# World of work outlook: The challenge of job-rich recovery[*]

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## Main findings

- The current economic recovery is not creating enough jobs and there are concerns about the quality of the jobs being created. Workers are becoming discouraged and leaving the labour market altogether, which could have long-lasting and devastating effects, especially for young men and women:
  - Among 68 countries with available information, 38 per cent show negative job growth in the most recent quarter (either because employment losses continue or because it has fallen after a brief recovery, i.e. "double dip").
  - Among the group of countries now experiencing employment growth, a disproportionate share of the job growth has been part-time – often involuntary. In some developing countries, workers are also working less than desired, and many have resorted to informal employment.
  - The number of people that have been unemployed for more than one year has increased in nearly all of the countries for which information is available – in some cases significantly.
  - Among countries with available information, more than 4 million workers had left the labour market by the end of 2009 and labour force participation rates are declining even in countries with positive employment growth. As of early 2010, close to 1.2 million people have become discouraged and have stopped actively looking for a job – although they would prefer to be working.

- Over the medium term, in *advanced economies* job growth is expected to remain stagnant through 2010 and a return to pre-crisis levels is not foreseeable before 2015. Estimates suggest that almost 15 million jobs in 35 countries will need to be created in 2011 in order to restore the pre-crisis employment rate.

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- For the *33 emerging and developing economies* analysed, a V-shaped recovery is expected – with employment having quickly returned to pre-crisis levels in the first half of 2010. Yet, the challenge is to absorb labour surpluses from earlier years as well as new entrants: in 2011 there is an employment deficit of approximately 7 million jobs, which are needed to restore employment rates to their pre-crisis levels.

- Young men and women have been disproportionately affected since the onset of the crisis. Earlier experiences have shown that it takes, on average, over 11 years for youth unemployment to return to pre-recession levels.

- The policy challenge is to build and ensure a sustainable and inclusive recovery – one that is job-rich in terms of quantity and quality. Analysis shows, first, that countries that used an inclusive approach to promoting employment have been the most successful. This approach does not have to be expensive to work. Second, looking ahead, it is crucial to prioritize policies that prevent exit from the labour market (activation programmes, well-designed social protection that facilitates participation, effective minimum wage policies and employment-friendly taxation). Third, policy-makers must be careful to avoid short-term solutions, such as labour market deregulation, that will create long-term labour market and social challenges, including heightened social unrest (an issue explored in Chapter 2). Fourth, a coordinated effort to ensure adequate aggregate demand and balanced growth is needed (addressed in detail in Chapters 3 to 5).

## Introduction

In the first half of 2009, employment destruction gained momentum as the effects of the global financial and economic crisis took hold. In the second half of the year, however, world GDP returned to positive territory, but despite the rebound in activity, employment losses continued in countries with available information – albeit at a much slower pace. Employment growth turned positive in the first quarter of 2010 but there are concerns about the quantity and quality of jobs being created.

Moreover, while some economies are now growing fast, others continue to struggle and some face the prospect of a double dip, i.e. a second period of contraction. Indeed, the financial crisis has entered a new phase, characterized by concern over sovereign debt risks – mainly in advanced countries – and fiscal consolidation, associated economic turbulence and potential spillovers. As such, pressures to cut spending, in particular on pro-employment programmes, are growing, which is only likely to delay further the employment recovery.

The purpose of this chapter is to demonstrate the importance of providing appropriate support to the labour market to ensure a sustainable and inclusive recovery. Section A examines recent developments in the world of work, documenting the extent of an employment recovery. It also examines the risks associated with current labour market trends in terms of the quantity and quality of jobs being created. Section B assesses the expected depth and duration of the current jobless recovery. In particular, using a number of different scenario analyses, the section forecasts future employment growth while taking into consideration the growing working-age population. The last section (section C) introduces the rest of the report and in doing so brings to the fore a number of important labour market and social challenges to be considered if policy-makers are to achieve a full, sustainable and inclusive recovery.

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## A. Employment snapshot

**Employment has only begun to recover from the financial and economic crisis…**

Signs of an economic recovery started to materialize already in the second half of 2009 (IMF, 2010) – but the labour market continued to struggle. In fact, employment in countries with available information fell for six consecutive quarters, only returning to positive territory during the first quarter of 2010 (figure 1.1).[1] In particular, employment grew by 0.8 per cent in the first three months of 2010 but given the extent and duration of the labour market recession, the number of jobs needed to restore employment to pre-crisis levels in these countries stood at 12 million.[2]

However, the current state of the labour market in terms of employment patterns is rather heterogeneous across income groups, in terms of timing, intensity and duration (figure 1.2)[3]:

- *High-income countries*[4] were the first group of countries affected, with losses beginning to amass in the second quarter of 2008, and, as a group, are clearly the most impacted overall in terms of employment losses.[5] The group experienced seven consecutive quarters of employment loss, with 7 million jobs shed in the first half of 2009 alone. While the rate of job loss slowed in the last two quarters of 2009, employment growth only turned positive in the first quarter of 2010. At the beginning of 2010, 14 million jobs (or 3 per cent) were still needed to restore employment to pre-crisis levels.[6]

- Employment in *upper-middle-income countries*[7] was also heavily affected by the crisis, but not until the second half of 2008: in the third and fourth quarters of 2008 employment fell by 2.6 million, or close to 1 per cent. Employment growth returned to positive territory in the second quarter of 2009, but only marginally (very low growth rates). However, employment rebounded in the past two quarters leading up to quarter one 2010, but compared with pre-crisis levels, employment remained lower by over 1.6 million jobs (or 0.6 per cent).

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1. The analysis in this section includes 68 countries for which information is available. For a full list of countries, please see Appendix A. These trends are consistent with the global estimates of unemployment provided by *Global Employment Trends 2010* (Geneva, January 2010).
2. This figure corresponds to the net number of jobs needed to restore employment to pre-crisis levels. It disregards the fact that the number of people entering working age and seeking employment has risen over the past two years (see section B for a discussion on the timing of the expected employment recovery and an analysis of employment to population ratios).
3. See for example ILO, 2009b.
4. High-income countries (countries with a gross national income (GNI) per capita of USD 11,906 or more) include: Australia, Austria, Belgium, Canada, Croatia, Cyprus, Czech Republic, Denmark, Estonia, France, Finland, Germany, Greece, Hungary, Iceland, Ireland, Israel, Italy, Japan, Republic of Korea, Luxembourg, Malta, Netherlands, New Zealand, Norway, Portugal, Singapore, Slovakia, Slovenia, Spain, Sweden, Switzerland, Trinidad and Tobago, United Kingdom and the United States.
5. Some countries in the group, e.g. the United States, started to incur job losses well before the second quarter of 2008.
6. The number of jobs needed to return to the pre-crisis peak employment level is derived from country-specific figures and then aggregated for the group.
7. Upper-middle-income countries (countries with a GNI per capita of USD 3,857 to USD 11,905) include: Argentina, Belarus, Brazil, Bulgaria, Chile, Colombia, Jamaica, Kazakhstan, Latvia, Lithuania, Macedonia FYR, Malaysia, Mauritius, Mexico, Peru, Poland, Romania, Russian Federation, Serbia, South Africa, Turkey and the Bolivarian Republic of Venezuela.

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**Figure 1.1 Total employment 2008–10 (change from the previous quarter, percentages)**
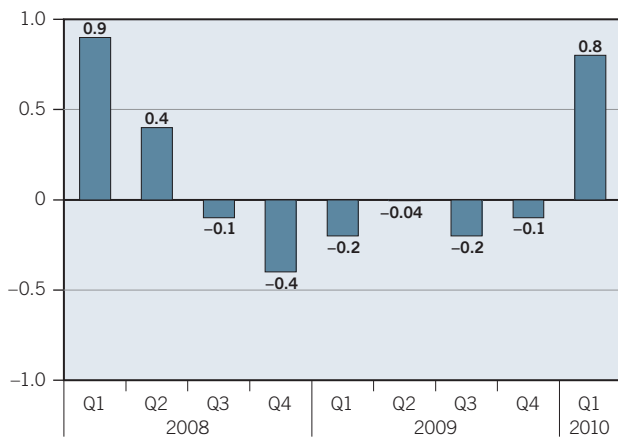


Note: Total employment is estimated on the basis of 68 countries for which information is available (see Appendix A). For some countries, employment figures are estimated using the previous quarters growth rate (Q1 2010: China, Jamaica, Morocco and Trinidad and Tobago; Q4 2009: China). Data are seasonally adjusted.[7]
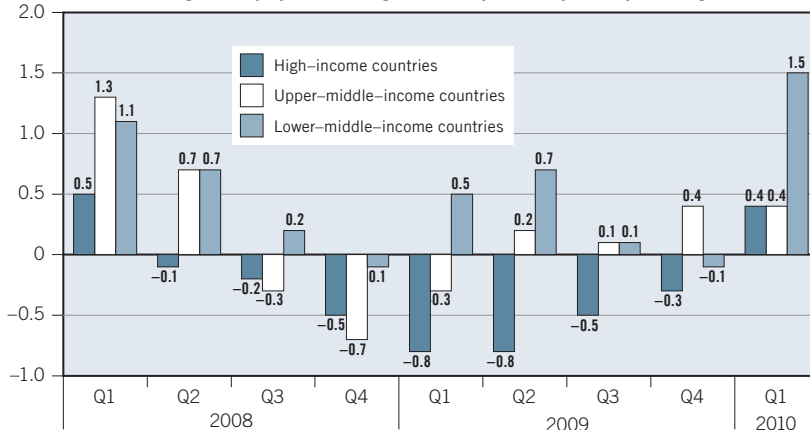
Source: IILS estimates based on ILO, Laborsta database.

**Figure 1.2 Employment patterns since the start of the crisis**

Panel A. Change in employment (millions)



High–income countries

Upper–middle–income countries

Lower–middle–income countries

Panel B. Change in employment (change from the previous quarter, percentages)



Note: Groups are divided by GNI per capita according to the World Bank country classification. See Appendix A for the detailed list of countries for each country grouping. For some countries, employment figures are estimated using the previous quarters growth rate (Q1 2010: China, Jamaica, Morocco and Trinidad and Tobago; Q4 2009: China). Data are seasonally adjusted.

Source: IILS estimates based on ILO, Laborsta database.

7. Seasonality was corrected through the non-causal ratio-to-moving average method due to the limited availability of time-series data. This technique was also used to extrapolate quarterly employment information for Indonesia given that data is available only on a 6-month basis.

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- Finally, the group of *lower-middle-income countries*[8] was the last and – at least for the time being – the least affected by the crisis in terms of employment losses. And during the first quarter 2010 employment grew at an impressive rate (especially in Indonesia and Thailand), wiping away jobs lost during the crisis and even surpassing pre-crisis levels by over 3 million jobs.[9]

**…but the figures mask the cross-country variation in job growth as employment continues to fall in many countries.**

Wide differences exist in terms of the extent of a jobs recovery. In particular, if countries that have already attained (or exceeded) pre-crisis employment levels are excluded, the total number of jobs needed to restore pre-crisis levels in these countries increases to over 20 million.[10] Moreover, in 38 per cent of the countries analysed, employment growth in the most recent quarter was negative. Employment has continued to fall in a considerable number of these countries, while in some others it has recently fallen after a period of positive job growth (figure 1.3):

- *Employment is still falling*: Employment in over 22 per cent of the countries analysed continues to fall – albeit at a decelerating rate. These countries – the majority of which are high-income countries – have seen employment fall for, on average, at least a year.

