	6.7	6.2	6.3	6.7	6.3	6.5	6.0	4.9	4.4	5.9

a) Data for 1996 are estimates.

b) Weighted average for above countries only.

Note: In so far as possible, the data have been adjusted 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, harmonised unemployment rates are produced by the Statistical Office of the European Communities (Eurostat). 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* .

Source: OECD (2010), *OECD Main Economic Indicators* , OECD Publishing, Paris, May.

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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	2005	2006	2007	2008	2009	1994	2005	2006	2007	2008	2009	1994	2005	2006	2007	2008	2009
Australia	66.0	71.5	72.2	72.8	73.2	72.0	73.2	75.4	75.8	76.2	76.5	76.3	9.9	5.1	4.9	4.4	4.3	5.7
Austria	68.4	68.6	70.2	71.4	72.1	71.6	71.0	72.4	73.7	74.7	75.0	75.3	3.6	5.2	4.8	4.5	3.9	4.8
Belgium	55.7	61.1	61.0	62.0	62.4	61.6	61.7	66.7	66.5	67.1	67.1	66.9	9.7	8.5	8.3	7.5	7.0	8.0
Canada	67.0	72.5	72.9	73.6	73.7	71.5	74.9	77.8	77.9	78.4	78.6	78.1	10.5	6.8	6.3	6.1	6.2	8.4
Chile	..	54.4	55.5	56.3	57.3	..	..	59.3	60.3	60.8	62.3	..	..	8.3	7.9	7.4	8.0	..
Czech Republic	69.2	64.8	65.3	66.1	66.6	65.4	72.4	70.4	70.3	69.8	69.7	70.1	4.3	8.0	7.2	5.4	4.4	6.8
Denmark	72.4	75.9	77.4	77.1	78.1	75.7	78.8	79.8	80.6	80.2	80.8	80.7	8.1	4.9	4.0	3.8	3.4	6.1
Finland	60.7	68.5	69.6	70.5	71.3	68.4	72.7	74.8	75.4	75.7	76.1	74.6	16.5	8.4	7.7	6.9	6.4	8.4
France[b]	58.4	63.2	63.3	64.0	64.6	63.9	66.6	69.4	69.4	69.5	69.7	70.2	12.4	8.9	8.8	8.0	7.4	9.1
Germany	64.5	65.5	67.2	69.0	70.2	70.4	70.5	73.8	75.0	75.6	75.9	76.4	8.5	11.3	10.4	8.7	7.6	7.8
Greece	54.1	60.1	61.0	61.4	61.9	61.2	59.5	66.8	67.0	67.0	67.1	67.8	9.1	10.0	9.0	8.4	7.8	9.6
Hungary	53.5	56.9	57.3	57.3	56.7	55.4	60.0	61.4	62.0	61.9	61.5	61.6	10.8	7.2	7.5	7.4	7.9	10.1
Iceland[c]	78.5	84.4	85.3	85.7	84.2	78.9	83.0	86.7	88.0	87.8	86.9	85.3	5.4	2.7	3.0	2.3	3.0	7.4
Ireland	51.9	67.5	68.5	69.2	68.1	62.5	61.1	70.9	71.8	72.6	72.3	71.3	15.1	4.8	4.7	4.7	5.8	12.2
Italy	51.5	57.5	58.4	58.7	58.7	57.5	58.0	62.4	62.7	62.5	63.0	62.4	11.1	7.8	6.9	6.2	6.8	7.9
Japan	69.3	69.3	70.0	70.7	70.7	70.0	71.4	72.6	73.1	73.6	73.8	73.9	3.0	4.6	4.3	4.1	4.2	5.3
Korea	62.8	63.7	63.8	63.9	63.8	62.9	64.4	66.3	66.2	66.2	66.0	65.4	2.6	3.9	3.6	3.4	3.3	3.8
Luxembourg	60.2	63.6	63.6	64.2	63.4	65.2	62.3	66.6	66.7	66.9	66.8	68.7	3.5	4.5	4.7	4.1	5.1	5.2
Mexico	58.7	59.6	61.0	61.1	61.3	59.4	61.4	61.9	63.0	63.3	63.6	62.8	4.4	3.6	3.3	3.5	3.6	5.4
Netherlands	63.9	71.9	73.2	74.8	76.1	75.8	68.6	75.8	76.4	77.5	78.4	78.8	6.8	5.1	4.2	3.5	3.0	3.9
New Zealand	67.5	74.3	74.9	75.2	74.7	72.9	73.8	77.3	77.9	78.1	78.0	77.8	8.4	3.9	3.9	3.8	4.3	6.3
Norway[c]	72.2	75.2	75.5	76.9	78.1	76.5	76.4	78.9	78.2	78.9	80.2	79.0	5.4	4.7	3.5	2.6	2.6	3.2
Poland	58.3	53.0	54.5	57.0	59.2	59.3	68.4	64.6	63.4	63.2	63.8	64.7	14.8	18.0	14.0	9.7	7.2	8.3
Portugal	64.0	67.5	67.9	67.8	68.2	66.3	69.0	73.4	73.9	74.1	74.2	73.7	7.2	8.1	8.1	8.5	8.1	10.0
Slovak Republic	59.8	57.7	59.4	60.7	62.3	60.2	69.3	68.9	68.5	68.2	68.9	68.4	13.7	16.2	13.3	11.0	9.6	12.1
Spain[c]	47.4	64.3	65.7	66.6	65.3	60.6	62.4	70.8	71.9	72.6	73.7	74.0	24.0	9.2	8.6	8.3	11.4	18.1
Sweden[c]	71.5	73.9	74.5	75.7	75.7	72.2	79.2	80.1	80.2	80.6	80.7	78.9	9.7	7.8	7.1	6.2	6.2	8.5
Switzerland	75.6	77.2	77.9	78.6	79.5	79.2	78.7	80.8	81.2	81.6	82.3	82.6	4.0	4.5	4.1	3.7	3.4	4.2
Turkey	52.4	44.4	44.6	44.6	44.9	44.3	57.5	49.8	49.8	49.8	50.6	51.7	8.8	10.9	10.5	10.5	11.2	14.3
United Kingdom[c]	68.7	72.6	72.5	72.3	72.7	70.6	76.0	76.2	76.7	76.3	76.8	76.6	9.7	4.7	5.4	5.3	5.4	7.8
United States[c]	72.0	71.5	72.0	71.8	70.9	67.6	76.7	75.4	75.5	75.3	75.3	74.6	6.2	5.1	4.7	4.7	5.8	9.4
OECD (weighted average)	63.9	65.4	66.1	66.5	66.5	64.8	69.4	70.1	70.4	70.6	70.8	70.7	7.8	6.8	6.2	5.8	6.1	8.3
Estonia	..	64.4	68.1	69.4	69.8	63.5	..	70.1	72.4	72.9	74.0	74.0	..	8.1	6.0	4.8	5.6	14.1
Israel[d]	55.5	56.7	57.6	58.9	59.8	..	60.2	62.4	62.9	63.7	63.8	..	8.0	9.2	8.5	7.4	6.2	..
Russian Federation	..	65.6	66.4	68.1	68.4	..	..	70.6	71.5	72.5	73.0	..	8.2	7.2	7.2	6.1	6.3	..
Slovenia	..	66.0	66.6	67.8	68.6	67.5	..	70.7	70.9	71.3	71.8	71.8	..	6.7	6.1	5.0	4.5	6.0

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	2005	2006	2007	2008	2009	1994	2005	2006	2007	2008	2009	1994	2005	2006	2007	2008	2009
Australia	75.0	78.5	78.8	79.6	79.6	77.7	83.5	82.6	82.8	83.0	83.0	82.6	10.2	5.0	4.8	4.1	4.1	5.9
Austria	78.0	75.4	76.9	78.4	78.5	76.9	80.7	79.3	80.4	81.7	81.4	81.0	3.2	5.0	4.4	4.0	3.6	5.1
Belgium	66.5	68.3	67.9	68.7	68.6	67.2	72.0	73.9	73.4	73.6	73.3	72.8	7.7	7.7	7.5	6.7	6.5	7.8
Canada	73.0	76.7	76.8	77.2	77.2	74.0	82.0	82.5	82.2	82.5	82.7	81.8	11.0	7.1	6.6	6.4	6.7	9.6
Chile	..	71.1	72.0	72.3	72.6	..	..	76.7	77.4	77.4	78.1	..	..	7.3	6.9	6.5	7.0	..
Czech Republic	77.5	73.3	73.7	74.8	75.4	73.8	80.4	78.4	78.2	78.1	78.1	78.5	3.6	6.5	5.9	4.3	3.5	5.9
Denmark	77.6	79.8	81.2	81.0	81.9	78.3	83.7	83.6	84.1	83.9	84.4	84.0	7.3	4.5	3.4	3.5	3.1	6.7
Finland	62.6	70.5	71.8	72.4	73.4	68.9	76.3	76.8	77.5	77.4	78.1	75.8	17.9	8.2	7.3	6.5	6.0	9.1
France[b]	66.1	68.6	68.4	68.6	69.2	68.0	74.1	74.6	74.4	74.2	74.3	74.7	10.8	8.1	8.1	7.5	6.9	8.9
Germany	74.0	71.4	72.8	74.7	75.9	75.5	79.8	80.6	81.4	81.8	82.1	82.2	7.2	11.5	10.5	8.6	7.5	8.2
Greece	72.2	74.2	74.6	74.9	75.0	73.5	77.0	79.2	79.1	79.1	79.1	79.0	6.2	6.2	5.7	5.3	5.1	7.0
Hungary	59.6	63.1	63.8	64.0	63.0	61.1	67.8	67.9	68.7	69.0	68.3	68.2	12.1	7.0	7.2	7.2	7.7	10.3
Iceland[c]	82.4	87.4	88.7	89.5	87.8	80.6	86.8	89.8	91.4	91.6	90.9	88.4	5.1	2.7	3.0	2.3	3.4	8.9
Ireland	64.8	76.6	77.7	77.6	75.7	67.3	76.2	80.7	81.6	81.6	81.2	79.6	15.0	5.1	4.8	4.9	6.8	15.5
Italy	67.8	69.7	70.5	70.7	70.3	68.6	74.2	74.4	74.6	74.4	74.4	73.7	8.6	6.3	5.5	5.0	5.6	6.9
Japan	81.9	80.4	81.0	81.7	81.6	80.2	84.4	84.4	84.8	85.2	85.2	84.8	2.9	4.7	4.4	4.1	4.3	5.5
Korea	76.3	75.0	74.6	74.7	74.4	73.6	78.6	78.2	77.7	77.6	77.3	76.9	2.9	4.1	4.0	3.8	3.7	4.3
Luxembourg	74.9	73.3	72.6	72.3	71.5	73.2	77.3	76.0	75.3	75.0	74.7	76.6	3.0	3.5	3.6	3.6	4.3	4.4
Mexico	82.9	80.2	81.6	80.9	80.7	77.7	86.4	83.1	84.2	83.7	83.5	82.3	4.1	3.5	3.1	3.3	3.4	5.6
Netherlands	74.9	78.9	79.9	81.0	81.9	80.8	79.6	82.9	83.0	83.6	84.2	84.1	5.9	4.8	3.8	3.1	2.8	3.9
New Zealand	75.7	81.3	81.9	81.9	80.9	78.6	83.1	84.4	85.0	84.9	84.4	83.9	8.9	3.6	3.6	3.5	4.2	6.3
Norway[c]	76.8	78.3	78.6	79.7	80.6	78.4	81.6	82.3	81.4	81.8	82.9	81.4	6.0	4.9	3.5	2.6	2.8	3.7
Poland	64.9	59.0	60.9	63.6	66.3	66.1	75.0	71.0	70.1	70.0	70.9	71.8	13.4	16.9	13.1	9.1	6.5	7.9
Portugal	73.5	73.4	73.9	73.9	74.0	71.1	78.4	79.0	79.5	79.4	79.5	78.5	6.3	7.1	7.0	7.0	6.9	9.4
Slovak Republic	67.2	64.6	67.0	68.4	70.0	67.6	77.6	76.4	76.3	75.8	76.4	76.3	13.3	15.4	12.2	9.8	8.4	11.4
Spain[c]	63.3	76.4	77.3	77.4	74.6	67.5	78.5	82.2	82.5	82.7	83.0	82.2	19.4	7.1	6.4	6.4	10.1	17.8
Sweden[c]	72.2	75.9	76.8	78.0	78.1	74.1	81.3	82.5	82.6	82.9	83.1	81.3	11.1	7.9	7.0	5.9	5.9	8.8
Switzerland	86.3	83.9	84.7	85.6	85.4	84.5	89.5	87.4	87.8	88.2	88.0	87.9	3.6	4.0	3.5	3.0	2.9	3.8
Turkey	74.6	66.9	66.8	66.8	66.6	64.6	82.0	75.0	74.4	74.4	74.8	75.2	9.0	10.7	10.1	10.2	11.0	14.2
United Kingdom[c]	75.3	78.8	78.4	78.4	78.5	75.7	85.1	83.0	83.2	83.1	83.4	83.2	11.5	5.1	5.8	5.6	5.8	8.9
United States[c]	79.0	77.6	78.1	77.8	76.4	72.0	84.3	81.8	81.9	81.7	81.4	80.4	6.2	5.1	4.7	4.8	6.2	10.5
OECD (weighted average)	75.4	75.0	75.6	75.9	75.6	73.2	81.4	80.2	80.4	80.4	80.4	80.2	7.4	6.5	6.0	5.6	6.0	8.7
Estonia	..	67.0	71.0	73.2	73.6	64.1	..	73.6	75.8	77.5	78.3	77.6	..	9.0	6.3	5.5	5.9	17.4
Israel[d]	64.6	61.0	61.8	63.3	64.1	..	69.0	66.8	67.2	68.0	68.1	..	6.3	8.7	8.0	6.9	5.8	..
Russian Federation	..	69.1	69.5	71.5	72.6	..	..	74.5	75.2	76.4	77.6	..	8.4	7.3	7.5	6.4	6.5	..
Slovenia	..	70.4	71.1	72.7	72.7	71.0	..	75.1	74.9	75.8	75.8	75.6	..	6.2	5.0	4.1	4.1	6.1

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	2005	2006	2007	2008	2009	1994	2005	2006	2007	2008	2009	1994	2005	2006	2007	2008	2009
Australia	56.9	64.6	65.5	66.1	66.7	66.2	62.8	68.2	68.9	69.5	69.9	70.1	9.5	5.3	5.0	4.8	4.6	5.5
Austria	58.9	62.0	63.5	64.4	65.8	66.4	61.3	65.6	67.0	67.8	68.6	69.6	4.0	5.5	5.3	5.1	4.2	4.6
Belgium	44.8	53.8	54.0	55.3	56.2	56.0	51.2	59.5	59.5	60.4	60.8	60.9	12.5	9.5	9.4	8.5	7.6	8.1
Canada	61.1	68.3	69.0	70.1	70.1	69.1	67.8	73.1	73.5	74.3	74.4	74.4	9.8	6.5	6.1	5.7	5.7	7.1
Chile	..	38.0	39.2	40.4	42.1	..	..	42.3	43.3	44.4	46.6	..	..	10.0	9.6	8.8	9.7	..
Czech Republic	61.0	56.3	56.8	57.3	57.6	56.7	64.4	62.4	62.3	61.5	61.0	61.5	5.2	9.8	8.9	6.8	5.7	7.8
Denmark	67.1	71.9	73.4	73.2	74.3	73.1	73.8	75.9	77.0	76.4	77.1	77.3	9.0	5.3	4.6	4.2	3.7	5.4
Finland	58.7	66.5	67.3	68.5	69.0	67.9	69.1	72.9	73.2	73.9	74.0	73.5	14.9	8.7	8.1	7.3	6.8	7.6
France[b]	50.8	58.0	58.2	59.4	60.1	59.8	59.3	64.3	64.5	65.0	65.2	65.9	14.4	9.8	9.7	8.6	7.9	9.3
Germany	54.7	59.6	61.4	63.2	64.3	65.2	60.9	66.9	68.5	69.4	69.7	70.4	10.1	11.0	10.3	8.9	7.7	7.4
Greece	37.1	46.1	47.4	47.9	48.7	48.9	43.2	54.5	55.0	54.9	55.1	56.5	14.0	15.4	13.8	12.9	11.5	13.3
Hungary	47.8	51.0	51.2	50.9	50.6	49.9	52.7	55.1	55.5	55.1	55.0	55.3	9.3	7.5	7.9	7.7	8.1	9.8
Iceland[c]	74.6	81.2	81.6	81.7	80.3	77.2	79.1	83.4	84.2	83.6	82.5	82.0	5.7	2.7	3.1	2.4	2.6	5.8
Ireland	38.9	58.2	59.1	60.7	60.5	57.8	45.8	60.8	61.9	63.5	63.3	62.9	15.2	4.3	4.5	4.5	4.5	8.1
Italy	35.4	45.3	46.3	46.6	47.2	46.4	41.9	50.4	50.8	50.7	51.6	51.1	15.5	10.1	8.8	7.9	8.6	9.3
Japan	56.5	58.1	58.8	59.5	59.7	59.8	58.3	60.8	61.3	61.9	62.2	62.9	3.1	4.4	4.1	3.9	4.0	5.0
Korea	49.8	52.5	53.1	53.2	53.2	52.2	50.8	54.5	54.8	54.8	54.7	53.9	2.0	3.6	3.1	2.8	2.8	3.2
Luxembourg	44.9	53.7	54.6	56.1	55.1	57.0	47.0	57.0	58.2	58.9	58.7	60.7	4.3	5.8	6.3	4.7	6.1	6.1
Mexico	36.2	41.6	42.9	43.6	44.1	43.0	38.1	43.2	44.5	45.3	45.9	45.2	4.9	3.7	3.6	3.8	4.0	5.0
Netherlands	52.6	64.8	66.4	68.5	70.2	70.6	57.3	68.6	69.6	71.4	72.6	73.5	8.1	5.5	4.6	4.0	3.2	3.9
New Zealand	59.5	67.6	68.2	68.7	68.7	67.4	64.6	70.6	71.2	71.6	71.8	72.0	7.9	4.2	4.2	4.0	4.3	6.3
Norway[c]	67.5	72.0	72.3	74.0	75.4	74.4	70.9	75.4	74.8	75.9	77.4	76.5	4.8	4.4	3.4	2.5	2.5	2.7
Poland	51.9	47.0	48.2	50.6	52.4	52.8	62.1	58.3	56.8	56.5	57.0	57.8	16.4	19.4	15.1	10.4	8.0	8.8
Portugal	55.0	61.7	62.0	61.9	62.5	61.6	60.0	67.9	68.4	68.8	68.9	69.0	8.3	9.2	9.5	10.1	9.4	10.7
Slovak Republic	52.6	50.9	51.9	53.0	54.6	52.8	61.2	61.5	60.9	60.7	61.4	60.6	14.1	17.2	14.7	12.6	11.1	12.9
Spain[c]	31.5	51.9	54.0	55.5	55.7	53.5	46.3	59.1	61.1	62.3	64.1	65.7	31.8	12.2	11.6	10.9	13.1	18.5
Sweden[c]	70.7	71.8	72.1	73.2	73.2	70.2	77.0	77.7	77.7	78.2	78.2	76.4	8.2	7.6	7.2	6.4	6.4	8.1
Switzerland	64.9	70.4	71.1	71.6	73.5	73.8	68.0	74.3	74.7	75.0	76.6	77.3	4.4	5.2	4.8	4.6	4.0	4.6
Turkey	30.4	22.3	22.7	22.8	23.5	24.2	33.2	25.2	25.6	25.7	26.7	28.4	8.3	11.5	11.4	11.3	11.9	14.7
United Kingdom[c]	62.1	66.7	66.8	66.3	66.9	65.6	67.1	69.6	70.3	69.8	70.2	70.2	7.4	4.2	5.0	4.9	4.8	6.5
United States[c]	65.2	65.6	66.1	65.9	65.5	63.4	69.4	69.2	69.3	69.1	69.3	69.0	6.1	5.2	4.7	4.6	5.5	8.2
OECD (weighted average)	52.7	55.9	56.7	57.2	57.6	56.5	57.5	60.2	60.7	60.9	61.4	61.3	8.4	7.1	6.6	6.0	6.2	7.8
Estonia	..	62.1	65.3	65.9	66.3	63.0	..	66.9	69.3	68.7	70.1	70.6	..	7.2	5.8	4.0	5.4	10.8
Israel[d]	46.4	52.5	53.3	54.6	55.6	..	51.6	58.1	58.7	59.4	59.5	..	10.1	9.7	9.1	8.0	6.6	..
Russian Federation	..	62.4	63.5	64.9	64.5	..	..	67.1	68.1	68.9	68.6	..	8.0	7.0	6.8	5.8	6.1	..
Slovenia	..	61.3	61.8	62.6	64.2	63.8	..	66.1	66.7	66.6	67.5	67.9	..	7.2	7.4	6.0	4.9	5.9

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) Data for 2009 are preliminary estimates.

c) Refers to persons aged 16-64. For Norway up to 2005.

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.

Source: OECD Online Employment Database: www.oecd.org/els/employment/database.

