World of Work Report 2012

World of Work Report 2012

Better jobs for a better economy

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The **International Institute for Labour Studies** was established by the International Labour Organization in 1960 as an autonomous centre for advanced studies in the social and labour field.

Who are the authors of World of Work Report 2012?

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Editorial

How to move out of the austerity trap?

Raymond Torres
Director
International Institute for Labour Studies

The employment situation is deteriorating in Europe and is no longer improving in many other countries …

Over the past year, labour markets have been affected by the slowdown in global growth. This is all the more problematic because labour markets had not fully recovered from the global crisis that erupted in 2008: there is still a deficit of around 50 million jobs in comparison to the pre-crisis situation (Chapter 1). It is unlikely that the world economy will grow at a sufficient pace over the next couple of years to both close the existing jobs deficit and provide employment for the over 80 million people expected to enter the labour market during this period.

The trends are especially worrying in Europe, where the unemployment rate has increased in nearly two-thirds of these countries since 2010; but labour market recovery has also stalled in other advanced economies, such as Japan and the United States. Elsewhere, employment gains have weakened in terms of the needs of a growing, better educated working-age population, as in China. And jobs deficits remain acute in much of the Arab region and Africa.

… as a result, the global jobs crisis has entered a new, more structural phase.

This is not a normal employment slowdown. Four years into the global crisis, labour market imbalances are becoming more structural, and therefore more difficult to eradicate. Certain groups, such as the long-term unemployed, are at risk of exclusion from the labour market. This means that they would be unable to obtain new employment even if there were a strong recovery.

In addition, for a growing proportion of workers who do have a job, employment has become more unstable or precarious. In advanced economies, involuntary part-time employment and temporary employment have increased in two-thirds and more than half of these economies, respectively. The share of informal employment remains high, standing at more than 40 per cent in two-thirds of emerging

and developing countries for which data are available. Women and youth are disproportionately affected by unemployment and job precariousness. In particular, youth unemployment rates have increased in about 80 per cent of advanced economies and in two-thirds of developing economies.

Job instability is, above all, a human tragedy for workers and their families; but it also entails a waste of productive capacity, as skills tend to be lost as a result of excessive rotation between jobs and long periods of unemployment or inactivity. More job instability therefore means weaker productivity gains in the future and less room for prospering and moving up the career ladder.

The jobs deficit is going hand-in-hand with a prolonged investment deficit – another sign that the crisis has entered a new phase. The amount of uninvested cash in the accounts of large firms has reached unprecedented levels (Chapter 4) while, in the case of advanced economies, small firms continue to have difficulty accessing credit that would allow them to invest and create jobs. Importantly, the Report finds that investment has become more volatile, and that this has exacerbated job precariousness in advanced economies as well as in emerging and developing ones.

Finally, society is becoming increasingly anxious about the lack of decent jobs. In 57 out of 106 countries, the Social Unrest Index, developed for the purposes of this Report, increased in 2011 compared to 2010. Europe, the Middle East, North Africa and sub-Saharan Africa show the most heightened risk of social unrest. On average, Latin America – where there has been a degree of employment recovery and, in a few cases, improvements in job quality – has experienced a decline in the risk of social unrest.

The worsening situation reflects the austerity trap in advanced economies, primarily in Europe …

Since 2010, and despite the job-friendly statements in successive G20 meetings and other global forums, the policy strategy has shifted its focus away from job creation and improvement and concentrated instead on cutting fiscal deficits at all costs. In European countries, cutting fiscal deficits has been deemed essential for calming financial markets. But even in countries which have not suffered from the effects of the crisis this remedy is being applied for pre-emptive reasons – fiscal deficits are being reduced to avert any negative reactions from financial markets. This approach was intended to pave the way for greater investment and growth, along with lower fiscal deficits.

In addition, as part of the policy shift, the majority of advanced economies have relaxed employment regulations and weakened labour market institutions (Chapter 2), and more deregulation measures have been announced. These steps are being taken in the hope that financial markets will react positively, thereby boosting confidence, growth and job creation.

However, these expectations have not been met. In countries that have pursued austerity and deregulation to the greatest extent, principally those in Southern Europe, economic and employment growth have continued to deteriorate. The measures also failed to stabilize fiscal positions in many instances. The fundamental reason for these failures is that these policies – implemented in a context of limited demand prospects and with the added complication of a banking system in the throes of its "deleveraging" process – are unable to stimulate private investment. The austerity trap has sprung. Austerity has, in fact, resulted in weaker economic growth, increased volatility and a worsening of banks' balance

sheets leading to a further contraction of credit, lower investment and, consequently, more job losses. Ironically, this has adversely affected government budgets, thus increasing the demands for further austerity. It is a fact that there has been little improvement in fiscal deficits in countries actively pursuing austerity policies (Chapter 3).

With regard to deregulation policies, the Report finds that they will fail to boost growth and employment in the short term – the key time horizon in a crisis situation. Indeed, the employment effects of labour market reforms depend heavily on the business cycle. In the face of a recession, less stringent regulation may lead to more redundancies without supporting job creation. Likewise, the weakening of collective bargaining is likely to provoke a downward spiral of wages, thereby delaying recovery further.

In general, the Report confirms findings from earlier studies that show there is no clear link between labour market reforms and employment levels. Interestingly, within the range in which the majority of countries lie, adequate employment regulations tend to be positively associated with employment. Beyond that, badly designed regulations may adversely affect labour market performance. In these cases, there are grounds for considering reforms as part of social dialogue and in conjunction with social protection measures. This policy has been successfully pursued in the recent past in countries such as Austria and Brazil.

… but spreading to other countries.

Many emerging and developing countries pursued a strategy of boosting domestic demand in order to compensate for weaker prospects for exporting to advanced economies. There are signs that in some of these countries, such as India, Latin America, South Africa and, more recently, China, wages have grown to catch up with productivity. Public investment and social protection have also been reinforced and regional integration has proved helpful.

Nevertheless, even in these countries, labour markets and real investment are not immune to the global economic weakening. Volatile capital flows has also aggravated the instability of the real economy and the possibility for creating better jobs.

It is therefore crucial to pursue further the present approach of boosting domestic demand, complementing it with better enforcement of core labour standards and measures to avoid destabilizing capital flows.

An alternative approach exists …

It is possible to move away from the austerity trap. Last year's World of Work Report offered a three-pronged approach, which remains valid today. First, labour market institutions should be strengthened so that wages grow in line with productivity, starting in surplus economies. In the current situation, consideration could be given to a careful and coordinated increase in the minimum wage. Further efforts to implement core labour standards would also be helpful, especially in emerging and developing countries where gaps exist. Ratifying ILO core Conventions in all G20 countries would give a positive signal in this respect.

Second, it is critical to restore credit conditions and create a more favourable business environment for small enterprises. The issue is particularly pressing in the Euro-zone countries, where the policy of the Central Bank to provide liquidity to banks has failed to boost credit to the real economy. There may also be a case for

higher taxation of firms that do not reinvest profits, and/or lower taxation of firms that emphasize investment and job creation.

Third, it is possible to promote employment while meeting fiscal goals. The Report shows that a fiscally neutral change in the composition of expenditures and revenues would create between 1.8 and 2.1 million jobs within 1 to 2 years. In the case of emerging and developing countries, efforts should be centred on public investment and social protection to reduce poverty and income inequality and to stimulate aggregate demand. For advanced economies, the focus should be on ensuring that unemployed people, especially youth, receive adequate support to find new jobs.

More fundamentally, it is high time for a move towards a growth- and job-orientated strategy. This would help to coordinate policies and avert further contagion caused by fiscal austerity. In Europe, the strategy could include a coordinated approach to solving the debt crisis, for which innovative funding mechanisms and improved utilization of European Structural Funds – properly reformed in order to better tackle present job deficits — would be instrumental.

… which requires embracing the perception that job-friendly policies have a positive effect on the economy and that the voice of finance should not drive policy-making.

The current policy approach reflects the premise that growth follows austerity and that, in turn, jobs follow growth. According to this view, the main thrust of efforts to date has therefore focused on cutting deficits and restoring global growth to positive territory with the view that, soon thereafter, job creation would follow. As a consequence, more direct efforts to stimulate job creation and boost the incomes of those most vulnerable to the crisis have been of secondary importance.

Since there are now indications that these premises have proved counterproductive, it is vital to demonstrate that an alternative, job-centred approach outlined above exists. It is also imperative to nurture this alternative approach with concrete examples of policies that work, in which ILO has played a key role via the adoption of the Global Jobs Pact and could play a greater role as a forum for policy analysis.

Another factor at work has been the imbalance between the voice of the real economy and that of the financial sector. Both are important, but both need to be heard. To remedy this, consideration could first be given to the creation of national employment and social observatories. This step could help to identify an upper bound to the level of unemployment beyond which new measures will be needed – in much the same way as for inflation or fiscal targets. The task could be facilitated by the establishment of independent and authoritative observatories to monitor and forecast trends in the labour market, which could be charged with providing independent evaluations of the employment impact of policy proposals. Their remit would be to forewarn governments against the adoption or continuation of policies that are unlikely to achieve the unemployment goals.

Second, there is a strong case for establishing consultative national forums, where economic and social policies are discussed by government and the social partners. Although outcomes will not be binding, such consultations can provide important feedback to governments on the current state of the labour market and outlook for unemployment. The forum could also play a central role in collaborating and consulting with the national observatory or agency created to monitor and assess labour market developments and policy impacts.

Finally, national efforts to shift to policies that will ensure higher levels of employment will be greatly facilitated by reforms in the governance of the global economy. The key objective of this reform is to provide a high and stable level of effective demand in the global economy. This will entail: (i) ensuring effective global coordination of economic policies to eliminate "beggar-my-neighbour" policies that lead to global imbalances and restrict potential global growth; (ii) removing the constant threat to global economic stability from volatile and unregulated cross-border financial flows; and (iii) developing coordinated macroeconomic policies for dealing with future global economic crises.

In short, this Report calls for countries to put in place the necessary conditions for a dramatic shift in the current policy approach. It highlights the need for an approach that recognizes the importance of placing jobs at the top of the policy agenda and the need for coherence among macroeconomic, employment and social policies. This requires a significant change in domestic and global governance, which is a complex task. Though the task is demanding, even progressive steps in this direction will be rewarded with better job prospects and a more efficient economy.

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1 Employment, job quality and social implications of the global crisis*

Main findings

- Global employment has not yet recovered from the global crisis that erupted in 2008. The global employment rate, at 60.3 per cent in 2011, is 0.9 percentage points lower than before the crisis. This means that around 50 million jobs are missing relative to the pre-crisis situation.
- There are marked cross-country differences in recent employment trends. Employment rates have recovered much faster in emerging and developing economies, especially the latter where as a group they have surpassed the pre-crisis levels. By contrast, employment rates remain subdued in many advanced economies and in Northern Africa.
- Despite the cross-country differences, there are general issues which have to be addressed in order to ensure a sustainable job recovery in all countries. First, in the majority of countries, some groups, such as youth and the long-term unemployed, face considerable difficulties in obtaining employment. Youth unemployment rates have increased in about 80 per cent of advanced economies and in two-thirds of the developing economies. On average, more than 36 per cent of job-seekers in advanced economies have been without work for more than one year.
- Second, in many countries where employment growth has resumed, jobs tend to be provided on a short-term basis. Involuntary part-time work and temporary employment are on the increase in the majority of countries where employment growth has resumed. Involuntary part-time employment and temporary employment have increased in, respectively, two-thirds of advanced economies and more than half of these economies. The share of informal employment remains high, standing at more than 40 per cent in two-thirds of emerging and developing countries for which data are available. There are,

* Thanks to the Trends Unit of the Employment Sector for providing the global unemployment projections and Sameer Khatiwada (Institute) for the social unrest graph.

however, some exceptions to these general patterns; in particular, Austria, Belgium, Brazil, Chile, Germany, Indonesia, Peru, Poland, Thailand and Uruguay have increased their employment rates without compromising on job quality.

- Third, the crisis has led to an increase in poverty rates in half of advanced economies and one-third of developing economies. Similarly, inequality has increased in less than one-half of advanced economies and one-quarter of emerging and developing economies. Inequalities have also widened in terms of access to education, food, land and credit.
- Fourth, in 57 out of 106 countries, the Social Unrest Index increased in 2011 compared to 2010. Sub-Saharan Africa and the Middle East and North Africa show the most heightened risk of social unrest. In several countries in Asia and Latin America – where there has been employment recovery and, in some cases, improved job quality – have experienced a decline in the risk of social unrest between 2010 and 2011.
- Projections indicate that, on present trends, employment in advanced economies will not reach pre-crisis levels until late 2016. The current economic slowdown has also affected employment prospects in emerging and developing economies. The global unemployment projections show that around 202 million people will be unemployed and unemployment rate will increase to 6.1 per cent in 2012.

Introduction

Four years since the onset of the global crisis, the employment rate for the global labour market is still below the pre-crisis peak (ILO, 2012). Recent trends suggest that the labour market recovery has been weak in many of the advanced economies. Employment growth in developing economies has shown a corresponding decline as economic growth has slowed down. The decline in demand from the Eurozone area has potential consequences that may spill over into other regions through trade and financial linkages, if there is no boost in internal demand in developing economies (UNDESA, 2012).

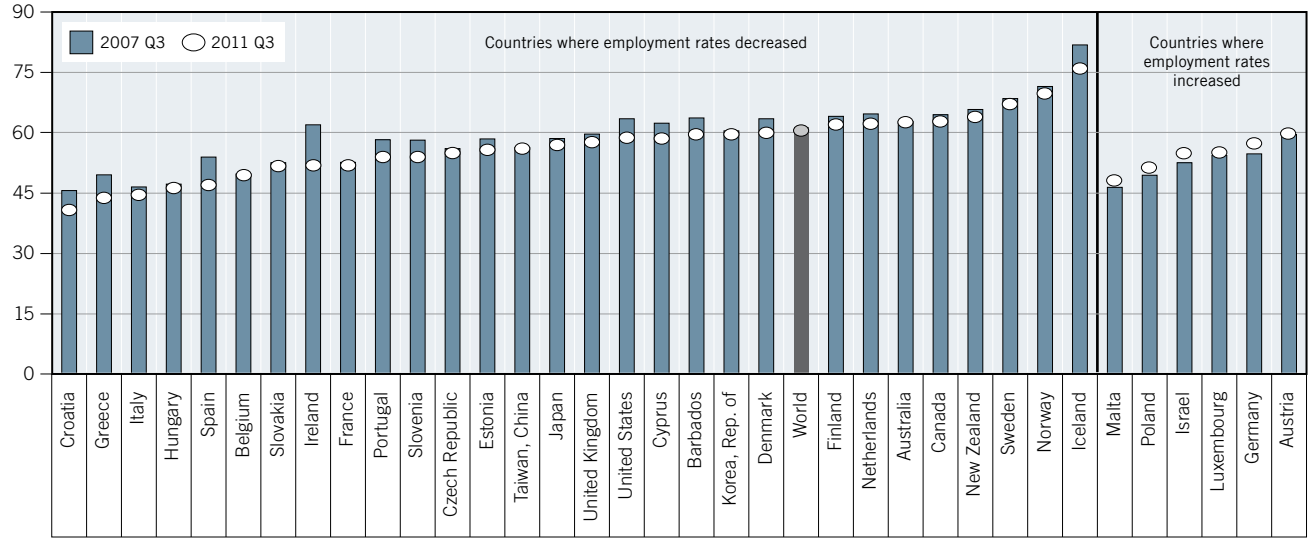
Beyond these general trends, this chapter provides an in-depth examination of the profound impact, which the prolonged period of economic turbulence has had on labour markets. The chapter examines its impact on employment, long-term unemployment and labour market inactivity (section A), as well as job quality (section B) and poverty and income inequality trends (section C). Finally, the chapter presents employment projections and introduces the rest of the report (section D).