**Figure 1.3  Employment trends, by type of recovery (quarterly changes, percentages)**
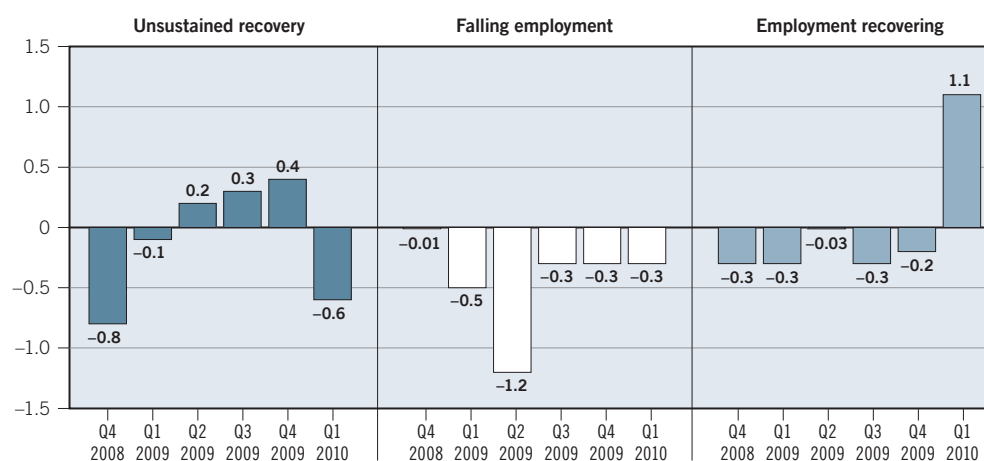


Note: This figure shows changes in employment (over the previous quarter, in per cent) for the 68 countries for which quarterly information is available by type of employment recovery. Unsustained recovery includes countries where the most recent quarterly employment growth is negative despite having experienced at least one quarter of positive employment growth since the beginning of the crisis. For some countries, employment figures are estimated using the previous quarters growth rate (Q1 2010: China, Jamaica, Morocco and Trinidad and Tobago; Q4 2009: China). Data are seasonally adjusted.
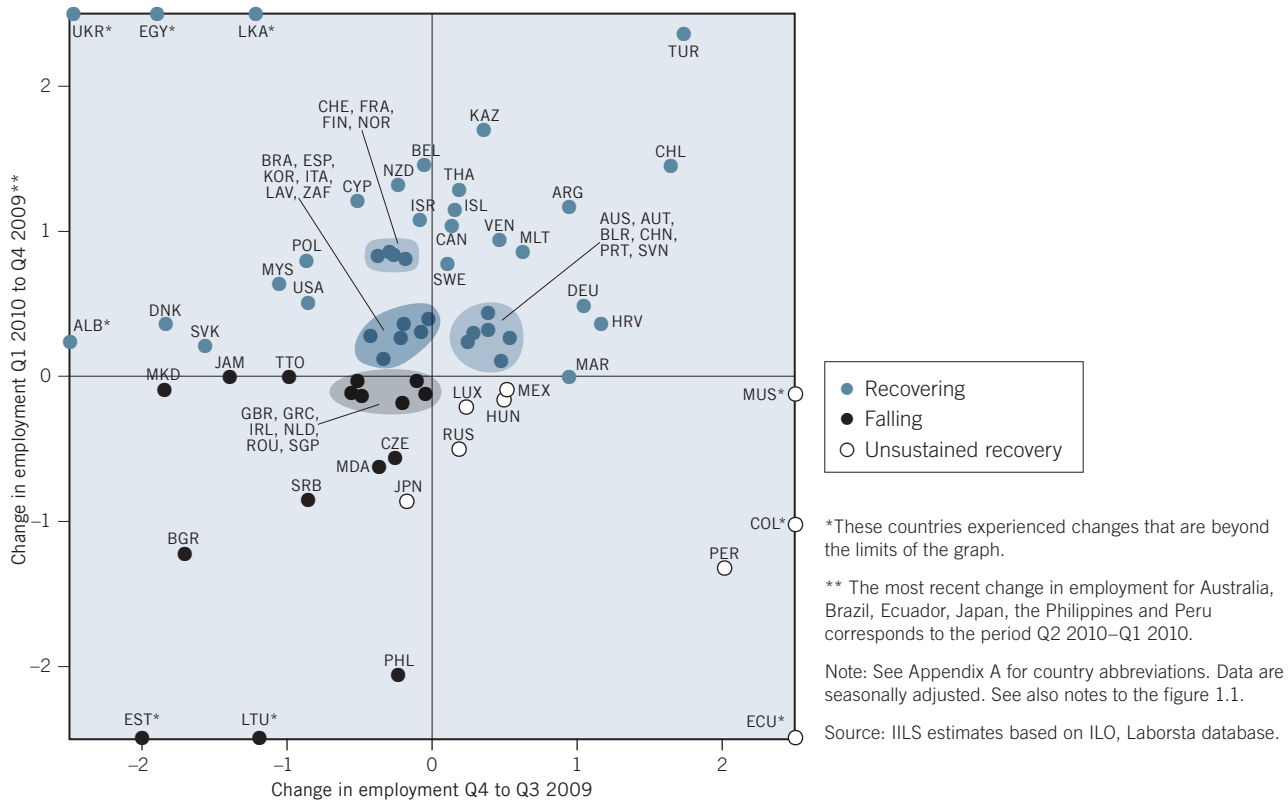
Source: IILS estimates based on ILO, Laborsta database.

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8. Lower-middle-income countries (countries with a GNI per capita of USD 976 to USD 3,856) include: Albania, Bolivia, China, Ecuador, Egypt, Indonesia, Republic of Moldova, Morocco, Philippines, Sri Lanka, Thailand and Ukraine.
9. When this group is analysed without the strong influence of China's figures, employment losses appear higher, but they are still the lowest among country groupings and the pattern of employment developments is not altered. For example, excluding China, at the end of 2008, 344 000 jobs were lost, but employment quickly recovered in the following quarter. And, during the third quarter 2009, employment fell again by 130 000.
10. As of Q1 2010 Argentina, Australia, Belarus, Belgium, Brazil, Chile, China, Colombia, Indonesia, Israel, Kazakhstan, Luxembourg, Malta, Mexico, Peru, Philippines, Switzerland, Thailand and Turkey have attained pre-crisis employment levels.

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**Figure 1.4  Changes in total employment, by type of employment recovery and by country (percentages)**



*These countries experienced changes that are beyond the limits of the graph.

** The most recent change in employment for Australia, Brazil, Ecuador, Japan, the Philippines and Peru corresponds to the period Q2 2010–Q1 2010.

Note: See Appendix A for country abbreviations. Data are seasonally adjusted. See also notes to the figure 1.1.

Source: IILS estimates based on ILO, Laborsta database.

- *Unsustained recovery*: In close to 15 per cent of the countries analysed, the jobs recovery was unsustained, i.e. after initially falling, employment growth returned to positive territory, but only temporarily, as it again turned negative in the most recent period. Interestingly, the drop in employment among this group during this most recent period was notably strong, erasing much of the prior gains.

- *Employment is recovering*: In about 63 per cent of the countries analysed employment growth was positive in the most recent quarter. The country composition of this the group of recovering countries is rather mixed, including upper-middle-income countries as well as some high-income and lower-middle-income countries.

The extent of the cross-country variation in terms of employment developments is particularly evident in Figure 1.4, which examines changes in employment compared with the previous quarter in both the first quarter of 2010 ($y$ axis) and in the last quarter of 2009 ($x$ axis). As such:
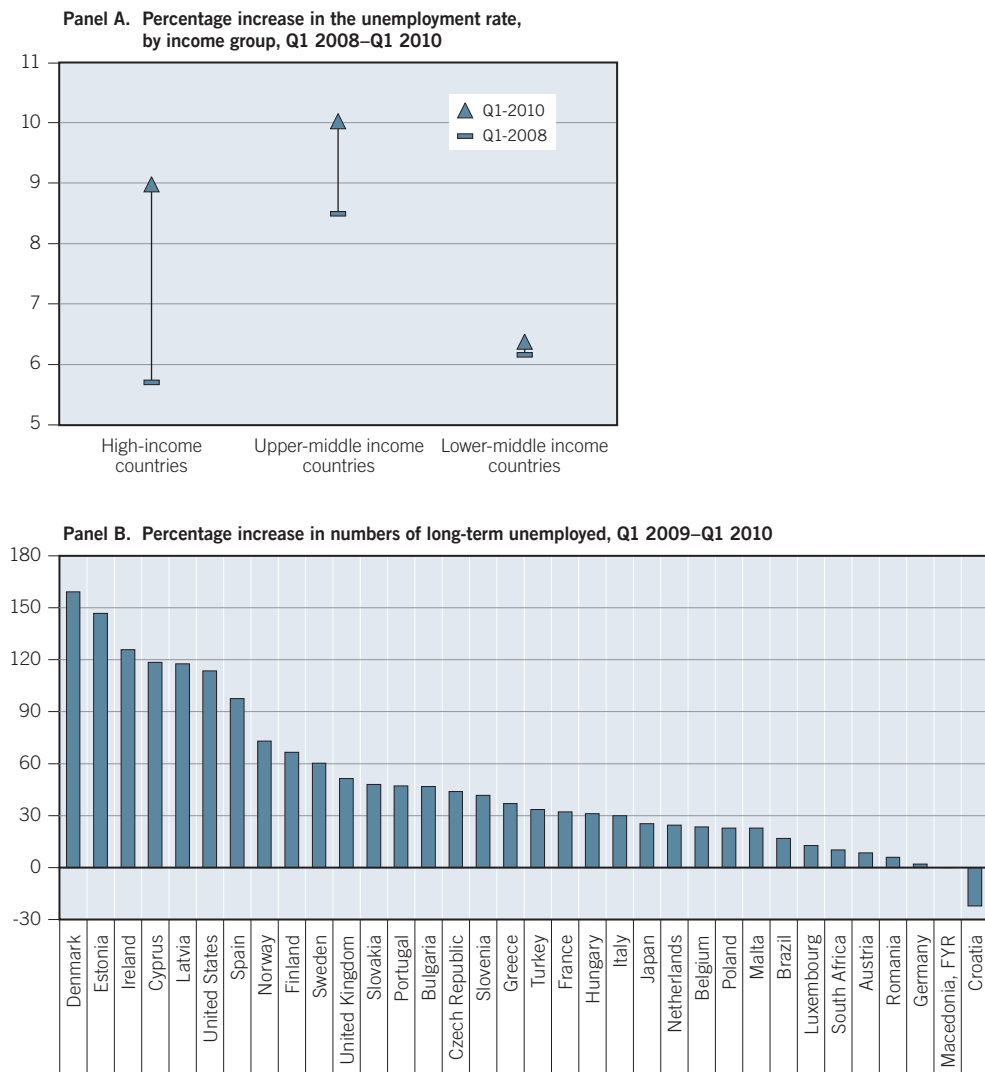
- countries appearing in the upper-right quadrant (less than half of the countries in the group) have experienced two consecutive quarters of employment growth;

- countries in the upper-left quadrant witnessed a return to positive job creation in the first quarter of 2010, including countries such as South Africa and the United States;

- conversely, countries in the bottom two quadrants experienced job losses in the most recent quarter: the lower-left quadrant indicates countries where

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employment losses have endured over the last two quarters (e.g. Greece and Ireland) and the lower-right quadrant contains countries that have recently experienced a double dip, i.e. recent job losses that followed a period of growth (e.g. the Russian Federation and Colombia).

## As a result, long-term joblessness is on the rise in most countries…

With labour demand remaining weak, joblessness continued to spread in early 2010 – figures indicate that unemployment rates remain stubbornly high across income groups (figure 1.5, panel A). In fact, 85 per cent of the countries analysed have experienced increases in the unemployment rate since the beginning of 2008.[11] For example, in high-income countries the unemployment rate

**Figure 1.5  Unemployment and long-term unemployment, 2008 to 2010**

**Panel A.  Percentage increase in the unemployment rate, by income group, Q1 2008–Q1 2010**



**Panel B.  Percentage increase in numbers of long-term unemployed, Q1 2009–Q1 2010**



Note: Unemployment rates by income group are weighted averages based upon 60 countries with available information. Long-term unemployment in the United States is defined as 6 months or more.

Source: IILS estimates based on ILO, Eurostat database and Laborsta database.

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11.  By income group, the share of countries that have experienced an increase in the unemployment rate equals 97 per cent for high-income countries; 78 per cent for upper-middle-income countries and 50 per cent for lower-middle-income countries.

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increased over 3 percentage points since the first quarter of 2008, reaching 9 per cent in the first quarter of 2010. Among upper-middle-income countries, the average unemployment rate is even higher – over 10 per cent at the beginning of 2010 – although the jump since the beginning of 2008 has been less dramatic given that rates were already comparably high. For lower-middle-income countries, the increase in unemployment has only been marginal, rising to above 6 per cent.

Moreover, as the crisis persists, it is not surprising to see a rise in the number of people entering long-term unemployment, i.e. those that have been unemployed for more than one year (figure 1.5, panel B).[12] Over the past year, the number of workers in long-term unemployment has increased in nearly all of the countries for which information is available – in some cases significantly. Additionally, in more than 80 per cent of these countries, the share of long-term unemployed in total unemployment has also increased. In other words, long-term unemployment is not only growing, but it is growing faster than overall unemployment. It is also worth noting that the trend increase in unemployment and long-term unemployment is occurring regardless of the recovery path, i.e. even in countries where employment growth was positive in the most recent quarter.