StatLink http://dx.doi.org/10.1787/888932303518

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	2006	2007	2008	2009	1994	2006	2007	2008	2009	1994	2006	2007	2008	2009
Australia	Unemployment rates	17.1	10.0	9.4	8.9	11.6	7.6	3.7	3.4	3.4	4.5	9.5	3.2	2.7	2.6	3.4
	Labour force participation rates	70.7	70.9	70.8	70.6	68.9	79.7	82.3	82.8	83.1	82.9	44.8	57.3	58.2	58.9	61.0
	Employment/population ratios	58.6	63.7	64.1	64.4	61.0	73.6	79.2	80.0	80.3	79.2	40.5	55.5	56.6	57.4	59.0
Austria	Unemployment rates	5.0	9.1	8.7	8.1	10.0	3.3	4.1	3.8	3.3	4.2	3.4	3.5	3.0	2.1	2.4
	Labour force participation rates	62.3	59.4	60.8	60.8	60.5	82.5	87.1	87.4	87.3	87.7	29.4	36.8	39.8	41.9	42.1
	Employment/population ratios	59.2	54.0	55.5	55.9	54.5	79.8	83.5	84.0	84.4	84.0	28.4	35.5	38.6	41.0	41.1
Belgium	Unemployment rates	21.8	20.5	18.8	18.0	21.9	8.4	7.2	6.6	6.1	6.8	4.9	4.8	4.2	4.4	5.1
	Labour force participation rates	35.2	34.7	33.9	33.4	32.4	79.9	84.5	85.3	85.7	85.6	23.5	33.6	35.9	36.1	37.2
	Employment/population ratios	27.5	27.6	27.5	27.4	25.3	73.1	78.4	79.7	80.5	79.8	22.4	32.0	34.4	34.5	35.3
Canada	Unemployment rates	15.9	11.6	11.2	11.6	15.3	9.4	5.3	5.1	5.1	7.1	9.2	5.2	5.0	5.5	7.0
	Labour force participation rates	63.9	66.4	67.0	67.4	65.3	83.3	86.2	86.6	86.7	86.4	48.1	58.7	60.1	60.8	61.9
	Employment/population ratios	53.8	58.7	59.5	59.6	55.3	75.5	81.6	82.2	82.3	80.3	43.6	55.6	57.1	57.5	57.6
Chile	Unemployment rates	..	18.3	17.8	19.7	..	..	6.7	6.0	6.6	..	..	3.7	3.8	3.7	..
	Labour force participation rates	..	31.8	32.1	34.2	..	..	73.3	73.9	75.3	..	..	55.2	56.5	57.9	..
	Employment/population ratios	..	26.0	26.4	27.5	..	..	68.4	69.5	70.3	..	..	53.2	54.4	55.7	..
Czech Republic	Unemployment rates	8.7	17.5	10.7	9.9	16.6	3.4	6.4	4.9	4.0	5.9	3.5	5.3	4.6	3.9	5.7
	Labour force participation rates	52.0	33.5	31.9	31.1	31.8	89.3	88.1	87.8	87.3	87.7	33.5	47.7	48.2	49.5	49.6
	Employment/population ratios	47.5	27.7	28.5	28.1	26.5	86.3	82.5	83.5	83.8	82.5	32.3	45.2	46.0	47.6	46.8
Denmark	Unemployment rates	10.2	7.7	7.9	7.6	11.2	7.8	3.2	3.0	2.5	5.2	6.5	3.9	3.5	2.9	4.7
	Labour force participation rates	69.1	69.9	70.9	72.5	71.7	87.2	88.9	89.0	90.2	89.7	53.7	63.2	60.8	58.7	60.3
	Employment/population ratios	62.1	64.6	65.3	67.0	63.6	80.5	86.1	86.3	88.0	85.1	50.2	60.7	58.6	57.0	57.5
Finland	Unemployment rates	31.2	17.6	15.7	15.7	21.6	14.1	6.1	5.3	4.8	6.6	19.0	6.7	6.5	5.5	6.3
	Labour force participation rates	46.3	53.6	55.0	55.1	49.2	87.1	87.8	88.0	88.6	88.2	41.3	58.4	58.8	59.7	59.3
	Employment/population ratios	31.9	44.1	46.4	46.4	38.5	74.9	82.5	83.3	84.3	82.4	33.5	54.5	55.0	56.4	55.6
France[a]	Unemployment rates	27.5	21.3	18.7	18.1	22.4	11.2	7.6	6.9	6.3	7.7	7.0	5.7	5.1	4.6	6.3
	Labour force participation rates	30.4	36.7	37.0	37.5	38.8	85.9	87.8	88.2	88.8	89.0	35.9	40.5	40.4	40.1	41.6
	Employment/population ratios	22.0	28.9	30.1	30.7	30.1	76.3	81.2	82.1	83.2	82.1	33.4	38.1	38.3	38.2	39.0
Germany	Unemployment rates	8.2	13.6	11.7	10.4	11.0	8.1	9.6	8.0	7.0	7.3	11.6	12.4	10.3	8.5	8.0
	Labour force participation rates	56.0	50.9	52.0	52.7	52.3	82.9	87.1	87.2	87.0	87.2	40.6	54.9	57.2	58.7	61.0
	Employment/population ratios	51.4	44.0	45.9	47.2	46.6	76.2	78.8	80.3	81.0	80.8	35.9	48.1	51.3	53.8	56.1
Greece	Unemployment rates	27.7	25.2	22.9	22.1	25.8	7.0	8.1	7.8	7.2	8.9	3.1	3.7	3.4	3.2	4.6
	Labour force participation rates	36.9	32.4	31.1	30.2	30.9	73.7	82.0	81.9	82.0	82.8	40.7	43.9	43.9	44.2	44.2
	Employment/population ratios	26.7	24.2	24.0	23.5	22.9	68.6	75.3	75.6	76.1	75.4	39.5	42.3	42.4	42.8	42.2
Hungary	Unemployment rates	20.9	19.1	18.0	19.9	26.5	9.3	6.8	6.8	7.1	9.1	7.0	3.9	4.2	5.0	6.3
	Labour force participation rates	39.0	26.8	25.6	25.0	24.6	79.0	79.6	80.0	80.1	80.2	18.3	34.9	34.5	33.1	35.0
	Employment/population ratios	30.8	21.7	21.0	20.0	18.1	71.7	74.2	74.6	74.4	72.9	17.0	33.6	33.1	31.4	32.8

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	2006	2007	2008	2009	1994	2006	2007	2008	2009	1994	2006	2007	2008	2009
Iceland[b]	Unemployment rates	11.5	8.4	7.2	8.2	16.0	4.2	1.9	1.3	2.0	6.2	3.8	1.6	0.9	1.6	3.6
	Labour force participation rates	58.5	79.5	80.1	78.6	73.4	91.3	90.9	90.6	89.9	89.3	88.1	86.3	85.7	84.7	83.8
	Employment/population ratios	51.7	72.9	74.3	72.1	61.7	87.5	89.1	89.4	88.1	83.8	84.7	84.9	84.9	83.3	80.8
Ireland	Unemployment rates	24.2	9.8	10.0	12.5	25.9	13.4	3.8	3.9	4.8	10.8	8.5	2.5	2.2	3.2	6.0
	Labour force participation rates	44.2	54.7	55.4	53.1	49.0	72.4	81.4	82.0	81.8	81.3	43.2	54.6	55.4	55.8	55.2
	Employment/population ratios	33.5	49.4	49.8	46.5	36.3	62.7	78.3	78.8	77.9	72.6	39.5	53.2	54.2	54.0	51.9
Italy	Unemployment rates	30.5	21.6	20.3	21.3	25.4	8.2	5.9	5.3	6.0	7.0	3.4	2.9	2.4	3.1	3.4
	Labour force participation rates	40.7	32.5	30.9	30.9	29.1	71.7	77.8	77.6	78.1	77.2	30.4	33.4	34.6	35.5	37.0
	Employment/population ratios	28.3	25.5	24.7	24.4	21.7	65.8	73.3	73.5	73.5	71.9	29.4	32.5	33.8	34.4	35.7
Japan	Unemployment rates	5.5	8.0	7.7	7.2	9.1	2.4	3.9	3.7	3.9	4.9	3.5	3.9	3.4	3.6	4.6
	Labour force participation rates	47.6	45.0	44.9	44.6	43.9	81.4	82.8	83.3	83.4	83.7	66.1	67.3	68.4	68.8	68.7
	Employment/population ratios	45.0	41.4	41.4	41.4	39.9	79.5	79.6	80.2	80.2	79.6	63.7	64.7	66.1	66.3	65.5
Korea	Unemployment rates	7.2	10.0	8.8	9.3	9.8	1.9	3.2	3.1	3.0	3.6	0.6	2.3	2.2	2.0	2.3
	Labour force participation rates	37.2	30.2	28.2	26.3	25.4	75.1	76.3	76.4	76.6	76.0	63.3	60.7	62.0	61.8	61.8
	Employment/population ratios	34.5	27.2	25.7	23.8	22.9	73.6	73.9	74.0	74.2	73.3	62.9	59.3	60.6	60.6	60.4
Luxembourg	Unemployment rates	7.9	16.2	15.2	17.9	17.2	3.0	4.1	3.4	4.2	4.2	0.7	1.4	2.1	2.7	3.0
	Labour force participation rates	46.5	27.8	26.5	29.0	32.3	75.8	84.5	84.7	83.4	84.8	23.3	33.6	32.7	35.1	39.4
	Employment/population ratios	42.8	23.3	22.5	23.8	26.7	73.5	81.0	81.9	80.0	81.2	23.2	33.2	32.0	34.1	38.2
Mexico	Unemployment rates	7.1	6.2	6.7	7.0	10.0	3.3	2.5	2.7	2.8	4.2	1.9	1.7	1.6	1.9	3.1
	Labour force participation rates	54.1	47.8	47.4	47.7	45.8	67.2	71.7	72.3	72.6	72.4	53.5	55.9	55.6	55.8	54.2
	Employment/population ratios	50.3	44.8	44.2	44.3	41.2	65.0	69.9	70.3	70.6	69.4	52.4	55.0	54.7	54.7	52.5
Netherlands	Unemployment rates	10.2	6.9	6.3	5.6	7.3	6.3	3.5	2.7	2.2	3.1	3.5	4.4	4.2	3.7	3.8
	Labour force participation rates	61.7	70.5	72.8	73.3	73.1	78.7	86.2	86.8	87.7	87.9	30.0	47.7	50.4	52.7	54.7
	Employment/population ratios	55.4	65.7	68.2	69.2	67.8	73.7	83.1	84.5	85.7	85.2	29.0	45.6	48.3	50.7	52.6
New Zealand	Unemployment rates	15.5	10.0	10.1	11.4	16.6	6.8	2.7	2.6	2.9	4.4	4.8	2.0	1.5	2.0	3.2
	Labour force participation rates	66.1	64.6	64.7	63.3	61.9	81.3	84.1	84.1	84.4	84.3	49.4	71.6	72.9	73.2	74.5
	Employment/population ratios	55.9	58.2	58.2	56.1	51.6	75.8	81.8	81.9	81.9	80.6	47.1	70.2	71.8	71.7	72.1
Norway[b]	Unemployment rates	12.6	8.6	7.3	7.5	9.2	4.5	2.9	1.9	2.0	2.5	2.6	1.1	1.0	1.0	1.1
	Labour force participation rates	55.4	58.1	59.4	62.7	58.5	85.1	87.0	87.5	88.5	88.1	63.3	68.2	69.7	70.0	69.5
	Employment/population ratios	48.4	53.1	55.1	58.0	53.2	81.3	84.4	85.8	86.8	86.0	61.6	67.4	69.0	69.3	68.7
Poland	Unemployment rates	32.6	29.8	21.7	17.3	20.7	12.8	12.2	8.4	6.1	6.9	7.0	8.5	6.8	5.3	6.3
	Labour force participation rates	41.5	34.2	33.0	33.1	33.8	84.7	81.7	81.7	82.5	83.4	37.0	30.7	31.8	33.3	34.5
	Employment/population ratios	28.0	24.0	25.8	27.3	26.8	73.8	71.8	74.9	77.5	77.6	34.4	28.1	29.7	31.6	32.3
Portugal	Unemployment rates	14.1	16.2	16.6	16.4	20.0	6.0	7.3	7.8	7.3	9.3	4.0	6.3	6.5	6.6	7.7
	Labour force participation rates	47.2	42.7	41.9	41.6	39.2	83.8	87.7	87.8	88.0	87.9	47.9	53.4	54.4	54.4	53.9
	Employment/population ratios	40.5	35.8	34.9	34.7	31.3	78.7	81.3	81.0	81.6	79.7	45.9	50.1	50.9	50.8	49.7

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	2006	2007	2008	2009	1994	2006	2007	2008	2009	1994	2006	2007	2008	2009
Slovak Republic	Unemployment rates	27.3	26.6	20.1	18.8	27.3	11.0	11.8	10.1	8.8	10.8	9.0	9.7	8.1	6.5	7.7
	Labour force participation rates	47.3	35.1	34.5	32.3	31.3	88.0	87.5	86.8	87.8	87.2	23.5	36.8	38.8	42.0	42.9
	Employment/population ratios	34.4	25.7	27.6	26.2	22.8	78.4	77.2	78.0	80.1	77.8	21.3	33.2	35.7	39.3	39.6
Spain[b]	Unemployment rates	42.9	17.9	18.2	24.6	37.9	20.9	7.5	7.2	10.2	16.5	12.4	5.7	5.9	7.3	12.1
	Labour force participation rates	49.4	52.7	52.4	52.5	49.5	73.9	82.0	82.8	83.8	84.7	37.3	46.8	47.4	49.2	50.2
	Employment/population ratios	28.3	43.3	42.9	39.5	30.8	58.4	75.8	76.8	75.3	70.7	32.7	44.1	44.6	45.6	44.1
Sweden[b]	Unemployment rates	22.7	21.3	18.9	19.4	25.0	8.1	5.3	4.4	4.3	6.2	6.9	4.4	3.9	3.8	5.2
	Labour force participation rates	53.5	56.0	57.1	56.9	50.7	89.2	89.4	90.0	90.4	90.0	66.5	73.0	73.0	73.0	74.0
	Employment/population ratios	41.3	44.0	46.3	45.9	38.0	81.9	84.7	86.1	86.5	84.4	61.9	69.8	70.1	70.3	70.1
Switzerland	Unemployment rates	5.8	7.7	7.1	7.0	8.2	3.6	3.5	3.1	2.9	3.7	4.1	3.0	3.1	2.6	2.8
	Labour force participation rates	64.0	68.6	67.4	67.1	67.4	86.2	88.3	88.9	89.8	90.1	63.7	67.8	69.3	70.2	70.3
	Employment/population ratios	60.3	63.3	62.6	62.4	61.9	83.2	85.2	86.1	87.2	86.8	61.1	65.7	67.2	68.4	68.4
Turkey	Unemployment rates	16.0	19.1	20.0	20.5	25.3	6.2	8.7	8.5	9.4	12.3	2.3	4.3	4.3	5.1	6.4
	Labour force participation rates	51.2	37.4	37.7	38.1	38.7	63.7	58.2	58.2	59.0	60.3	41.8	28.8	28.3	28.9	30.1
	Employment/population ratios	43.0	30.3	30.2	30.3	28.9	59.8	53.2	53.2	53.5	52.9	40.8	27.6	27.1	27.4	28.2
United Kingdom[b]	Unemployment rates	16.1	13.9	14.4	14.1	18.9	8.2	4.1	3.7	3.9	6.1	9.1	2.9	3.3	2.8	4.6
	Labour force participation rates	70.1	66.6	65.3	65.6	64.2	83.4	84.6	84.5	84.9	85.0	52.1	59.1	59.3	59.9	60.3
	Employment/population ratios	58.8	57.3	55.9	56.4	52.1	76.5	81.2	81.3	81.6	79.8	47.4	57.4	57.4	58.2	57.5
United States[b]	Unemployment rates	12.5	10.5	10.5	12.8	17.6	5.0	3.8	3.7	4.8	8.3	4.1	3.0	3.1	3.7	6.6
	Labour force participation rates	66.4	60.6	59.4	58.8	56.9	83.4	82.9	83.0	83.1	82.6	56.8	63.7	63.8	64.5	64.9
	Employment/population ratios	58.1	54.2	53.1	51.2	46.9	79.2	79.8	79.9	79.1	75.8	54.4	61.8	61.8	62.1	60.6
OECD (weighted average)	Unemployment rates	14.3	12.5	12.0	12.7	16.4	6.6	5.4	4.9	5.2	7.3	5.4	4.3	4.0	4.1	5.7
	Labour force participation rates	53.1	49.4	49.1	49.1	48.5	79.7	80.9	81.0	81.3	80.8	48.7	55.1	55.7	56.4	57.8
	Employment/population ratios	45.5	43.3	43.2	42.9	40.6	74.4	76.5	77.0	77.1	75.0	46.1	52.7	53.5	54.1	54.5
Estonia	Unemployment rates	..	12.0	10.0	12.0	27.5	..	5.5	4.2	4.9	12.9	..	4.1	3.5	4.1	9.4
	Labour force participation rates	..	35.9	38.3	41.4	39.9	..	89.1	88.5	88.1	87.8	..	61.0	62.2	65.1	66.7
	Employment/population ratios	..	31.6	34.5	36.4	28.9	..	84.2	84.8	83.9	76.4	..	58.5	60.0	62.4	60.4
Israel[c]	Unemployment rates	16.7	18.2	16.1	12.6	..	6.3	7.1	6.2	5.4	..	5.1	6.5	5.3	4.5	..
	Labour force participation rates	34.8	32.6	32.4	31.6	..	74.8	76.9	77.8	78.1	..	49.7	58.7	60.4	61.2	..
	Employment/population ratios	29.0	26.6	27.2	27.6	..	70.0	71.5	73.0	73.9	..	47.2	54.9	57.2	58.4	..
Russian Federation	Unemployment rates	16.3	16.4	14.4	14.0	..	6.9	6.0	5.1	5.2	..	5.4	3.7	3.0	4.0	..
	Labour force participation rates	..	39.2	40.6	44.6	..	..	88.5	88.9	88.4	..	..	47.4	49.9	48.7	..
	Employment/population ratios	..	32.8	34.8	38.3	..	..	83.1	84.4	83.7	..	..	45.7	48.4	46.8	..
Slovenia	Unemployment rates	..	13.9	10.1	10.4	13.6	..	5.4	4.5	3.7	5.3	..	2.5	3.3	4.0	3.6
	Labour force participation rates	..	40.6	41.8	42.9	40.9	..	89.0	89.3	90.1	89.6	..	33.4	34.6	34.2	36.9
	Employment/population ratios	..	35.0	37.6	38.4	35.3	..	84.2	85.3	86.8	84.8	..	32.6	33.5	32.8	35.6

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	2006	2007	2008	2009	1994	2006	2007	2008	2009	1994	2006	2007	2008	2009
Australia	Unemployment rates	17.7	10.5	9.5	9.1	12.6	7.8	3.4	2.9	2.9	4.5	11.4	3.6	2.8	3.1	3.7
	Labour force participation rates	73.0	72.1	71.8	71.8	70.2	91.6	90.3	90.8	90.9	90.3	61.7	67.3	67.7	67.7	69.3
	Employment/population ratios	60.1	64.5	65.0	65.2	61.4	84.4	87.2	88.1	88.3	86.3	54.7	64.9	65.8	65.6	66.7
Austria	Unemployment rates	4.7	8.8	8.3	7.9	10.5	2.9	3.6	3.3	3.1	4.4	3.8	4.3	2.9	1.8	2.5
	Labour force participation rates	65.3	63.9	65.0	64.6	64.0	93.1	93.2	93.7	93.0	92.6	41.3	47.3	51.3	52.8	52.3
	Employment/population ratios	62.3	58.2	59.6	59.5	57.3	90.4	89.9	90.6	90.2	88.5	39.8	45.3	49.8	51.8	51.0
Belgium	Unemployment rates	20.5	18.8	17.1	17.3	21.5	6.4	6.5	5.9	5.7	6.7	4.5	4.2	3.6	3.6	5.0
	Labour force participation rates	37.3	37.4	36.1	36.0	34.9	92.1	91.9	92.5	92.3	91.8	34.5	42.7	44.4	44.4	45.2
	Employment/population ratios	29.7	30.4	29.9	29.7	27.4	86.2	85.9	87.0	87.0	85.7	33.0	40.9	42.9	42.8	42.9
Canada	Unemployment rates	17.9	12.9	12.3	13.1	18.0	9.6	5.4	5.3	5.4	8.0	9.7	5.3	5.2	5.8	8.0
	Labour force participation rates	65.9	66.5	67.4	67.8	65.4	91.2	91.1	91.1	91.5	90.7	59.5	66.3	67.1	67.2	67.7
	Employment/population ratios	54.1	57.9	59.1	58.9	53.6	82.5	86.2	86.2	86.6	83.5	53.7	62.8	63.6	63.3	62.3
Chile	Unemployment rates	..	16.4	16.1	17.8	..	..	5.7	5.2	5.5	..	..	3.8	3.8	3.8	..
	Labour force participation rates	..	38.9	39.0	41.5	..	..	94.0	93.9	93.9	..	..	79.1	80.2	81.2	..
	Employment/population ratios	..	32.5	32.7	34.1	..	..	88.7	89.0	88.7	..	..	76.1	77.2	78.2	..
Czech Republic	Unemployment rates	7.9	16.6	10.6	9.8	16.6	2.5	4.7	3.5	2.8	4.8	3.5	5.1	4.5	3.5	5.6
	Labour force participation rates	59.9	37.7	36.7	35.9	37.3	95.3	94.8	95.0	94.8	95.1	49.0	62.7	62.4	64.2	63.2
	Employment/population ratios	55.2	31.4	32.8	32.3	31.1	92.9	90.4	91.7	92.1	90.5	47.3	59.5	59.6	61.9	59.6
Denmark	Unemployment rates	10.2	7.9	8.2	6.9	12.4	6.7	2.4	2.6	2.3	5.7	6.3	3.5	3.1	2.6	5.3
	Labour force participation rates	72.1	70.5	72.3	73.3	72.6	91.9	92.3	92.5	93.4	92.4	63.8	69.6	66.9	66.0	67.7
	Employment/population ratios	64.8	65.0	66.3	68.3	63.6	85.7	90.1	90.2	91.3	87.2	59.8	67.1	64.9	64.3	64.1
Finland	Unemployment rates	31.5	16.9	14.8	15.3	24.5	15.5	5.6	4.8	4.3	7.1	20.4	6.7	6.9	5.7	7.1
	Labour force participation rates	51.2	56.3	56.3	56.4	47.2	90.2	90.3	90.3	91.2	90.8	43.9	58.7	59.2	60.5	58.9
	Employment/population ratios	35.1	46.7	47.9	47.8	35.6	76.2	85.2	85.9	87.3	84.4	35.0	54.8	55.1	57.0	54.7
France[a]	Unemployment rates	24.1	20.1	18.0	18.2	23.1	9.6	6.7	6.3	5.6	7.2	7.2	5.9	5.3	4.9	6.5
	Labour force participation rates	33.2	40.3	40.1	40.8	41.8	95.1	94.2	94.2	94.5	94.4	42.1	43.1	42.8	42.6	44.2
	Employment/population ratios	25.2	32.2	32.9	33.4	32.1	85.9	87.9	88.3	89.1	87.6	39.1	40.5	40.5	40.5	41.4
Germany	Unemployment rates	8.2	14.3	12.2	10.7	12.0	6.5	9.6	7.8	6.9	7.6	10.5	12.0	9.7	8.1	8.0
	Labour force participation rates	58.8	54.0	54.9	55.6	55.2	92.9	93.8	93.8	93.5	93.2	53.1	63.7	65.8	67.2	69.3
	Employment/population ratios	53.9	46.3	48.2	49.7	48.6	86.8	84.8	86.4	87.1	86.1	47.5	56.1	59.4	61.7	63.8
Greece	Unemployment rates	19.8	17.7	15.7	17.0	19.4	4.8	5.0	4.7	4.5	6.4	3.3	3.1	2.9	2.9	4.1
	Labour force participation rates	41.8	36.1	34.7	34.3	34.4	94.5	94.7	94.6	94.4	94.4	60.1	61.0	60.8	60.9	60.1
	Employment/population ratios	33.5	29.7	29.2	28.5	27.7	90.0	90.0	90.1	90.2	88.4	58.1	59.2	59.1	59.1	57.7
Hungary	Unemployment rates	24.6	18.6	17.6	19.1	28.2	10.2	6.4	6.5	6.9	9.2	6.8	4.0	4.5	5.0	6.4
	Labour force participation rates	42.7	30.1	29.3	28.6	27.7	86.9	86.5	86.9	87.0	86.9	28.4	43.2	43.6	40.5	42.6
	Employment/population ratios	32.2	24.5	24.2	23.2	19.9	78.0	81.0	81.3	81.0	78.9	26.5	41.4	41.7	38.5	39.9