A. Employment trends

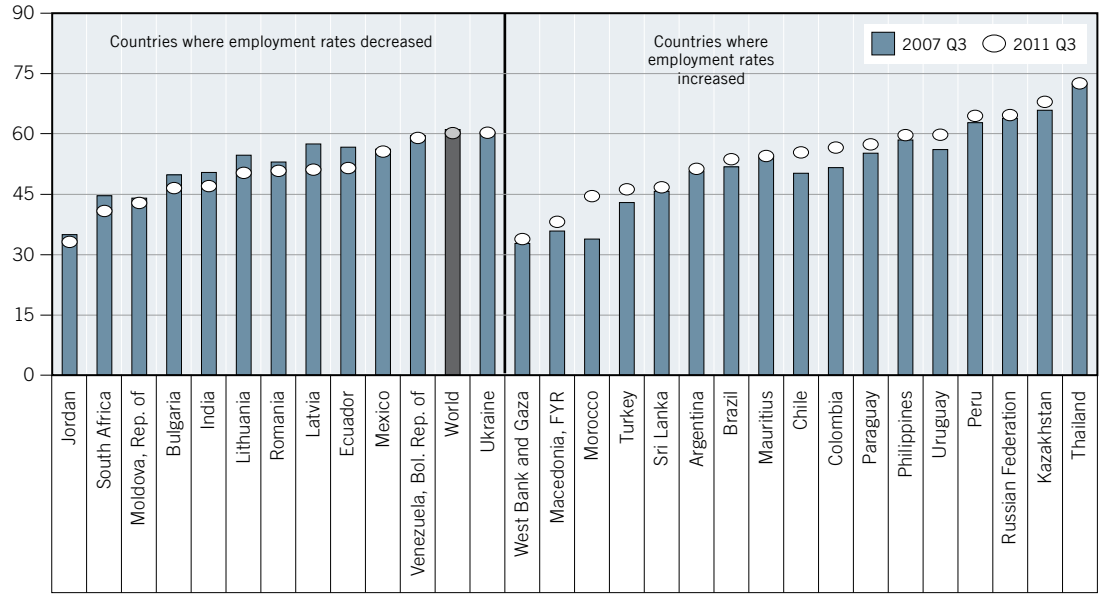
In the past year, the employment recovery has been slower in advanced economies (0.1 per cent) than in developing economies (2.2 per cent). The recovery is marginal in advanced economies compared to the crisis period (2007–10) during which it declined by 1.7 per cent. Developing economies, in contrast, experienced a slowdown in their employment growth by more than one percentage point (2.2 per cent) compared to the crisis period (3.8 per cent).

Figure 1.1 Employment rates in the third quarters of 2007 and 2011 (percentages)

Panel A. Advanced economies



Panel B. Emerging and developing economies



Note: For Argentina, Israel and Sri Lanka the data refers to Q2 and for Morocco and Uruguay the data refers to Q1.
World refers to global employment rates estimated for the baseline scenario from ILO, 2012.

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

Labour markets have not recovered from the global crisis …

Despite an improvement in the past year, labour markets have not recovered from the global crisis and there is an overall decline in employment growth in advanced economies by 1.6 per cent for the period 2007–11. For countries with available information, employment rates have increased since 2007 only in six (Austria, Germany, Israel, Luxembourg, Malta and Poland) of the 36 advanced economies (16 per cent) and in 60 per cent (17 out of 29 countries) of the developing economies (see Figure 1.1 panels A and B). Some of the developing countries in the Latin American region (Chile, Colombia and Uruguay) were able to increase their employment rates by more than three percentage points, while in others the rate remained below the 2007 peak. In the developing economies, the growth spurt

driven by domestic demand on both the consumption and investment side and rising real wages have actually helped many of these economies to register increases in employment. Among the advanced economies, Germany was able to increase employment, largely due to the *Kurzarbeit*[1] scheme.

… there is a widespread deterioration in youth unemployment …

In addition to unsatisfactory employment outcomes, in the majority of advanced economies labour markets have deteriorated since 2007 in terms of unemployment and inactivity. Unemployment has been particularly widespread among vulnerable groups, especially youth (aged 15-24). Youth unemployment rates have increased in about 80 per cent of the advanced and two-thirds of the developing economies with available information. In addition, in half of the advanced economies youth unemployment is higher than 15 per cent. Although there was a temporary respite in the unemployment rate among adults in 2011, the situation did not improve for the unemployed youth (ILO, 2012). In the Middle East and North African region, youth unemployment was four times greater than adult unemployment (ILO, 2012), and the rates were as high as 25 per cent. Although some countries that improved their employment situation, mainly Austria and Germany, were also able to reduce their youth unemployment rates, in some others it escalated to 45 per cent in countries such as Spain and Greece. In particular, the youth unemployment rate in Spain has increased by 28 percentage points (from 18 to 45.8 per cent) since 2007.

Across age groups, the long-term unemployment rate has increased by more than five percentage points among adults in advanced economies. The long-term unemployment rate has seen its greatest increase among youth since 2007 (Figure 1.2 panel C) and inactivity rates have also increased among youth (Figure 1.2 panel D). This has huge economic costs in terms of loss of skills and motivation, and could lead to human capital depreciation. There may also be accompanying social implications in terms of increased social strife, riots, illness, and so forth.

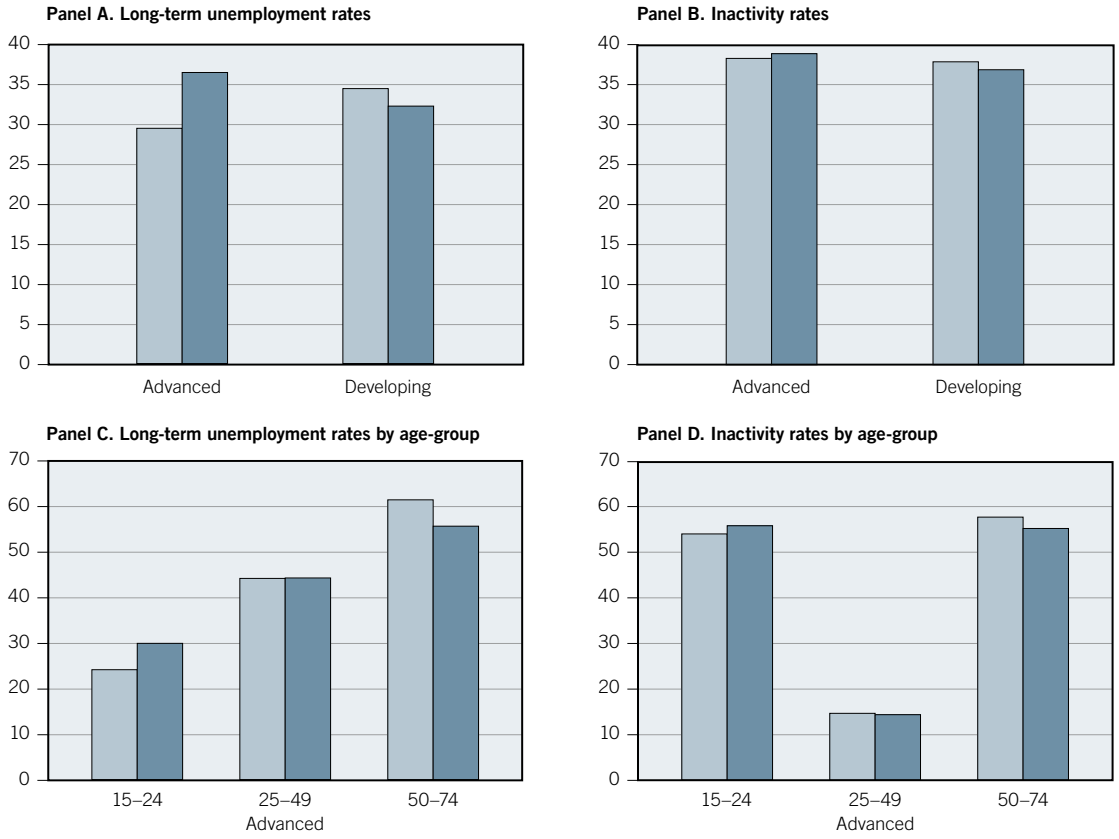
… long-term unemployment continues to increase in advanced economies …

Globally, long-term unemployment rates have increased much more in advanced economies compared to developing economies (Figure 1.2 panel A). In half of the advanced economies, more than 40 per cent of the unemployed are long-term, that is unemployed for more than 12 months. The long-term unemployment rate has increased most significantly in Denmark, Ireland, Spain, the United Kingdom and the United States since 2007. The presence of a large proportion of long-term unemployed could result in huge economic and social costs. In some of the countries where the long-term unemployment rate declined, such as the Czech Republic, Finland, Greece, Netherlands, Portugal and Slovenia, inactivity rates actually increased. This could imply that many of the long-term unemployed are already exiting the labour market. Countries such as Australia and Germany had a comparatively small increase in long-term unemployment.

In comparison, in the majority of the developing economies with available information there is a decline in both long-term unemployment rates and inactivity rates (see Figure 1.2 panels A and B). This could be seen as a result of labour

1. *Kurzarbeit* refers to "short-work" or "reduced working hours" in Germany wherein companies enter into an agreement to avoid lay-offs of their employees to reduce the working hours of all or most of their employees, with the government taking up the responsibility of some employees' lost income.

Figure 1.2 Long-term unemployment and inactivity rates, third quarters of 2007 and 2011 (percentages)



Note: Long-term unemployment rates refer to the number of jobseekers who have been looking for work for over one year, as a share of the total number of jobseekers. Inactivity rates are calculated as the number of persons of working age who do not work as a per cent of the total number of persons of working age.

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

moving into informal employment to secure access to an income, given the absence of unemployment benefits in these economies.

… and there is a major slowdown under way.

As observed earlier most countries have not recovered from the global crisis and short-term trends indicate a further slowdown in the labour market recovery. Among the G20 countries, for the time being, employment rates have continued to improve in several Latin American countries like Argentina, Brazil and Mexico, as well as in Indonesia, the Russian Federation and Turkey. In other countries for which recent statistics exist, employment rates have tended to stagnate or have "double-dipped", such as in the China, EU, India and Saudi Arabia.

B. Job quality

As discussed in the preceding section, advanced economies are still far below their 2007 peak and unemployment rates have continued to increase in almost all the countries in the group. However, there is little empirical evidence about the quality of jobs that have been created since the crisis. This section addresses the issue of job quality, which is a multi-dimensional concept including different attributes

and dimensions of work and employment. In the literature these different dimensions of job quality are identified as labour compensation, power relations, contractual status and stability of employment, working time, etc. (see Muñoz de Bustillo and de Pedraza (2010) for details of the different perspectives).[2] All these aspects of employment quality have a potential impact on the well-being of the workers and their career development. The issue of job quality is addressed below by taking into account only three dimensions: first, the contractual status and stability of employment; second, the willingness to continue in a particular employment status; and third, labour compensation – that is, wages. All three dimensions combined actually reflect the quality of employment.

The first dimension of job quality considers the contractual status and stability of employment, that is standard and non-standard jobs in advanced economies or formal and informal employment in developing economies. Non-standard jobs comprise part-time or temporary employment or self-employed own account. Informal employment comprises workers in small enterprises of fewer than five workers, self-employed own-account workers, unpaid family helpers and workers with no proper contract in the formal sector. This indicator determines the quality of jobs created, whether they are standard or non-standard, formal or informal.

The second dimension examines the willingness of part-time or temporary workers to remain in their job, and this analysis is largely confined to advanced economies. Eurostat data provides information to differentiate between voluntary and involuntary part-time or temporary work. Involuntary work is defined as those workers who are engaged in these forms of employment because they cannot find either full-time or permanent jobs. As the workers are in these forms of employment not out of their choice but due to compulsion, so they are referred as "precarious workers".[3] The third dimension examines the wages of the workers in assessing job quality for a sample of advanced and developing economies.