### …and a deterioration in the quality of employment in many instances.

In some cases there is concern that when the jobs recovery takes place it will not be in full-time permanent employment. During 2009, in countries where employment growth has turned positive (recovering countries), the growth has been disproportionately part-time in nature (figure 1.6). In fact, with the exception of a few countries (Poland, South Africa and Thailand), the share of employment growth that has been part-time during the recent recovery period exceeds the share of part-time employment in total employment prior to the crisis. For example, in the United States prior to the crisis part-time employment accounted for approximately 17 per cent of total employment but during the recent quarters of job growth, part-time has accounted for a disproportionate share of growth, i.e. 20 per cent. And while job-sharing and reduced working hours have been helping to mitigate employment losses in the short term, if this translates into a permanent, involuntary increase in part-time employment it will lead to a deterioration in the overall quality of jobs being created.

Moreover, evidence regarding the nature of part-time employment indicates that for the recovering countries with available information (21), over 60 per cent have experienced increases in the share of involuntary part-time employment in 2009. The incidence of involuntary part-time employment is on the rise in other countries such as Mexico and Ecuador, where the share of involuntary part-time employment (in total employment) has increased by over 2 percentage points in the two years up to the first quarter of 2010, as well as in Colombia, although at a lesser pace. The issue could exacerbate the jobless recovery as employers – against the backdrop of an uncertain recovery – may in the first instance increase hours of existing employees and thus reduce the overall speed and intensity of employment recovery. Fewer hours worked could also lead to lower wages (see below).

In other instances – especially in developing countries – workers adapt to the adverse effects of weak employment creation by moving to the informal sector or to other forms of precarious employment, which act as a buffer against loss

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**8**   12. Long-term unemployment in the United States is defined as six months or more.

**Figure 1.6  Change in employment composition among recovering countries**

The difference between the share of employment growth during the recent recovery period* which is part-time and the share of part-time employment in total employment prior to the crisis**
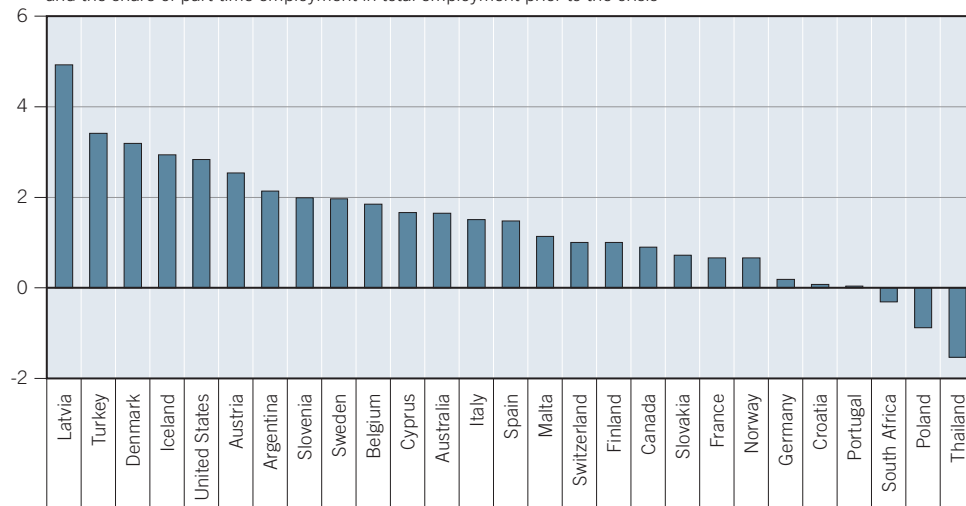


* The share of part-time employment in total employment over quarters with positive employment growth.
** Before the crisis corresponds to the quarterly average share of part-time employment in 2006 and 2007 except for Argentina, South Africa and Thailand that refer to 2008.

Source: IILS estimates based on Eurostat database and national labour force statistics.

**Figure 1.7  Change in the employment structure, Q2 2009 to Q2 2008 (percentage points)**
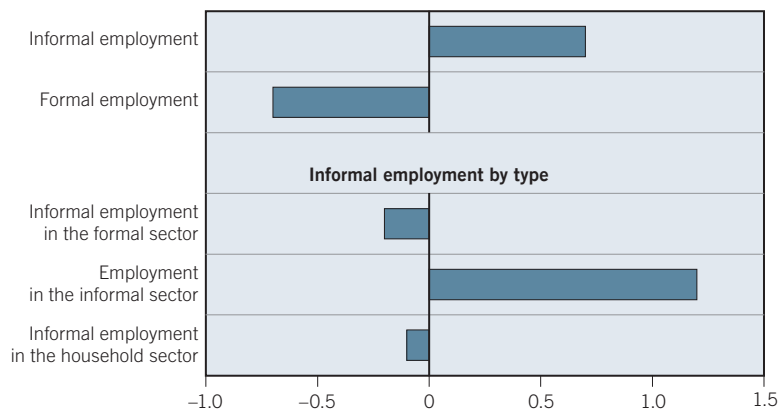


Note: Figures correspond to a group of six Latin American countries: Chile, Colombia, Ecuador, Mexico, Panama and Peru.

Source: ILO (2009a).

of income and employment. In these circumstances, the risk of labour market duality is high as it becomes increasingly difficult for many workers to move out of a cycle of, for instance, informal, often low-skill, insecure and uncertain employment into a high-skilled, relatively secure employment status. Some countries in Latin America have already witnessed increases in informal employment. Available information for six Latin American countries (Chile, Colombia, Ecuador, Mexico, Panama and Peru) shows that between the second quarters of 2008 and 2009, informal employment increased by 0.6 percentage points, while formal employment declined by the same amount (figure 1.7). This illustrates that there seems to be some kind of labour market adjustment, at least in the current crisis, in which jobs that were destroyed in the formal employment are absorbed by the

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**Figure 1.8 Change in real wages, Q4 2007 to Q4 2009\* (percentages)**

Panel A.  Real monthly wages\*\*

Panel B.  Real hourly wages
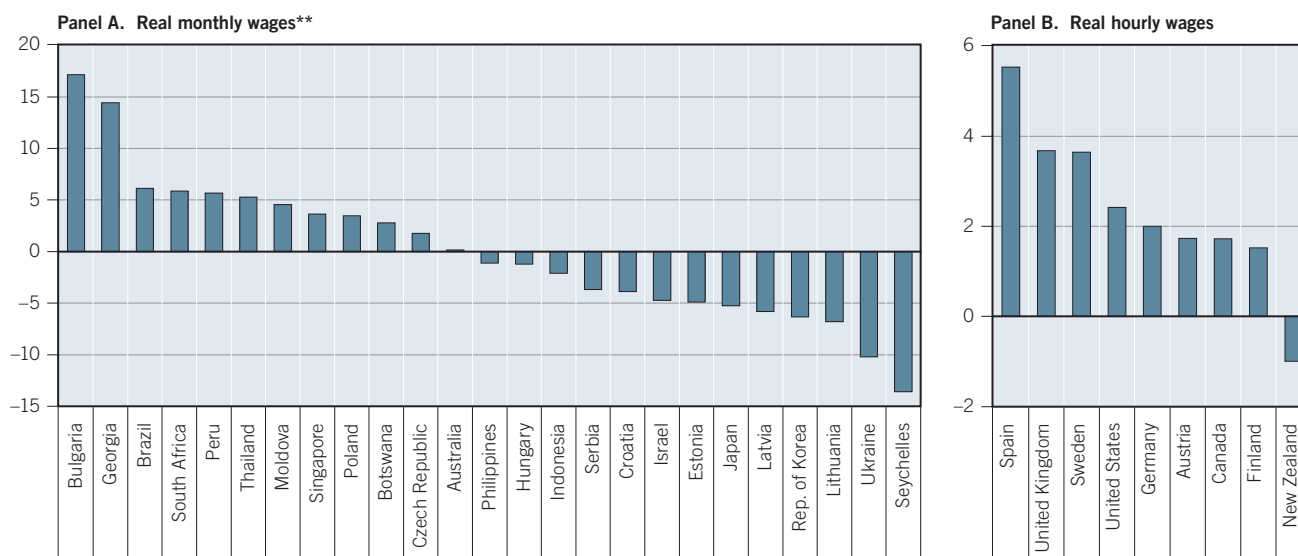


\* Changes for Botswana and the Republic of Korea correspond to the period Q1 2007–Q1 2009; for Finland and Peru to the period Q2 2007–Q2 2009; and for Austria, Georgia, the Philippines, Thailand and the United Kingdom to the period Q3 2007–Q3 2009.

\*\* Figures for Australia and the Philippines correspond to weekly and daily wages, respectively.

Source: ILO, Crisis database and Global Wage database based on national statistical sources.

informal sector.[13] A similar phenomenon occurs in Indonesia – one of the least affected countries in terms of employment loss – where the incidence of informal employment, and of persons switching to lower quality forms of employment, has risen instead of unemployment (ILO, 2010a).

Moreover, general dissatisfaction with job characteristics has increased in some Latin American countries during the crisis. In Argentina and Mexico, for example, the incidence of underemployment, i.e. workers that are actively searching for a new job in hopes of improving their current employment situation – in terms of quality, salary or skills matching – is on the rise. Indeed, in Mexico the number of underemployed workers actively looking for a job increased by close to 17 per cent in 2009. The increase – 35 per cent – is even more dramatic among workers with tertiary education. In Argentina, the rate of similarly defined underemployed jobseekers increased by close to 3 percentage points between the third quarters of 2008 and 2009.

Wages are also an important aspect of employment quality but real monthly wages have declined in over half of the countries for which information is available since the onset of the crisis (figure 1.8, panel A). This decline might be linked to a reduction in the number of hours worked, as discussed above. On the other hand, in the few countries with hourly data, wages have grown in all but one case (figure 1.8, panel B). This may in part be due to the changing composition of employment, i.e. the wages of workers who have maintained their job could be higher than the pre-crisis average, or it could be due to previously agreed upon wage agreements.[14]

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13.  It is interesting to note that the increase in informality in these countries did not mean an informalization of labour relations in the formal sector – in fact, informality in the formal sector stayed relatively constant (ILO, 2009a). This reinforces the argument of an existing trade-off between formal and informal sector employment during the crisis.

**10**  14.  For more information regarding the issue of wage developments and productivity see (ILO 2010d).

**Figure 1.9  Percentage point change in the employment
to population ratio Q1 2010 to Q1 2009\***
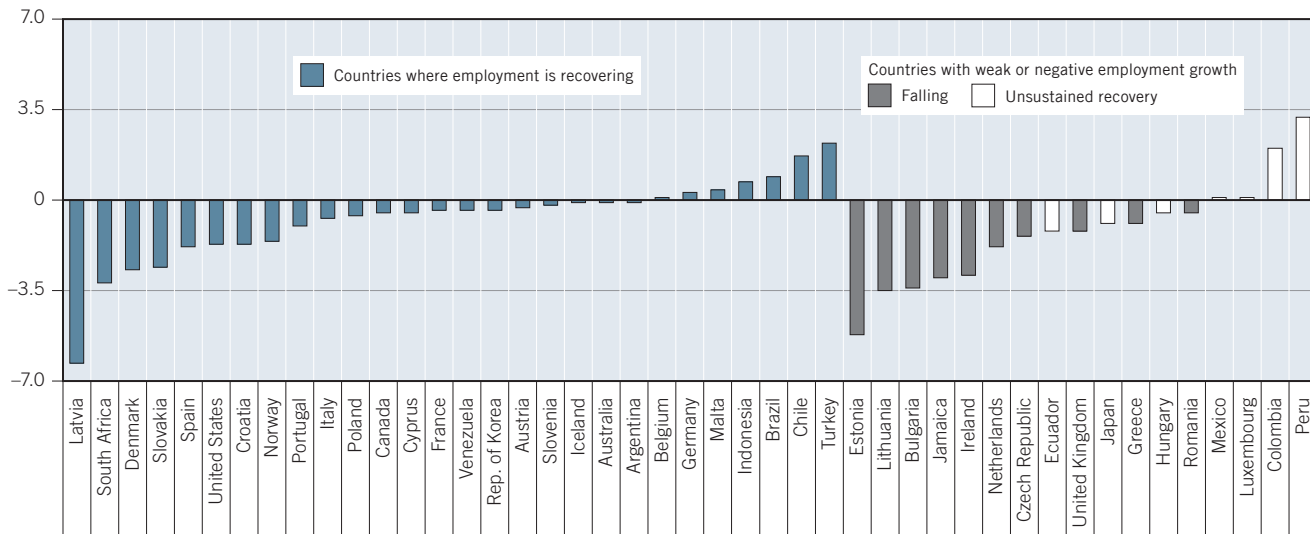


*\*Percentage point change in employment rates for Jamaica corresponds to the period Q4 2009–Q4 2008.
Indicators for Argentina, Bolivia, Ecuador and Peru correspond to selected urban area data only.*

Source: IILS estimates based on ILO, Laborsta database.