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	2006	2007	2008	2009	1994	2006	2007	2008	2009	1994	2006	2007	2008	2009
Iceland[b]	Unemployment rates	13.0	9.2	8.0	9.0	19.9	3.5	1.8	1.2	2.2	7.2	3.8	1.5	0.9	2.5	4.9
	Labour force participation rates	57.9	77.6	80.0	77.4	70.7	96.1	95.8	95.3	95.0	93.7	95.9	90.6	90.4	90.9	89.3
	Employment/population ratios	50.4	70.4	73.6	70.5	56.7	92.7	94.1	94.2	92.9	86.9	92.3	89.3	89.6	88.7	85.0
Ireland	Unemployment rates	25.4	9.6	10.4	14.9	32.4	13.4	4.1	4.2	5.8	14.0	8.6	2.7	2.4	3.6	7.8
	Labour force participation rates	48.7	59.2	58.6	55.9	50.5	91.3	92.1	91.6	91.7	90.8	64.9	68.2	69.8	68.9	67.5
	Employment/population ratios	36.3	53.6	52.5	47.5	34.1	79.0	88.4	87.8	86.4	78.0	59.3	66.4	68.1	66.5	62.2
Italy	Unemployment rates	26.3	19.1	18.2	18.9	23.3	6.1	4.5	4.0	4.7	5.9	3.4	2.8	2.6	3.2	3.7
	Labour force participation rates	46.9	37.8	36.1	35.9	34.0	90.8	91.3	91.0	91.0	90.0	48.1	45.0	46.3	47.0	48.5
	Employment/population ratios	34.5	30.6	29.6	29.1	26.1	85.3	87.2	87.3	86.7	84.7	46.5	43.7	45.1	45.5	46.7
Japan	Unemployment rates	5.6	8.8	8.3	7.9	10.1	2.0	3.9	3.6	3.8	4.9	4.5	4.5	4.1	4.3	5.4
	Labour force participation rates	48.0	44.7	45.1	44.5	43.0	97.5	96.1	96.3	96.3	96.1	85.0	83.8	84.9	85.1	84.4
	Employment/population ratios	45.4	40.8	41.3	41.0	38.7	95.5	92.4	92.8	92.6	91.3	81.2	80.0	81.5	81.4	79.8
Korea	Unemployment rates	9.2	11.7	11.4	11.5	11.9	2.5	3.6	3.6	3.5	4.1	0.9	3.0	2.7	2.6	2.8
	Labour force participation rates	31.8	24.3	23.1	21.0	20.4	94.6	90.8	90.5	90.5	90.0	79.2	74.9	76.8	76.3	76.6
	Employment/population ratios	28.9	21.4	20.5	18.5	18.0	92.3	87.5	87.3	87.3	86.3	78.5	72.6	74.7	74.3	74.5
Luxembourg	Unemployment rates	8.5	17.0	13.5	12.5	16.7	2.5	2.7	2.8	3.8	3.5	0.4	0.5	2.3	2.5	2.4
	Labour force participation rates	47.9	30.6	30.6	30.9	34.9	94.9	95.3	94.9	93.7	94.1	33.6	38.9	36.4	39.7	47.7
	Employment/population ratios	43.8	25.4	26.5	27.0	29.1	92.6	92.7	92.2	90.2	90.8	33.5	38.7	35.6	38.7	46.5
Mexico	Unemployment rates	6.5	5.4	6.2	6.2	9.7	3.2	2.5	2.5	2.6	4.5	2.0	1.8	2.0	2.2	3.9
	Labour force participation rates	72.6	62.6	61.7	61.8	59.6	96.1	95.5	95.3	95.1	94.5	82.4	82.1	80.9	80.0	77.8
	Employment/population ratios	67.9	59.2	57.8	57.9	53.9	93.0	93.1	92.9	92.5	90.2	80.7	80.6	79.2	78.2	74.7
Netherlands	Unemployment rates	10.9	6.5	5.9	5.7	7.9	5.2	3.1	2.1	1.9	3.0	2.7	4.6	4.5	4.0	4.0
	Labour force participation rates	62.6	71.4	72.9	73.8	73.0	92.3	93.4	93.3	93.8	93.5	41.8	58.1	60.9	62.7	64.2
	Employment/population ratios	55.8	66.8	68.6	69.6	67.3	87.5	90.5	91.3	92.0	90.7	40.7	55.4	58.2	60.2	61.7
New Zealand	Unemployment rates	16.1	9.6	10.0	11.8	16.0	7.3	2.5	2.2	2.7	4.4	5.5	1.9	1.5	2.2	3.8
	Labour force participation rates	70.1	67.5	67.2	66.0	64.2	92.0	92.3	92.1	91.9	91.5	62.4	81.2	81.9	81.8	82.7
	Employment/population ratios	58.8	61.0	60.5	58.2	53.9	85.3	90.0	90.1	89.4	87.5	59.0	79.6	80.7	79.9	79.5
Norway[b]	Unemployment rates	13.1	8.6	7.9	8.2	10.3	5.0	3.1	1.9	2.0	2.9	3.1	1.3	1.1	1.1	1.5
	Labour force participation rates	57.8	58.2	58.6	62.9	57.9	90.6	90.6	90.9	91.4	90.9	71.5	74.1	74.7	75.0	73.9
	Employment/population ratios	50.2	53.2	54.0	57.7	52.0	86.0	87.8	89.2	89.5	88.3	69.3	73.2	73.9	74.2	72.8
Poland	Unemployment rates	30.8	28.3	20.0	15.2	20.2	11.3	11.2	7.8	5.4	6.3	7.5	9.8	7.4	5.8	6.7
	Labour force participation rates	45.2	37.5	36.5	36.5	38.1	90.9	88.2	87.9	88.8	89.4	46.7	42.6	44.8	46.8	47.5
	Employment/population ratios	31.3	26.9	29.2	31.0	30.4	80.6	78.3	81.1	84.0	83.7	43.2	38.4	41.4	44.1	44.3
Portugal	Unemployment rates	12.3	14.5	13.5	13.4	18.7	5.0	5.8	6.1	6.0	8.5	5.0	7.3	7.1	7.3	8.3
	Labour force participation rates	51.6	46.6	45.3	44.4	40.8	93.6	92.9	92.8	93.2	92.4	63.6	62.7	63.0	63.0	62.7
	Employment/population ratios	45.2	39.8	39.2	38.5	33.2	88.9	87.4	87.2	87.6	84.5	60.4	58.2	58.6	58.5	57.5

Table C. **Employment/population ratios, activity and unemployment rates by selected age groups** *(cont.)*

Men (percentages)

		15 to 24					25 to 54					55 to 64				
		1994	2006	2007	2008	2009	1994	2006	2007	2008	2009	1994	2006	2007	2008	2009
Slovak Republic	Unemployment rates	28.0	26.3	20.3	18.1	27.9	10.4	10.4	8.6	7.5	10.0	8.1	9.8	7.7	5.5	6.4
	Labour force participation rates	52.7	39.3	38.7	37.7	37.0	95.0	93.8	93.0	93.4	93.6	40.9	55.3	56.9	60.0	58.8
	Employment/population ratios	38.0	29.0	30.9	30.8	26.7	85.1	84.1	85.0	86.4	84.2	37.6	49.9	52.6	56.7	55.0
Spain[b]	Unemployment rates	37.4	15.0	15.2	23.7	39.1	16.4	5.4	5.4	8.9	16.2	13.3	4.8	4.9	6.4	11.3
	Labour force participation rates	55.0	57.1	57.2	56.6	53.1	93.1	92.5	92.6	92.6	92.3	56.6	63.5	63.1	65.1	64.0
	Employment/population ratios	34.4	48.6	48.5	43.2	32.4	77.8	87.6	87.6	84.4	77.3	49.1	60.4	60.0	60.9	56.7
Sweden[b]	Unemployment rates	25.3	21.1	18.4	19.2	26.3	9.3	5.1	4.1	4.0	6.4	8.5	4.9	4.3	4.1	5.8
	Labour force participation rates	53.5	55.2	56.5	56.7	50.6	91.3	92.5	92.9	93.1	92.8	70.5	76.2	76.4	76.7	77.9
	Employment/population ratios	40.0	43.5	46.1	45.9	37.3	82.8	87.7	89.0	89.4	86.9	64.5	72.4	73.1	73.6	73.3
Switzerland	Unemployment rates	5.4	7.9	6.8	6.7	7.7	3.1	2.7	2.3	2.2	3.3	4.6	2.8	2.6	2.5	3.1
	Labour force participation rates	63.2	70.1	70.2	68.1	66.3	98.2	95.5	95.8	95.9	96.0	82.9	77.1	78.4	78.9	79.6
	Employment/population ratios	59.8	64.6	65.4	63.6	61.2	95.2	92.9	93.6	93.7	92.9	79.1	74.9	76.4	77.0	77.1
Turkey	Unemployment rates	17.5	18.3	19.6	20.1	25.4	6.2	8.6	8.5	9.3	12.2	3.0	5.5	5.4	6.6	8.2
	Labour force participation rates	67.2	51.2	51.6	51.7	52.2	93.7	88.3	88.1	88.5	88.8	59.5	44.0	42.9	43.8	44.8
	Employment/population ratios	55.5	41.8	41.5	41.3	39.0	87.9	80.7	80.7	80.2	77.9	57.7	41.6	40.5	40.9	41.1
United Kingdom[b]	Unemployment rates	19.2	15.8	16.0	16.0	21.7	9.7	4.2	3.7	4.1	6.8	11.6	3.3	4.1	3.4	6.0
	Labour force participation rates	75.1	69.1	68.2	68.5	67.4	92.9	91.7	91.6	91.7	91.5	64.0	68.3	68.9	70.1	70.3
	Employment/population ratios	60.7	58.1	57.3	57.5	52.8	83.9	87.8	88.3	87.9	85.4	56.6	66.0	66.1	67.7	66.1
United States[b]	Unemployment rates	13.2	11.2	11.6	14.4	20.1	4.9	3.6	3.7	5.0	9.2	4.4	3.0	3.2	3.7	7.2
	Labour force participation rates	70.3	63.3	61.5	61.0	58.5	91.7	90.6	90.9	90.5	89.7	65.5	69.6	69.6	70.4	70.3
	Employment/population ratios	61.0	56.2	54.4	52.3	46.7	87.2	87.3	87.5	86.0	81.5	62.6	67.5	67.4	67.7	65.2
OECD (weighted average)	Unemployment rates	14.3	12.6	12.2	13.1	17.6	6.1	5.0	4.6	5.0	7.6	5.9	4.5	4.2	4.3	6.2
	Labour force participation rates	58.9	54.1	53.6	53.6	52.8	93.3	92.2	92.2	92.2	91.6	62.8	66.2	66.7	67.2	68.7
	Employment/population ratios	50.4	47.3	47.1	46.6	43.5	87.7	87.6	88.0	87.5	84.7	59.2	63.2	63.9	64.3	64.4
Estonia	Unemployment rates	..	10.0	12.1	12.6	31.7	..	5.6	4.2	4.8	15.8	..	6.7	6.8	5.2	11.8
	Labour force participation rates	..	41.2	44.2	45.2	45.0	..	92.8	93.6	92.9	91.9	..	61.6	63.7	68.8	67.4
	Employment/population ratios	..	37.0	38.9	39.5	30.8	..	87.5	89.7	88.5	77.4	..	57.5	59.4	65.2	59.4
Israel[c]	Unemployment rates	14.5	17.3	15.0	11.9	..	4.8	6.7	5.7	5.1	..	5.1	6.9	5.9	4.6	..
	Labour force participation rates	35.3	30.5	30.7	30.1	..	85.9	83.0	83.7	83.9	..	69.4	70.1	71.4	71.7	..
	Employment/population ratios	30.1	25.2	26.1	26.5	..	81.8	77.4	78.9	79.6	..	65.8	65.3	67.2	68.4	..
Russian Federation	Unemployment rates	15.3	15.8	14.2	13.2	..	7.3	6.4	5.4	5.5	..	5.1	3.8	3.4	4.6	..
	Labour force participation rates	..	42.4	44.0	49.0	..	..	90.8	91.6	91.4	..	..	59.7	61.7	61.0	..
	Employment/population ratios	..	35.7	37.7	42.6	..	..	85.0	86.7	86.4	..	..	57.4	59.6	58.2	..
Slovenia	Unemployment rates	..	11.6	9.4	9.9	13.8	..	4.3	3.4	3.3	5.3	..	2.7	3.0	3.6	3.8
	Labour force participation rates	..	44.4	47.6	47.7	45.4	..	91.0	91.3	91.6	91.3	..	45.8	46.7	46.4	48.2
	Employment/population ratios	..	39.2	43.2	43.0	39.1	..	87.1	88.1	88.6	86.4	..	44.5	45.3	44.7	46.4

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	2006	2007	2008	2009	1994	2006	2007	2008	2009	1994	2006	2007	2008	2009
Australia	Unemployment rates	16.4	9.5	9.2	8.6	10.4	7.3	4.0	3.9	3.9	4.6	5.5	2.8	2.6	2.0	2.9
	Labour force participation rates	68.3	69.5	69.7	69.4	67.6	67.7	74.3	74.8	75.4	75.6	27.7	47.3	48.7	50.1	52.9
	Employment/population ratios	57.1	62.9	63.3	63.5	60.5	62.8	71.3	71.9	72.5	72.1	26.2	46.0	47.4	49.1	51.4
Austria	Unemployment rates	5.2	9.3	9.1	8.2	9.4	3.8	4.8	4.5	3.6	4.0	2.7	2.3	3.1	2.5	2.2
	Labour force participation rates	59.2	55.1	56.7	56.9	57.0	71.6	80.9	81.1	81.5	82.8	18.4	26.9	28.9	31.6	32.4
	Employment/population ratios	56.1	49.9	51.5	52.2	51.7	68.9	77.0	77.5	78.6	79.5	17.9	26.3	28.0	30.8	31.7
Belgium	Unemployment rates	23.4	22.6	20.9	18.7	22.5	11.2	8.1	7.4	6.6	6.9	5.9	5.7	5.3	5.6	5.2
	Labour force participation rates	33.0	31.9	31.6	30.8	29.9	67.2	77.0	78.0	79.0	79.2	13.2	24.6	27.5	27.9	29.3
	Employment/population ratios	25.3	24.7	25.0	25.0	23.2	59.7	70.7	72.3	73.8	73.8	12.4	23.2	26.0	26.3	27.7
Canada	Unemployment rates	13.7	10.3	10.0	10.0	12.4	9.0	5.2	4.7	4.8	6.1	8.4	5.1	4.9	5.1	5.7
	Labour force participation rates	61.9	66.4	66.5	67.0	65.1	75.4	81.3	82.1	82.0	82.2	36.9	51.4	53.3	54.6	56.3
	Employment/population ratios	53.4	59.5	59.8	60.3	57.1	68.6	77.1	78.2	78.0	77.2	33.8	48.7	50.7	51.8	53.1
Chile	Unemployment rates	..	21.6	20.8	23.0	..	..	8.3	7.3	8.2	..	..	3.3	3.6	3.4	..
	Labour force participation rates	..	24.2	24.8	26.3	..	..	53.2	54.6	57.3	..	..	32.9	33.7	35.4	..
	Employment/population ratios	..	18.9	19.6	20.2	..	..	48.8	50.6	52.7	..	..	31.8	32.5	34.2	..
Czech Republic	Unemployment rates	9.8	18.6	11.0	9.9	16.7	4.4	8.3	6.7	5.4	7.3	3.7	5.6	4.8	4.6	5.8
	Labour force participation rates	43.7	29.1	26.9	26.1	26.1	83.2	81.3	80.3	79.6	79.9	20.0	34.0	35.2	36.1	37.2
	Employment/population ratios	39.4	23.7	23.9	23.5	21.7	79.6	74.5	74.9	75.2	74.1	19.3	32.1	33.5	34.4	35.0
Denmark	Unemployment rates	10.2	7.5	7.5	8.4	9.9	9.0	4.0	3.5	2.7	4.7	6.7	4.3	4.1	3.2	3.9
	Labour force participation rates	65.9	69.3	69.4	71.7	70.7	82.7	85.4	85.4	87.0	87.0	43.1	56.7	54.6	51.5	53.0
	Employment/population ratios	59.1	64.1	64.2	65.7	63.7	75.2	82.0	82.4	84.6	82.9	40.2	54.3	52.4	49.8	50.9
Finland	Unemployment rates	30.7	18.4	16.8	16.2	18.8	12.5	6.6	5.8	5.4	6.1	17.5	6.6	6.0	5.3	5.5
	Labour force participation rates	41.1	50.8	53.7	53.7	51.2	84.0	85.3	85.6	85.9	85.6	38.9	58.1	58.3	59.0	59.8
	Employment/population ratios	28.5	41.4	44.7	45.0	41.6	73.5	79.7	80.7	81.3	80.4	32.1	54.3	54.8	55.8	56.5
France[a]	Unemployment rates	31.7	22.9	19.6	18.0	21.5	13.1	8.5	7.7	7.1	8.2	6.6	5.6	4.9	4.4	6.0
	Labour force participation rates	27.6	33.0	33.8	34.1	35.8	76.7	81.7	82.4	83.2	83.7	30.1	38.0	38.0	37.7	39.1
	Employment/population ratios	18.8	25.4	27.2	28.0	28.1	66.7	74.7	76.1	77.3	76.8	28.1	35.9	36.2	36.0	36.7
Germany	Unemployment rates	8.3	12.6	11.1	10.0	9.8	10.1	9.5	8.1	7.2	6.9	13.5	13.0	11.2	8.9	8.0
	Labour force participation rates	53.0	47.6	49.0	49.5	49.2	72.6	80.3	80.6	80.5	81.0	28.3	46.3	48.9	50.6	52.9
	Employment/population ratios	48.6	41.6	43.5	44.5	44.4	65.3	72.6	74.0	74.7	75.4	24.5	40.3	43.4	46.0	48.6
Greece	Unemployment rates	36.9	34.7	32.1	28.9	33.9	10.7	12.5	12.0	10.9	12.4	2.6	5.0	4.3	3.9	5.5
	Labour force participation rates	32.6	28.7	27.6	26.1	27.4	53.9	69.1	69.1	69.4	71.0	23.0	28.0	28.2	28.6	29.3
	Employment/population ratios	20.6	18.7	18.7	18.5	18.1	48.1	60.5	60.8	61.9	62.2	22.4	26.6	26.9	27.5	27.7
Hungary	Unemployment rates	16.5	19.8	18.6	20.9	24.2	8.1	7.2	7.2	7.4	9.0	7.2	3.9	3.9	5.1	6.2
	Labour force participation rates	35.3	23.4	21.8	21.3	21.5	71.5	72.9	73.2	73.3	73.6	10.2	28.2	27.3	27.0	28.8
	Employment/population ratios	29.5	18.8	17.8	16.8	16.3	65.7	67.6	67.9	67.9	66.9	9.4	27.1	26.2	25.7	27.0

Table C. **Employment/population ratios, activity and unemployment rates by selected age groups** *(cont.)*

Women (percentages)

		15 to 24					25 to 54					55 to 64				
		1994	2006	2007	2008	2009	1994	2006	2007	2008	2009	1994	2006	2007	2008	2009
Iceland[b]	Unemployment rates	10.1	7.5	6.3	7.5	12.0	5.0	2.1	1.6	1.7	4.9	3.8	1.7	0.9	0.6	2.2
	Labour force participation rates	59.1	81.7	80.1	79.9	76.2	86.3	85.6	85.4	84.4	84.7	80.5	81.7	80.7	78.1	78.1
	Employment/population ratios	53.1	75.6	75.0	73.9	67.0	82.0	83.8	84.1	82.9	80.6	77.4	80.3	80.0	77.6	76.4
Ireland	Unemployment rates	22.5	10.0	9.5	9.7	19.1	13.4	3.5	3.6	3.6	6.7	8.1	2.2	1.9	2.4	3.1
	Labour force participation rates	39.6	50.0	52.0	50.4	47.5	53.6	70.5	72.2	71.8	71.9	21.5	40.7	40.7	42.4	42.7
	Employment/population ratios	30.6	45.0	47.1	45.5	38.5	46.5	68.0	69.6	69.3	67.1	19.7	39.8	40.0	41.4	41.4
Italy	Unemployment rates	36.5	25.3	23.3	24.7	28.7	11.8	7.8	7.1	7.7	8.5	3.4	2.9	2.1	2.9	2.8
	Labour force participation rates	34.4	26.9	25.5	25.7	23.9	52.6	64.3	64.1	65.2	64.5	14.2	22.5	23.5	24.7	26.1
	Employment/population ratios	21.8	20.1	19.5	19.4	17.0	46.3	59.3	59.6	60.2	59.1	13.7	21.9	23.0	24.0	25.4
Japan	Unemployment rates	5.3	7.2	7.1	6.6	8.1	2.8	3.9	3.9	4.0	4.9	1.9	2.8	2.4	2.6	3.4
	Labour force participation rates	47.1	45.3	44.7	44.7	44.8	65.3	69.3	70.1	70.3	71.1	48.1	51.5	52.5	53.1	53.5
	Employment/population ratios	44.6	42.0	41.5	41.8	41.2	63.4	66.6	67.4	67.5	67.6	47.2	50.1	51.2	51.7	51.7
Korea	Unemployment rates	6.0	9.0	7.1	8.0	8.5	1.0	2.5	2.4	2.4	2.8	0.2	1.2	1.4	1.1	1.7
	Labour force participation rates	41.8	35.5	32.7	31.1	30.0	54.8	61.5	62.0	62.3	61.5	49.5	47.0	47.6	47.9	47.5
	Employment/population ratios	39.3	32.3	30.4	28.6	27.4	54.2	60.0	60.5	60.8	59.8	49.4	46.4	46.9	47.4	46.7
Luxembourg	Unemployment rates	7.2	15.2	17.5	24.1	17.8	3.9	5.8	4.0	4.6	5.2	1.2	2.5	1.7	3.0	4.0
	Labour force participation rates	45.0	25.0	22.3	27.1	29.5	55.7	73.8	74.7	72.9	75.3	13.4	28.5	29.1	30.3	30.6
	Employment/population ratios	41.8	21.2	18.4	20.6	24.2	53.5	69.5	71.7	69.5	71.4	13.2	27.8	28.6	29.3	29.4
Mexico	Unemployment rates	8.3	7.4	7.5	8.4	10.6	3.5	2.6	3.1	3.0	3.8	1.6	1.3	0.6	1.1	1.5
	Labour force participation rates	35.8	34.3	34.1	34.4	32.2	41.3	51.3	52.6	53.2	53.2	25.8	32.2	32.9	34.6	33.3
	Employment/population ratios	32.8	31.8	31.5	31.5	28.8	39.8	50.0	51.0	51.6	51.1	25.4	31.8	32.7	34.3	32.8
Netherlands	Unemployment rates	9.4	7.3	6.7	5.5	6.7	7.8	4.1	3.4	2.6	3.3	5.2	4.1	3.7	3.4	3.6
	Labour force participation rates	60.7	69.6	72.6	72.7	73.2	64.5	78.9	80.3	81.6	82.3	18.5	37.2	39.8	42.5	45.2
	Employment/population ratios	55.0	64.5	67.7	68.7	68.3	59.4	75.7	77.6	79.5	79.6	17.5	35.6	38.3	41.1	43.6
New Zealand	Unemployment rates	14.7	10.4	10.1	10.9	17.2	6.1	3.0	3.0	3.2	4.4	3.6	2.1	1.4	1.7	2.5
	Labour force participation rates	62.1	61.7	62.2	60.4	59.4	70.8	76.4	76.6	77.4	77.5	36.6	62.3	64.0	64.8	66.6
	Employment/population ratios	52.9	55.3	55.9	53.8	49.2	66.5	74.1	74.3	75.0	74.2	35.3	61.0	63.1	63.7	65.0
Norway[b]	Unemployment rates	12.1	8.7	6.6	6.8	8.0	3.8	2.8	2.0	1.8	2.0	1.9	1.0	0.8	0.9	0.6
	Labour force participation rates	53.0	58.1	60.3	62.5	59.2	79.4	83.4	84.0	85.6	85.2	55.4	62.2	64.6	64.9	65.0
	Employment/population ratios	46.6	53.0	56.3	58.3	54.4	76.4	81.0	82.3	84.0	83.5	54.3	61.6	64.0	64.3	64.6
Poland	Unemployment rates	34.7	31.6	23.8	19.9	21.2	14.5	13.4	9.1	6.8	7.6	6.4	6.2	5.7	4.4	5.5
	Labour force participation rates	37.9	30.7	29.3	29.6	29.4	78.6	75.4	75.6	76.3	77.5	28.7	20.3	20.6	21.6	23.2
	Employment/population ratios	24.8	21.0	22.4	23.7	23.2	67.2	65.3	68.8	71.0	71.6	26.8	19.0	19.4	20.7	21.9
Portugal	Unemployment rates	16.3	18.4	20.3	20.2	21.6	7.2	9.0	9.6	8.6	10.1	2.4	5.2	5.8	5.8	7.0
	Labour force participation rates	42.6	38.7	38.4	38.6	37.5	74.4	82.7	82.8	82.9	83.4	34.2	45.1	46.7	46.6	45.9
	Employment/population ratios	35.7	31.6	30.6	30.8	29.4	69.0	75.3	74.9	75.8	74.9	33.4	42.8	44.0	43.9	42.7

Table C. **Employment/population ratios, activity and unemployment rates by selected age groups** *(cont.)*

Women (percentages)