Non-standard employment has tended to increase or has remained high …

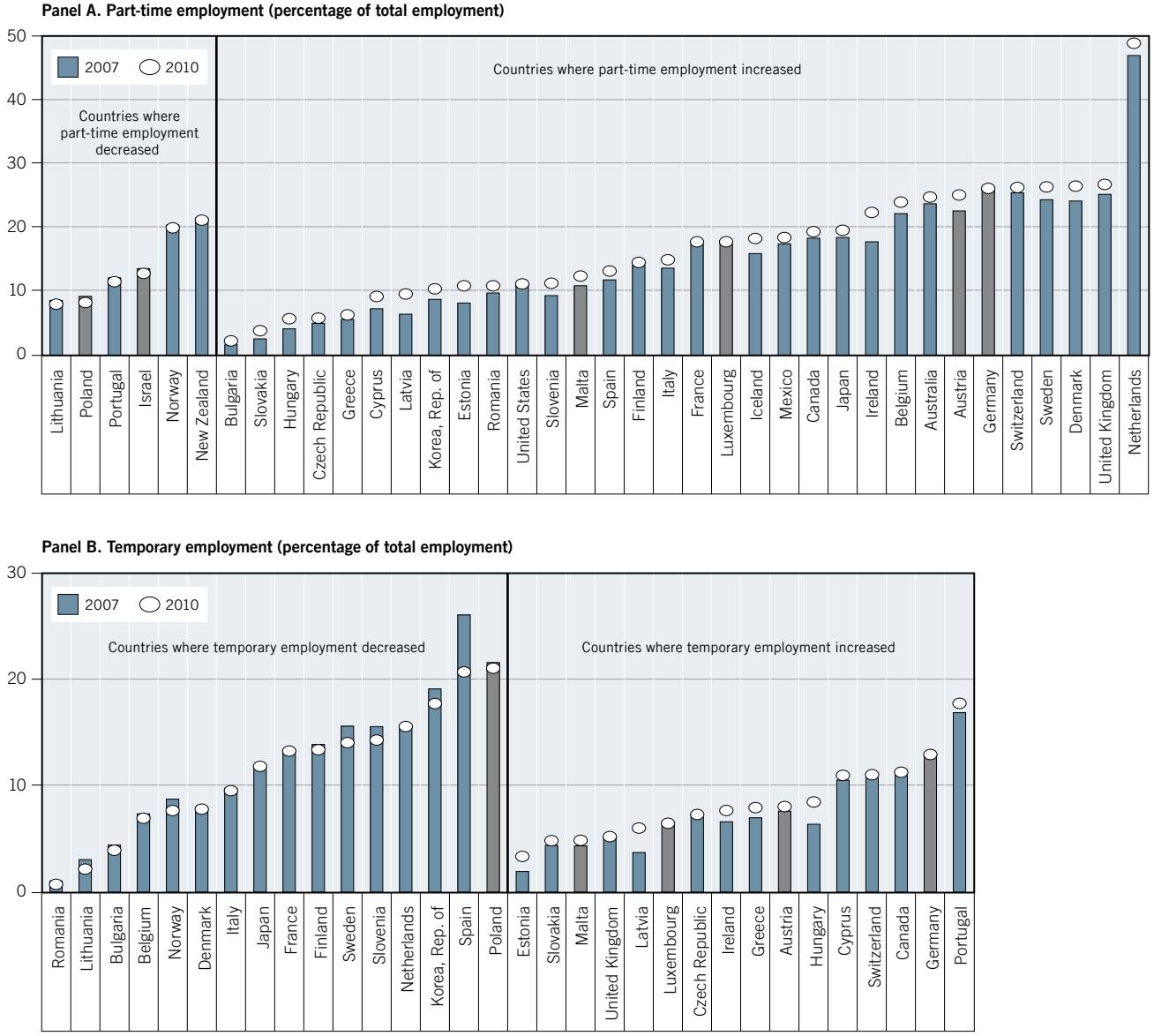
Since the onset of the global crisis, part-time employment has increased in two-thirds of the advanced countries (Figure 1.3 panel A), and temporary employment has increased in one-half of the countries (Figure 1.3 panel B). The increase in non-standard forms of employment is a phenomenon, which was already widely known before the current crisis (Houseman and Osawa, 2003). The *World of Work Report 2008* (ILO, 2008) showed that the incidence of part-time and temporary employment has increased over the past two decades. In many countries, much of the slow recovery in employment has been accompanied by an increase in part-time or temporary employment between 2007 and 2010. This is despite the fact that much of the employment loss in the beginning of the crisis was the result of dismissal of temporary and part-time workers. For example, Spain, along with Poland continues to have the highest proportion of temporary employment in Europe (20 per cent), despite significant losses of temporary employment during the crisis.

---

2. Appendix B presents an analysis of the determinants of non-standard employment.

3. Precarious work has the following characteristics in the literature: low wages (at or below minimum wage, if it exists), uncertainty and insecurity (in terms of hours of work, earnings, multiple possible employers, tasks to perform or duration of the employment relation), lack of protection (from termination of employment, of access to social protection and standard non-wage employment benefits: sick leave, domestic leave or parental leave), no explicit or implicit contract, or lack of or limited access to exercise, union and work rights (Kalleberg, 2009; Tucker, 2002). However, due to lack of data on these various dimensions we restrict our analysis only to 'involuntary' part-time and temporary workers.

Figure 1.3 Incidence of non-standard employment, advanced economies, 2007 and 2010



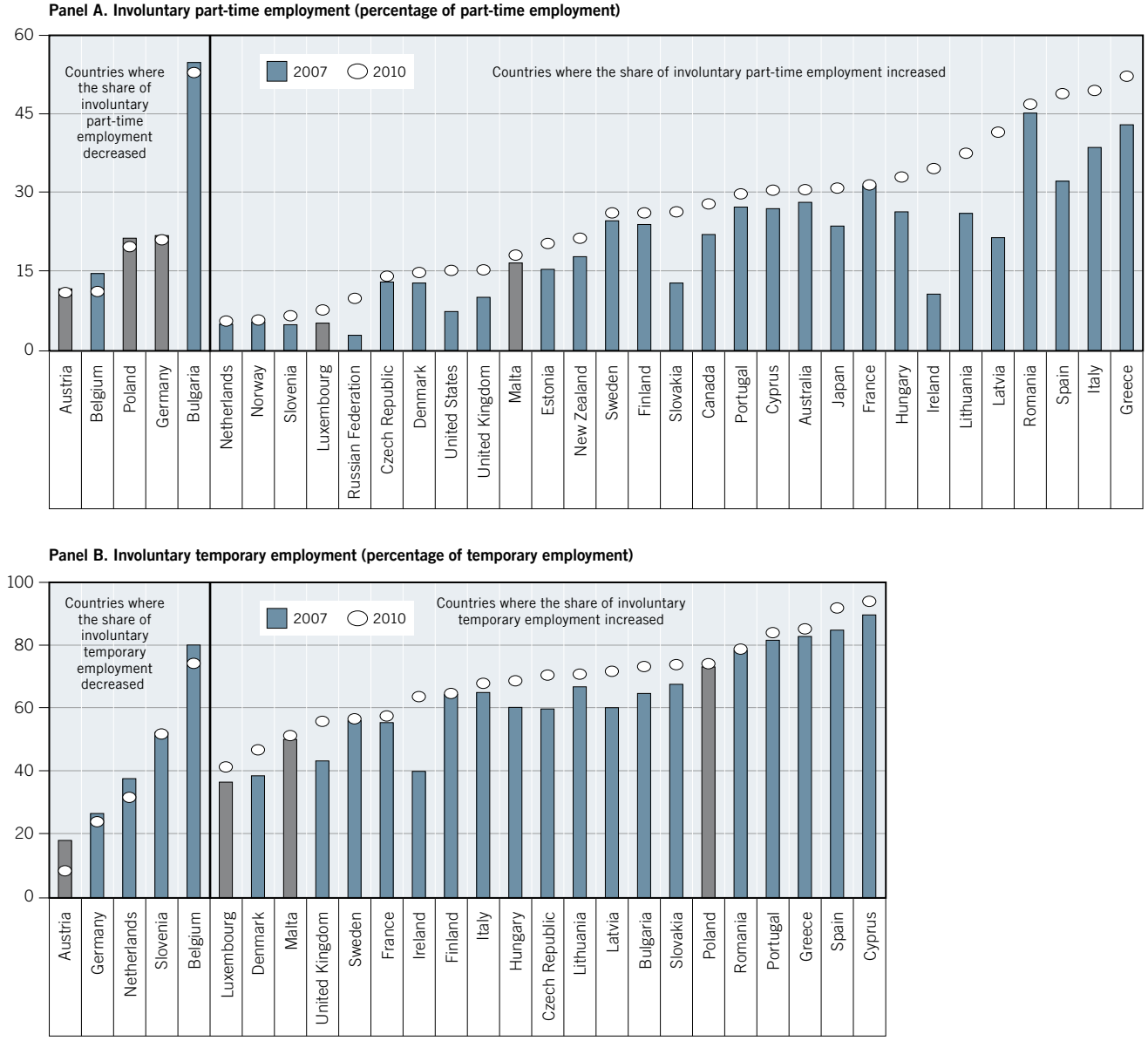
Note: Grey bar denotes countries where employment rates increased.

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

A proportion of the increase in non-standard employment in advanced economies could be of a precarious nature – that is, involuntary part-time and temporary employment. The share of involuntary part-time and temporary employment increased in the majority of the advanced countries (Figure 1.4 panels A and B). In 2007, the share of involuntary part-time and temporary employees accounted for more than 22 and 60 per cent of part-time and temporary employees, respectively and these shares have increased to 26 and 62 per cent in 2010 for the EU as a whole. The creation of precarious employment has also led to a decline in unemployment rate in some of the countries.

Precarious employment (both involuntary part-time and temporary) declined in Austria, Belgium and Germany, while in Eastern and Southern European countries it increased during the crisis (Figure 1.4 panel A and B). In Greece, Italy and Spain involuntary part-time employment is relatively high, approximately 50 per cent in 2010; and involuntary temporary employment topped the 80 per cent level in

Figure 1.4 Incidence of precarious employment, advanced economies, 2007 and 2010



Note: Grey bar denotes countries where employment rates increased.

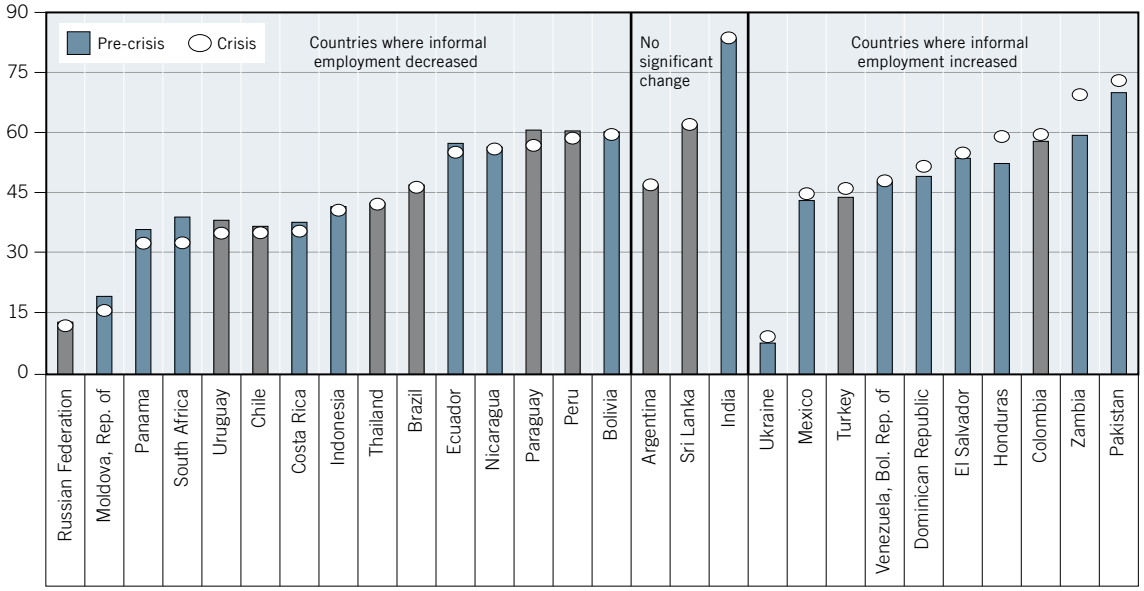
Source: IILS estimates based on Eurostat, OECD employment database and national sources.

Greece, Portugal and Spain. A comparison of involuntary part-time and temporary employment before the crisis (taken as an average between 2001 and 2007) and in 2010, shows that the increase in involuntary part-time and temporary employment has been larger than the increase in unemployed and permanent jobs since the crisis. This clearly shows that during the crisis more precarious employment was created.

… and informal employment remains significant in most developing countries for which data exist.

The incidence of informal employment remains high, at over 40 per cent of non-agricultural employment in two-thirds of the countries for which data is available (Figure 1.5). In about 60 per cent of the countries, informal employment has remained stable or has marginally declined since the beginning of the crisis. Informal employment provides a refuge for the underemployed and also presents

Figure 1.5 Informal employment in developing economies (percentage of total non-agricultural employment)



Note: For Pakistan, Russian Federation, Turkey and Ukraine the figures represent only employment in the informal sector (it excludes workers with no proper contracts in the formal sector) and for all other countries the figures are estimates of informal employment.

Grey bar denotes countries where employment rates increased.

Source: The estimates for Latin American countries are from Panorama Laboral (2011); data for Zambia, South Africa, Turkey, Republic of Moldova, Russian Federation, Ukraine, Sri Lanka and Thailand were compiled by the ILO Statistics Department and are published in Vanek et al. (forthcoming). Data for India, Indonesia and Pakistan are estimates by IILS from national sources.

possibilities for raising families out of poverty. There is some evidence that time-related underemployment[4] reduced marginally in some of the Latin American countries (Argentina, Brazil, Chile, Colombia, Ecuador, Mexico, Peru and Uruguay) (ECLAC, 2012). Similarly, in the Asian region, the implementation of the National Rural Employment Guarantee Scheme in India has reduced underemployment while boosting employment opportunities and wages in rural areas (Rani and Belser, forthcoming). In Sri Lanka, underemployment has declined by 2.1 percentage points between 2006 and 2010 (Ministry of Finance and Planning, 2011).

Wages paid to temporary workers are comparatively low …

The wages paid to workers in non-standard employment are comparatively low. The *World of Work Report 2008* (ILO, 2008) showed that, in European countries, workers on fixed-term contracts are paid less than permanent employees. An analysis of temporary contracts in nine countries (advanced and developing), shows that temporary workers are paid about 40 per cent less than permanent workers in a number of countries.[5] Earlier empirical evidence also shows that fixed-term jobs pay less than permanent ones even after controlling for other individual characteristics (Stancanelli, 2002; Amuedo-Dorantes and Serrano-Padial, 2005). During the present crisis this tendency has become widespread in many countries. The phenomenon was also observed in many developing countries where data was

4. The time-related underemployment definition is from ECLAC. It is defined as involuntarily working less than the normal duration of work determined for a given activity.
5. The countries where wages are 40 per cent lower are Germany, Mexico, South Africa and Spain, and the analysis is based on Tijdens et al (2010) wage indicator dataset. Please contact the authors for more details about the analysis.

available, where informal jobs were paid at less than 40 per cent of the rate for formal jobs, and the wage gaps were widening further (ILO, 2008).

… and new jobs created tend to entail relatively low wages.

An examination of the nature of jobs created between 2007 and 2010 in the 20 countries for which data exist shows, first, that the majority of new jobs are remunerated at a rate below average wages. This is particularly the case in Argentina, Mexico, Netherlands, South Africa and Spain. Second, the analysis shows that new low-paid jobs are less stable than is the case with new highly-paid jobs. Again there are cross-country differences, such as in Sweden and Netherlands most of the new jobs are in lower quintiles and these are concentrated in agriculture, construction, wholesale and retail trade, accommodation and food, while the jobs in the upper quintiles are concentrated in information, real estate and financial sectors. In comparison, in the Russian Federation the new jobs are equally distributed across the quintiles and jobs in manufacturing and construction sectors are prevalent in all quintiles. The new jobs in lower quintiles are predominantly in accommodation and food, and in the upper quintiles they are concentrated in mining, finance, real estate, information and communication and professional and scientific sectors.

An attempt is also made to analyse the new jobs created between 2007 and 2010 in order to account for permanent and temporary contracts. It emerges that the distribution of permanent contracts between wage quintiles is more homogenous compared to the temporary jobs, which are unevenly distributed towards the lower wage quintiles (see Figure 1.6).

There is significant cross-country heterogeneity in the quantity and quality of new jobs created.