## Weak job creation alongside a growing working-age population means that employment rates have fallen in over 80 per cent of countries…

While employment has reacted slowly, the working-age population (persons aged 16-64) has continued to increase in most countries. As a result, the ratio of employment to working-age population, i.e. the employment rate, declined in 2009 in over 80 per cent of the countries analysed – in some cases significantly (figure 1.9). Not surprisingly, the steepest – and most prevalent – declines are among countries where employment continues to fall or growth is stagnant. The problem is particularly acute in countries such as Bulgaria, Estonia and Lithuania as they are confronted with the dual challenge of falling employment and rising working-age populations. In these countries, employment rates have fallen by 3.5 percentage points or more. But even in countries where employment has begun to recover, employment rates have fallen.

## …driving many persons out of the labour market altogether.

As a result, many workers have become discouraged and are no longer actively looking for a job. By the end of 2009 over 4 million workers had already decided to leave the labour market – just over 1 per cent of the labour force of the affected countries (figure 1.10, panel A).[15] In particular, in about half of the countries, participation rates have fallen, even among countries experiencing positive job growth; and in the few countries with growing participation rates, increases in participation are negligible. The most striking examples in this group include South

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15.  Countries with declining labour forces include Bulgaria, Croatia, Denmark, Estonia, Finland, Iceland, Ireland, Italy, Jamaica, Japan, Latvia, Morocco, Netherlands, Norway, Portugal, Romania, South Africa, Spain, Ukraine, the United States and Venezuela, where 4.4 million people had already left the labour market at the end of 2009 (Q4).

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**Figure 1.10  Discouraged workers and labour market withdrawal, 2009 to 2010**

**Panel A.  Percentage point change in labour force participation rates**
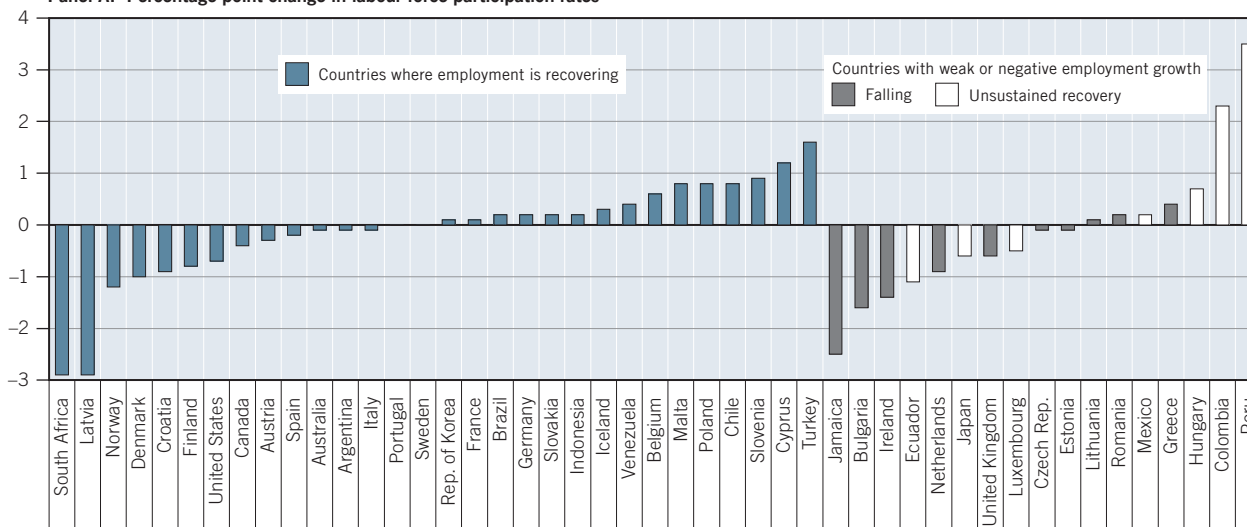


**Panel B.  Discouraged workers* (in percentages – left axis, and percentage points – right axis)**
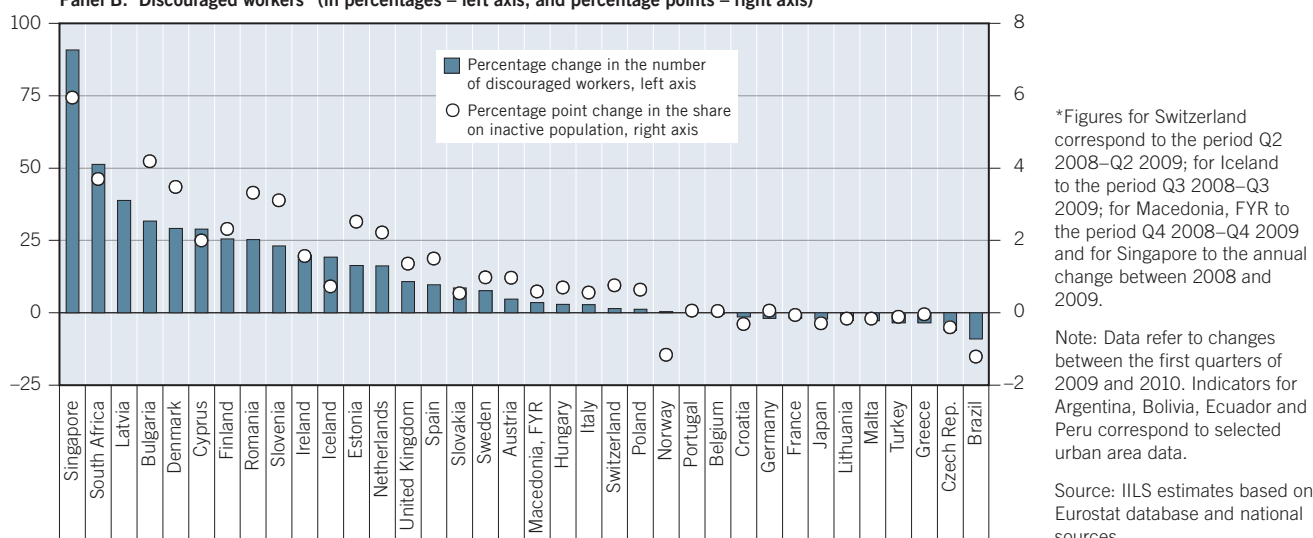


*Figures for Switzerland correspond to the period Q2 2008–Q2 2009; for Iceland to the period Q3 2008–Q3 2009; for Macedonia, FYR to the period Q4 2008–Q4 2009 and for Singapore to the annual change between 2008 and 2009.

Note: Data refer to changes between the first quarters of 2009 and 2010. Indicators for Argentina, Bolivia, Ecuador and Peru correspond to selected urban area data.

Source: IILS estimates based on Eurostat database and national sources.

Africa and Latvia, which reported sharp declines in participation rates in the four quarters to quarter one 2010 – close to 3 percentage points. Labour market exit, however, is most prevalent among countries that continue to experience weak or negative employment growth, with Jamaica having experienced the sharpest decline, over 2.5 percentage points. The challenge is often particularly acute among youth (Box 1.1).

More worrisome is that in 65 per cent of the countries with available information, the number and share of discouraged workers – those who are not participating but would rather be working – have risen. In fact, between the first quarters of 2009 and 2010, the number of discouraged workers has increased by 5 per cent on average (figure 1.10, panel B). This means that close to 1.2 million people became discouraged in the year to quarter one 2010 – close to 450 000 people in countries with negative employment growth and more than 700 000 in countries where employment is already recovering. Similarly, in most of the countries (70 per cent), discouraged workers as a share of the inactive population is also on the rise.

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## Box 1.1 Special focus on youth: Labour market detachment can have devastating and long-lasting effects on young men and women

Young workers are especially vulnerable to changes in the labour market because they lack relevant job skills, work experience, access to information and suffer disproportionately in their search for employment – a situation exacerbated during times of crisis (Verick, 2009; World Bank, 2007).[1] The current crisis is no exception as the young, inexperienced entrants to the labour market have been particularly hard hit.[2]

Of particular importance is the school-to-work transition, when young workers enter the labour market in search of full-time employment. Before the crisis there was already evidence for developed countries showing that the transition from school to a permanent job takes on average two years – ranging from about one year in Denmark, Ireland and Germany to over two years in Italy, Finland and Spain (Quintini et al., 2007). In developing countries, the transition to full-time work can be more challenging – with many opting for informal or self-employment – and can often take much longer, in some cases up to seven years.[3] In the context of a weak job market, transition times could worsen given the heightened risk that young workers will leave the labour market entirely. In fact, among 32 developed countries with available information, labour force participation rates for youth aged 20-24 declined in approximately two-thirds of those countries, and for youth aged 15-19 it declined in all but four countries.[4]

Moreover, evidence from earlier crises shows that youth unemployment persists long after growth resumes. In fact, among countries able to restore pre-crisis lows in youth unemployment, it took on average 11 years – ranging from 17 years in Greece to 7 years in Mexico (figure 1.11, panel A). Some countries, such as those depicted in Figure 1.11, panel B, never attained the pre-crisis lows – only new, albeit higher, troughs in youth unemployment.[5] For these countries, it took more than 17 years on average to achieve a "partial" recovery. In Spain, for example, the pre-crisis low for youth unemployment rate was 9.3 per cent in 1976, but 30 years later, in 2006 (pre-current crisis low), it stood at more than 17 per cent. Similar trends are present for the other countries in the group: the most recent trough achieved prior to the onset of the current crisis was on average close to two times higher than the pre-crises low. This is of particular concern given that in some countries, including e.g. Brazil, Japan, the United States and the United Kingdom, youth unemployment rates in the current crisis have already surpassed the peak rates during the downturn of the 1990s (Ha et al., 2010).

### Figure 1.11 Time taken for youth employment to recover from earlier crises (years)



Panel A. Attained pre-crisis lows

Panel B. Did not attain pre-crisis lows (only new trough)
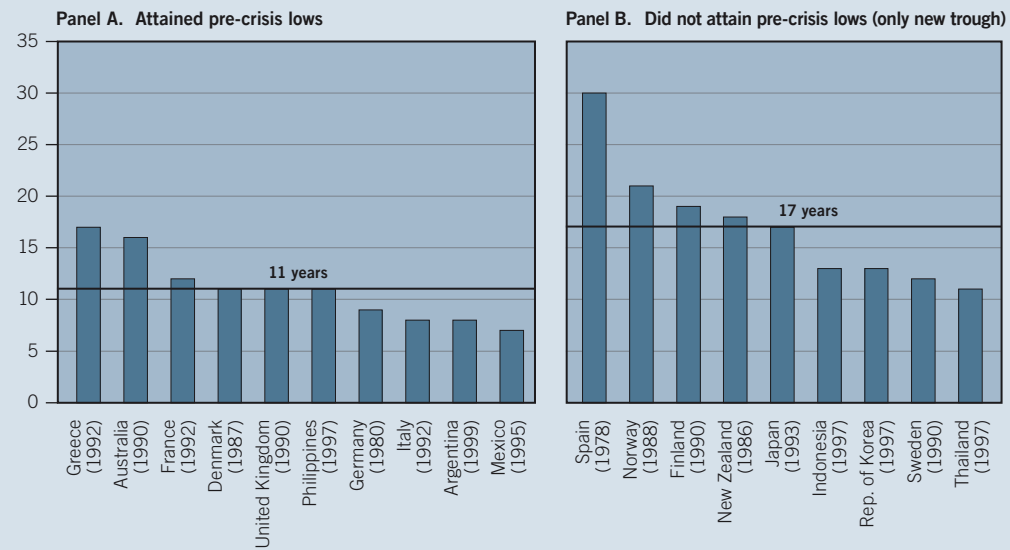
Source: IILS estimates based on EULFS; OECD and UN database.

In addition, the effects of unemployment on youth can lead in some cases to social exclusion, poverty, erosion of skills and increased likelihood of entering unstable, low-paid occupations,[6] all of which can have severe long-term consequences for potential future earnings, especially among new graduates   →

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during times of crisis. For instance, Gartell (2009) finds that unemployment at graduation in Sweden lowers earnings by 30 per cent after five years. In the United States, Mroz and Savage (2006) find that a mere six-month spell of unemployment at the age of 22 years would result in wages after one year being reduced by 8 per cent, and that the impact would be long term as wages earned after ten years would be 3 per cent lower than normal. Similarly, Oreopoulos et al. (2008) find that in Canada, students graduating during a recession have lower earnings, and while their earnings recover partially through a gradual process of job mobility towards better firms, they never catch up.