		15 to 24					25 to 54					55 to 64				
		1994	2006	2007	2008	2009	1994	2006	2007	2008	2009	1994	2006	2007	2008	2009
Slovak Republic	Unemployment rates	26.5	27.0	19.9	19.9	26.5	11.6	13.5	11.9	10.3	11.8	12.3	9.4	9.1	8.5	10.0
	Labour force participation rates	41.8	30.6	30.1	26.8	25.4	81.1	81.2	80.5	82.2	80.8	9.2	21.0	23.3	26.5	29.1
	Employment/population ratios	30.7	22.3	24.1	21.4	18.6	71.7	70.2	71.0	73.7	71.2	8.0	19.0	21.2	24.2	26.2
Spain[b]	Unemployment rates	50.1	21.6	21.9	25.8	36.4	28.6	10.5	9.7	11.8	16.9	9.9	7.4	7.7	8.9	13.3
	Labour force participation rates	43.7	48.1	47.4	48.1	45.7	54.6	71.2	72.7	74.7	76.7	19.4	31.0	32.5	34.2	37.2
	Employment/population ratios	21.8	37.7	37.0	35.7	29.1	39.0	63.7	65.6	65.9	63.8	17.5	28.7	30.0	31.1	32.3
Sweden[b]	Unemployment rates	19.9	21.5	19.5	19.6	23.7	6.8	5.5	4.7	4.7	6.0	5.2	3.8	3.5	3.4	4.6
	Labour force participation rates	53.4	56.8	57.8	57.1	50.8	86.9	86.2	87.1	87.5	87.1	62.6	69.8	69.6	69.3	70.0
	Employment/population ratios	42.7	44.6	46.5	45.9	38.8	81.1	81.5	83.0	83.5	81.9	59.3	67.1	67.2	66.9	66.8
Switzerland	Unemployment rates	6.1	7.5	7.4	7.4	8.7	4.2	4.5	4.1	3.6	4.1	3.2	3.3	3.8	2.7	2.3
	Labour force participation rates	64.8	67.0	64.5	66.1	68.6	74.1	81.2	81.9	83.6	84.1	47.2	58.6	60.3	61.6	61.2
	Employment/population ratios	60.8	62.0	59.7	61.2	62.7	70.9	77.6	78.5	80.6	80.6	45.7	56.6	58.1	60.0	59.8
Turkey	Unemployment rates	13.4	20.7	20.8	21.2	25.0	6.0	8.9	8.8	9.6	12.5	0.7	0.9	1.1	1.3	1.6
	Labour force participation rates	35.8	24.3	24.4	25.1	25.8	33.1	28.0	28.0	29.3	31.6	24.8	14.9	14.8	15.0	16.3
	Employment/population ratios	31.0	19.3	19.3	19.8	19.3	31.1	25.5	25.6	26.5	27.6	24.6	14.8	14.6	14.8	16.0
United Kingdom[b]	Unemployment rates	12.6	11.8	12.7	12.0	15.6	6.4	3.9	3.7	3.7	5.2	5.3	2.4	2.2	2.0	2.8
	Labour force participation rates	65.1	64.1	62.5	62.6	60.9	74.1	77.9	77.6	78.3	78.5	40.7	50.2	50.1	50.0	50.8
	Employment/population ratios	56.9	56.5	54.6	55.1	51.4	69.3	74.9	74.7	75.4	74.4	38.5	49.0	49.0	49.0	49.3
United States[b]	Unemployment rates	11.6	9.7	9.4	11.2	14.9	5.0	3.9	3.8	4.6	7.2	3.9	2.9	3.0	3.7	6.0
	Labour force participation rates	62.5	57.9	57.2	56.5	55.2	75.3	75.5	75.4	75.8	75.6	48.9	58.2	58.3	59.1	60.0
	Employment/population ratios	55.3	52.3	51.8	50.2	47.0	71.5	72.5	72.5	72.3	70.2	47.0	56.5	56.6	57.0	56.4
OECD (weighted average)	Unemployment rates	14.3	12.4	11.7	12.2	14.8	7.5	5.8	5.3	5.5	6.9	4.6	4.0	3.7	3.8	5.0
	Labour force participation rates	47.3	44.8	44.5	44.5	44.1	66.1	69.7	70.0	70.6	70.2	35.6	44.6	45.4	46.1	47.5
	Employment/population ratios	40.5	39.2	39.3	39.1	37.6	61.2	65.6	66.3	66.7	65.3	33.9	42.8	43.7	44.4	45.1
Estonia	Unemployment rates	..	14.7	7.1	11.3	22.0	..	5.4	4.3	4.9	10.0	..	2.2	0.9	3.2	7.5
	Labour force participation rates	..	30.6	32.3	37.5	34.7	..	85.7	83.7	83.6	83.9	..	60.5	61.0	62.3	66.1
	Employment/population ratios	..	26.1	30.0	33.2	27.0	..	81.1	80.1	79.5	75.5	..	59.2	60.5	60.3	61.2
Israel[c]	Unemployment rates	19.1	19.1	17.0	13.4	..	8.4	7.5	6.8	5.7	..	4.9	6.0	4.6	4.3	..
	Labour force participation rates	34.2	34.7	34.1	33.3	..	63.8	71.0	72.0	72.4	..	32.3	48.3	50.3	51.5	..
	Employment/population ratios	27.7	28.1	28.3	28.8	..	58.4	65.7	67.1	68.3	..	30.8	45.4	48.0	49.3	..
Russian Federation	Unemployment rates	17.5	17.2	14.6	15.0	..	6.5	5.7	4.9	5.0	..	5.8	3.5	2.6	3.4	..
	Labour force participation rates	..	36.0	37.1	40.0	..	..	86.3	86.4	85.5	..	..	38.3	41.0	39.6	..
	Employment/population ratios	..	29.8	31.7	34.0	..	..	81.4	82.2	81.2	..	..	36.9	39.9	38.3	..
Slovenia	Unemployment rates	..	16.8	11.2	11.3	13.4	..	6.6	5.6	4.2	5.4	..	2.2	3.8	4.8	3.2
	Labour force participation rates	..	36.4	35.4	37.4	35.8	..	87.0	87.3	88.5	87.9	..	21.4	23.1	22.2	25.6
	Employment/population ratios	..	30.3	31.4	33.2	31.0	..	81.2	82.4	84.8	83.2	..	21.0	22.2	21.1	24.8

a) Data for 2009 are preliminary estimates.

b) Age group 15-24 refers to 16-24. 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/10.1787/888932303537

Table D. **Employment/population ratios, activity and unemployment rates by educational attainment, 2008**

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	5.2	2.6	2.1	5.3	2.3	2.1	5.0	3.2	2.2
	Labour force participation rates	69.0	84.7	87.0	80.7	90.9	93.0	59.8	75.8	82.1
	Employment/population ratios	61.5	80.9	83.1	76.3	88.6	90.7	49.8	69.8	76.8
Austria	Unemployment rates	6.3	2.9	1.7	6.3	2.8	1.6	6.4	3.0	2.0
	Labour force participation rates	60.9	80.4	87.9	71.9	85.8	91.1	54.9	74.6	83.9
	Employment/population ratios	57.0	78.1	86.4	67.4	83.4	89.6	51.4	72.3	82.2
Belgium	Unemployment rates	10.8	5.7	3.2	10.0	4.5	3.2	12.2	7.3	3.2
	Labour force participation rates	55.4	79.3	87.5	67.4	85.8	91.1	43.4	72.1	84.2
	Employment/population ratios	49.4	74.7	84.7	60.6	81.9	88.2	38.1	66.8	81.5
Canada	Unemployment rates	9.1	5.5	4.1	9.5	5.5	4.2	8.5	5.3	4.1
	Labour force participation rates	63.4	80.9	86.1	73.6	86.6	90.2	51.1	74.3	82.7
	Employment/population ratios	57.7	76.5	82.6	66.6	81.8	86.4	47.0	70.4	79.4
Chile	Unemployment rates	5.2	6.6	5.5	4.3	5.9	5.1	7.2	7.6	5.9
	Labour force participation rates	62.1	75.4	84.3	87.8	94.2	92.3	38.5	57.5	75.9
	Employment/population ratios	58.9	70.4	79.7	84.0	88.6	87.5	35.7	53.2	71.4
Czech Republic	Unemployment rates	17.3	3.3	1.5	17.2	2.4	1.5	17.3	4.7	1.6
	Labour force participation rates	56.3	79.2	86.4	69.4	88.0	93.6	50.0	69.9	78.5
	Employment/population ratios	46.5	76.6	85.1	57.4	85.9	92.2	41.3	66.6	77.2
Denmark	Unemployment rates	3.5	2.2	2.3	3.6	1.8	2.3	3.4	2.8	2.2
	Labour force participation rates	69.4	85.1	91.3	77.7	87.9	93.6	61.8	81.7	89.3
	Employment/population ratios	66.9	83.2	89.2	74.9	86.3	91.4	59.7	79.3	87.4
Finland	Unemployment rates	8.1	5.4	3.3	7.4	4.9	2.8	9.0	6.2	3.6
	Labour force participation rates	64.5	81.7	88.5	68.6	84.5	91.4	59.1	78.4	86.4
	Employment/population ratios	59.3	77.3	85.6	63.5	80.4	88.8	53.7	73.5	83.3
France	Unemployment rates	9.8	5.6	4.0	9.0	4.7	3.7	10.7	6.6	4.3
	Labour force participation rates	64.4	80.4	87.8	73.5	84.3	91.5	56.3	76.0	84.7
	Employment/population ratios	58.1	75.9	84.3	66.9	80.3	88.0	50.3	71.0	81.1
Germany	Unemployment rates	16.5	7.2	3.3	18.1	7.2	2.9	15.0	7.2	3.9
	Labour force participation rates	66.2	81.2	88.8	81.0	87.2	92.1	56.1	75.3	84.3
	Employment/population ratios	55.3	75.3	85.8	66.3	81.0	89.4	47.7	69.8	81.1
Greece	Unemployment rates	6.8	7.2	5.7	4.5	4.1	4.2	11.5	11.3	7.5
	Labour force participation rates	64.7	75.2	87.6	83.8	89.5	91.0	44.4	62.3	84.1
	Employment/population ratios	60.3	69.8	82.6	80.0	85.8	87.2	39.3	55.3	77.8
Hungary	Unemployment rates	17.3	6.3	2.3	18.3	5.9	2.0	16.4	6.9	2.5
	Labour force participation rates	46.8	73.3	81.8	58.1	79.7	86.9	39.1	66.1	77.9
	Employment/population ratios	38.7	68.7	79.9	47.5	75.0	85.1	32.7	61.5	75.9

Table D. **Employment/population ratios, activity and unemployment rates by educational attainment, 2008** *(cont.)*

Persons aged 25-64 (percentages)

		Both sexes			Men			Women		
		Less than upper secondary education	Upper secondary education	Tertiary education	Less than upper secondary education	Upper secondary education	Tertiary education	Less than upper secondary education	Upper secondary education	Tertiary education
Iceland	Unemployment rates	2.5	a	a	a	a	a	a	a	a
	Labour force participation rates	85.3	87.6	92.5	92.3	93.3	96.1	78.5	78.9	89.3
	Employment/population ratios	83.1	86.3	91.0	89.4	91.6	94.7	77.1	78.2	87.8
Ireland	Unemployment rates	8.2	4.8	3.0	9.5	5.5	3.3	5.5	3.8	2.7
	Labour force participation rates	61.9	79.3	87.8	76.9	91.7	93.4	43.1	67.2	83.1
	Employment/population ratios	56.8	75.5	85.2	69.6	86.7	90.4	40.8	64.6	80.8
Italy	Unemployment rates	7.4	4.6	4.3	6.0	3.4	3.1	10.4	6.1	5.3
	Labour force participation rates	56.7	77.9	84.3	75.2	86.9	89.3	37.5	68.8	80.1
	Employment/population ratios	52.5	74.3	80.7	70.7	84.0	86.5	33.6	64.5	75.9
Japan	Unemployment rates	b	4.4	3.1	b	4.7	2.8	b	4.0	3.5
	Labour force participation rates	b	77.8	82.3	b	91.9	96.0	b	64.2	67.9
	Employment/population ratios	b	74.4	79.7	b	87.6	93.3	b	61.7	65.6
Korea	Unemployment rates	2.5	3.3	2.6	3.5	3.9	2.7	1.5	2.5	2.4
	Labour force participation rates	67.8	73.1	79.2	81.1	87.6	91.7	59.3	58.2	62.6
	Employment/population ratios	66.1	70.7	77.1	78.2	84.2	89.1	58.4	56.8	61.1
Luxembourg	Unemployment rates	4.8	4.9	2.2	4.2	5.0	1.6	5.7	4.9	3.0
	Labour force participation rates	64.2	74.4	86.7	78.5	82.4	90.4	52.5	65.4	82.4
	Employment/population ratios	61.1	70.7	84.7	75.2	78.3	88.9	49.5	62.2	79.9
Mexico	Unemployment rates	2.4	2.9	3.3	2.5	2.6	3.0	2.3	3.3	3.8
	Labour force participation rates	65.2	75.1	85.7	92.1	94.6	93.9	43.1	59.2	76.0
	Employment/population ratios	63.6	72.9	82.8	89.8	92.1	91.1	42.1	57.2	73.1
Netherlands	Unemployment rates	3.4	2.1	1.6	2.8	1.8	1.6	4.2	2.5	1.6
	Labour force participation rates	65.9	83.2	89.7	80.6	88.8	91.9	53.4	77.6	87.2
	Employment/population ratios	63.7	81.5	88.3	78.4	87.2	90.5	51.2	75.7	85.8
New Zealand	Unemployment rates	3.7	2.6	2.4	3.9	2.2	2.2	3.4	3.1	2.5
	Labour force participation rates	73.2	85.5	86.6	82.2	92.3	93.4	65.4	76.5	81.4
	Employment/population ratios	70.5	83.3	84.5	79.0	90.3	91.3	63.2	74.1	79.4
Norway	Unemployment rates	3.8	1.3	1.3	4.2	1.2	1.4	a	1.4	a
	Labour force participation rates	68.6	85.5	91.8	75.7	88.8	93.3	61.5	81.5	90.3
	Employment/population ratios	66.0	84.4	90.6	72.5	87.7	92.0	59.5	80.3	89.3
Poland	Unemployment rates	11.5	6.3	3.1	11.2	5.4	2.9	11.9	7.6	3.4
	Labour force participation rates	48.6	71.6	87.9	62.0	80.5	91.8	36.8	62.1	85.1
	Employment/population ratios	43.0	67.0	85.1	55.0	76.1	89.2	32.4	57.4	82.2
Portugal	Unemployment rates	7.6	6.6	5.8	6.7	5.5	4.3	8.8	7.8	6.8
	Labour force participation rates	77.6	86.3	92.0	85.5	88.7	94.4	69.4	83.8	90.5
	Employment/population ratios	71.7	80.6	86.7	79.8	83.8	90.4	63.3	77.3	84.3

Table D. **Employment/population ratios, activity and unemployment rates by educational attainment, 2008** *(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
Slovak Republic	Unemployment rates	36.3	7.4	3.1	37.6	6.1	2.5	35.2	9.1	3.7
	Labour force participation rates	50.7	80.8	88.2	62.6	88.3	94.0	44.0	72.8	82.8
	Employment/population ratios	32.3	74.8	85.5	39.1	82.9	91.7	28.5	66.2	79.7
Spain	Unemployment rates	13.2	9.3	5.8	11.5	7.7	4.8	16.2	11.4	7.0
	Labour force participation rates	68.1	82.9	88.8	83.7	90.5	92.4	51.8	75.1	85.3
	Employment/population ratios	59.1	75.2	83.6	74.1	83.5	88.0	43.4	66.6	79.4
Sweden	Unemployment rates	7.1	4.1	3.3	6.0	3.8	3.4	8.9	4.5	3.1
	Labour force participation rates	71.3	86.8	92.2	78.9	90.1	93.4	61.4	83.0	91.2
	Employment/population ratios	66.2	83.3	89.2	74.1	86.8	90.2	56.0	79.2	88.4
Switzerland	Unemployment rates	6.0	2.9	1.8	4.9	2.6	1.5	6.7	3.1	2.3
	Labour force participation rates	71.9	84.4	92.1	82.8	91.2	95.3	65.6	78.7	87.0
	Employment/population ratios	67.6	82.0	90.5	78.7	88.9	93.9	61.2	76.2	85.0
Turkey	Unemployment rates	9.6	9.3	7.3	10.0	7.6	6.3	8.1	16.0	9.3
	Labour force participation rates	51.7	67.0	80.5	80.9	87.4	86.9	22.0	34.3	70.4
	Employment/population ratios	46.7	60.8	74.6	72.8	80.7	81.4	20.2	28.8	63.9
United Kingdom	Unemployment rates	6.2	3.7	2.0	6.7	3.7	2.0	5.5	3.7	2.0
	Labour force participation rates	69.9	85.3	89.6	78.4	89.3	91.8	61.4	80.4	87.3
	Employment/population ratios	65.6	82.1	87.8	73.2	85.9	89.9	58.0	77.4	85.6
United States	Unemployment rates	10.1	5.3	2.4	10.9	5.6	2.4	8.5	4.9	2.5
	Labour force participation rates	62.5	76.9	85.2	74.7	83.5	90.2	47.9	70.3	80.7
	Employment/population ratios	56.2	72.8	83.1	66.6	78.8	88.1	43.8	66.8	78.7
OECD[c]	Unemployment rates	8.7	4.9	3.2	8.8	4.3	2.9	9.5	5.7	3.7
	Labour force participation rates	64.1	79.9	87.4	77.3	88.1	92.2	52.3	71.0	82.4
	Employment/population ratios	58.7	76.1	84.5	70.9	84.4	89.5	47.6	67.1	79.4
Estonia	Unemployment rates	9.7	5.2	2.8	9.6	5.0	2.8	9.8	5.5	2.8
	Labour force participation rates	64.6	84.1	88.3	73.2	88.6	95.1	54.4	79.0	84.4
	Employment/population ratios	58.3	79.7	85.8	66.2	84.2	92.5	49.0	74.6	82.0
Israel[d]	Unemployment rates	9.8	5.8	3.7	9.5	4.6	3.7	10.6	7.3	3.7
	Labour force participation rates	49.7	74.3	86.0	67.5	80.2	90.0	29.6	67.9	82.6
	Employment/population ratios	44.8	70.0	82.8	61.1	76.5	86.6	26.5	63.0	79.6
Slovenia	Unemployment rates	5.9	3.5	3.1	5.5	3.0	2.8	6.3	4.2	3.4
	Labour force participation rates	58.4	79.2	90.7	67.1	83.3	91.2	51.2	74.1	90.3
	Employment/population ratios	55.0	76.4	87.9	63.4	80.8	88.7	47.9	71.0	87.3

a) Below reliability thresholds.

b) Included in upper secondary education.

c) Unweighted average of all OECD countries excluding Canada.

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.

Source: OECD (2010), *Education at a Glance – OECD Indicators* , OECD Publishing, Paris, September (forthcoming).

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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	2006	2007	2008	2009	1994	2006	2007	2008	2009
Australia[b]	..	12.2	12.3	12.3	13.2	..	38.2	37.7	37.7	38.3
Austria	..	5.1	5.6	6.3	6.7	..	31.0	31.4	31.3	32.2
Belgium	4.4	6.2	6.4	6.3	6.6	30.0	33.8	32.2	32.5	31.8
Canada	10.8	10.9	11.0	11.3	11.9	28.8	26.2	26.1	26.4	27.0
Chile	..	5.0	5.2	6.0	..	..	13.3	13.9	15.2	..
Czech Republic	2.1	1.6	1.7	1.7	2.1	5.6	5.6	5.9	5.8	6.2
Denmark	9.8	12.0	12.0	12.9	13.6	26.2	24.6	23.4	23.1	24.8
Finland	6.5	8.1	8.2	8.2	8.7	11.5	14.9	15.5	15.1	15.9
France	5.3	5.0	4.9	5.0	5.1	24.5	22.6	22.7	21.9	22.4
Germany	3.0	7.6	7.8	7.9	8.0	28.0	38.8	38.9	38.3	38.1
Greece	5.0	4.0	4.1	4.2	4.5	13.1	12.8	13.3	13.6	14.4
Hungary	..	1.5	1.6	2.0	2.3	..	4.2	4.2	4.3	5.0
Iceland	9.2	7.6	8.0	8.0	10.0	37.9	26.0	25.4	23.6	25.8
Ireland	6.4	7.2	7.4	8.1	10.7	25.5	34.5	35.2	35.6	37.4
Italy	4.2	5.5	5.5	6.1	5.9	20.6	29.3	29.8	30.6	30.5
Japan[c]	..	8.5	9.2	9.9	10.5	..	31.3	32.6	33.2	33.8
Korea[c]	2.9	6.3	6.3	6.5	6.9	6.8	12.3	12.5	13.2	14.2
Luxembourg	1.9	1.5	1.4	1.7	5.4	25.7	27.2	27.6	28.9	31.1
Mexico	6.4	6.7	7.0	7.2	7.5	10.0	10.3	10.6	10.4	10.4
Netherlands	11.3	15.5	16.1	16.2	17.0	54.5	59.8	59.9	59.8	59.9
New Zealand	9.1	10.0	11.1	11.3	11.9	36.0	34.3	34.6	34.6	34.5
Norway	7.7	10.6	10.5	10.9	11.3	37.7	32.9	31.6	30.8	30.4
Poland	..	6.5	6.0	5.3	5.0	..	16.3	15.0	14.1	13.1
Portugal	4.9	5.9	6.2	5.8	5.9	15.2	13.4	14.2	14.3	13.8
Slovak Republic	1.3	1.3	1.2	1.5	2.2	4.4	4.1	4.4	4.1	4.1
Spain	2.4	3.8	3.6	3.8	4.4	14.3	21.0	20.7	21.0	21.4
Sweden	7.1	8.4	9.5	9.6	10.0	24.9	19.0	19.7	19.6	19.8
Switzerland[b]	6.8	8.8	8.7	9.0	9.2	44.9	45.7	45.6	45.9	46.1
Turkey	4.9	4.2	4.4	4.8	6.4	18.5	17.3	18.6	19.0	23.5
United Kingdom	7.0	9.8	9.8	10.3	10.9	41.2	38.6	38.3	37.8	38.8
United States[d]	8.5	7.8	7.6	8.0	9.2	20.4	17.8	17.9	17.8	19.2
OECD (weighted average)	5.1	7.4	7.5	7.8	8.4	19.7	25.1	25.3	25.3	26.1
Estonia	..	3.3	3.6	3.6	5.5	..	10.1	10.1	8.9	11.1
Israel[e]	..	7.1	7.1	..	..	..	24.5	23.8	..	..
Russian Federation[c]	2.1	2.4	2.4	2.4	..	4.5	4.0	3.9	4.0	..
Slovenia	..	6.1	6.3	5.7	6.6	..	9.8	9.7	9.6	10.4

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	2006	2007	2008	2009	1994	2006	2007	2008	2009
Australia[b]	..	23.9	23.7	23.8	24.7	..	72.0	71.5	71.7	70.9
Austria	..	16.8	17.3	17.7	18.5	..	83.6	82.1	80.7	80.6
Belgium	14.6	18.7	18.1	18.3	18.2	81.8	81.8	80.7	81.3	80.6
Canada	18.9	18.1	18.2	18.4	19.1	68.9	68.1	68.0	67.8	67.5
Chile	..	7.7	8.0	9.1	..	..	55.6	56.9	56.4	..
Czech Republic	3.6	3.3	3.5	3.5	3.9	67.7	72.8	72.3	72.1	68.7
Denmark	17.3	17.9	17.3	17.7	18.9	69.4	64.3	63.1	61.2	62.3
Finland	8.9	11.4	11.7	11.5	12.2	62.8	62.9	63.7	63.0	63.6
France	13.8	13.2	13.3	12.9	13.3	78.6	79.8	80.4	79.7	79.8
Germany	13.5	21.8	22.0	21.8	21.9	87.1	81.0	80.8	80.4	80.4
Greece	7.8	7.4	7.7	7.9	8.4	59.1	67.0	67.6	67.4	67.7
Hungary	..	2.7	2.8	3.1	3.6	..	70.5	68.6	64.7	65.0
Iceland	22.6	16.0	15.9	15.1	17.5	78.3	74.2	72.7	71.2	70.0
Ireland	13.5	19.5	20.0	20.8	23.7	70.3	79.6	79.9	79.0	76.8
Italy	10.0	15.0	15.2	15.9	15.8	72.6	77.7	78.1	77.0	77.6
Japan[c]	..	18.0	18.9	19.6	20.3	..	72.4	71.5	70.4	69.9
Korea[c]	4.5	8.8	8.9	9.3	9.9	61.3	58.5	58.9	59.0	59.3
Luxembourg	10.7	12.7	13.1	13.4	16.4	88.6	93.1	93.9	92.6	81.2
Mexico	16.4	17.0	17.6	17.6	17.9	61.0	60.7	60.1	59.2	58.2
Netherlands	28.9	35.4	35.9	36.1	36.7	76.8	75.9	75.5	75.6	75.0
New Zealand	21.0	21.2	22.0	22.2	22.5	76.0	74.8	73.0	72.8	71.9
Norway	21.5	21.1	20.4	20.3	20.4	80.6	73.5	72.9	71.7	70.8
Poland	..	10.8	10.1	9.3	8.7	..	67.0	67.0	68.1	68.4
Portugal	9.5	9.3	9.9	9.7	9.6	71.3	66.1	66.4	68.1	67.7
Slovak Republic	2.7	2.5	2.6	2.7	3.0	72.0	70.0	74.0	67.1	59.0
Spain	6.4	10.8	10.7	11.1	11.9	75.5	79.5	80.4	80.6	79.3
Sweden	15.8	13.4	14.4	14.4	14.6	76.8	67.3	65.0	64.6	64.2
Switzerland[b]	23.2	25.5	25.4	25.9	26.2	83.3	81.2	81.3	81.2	81.1
Turkey	8.8	7.6	8.1	8.5	11.1	61.0	58.5	59.6	58.7	58.4
United Kingdom	22.4	23.2	22.9	23.0	23.9	82.7	77.4	77.0	76.1	75.8
United States[d]	14.2	12.6	12.6	12.8	14.1	68.4	67.8	68.4	67.5	66.5
OECD (weighted average)	11.3	15.1	15.2	15.4	16.2	74.1	72.2	72.1	71.6	71.0
Estonia	..	6.7	6.8	6.2	8.4	..	75.5	73.7	70.9	68.1
Israel[e]	..	15.0	14.6	..	..	..	73.9	73.3	..	..
Russian Federation[c]	3.2	3.2	3.1	3.2	..	65.0	62.0	61.6	61.9	..
Slovenia	..	7.8	7.8	7.5	8.3	..	57.1	56.2	58.3	57.3

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) Data are based on actual hours worked.

d) Data are for wage and salary workers only.