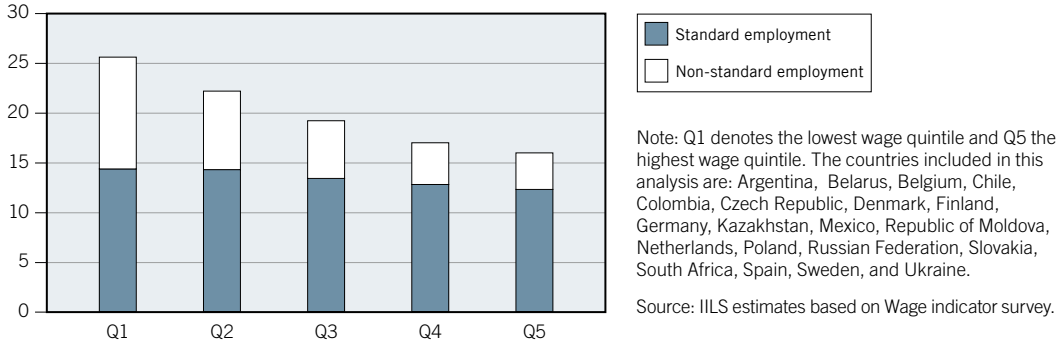
In order to deepen the preceding analysis of the nature of new jobs created, countries have been grouped into four categories, depending on their aggregate employment record since 2007 and whether the incidence of non-standard employment increased or not since 2007 (see Figure 1.7). For the purpose of the analysis, non-standard employment includes temporary employment or precarious workers (involuntary part-time and temporary employment) for advanced countries and informal employment for developing countries.

Category 1 consists of countries where employment rates have increased since 2007 and the incidence of non-standard employment has decreased (see Figure 1.7, category 1). This group comprises Austria, Belgium, Brazil, Chile, Germany, Indonesia, Peru, Poland, Thailand, Paraguay and Uruguay.

Category 2 consists of countries where employment rates increased compared to 2007 and the incidence of non-standard employment increased (see Figure 1.7, category 2). This group comprises Colombia, Luxembourg, Malta, Turkey and Ukraine.

Category 3 consists of countries where employment rates decreased compared to 2007 and the incidence of non-standard employment also decreased (see Figure 1.7, category 3). This shows that the impact of the crisis on job quality can actually be mixed, as it is usually the worst jobs that are lost first, resulting in an improvement in overall job quality through the composition effect. This group consists of Argentina, Denmark, Ecuador, Japan, Netherlands, Norway, Republic

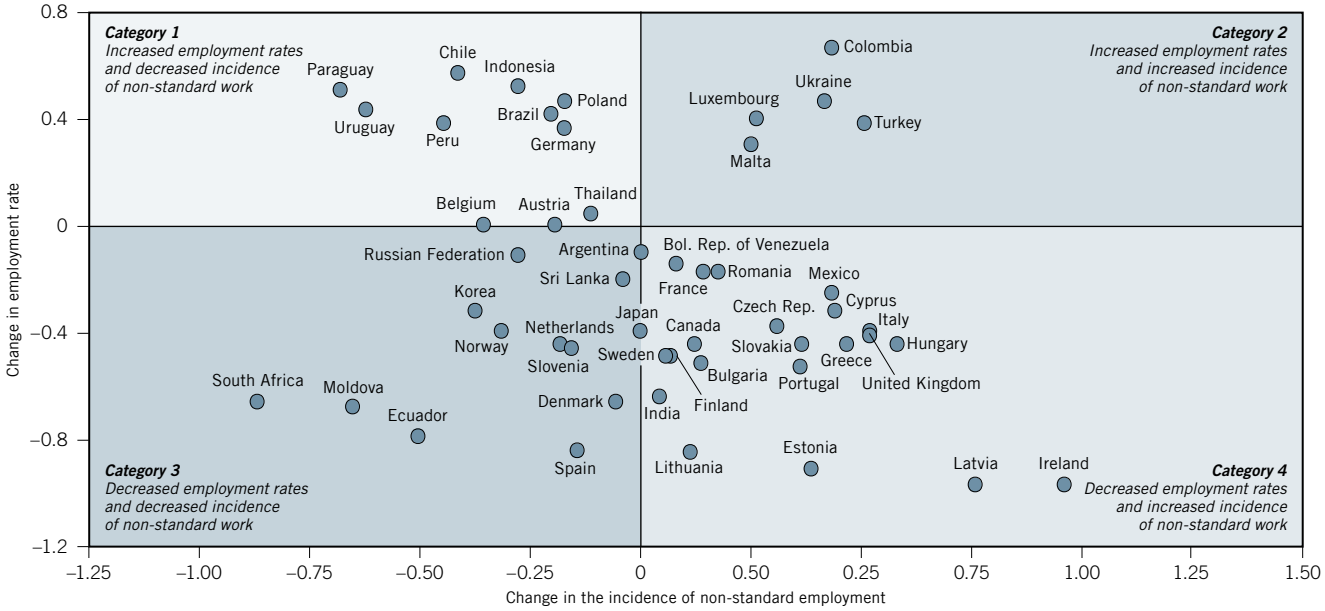
Figure 1.6 New jobs created between 2007 and 2010 by wage quintile (percentages)



Note: Q1 denotes the lowest wage quintile and Q5 the highest wage quintile. The countries included in this analysis are: Argentina, Belarus, Belgium, Chile, Colombia, Czech Republic, Denmark, Finland, Germany, Kazakhstan, Mexico, Republic of Moldova, Netherlands, Poland, Russian Federation, Slovakia, South Africa, Spain, Sweden, and Ukraine.

Source: IILS estimates based on Wage indicator survey.

Figure 1.7 Employment rates and incidence of non-standard employment, changes between 2007 and 2010



Source: IILS estimates.

of Korea, Republic of Moldova, Russian Federation, Slovenia, Spain, South Africa and Sri Lanka. However, countries in this category are relatively heterogeneous in terms of institutions. Netherlands and Denmark have the highest share of part-time work, and their strong reliance on this type of employment has helped them to curtail the growth in temporary employment. In contrast, in Spain job quality was improved through the destruction of temporary jobs. Spain also presents the highest rate of transition from temporary jobs to unemployment in 2009.

Category 4 consists of countries where employment rates decreased compared to 2007 and the incidence of non-standard employment increased (see Figure 1.7, category 4). This category has the largest number of countries and comprises the Bolivarian Republic of Venezuela, Bulgaria, Canada, Cyprus, Czech Republic, Estonia, Finland, France, Greece, Hungary, India, Ireland, Italy, Latvia, Lithuania, Mexico, Portugal, Romania, Slovakia, Sweden and the United Kingdom.

The analysis shows that countries such as Austria, Belgium, Brazil, Chile, Germany, Indonesia, Peru, Poland, Thailand and Uruguay have increased their employment rates without compromising on job quality, in terms of reducing the share of non-standard employment. In countries such as Greece, Hungary, Ireland, Italy, Latvia, Portugal and Romania, the employment situation did not improve and temporary and precarious employment actually increased.

C. Impact of the crisis on poverty and income inequality

The social impact of the current global crisis has been manifold, as rising unemployment and falling incomes further deepen poverty and worsen inequality in certain countries. In many of the developing countries, the informal sector labour force has expanded with the entry of the unemployed from the formal sector, resulting in sharp declines in the earnings of workers. The situation is similar in the advanced economies, where the rise in temporary employment and precarious workers also leads to a decline in incomes. This section analyses the impact of the crisis on poverty and income inequality.

Poverty rates have increased since the start of the crisis in advanced economies, and have tended to decrease in developing countries …

In the past decade, global poverty rates, measured as the share of the population living below $1.25 per day, declined by 17 percentage points from 42 per cent in 1990 to 25 per cent in 2005 (World Bank, 2011).[6] However, increasing food and fuel prices and the 2008 global crisis reversed these positive trends in several regions of the world. The poverty threshold, which is the minimum level of income deemed adequate to sustain a basic standard of living, is defined differently for advanced and developing economies. In advanced economies, the poverty threshold is a relative measure and is calculated as the percentage of the population living on an income below 60 per cent of the median income. In developing economies, it is an absolute measure calculated as the percentage of the population living on incomes below the national poverty rates.

In about three-quarters of the developing economies there was a decline in national poverty rates between pre-crisis and crisis periods, which was most marked in the Latin American region followed by the Asian countries and Uganda and Rwanda in the African region (Figure 1.8 panel A). In advanced economies, poverty rates declined or remained the same in half of the countries between 2007 and 2010 (see Figure 1.8 panel B). As the poverty line used in Europe is a relative one, the decrease in poverty rates might stem from a disproportional decline in overall income instead of an improvement in poverty. Poverty rates have also declined in some of the East European countries that joined the EU recently. In these countries, the poverty rates were relatively high and joining the EU seems to have had a positive impact on their poverty level.

However, if poverty thresholds are calculated using an absolute measure then the situation might be different. For example, in Latvia relative poverty rates do not show any significant change in poverty between 2007 and 2010. Though, if an absolute poverty line, such as a minimum subsistence basket, is used then the poverty rate increases by 16 percentage points between 2008 and 2009 (Kūla et al., 2011). The situation in Greece and Portugal[7] seems to be similar wherein GDP per capita decreased while relative poverty rates did not change during the crisis.

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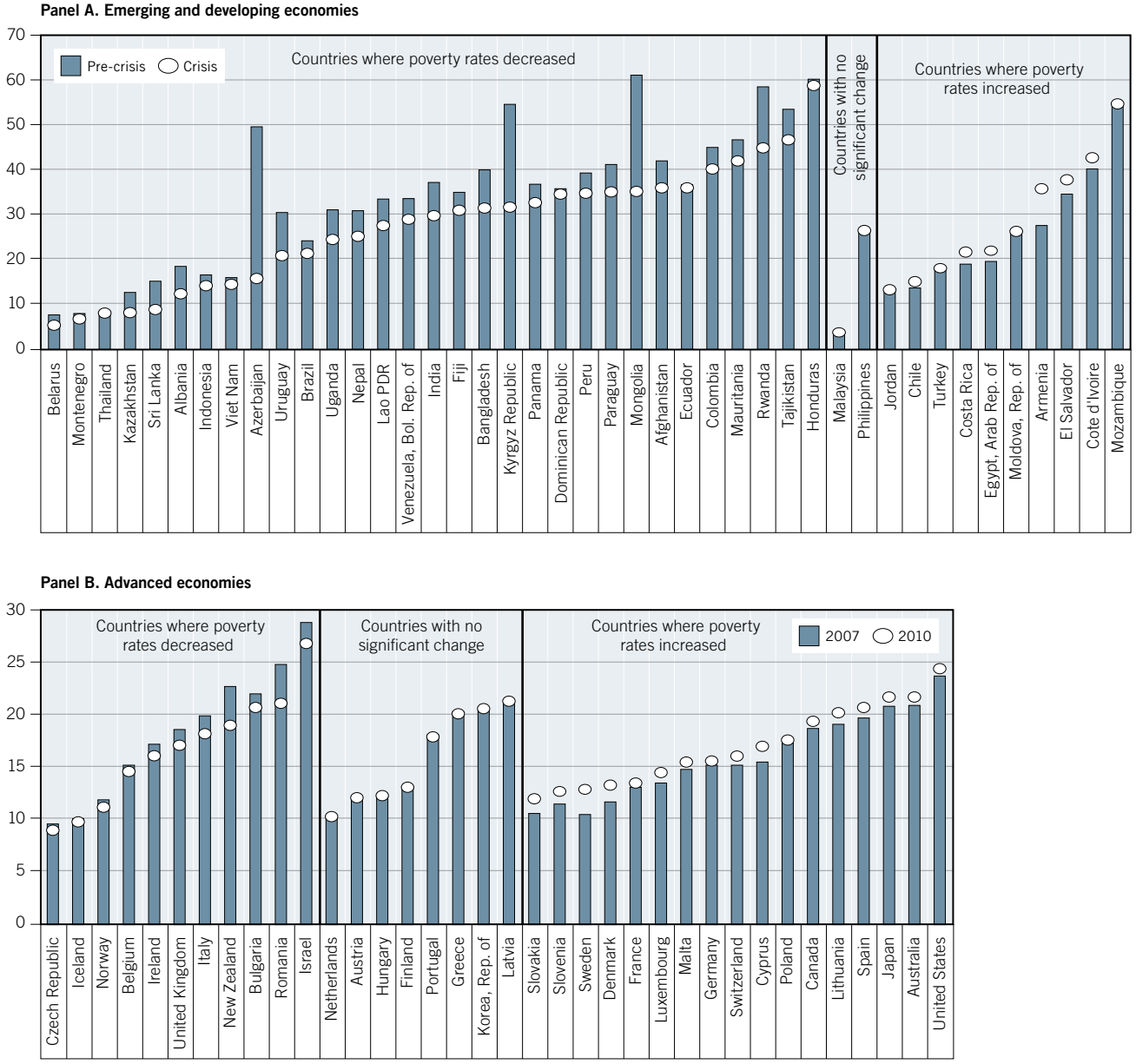
6. This indicator is one of the two indicators used in developing countries to measure poverty (the other one is the share of population living below $2 a day) and indicates extreme poverty, according to the World Bank. These estimates are provided to present an overall picture of global poverty. However, as each country's national poverty rate is more relevant (since this takes into account economic and social conditions specific to that country), this is the rate considered for developing countries. In the case of advanced countries, 60 per cent of the median income is used as the poverty rate.

7. Using an absolute measure it was found that poverty rates increased by two percentage points between pre-crisis and crisis periods (Callan et al., 2011).

Figure 1.8 Poverty rates, pre-crisis and crisis



Note: For emerging and developing economies, the poverty rate is measured as the percentage of the population living below the national poverty rate. For advanced economies it is measured as the percentage of the population living below 60 per cent of the median income. For Australia, Canada, Israel, Japan, Republic of Korea, New Zealand, Switzerland and the United States the data refer to mid-2000s and latest year.

Source: IILS estimates based on World Bank, Eurostat and OECD databases.

This is surprising given that Greece observed a decline in minimum wages by 20 per cent, which should have led to a decline in purchasing power and also increase in poverty.

One of the obstacles to reducing poverty is its intergenerational transmission from parents to children, which increases the long-term probability that the poor will remain in poverty. One of the reasons why certain groups are trapped in poverty is due to low pay.[8] "Historically poverty was associated with joblessness" (Lucifora and Salverda, 2009); however, today an increasing number of those who

8. Low pay is defined by the ILO as "the proportion of workers whose hourly wages [are] less than two-thirds of the median wage across all jobs" (ILO, 2010a).

are working are also poor. Available data show that the incidence of low pay has risen in a number of countries: the comparison between 1995–2000 and 2007–2009 periods (averages) shows that this increase was more than 4 per cent in Germany and Argentina, 6 per cent in Luxembourg, almost 8 per cent in Honduras and more than 12 per cent in Panama (ILO, 2010a). The issue of low pay and the working poor is crucial for implementing policies which aim to address poverty.

In addition to the issue of low pay, unemployment among young graduates could also lead to intergenerational poverty. There is some evidence from earlier crises that youth unemployment persists even long after growth resumes (ILO, 2010b). This often implies a lower probability of finding a job in the future. For example, in Belgium it was found that the probability of young graduates finding a job after a 21-month period of unemployment decreases from 60 per cent to 16 per cent for men and from 47 per cent to 13 per cent for women (Cockx and Picchio, 2011). Unemployment at graduation also has a significant negative impact on future earnings. For instance, in Sweden those who were unemployed after graduation were earning 30 per cent less after five years than graduates who had a job at graduation (Gartell, 2009), while in the United States Mroz and Savage (2006) found that a six-month spell of unemployment at the age of 22 would lower future earnings by 8 per cent.