In this regard, the quality of jobs is an important consideration. In particular, while more flexible working arrangements, such as temporary and part-time jobs, can facilitate the entry of young people into the labour market, these arrangements may also lead to persistent job insecurity (Ha et al., 2010). In fact, the vast majority of youth are in temporary jobs because they could not find permanent ones – and their numbers are on the increase in two-thirds of countries with available information (figure 1.12).[7]

Special policy intervention to address the difficulties faced by youth may be warranted – and sooner rather than later. In particular, it will be essential to keep young jobseekers in contact with the labour market, and for those that return to school, to continue to facilitate a smooth and efficient school-to-work transition – all the while promoting job quality and skills matching. This is of particular relevance against the backdrop of a relatively weak employment outlook (see section B). Moreover, even before the crisis the situation facing youth was unfavourable, and if this persists it may have serious long-term negative implications – both social and economic – for the development of individuals and society more generally.

**Figure 1.12  Proportion of temporary workers aged 15-24 who could not find permanent employment, 2009 (percentages)**
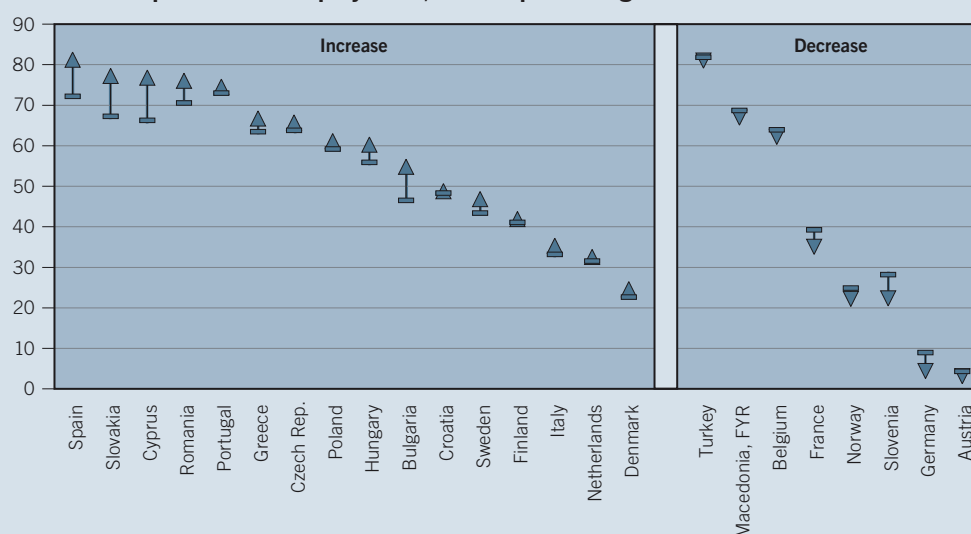


Note: Data for all countries refer to change between 2008 and 2009.

Source: IILS estimates based on EULFS.

Box 1.1 has been prepared by Uma Rani with assistance from Antonino Barbera Mazzola.

[1] See Scarpetta, Sonnet and Manfredi (2010) for more information on youth unemployment during crisis times.   [2] At the end of 2009 there were an estimated 81 million unemployed young people and the global youth unemployment rate stood at 13.0 per cent (ILO, 2010b). See also Ha et al. (2010).   [3] ILO has conducted school-to-work transition surveys in eight developing countries over the period 2004–2007 (Matsumoto and Elder, 2010). The length of transition to full-time jobs ranges from 5 years (Egypt) to 7 years (Mongolia).   [4] For youth aged 15–19, only in the Czech Republic, Denmark, France and Poland did participation rates increase.   [5] The success, or lack thereof, in attaining pre-crisis youth unemployment rates is a function of a number of factors. Importantly, none of the countries that were exposed to the 1997 Asian financial crisis – with the exception of the Philippines – have reached pre-crisis lows. In other cases, e.g. Denmark, Germany and the United Kingdom, and to some extent Mexico, the attainment of pre-crisis lows appears largely due to strong output growth following the crisis.   [6] See for example, Bell and Blanchflower (2010); Mincer and Polachek (1974); Pissarides (1992); Biewen and Steffes (2008); and Lupi and Ordine (2002).   [7] See also section C for a discussion of employment regulation and temporary work.

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## B. Employment outlook

This section presents an assessment of the medium-term prospects for employment assuming there is no change in the current policy prescription.[16] In particular, it takes into account (i) the current economic outlook to 2015 and (ii) projections for the working-age population, to estimate prospects for employment rates. The projections presented in this section draw on employment–output elasticities estimated by way of an econometric analysis of the impact of growth on employment during past crises (see Appendix B for methodological considerations). Estimates are first presented by income group and are then regrouped by ILO region. Two scenarios are constructed: (a) a baseline scenario using current growth projections from IMF; and (b) an alternate growth scenario based on UNDESA output estimates – which are 1 per cent lower per annum than the IMF baseline projections.[17] The analysis follows a similar methodology to the one used for the *World of Work Report 2009* (ILO, 2009b).[18] The employment outlook is then constructed by applying the elasticity of the group to the GDP growth projections of the IMF (IMF, 2010) and UNDESA (UN, 2010) by country, from 2010 onwards.

### Employment recovery will be sluggish in high-income countries…

The first conclusion that emerges from the analysis is that following the crisis, the employment content of growth is expected to be low.[19] This is particularly the case among high-income countries, where job growth is expected to remain stagnant through 2010 and a return to pre-crisis levels will not be possible before 2015 (figure 1.13, panel A).[20] The expected time to recovery has thus deteriorated compared with estimates from a year ago, where high-income countries were expected to return to pre-crisis levels almost two years earlier, i.e. in 2013.[21] This is likely due to the fact that employment is currently growing more slowly than previously anticipated and therefore the upturn in employment is now expected to occur later. If conditions deteriorate further (pessimistic growth scenario), employment will only begin to grow by the beginning of 2011.

When taking into account the growth in the working-age population, the situation is even more critical (figure 1.13, panel B). While the employment rate is expected to follow a similar trajectory, the trough will only be attained at the beginning of 2011 under the baseline scenario. Moreover, a recovery to pre-crisis employment rates does not seem viable in the medium term; by the end of 2015 the employment rate will still be 1.4 percentage points lower than its 2007 pre-crisis level (and close to 2 percentage points lower when considering the pessimistic growth scenario). Under the current baseline scenario, this finding suggests that by

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16. Chapter 3 takes up the issue of the impact of various fiscal positions on the labour market.
17. One per cent per annum is the current difference between the IMF and UNDESA world output estimates for 2010 (4.2 per cent and 3.2 per cent, respectively).
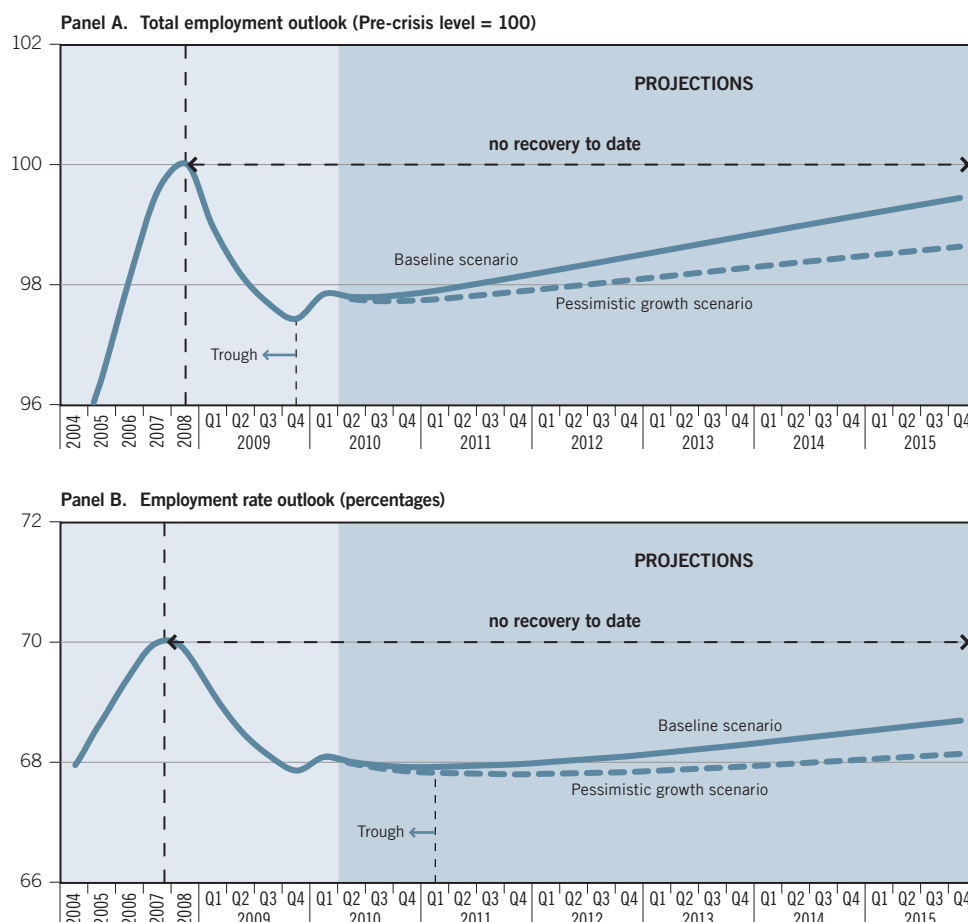18. Given that employment reacts differently to growth depending upon the business cycle, the analysis estimates the output–employment relations during the recovery periods of the different countries' past crises.
19. Given that employment is considered to be a lagged variable, it is not surprising per se that employment growth occurs after a GDP recovery. However, the findings suggest that during crises, employment reacts more slowly when there is a return to positive GDP growth compared to when GDP falls.
20. For a detailed list of the countries in each income group, refer to Appendix B.
21. ILO 2009b.

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**Figure 1.13  Employment outlook in selected high-income countries, 2004–2015**

Panel A.  Total employment outlook (Pre-crisis level = 100)

PROJECTIONS

no recovery to date

Baseline scenario

Pessimistic growth scenario

Trough

Panel B.  Employment rate outlook (percentages)

PROJECTIONS

no recovery to date

Baseline scenario

Pessimistic growth scenario

Trough

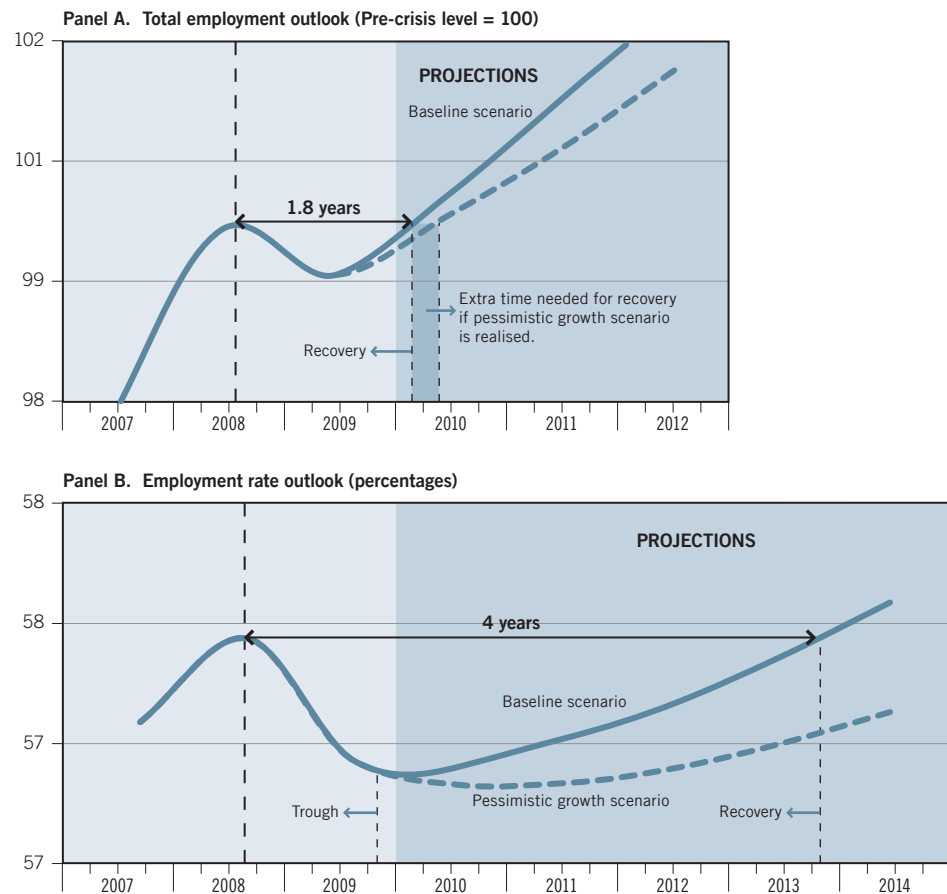Source: IILS estimates based on ILO, Laborsta database; IMF (2010); OECD (2010); UN (2010).

the first quarter 2011, close to 15 million jobs[22] in 35 countries will still be needed to restore the pre-crisis employment rate.