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 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, OECD Publishing, Paris, available on Internet (*www.oecd.org/els/workingpapers*).

StatLink http://dx.doi.org/10.1787/888932303575

Table F. **Incidence of temporary employment**[a]

Percentages

	Temporary employees as a proportion of total employees									
	Youth (15-24)					Prime age (25-54)				
	1994	2006	2007	2008	2009	1994	2006	2007	2008	2009
Australia	..	4.5	..	..	..	..	5.4	..	..	..
Austria	..	35.2	34.9	34.9	35.6	..	4.4	4.3	4.5	4.5
Belgium	18.0	30.0	31.6	29.5	33.2	3.8	6.7	6.6	6.4	6.2
Canada	..	29.2	28.8	27.2	27.8	..	9.3	9.2	8.8	9.2
Czech Republic	14.7	18.9	17.4	15.6	18.8	2.8	5.9	5.6	5.1	5.3
Denmark	31.1	22.4	22.2	23.5	23.6	7.8	6.8	6.5	5.6	6.5
Finland	..	44.2	42.4	39.7	39.0	..	13.8	13.2	12.5	12.4
France	40.7	50.8	52.5	51.5	51.2	7.9	10.6	10.6	10.5	9.7
Germany	38.0	57.6	57.5	56.6	57.2	6.2	9.0	9.1	9.4	9.3
Greece	22.0	25.0	27.0	29.2	28.4	8.6	9.7	9.9	10.5	11.3
Hungary	..	16.9	19.1	20.0	21.4	..	6.0	6.5	7.1	7.8
Iceland	25.9	30.4	32.0	27.8	26.9	10.7	8.4	8.9	6.0	7.1
Ireland	17.9	10.9	19.2	22.0	25.0	7.3	1.6	4.7	5.9	6.2
Italy	16.7	40.9	42.3	43.3	44.4	6.0	11.2	11.4	11.5	10.7
Japan	15.2	26.8	26.4	26.0	25.5	8.3	11.0	10.9	10.6	10.8
Korea	..	30.2	28.8	27.9	29.4	..	21.0	19.9	17.8	17.4
Luxembourg	10.7	33.2	34.1	39.3	39.4	1.7	4.3	5.3	4.1	4.9
Mexico	..	..	..	..	..	..	..	..	..	..
Netherlands	26.5	43.6	45.1	45.2	46.5	7.3	11.4	12.9	13.0	13.0
New Zealand	..	..	..	..	..	..	..	..	..	..
Norway	..	28.7	27.3	25.5	32.4	..	8.0	7.4	6.7	6.8
Poland	..	67.3	65.7	62.8	62.0	..	22.9	24.0	22.7	22.5
Portugal	24.2	49.3	52.6	54.2	53.5	6.9	17.8	19.8	20.4	19.9
Slovak Republic	4.4	14.3	13.7	12.6	12.5	1.5	3.5	3.7	3.6	3.4
Spain	74.4	66.1	62.8	59.4	55.9	28.4	31.6	29.5	27.5	24.2
Sweden	..	58.4	57.3	53.8	53.4	..	12.8	13.0	11.6	11.1
Switzerland	..	51.4	50.3	50.6	52.0	..	6.5	6.4	6.7	6.6
Turkey	27.1	13.4	12.4	12.5	15.0	16.8	11.8	11.3	10.6	9.5
United Kingdom	11.8	12.8	13.3	12.0	11.9	5.3	4.3	4.2	3.9	4.3
United States[b]	9.9	8.1	..	..	..	4.1	3.5	..	..	..
OECD (weighted average)	20.7	25.1	25.2	24.7	24.5	8.1	9.9	10.0	9.7	9.4
Estonia	..	7.3	6.6	6.0	8.3	..	2.1	1.6	2.2	2.0
Russian Federation	..	24.8	23.4	24.5	..	..	11.2	11.2	12.7	..
Slovenia	..	64.2	68.3	69.8	66.6	..	12.0	12.9	11.6	11.3

Table F. **Incidence of temporary employment**[a] *(cont.)*

Percentages

	Temporary employees as a proportion of total employees									
	Women					Total				
	1994	2006	2007	2008	2009	1994	2006	2007	2008	2009
Australia	..	5.9	..	..	..	..	5.2	..	..	..
Austria	..	8.9	9.0	9.1	9.0	..	9.0	8.9	9.0	9.1
Belgium	7.5	10.9	10.8	10.2	10.2	5.1	8.7	8.7	8.3	8.2
Canada	..	13.8	13.5	12.7	12.9	..	13.0	12.9	12.3	12.5
Czech Republic	7.8	10.1	10.2	9.8	10.2	8.4	8.7	8.6	8.0	8.5
Denmark	12.9	10.0	10.0	9.1	9.6	12.0	8.9	8.7	8.4	8.9
Finland	..	20.0	19.4	18.8	18.4	..	16.4	16.0	15.1	14.6
France	12.4	14.9	15.5	15.4	15.0	11.0	14.1	14.4	14.2	13.5
Germany	11.0	14.1	14.5	14.6	14.6	10.4	14.5	14.6	14.7	14.5
Greece	10.5	13.0	13.1	13.7	14.1	10.3	10.7	10.9	11.5	12.1
Hungary	..	6.0	6.8	7.0	7.8	..	6.7	7.3	7.9	8.5
Iceland	11.8	12.8	13.6	9.9	10.5	12.7	11.7	12.4	9.5	9.7
Ireland	11.4	3.9	8.6	9.8	9.6	9.5	3.4	7.3	8.5	8.5
Italy	9.3	15.8	15.9	15.6	14.6	7.3	13.1	13.2	13.3	12.5
Japan	18.1	22.0	21.7	21.0	21.3	10.3	11.7	13.9	13.6	13.7
Korea	..	26.6	24.4	23.6	26.2	..	23.6	22.3	20.4	21.3
Luxembourg	4.4	6.6	7.6	6.6	8.4	2.9	6.1	6.8	6.2	7.2
Mexico	..	..	..	..	..	..	..	..	..	..
Netherlands	15.0	18.0	19.7	20.0	20.3	10.9	16.6	18.1	18.2	18.3
New Zealand	..	..	..	..	..	..	..	..	..	..
Norway	..	12.6	11.7	11.1	13.1	..	10.1	9.5	9.0	9.2
Poland	..	26.0	27.9	27.7	26.6	..	27.3	28.2	27.0	26.5
Portugal	10.5	21.7	23.0	24.2	23.2	9.4	20.6	22.4	22.8	22.0
Slovak Republic	2.6	5.2	5.3	4.8	4.1	2.9	5.1	5.1	4.7	4.4
Spain	37.9	36.7	33.1	31.4	27.3	33.7	34.0	31.7	29.3	25.4
Sweden	..	18.7	19.9	18.7	17.6	..	16.8	17.5	16.1	15.3
Switzerland	..	13.9	13.1	13.1	13.6	..	13.5	12.9	13.2	13.2
Turkey	18.5	12.1	11.4	11.6	11.4	20.0	12.4	11.9	11.2	10.7
United Kingdom	7.5	6.5	6.5	6.0	6.1	6.5	5.8	5.9	5.4	5.7
United States[b]	5.4	4.2	..	..	..	5.1	4.2	..	..	..
OECD (weighted average)	11.1	12.7	12.7	12.5	12.4	10.3	11.7	12.1	11.8	11.6
Estonia	..	2.2	1.6	1.4	2.1	..	2.7	2.1	2.4	2.5
Russian Federation	..	10.8	10.4	11.5	..	..	12.6	12.4	14.1	..
Slovenia	..	19.3	20.8	19.7	17.8	..	17.3	18.5	17.4	16.4

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 and 2005.

Source: OECD Online Employment Database: www.oecd.org/els/employment/database.

StatLink http://dx.doi.org/10.1787/888932303594

Table G. **Average annual hours actually worked per person in employment**[a]

	1979	1983	1994	2004	2005	2006	2007	2008	2009
Total employment									
Australia	1 831	1 786	1 794	1 732	1 726	1 719	1 713	1 718	1 690
Austria	..	..	..	1 663	1 652	1 644	1 630	1 631	1 621
Belgium	..	1 670	1 554	1 549	1 565	1 566	1 560	1 568	1 550
Canada	1 825	1 768	1 762	1 752	1 738	1 738	1 736	1 727	1 699
Czech Republic	..	..	2 043	1 986	2 002	1 997	1 985	1 992	1 942
Denmark[b]	1 636	1 638	1 548	1 579	1 579	1 586	1 571	1 570	1 563
Finland	1 869	1 823	1 775	1 723	1 716	1 709	1 706	1 704	1 652
France[b]	1 868	1 749	1 675	1 561	1 557	1 536	1 556	1 560	1 554
Germany	..	..	1 547	1 442	1 434	1 430	1 431	1 430	1 390
Western Germany	1 770	1 705	1 515	1 426	1 419	1 416	1 421	1 421	1 380
Greece	..	2 194	2 133	2 082	2 086	2 148	2 116	2 116	2 119
Hungary	..	2 112	2 032	1 994	1 994	1 989	1 986	1 986	1 989
Iceland[b]	1 875	1 860	1 813	1 810	1 794	1 795	1 807	1 807	1 716
Ireland	..	1 981	1 883	1 668	1 654	1 642	1 631	1 601	1 549
Italy	..	1 876	1 857	1 826	1 819	1 815	1 816	1 807	1 773
Japan	2 126	2 095	1 898	1 787	1 775	1 784	1 785	1 772	1 714
Korea	..	2 923	2 651	2 404	2 364	2 357	2 316	2 256	..
Luxembourg	..	1 778	1 709	1 586	1 570	1 580	1 515	1 555	1 601
Mexico	..	..	1 839	1 849	1 909	1 883	1 871	1 893	1 857
Netherlands	..	..	1 383	1 362	1 375	1 389	1 390	1 389	1 378
New Zealand	..	..	1 850	1 827	1 810	1 787	1 763	1 746	1 729
Norway	1 580	1 553	1 505	1 417	1 420	1 414	1 419	1 423	1 407
Poland	..	..	..	1 983	1 994	1 985	1 976	1 969	1 966
Portugal	..	..	1 838	1 763	1 752	1 757	1 727	1 745	1 719
Slovak Republic	..	..	1 852	1 733	1 768	1 755	1 753	1 769	1 693
Spain	1 930	1 825	1 733	1 690	1 668	1 656	1 636	1 647	1 654
Sweden	1 530	1 532	1 635	1 605	1 605	1 599	1 615	1 625	1 610
Switzerland[c]	..	..	1 725	1 673	1 667	1 652	1 643	1 640	..
Turkey	1 964	1 935	1 886	1 918	..	..	..	..	..
United Kingdom	1 819	1 717	1 740	1 672	1 676	1 671	1 673	1 652	1 646
United States	1 828	1 820	1 836	1 802	1 800	1 800	1 798	1 792	1 768
Estonia	..	..	..	1 996	2 010	2 001	1 999	1 969	..
Israel[d]	..	..	..	1 951	1 942	1 930	1 945	1 943	..
Russian Federation	..	..	..	1 994	1 990	1 999	2 000	1 997	..
Slovenia	..	..	..	..	1 698	1 669	1 655	1 687	..

Table G. **Average annual hours actually worked per person in employment**[a] *(cont.)*

	1979	1983	1994	2004	2005	2006	2007	2008	2009
Dependent employment									
Austria	..	..	..	1 532	1 488	1 480	1 487	1 483	1 436
Belgium	..	1 563	1 452	1 441	1 450	1 454	1 454	1 469	1 453
Canada	1 791	1 743	1 746	1 744	1 735	1 734	1 731	1 725	1 699
Czech Republic	..	..	1 974	1 900	1 923	1 922	1 914	1 923	1 879
Denmark[b]	1 600	1 614	1 524	1 544	1 548	1 556	1 547	1 549	1 547
Finland	..	..	1 670	1 622	1 605	1 600	1 594	1 610	1 555
France[b]	1 710	1 608	1 563	1 469	1 466	1 447	1 468	1 475	1 468
Germany	..	..	1 474	1 364	1 354	1 352	1 354	1 353	1 309
Western Germany	1 689	1 621	1 435	1 347	1 338	1 337	1 343	1 344	1 299
Greece	..	1 735	1 792	1 803	1 811	1 796	1 782	1 803	1 777
Hungary	..	..	..	1 807	1 803	1 799	1 778	1 786	1 749
Iceland[e]	..	..	1 774	1 823	1 816	1 813	1 822	1 812	1 717
Ireland	..	1 702	1 652	1 570	1 562	1 560	1 544	1 522	1 470
Japan[f]	..	..	1 910	1 816	1 802	1 811	1 808	1 792	1 733
Korea[f]	..	..	..	..	..	..	2 090	2 057	2 074
Luxembourg	..	1 637	1 598	1 535	1 524	1 555	1 513	1 544	1 559
Mexico	..	..	..	1 919	1 970	1 944	1 933	1 960	1 915
Netherlands[b]	1 591	1 530	1 388	1 309	1 301	1 300	1 297	1 301	1 288
New Zealand	..	..	1 772	1 787	1 775	1 760	1 744	1 724	1 709
Poland	..	..	..	1 957	1 970	1 958	1 953	1 940	1 938
Portugal	..	..	1 690	1 690	1 680	1 694	1 674	1 686	1 664
Spain	1 844	1 750	1 666	1 653	1 634	1 622	1 603	1 613	1 615
United Kingdom	1 757	1 659	1 700	1 652	1 658	1 652	1 660	1 638	..
United States	1 828	1 827	1 839	1 803	1 801	1 802	1 799	1 797	1 776
Russian Federation	..	..	..	2 011	2 014	2 023	2 021	2 016	..

a) The concept used is the total number of hours worked over the year divided by the average number of people in employment. The data are intended for comparisons of trends over time; they are unsuitable for comparisons of the level of average annual hours of work for a given year, because of differences in their sources. Part-time workers are covered as well as full-time workers.

b) Data for the year 2009 are preliminary estimates.

c) OECD estimates.

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 the years 2008 and 2009 are preliminary estimates.

f) Data refer to establishments with five or more *regular* employees and cover all employees in Korea.

Source and definition:

The series on annual hours actually worked per person in total employment presented in this table for all 30 OECD countries are consistent with the series retained for the calculation of productivity measures in the *OECD Productivity Database* (*www.oecd.org/statistics/productivity/compendium*). However, there may be some differences for some countries given that the main purpose of the latter database is to report data series on labour input (*i.e.* total hours worked) and also because the updating of databases occur at different moment of the year.

Hours actually worked per person in employment are according to national accounts concepts for 16 countries: Austria, Canada, Denmark, Finland, France, Germany, Greece, Hungary, Italy, Korea, Norway, the Slovak Republic, Spain, Sweden, Switzerland and Turkey. OECD estimates for Belgium, Ireland, Luxembourg, the Netherlands (for total employment only) and Portugal for annual hours worked based on the European Union Labour Force Survey. For the remaining countries, the sources and methodologies are the same as those presented in the previous edition of the *OECD Employment Outlook*, as are estimates reported for dependent employment for 23 countries. The table includes, for the first time, data for Estonia, Israel, the Russian Federation and Slovenia. The estimates are based on labour force surveys.

Country-specific notes can be found at: *www.oecd.org/els/employment/outlook* and data on the *OECD Online Employment Database* at: *www.oecd.org/els/employment/database*.

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Table H. **Incidence of long-term unemployment**[a, b]

As a percentage of total unemployment

	1994		2006		2007		2008		2009	
	6 months and over	12 months and over	6 months and over	12 months and over	6 months and over	12 months and over	6 months and over	12 months and over	6 months and over	12 months and over
Australia	52.6	36.1	30.8	18.1	27.1	15.4	26.7	14.9	29.9	14.7
Austria	31.8	18.4	44.2	27.3	44.2	26.8	42.3	24.2	37.5	20.3
Belgium	75.2	58.3	65.2	51.2	65.0	50.4	61.3	47.6	60.2	44.2
Canada	32.7	17.9	16.0	8.7	14.8	7.5	14.7	7.1	18.0	7.8
Chile	..	..	..	..	..	..	..	..	..	..
Czech Republic	41.9	22.3	75.0	55.2	71.6	53.4	69.4	50.2	54.9	31.2
Denmark	54.0	32.1	34.4	20.8	28.0	16.2	22.5	13.6	25.4	9.1
Finland	..	..	39.7	24.8	37.9	23.0	31.5	18.2	31.7	16.6
France	61.7	38.5	61.0	42.2	58.5	40.4	55.6	37.9	55.3	34.7
Germany	63.8	44.3	71.3	56.4	69.8	56.6	66.6	52.6	61.8	45.5
Greece	72.8	50.5	72.1	54.3	65.9	50.0	63.4	47.5	58.8	40.8
Hungary	62.6	41.3	68.3	46.1	69.0	47.5	69.1	47.6	66.7	42.6
Iceland[c, d]	(32.2)	(15.1)	(13.6)	(7.3)	(11.1)	(8.0)	(7.4)	(4.1)	(24.5)	(6.9)
Ireland	80.7	64.3	50.8	32.3	47.6	30.0	45.6	27.1	52.9	29.0
Italy	79.5	61.5	63.5	49.6	60.8	47.4	59.8	45.7	61.5	44.4
Japan	36.1	17.5	48.1	33.0	48.2	32.0	46.9	33.3	46.3	28.5
Korea	20.7	5.4	11.3	1.1	11.7	0.6	9.7	2.7	9.0	0.5
Luxembourg[d]	(54.7)	(29.6)	(50.1)	(29.5)	(49.4)	(28.7)	(49.0)	(32.4)	(48.7)	(23.1)
Mexico	..	..	6.2	2.5	5.4	2.7	4.2	1.7	6.4	1.9
Netherlands	77.5	49.4	60.1	43.0	55.8	39.4	50.0	34.8	43.4	24.8
New Zealand	50.7	32.9	20.8	7.8	17.1	6.1	14.8	4.4	23.2	6.3
Norway[c]	43.7	28.8	32.9	14.5	25.8	8.8	18.4	6.0	25.1	7.7
Poland	65.2	40.4	69.1	50.4	64.3	45.9	46.7	29.0	44.7	25.2
Portugal	57.2	43.4	67.8	50.2	65.0	47.1	63.7	47.4	63.7	44.2
Slovak Republic	63.9	42.6	84.3	73.1	82.3	70.8	78.6	66.0	66.8	50.9
Spain[c]	73.4	56.2	44.4	29.5	42.6	27.6	40.2	23.8	53.2	30.2
Sweden[c]	46.7	25.7	..	..	27.2	13.0	25.9	12.4	29.4	12.8
Switzerland	50.1	29.0	58.6	39.1	56.6	40.8	49.3	34.3	47.9	30.0
Turkey	68.9	45.9	51.2	35.7	46.3	30.3	42.6	26.9	44.9	25.3
United Kingdom[c]	63.4	45.4	39.6	22.3	39.9	23.8	40.2	24.1	44.8	24.6
United States[c]	20.3	12.2	17.6	10.0	17.6	10.0	19.7	10.6	31.5	16.3
OECD (weighted average)	52.6	35.5	45.3	31.8	41.8	29.0	38.2	25.5	40.1	23.5
Estonia	..	..	61.2	48.2	58.3	49.5	47.0	30.9	48.1	27.4
Israel[e]	..	..	44.2	32.6	41.4	30.9	..	..	..	..
Russian Federation	..	..	60.4	41.7	58.7	40.6	52.6	35.2	..	..
Slovenia	..	..	67.7	49.3	61.5	45.7	57.4	42.2	50.6	30.1

Table H. **Incidence of long-term unemployment**[a, b] *(cont.)*

As a percentage of male unemployment

	1994		2006		2007		2008		2009	
	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	33.5	20.5	27.6	16.4	27.7	15.8	31.0	15.0
Austria	30.8	18.4	46.2	29.5	43.9	26.6	43.5	25.8	36.4	19.7
Belgium	72.4	53.4	64.7	49.8	64.4	49.3	61.8	47.0	59.9	43.5
Canada	34.5	19.5	16.1	9.1	15.7	8.4	15.9	7.9	18.5	8.1
Chile	..	..	..	..	..	..	..	..	..	..
Czech Republic	40.4	21.7	72.7	53.9	70.5	51.7	69.4	50.4	52.0	29.0
Denmark	52.1	31.9	35.1	20.8	27.1	15.4	22.0	14.6	26.4	8.9
Finland	..	..	42.3	28.0	41.0	26.5	33.6	20.1	34.9	18.2
France	60.3	37.4	60.9	42.8	58.5	40.6	57.0	39.3	55.3	34.8
Germany	60.4	41.2	70.4	56.2	69.7	56.7	66.7	53.3	61.0	44.4
Greece	65.8	41.3	67.7	46.5	59.0	41.8	57.8	40.6	53.4	34.4
Hungary	65.0	43.6	68.4	47.1	69.0	47.3	69.4	48.8	65.8	42.4
Iceland[c, d]	(29.7)	(14.0)	(15.4)	(9.2)	(11.2)	(9.5)	(5.7)	(4.0)	(25.1)	(7.0)
Ireland	83.0	68.5	57.5	39.4	53.4	35.5	50.7	31.0	57.2	32.1
Italy	77.4	59.6	61.9	47.9	59.0	45.5	58.4	43.7	60.2	42.0
Japan	40.2	21.4	55.5	40.9	55.7	40.3	54.2	39.9	52.0	34.8
Korea	22.8	6.4	12.2	1.2	13.9	0.7	12.9	3.7	10.5	0.6
Luxembourg[d]	(59.6)	(33.8)	(53.7)	(34.4)	(55.4)	(35.4)	(45.6)	(29.4)	(45.2)	(19.9)
Mexico	..	..	6.3	2.7	5.3	3.0	4.1	1.6	6.3	1.8
Netherlands	74.3	50.0	61.3	45.8	57.4	41.8	51.9	37.3	42.2	23.7
New Zealand	56.1	37.4	23.0	9.5	19.0	6.8	16.5	5.4	23.7	6.3
Norway[c]	43.5	28.1	36.7	17.0	27.4	10.2	18.6	6.0	26.5	7.5
Poland	61.8	36.8	68.3	49.0	64.1	45.8	44.3	27.3	42.3	23.3
Portugal	54.2	42.3	69.0	51.3	65.1	47.6	63.5	48.4	61.8	40.8
Slovak Republic	63.8	41.7	84.3	73.9	82.8	72.3	77.7	65.6	64.3	47.8
Spain[c]	68.5	49.5	40.3	25.9	38.3	23.9	35.3	18.8	51.7	26.9
Sweden[c]	50.0	29.1	..	..	29.8	14.4	27.3	13.5	30.9	13.1
Switzerland	47.4	22.9	54.4	35.0	55.9	37.9	43.1	27.3	44.4	26.4
Turkey	66.8	43.7	48.4	32.4	42.7	27.0	39.7	24.0	42.4	22.6
United Kingdom[c]	68.6	51.2	44.5	26.8	45.0	28.4	44.3	28.3	47.7	26.5
United States[c]	22.2	13.9	18.6	10.7	18.2	10.7	20.1	10.9	31.7	16.4
OECD (weighted average)	52.0	34.9	45.2	31.9	41.6	28.9	37.8	25.1	39.7	22.8
Estonia	..	..	64.4	50.6	60.5	52.8	50.6	35.3	50.2	26.8
Israel[e]	..	..	47.1	35.4	43.3	34.5	..	..	..	..
Russian Federation	..	..	58.4	40.1	56.4	38.8	49.4	32.7	..	..
Slovenia	..	..	67.6	49.7	61.3	45.3	56.5	41.4	51.8	28.3