… and a similar pattern can be observed for income inequalities.

The increase in the number of unemployed, the decrease in earnings and the slowdown in growth has raised concerns about income inequalities. Using the Gini coefficient as an indicator for inequality, in more than half of the advanced economies and three-quarters of the developing economies inequality actually declined (see Figure 1.9 panels A and B). However, the level of income inequality in developing economies is markedly higher than in advanced economies.

The decline in income inequality in many of these countries must be interpreted carefully. There is evidence that the Gini coefficient can be a misleading concept in terms of income inequality, especially with respect to income redistributions that are on one side of the median. In fact, in such a case, the Gini coefficient would decrease and polarization would increase (Seshanna and Decornez, 2003). An analysis of income shares for 44 developing countries with available information shows that the income share among the richest 20 per cent of the population (Q5) is almost 50 per cent and among the poorest 20 per cent of the population is 5 per cent (see Figure 1.10).

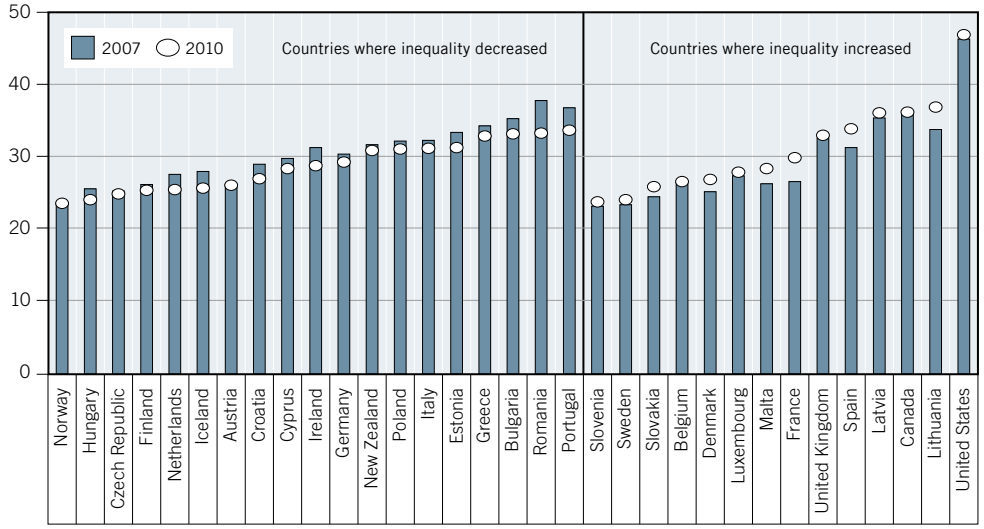
Non-income dimensions of inequality are on the rise.

Additionally, there are non-income dimensions of inequality that are not reflected in the Gini coefficients. These dimensions of global inequality include inequalities in health, access to education, employment, gender, etc., which, apart from exacerbating poverty, also lead to greater marginalization within society. Some of these dimensions are explored here.

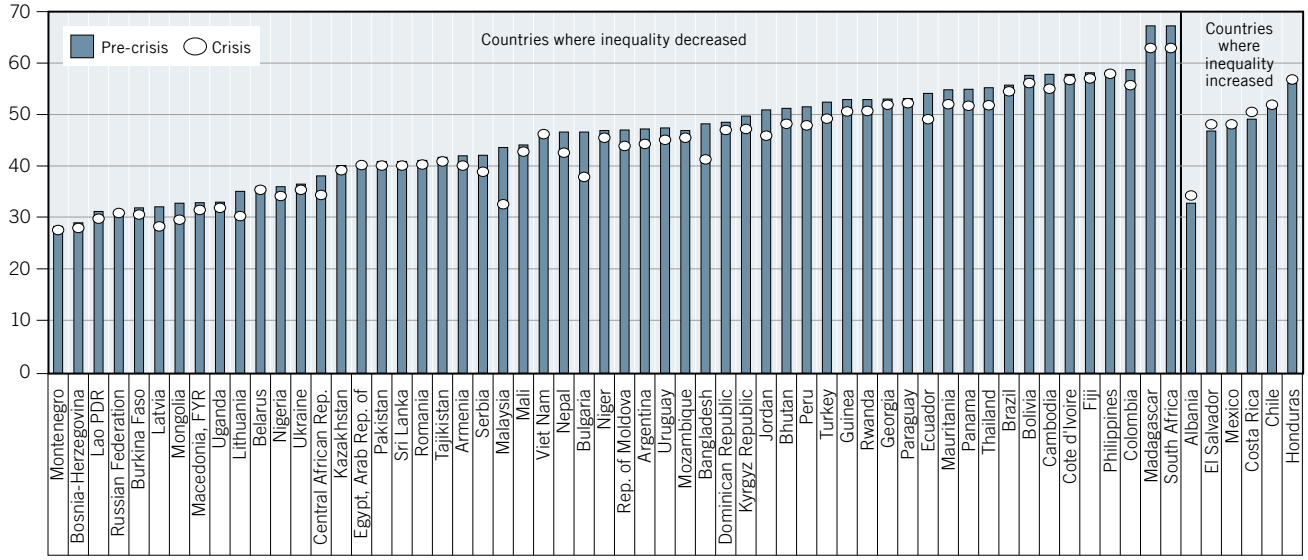
Inequality related to *health* is an important non-economic component of inequality, which has been increasing both in advanced and in developing economies. In developing and less-developed economies, access to health care is quite restricted and health insurance coverage is not universal, therefore the financial burden of health care often falls on the private households, which cannot afford such costs. In the aftermath of the recent food and fuel crisis, poor households

Figure 1.9 Income inequality, pre-crisis and crisis

Panel A. Advanced economies



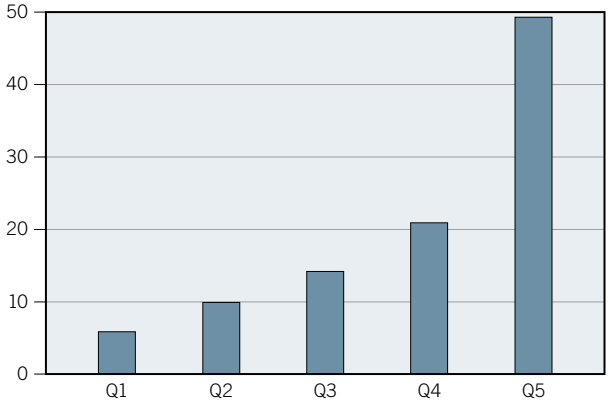
Panel B. Emerging and developing economies



Note: The data for Canada, Croatia, Cyprus and Ireland relate to 2009.

Source: IILS estimates based on World Bank Database, Eurostat and national sources.

Figure 1.10 Income share by income quintile, 2011 (percentages)



Note: Q1 denotes the poorest income quintile of population and Q5 the richest income quintile of population.

Source: IILS estimates based on World Bank Database.

in Bangladesh and Jamaica "reported finding it harder to manage the costs of accessing health services", which led to "self-diagnosis and resort to folk remedies" (Institute of Development Studies (IDS), 2009). In Pakistan, it was reported that among households in the poorest quintile "the number of households unable to afford healthcare increased from 6 per cent to 30 per cent" (Sanogo, 2009). The crisis has also led to a slowdown in foreign aid for health programmes in many countries. For example development assistance for health stagnated or decreased (France, Luxembourg, Netherlands, Ireland, Italy, Portugal among others) and in many of the countries there were marginal increases with some exceptions such as Norway and United Kingdom between 2008 and 2009 (Institute for Health Metrics and Evaluation, 2010, 2011). Some of the sub-Saharan countries, such as Botswana, South Africa and Tanzania, have also announced cuts in government budgets for HIV/AIDS, and the impact on vulnerable groups could be phenomenal.

In Europe, the situation was exacerbated in some countries, such as Greece, after the crisis. Many Greeks lost their access to health care through employment, which pushed many from private sector health care into state health institutions.[9] At the same time, austerity measures led to 40 per cent cuts in public hospital budgets, which in turn created problems of understaffing and shortages of medical supplies. This led to a rise in the number of those who reported unmet medical needs and "bad health" between 2007 and 2009. There was increase in the use of street clinics run by NGOs from 3-4 per cent to 30 per cent worsening the situation for the vulnerable groups (Kentikelenis et al., 2011). The United States provides another example of rising problems related to health care after the crisis: many households "are close to financial ruin owing to health costs incurred after the loss of employer-provided health insurance" (UNDESA, 2010).

Inequality in *access to education* perpetuates income inequality and further "limits the impact of economic growth on poverty reduction" (Ahmad, 2003). This could also have implications for other outcomes, such as employment, wages, health (UNDESA, 2005). Access to education helps in acquiring skills, which enhance the capacity to take advantage of job opportunities, and improve personal bargaining power in the labour market (Ahmad, 2003). However, access to education is quite unequal in different countries throughout the world. In some African countries (Benin, Burkina Faso and Senegal), the percentage of those aged 25 and older without any education stands at more than 60 per cent, with lack of education much higher among poor households. The situation worsens in times of crisis when the financial burden on poor households increases, leading to a rise in drop-out rates among children (UNESCO, 2011). A number of countries (Bangladesh, Kenya and Zambia) have observed significant school drop-outs after the crisis, due to unaffordable school costs, children entering the labour market to augment household income, and lack of adequate food (IDS, 2009). The World Bank and IMF estimate that "350,000 more students will fail to complete primary school" in 2015 due to the recent crisis (World Bank and IMF, 2010).

Inequality in *access to food* is the most alarming of all inequalities. In 2009, the number of undernourished reached a peak of 1.023 billion (FAO, 2011). In times of economic crisis, inequalities become even more glaring as the poor, whose share of food expenditure is more than 60 per cent of their total income, cannot afford to purchase food at the increased prices and tend to reduce both their consumption and the variety of food they consume. In some countries, such as Bangladesh,

9. See http://www.guardian.co.uk/world/2011/oct/10/greece-economic-crisis-health

Kenya and Jamaica, people reported a reduction in the consumption of vegetables, cheese, milk and meat and there was a tendency to buy cheaper and lower quality products (IDS, 2009).

Related to the issue of access to food is the issue of *access to land*, which is quite skewed in developing economies. For example, the Gini coefficient for land was 0.80 in Brazil, Chile, Colombia, Uruguay and the Bolivarian Republic of Venezuela in the 2000s (Torche and Spilerman, 2008).[10] Land has become increasingly concentrated in the hands of a few landowners and landlessness has been increasing over the past decades in a number of countries (Bangladesh, Cambodia, the Philippines and Thailand). Moreover, the cultivated land per capita has declined in a number of countries: for example, in Eastern and Southern Africa the average cultivated area today accounts to less than 0.3 hectares per capita (International Fund for Agricultural Development (IFAD), 2010). The landless and those who have very small parcels of land are usually net food buyers who are more vulnerable to shocks, and were most severely affected during the recent food crisis (IFAD, 2010).

Huge inequalities exist in *access to credit* and, historically, those with better credit worthiness have been able to access credit much more easily than others. According to IFAD, "basic formal financial services reach only ten per cent of rural communities".[11] Availability of credit has become highly restricted in the developing world after the crisis. In Africa, real growth of credit to the private sector declined substantially between 2007 and 2009 (Brixiová and Ndikumana, 2010). Moreover, defaults in payments to microcredit institutions are on the rise in many regions (such as Central Asia) reducing micro-entrepreneurs' profits and increasing the difficulty of accessing liquidity (International Finance Corporation (IFC), 2009).

Access to credit for small and medium-sized enterprises (SMEs) has decreased considerably in several European countries. For example, in Estonia and Latvia firms in 2009 were "15 per cent more likely to be credit constrained than in 2005", largely due to credit rationing (McCann, 2011). Greece also observed a decline in credit growth to the private sector in 2010, which turned negative at the beginning of 2011 (OECD, 2011). SMEs in Europe reported 6 percentage points increase in rejection of their bank loan application (18 per cent) while "bank loan application success (72 per cent) and rejection rates (5 per cent) remained stable for large firms" (European Central Bank (ECB), 2010). In 2011, the situation of large firms compared to SMEs remained more favourable, with 50 per cent of the large firms reporting that there were no obstacles to receiving financing. The number of SMEs reporting that there were no obstacles to receiving financing in 2011 was only 8 per cent in Greece, 15 per cent in Portugal, 16 per cent in Spain and 18 per cent in Ireland, while it was 64 per cent in Finland, 58 per cent in Germany and 56 per cent in Austria (ECB, 2011). In 2011, "The highest net percentages of SMEs reporting deterioration in the availability of bank loans were ... in Greece, Ireland and Portugal (42 per cent, 35 per cent and 31 per cent respectively)" (ECB, 2011).

10. The Gini coefficient for land does not include the landless.
11. See http://www.ifad.org/ruralfinance

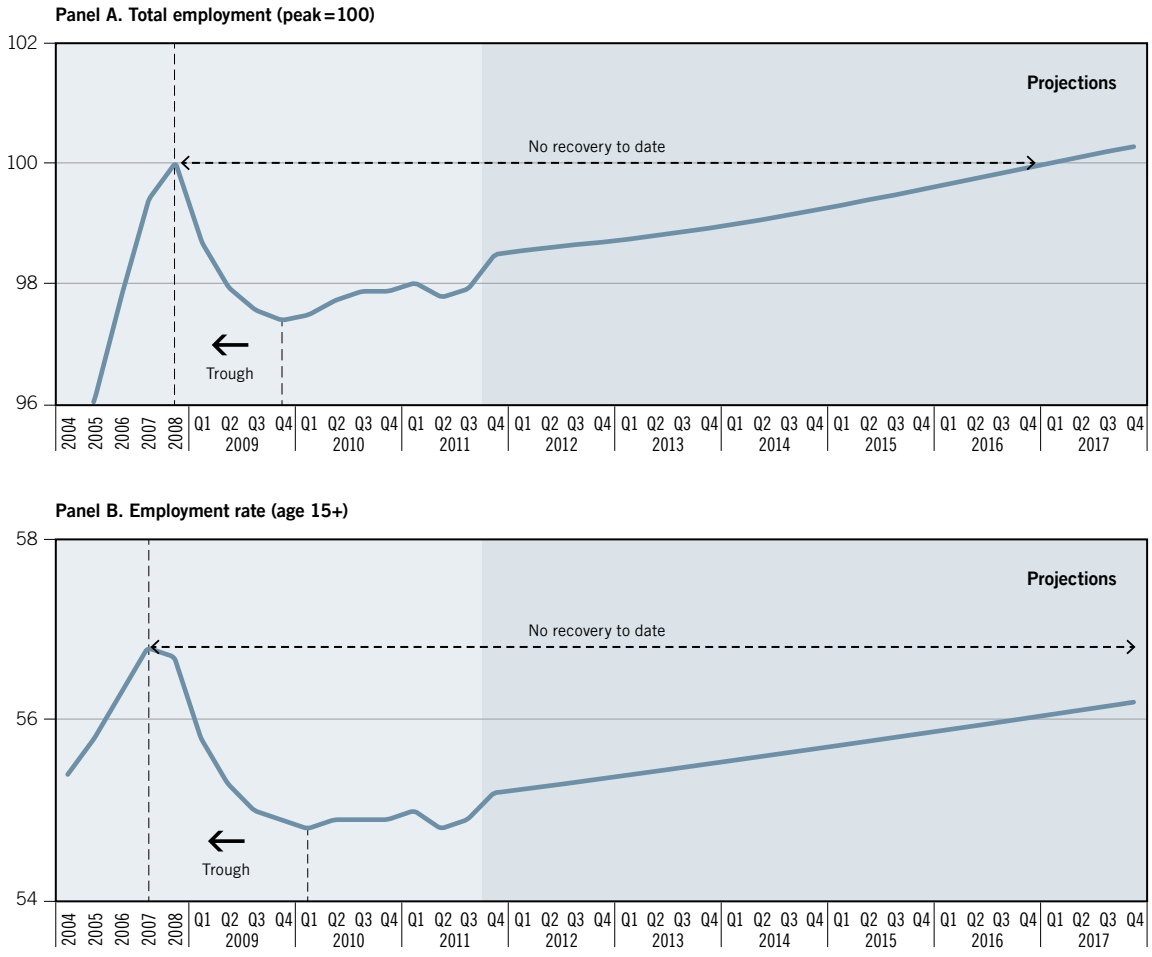
D. Better jobs for a better economy

The short-term employment outlook continues to deteriorate in advanced economies …

As observed in section A, employment rates have increased in less than 20 per cent of the advanced economies and 60 per cent of the developing economies. The impact of the economic slowdown on employment creation will be significant. Further, global unemployment has started to rise again since late 2011, reversing earlier employment gains. For 2012, around 202 million people will be unemployed, reflecting the downward scenario indicated in the ILO (2012). The unemployment rate will further increase to 6.1 per cent of the global labour force this year and increase to 6.2 per cent in 2013. The number of jobseekers will continue to swell, and is expected to reach 210 million people by 2016, despite a gradual but limited decline in the unemployment rate.