**… and faster recovery will happen in emerging and developing countries, though it will take time to absorb the rise in the number of new entrants.**

Upper-middle-income countries were clearly less affected in terms of job destruction – as already described in section A – and the overall impact on employment is rather V-shaped in nature, i.e. a quick recovery is also expected (figure 1.14, panel A). In fact, employment is already expected to have returned to pre-crisis levels in the first half of 2010. Even under the pessimistic growth scenario, a recovery in employment levels will only take an additional quarter to be achieved. Despite this relatively positive outlook, the speed at which employment is growing in this group of countries is far from sufficient, given the expected substantial increases in people entering the working-age population. As such, it is expected to take four years for the employment rate to attain pre-crisis levels if the economy grows at the current forecast pace, and not before 2014 if economic growth slows (figure 1.14, panel B). By 2011, even though a jobs recovery is anticipated, there will still be

22.  This represents 2.2 per cent of the working-age population of the group in 2009.

**Figure 1.14 Employment outlook in selected upper-middle-income countries, 2007–2014**

Panel A.  Total employment outlook (Pre-crisis level = 100)



PROJECTIONS

Baseline scenario

1.8 years

Extra time needed for recovery if pessimistic growth scenario is realised.

Recovery

Panel B.  Employment rate outlook (percentages)



PROJECTIONS

4 years

Baseline scenario

Pessimistic growth scenario

Trough

Recovery

Source: IILS estimates based on ILO, Laborsta database; IMF (2010); UN (2010).

an employment gap of close to 4 million jobs in 22 countries compared with pre-crisis levels.[23]

In terms of the final group (lower-middle-income countries), employment did not fall on a year-on-year basis – although, as section A illustrates, there were job losses in the second quarter of 2009 and significant country variation in the impact. Nevertheless, both scenarios call for a continuation in employment growth in the coming years. However, in these countries the growth in the working-age population is expected to continue to outpace the growth in jobs, meaning that the employment rate is likely to decline until the end of 2010 in the baseline scenario, and for the foreseeable future if the pessimistic growth scenario is taken into account (figure 1.15). Consequently, for 2011 there will be an employment gap of approximately 3 million jobs[24] in 11 countries compared with pre-crisis levels.

**In 2011, the employment shortfall is estimated at over 22 million jobs vis-à-vis the pre-crisis situation when projections take into account the growing working-age population.**

The outlook in terms of geographic regions is also rather heterogeneous. However, in terms of employment levels – consistent with the analysis above – advanced

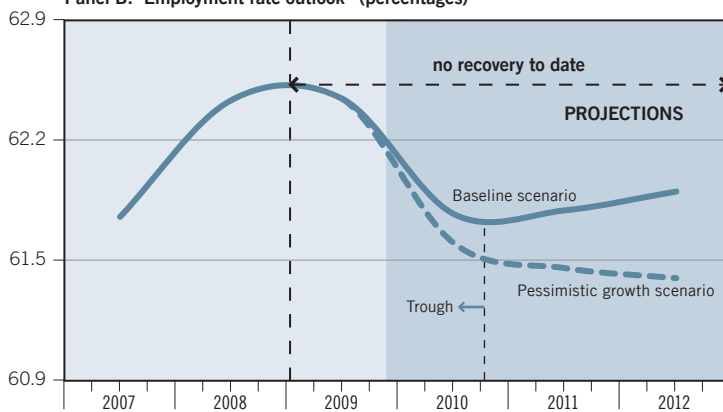23. This represents 0.7 per cent of the working-age population of the group in 2009.
24. This represents 0.6 per cent of the working-age population of the group in 2009.

**17**

## Figure 1.15 Employment outlook in selected lower-middle-income countries, 2007–2012

**Panel A. Total employment outlook (Pre-crisis level = 100)**
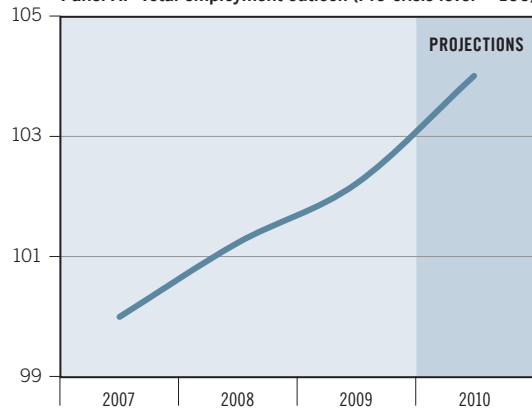


**Panel B. Employment rate outlook* (percentages)**



*The employment rate outlook does not include China due to differences in methodologies used to measure employment and working-age population.

Source: IILS estimates based on ILO, Laborsta database; IMF, 2010; UN, 2010.

### Table 1.1 Employment gaps and recovery times in 68 countries by region

| World regions | Employment level: Time to recover pre-crisis levels | Employment rate: Time to recover pre-crisis rates | Employment rate gap by 2011: Million jobs |
|---|---|---|---|
| Africa | In 2010 | Not before 2015 | 1.4 |
| Latin America and the Caribbean | Recovering | Not before 2015 | 2.6 |
| Advanced countries | Not before 2015 | Not before 2015 | 14.5 |
| Central and Eastern Europe and Central Asia | In 2012 | In 2012 | 1.9 |
| Asia | Recovering | In 2015 | 1.7 |

Note: Data for Africa refer only to Egypt, Mauritius, Morocco and South Africa. Estimates for Central and Eastern Europe and Central Asia include data for Turkey. In addition, this group of countries is likely to see a recovery in employment rates to pre-crisis levels before a recovery in employment levels due to the trend of decreasing working-age populations. The employment rate gap is the number of jobs needed to restore the pre-crisis employment rate.

Source: IILS estimates based on ILO, Laborsta database; IMF, 2010.

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countries are estimated to be the last country group to recover to pre-crisis job levels (not before 2015). Given the substantial increases in the working-age population, however, most groups of countries (except Central and Eastern Europe and Central Asia[25] and Asia) are unlikely to see a return to pre-crisis employment rates in the medium term. Taking these two trends into account, i.e. stagnant employment growth and rising working-age population, the employment gap (number of jobs needed to restore the pre-crisis employment rate) is estimated to reach over 22 million in 2011 in all regions,[26] of which the bulk is in advanced countries (table 1.1). In Africa, Asia, Latin America and the Caribbean, and Central and Eastern Europe and Central Asia, the employment gap will be approximately 7.5 million jobs.

## C. Promoting a quality, job-rich and sustainable recovery: The way forward

As the two previous sections illustrate, not enough jobs are being created, especially when the growing working-age population is taken into account. Individuals are adjusting to this jobless recovery by taking up jobs below their expectations (in terms of hours, wages and skills) or, in some instances, in the informal economy. As a result, there are concerns about the quality of jobs, even in instances where employment is growing.

In other cases, individuals are resorting to leaving the labour market entirely, even though many would prefer to be working, exacerbating the challenge of policy-makers to build and ensure a sustainable and inclusive recovery. Moreover, against the backdrop of fiscal constraints, policy-makers must be careful to avoid short-term solutions that – while complying with pressures to cut deficits quickly – will create long-term labour market and social challenges which may prove difficult and costly to undo.

### 1. Risks of social unrest

A jobless recovery is likely to bring forth a number of social challenges. In particular, as workers become increasingly discouraged by their job prospects, their discontentment could spread and deepen, damaging social cohesion. In addition, as the economic recovery begins to take shape, the social climate may be influenced by the breadth and quality of the jobs recovery. This is of particular concern given that even before the crisis the benefits of the extended growth period were unevenly distributed, i.e. employment growth was in many cases poor in quantity and quality, especially in many developing countries, and income inequality rose in most countries (ILO, 2008b). Decent work is central to people's well-being, and the global social climate is shaped by employment as it provides, among other things, income while paving the way for broader social and economic development.

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25. See the note to table 1.1 for an explanation of the employment rate trend for Central and Eastern Europe and Central Asia.
26. This represents 1.5 per cent of the working-age population of the 68 countries analysed in 2009.

These issues are taken up in Chapter 2, which analyses the risk of social unrest. Specifically, it looks at the extent to which people are worried about losing their incomes, jobs, and pensions and whether perceptions of unfairness have grown in recent years. It also examines the extent to which social climate indicators are related to labour market developments, including crisis responses. Indeed, the chapter highlights the role of a job-rich recovery in alleviating social tensions.

## 2. Role of labour market programmes

As sections A and B have demonstrated, the duration and intensity of the labour market impacts of the financial and economic crisis – and recovery to date – vary considerably by country. The heterogeneous impact is persistent across income groups and regions. The variation in employment losses is likely to be a function of a number of factors, including structure of the economy, exposure to financial sector and labour regulations (see below), but is also due, to some extent, to countries' different policy responses to the crisis. Indeed, the nature (content) and extent (size) of country responses has varied considerably.[27] Stimulus packages ranged from under 1 per cent of GDP in some cases to over 10 per cent in others. In some instances, efforts were narrow in focus, relying principally on infrastructure investment, for example, while other countries took a more comprehensive and varied approach. As countries look for ways to promote job creation, it is useful to examine the variation in country responses for possible lessons learned.[28] One way is via a principal component analysis (PCA), which reduces the various policy variables in the data set to principal components, where each component is a linear weighted combination of the original variables of country responses. This multivariate statistical technique allows the grouping of countries into predetermined categories (components), reflecting the different types of policy intervention.

To assess the variation in country responses to the crisis, the PCA is undertaken using the following variables: (i) size of the stimulus package as a percentage of GDP, to reflect the magnitude in which countries responded; and (ii) the breakdown of the stimulus into different types of measures, including tax cuts, infrastructure spending, labour market measures and social transfers, as a percentage of GDP, to examine the breadth of policy responses. Two of the components explain around two-thirds of the variation in country responses.[29] In particular, component 1 is explained principally by the size of the stimulus package (as well as by spending on infrastructure investment).[30] In this respect component 1 is indicative of the extent or size of the response. Therefore, a country with a higher score for component 1 can be identified with a larger response, but the response is more focused in nature, i.e. spending principally on infrastructure. Conversely, the variation in component 2 is derived from tax cuts, social transfers and, to a lesser
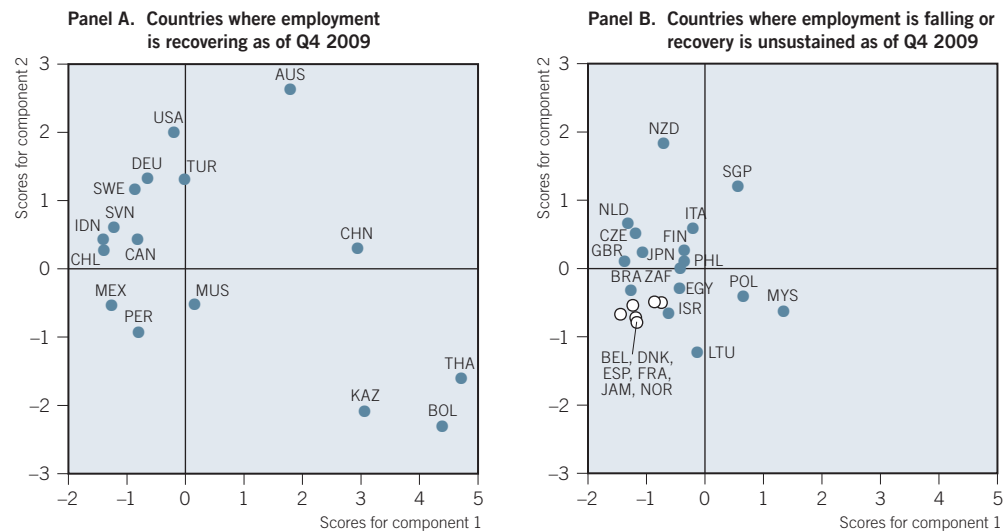
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27.  See for example ILO, 2009c.
28.  This analysis builds on the country-level examination of lessons learned undertaken in ILO, 2009b.
29.  Component 1 explains 44.2 per cent of the variation in the original data and component 2 an additional 20.3 per cent of the variance.
30.  Component loadings for these two variables (stimulus spending and infrastructure spending as a percentage of GDP) in component 1 are 0.61 and 0.54, respectively.

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**Figure 1.16  Principal component analysis scores, by country and type of employment recovery as of 2009**

Panel A.  Countries where employment is recovering as of Q4 2009

Panel B.  Countries where employment is falling or recovery is unsustained as of Q4 2009



Note: The analysis of employment recovery is based upon seasonally adjusted data.