Table H. **Incidence of long-term unemployment**[a, b] *(cont.)*

As a percentage of female unemployment

	1994		2006		2007		2008		2009	
	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	27.8	15.4	26.5	14.4	25.6	14.0	28.6	14.4
Austria	33.1	18.5	42.1	25.1	44.5	27.1	41.2	22.6	39.1	21.0
Belgium	77.7	62.6	65.6	52.6	65.6	51.4	60.8	48.1	60.5	45.0
Canada	30.1	15.6	15.9	8.3	13.7	6.3	13.1	6.1	17.1	7.4
Chile	..	..	..	..	..	..	..	..	..	..
Czech Republic	43.1	22.8	77.0	56.3	72.5	54.7	69.4	50.1	57.8	33.4
Denmark	55.8	32.4	33.8	20.8	28.9	16.9	22.9	12.7	23.9	9.4
Finland	..	..	37.2	21.8	34.9	19.5	29.5	16.2	27.6	14.7
France	63.1	39.5	61.1	41.7	58.5	40.1	54.3	36.5	55.2	34.7
Germany	67.1	47.2	72.3	56.6	69.9	56.5	66.5	51.9	62.9	47.0
Greece	78.0	57.2	74.7	59.0	69.9	54.8	66.9	52.0	62.8	45.6
Hungary	58.9	37.6	68.2	45.1	69.0	47.9	68.8	46.3	67.8	42.8
Iceland[c, d]	(34.9)	(16.3)	(11.7)	(5.3)	(10.9)	(5.7)	(10.2)	(4.1)	(23.5)	(6.7)
Ireland	76.8	57.4	40.7	21.5	38.6	21.5	35.3	19.3	42.8	21.7
Italy	81.5	63.3	65.0	51.2	62.5	49.1	61.1	47.5	62.9	46.9
Japan	30.5	12.2	36.8	20.8	36.7	19.4	36.2	23.8	37.5	18.8
Korea	16.1	3.2	9.6	0.9	7.4	0.3	1.6	0.4	6.0	0.3
Luxembourg[d]	(48.9)	(24.6)	(47.6)	(26.0)	(43.7)	(22.3)	(52.2)	(35.2)	(52.0)	(26.1)
Mexico	..	..	6.1	2.3	5.4	2.3	4.3	1.8	6.7	2.1
Netherlands	80.9	48.7	59.0	40.3	54.4	37.1	48.0	32.2	44.7	26.1
New Zealand	42.9	26.4	18.7	6.0	15.3	5.4	13.0	3.4	22.6	6.4
Norway[c]	43.9	29.8	28.7	11.5	23.9	7.1	18.2	6.0	23.0	8.0
Poland	68.4	43.8	70.0	52.0	64.5	46.0	49.0	30.8	47.2	27.3
Portugal	60.1	44.3	66.8	49.3	64.9	46.7	63.9	46.6	65.6	47.5
Slovak Republic	64.1	43.5	84.3	72.3	81.9	69.4	79.4	66.4	69.6	54.4
Spain[c]	78.4	63.0	47.5	32.2	45.9	30.5	45.3	28.9	55.2	34.4
Sweden[c]	41.8	20.5	..	..	24.6	11.5	24.4	11.3	27.6	12.4
Switzerland	53.0	35.4	62.2	42.6	57.1	43.0	54.5	39.9	51.4	33.6
Turkey	74.7	51.9	58.4	43.9	55.8	38.9	50.1	34.4	51.4	32.2
United Kingdom[c]	53.3	33.9	33.0	16.2	33.1	17.6	34.4	18.1	40.2	21.5
United States[c]	18.1	10.2	16.5	9.2	16.8	9.0	19.3	10.3	31.2	16.1
OECD (weighted average)	53.2	36.2	45.3	31.8	42.2	29.1	38.7	26.0	40.8	24.5
Estonia	..	..	57.6	45.6	55.1	44.7	42.9	25.9	44.7	28.4
Israel[e]	..	..	41.3	29.8	39.5	27.2	..	..	..	..
Russian Federation	..	..	62.7	43.5	61.3	42.7	56.2	38.0	..	..
Slovenia	..	..	67.8	48.9	61.6	46.1	58.3	43.0	49.0	32.1

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, Hungary, Norway, New Zealand, Poland, the Slovak Republic and Spain, averages of semi-annual figures for Turkey until 1999 and quarterly averages since 2000. The reference period for the remaining countries is as follows (among EU countries it occasionally varies from year to year): Austria, March, and since 2004 all weeks of the first quarter; Belgium, April, and since 1999 all weeks of the second quarter; Denmark, April-May and since 1999 all weeks of the second quarter; Finland, spring between 1995 and 1998, and averages of monthly figures since 1999; France, March and since 2003 all weeks of the first quarter; Germany, April, and since 2005 all weeks of the second quarter; Greece, all weeks of the second quarter; Iceland, April and since 2003 all weeks of the second quarter; Ireland, May and since 1998 all weeks of the second quarter; Italy, April and since 2004 all weeks of the second quarter; Japan, February; Luxembourg, April and since 2003 all weeks of the year; Mexico, April; the Netherlands, March-June and since 2000 all weeks of the second quarter; Portugal, all weeks of the second quarter; Switzerland, second quarter; and the United Kingdom, all weeks of the second quarter.

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					
	1998	2008	1998	2008	1998	2008	1998	2008	1998	2008
Australia	2.91	3.34	1.84	1.92	1.58	1.74	13	12	12.3	17.5
Austria	..	3.32	..	1.93	..	1.72	23	21	..	15.9
Belgium	2.39	2.33	1.70	1.70	1.41	1.38	15	10	..	5.6
Canada	3.59	3.75	1.80	1.88	2.00	2.00	25	20	21.2	22.0
Czech Republic	2.90	3.15	1.74	1.82	1.66	1.73	25	21	15.0	16.8
Denmark	2.48	2.73	1.67	1.74	1.48	1.57	15	12	9.2	13.0
Finland	2.42	2.57	1.73	1.76	1.40	1.46	21	21	..	8.5
France	3.05	2.91	1.92	1.98	1.58	1.47	9	12	..	..
Germany	3.07	3.32	1.75	1.72	1.75	1.93	22	25	16.0	21.5
Greece	..	3.24	..	2.04	..	1.59	..	10	..	13.5
Hungary	4.21	4.11	2.18	2.36	1.93	1.74	16	2	22.0	20.8
Iceland	..	3.21	..	1.80	..	1.78	..	13	..	16.8
Ireland[d]	3.93	3.79	2.02	2.02	1.95	1.88	22	16	20.4	21.1
Italy	..	2.69	..	1.74	..	1.55	..	1	..	11.4
Japan	2.98	3.02	1.84	1.85	1.62	1.63	35	31	14.7	15.1
Korea[e]	3.83	4.78	1.95	2.30	1.96	2.08	41	39	23.1	25.4
Netherlands	2.88	2.91	1.73	1.76	1.66	1.65	22	17	14.8	..
New Zealand	2.64	2.92	1.66	1.87	1.59	1.56	11	8	13.2	12.7
Norway	1.95	2.28	1.40	1.46	1.39	1.56	10	9	..	..
Poland	..	3.55	..	2.07	..	1.71	..	14	..	17.3
Portugal	..	4.26	..	2.74	..	1.55	..	16	..	14.2
Spain	..	3.28	..	1.98	..	1.66	..	12	..	1.7
Sweden	2.24	2.28	1.63	1.66	1.37	1.37	17	15	..	..
Switzerland	2.53	2.69	1.70	1.83	1.49	1.47	22	20	..	..
United Kingdom[e]	3.47	3.63	1.89	1.98	1.84	1.83	26	21	20.8	21.2
United States	4.51	4.89	2.21	2.34	2.04	2.09	24	20	24.5	24.5
OECD26[f]	3.05	3.27	1.81	1.93	1.67	1.68	21	16	17.5	16.0

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 1997 (instead of 1998) for Ireland and to 1999 for Belgium. They refer to 2005 (instead of 2008) for the Netherlands and to 2007 for Belgium and France.

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 1997 (instead of 1998) for Ireland, to 1999 for Belgium and to 2000 for Austria. They refer to 2005 (instead of 2008) for the Netherlands and to 2007 for Belgium and France.

c) The incidence of low pay refers to the share of workers earning less than two-thirds of median earnings. Data refer to 1997 (instead of 1998) for Ireland and to 1999 for the Netherlands. They refer to 2007 (instead of 2008) for Belgium.

d) Preliminary estimates for 2008.

e) Data for 1997 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 countries shown in the table.

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.*

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 2008 in current USD[b]	Level of average wages in 2008 in 2008 prices and USD PPPs[c]	Average annual growth rates of real average wages[d] (%)			
			1990-95	1995-2000	2000-05	2007-08
Australia	57 219	45 464	0.6	2.1	1.2	-0.2
Austria	51 772	40 069	1.6	0.6	0.8	0.9
Belgium	56 537	41 404	2.1	1.3	0.4	-0.5
Canada	45 990	40 341	-0.2	2.0	1.1	1.7
Czech Republic	17 227	19 241	6.0	3.0	5.1	1.6
Denmark	71 426	41 166	0.8	1.6	1.9	0.9
Finland	51 138	33 489	0.0	1.5	2.3	1.3
France	49 631	36 347	1.1	1.3	1.3	-0.3
Germany	47 054	36 835	2.1	0.8	0.2	0.2
Greece	31 852	27 460	3.1	2.4	2.9	1.3
Hungary	15 766	18 776	4.0	-0.3	6.4	1.4
Ireland	69 776	44 413	2.5	2.1	2.3	1.1
Italy	39 789	30 794	-0.7	0.8	0.3	-0.1
Japan	41 696	32 872	0.8	0.5	0.3	0.3
Korea	26 353	32 744	4.5	-0.2	2.8	2.2
Luxembourg	72 328	49 260	1.9	1.2	1.1	-1.5
Netherlands	57 170	44 755	0.3	0.0	0.6	1.0
Norway	73 068	42 565	1.2	2.2	3.1	1.6
Poland	14 906	17 485	2.5	5.3	0.1	4.3
Portugal	23 495	21 920	1.1	2.6	0.3	0.7
Slovak Republic	13 825	16 021	6.3	5.3	3.4	-0.1
Spain	36 439	31 022	1.9	-0.5	-0.2	2.7
Sweden	50 468	35 736	-0.3	3.3	1.4	1.7
Switzerland	76 039	47 269	1.0	0.9	1.1	1.1
United Kingdom	54 810	44 229	0.6	2.4	1.4	0.2
United States	50 888	50 888	1.0	2.9	0.4	-1.0
EU15[e]	47 642	36 786	1.1	1.2	0.8	0.5
OECD[e]	47 015	41 435	1.2	1.9	0.7	0.1

PPPs: Purshasing power parities.

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 2008 USD PPPs for private consumption.

d) Average annual wages are deflated by a price deflator for private final consumption expenditures in 2008 prices.

e) Aggregates are computed on the basis of 2005 GDP weights expressed in 2005 PPPs and include the countries shown.

Source: OECD estimates based on *OECD National Accounts Database* and OECD (2010), *OECD Economic Outlook* , No. 87, OECD Publishing, Paris, May.

StatLink http://dx.doi.org/10.1787/888932303670

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		
	2006-07	2007-08	2008-09	2006-07	2007-08	2008-09	2006	2007	2008	2006	2007	2008	2006	2007	2008	2006	2007	2008
1. PES and administration[a]	**0.19**	**0.17**	**0.16**				**0.17**	**0.16**	**0.16**				**0.20**	**0.20**	**0.20**			
of which: 1.1. Placement and related services[a]	0.11	0.10	0.10				0.08	0.08	0.08				0.07	0.07	0.07			
1.2. Benefit administration[a]	0.03	0.03	0.03				0.02 [e]	0.02 [e]	0.02 [e]				0.10 [h]	0.10 [h]	0.10 [h]			
2. Training	**0.01** [c]	**0.01** [c]	**0.01** [c]	**0.17**	**0.17**	**0.13**	**0.40** [f]	**0.37** [f]	**0.37** [f]	**2.18** [g]	**2.29** [g]	**2.44** [g]	**0.18**	**0.19**	**0.16**	**2.20** [g]	**2.31** [g]	**2.32** [g]
2.1. Institutional training	0.01	0.01	0.01	0.04	0.05	0.03	0.31	0.27	0.26	3.37	3.00	2.82	0.18	0.18	0.15	2.10	2.35	2.02
2.2. Workplace training	-	-	-	0.13	0.12	0.11	0.03	0.02	0.02	0.18	0.15	0.25	-	-	-	0.34	0.21	0.42
2.3. Alternate training	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2.4. Special support for apprenticeship[a]	-	-	-	-	-	-	0.04	0.06	0.07	0.57	0.76	0.87	-	-	-	0.13	0.12	0.23
4. Employment incentives[a]	**0.01**	**0.01**	**0.01**	**-**	**-**	**-**	**0.06**	**0.06**	**0.06**	**1.48**	**1.25**	**1.49**	**0.30** [i,j]	**0.37** [i,j]	**0.45** [i,j]	**3.42** [i,j]	**3.88** [i,j]	**4.59** [i,j]
4.1. Recruitment incentives	0.01	0.01	0.01	-	-	-	0.04	0.04	0.03	0.40	0.38	0.32	0.30	0.37	0.45	3.42	3.88	4.59
4.2. Employment maintenance incentives	-	-	-	-	-	-	0.01	0.02	0.03	1.08	0.88	1.17	-	-	0.01	-	-	-
5. Supported employment and rehabilitation	**0.05**	**0.06**	**0.06**	**0.97**	**1.19**	**1.43**	**0.04**	**0.03**	**0.04**	**0.03**	**0.05**	**0.05**	**0.11**	**0.12**	**0.12**	**0.74**	**0.77**	**0.80**
5.1 Supported employment	0.04	0.04	0.04	0.82	0.89	1.07	0.04	0.03	0.04	0.03	0.05	0.05	0.11	0.12	0.12	0.74	0.77	0.80
5.2 Rehabilitation	0.02	0.02	0.02	0.15	0.29	0.36	-	-	-	-	-	-	-	-	-	-	-	-
6. Direct job creation	**0.06** [c]	**0.05** [c]	**0.04** [c]	**0.63**	**0.48**	**0.40**	**0.04**	**0.04**	**0.04**	**0.18**	**0.19**	**0.16**	**0.35**	**0.35**	**0.34**	**2.32**	**2.64**	**3.23**
7. Start-up incentives	**0.01**	**0.01**	**0.01**	**0.06**	**0.05**	**-**	**0.01**	**0.01**	**0.01**	**0.05**	**0.06**	**0.06**	**-**	**-**	**-**	**0.02**	**0.02**	**0.03**
8. Out-of-work income maintenance and support[a]	**0.48**	**0.41**	**0.45**	**4.51**	**4.17**	**5.31**	**1.15**	**1.02**	**0.96**	**5.21**	**4.80**	**4.59**	**1.46** [j]	**1.31** [j]	**1.30** [j]	**14.35** [j]	**13.31** [j]	**12.51** [j]
8.1. Full unemployment benefits	0.48 [d]	0.40 [d]	0.44 [d]	4.51 [d]	4.17 [d]	5.31 [d]	1.01	0.90	0.85	5.16	4.74	4.51	1.23	1.10	1.07	10.66	9.75	8.55
of which: Unemployment insurance	-	-	-	-	-	-	0.62	0.55	0.53	2.93	2.72	2.67	1.23	1.10	1.07	10.66	9.75	8.55
8.2, 8.3. Partial and part-time unemployment benefits	-	-	-	-	-	-	0.01	0.01	0.01	0.05	0.06	0.08	0.19 [j]	0.17 [j]	0.19 [j]	3.69 [j]	3.56 [j]	3.96 [j]
8.4, 8.5. Redundancy and bankrupcy compensation	0.01	0.01	0.01	-	-	-	0.13	0.11	0.11	-	-	-	0.04	0.03	0.04	-	-	-
9. Early retirement[a]	**-**	**-**	**-**	**-**	**-**	**-**	**0.25**	**0.22**	**0.20**	**1.45**	**1.33**	**1.20**	**0.78**	**0.74**	**0.74**	**4.96**	**4.73**	**4.60**
TOTAL (1-9)	**0.81**	**0.71**	**0.74**				**2.12**	**1.93**	**1.83**				**3.39**	**3.27**	**3.32**			
Active measures (1-7)	0.33	0.30	0.29				0.72	0.68	0.67				1.15	1.22	1.28			
of which: Categories 2-7 only	0.14	0.14	0.14	1.82	1.89	1.96	0.54	0.51	0.52	3.93	3.84	4.21	0.95	1.02	1.08	8.70	9.62	10.96
Passive measures (8-9)	0.48	0.41	0.45	4.51	4.17	5.31	1.40	1.25	1.16	6.66	6.13	5.79	2.24	2.05	2.04	19.31	18.03	17.11

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) Fiscal years starting on July 1st.

c) Income support payments to participants in Training (Category 2) and Work for the Dole (Category 6) are usually unemployment benefits, reported in Category 8. Payments to participants in measures for Indigenous Australians (CDEP) are reported in Category 6.

d) Includes Mature Age, Partner Allowances (benefit only) and Youth Allowances.

e) Staff costs of the unemployment insurance service.

f) Includes Employment Foundations established by enterprises in cases of large-scale manpower reductions, which have not been allocated across sub-categories.

g) Adjustments for double-counting (relevant in cases of simultaneous participation in two or more programmes *e.g.* the budget for training centres and training subsistence allowances) are applied to database totals for the main categories (*e.g.* 2. "Training" or 8. "Out-of-work income maintenance and support"), but not to sub-category data.

h) Includes administration costs of union and auxiliary benefit payment organisations.

i) Includes the "titres services" programme, which is only partly targeted on the unemployed.

j) Data are revised from those previously published. The income guarantee for part-time workers, which resembles regular unemployment benefit paid at a reduced rate in the case of part-time work or part-time earnings, is now reported in Sub-category 8.2.

Table K. **Public expenditure and participant stocks in labour market programmes in OECD countries**[a] *(cont.)*

Programme categories and sub-categories	Canada[b]						Czech Republic						Denmark					
	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		
	2006-07	2007-08	2008-09	2006-07	2007-08	2008-09	2006	2007	2008	2006	2007	2008	2006	2007	2008	2006	2007	2008
1. PES and administration[a]	**0.15**	**0.14**	**0.12**				**0.13**	**0.13**	**0.12**				**0.30**	**0.28**	**0.37**			
of which: 1.1. Placement and related services[a]	0.04 [c]	0.04 [c]	0.04 [c]				0.04	0.04	0.04				0.06	0.06	0.17			
1.2. Benefit administration[a]	0.03	0.03	0.03				..	..	..				0.14 [f]	0.14 [f]	0.13 [f]			
2. Training	**0.08**	**0.08**	**0.08**	**1.56**	**1.52**	**1.56**	**0.01**	**0.01**	**0.01**	**0.14**	**0.14**	**0.09**	**0.43**	**0.33**	**0.23**	**1.51**	**1.84**	**2.07**
2.1. Institutional training	0.07	0.06	0.06	1.17	1.16	1.23	0.01	0.01	0.01	0.14	0.14	0.09	0.41 [g]	0.31 [g]	0.21 [g]	1.23	1.49	1.70
2.2. Workplace training	0.01	0.01	0.01	0.14	0.12	0.12	-	-	-	-	-	-	-	-	-	-	-	-
2.3. Alternate training	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
2.4. Special support for apprenticeship[a]	0.01	0.01	0.01	0.25	0.24	0.20	-	-	-	-	-	-	0.02	0.03	0.03	0.28	0.35	0.37
4. Employment incentives[a]	**0.01**	**0.01**	**0.01**	**0.14**	**0.12**	**0.11**	**0.03**	**0.02**	**0.01**	**0.32**	**0.25**	**0.14**	**0.21**	**0.13**	**0.14**	**0.91**	**0.77**	**0.77**
4.1. Recruitment incentives	0.01	0.01	0.01	0.14	0.12	0.11	0.03	0.02	0.01	0.29	0.23	0.12	0.21	0.13	0.14	0.91	0.77	0.77
4.2. Employment maintenance incentives	-	-	-	-	-	-	-	-	-	0.03	0.02	0.02	-	-	-	-	-	-
5. Supported employment and rehabilitation	**0.02**	**0.02**	**0.02**	**..**	**..**	**..**	**0.05**	**0.07**	**0.07**	**0.40**	**0.51**	**0.55**	**0.57**	**0.56**	**0.61**	**2.32**	**2.15**	**2.22**
5.1 Supported employment	-	-	-	0.05	0.05	0.05	0.05	0.07	0.07	0.40	0.51	0.55	0.36	0.37	0.45	1.63	1.68	1.85
5.2 Rehabilitation	0.01	0.01	0.01	..	..	..	-	-	-	-	-	-	0.22	0.18	0.16	0.69	0.46	0.37
6. Direct job creation	**0.02**	**0.02**	**0.02**	**0.06**	**0.05**	**0.04**	**0.03**	**0.02**	**0.01**	**0.18**	**0.14**	**0.08**	**-**	**-**	**-**	**-**	**-**	**-**
7. Start-up incentives	**0.01**	**0.01**	**0.01**	**0.11**	**0.10**	**0.10**	**-**	**-**	**-**	**0.08**	**0.07**	**0.07**	**-**	**-**	**-**	**-**	**-**	**-**
8. Out-of-work income maintenance and support[a]	**0.59**	**0.56**	**0.66**	**..**	**..**	**..**	**0.23**	**0.20**	**0.20**	**2.57**	**2.24**	**2.09**	**1.30**	**0.98**	**0.73**	**4.71**	**3.56**	**2.45**
8.1. Full unemployment benefits	0.59	0.56	0.66	..	..	..	0.23	0.20	0.19	2.57	2.24	2.09	1.28 [h]	0.96 [h]	0.69 [h]	4.71 [h]	3.56 [h]	2.45 [h]
of which: Unemployment insurance	0.59	0.56	0.66	..	..	..	0.23	0.20	0.19	2.57	2.24	2.09	0.98 [i]	0.69 [i]	0.45 [i]	3.55 [i]	2.46 [i]	1.55 [i]
8.2, 8.3. Partial and part-time unemployment benefits	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
8.4, 8.5. Redundancy and bankrupcy compensation	-	-	-	-	-	-	0.01	0.01	-	-	-	-	0.01	0.02	0.04	-	-	-
9. Early retirement[a]	**-**	**-**	**-**	**..**	**..**	**..**	**-**	**-**	**-**	**-**	**-**	**-**	**0.57** [j]	**0.52** [j]	**0.48** [j]	**2.24** [j]	**2.11** [j]	**1.89** [j]
TOTAL (1-9)	**0.90**	**0.85**	**0.96**				**0.49**	**0.46**	**0.42**				**3.37**	**2.80**	**2.56**			
Active measures (1-7)	0.31 [d]	0.29 [d]	0.30 [d]				0.26	0.25	0.23				1.51	1.30	1.35			
of which: Categories 2-7 only	0.15 [d]	0.15 [d]	0.17 [d]	2.38 [d, e]	2.30 [d, e]	2.34 [d, e]	0.13	0.12	0.10	1.13	1.12	0.93	1.21	1.02	0.98	4.74	4.75	5.06
Passive measures (8-9)	0.59	0.56	0.66	..	..	..	0.23	0.20	0.20	2.57	2.24	2.09	1.86	1.50	1.22	6.95	5.67	4.35

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) Fiscal years starting on April 1st.
c) Employment Assistance Service.
d) Includes the Aboriginal Human Resources Development Agreements, which have not been allocated across the main categories.
e) Participant stocks for Category 5.2 "Rehabilitation" are not included.
f) 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.
g) Includes income support paid to participants in "Specially arranged activation", but not the corresponding services.
h) Includes social assistance benefits paid to unemployed but not inactive recipients.
i) Includes part-time and partial benefits.
j) Early retirement benefits (*efterløn*) only when paid to recipients who entered the scheme from unemployment.