In the advanced economies, the employment level is not expected to recover to pre-crisis levels till late 2016 (Figure 1.11, panel A). Given the current employment rate, which is still under the 2007 peak, the employment recovery will take more than five years even if the current output growth continues to grow at the same rate (Figure 1.11, panel B).

Figure 1.11 Employment projections: Advanced economies



Source: IILS estimates.

… and improves in emerging and developing economies, though unevenly.

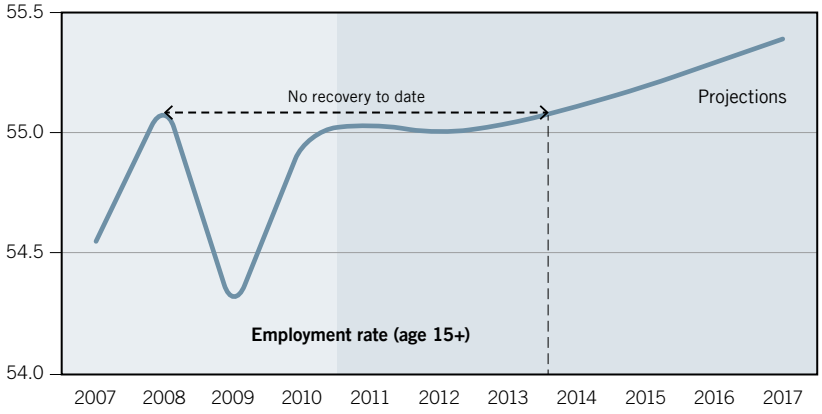
The sluggish employment growth in the advanced economies is having an impact on the emerging economies, which are slowing down. Many of the countries in this group have experienced an improvement in the employment rate, but the rates are still lower than the 2007 peak and there is no recovery to date (Figure 1.12). There was an initial increase in the employment rate, which had a considerable potential for recovery in 2011, but the current economic slowdown has delayed recovery prospects. In the short-run, the impact of the current slowdown could continue for a year before employment rates starts to pick up.

The developing economies continue to experience an increase in employment, although some countries in the region are facing an economic slowdown. The employment rate, which slowed down between 2008 and 2009 started to grow, and has again slowed down (Figure 1.13). The projections show that the employment rate would be flat till 2013 before it slowly starts to pick up.

Changes in the risk of social unrest reflect the diverging employment trends.

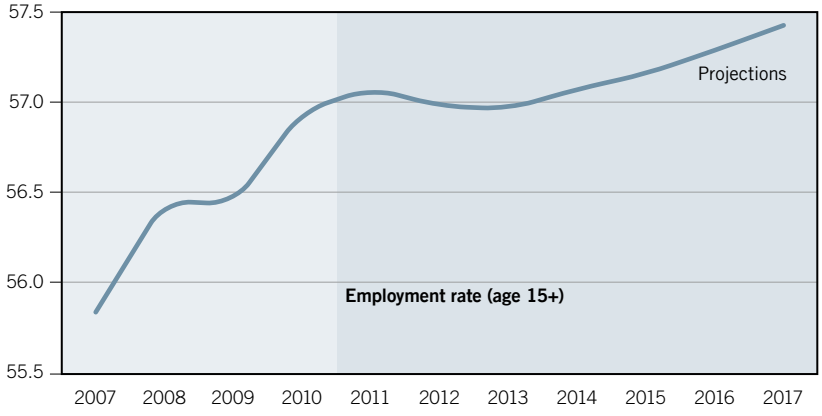
The labour markets in most economies have not recovered from the global crisis. Moreover, the major economic slowdown is further affecting the labour market recovery. Further, the recovery in the labour market has largely been of a precarious kind, with increase in involuntary part-time and temporary employment and informal employment. The crisis has also led to an increase in poverty rates

Figure 1.12 Employment projections: Emerging economies



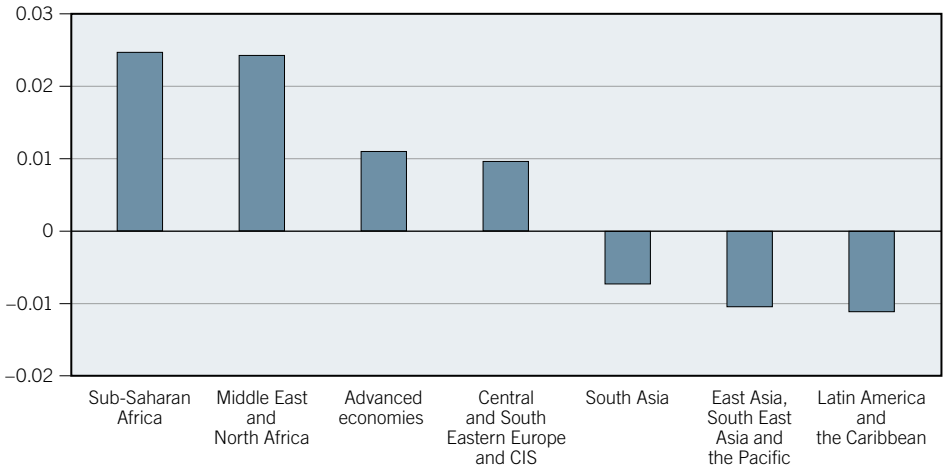
Source:
IILS estimates.

Figure 1.13 Employment projections: Developing economies



Source:
IILS estimates.

Figure 1.14 Change in the risk of social unrest between 2010 and 2011 (scale of 0 to 1)



Source: IILS estimates based on Gallup World Poll Data, 2012

and inequality in half of advanced economies and one-third of developing economies. These trends could further lead to reduced social cohesion.

A global annual survey shows a heightened sense of socio-economic insecurity in most parts of the world. Out of 106 countries with available information, 54 *per cent* of the countries reported increase in the score of the Social Unrest Index in 2011 compared to 2010 (the higher the score, the higher the estimated risk).[12,13,14] The two regions of the world that show the most heightened risk of unrest are Sub-Saharan Africa and the Middle East and North Africa but there are also important increases in Advanced economies and also in Central and Eastern Europe (figure 1.14). Interestingly, countries in Asia and Latin America – where there has been employment recovery – have experienced a decline in the risk of social unrest between 2010 and 2011.

This report examines alternatives to fiscal austerity and ill-conceived labour market reforms.

As the preceding sections demonstrate, the labour market situation requires a change in the policy approach – away from ill-conceived labour market reforms and fiscal austerity. Indeed, by boosting job quality, countries will be rewarded with a strong employment performance and a more solid basis for growth and development.

Chapter 2 examines this change from the point of view of labour market institutions. It documents recent reforms in employment regulations and collective bargaining and assesses the employment effects of these measures. The

12. Social unrest index was constructed using the following variables and corresponding weights: percentage of respondents reporting lack of confidence in their national government (0.35); percentage of respondents reporting that their standard of living was getting worse (0.2); percentage of respondents reporting dissatisfaction with freedom in their country (0.2); percentage of respondents reporting that their national economy was getting worse (0.2); and percentage of respondents with access to internet (0.05). The weights were loosely based on other indexes for social and political unrest. See also *World of Work Report 2011: Making markets work for jobs* (ILO, 2011).
13. Comparing levels across countries should be made with some caution. Indeed, given the nature of the index, it is more meaningful to compare changes within regions and countries. Looking at within country/region changes can provide valuable insight into how perceptions of people have changed.
14. In 2011, 54 per cent of the countries analyzed reported lower confidence in their national government compared to 2010.

chapter also provides examples of countries which, instead of deregulating labour markets, reinforced labour market institutions while also improving their design.

Chapter 3 shows that a fiscally-neutral change in the expenditure and revenue composition would be efficient in boosting decent work prospects. Since 2010, there has been an increased tendency among advanced economies to focus on austerity measures – mainly centred on continued reductions in social spending and downward pressure on public investment. The chapter shows that these measures have to a large extent been counterproductive, in terms of both employment and fiscal goals.

Finally, Chapter 4 presents new analysis on the links between investment and employment. It makes an important connection between the volatility of investment on the one hand – partly the product of an uncertain financial and economic environment – and job quality on the other. The implications for an alternative policy approach are also drawn, including with respect to the role of credit policy for small businesses and aggregate demand.

Appendix A

Country groupings by income level

Country	Income-level group[1]
Afghanistan (AFG)	Low income
Albania (ALB)	Lower-middle income
Algeria (DZA)	Upper-middle income
Argentina (ARG)	Upper-middle income
Armenia (ARM)	Lower-middle income
Australia (AUS)	High income
Austria (AUT)	High income
Azerbaijan (AZE)	Upper-middle income
Bahamas (BHS)	High income
Barbados (BRB)	High income
Belarus (BLR)	Upper-middle income
Belgium (BEL)	High income
Bolivia (BOL)	Lower-middle income
Brazil (BRA)	Upper-middle income
Bulgaria (BGR)	Upper-middle income
Cambodia (KHM)	Low income
Canada (CAN)	High income
Chile (CHL)	Upper-middle income
China (CHN)	Upper-middle income
Colombia (COL)	Upper-middle income
Costa Rica (CRC)	Upper-middle income
Croatia (HRV)	High income
Cyprus (CYP)	High income
Czech Republic (CZE)	High income
Denmark (DNK)	High income
Dominica (DMA)	Upper-middle income
Dominican Republic (DOM)	Upper-middle income
Ecuador (ECU)	Lower-middle income
Egypt, Arab Rep. of (EGY)	Lower-middle income
El Salvador (SLV)	Lower-middle income
Estonia (EST)	High income
Finland (FIN)	High income
France (FRA)	High income
Georgia (GEO)	Lower-middle income
Germany (DEU)	High income
Greece (GRC)	High income
Guatemala (GTM)	Lower-middle income
Honduras (HND)	Lower-middle income
Hong Kong SAR (HKG)	High income
Hungary (HUN)	High income
Iceland (IS)	High income
India (IND)	Lower-middle income
Indonesia (IDN)	Lower-middle income
Iran (IRN)	Upper-middle income
Ireland (IRL)	High income
Israel (ISR)	High income
Italy (ITA)	High income
Jamaica (JAM)	Upper-middle income
Japan (JPN)	High income
Kazakhstan (KAZ)	Upper-middle income
Korea, Republic of (KOR)	High income
Kyrgyzstan (KGZ)	Low income
Latvia (LVA)	Upper-middle income
Lithuania (LTU)	Upper-middle income
Luxembourg (LUX)	High income
Macao SAR (MAC)	High income
Macedonia, FYR (MKD)	Upper-middle income
Malaysia (MYS)	Upper-middle income
Malta (MLT)	High income
Mauritius (MUS)	Upper-middle income
Mexico (MEX)	Upper-middle income
Rep. of Moldova (MDA)	Lower-middle income
Mongolia (MNG)	Lower-middle income
Montenegro (MNE)	Upper-middle income
Morocco (MAR)	Lower-middle income
Netherlands (NLD)	High income
New Zealand (NZL)	High income
Niger (NER)	Low income
Norway (NOR)	High income
Pakistan (PAK)	Lower-middle income
Panama (PAN)	Upper-middle income
Paraguay (PRY)	Lower-middle income
Peru (PER)	Upper-middle income
Philippines (PHL)	Lower-middle income
Poland (POL)	Upper-middle income
Portugal (PRT)	High income
Romania (ROU)	Upper-middle income
Russian Federation (RUS)	Upper-middle income
Serbia (SCG)	Upper-middle income
Singapore (SGP)	High income
Slovakia (SVK)	High income
Slovenia (SVN)	High income
South Africa (ZAF)	Upper-middle income
Spain (ESP)	High income
Sri Lanka (LKA)	Lower-middle income
Sweden (SWE)	High income
Switzerland (CHE)	High income
Taiwan, China (TWN)	High income
Tajikistan (TJK)	Low income
Thailand (THA)	Lower-middle income
Trinidad and Tobago (TTO)	High income
Tunisia (TUN)	Upper-middle income
Turkey (TUR)	Upper-middle income
Ukraine (UKR)	Lower-middle income
United Kingdom (GBR)	High income
United States (USA)	High income
Uruguay (URY)	Upper-middle income
Uzbekistan (UZB)	Lower-middle income
Bolivarian Republic of Venezuela (VEN)	Upper-middle income
Viet Nam (VNM)	Lower-middle income

[1] Income groups are based on gross national income (GNI) per capita according to the World Bank country classification, available at: http://data.worldbank.org/about/country-classifications/country-and-lending-groups. High-income countries are countries with a GNI per capita of US$12,276 or more; upper-middle income countries are countries with a GNI per capita of US$3,976 to US$12,275; lower-middle income countries are countries with a GNI per capita of US$1,006 to US$3,975; and low-income countries are countries with a GNI per capita of US$1,005 or less.

The advanced economies are categorized as high-income countries, emerging economies are categorized as upper-middle income economies and developing economies are categorized as lower-middle income economies.