Source: IILS estimates based on ILO, Laborsta database.

extent, labour market measures.[31] As such, component 2 is representative of a varied approach to addressing the crisis.

For the purposes of this analysis, country scores for each of the two retained PCA components are presented in two separate graphs: one for countries where employment is recovering, and another for countries where employment is still falling or is unsustained (figure 1.16, panels A and B). The analysis illustrates that countries where employment growth has turned positive in the most recent period (panel A) have – with the exception of Mauritius, Mexico and Peru – positive scores (relatively high in most countries) for either component 1 or component 2. Moreover, the results indicate that in the majority of these countries, the government response could be characterized as more varied than large, i.e. more countries with higher scores for component 2 than for component 1, and therefore tax cuts, social transfers and labour market measures played a more important role than the overall size of the stimulus. Conversely, countries where employment has yet to recover (panel B) are concentrated primarily around the axis, i.e. their responses were neither larger and focused nor varied – the exceptions in this group are Malaysia, New Zealand and Singapore, where employment seems to have reacted less to government measures.

This highlights the importance of having an integrated but varied approach to promoting employment; but it also reinforces the fact that programmes do not have to be expensive to work. This is crucial given that policies to promote (and retain) employment are at risk of being discontinued or downsized in the face of calls to control government spending. Indiscriminately cutting labour market and social measures – especially in countries where an employment recovery has not yet taken place – would have a number of adverse consequences, including potentially derailing the economic recovery. These issues are taken up in more detail in Chapter 3 which focuses on the effectiveness of labour market programmes to

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31.  Component loadings for these three variables (tax cuts, social transfers and labour market measures as a percentage of GDP) in component 2 are 0.71, 0.47 and 0.40, respectively.

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foster job creation and limit further employment losses. In this respect, governments can improve the state of both their public finances and the labour market situation by reorienting action towards certain areas, including the more widespread use of active labour market policies. The chapter highlights a number of measures where such an investment would provide long-term positive returns for both individuals (in terms of jobs) and balance sheets (in terms of cost-effectiveness). The chapter also stresses that an early exit from current measures and the hasty implementation of consolidation plans is likely to worsen the sovereign debt crisis that is looming in some countries.

## 3. Properly designed labour regulation: Avoiding labour market duality

To address labour market challenges, policy-makers also often turn to examining the role of labour market regulations – in particular, employment protection legislation (EPL).[32] Less strict EPL, by facilitating the hiring and firing process, can promote job creation and job destruction and the reallocation of workers to sectors that are more productive, e.g. ones with improved technologies.[33] More stringent EPL, however, can enhance income and job security for workers. It can also promote longer-term employment relationships and firm-specific human capital which in turn can have positive outcomes for employment and efficiency. Indeed, a more comprehensive approach to labour regulations can have social development and economic benefits (Sengenberger, 2005).

In times of crisis, the debate regarding the appropriate level of strictness of employment protection gains momentum.[34] This was particularly the case for the Republic of Korea during the 1997 Asian crisis. In exchange for financial support from the IMF, the Republic of Korea undertook a number of structural reforms, including those aimed at enhancing labour market flexibility by easing EPL. However, like reforms in other countries during the 1990s, the deregulation focused almost exclusively on temporary forms of employment rather than on regular employment.[35] As a consequence, the incidence of non-regular workers accelerated following the labour market reforms of the 1997 financial crisis. On the one hand, this contributed significantly to overall employment creation and the overall recovery, with growth in non-standard work rising rapidly. On the other hand, these developments led to a high degree of labour market segmentation: the divide between non-regular and regular workers widened. For temporary workers this translated into (i) lower employment quality, (ii) reduced access to existing social protection measures and (iii) fewer rights at work (Box 1.2).

Of particular concern in the context of the current crisis is the issue of vulnerability of non-regular workers to employment destruction. For the Republic

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32. EPL refers to a set of regulations governing the hiring and firing process, both for regular and temporary employment and also for collective dismissals (the more onerous hiring and firing process is indicative of a higher EPL). Country-level EPL indicators have been developed by the OECD.
33. For example, in an attempt to reduce high unemployment rates and the incidence of long-term unemployment, most advanced economies since the mid-1980s – especially in Europe – relaxed EPL, especially on temporary forms of employment
34. For more information on the role of internal flexibility and EPL in the context of the current crisis, see Eichhorst et al. (Forthcoming).
35. Over the past two decades, the average EPL level for OECD countries for temporary employment dropped from 2.5 to 1.8, decreasing by 0.7 points, while the figure for regular workers remained more or less unchanged

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of Korea, for example, between the second quarter of 2008 and the first quarter of 2009, over 200 000 temporary jobs were lost – but permanent employment remained relatively stable. A similar trend is present in other countries, where temporary workers have borne the brunt of employment losses (figure 1.18). And much like the case of the Republic of Korea, temporary workers tend to be less well protected in terms of access to labour market support, such as unemployment insurance. As a result, non-standard workers are disadvantaged twice: first, in terms of employment stability, and second, in terms of access to adequate social benefits and active labour market support.

**23**

**Figure 1.18 Employment losses during the current crisis\*, by type (percentages)**



*Employment change* ■  *Temporary employment change* □
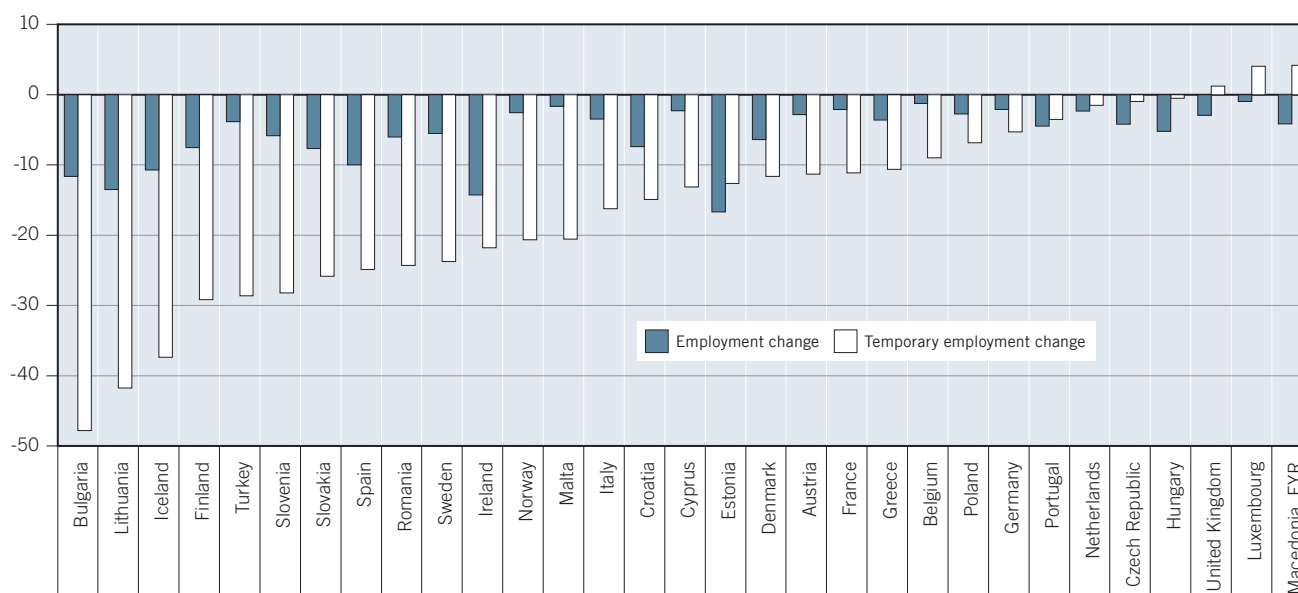
\*Changes in temporary employment are changes measured from peak to trough (by quarters); where a trough has not yet been attained, the latest available information is used. The beginning of the crisis is country-specific and is measured as the first term showing a negative change in total employment.

Source: IILS estimates based upon EULFS and national sources.

Policy-makers rightfully explore all avenues in seeking ways to encourage job growth and the reallocation of resources from less to more productive sectors. However, a certain level of regulation is necessary to protect workers from arbitrary decisions regarding dismissals and to ensure that firms internalize some of the social costs of labour turnover. Moreover, poorly designed deregulation – that which encourages the hiring of non-standard workers only (temporary, casual etc.) – may only serve to exacerbate existing dualities between these workers and permanent workers.

Instead, in the first instance, labour market reforms should consider job quality as well as job quantity. Second, given that the current labour market adjustment mechanism falls disproportionately on non-standard workers, reforms should work towards providing better social protection measures for these workers, including seeking ways to promote a better transition from non-standard to standard work. Finally, as discussed above – and to some extent in Chapter 3 – active and passive labour market programmes can play a key role in the efficient (re)allocation of labour resources while meeting employment and social objectives.

## 4. Rebalancing growth: The role of trade and consumption

A sustainable recovery is not possible without structural adjustments. There is a need to rebalance international trade and consumption between deficit countries in the developed world and surplus account countries in the developing world. Chapter 4 highlights two key challenges. First, the adoption of policies to raise domestic consumption and lower savings rates in surplus countries. Simulations of different policy scenarios and their respective effectiveness are considered. Second, the rebalancing of trade among surplus countries that have relied upon exports of

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price-sensitive, labour-intensive goods to developed country markets, which will involve greater South–South trade; but addressing the fragilities of export dependency will require a broader set of industrial and labour policies.

## 5. Reforming the financial sector

Finally, while the financial sector played a key role in the onset of the crisis – and its devastating impact on the labour market – reform in this area continues to be lacking. The final chapter, Chapter 5, takes up the debate regarding reform proposals, but it takes a broader view of the issue. It presents a number of scenarios regarding reform options and their implications – and importance – for a sustainable recovery. In particular, the chapter argues that the benefits of stricter regulation in the form of lower economic volatility might outweigh the higher cost of financing which such regulatory changes will imply.

1. World of work outlook: The challenge of job-rich recovery

## Appendix A

# Country groupings by type of recovery and income level

| Country | Income-level group [1] |
|---|---|
| Bulgaria (BGR) | Upper middle income, 3 |
| Czech Republic (CZE) | High income, 4 |
| Estonia (EST) | High income, 4 |
| Greece (GRC) | High income, 4 |
| Ireland (IRL) | High income, 4 |
| Jamaica (JAM) | Upper middle income, 3 |
| Lithuania (LTU) | Upper middle income, 3 |
| Macedonia, FYR (MKD) | Upper middle income, 3 |
| Moldova, Republic of (MDA) | Lower middle income, 2 |
| Netherlands (NLD) | High income, 4 |
| Romania (ROU) | Upper middle income, 3 |
| Serbia (SRB) | Upper middle income, 3 |
| Singapore (SGP) | High income, 4 |
| Trinidad and Tobago (TTO) | High income, 4 |
| United Kingdom (GBR) | High income, 4 |
| Albania (ALB) | Lower middle income, 2 |
| Argentina (ARG) | Upper middle income, 3 |
| Australia (AUS) | High income, 4 |
| Austria (AUT) | High income, 4 |
| Belarus (BLR) | Upper middle income, 3 |
| Belgium (BEL) | High income, 4 |
| Brazil (BRA) | Upper middle income, 3 |
| Canada (CAN) | High income, 4 |
| Chile (CHL) | Upper middle income, 3 |
| China (CHN) | Lower middle income, 2 |
| Croatia (HRV) | High income, 4 |
| Cyprus (CYP) | Lower middle income, 2 |
| Denmark (DNK) | High income, 4 |
| Egypt (EGY) | Lower middle income, 2 |
| Finland (FIN) | High income, 4 |
| France (FRA) | High income, 4 |
| Germany (DEU) | High income, 4 |
| Iceland (ISL) | High income, 4 |
| Indonesia (IDN) | Lower middle income, 2 |
| Israel (ISR) | High income, 4 |

| Country | Income-level group [1] |
|---|---|
| Italy (ITA) | High income, 4 |
| Jordan (JOR) | Lower middle income, 2 |
| Kazakhstan (KAZ) | Upper middle income, 3 |
| Korea, Republic of (KOR) | High income, 4 |
| Latvia (LVA) | Upper middle income, 3 |
| Malaysia (MYS) | Upper middle income, 3 |
| Malta (MLT) | High income, 4 |
| Morocco (MAR) | Lower middle income, 2 |
| New Zealand (NZD) | High income, 4 |
| Norway (NOR) | High income, 4 |
| Poland (POL) | Upper middle income, 3 |
| Portugal (PRT) | High income, 4 |
| Slovakia (SVK) | High income, 4 |
| Slovenia (SVN) | High income, 4 |
| South Africa (ZAF) | Upper middle income, 3 |
| Spain (ESP) | High income, 4 |
| Sri Lanka (LKA) | Lower middle income, 2 |
| Sweden (SWE) | High income, 4 |
| Switzerland (CHE) | High income, 4 |
| Thailand (THA) | Lower middle income, 2 |
| Turkey (TUR) | Upper middle income, 3 |
| Ukraine (UKR) | Lower middle income, 2 |
| United States (USA) | High income, 4 |
| Venezuela, Bolivarian Rep. of (VEN) | Upper middle income, 3 |
| Colombia( COL) | Upper middle income, 3 |
| Ecuador (ECU) | Lower middle income, 2 |
| Hungary (HUN) | High income, 4 |
| Japan (JPN) | High income, 4 |
| Luxembourg (LUX) | High income, 4 |
| Mauritius (MUS) | Low income, 1 |
| Mexico (MEX) | Upper middle income, 3 |
| Peru (PER) | Upper middle income, 3 |
| Philippines (PHL) | Lower middle income, 2 |
| Russian Federation (RUS) | Upper middle income, 3 |

[1] Income groups are based on GNI per capita according to the World Bank country classification, available at: http://go.worldbank.org/K2CKM78CC0. High-income countries are countries with a GNI per capita of USD 11,906 or more; upper-middle-income countries are countries with a GNI per capita of USD 3,855 to USD 11,905; and lower-middle-income countries are countries with a GNI per capita of USD 976 to USD 3,856.