Table K. **Public expenditure and participant stocks in labour market programmes in OECD countries**[a] *(cont.)*

Programme categories and sub-categories	Finland						France						Germany					
	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		
	2006	2007	2008	2006	2007	2008	2006	2007	2008	2006	2007	2008	2006	2007	2008	2006	2007	2008
1. PES and administration[a]	**0.17**	**0.16**	**0.15**				**0.24**	**0.22**	**0.20**				**0.27**	**0.27**	**0.29**			
of which: 1.1. Placement and related services[a]	0.10	0.10	0.09				0.17	0.15	0.15				0.13	0.15	0.16			
1.2. Benefit administration[a]	0.05 [b]	0.04 [b]	0.04 [b]				0.07	0.07	0.05				0.05	0.04	0.04			
2. Training	**0.39**	**0.38**	**0.36**	**1.83**	**1.86**	**1.68**	**0.29** [d]	**0.27** [d]	**0.25** [d]	**1.98**	**2.03**	**2.10**	**0.32**	**0.24**	**0.29**	**3.55**	**1.98**	**1.94**
2.1. Institutional training	0.31	0.31	0.29	1.16	1.20	1.10	0.11	0.10	0.08	0.84	0.86	0.85	0.21	0.18	0.22	1.22	1.18	1.37
2.2. Workplace training	0.06	0.06	0.05	0.52	0.48	0.39	-	-	-	-	-	-	-	-	0.01	-	-	0.11
2.3. Alternate training	-	-	-	-	-	-	-	-	-	0.01	0.02	0.03	-	-	-	-	-	-
2.4. Special support for apprenticeship[a]	0.01	0.02	0.02	0.15	0.18	0.18	0.08	0.08	0.08	1.03	1.07	1.07	0.06	0.06	0.02	0.68	0.87	0.48
4. Employment incentives[a]	**0.15** [c]	**0.14** [c]	**0.14** [c]	**0.87** [c]	**0.89** [c]	**0.80** [c]	**0.12**	**0.11**	**0.10**	**1.97**	**1.90**	**..**	**0.06** [c]	**0.06** [c]	**0.08** [c]	**0.31** [c]	**0.39** [c]	**0.45** [c]
4.1. Recruitment incentives	0.10	0.08	0.08	0.59	0.60	0.51	0.12	0.11	0.10	1.97	1.90	..	0.06	0.06	0.08	0.31	0.39	0.45
4.2. Employment maintenance incentives	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5. Supported employment and rehabilitation	**0.10**	**0.09**	**0.09**	**0.33**	**0.31**	**0.30**	**0.07**	**0.07**	**0.07**	**0.47**	**0.50**	**0.48**	**0.01**	**0.01**	**0.03**	**0.06**	**0.06**	**0.11**
5.1 Supported employment	0.02	0.02	0.02	0.13	0.12	0.10	0.07	0.07	0.07	0.47	0.50	0.48	0.01	0.01	0.01	0.04	0.04	0.04
5.2 Rehabilitation	0.07	0.07	0.07	0.20	0.20	0.20	-	-	-	-	-	-	-	-	0.03	-	-	0.07
6. Direct job creation	**0.09**	**0.08**	**0.07**	**0.50**	**0.51**	**0.43**	**0.20**	**0.20**	**0.15**	**1.01**	**1.20**	**0.83**	**0.09**	**0.06**	**0.06**	**0.90**	**0.82**	**0.79**
7. Start-up incentives	**0.02**	**0.02**	**0.02**	**0.16**	**0.17**	**0.16**	**0.01**	**0.03**	**0.03**	**0.28**	**0.37**	**0.46**	**0.12**	**0.08**	**0.07**	**0.98**	**0.57**	**0.43**
8. Out-of-work income maintenance and support[a]	**1.30**	**1.05**	**0.96**	**8.62**	**7.20**	**6.58**	**1.34**	**1.20**	**1.15**	**8.98**	**7.90**	**7.99**	**1.67** [e]	**1.24** [e]	**1.04** [e]	**9.83** [e, f]	**8.29** [e, f]	**7.42** [e, f]
8.1. Full unemployment benefits	1.19	0.96	0.88	7.58	6.30	5.76	1.34	1.20	1.14	8.97	7.89	7.99	1.62	1.19	0.99	9.95	8.46	7.44
of which: Unemployment insurance	0.76	0.63	0.57	3.56	3.06	2.83	1.18	1.05	1.01	7.42	6.39	6.53	0.98	0.70	0.56	3.48	2.59	2.20
8.2, 8.3. Partial and part-time unemployment benefits	0.10	0.08	0.07	1.04	0.91	0.82	-	-	-	0.01	0.01	0.01	0.02	0.02	0.02	0.21	0.10	0.22
8.4, 8.5. Redundancy and bankrupcy compensation	0.01	0.01	0.01	-	-	-	-	-	-	-	-	-	0.04	0.03	0.03	-	-	-
9. Early retirement[a]	**0.41**	**0.38**	**0.39**	**1.71**	**1.69**	**1.76**	**0.05**	**0.04**	**0.02**	**0.31**	**0.21**	**0.14**	**0.05**	**0.06**	**0.05**	**0.25**	**0.25**	**0.24**
TOTAL (1-9)	**2.61**	**2.29**	**2.18**				**2.30**	**2.14**	**1.98**				**2.59**	**2.02**	**1.91**			
Active measures (1-7)	0.91	0.87	0.82				0.92	0.90	0.81				0.86	0.72	0.81			
of which: Categories 2-7 only	0.74	0.71	0.67	3.69	3.74	3.37	0.68	0.68	0.60	5.71	6.01	5.49	0.59	0.45	0.53	5.79	3.81	3.72
Passive measures (8-9)	1.70	1.43	1.35	10.33	8.90	8.33	1.38	1.24	1.17	9.29	8.11	8.13	1.73	1.30	1.10	10.07	8.54	7.66

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 the administration costs of independent unemployment insurance funds.

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 training allowances which have not been allocated across sub-categories.

e) Data are revised from those previously published. Recipients of the assistance benefit ALG II who are not registered unemployed are not included.

f) 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	Greece						Hungary						Ireland						Italy					
	Public expenditure as a percentage of GDP			Participant stocks as a percentage of the labour force			Public expenditure as a percentage of GDP			Participant stocks as a percentage of the labour force			Public expenditure as a percentage of GDP			Participant stocks as a percentage of the labour force			Public expenditure as a percentage of GDP			Participant stocks as a percentage of the labour force		
	2006	2007	2008	2006	2007	2008	2006	2007	2008	2006	2007	2008	2006	2007	2008	2006	2007	2008	2006	2007	2008	2006	2007	2008
1. PES and administration[a]	**..**	**..**	**..**				**0.09**	**0.08**	**0.09**				**0.12**[b]	**0.12**[b]	**0.13**[b]				**0.09**	**0.08**	**0.09**			
of which: 1.1. Placement and related services[a]	0.01	0.02	0.01				-	-	-				0.04	0.04	0.03				0.01	0.01	0.01			
1.2. Benefit administration[a]	..	..	..				..	..	..				0.03[c]	0.03[c]	0.03[c]				0.05[e]	0.05[e]	0.05[e]			
2. Training	**0.06**	**0.06**	**0.09**	**0.45**	**0.30**	**0.29**	**0.06**	**0.06**	**0.06**	**0.33**	**0.32**	**0.39**	**0.25**[d]	**0.26**[d]	**0.30**[d]	**1.32**[d]	**1.42**[d]	**1.55**[d]	**0.18**	**0.18**	**0.18**	**3.33**	**3.59**	**3.19**
2.1. Institutional training	0.02	0.04	0.03	0.23	0.27	0.18	0.06	0.06	0.06	0.33	0.32	0.39	0.14	0.14	0.16	0.78	0.80	0.88	0.01	-	-	..	..	..
2.2. Workplace training	-	-	-	-	-	-	-	-	-	-	-	-	0.01	0.02	0.02	0.12	0.11	0.11	0.01	0.01	0.01	0.23	0.20	0.20
2.3. Alternate training	0.03	0.02	0.06	0.23	0.03	0.11	-	-	-	-	-	-	0.07	0.08	0.09	0.33	0.42	0.46	0.01	0.01	-	..	..	..
2.4. Special support for apprenticeship[a]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.13[f]	0.13[f]	0.14[f]	2.26	2.50	2.51
4. Employment incentives[a]	**0.06**	**0.06**	**0.04**	**0.29**	**0.37**	**0.46**	**0.08**	**0.12**	**0.09**	**0.83**	**0.76**	**0.84**	**0.03**	**0.04**	**0.04**	**0.20**	**0.25**	**0.20**	**0.18**[g]	**0.15**[g]	**0.15**[g]	**3.35**[g]	**2.55**[g]	**2.52**[g]
4.1. Recruitment incentives	0.06	0.06	0.04	0.29	0.37	0.46	0.08	0.12	0.09	0.78	0.67	0.75	0.03	0.04	0.04	0.20	0.25	0.20	0.18[h]	0.15[h]	0.15[h]	3.27	2.47	..
4.2. Employment maintenance incentives	-	-	-	-	-	-	0.01	-	-	0.05	0.09	0.02	-	-	-	-	-	-	-	-	-	-	-	-
5. Supported employment and rehabilitation	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**0.01**	**0.01**	**0.01**	**0.07**	**0.14**	**0.15**	**-**	**-**	**-**	**-**	**-**	**-**
5.1 Supported employment	-	-	-	-	-	-	-	-	-	-	-	-	0.01	0.01	0.01	0.07	0.14	0.15	-	-	-	-	-	-
5.2 Rehabilitation	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6. Direct job creation	**-**	**0.01**	**0.01**	**..**	**0.01**	**0.02**	**0.05**	**0.04**	**0.04**	**0.40**	**0.39**	**0.32**	**0.21**	**0.21**	**0.23**	**1.13**	**1.08**	**1.10**	**0.01**	**0.01**	**0.01**	**0.16**	**0.11**	**0.09**
7. Start-up incentives	**0.02**	**0.03**	**0.01**	**0.11**	**0.12**	**0.10**	**-**	**-**	**0.01**	**0.08**	**0.04**	**0.07**	**-**	**-**	**-**	**0.21**	**0.22**	**0.21**	**0.04**	**0.03**	**0.02**	**0.04**	**..**	**0.02**
8. Out-of-work income maintenance and support[a]	**0.38**	**0.34**	**0.46**	**..**	**..**	**4.44**	**0.35**	**0.36**	**0.37**	**3.35**	**3.27**	**3.67**	**0.79**	**0.85**	**1.26**	**6.99**	**6.94**	**9.91**	**0.69**	**0.60**	**0.72**	**2.71**	**2.53**	**2.90**
8.1. Full unemployment benefits	0.38	0.34	0.46	..	..	4.44	0.35	0.36	0.37	3.35	3.27	3.67	0.69	0.75	1.15	6.99	6.94	9.74	0.58	0.52	0.62	2.17	2.26	2.57
of which: Unemployment insurance	0.33	0.28	0.40	..	..	2.63	0.32	0.36	0.37	2.12	2.23	2.51	0.26	0.29	0.51	2.92	2.96	4.63	0.51	0.49	0.59	2.13	2.22	2.52
8.2, 8.3. Partial and part-time unemployment benefits	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.16	0.11	0.09	0.09	0.54	0.28	0.33
8.4, 8.5. Redundancy and bankrupcy compensation	-	-	-	-	-	-	-	-	-	-	-	-	0.10	0.10	0.11	-	-	-	-	-	-	-	-	-
9. Early retirement[a]	**-**	**-**	**-**	**-**	**-**	**-**	**0.01**	**-**	**-**	**0.12**	**0.04**	**0.01**	**0.06**	**0.07**	**0.06**	**0.53**	**0.49**	**0.40**	**0.11**	**0.09**	**0.09**	**0.32**	**0.19**	**0.15**
TOTAL (1-9)	**..**	**..**	**..**				**0.64**	**0.67**	**0.67**				**1.47**	**1.55**	**2.03**				**1.29**	**1.14**	**1.26**			
Active measures (1-7)	..	..	..				0.28	0.31	0.30				0.62	0.64	0.70				0.50	0.45	0.45			
of which: Categories 2-7 only	0.14	0.15	0.14	0.85	0.81	0.87	0.19	0.23	0.21	1.64	1.51	1.62	0.50	0.52	0.58	2.93	3.11	3.20	0.41	0.37	0.36	6.87	6.27	5.82
Passive measures (8-9)	0.38	0.34	0.46	..	..	4.44	0.36	0.36	0.37	3.47	3.30	3.68	0.85	0.91	1.33	7.51	7.44	10.31	0.79	0.69	0.81	3.03	2.73	3.05

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) 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).

f) 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.

g) 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.

h) 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.

Table K. **Public expenditure and participant stocks in labour market programmes in OECD countries**[a] *(cont.)*

Programme categories and sub-categories	Japan[b]			Korea[d]			Luxembourg						Netherlands					
	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			Public expenditure as a percentage of GDP			Participant stocks as a percentage of the labour force		
	2006-07	2007-08	2008-09	2006	2007	2008	2006	2007	2008	2006	2007	2008	2006	2007	2008	2006	2007	2008
1. PES and administration[a]	**0.14**	**0.12**	**0.14**	**0.03**	**0.03**	**0.02**	**0.04**	**0.04**	**0.04**				**0.40**	**0.36**	**0.33**			
of which: 1.1. Placement and related services[a]	0.01	0.01	0.02	0.01	0.01	0.01	0.02	0.02	0.02				0.21	0.20	0.18			
1.2. Benefit administration[a]	-	-	-	0.01	0.01	..	0.01	0.01	0.01				0.18	0.17	0.14			
2. Training	**0.04**	**0.03**	**0.03**	**0.05**	**0.05**	**0.06**	**0.12**	**0.10**	**0.04**	**1.10**	**0.99**	**0.35**	**0.10** [i]	**0.09** [i]	**0.10** [i]	**1.52**	**1.37**	**1.64**
2.1. Institutional training	0.03 [c]	0.03 [c]	0.03 [c]	0.04 [e]	0.04 [e]	0.01	0.01	0.01	0.01	..	..	..	0.04	0.04	0.04	0.44	0.41	0.43
2.2. Workplace training	-	-	-	-	-	0.05	0.09	0.07	0.01	0.84	0.69	0.08	-	-	-	0.05	0.04	0.03
2.3. Alternate training	-	-	-	-	-	-	0.02	0.02	0.02	0.16	0.17	0.15	0.02	0.01	0.01	0.41	0.11	0.09
2.4. Special support for apprenticeship[a]	-	-	-	-	0.01	-	0.01	0.01	0.01	0.10	0.13	0.12	0.03 [j]	0.04 [j]	0.05 [j]	0.87 [j]	1.02 [j]	1.34 [j]
4. Employment incentives[a]	**0.01**	**0.01**	**0.01**	**0.03** [f]	**0.03** [f]	**0.06** [f]	**0.20** [g]	**0.22** [g]	**0.25** [g]	**3.63** [g]	**4.50** [g]	**5.45** [g]	**-** [k]	**-** [k]	**-** [k]	**0.07** [k]	**0.01** [k]	**-** [k]
4.1. Recruitment incentives	0.01	0.01	0.01	0.02	0.03	0.05	0.02	0.02	0.03	1.26	1.53	2.03	-	-	-	0.07	0.01	-
4.2. Employment maintenance incentives	-	-	-	-	-	-	0.05	0.06	0.07	0.52	0.64	0.78	-	-	-	-	-	-
5. Supported employment and rehabilitation	**-**	**-**	**-**	**-**	**-**	**0.01**	**0.01**	**0.01**	**0.01**	**0.02**	**0.02**	**0.02**	**0.49**	**0.47**	**0.47**	**1.71**	**1.68**	**1.73**
5.1 Supported employment	-	-	-	-	-	0.01	0.01	0.01	0.01	0.02	0.02	0.02	0.42	0.41	0.41	1.17	1.17	1.17
5.2 Rehabilitation	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
6. Direct job creation	**-**	**-**	**0.08**	**0.01**	**0.01**	**0.05**	**0.10** [h]	**0.10** [h]	**0.09** [h]	**0.82** [h]	**0.82** [h]	**0.72** [h]	**0.17** [k]	**0.16** [k]	**0.15** [k]	**0.46** [k]	**0.41** [k]	**0.37** [k]
7. Start-up incentives	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
8. Out-of-work income maintenance and support[a]	**0.40**	**0.33**	**0.30**	**0.23**	**0.25**	**0.29**	**0.42**	**0.36**	**0.37**	**3.53**	**3.09**	**3.49**	**1.67** [l]	**1.39** [l]	**1.26** [l]	**7.49** [l]	**6.45** [l]	**6.13** [l]
8.1. Full unemployment benefits	0.40	0.32	0.30	0.23	0.25	0.28	0.35	0.33	0.33	2.37	2.28	2.16	1.67 [l]	1.39 [l]	1.26 [l]	7.49 [l]	6.45 [l]	6.13 [l]
of which: Unemployment insurance	..	..	0.30	0.23	0.25	0.28	..	..	..	..	..	..	0.85	0.67	0.59	3.71	2.79	2.59
8.2, 8.3. Partial and part-time unemployment benefits	-	-	-	-	-	-	0.04	0.01	0.02	1.16	0.82	1.32	-	-	-	-	-	-
8.4, 8.5. Redundancy and bankrupcy compensation	-	-	-	-	-	-	0.02	0.02	0.02	-	-	-	-	-	-	-	-	-
9. Early retirement[a]	**-**	**-**	**-**	**-**	**-**	**-**	**0.17**	**0.16**	**0.15**	**0.60**	**0.58**	**0.58**	**-**	**-**	**-**	**-**	**-**	**-**
TOTAL (1-9)	**0.59**	**0.49**	**0.57**	**0.35**	**0.38**	**0.49** [d]	**1.06**	**0.99**	**0.95**				**2.85**	**2.47**	**2.31**			
Active measures (1-7)	0.19	0.16	0.26	0.12	0.13	0.20 [d]	0.48	0.47	0.42				1.18	1.08	1.04			
of which: Categories 2-7 only	0.05	0.05	0.13	0.09	0.10	0.18 [d]	0.43	0.42	0.39	5.58	6.33	6.54	0.78	0.72	0.71	3.76	3.47	3.74
Passive measures (8-9)	0.40	0.33	0.30	0.23	0.25	0.29	0.59	0.52	0.53	4.14	3.68	4.06	1.67	1.39	1.26	7.49	6.45	6.13

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 April 1st.
c) Includes education and training allowances, but not unemployment benefits paid to programme participants.
d) Statistical break between 2007 and 2008 due to an extensive revision of the reporting framework.
e) 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.
f) 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.
g) Includes the re-employment bonus and measures of professional (re)integration of disabled workers which have not been allocated across sub-categories.
h) Includes Secretariat estimates in Category 6 for "Special measures".
i) Unemployment benefits paid to participants in training are included.
j) Employer tax reductions payable for every apprentice who does not earn more than 130% of the minimum wage.
k) Wage cost subsidies component of "Flexible reintegration budget for municipalities" measure is allocated to Category 6 in order to improve time-series consistency.
l) Includes social assistance benefits paid to inactive individuals as well as unemployed recipients.

Table K. **Public expenditure and participant stocks in labour market programmes in OECD countries**[a] *(cont.)*

Programme categories and sub-categories	New Zealand[b]						Norway						Poland					
	Public expenditure as a percentage of GDP			Participant stocks as a percentage of the labour force			Public expenditure as a percentage of GDP			Participant stocks as a percentage of the labour force			Public expenditure as a percentage of GDP			Participant stocks as a percentage of the labour force		
	2006-07	2007-08	2008-09	2006-07	2007-08	2008-09	2006	2007	2008	2006	2007	2008	2006	2007	2008	2006	2007	2008
1. PES and administration[a]	**0.11**	**0.11**	**..**				**0.12**	**0.11**	**..**				**0.09**	**0.10**	**0.09**			
of which: 1.1. Placement and related services[a]	0.02	0.01	0.02				0.08	0.08	..				-	0.01	0.01			
1.2. Benefit administration[a]	0.07	0.07	..				0.01 [f]	0.01 [f]	..				..	..	..			
2. Training	**0.18** [c]	**0.17** [c]	**0.17** [c]	**1.11**	**1.17**	**1.23**	**0.26**	**0.23**	**0.21**	**1.41**	**1.26**	**1.14**	**0.10**	**0.10**	**0.12**	**0.61**	**0.54**	**0.56**
2.1. Institutional training	0.06	0.06	0.06	0.24	0.23	0.24	0.25 [g]	0.22 [g]	0.20 [g]	1.24	1.11	0.99	0.02	0.02	0.02	0.07	0.06	0.06
2.2. Workplace training	-	-	-	-	-	-	0.01	0.01	0.01	0.17	0.15	0.15	0.02	0.02	0.03	0.11	0.11	0.15
2.3. Alternate training	0.11	0.11	0.11	0.87	0.94	1.00	-	-	-	-	-	-	-	-	-	-	-	-
2.4. Special support for apprenticeship[a]	-	-	-	-	-	-	-	-	-	-	-	-	0.06	0.06	0.07	0.42	0.40	0.39
4. Employment incentives[a]	**0.02**	**0.01**	**0.01**	**..**	**..**	**..**	**0.02**	**0.03**	**0.02**	**0.19**	**0.19**	**0.19**	**0.05**	**0.07**	**0.08**	**0.58**	**0.63**	**0.79**
4.1. Recruitment incentives	0.02	0.01	0.01	..	..	..	0.02	0.03	0.02	0.19	0.19	0.19	0.03	0.05	0.06	0.26	0.27	0.27
4.2. Employment maintenance incentives	-	-	-	..	..	..	-	-	-	-	-	-	0.01	0.02	0.02	0.31	0.36	0.52
5. Supported employment and rehabilitation	**0.05**	**0.05**	**0.05**	**1.20**	**1.12**	**1.22**	**0.13**	**0.15**	**0.14**	**0.52**	**0.55**	**0.54**	**0.16**	**0.17**	**0.19**	**..**	**..**	**3.13**
5.1 Supported employment	0.02	0.02	0.02	0.67	0.65	0.77	0.11	0.13	0.12	0.44	0.48	0.48	0.15	0.16	0.18	..	..	3.12
5.2 Rehabilitation	0.03	0.03	0.03	0.53	0.47	0.45	0.02	0.02	0.02	0.07	0.07	0.06	-	-	-	0.01	0.01	0.01
6. Direct job creation	**-**	**-**	**-**	**..**	**..**	**..**	**0.05**	**0.05**	**0.04**	**0.31**	**0.27**	**0.26**	**0.02**	**0.02**	**0.02**	**0.05**	**0.06**	**0.07**
7. Start-up incentives	**0.01**	**0.01**	**0.01**	**..**	**..**	**..**	**-**	**-**	**-**	**0.02**	**0.02**	**0.01**	**0.04**	**0.05**	**0.06**	**0.02**	**0.02**	**0.04**
8. Out-of-work income maintenance and support[a]	**0.34** [d]	**0.23** [d]	**0.28** [d]	**1.10**	**0.85**	**2.29**	**0.50** [h]	**0.42** [h]	**0.32** [h]	**2.87**	**2.03**	**1.76**	**0.26**	**0.19**	**0.14**	**1.84**	**1.49**	**1.59**
8.1. Full unemployment benefits	0.34 [d]	0.23 [d]	0.28 [d]	1.10	0.85	2.29	0.43	0.36	0.29	2.87	2.03	1.76	0.26	0.19	0.14	1.84	1.49	1.59
of which: Unemployment insurance	-	-	-	-	-	-	0.21	0.14	0.12	2.00	1.28	1.09	..	..	..	..	..	..
8.2, 8.3. Partial and part-time unemployment benefits	-	-	-	-	-	-	0.06	0.06	0.03	-	-	-	-	-	-	-	-	-
8.4, 8.5. Redundancy and bankrupcy compensation	-	-	-	-	-	-	0.01	-	-	-	-	-	-	-	-	-	-	-
9. Early retirement[a]	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**0.45**	**0.33**	**0.21**	**2.46**	**1.94**	**1.08**
TOTAL (1-9)	**0.72**	**0.59**	**..**				**1.08**	**0.98**	**..**				**1.16**	**1.01**	**0.91**			
Active measures (1-7)	0.38	0.36	..				0.58	0.56	..				0.45	0.50	0.56			
of which: Categories 2-7 only	0.26	0.25	0.25	2.31 [e]	2.29 [e]	2.45 [e]	0.47	0.45	0.42	2.45	2.29	2.13	0.36	0.40	0.47	2.70 [i]	2.74 [i]	4.58
Passive measures (8-9)	0.34	0.23	0.28	1.10	0.85	2.29	0.50	0.42	0.32	2.87	2.03	1.76	0.71	0.51	0.35	4.30	3.43	2.67

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 July 1st.

c) 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.

d) Excludes training benefits and includes unemployment benefits paid to participants in active programmes.

e) Participant stocks for Categories 4 "Employment incentives", 6 "Direct job creation" and 7 "Start-up incentives" are not included.

f) Includes the administration costs of rehabilitation benefits.

g) Mainly rehabilitation benefits paid to participants in education in regular schools.

h) Includes both unemployment and rehabilitation benefits, except when these are paid to participants in active programmes.

i) Participants in some measures in Category 5.1 "Supported employment" are not included in 2006 and 2007.