Appendix B

Determinants of non-standard employment: An empirical analysis

Section B of this chapter discusses about the non-standard employment. The factors that could explain the rise in non-standard employment in advanced economies is analysed in this appendix. The determinants of non-standard forms of employment are classified in terms of micro- and macroeconomic factors in the literature. The microeconomic factors refer to the individual characteristics of the worker: that is, sex, age, nationality, education and family, work–life balance, past unemployment experiences, working conditions and labour demand characteristics, such as establishment size, sector and demand uncertainty. A number of empirical studies actually use these different microeconomic variables to explain the rise in non-standard work (Farber, 1999; Booth et al., 2000; Gagliarducci, 2005; Salladarre and Hlaimi, 2007). The macroeconomic factors considered in the literature to explain the rise in non-standard work largely concern the role of labour market reforms (Dolado et al., 2002; Blanchard and Landier, 2002; Kahn, 2010). D'Addio and Rosholm (2005) also consider the role of growth rate and unemployment rate, as well as including the microeconomic and labour market institution variables in their analysis.

The empirical analysis is undertaken to explain the rise in non-standard forms of employment for each of the categories – namely, part-time employment, temporary employment and self-employed own-account workers. Both the micro- and macroeconomic variables are considered to explain the rise in non-standard employment, which is similar to the methods employed by D'Addio and Rosholm, 2005[15]. The analysis is undertaken for the year 2010 for 20 advanced economies (Belgium, Bulgaria, Czech Republic, Denmark, Estonia, Finland, France, Germany, Hungary, Israel, Netherlands, Norway, Poland, Portugal, Russian Federation, Slovenia, Spain, Sweden, Switzerland and the United Kingdom). The data used for this analysis is from the European Social Survey (ESS).[16] The variables included in the analysis are listed and described in table 1B.1.

The dependent variable in the model is a binary variable: whether a worker is "part-time", "temporary" or "self-employed own-account" and takes the value 1, otherwise 0. The vector of independent variable, x_t, includes the variables listed in table 1B.1. The conditional probability of y_t, given the vector of regressor x_t, is given by:

$$\begin{cases} f(y_t = 1|x_t;\ \theta) = \varphi(x_t'\theta) \\ f(y_t = 0|x_t;\ \theta) = 1 - \varphi(x_t'\theta) \end{cases}$$

where φ is the cumulative density function of the standard normal distribution and $\theta = (\beta', \sigma^2)'$ is the parameter to estimate, which includes β and σ– that is, the

15. We did not conduct a cluster analysis of the different employment contracts, as was done by D'Addio and Rosholm, 2005, and we have included both micro- and macroeconomic variables in our analysis.

16. The data refers to ESS Round 5: European Social Survey Round 5 Data (2010). Data file edition 1.0. The Norwegian Social Science Data Services, Norway is the distributor of ESS data and the data archive.

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

Variable	Definition	Source
Microeconomic variables		
Part-time worker	Worker with less than 30 hours of work per week in main job (overtime excluded)	ESS 2010
Temporary worker	Worker with limited duration employment contract	ESS 2010
Self-employment own account	Self-employed worker with no employees	ESS 2010
Age		ESS 2010
Gender		ESS 2010
Education (below BA)	Worker with highest level of education below International Standard Classification of Education (ISCED) 5A medium, bachelor/equivalent from lower tier tertiary	ESS 2010
Education (above BA)	Worker with masters or doctoral degrees, ISCED 5A medium or long	ESS 2010
Micro-firm	Firm with fewer than ten employees	ESS 2010
Small and medium enterprises	Small and medium-sized enterprises with ten and 100 employees	ESS 2010
Public sector	Workers employed by central or local government, other public sectors (such as education and health) or a state-owned enterprise	ESS 2010
Past unemployment	Workers who have experienced any period of unemployment and work-seeking within the past 5 years	ESS 2010
Work–life balance	Workers with a satisfaction level of between 6 and 10 (on a scale of 1 to 10) in terms of the balance between time spent on their job and time spent on other aspects of life	ESS 2010
Macroeconomic variables		
Unemployment rate	People who are currently not working but are willing and able to work for pay, currently available to work, and have actively searched for work, as a percentage of labour force	IMF, *World Economic Outlook* 2011
Growth rate	Growth rate of gross domestic product (GDP) at constant price, in per cent	IMF, *World Economic Outlook* 2011
Trade openness	Ratio between trade (sum of export and imports) and GDP	OECD
Trade balance	Ratio between trade balance (difference between exports and imports) and GDP	OECD
Labour productivity	Real GDP per employed person	OECD
Employment protection legislation	Summary indicator of the stringency of employment protection legislation, 2008 values	OECD
Union coverage	Employees covered by wage-bargaining agreements as a proportion of all wage and salary earners in employment with the right to bargaining, expressed as a percentage, adjusted for the possibility that some sectors or occupations are excluded from the right to bargain, 2008 values	ICTWSS database
Incidence of part-time	Proportion of part-time workers to total employment	Eurostat
Incidence of temporary	Proportion of temporary employees to total employment	Eurostat
Incidence of self-employed own account	Proportion of self-employed own–account workers to total employment	Eurostat

coefficient attached to every independent variable and its variance. The conditional probability can be written compactly as:[17]

$$f(y_t|x_t;\ \theta) = \varphi(x_t'\theta)^{y_t}[1-\varphi(x_t'\theta)]^{1-y_t}$$

The regression is estimated using a probit model, which is specified as follows:

$$NS_i = \alpha_i + \beta_k * \sum^{k} MICRO_{ik} + \beta_j * \sum^{l} MACRO_{il} + \beta_l * \sum^{m} LD_{im} + \beta_m * \sum^{n} LMI_{in} + \varepsilon_i$$

Where *NS* is the non-standard employment variable considered (either the fact of being a part-time, temporary or self-employed own-account worker), *MICRO* is

17. Taking the log form, the Probit model to estimate using maximum likelihood has the following specification: $\log f(y_t|x_t;\ \theta) = y_t log\varphi(x_t'\theta) + (1-y_t)\log[1-\varphi(x_t'\theta)]$

Table 1B.2 Summary of the estimation of the determinants of non-standard employment

		Part-time	Temporary	Self-employment own account
Microeconomic factors	Age	NS	–	+
	Male	–	NS	+
	Education	NS	NS	NS
	Size of the firm	–	NS	NI
	Past unemployment	+	+	+
Micro-labour supply	Work–life balance	+	NS	NS
Macroeconomic factors	Unemployment rate	NS	NS	NS
	Growth rate	+	+	NS
Macro-labour demand	Trade openness	+	+	NS
	Trade balance	–	–	NS
	Labour productivity	+	+	NS
Labour market institutions	Employment protection legislation	+	NS	NS
	Union coverage	–	–	NS

Note: Estimated using probit model *using the methodology, the variables and the list of countries detailed earlier.* +: *positive* marginal effect of the variable; –: negative marginal effect of the variable; NS: statistically non-significant; NI: variable not included in the estimation. Reference categories are female, graduate and above and larger firms.

Source: IILS estimates.

the *k*th variable for the set of microeconomic characteristics, *MACRO* is the *l*th variable for the set of macroeconomic characteristics, *LD* is the *m*th variable for labour demand factors and *LMI* is the *n*th variable for labour market institutions. The subscript i refer to the different individuals and ε_i is the error term.

In particular, the three different non-standard employment statuses are regressed on a set of variables: microeconomic (age, sex, education, size of the firm and public sector), macroeconomic (unemployment rate and growth rate), labour demand (trade openness, trade balance and labour productivity) and labour market institutions (employment protection legislation, union coverage and incidence of the non-standard form of work). The variables referring to the size of the firm and working in the public sector are not taken into account when the self-employed own-account category is considered as a dependent variable. The analysis is undertaken for the age groups 15–64 years.

The results show that labour-supply factors, such as work–life balance, influence the increase in part-time work but do not affect temporary and self-employment (see table 1B.2). Labour demand and macroeconomic factors seem to be important determinants for the increase in part-time and temporary work, but do not influence self-employment. The greater flexibility required by firms to face a more globalized market with higher demand uncertainty seems to contribute to the increase in non-standard forms of employment. Trade openness (defined as the sum of the exports and imports over GDP) leads to an increase in part-time and temporary work, while countries with a positive trade balances could have lower levels of part-time and temporary work. It is also likely that part-time and temporary works are pro-cyclical, increasing when the economy expands and declining during downturns and recessions. It is probable that countries with higher productivity will have a higher share of part-time or temporary work.

Microeconomic factors could also influence the growth in non-standard work. There is a higher probability for youth to be hired as temporary workers and for old male workers to be self-employed. Women have a higher probability of being employed part-time and in small enterprises. There is a higher probability that those who are unemployed will be part of non-standard work; a circumstance

Table 1B.3 Marginal effects of the determinants of non-standard employment

	Part-time	Temporary	Self-employment own account	Part-time and temporary	Non-standard
Age	0.00607 0.0037	–0.0192*** 0.00395	0.0178*** 0.00374	–0.00712** 0.00335	–0.00377 0.0032
Male	–0.925*** 0.0804	–0.0321 0.0797	0.237*** 0.086	–0.525*** 0.0686	–0.406*** 0.0661
Education (below BA)	0.00193 0.119	–0.0349 0.123	–0.176 0.132	–0.0968 0.111	–0.156 0.104
Education (above BA)	0.195 0.152	–0.129 0.156	–0.0663 0.16	–0.0763 0.135	–0.0728 0.127
Micro-firm	0.608*** 0.105	0.0273 0.106		0.524*** 0.093	0.834*** 0.0882
Small and medium enterprises	0.390*** 0.1	–0.00608 0.0912		0.201** 0.0803	0.200** 0.0785
Public sector	0.145 0.0921	0.113 0.0945		0.0825 0.0814	0.0211 0.0814
Past unemployment	0.164** 0.0825	0.900*** 0.0801	0.236** 0.0917	0.682*** 0.0713	0.620*** 0.0691
Work–life balance	0.498*** –0.0793	–0.0479 –0.0738	0.0614 –0.0867	0.178*** –0.0664	0.153** –0.0643
Unemployment rate	0.00856 0.0148	0.0134 0.0123	0.00661 0.0161	0.00504 0.0117	0.00906 0.0138
Growth rate	0.0946*** 0.0327	0.109** 0.0443	–0.00421 0.0432	0.107*** 0.0378	0.0384 0.0333
Trade openness	0.00293** 0.00127	0.00836*** 0.00299	–0.00191 0.00153	0.00692*** 0.00264	–0.00142 0.00409
Trade balance	–0.0340*** 0.0113	–0.0556*** 0.0188	0.0189 0.0169	–0.0623*** 0.0175	0.0141 0.0395
Labour productivity	0.0159*** 0.00337	0.0182** 0.00773	0.00442 0.00542	0.0175*** 0.00646	0.00114 0.00746
Employment protection legislation	0.527*** 0.153	0.272 0.171	0.145 0.225	0.333** 0.141	0.471** 0.205
Union coverage	–0.0193*** 0.00344	–0.0152*** 0.00577	–0.00447 0.00503	–0.0205*** 0.00448	–0.0107*** 0.00396
Incidence of part-time	0.0331*** 0.00499			0.0184*** 0.00478	0.0217*** 0.00508
Incidence of temporary		0.102*** 0.0192		0.0686*** 0.0175	0.00383 0.0344
Incidence of self-employed own account			0.0445* 0.0247		0.0637* 0.0353
Constant	–3.979*** 0.599	–3.811*** 1.076	–2.936*** 1.013	–3.169*** 0.884	–2.074*** 0.747
Observations	3,480	2,993	3,501	3,091	3,297

Note: Standard errors under the marginal effects; Significance levels: *** significant at 1 per cent; ** significant at 5 per cent; * significant at 10 per cent.

Source: IILS estimates.

which has been documented by Farber (1999). For the unemployed, non-standard work is used as a stepping-stone in the transition to standard employment.

Several researchers have hypothesized that the increase in non-standard employment (especially temporary work) was mainly due to the labour market reforms implemented during the 1980s and the 1990s (Dolado et al., 2002; Blanchard and Landier, 2002). The results show that, in countries which have higher union coverage, the probability of being employed in part-time or temporary employment actually declines.[18] However, it is difficult to ascertain from this ana-

18. Employees covered by wage-bargaining agreements as a proportion of all wage and salary earners in employment with the right to bargaining, expressed as a percentage.

Table 1B.4 Robustness tests of the estimation of the determinants of non-standard employment

	Logit		Bivariate probit	
	Part-time	Temporary	Part-time	Temporary
Age	0.0111 0.00675	–0.0345*** 0.00703	0.00802** 0.00403	–0.0192*** 0.00394
Male	–1.694*** 0.151	–0.0511 0.139	–0.915*** 0.088	–0.0342 0.0793
Education (below BA)	–0.00957 0.211	–0.0598 0.215	–0.0919 0.132	–0.0381 0.123
Education (above BA)	0.317 0.272	–0.246 0.274	0.119 0.167	–0.135 0.156
Micro-firm	1.067*** 0.19	0.014 0.186	0.670*** 0.116	0.028 0.106
Small and medium enterprises	0.690*** 0.183	–0.0486 0.162	0.364*** 0.102	–0.00509 0.0911
Public sector	0.242 0.161	0.206 0.166	0.143 0.0949	0.108 0.0939
Past unemployment	0.297** 0.15	1.585*** 0.144	0.145 0.0899	0.904*** 0.08
Work–life balance	0.891*** 0.146	–0.114 0.129	0.482*** 0.0867	–0.0485 0.0736
Unemployment rate	0.0109 0.0273	0.0229 0.0216	0.00488 0.0161	0.0133 0.0123
Growth rate	0.171*** 0.0582	0.181** 0.081	0.0952*** 0.0345	0.112** 0.0445
Trade openness	0.00514** 0.00227	0.0141*** 0.00547	0.00291** 0.00134	0.00873*** 0.00299
Trade balance	–0.0620*** 0.0204	–0.0917*** 0.0338	–0.0298** 0.0122	–0.0576*** 0.0187
Labour productivity	0.0291*** 0.00609	0.0306** 0.0143	0.0130*** 0.00355	0.0190** 0.00773
Employment protection legislation	1.006*** 0.268	0.45 0.317	0.579*** 0.165	0.288* 0.172
Union coverage	–0.0351*** 0.00604	–0.0251** 0.0107	–0.0176*** 0.00366	–0.0159*** 0.00578
Incidence of part-time	0.0598*** 0.0089		0.0348*** 0.00528	
Incidence of temporary		0.180*** 0.0349		0.104*** 0.0192
Incidence of self-employed own account	–7.163*** 1.083	–6.508*** 1.997	–4.015*** 0.629	–3.939*** 1.08
Constant	–3.979*** 0.599	–3.811*** 1.076	–2.936*** 1.013	–3.169*** 0.884
Observations	3,480	2,993	2,993	2,993

Note: Standard errors under the marginal effects; Significance levels: *** significant at 1 per cent; ** significant at 5 per cent; * significant at 10 per cent.

Source: IILS estimates.

lysis that the overall level of employment protection legislation is one of the determinants of the increase in temporary employment.