## Appendix B

# The impact of financial crises on employment: An empirical analysis

Section B of this chapter provided employment projections from 2010 to 2015 which are based upon the following countries that experienced a crisis in the past and for which there is sufficient historical time series data:

- *High-income countries:* Econometric analysis for this group is based on 22 countries, 26 crises[36] and 737 observations. Countries in this group include: Australia, Canada, Czech Republic, Denmark, Estonia, Finland, France, Germany, Hungary, Iceland, Israel, Italy, Japan, Republic of Korea, New Zealand, Norway, Portugal, Slovakia, Spain, Sweden, the United Kingdom and the United States.[37]

- *Upper-middle-income countries:* Based on 26 countries and 33 crises: 211 observations were taken into account in the analysis, for Algeria, Argentina, Belarus, Brazil, Bulgaria, Chile, Colombia, Costa Rica, Dominican Republic, Jamaica, Kazakhstan, Latvia, Lithuania, Former Yugoslav Republic of Macedonia, Malaysia, Mauritius, Mexico, Panama, Poland, Romania, Russian Federation, Serbia, Suriname, Turkey, Uruguay and the Bolivarian Rep. of Venezuela.[38]

- *Lower-middle-income countries:* Based on 17 countries and 21 crises: 115 observations were taken into account in the analysis, for Albania, Armenia, Bolivia, China, Ecuador, Egypt, El Salvador, Georgia, Honduras, India, Indonesia, Moldova, Nicaragua, Paraguay, Philippines, Sri Lanka and Thailand.[39]

These projections draw on output–employment elasticities, which have been estimated by way of the econometric analysis of the employment impact of the recovery phase during past financial crises. The projections are constructed by applying the employment elasticity of each group to the GDP growth projections from the IMF

36. The following crises were taken into account in the analysis of this group: Australia, 1989–92; Canada, 1983–85; Czech Republic, 1996–2000; Denmark, 1987–92; Estonia, 1998; Finland, 1991–95; France, 1994–95; Germany, late 1970s; Hungary, 1991–95; Iceland, 1975; Iceland, 1989; Israel, 1977; Israel, 1985; Italy, 1981; Italy, 1990–95; Japan, 1997–2001; Republic of Korea, 1997–98; New Zealand, 1987–90; Norway, 1991–93; Portugal, 1983; Slovakia, 1998–2000; Spain, 1977–81; Sweden, 1991; United Kingdom, 1974–76; United Kingdom, 1980s–1990s; and the United States, 1988. The crises of all groups have been identified on the basis of Laeven and Valencia, 2010 and 2008.
37. Note that the high-income group contains more observations than the other groups because the analysis of the former is based on quarterly information rather than annual information.
38. The following crises were taken into account in the analysis of this group: Algeria, 1990–94; Argentina, 1989–91; Argentina, 1995; Argentina, 2001–03; Belarus, 1995; Brazil, 1994–98; Bulgaria, 1996–97; Chile, 1981–85; Colombia, 1982; Colombia, 1998–2000; Costa Rica, 1987–91; Costa Rica, 1994–95; Dominican Republic, 2003–04; Jamaica, 1996–98; Kazakhstan, 1999; Latvia, 1995–96; Lithuania, 1995–96; Macedonia, 1993–95; Malaysia, 1997–99; Mauritius, 1996; Mexico, 1994–96; Panama, 1988–89; Poland, 1992–94; Romania, 1990–92; Russian Federation, 1998; Serbia, 2000; Suriname, 1990; Turkey, 1982–84; Turkey, 2000; Uruguay, 1981–85; Uruguay, 2002–05; Venezuela, 1994–98; and Venezuela, 2002.
39. The following crises were taken into account in the analysis of this group: Albania, 1994; Armenia, 1994; Bolivia, 1986; Bolivia, 1994; China, 1998; Ecuador, 1982–86; Egypt, 1990; El Salvador, 1989–90; Georgia, 1999; Honduras, 1990; India, 1993; Indonesia, 1997–2001; Moldova, 1999; Nicaragua, 1990–93; Nicaragua, 2000–01; Paraguay, 2002; Philippines,1983–86; Philippines, 1997–2000; Sri Lanka, 1989–91; Thailand, 1983; Thailand, 1997–2000.

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**Table A2.1 Definitions and sources of variables used in the regression analysis**

| Variable | Definition | Source |
|---|---|---|
| GDP annual growth rate | Annual growth rate of real GDP, in national currency | IILS calculations based on the IMF *World Economic Outlook* (WEO), April 2010 |
| GDP quarterly growth rate | Quarterly growth rate of real GDP, in national currency | IMF, IFS database and OECD, *Economic Outlook* No. 87 |
| Employment growth for high-income countries | Quarterly growth rate of total employment | OECD, *Economic Outlook* No. 87 |
| Employment growth for upper-middle-income countries | Annual growth rate of total employment | ILO, Laborsta database |
| Employment growth for lower-middle-income countries | Annual growth rate of total employment | IMF, IFS database |
| Frequency of financial crises | Time frames of financial crises in the countries analysed | Authors' estimates based on Laeven and Valencia, 2010 and 2008. |

**Table A2.2 Regression results [1,2]**

| | High income | Upper middle income | Lower middle income |
|---|---|---|---|
| GDP (annual growth rate) | 0.0238 (3.39)** | 0.2785 (5.69)** | 0.0481 (0.61) |
| Lag 1 of GDP | 0.0311 (4.16)** | | 0.2624 (3.45)** |
| Lag 2 of GDP | 0.0347 (4.52)** | | |
| Lag 3 of GDP | 0.0289 (3.75)** | | |
| Lag 4 of GDP | 0.0124 (1.68)* | | |
| Lag 5 of GDP | 0.0126 (1.88)* | | |
| Constant | 0.0123 (0.37) | 0.4126 (1.51) | 0.3731 (0.81) |
| Fixed effects | Yes | Yes | Yes |
| Observations | 737 | 211 | 115 |
| Number of crisis episodes | 26 | 33 | 21 |

[1] Estimated based on ordinary least squares. All regressions are controlled for country-fixed effects. Absolute value of *t*-statistics in parentheses. Significance levels: * significant at 5 per cent; ** significant at 1 per cent.

[2] For details of the countries included in each group see footnotes 37–40.

(from 2010 on) at a country level.[40] In this sense, all statistically significant partial elasticities emerging from the inclusion of lagged GDP growth rates were taken into account by applying them to the GDP growth rate of their corresponding period by country.

The elasticities of employment growth ($e_{it}^L$) to GDP changes are calculated by means of Okun Law panel regressions (following the methodology developed in Escudero, 2009) for the three groups of countries listed above. The following equation was estimated independently for each of the three country groups:

$$(1)\ e_{it}^L = \beta_1 Y_{it} + \beta_2 Y_{it-n} + \varepsilon_{it}$$

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40. Country-specific annual forecasts from IMF were converted into quarterly rates using the "effective periodic rate" calculation and were then used to establish future quarterly growth rates of employment for the high-income countries group.

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**Table A2.3  Alternative estimators [1,2]**

**Panel A. High-income countriess**

|  | Baseline equation (heteroscedasticity) | GLS | GLS (heteroscedasticity) | GLS (autocorrelated errors) |
|---|---|---|---|---|
| GDP (annual growth rate) | 0.0238 (3.39)** | 0.0291 (4.05)** | 0.0658 (6.31)** | 0.0571 (6.17)** |
| Lag 1 of GDP | 0.0311 (4.16)** | 0.0397 (5.27)** | 0.0839 (8.29)** | 0.0840 (8.28)** |
| Lag 2 of GDP | 0.0347 (4.52)** | 0.0455 (5.98)** | 0.0724 (7.21)** | 0.0756 (7.26)** |
| Lag 3 of GDP | 0.0289 (3.75)** | 0.0399 (5.28)** | 0.0669 (6.72)** | 0.0673 (6.48)** |
| Lag 4 of GDP | 0.0124 (1.68)* | 0.0207 (2.82)** | 0.0407 (4.09)** | 0.0427 (4.19)** |
| Lag 5 of GDP | 0.0126 (1.88)* | 0.0167 (2.42)* | 0.0223 (2.21)** | 0.0235 (2.56)** |
| Constant | 0.0123 (0.37) | -0.0233 (-0.69) | -0.1517 (-6.96) | -0.1529 (-4.99) |
| Observations | 737 | 737 | 737 | 737 |
| Number of crisis episodes | 26 | 26 | 26 | 26 |

**Panel B. Upper-middle-income countries**

|  | Baseline equation (heteroscedasticity) | GLS | GLS (heteroscedasticity) | GLS (autocorrelated errors) |
|---|---|---|---|---|
| GDP (annual growth rate) | 0.2785 (5.69)** | 0.3140 (6.70)** | 0.3063 (9.21)** | 0.3025 (8.95)** |
| Constant | 0.4126 (1.51) | 0.3165 (1.11) | 0.4423 (2.24)* | 0.4303 (1.98)* |
| Observations | 211 | 211 | 211 | 211 |
| Number of crisis episodes | 33 | 33 | 33 | 33 |

**Panel C. Lower-middle-income countries**

|  | Baseline equation (heteroscedasticity) | GLS |
|---|---|---|
| GDP (annual growth rate) | 0.0481 (0.61) | 0.0138 (0.18) |
| Lag 1 of GDP | 0.2624 (3.45)** | 0.2536 (3.20)** |
| Constant | 0.3731 (0.81) | 0.2829 (0.60) |
| Observations | 115 | 115 |
| Number of crisis episodes | 21 | 21 |

[1] All regressions are controlled for country-fixed effects. Absolute value of *t*-statistics (*z*-statistics in the tests for autocorrelation) in parentheses. Significance levels: *significant at 5 per cent; **significant at 1 per cent.

[2] For detail of the countries included in each group see footnotes 31–40.

where $L_{it}$ corresponds to the annual (or quarterly for high-income countries) growth rate of employment and $\Delta Y_{it}$ is the explanatory variable, measured by the annual (or quarterly for high-income countries) growth rate of GDP of the countries analysed. One or more lags of the growth rate of GDP are included in the estimations, depending on which group of countries is analysed. An overview of the different variables used and their sources and definitions is given in table A2.1.

To construct the panel, data on employment growth around the years of crises were collected and centred in $t_0$. This crisis-specific central time period corresponds to the year when the country experienced the lowest GDP annual/ quarterly growth rate. In this way, a panel was constructed with an average of 34 observations for employment growth around the recovery phase of past crises

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($t$ – 8 to $t$ + 25) for high-income countries and nine observations for employment growth around the recovery phase of past crises ($t$ – 2 to $t$ + 6) for upper-middle- and lower-middle-income countries. Table A2.2 gives a synthetic review of the econometric estimates reporting these elasticities.

To take into account the peculiarities of the data set, regressions have been re-run to account for heteroscedasticity. To ensure that one or some of the countries did not influence the results, reduced regressions were also estimated by excluding the countries analysed one at a time. Moreover, table A2.3 presents GLS estimates and controls for autocorrelated error terms. As can be seen in all panels of table A2.3, all coefficients remain highly significant, and the absolute sizes of the estimated effects change relatively little between different estimation methods, giving some confidence in the estimated effects.

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