Table K. **Public expenditure and participant stocks in labour market programmes in OECD countries**[a] *(cont.)*

Programme categories and sub-categories	Portugal						Slovak Republic						Spain[d]					
	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[g]		
	2006	2007	2008	2006	2007	2008	2006	2007	2008	2006	2007	2008	2006	2007	2008	2006	2007	2008
1. PES and administration[a]	**0.15**	**0.14**	**0.15**				**0.17**	**0.11**	**0.11**				**0.13**	**0.13**	**0.13**			
of which: 1.1. Placement and related services[a]	0.03	0.03	0.06				0.09	0.04	0.04				0.04	0.02	0.02			
1.2. Benefit administration[a]	0.03 [b]	0.02 [b]	0.02 [b]				..	..	..				0.02	0.02	0.02			
2. Training	**0.26**	**0.20**	**0.24**	**0.86**	**0.81**	**0.89**	**0.01**	**-**	**0.01**	**0.09**	**0.02**	**0.05**	**0.16**	**0.15**	**0.17**	**1.74**	**1.48**	**1.04**
2.1. Institutional training	0.15	0.11	0.17	0.38	0.37	0.48	0.01	-	0.01	0.09	0.02	0.05	0.09	0.09	0.10	0.98	0.90	0.64
2.2. Workplace training	0.04	0.04	0.04	0.17	0.17	0.18	-	-	-	-	-	-	0.01	0.01	0.02	0.59	..	..
2.3. Alternate training	-	-	-	-	-	-	-	-	-	-	-	-	0.05	0.04	0.05	0.17	0.16	0.17
2.4. Special support for apprenticeship[a]	0.07	0.05	0.04	0.30	0.26	0.21	-	-	-	-	-	-	0.01	0.01	0.01	-	-	-
4. Employment incentives[a]	**0.13**	**0.12**	**0.13**	**1.42**	**1.39**	**1.48**	**0.02**	**0.02**	**0.02**	**0.53**	**0.32**	**0.37**	**0.26** [e]	**0.25** [e]	**0.21** [e]	**10.88** [e]	**13.61** [e]	**9.08** [e]
4.1. Recruitment incentives	0.12	0.12	0.12	1.36	1.34	1.42	0.02	0.02	0.01	0.53	0.32	0.37	0.25 [f]	0.24 [f]	0.19 [f]	10.54 [f]	12.86 [f]	8.66 [f]
4.2. Employment maintenance incentives	-	-	-	-	-	-	-	-	-	-	-	0.01	-	-	0.01	0.02	0.38	0.01
5. Supported employment and rehabilitation	**0.04**	**0.04**	**0.03**	**0.10**	**0.11**	**0.11**	**0.01**	**0.01**	**0.02**	**0.03**	**0.04**	**0.07**	**0.02**	**0.02**	**0.03**	**0.20**	**0.23**	**0.25**
5.1 Supported employment	-	-	-	0.01	0.01	0.01	0.01	0.01	0.02	0.03	0.04	0.07	0.02	0.02	0.02	0.20	0.22	0.24
5.2 Rehabilitation	0.04	0.04	0.03	0.09	0.10	0.10	-	-	-	-	-	-	-	-	-	-	-	-
6. Direct job creation	**0.03**	**0.02**	**0.02**	**0.38**	**0.40**	**0.37**	**0.05**	**0.04**	**0.05**	**3.94**	**2.46**	**2.12**	**0.08**	**0.08**	**0.09**	**..**	**..**	**..**
7. Start-up incentives	**-**	**-**	**-**	**0.08**	**0.08**	**0.11**	**0.04**	**0.04**	**0.05**	**0.78**	**0.69**	**0.78**	**0.08**	**0.09**	**0.11**	**0.74**	**1.16**	**1.71**
8. Out-of-work income maintenance and support[a]	**1.12**	**0.99**	**0.93**	**5.47**	**4.93**	**3.90**	**0.12** [c]	**0.10** [c]	**0.11** [c]	**1.02**	**0.82**	**0.83**	**1.39**	**1.40**	**1.84**	**6.17**	**6.41**	**7.94**
8.1. Full unemployment benefits	1.09	0.95	0.88	5.42	4.85	3.84	0.12	0.10	0.10	1.02	0.82	0.83	1.36	1.37	1.80	6.17	6.40	7.93
of which: Unemployment insurance	0.89	0.75	0.68	4.10	3.52	2.63	0.12	0.10	0.10	1.02	0.82	0.83	1.02	1.04	1.43	3.33	3.51	4.80
8.2, 8.3. Partial and part-time unemployment benefits	-	0.01	0.01	0.05	0.08	0.07	-	-	-	-	-	-	-	-	0.01	0.01	0.01	0.01
8.4, 8.5. Redundancy and bankrupcy compensation	0.03	0.03	0.04	..	..	-	-	-	0.01	-	-	-	0.03	0.03	0.03	-	-	-
9. Early retirement[a]	**0.11**	**0.10**	**0.09**	**0.37**	**0.52**	**0.60**	**0.22**	**0.26**	**0.33**	**1.68**	**1.82**	**2.14**	**0.04**	**0.04**	**0.05**	**..**	**..**	**..**
TOTAL (1-9)	**1.84**	**1.62**	**1.595**				**0.66**	**0.59**	**0.69**				**2.16**	**2.17**	**2.62**			
Active measures (1-7)	0.61	0.53	0.57				0.32	0.22	0.25				0.73	0.73	0.73			
of which: Categories 2-7 only	0.46	0.39	0.42	2.84	2.79	2.96	0.14	0.12	0.15	5.36	3.54	3.40	0.60	0.60	0.60	13.58	16.48	12.10
Passive measures (8-9)	1.23	1.09	1.02	5.84	5.45	4.51	0.34 [c]	0.36 [c]	0.43 [c]	2.70	2.64	2.97	1.43	1.44	1.89	6.17	6.41	7.94

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.

d) Categories 1 to 7 include expenditure by the autonomous communities and municipalities (additional to data published by Eurostat).

e) The totals shown for Category 4 include non-zero spending on Eurostat Category 3 "Job rotation and sharing" in Finland, Germany, Italy, Korea, Spain and Sweden.

f) Includes an employer subsidy for the conversion of temporary contracts into permanent contracts, not otherwise conditional on employment status.

g) Participant stock data do not include participants in municipal programmes.

Table K. **Public expenditure and participant stocks in labour market programmes in OECD countries**[a] *(cont.)*

Programme categories and sub-categories	Sweden						Switzerland						United Kingdom[h]						United States[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			Participant stocks as a percentage of the labour force			Public expenditure as a percentage of GDP		
	2006	2007	2008	2006	2007	2008	2006	2007	2008	2006	2007	2008	2006-07	2007-08	2008-09	2006-07	2007-08	2008-09	2006-07	2007-08	2008-09
1. PES and administration[a]	**0.23**	**0.23**	**0.33**				**0.13**	**0.11**	**0.11**				**0.28**	**0.28**	**..**				**0.03**	**0.03**	**0.04**
of which: 1.1. Placement and related services[a]	0.11	0.11	0.22				..	..	..				0.14	0.14	..				0.01	0.01	0.01
1.2. Benefit administration[a]	0.04 [b]	0.04 [b]	0.04 [b]				0.04	0.04	0.04				0.06 [i]	0.06 [i]	0.06 [i]				0.02 [k]	0.02 [k]	0.02 [k]
2. Training	**0.33** [c]	**0.18** [c]	**0.07** [c]	**1.10**	**0.61**	**0.21**	**0.23**	**0.19**	**0.16**	**0.77**	**0.64**	**0.55**	**0.02**	**0.02**	**..**	**0.13**	**0.07**	**0.04**	**0.05**	**0.04**	**0.07**
2.1. Institutional training	0.20	0.11	0.06	0.54	0.27	0.14	0.22	0.18	0.16	0.74	0.62	0.53	0.02	0.02	..	0.12	0.07	0.04	0.02	0.02	0.03
2.2. Workplace training	-	-	-	0.02	-	-	0.01	0.01	0.01	0.04	0.03	0.02	-	-	-	-	-	-	-	-	-
2.3. Alternate training	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.02	0.02	0.04
2.4. Special support for apprenticeship[a]	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4. Employment incentives[a]	**0.58** [d]	**0.51** [d]	**0.38** [d]	**2.77** [d]	**2.14** [d]	**1.71** [d]	**0.08**	**0.06**	**0.06**	**0.66**	**0.56**	**0.50**	**0.01**	**0.01**	**..**	**0.11**	**0.14**	**0.10**	**-**	**-**	**0.01**
4.1. Recruitment incentives	0.51	0.49	0.38	2.50	2.06	1.71	0.08 [f]	0.06 [f]	0.06 [f]	0.66	0.56	0.50	0.01	0.01	..	0.11	0.14	0.10	-	-	0.01
4.2. Employment maintenance incentives	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5. Supported employment and rehabilitation	**0.20**	**0.18**	**0.20**	**0.78**	**0.72**	**0.79**	**0.23**	**0.22**	**0.14**	**0.87**	**0.88**	**0.88**	**0.01**	**0.01**	**..**	**0.02**	**0.06**	**-**	**0.03**	**0.03**	**0.04**
5.1 Supported employment	0.17	0.17	0.19	0.56	0.56	0.62	0.23	0.22	0.14	0.87	0.88	0.88	0.01	0.01	..	0.02	0.06	-	-	-	-
5.2 Rehabilitation	0.03	0.01	0.01	0.22	0.17	0.17	-	-	-	-	-	-	-	-	-	-	..	..	0.03	0.03	0.04
6. Direct job creation	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**0.01**	**..**	**0.03**	**0.02**	**0.03**	**0.01**	**0.01**	**0.01**
7. Start-up incentives	**0.03**	**0.02**	**0.01**	**0.11**	**0.06**	**0.06**	**0.01**	**0.01**	**-**	**0.02**	**0.01**	**0.01**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
8. Out-of-work income maintenance and support[a]	**0.96**	**0.67**	**0.46**	**6.94**	**5.39**	**4.03**	**0.76**	**0.57**	**0.54**	**3.30**	**2.82**	**2.19**	**0.19**	**0.16**	**0.20**	**3.19**	**2.78**	**3.35**	**0.24**	**0.30**	**0.81**
8.1. Full unemployment benefits	0.65	0.39	0.26	3.76	2.74	2.12	0.73 [g]	0.57 [g]	0.52 [g]	3.07	2.70	2.14	0.19	0.16	0.20	3.19	2.78	3.35	0.24	0.30	0.81
of which: Unemployment insurance	0.65 [e]	0.39 [e]	0.26 [e]	3.76 [e]	2.74 [e]	2.12 [e]	0.69	0.52	0.47	3.07	2.70	2.14	..	..	..	..	..	..	0.24	0.30	0.81
8.2, 8.3. Partial and part-time unemployment benefits	0.28	0.26	0.17	3.19	2.65	1.91	0.02	0.01	0.02	0.21	0.11	0.03	-	-	-	-	-	-	-	-	-
8.4, 8.5. Redundancy and bankrupcy compensation	0.02	0.02	0.03	-	-	-	-	-	-	0.02	0.02	0.02	-	-	-	-	-	-	-	-	-
9. Early retirement[a]	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
TOTAL (1-9)	**2.32**	**1.79**	**1.45**				**1.42**	**1.16**	**1.01**				**0.51**	**0.49**	**..**				**0.37**	**0.43**	**0.98**
Active measures (1-7)	1.36	1.12	0.99				0.66	0.59	0.47				0.32	0.32	..				0.13 [l]	0.13 [l]	0.17 [l]
of which: Categories 2-7 only	1.13	0.89	0.66	4.76	3.54	2.77	0.54	0.47	0.36	2.32	2.10	1.94	0.04	0.05	..	0.30	0.29	..	0.10 [l]	0.10 [l]	0.14 [l]
Passive measures (8-9)	0.96	0.67	0.46	6.94	5.39	4.03	0.76	0.57	0.54	3.30	2.82	2.19	0.19	0.16	0.20	3.19	2.78	3.35	0.24	0.30	0.81

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) Administration costs of independant unemployment insurance funds.

c) Includes income support paid to participants in "Activities within counselling, guidance and placement services" but not the corresponding services (which are in Category 1). This expenditure is not allocated across sub-categories.

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) Includes "basic insurance" which is not a contribution-based benefit.

f) Mainly the "intermediate earnings" programme, which resembles partial unemployment benefits paid subject to an earnings taper.

g) Excludes unemployment benefits paid to participants in active programmes.

h) Coverage of expenditure and participants in Northern Ireland is incomplete. Fiscal years starting on April 1st.

i) 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.

j) Fiscal years starting on October 1st.

k) Mainly costs of running unemployment insurance offices. Also includes various national activities such as information, research and evaluation.

l) 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.

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Table K. **Public expenditure and participant stocks in labour market programmes in OECD countries**[a] *(cont.)*

Programme categories and sub-categories	OECD unweighted average[b]						Estonia						Slovenia					
	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		
	2006	2007	2008	2006	2007	2008	2006	2007	2008	2006	2007	2008	2006	2007	2008	2006	2007	2008
1. PES and administration[a]	**0.16**	**0.15**	**0.16**				**0.02**	**0.02**	**0.03**				**0.09**	**0.09**	**0.09**			
of which: 1.1. Placement and related services[a]	0.06	0.06	0.07				0.02	0.02	0.03				0.04	0.04	0.04			
1.2. Benefit administration[a]	0.05	0.05	0.05				..	..	..				0.01	0.01	0.01			
2. Training	**0.17**	**0.15**	**0.14**	**1.33**	**1.24**	**1.18**	**0.04**	**0.03**	**0.03**	**0.17**	**0.16**	**0.15**	**0.06**	**0.03**	**0.03**	**1.17**	**0.44**	**0.33**
2.1. Institutional training	0.11	0.10	0.09	0.82	0.79	0.77	0.04	0.02	0.02	0.13	0.09	0.10	0.03	0.02	0.01	1.06	0.40	0.25
2.2. Workplace training	0.01	0.01	0.01	0.16	0.12	0.11	-	-	0.01	0.02	0.05	0.03	0.03	0.02	0.01	0.11	..	0.08
2.3. Alternate training	0.01	0.01	0.01	0.09	0.08	0.09	-	-	-	-	-	-	-	-	-	-	-	-
2.4. Special support for apprenticeship[a]	0.02	0.02	0.02	0.31	0.34	0.35	-	-	-	0.02	0.03	0.02	-	-	-	-	-	-
4. Employment incentives[a]	**0.10**	**0.10**	**0.09**	**1.57**	**1.66**	**1.50**	**-**	**-**	**-**	**0.10**	**0.03**	**-**	**0.03**	**0.02**	**0.01**	**0.24**	**0.17**	**0.06**
4.1. Recruitment incentives	0.09	0.08	0.08	1.35	1.41	1.15	-	-	-	0.10	0.03	-	0.03	0.02	0.01	0.24	0.17	0.06
4.2. Employment maintenance incentives	0.00	0.00	0.00	0.09	0.11	0.11	-	-	-	-	-	-	-	-	-	-	-	-
5. Supported employment and rehabilitation	**0.09**	**0.09**	**0.09**	**0.52**	**0.53**	**0.67**	**-**	**-**	**-**	**-**	**0.01**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
5.1 Supported employment	0.07	0.07	0.07	0.38	0.40	0.54	-	-	-	-	0.01	-	-	-	-	-	-	-
5.2 Rehabilitation	0.02	0.02	0.02	0.09	0.08	0.08	-	-	-	-	-	-	-	-	-	-	-	-
6. Direct job creation	**0.06**	**0.06**	**0.06**	**0.64**	**0.57**	**0.54**	**-**	**-**	**-**	**0.01**	**0.01**	**-**	**0.07**	**0.05**	**0.04**	**0.33**	**0.54**	**0.22**
7. Start-up incentives	**0.02**	**0.02**	**0.02**	**0.17**	**0.18**	**0.20**	**-**	**-**	**-**	**0.04**	**0.03**	**0.02**	**0.02**	**-**	**0.02**	**0.33**	**0.03**	**0.08**
8. Out-of-work income maintenance and support[a]	**0.75**	**0.65**	**0.67**	**5.22**	**4.60**	**4.68**	**0.08**	**0.10**	**0.21**	**1.34**	**1.26**	**1.71**	**0.38**	**0.30**	**0.27**	**2.99**	**1.75**	**1.40**
8.1. Full unemployment benefits	0.70	0.60	0.63	4.77	4.22	4.28	0.07	0.08	0.15	1.34	1.26	1.71	0.38	0.30	0.27	2.99	1.75	1.40
of which: Unemployment insurance	0.51	0.44	0.46	3.28	2.84	2.75	0.05	0.04	0.10	0.44	0.41	0.56	0.35	0.29	0.27	2.23	1.60	1.40
8.2, 8.3. Partial and part-time unemployment benefits	0.03	0.03	0.02	0.44	0.37	0.39	-	-	-	-	-	-	-	-	-	-	-	-
8.4, 8.5. Redundancy and bankrupcy compensation	0.02	0.02	0.02	0.00	0.00	0.00	0.01	0.02	0.06	-	-	-	-	-	-	-	-	-
9. Early retirement[a]	**0.12**	**0.11**	**0.11**	**0.81**	**0.76**	**0.70**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**
TOTAL (1-9)	**1.50**	**1.35**	**1.36**				**0.15**	**0.15**	**0.27**				**0.65**	**0.50**	**0.45**			
Active measures (1-7)	0.61	0.57	0.57				0.07	0.05	0.07				0.27	0.20	0.18			
of which: Categories 2-7 only	0.44	0.41	0.41	4.14	4.08	4.15	0.05	0.03	0.04	0.32	0.24	0.18	0.18	0.11	0.09	2.06	1.19	0.69
Passive measures (8-9)	0.87	0.76	0.78	5.99	5.33	5.35	0.08 [c]	0.10 [c]	0.21 [c]	1.34	1.26	1.71	0.38	0.30	0.27	2.99	1.75	1.40

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) 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 EU countries and Norway, Eurostat (2010), *Labour Market Policy: 2010 edition* and detailed underlying data supplied to OECD by Eurostat with certain Secretariat adjustments. For other countries: *OECD database on labour market programmes.*

StatLink http://dx.doi.org/10.1787/888932303689

OECD Publications on Employment and Related Topics

The Reassessed OECD Jobs Strategy: a major study of the factors underlying the deterioration of labour market performance. The 2006 edition of the *OECD Employment Outlook* provides an overall reassessment of the "OECD Jobs Strategy". To find out more about it, consult *www.oecd.org/els/employment/strategy*.

Growing Unequal?: a report providing evidence of a fairly generalised increase in income inequality over the past two decades across the OECD, but the timing, intensity and causes of the increase differ from what is typically suggested in the media.

Jobs for Youth: a series of 16 country reviews on the school-to-work transition process: Australia, Belgium, Canada, Denmark, France, Greece, Japan, Korea, Netherlands, New Zealand, Norway, Poland, Slovak Republic, Spain, United Kingdom, United States). Drawing from all the country reviews, a synthesis report will be published end 2010.

OECD Reviews of Labour Market and Social Policies: a series of country reports analysing the main challenges for labour market and social policies, and considering the available policy options from the perspective of OECD countries' experience: Chile, Estonia, Israel and Slovenia.

Equal Opportunities: The Labour Market Integration of the Children of Immigrants: The integration of the children of immigrants – both those born in the host country and those who arrived young enough to be educated in the host country – is of growing policy relevance for OECD countries.

International Migration Outlook: an annual publication on recent developments in migration movements and policies in OECD countries.

Pensions at a Glance: Public Policies across OECD Countries: a biannual publication presenting key features of mandatory pension systems – both public and private – in the 31 OECD countries, including projections of retirement income for today's workers.

Sickness, Disability and Work: Improving Opportunities: how to reduce inflows into sickness and disability benefits through good sickness management for the employed as well as the unemployed? (Vol. 1: Australia, Luxembourg, Spain and the United Kingdom, 2006; Vol. 2: Norway, Poland and Switzerland, 2007; Vol. 3: Denmark, Finland, Ireland and the Netherlands, 2008). Drawing from all the country reviews, a synthesis report will be published end 2010.

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Taxing Wages 2008: provides unique information on income tax paid by workers and social security contributions levied on employees and their employers in OECD countries as well as cash benefits received.

Going for Growth: a publication that takes stock of recent progress in implementing policy reforms to improve labour productivity and utilisation. Internationally comparable indicators provided here enable countries to assess their economic performance and structural policies in a broad range of areas.

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i.e. you need to know how does AUSTRALIA compare?

Labour market outcomes – Australia

	Unit	1999	2008	2009	2009
					OECD-Total
Unemployment rate	% of labour force	7.0	4.3	5.7	8.3
Youth unemployment rate	% of youth labour force (15-24)	13.3	8.9	11.6	16.4
Long-term unemployment (12 months and over)	% of total unemployment	28.3	14.9	14.7	23.5
Employment rate	% of working age population	68.4	73.2	72.0	64.8
Employment rate of women	% of female population (15-64)	60.0	66.7	66.2	56.5
Employment rate of older workers	% of population aged 55-64	44.3	57.4	59.0	54.5
Temporary employment	% of dependent employment	. .	. .	. .	11.6
Part-time employment	% of total employment	. .	23.8	24.7	16.2
Average annual working time	Hours per worker	1 778	1 718	1 690	1 739
Average annual wage	2008 USD PPPs	40 526	45 464	. .	. .
Growth of real GDP	% change from previous year	4.3	2.2	1.4	–3.3
Employment growth	% change from previous year	1.7	2.3	0.3	–1.8
Wage growth	% change from previous year	3.0	–0.2	. .	. .

Labour market policies and institutions – Australia

	Unit (earlier, latest years)	Earlier year	Latest year	Latest year
				OECD-Total
Public expenditure on labour market policies				
Active measures	% of GDP (1999, 2008)	0.4	0.3	0.6
Passive measures	% of GDP (1999, 2008)	1.0	0.4	0.8
Ratio of minimum to median wage	Ratio (1999, 2008)	0.61	0.52	0.46
Employment protection (EP)				
Overall EP strictness	Scale 0-6 (1998, 2008)	1.5	1.4	2.1
EP strictness for regular employment	Scale 0-6 (1998, 2008)	1.5	1.4	2.1
EP strictness for temporary employment	Scale 0-6 (1998, 2008)	0.9	0.9	1.8
Additional requirements for collective dismissals	Scale 0-6 (1998, 2008)	2.9	2.9	3.0
Labour taxes (for a single person without children)				
At 100% of the average wage	% of labour costs (2000, 2008)	30.6	26.9	37.4
At 67% of the average wage	% of labour costs (2000, 2008)	25.4	21.9	33.5
Unemployment benefits	% of previous earnings (1997, 2007)	26.5	20.2	24.7
Union membership	% of employees (1998, 2008)	27.8	18.6	. .

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OECD Employment Outlook
MOVING BEYOND THE JOBS CRISIS

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Why did unemployment rise so much more sharply in some countries than in others that were also hit hard by the global recession? Have governments taken effective measures to help workers weather the storm? What are the prospects for a job-rich recovery?

The Global Crisis in Emerging Economies: The Jobs Impact and Policy Response
How has the recent crisis affected emerging economies and their labour market outcomes? What is the role of employment and social policies to support the incomes of those in need? How can existing safety nets be best used to address increasing needs and what are the challenges they face?

Institutional and Policy Determinants of Labour Market Flows
What determines cross-country differences in hiring and separation rates? Can policies enhance growth by removing barriers to labour reallocation across industries, firms and jobs? What are the effects of different policies on the likelihood and cost of losing a job? And what is their impact on wage premia and losses associated with different types of labour market transitions?

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How do part-time jobs compare to full-time jobs in terms of pay, advancement, job security, working-time conditions and stress? Is part-time work the way to increase labour supply in ageing OECD societies? What barriers prevent part-timers from moving into full-time jobs?

www.oecd.org/els/employment/outlook

The full text of this book is available on line via these links:
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