The marginal effects of the probit estimates are presented in table 1B.3. The results are presented separately for part-time work, temporary employment, self-employed own account, part-time and temporary employment, and total non-standard employment. To test the robustness of our results we undertook the analysis using logit and bivariate probit models and found the results to be robust and consistent. Table 1B.4 presents the marginal effects from logit and bivariate probit models. Such models have also been used by other researchers (D'Addio and Rosholm, 2005; Salladarre and Hlaimi, 2007).

Appendix C

The impact of crises on employment: An empirical analysis

Section D of this chapter provided employment projections from 2012 to 2017, which are based upon the following countries that experienced a crisis, that is economic recession 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[19] and 737 observations. For projections the countries in this group include: Australia, Austria, Belgium, Canada, Cyprus, Croatia, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Israel, Italy, Japan, Republic of Korea, Luxembourg, Netherlands, New Zealand, Norway, Portugal, Poland, Singapore, Slovakia, Slovenia, Spain, Sweden, Switzerland, Trinidad and Tobago, the United Kingdom and the United States.
- *Upper-middle-income countries:* Based on 26 countries and 33 crises[20], 211 observations were taken into account in the econometric analysis. The countries included for projections are Argentina, Brazil, Bulgaria, Chile, Colombia, Ecuador, Jamaica, Kazakhstan, Latvia, Lithuania, Macedonia, Malaysia, Mauritius, Mexico, Peru, Romania, Russian Federation, Serbia, South Africa, Thailand, Turkey and Bolivarian Republic of Venezuela.
- *Lower-middle-income countries:* Based on 17 countries and 21 crises[21], 115 observations were taken into account in the econometric analysis. The countries included for projections are Arab Rep. of Egypt, Indonesia, Republic of Moldova, Morocco, Philippines, Sri Lanka and Ukraine.

These projections draw on output–employment elasticities, which have been estimated using econometric analysis based on employment impact of the recovery phase during past crises. The projections are constructed by applying the

19. 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.

20. 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; Bolivarian Republic of Venezuela, 1994–98 and 2002.

21. The following crises were taken into account in the analysis of this group: Albania, 1994; Arab Rep. of Egypt, 1990; Armenia, 1994; Bolivia, 1986; Bolivia, 1994; China, 1998; Ecuador, 1982–86; El Salvador, 1989–90; Georgia, 1999; Honduras, 1990; India, 1993; Indonesia, 1997–2001; Republic of 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.

Table 1C.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 2012 and IMF Forecast
GDP quarterly growth rate	Quarterly growth rate of real GDP, in national currency	IMF, IFS database and OECD, *World Economic Outlook* (WEO), April 2012.
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.

employment elasticity of each group to the GDP growth projections from the International Monetary Fund (IMF) forecast (projections from 2012 onwards) at a country level.[22] In this sense, all statistically significant partial elasticities estimated with the inclusion of lagged GDP growth rates were taken into account and applied 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's 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:

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

where L_{it} corresponds to the annual (or quarterly for high-income countries) growth rate of employment and ΔY_{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 1C.1.

To construct the panel, data on employment growth around the years of crises were collected and centred in $t0$. 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 26 observations for employment growth around the recovery phase of past crises (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 1C.2 presents 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

22. Country-specific annual forecasts from EIU 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.

Table 1C.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 Appendix A.

did not influence the results, reduced regressions were also estimated by excluding the countries analysed one at a time. Moreover, table 1C.3 presents GLS estimates and controls for autocorrelated error terms. As can be seen in all panels of table 1C.3, all coefficients remain highly significant, and the absolute sizes of the estimated effects change relatively little between different estimation methods.

Table 1C.3 Alternative estimators[1,2]

Panel A. High-income countries

	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

Note: [1] All regressions are controlled for country-fixed effects. Absolute value of t-statistics (z-statistics in the tests for autocorrelation) is provided 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 Appendix A.

Source: IILS estimates.

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2 Employment protection and industrial relations: Recent trends and labour market impacts*

Main findings

- Countries faced with the twin challenges of low employment growth (Chapter 1) and limited fiscal space (Chapter 3), have turned increasingly towards labour market reform as a tool for reassuring financial markets and in the hope of boosting economic growth. Indeed, the most recent evidence gathered in this chapter indicates that, in the post-crisis period, reforms that promote lighter employment protection regulations and decentralized collective bargaining have gathered momentum:
  - Between 2008 and March 2012, 40 countries out of 131 have altered their employment protection regulations for permanent employees, mainly by modifying the regulation of severance payments and notice periods. Overall, 60 per cent of these reforms have relaxed employment protection regulations for permanent employees. This trend is particularly visible among advanced economies, where 76 per cent of the reforms have relaxed employment protection regulations for permanent employees.
  - During the same period, 25 countries out of 131 have modified their legislation on collective dismissals for economic reasons – in 60 per cent of the cases (15 countries) facilitating the process or reducing the requirements for collective dismissals. In particular, in Central and South-Eastern Europe, 83 per cent of the reforms have relaxed the regulation of collective dismissals.
  - In 26 out of the 40 countries for which information is available, the proportion of workers covered by a collective agreement declined between 2000 and 2009. In some cases, the trend decline has accelerated since the start of the global crisis.

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- Empirical evidence gathered for the purposes of this chapter confirms the findings from earlier studies, that there is no clear link between employment protection legislation and employment levels. First, from low levels of employment protection regulation to an average level of regulation, employment levels tend to be *positively* associated with more stringent regulations. Beyond that, badly designed regulations may adversely affect employment. In these cases, there are grounds for considering a reform of regulations along with better protection via the welfare system (see Chapter 3). Second, the highest employment rates are found in either decentralized (but coordinated by social partners) systems of collective bargaining or centralized and coordinated bargaining systems. The recent trend towards decentralized collective bargaining, sometimes carried out without sufficient social dialogue or coordination, may therefore affect employment performance. Third, the employment effects of labour market reforms depend heavily on the business cycle. In the face of a recession, lighter regulations may aggravate the employment situation in the short term. Finally, country circumstances play a crucial role, notably as regards the extent to which regulations are applied effectively *and* in a predictable manner.
- In short, while there are grounds for modifying inadequate provisions, some of the recent labour market reforms may reduce job stability and exacerbate inequalities while failing to boost employment levels. And, in countries in recession, the weakening of regulations and institutions may leave the labour market with no protection floor or a very low one – thereby hampering overall job recovery prospects. The policy debate should therefore focus on the efficient design of regulations and institutions, rather than on "less regulation versus more regulation". This chapter provides recent examples of such efficient regulation.

Introduction

As Chapter 1 documented, job creation remains tepid at best and job quality has deteriorated. Labour market reforms are therefore seen by some as a way to spur job creation and growth. This is particularly the case in the European economies which continue to languish in the aftermath of the global crisis. Others, however, warn that labour market reforms need to be carefully designed, otherwise they risk creating worse labour market and macroeconomic outcomes in the short term while exacerbating structural problems, such as labour market duality, in the medium to long term. In view of the variety of opinions on these issues, the purpose of this chapter is (i) to document recent labour market reforms, notably in the areas of employment protection regulations and collective bargaining, and examine in which direction they have moved since the start of the global crisis and (ii) to assess the effects of these reforms in terms of employment levels and investment.

Section A provides a brief overview of the literature on employment protection regulations and collective bargaining and describes recent changes in these policies and institutions covering over 130 countries. Section B assesses the labour market impacts of the changes in regulations and institutions documented in section A. Section C draws policy lessons from the findings and provides examples of "efficient regulation", i.e. collectively negotiated levels of protection that will ensure job quality and satisfaction without preventing economic efficiency and employment growth.

A. Labour market institutions: Overview of the literature and recent trends

Employment protection can be achieved through either legislation or collective bargaining. In particular, legislation is designed to give employees protection against unfair dismissal as well as against fluctuations in earned income, which normally occur at the time of individual or collective job loss. Collective bargaining involves a process of negotiation between employers and/or their organizations and workers' organizations over employment relations and wages and working conditions. Depending on the structure and coverage of collective bargaining, it can also be a means of regulating the labour market. Moreover, these measures combined with effective labour policies (such as unemployment insurance, minimum wage legislation and training provisions and so forth) ensure labour market security – a more comprehensive understanding of protection that goes beyond one job or employer. Together, these labour policies and institutions facilitate transition from unemployment into employment, while providing protection to those who are already in employment. This chapter will examine only issues related to employment protection legislation and collective bargaining institutions.

A review of over 100 studies shows that reforms of employment regulations and collective bargaining have had diverse labour market impacts.

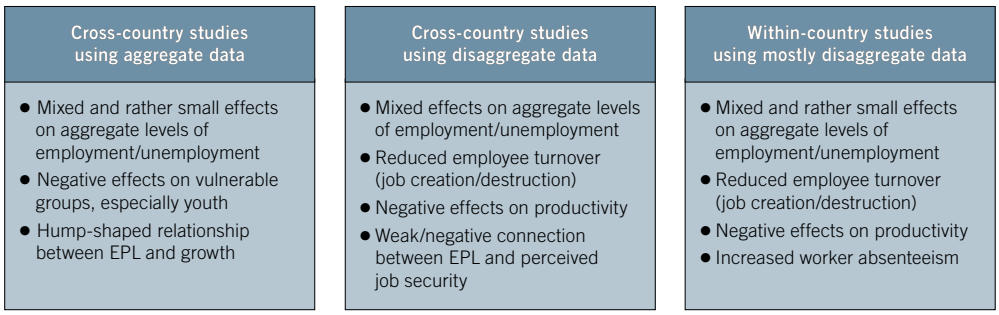
The empirical evidence on the effects of employment protection legislation can be divided into the following three categories: (i) cross-country studies using aggregate data; (ii) cross-country studies using disaggregate data; and (iii) within-country studies using disaggregate data (Figure 2.1). Most commonly found empirical evidence is of the first type but in recent years there has been a notable shift towards using disaggregated data and increasing reliance on within-country evidence. Irrespective of the methodology used, there is a general consensus that the stringency of labour legislation affects labour market outcomes but that the magnitude and direction of the impact on employment and unemployment are rather mixed.[1]

With respect to collective bargaining, there has been a trend towards deregulation and decentralization. This is despite the empirical evidence in Europe (and elsewhere) that illustrates that bargaining facilitates the adaptability of enterprises to macroeconomic shocks while saving jobs. Moreover, the discussion on the design of collective bargaining has moved away from the virtues of centralization and coordinated structures to the virtues of firm-level bargaining. Importantly, the period of decentralization and deregulation is also associated with a general increase in wage inequality.

Given their importance to labour market outcomes, it is not surprising that many changes to employment regulations and collective bargaining have been implemented since the start of the global crisis. However, in order to understand these changes, it is important to bear in mind that the responses of individual countries were very much a consequence of the initial conditions faced by those countries – with respect to both their institutional circumstances and the

1. This is partly due to the fact that internationally comparable measures of employment protection legislation have numerous problems: for example, they are de jure indicators, based on the provision of legislation in place, such as labour codes, employment protection Acts and other types of laws. Yet, there are several important indications that asymmetries across countries (and over time) in the degree of enforcement of labour legislation maybe more marked than differences in regulations per se. For more detail, see Bertola et al., 2000.

Figure 2.1 Main findings of over 100 studies on the labour market effects of employment protection legislation



Note: The summary is based on over 100 studies conducted since 1990.

Source: Cazes et al. (forthcoming).

magnitude of the impact of the crisis. For example, in countries where collective bargaining was relatively strong (measured by coverage rate and union density), the response to the crisis included extensive consultations with social partners. In addition, given that the severity of the crisis varied between countries, so too did the nature and depth of country responses. Furthermore, the debt overhang exacerbated the response in many troubled economies.

Since the start of the global crisis many changes have been towards lighter employment regulations …

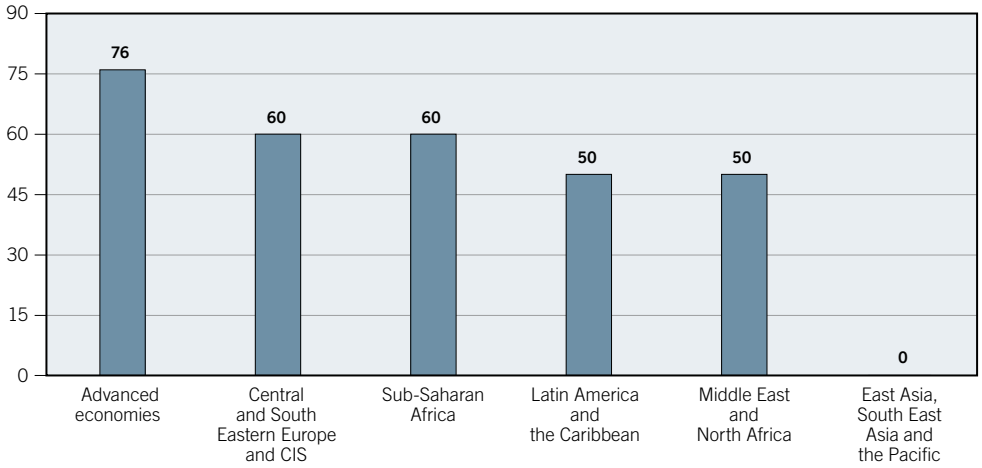
Against the backdrop of weak job creation, poor growth prospects and constrained fiscal space, there has been an increasing trend towards making modifications to employment protection legislation as part of broader labour market reforms. In fact, approximately 40 countries out of 131 (equal to 31 per cent) have changed their employment protection legislation for permanent employees (Figure 2.2).[2] This trend is particularly prominent in the EU-27, where changes in employment protection for permanent workers occurred in 19 out of 27 countries (see Appendix B for some country examples).

Furthermore, the changes to legislation for permanent employees have focused primarily (in 60 per cent of the cases of countries that made changes to their legislation) on lowering overall protection. This is particularly the case in advanced economies, where 76 per cent (13 countries) of the interventions have reduced employment protection for permanent employees (Figure 2.2, panel A). These reforms have generally taken the form of increasing probationary periods, expanding the grounds for justified dismissal, reducing severance payments and notice periods and weakening the remedies in the case of unfair dismissals. Besides the advanced economies, 60 per cent of the countries in Central and South-Eastern Europe that adopted any change in their legislation (6 out of 10 countries) reduced protection for permanent workers. The story is similar for countries in sub-Saharan Africa. Countries in Latin America and the Caribbean and the Middle East and North Africa also reduced protection – half of all the countries that put in place any change to their labour legislation.

2. Change in employment protection legislation refers to either negative change (reduction in protection), positive change (strengthening of protection) or a neutral situation (where changes were made but these did not affect the overall character of the legislation either way). This characterization is used by the ILO to construct its databases on employment protection legislation (EPLex).

Figure 2.2 A global overview of changes in employment protection legislation, 2008–2012*

Panel A. Out of all the countries with changes in employment protection legislation for permanent contracts, the percentage of those that reduced protection



Panel B. Summary of all changes

Region	Permanent contracts			Temporary contracts		Collective dismissals	
	Countries with available information	Percentage of countries with any change	Percentage of countries with negative changes out of the ones that changed legislation	Percentage of countries with any change	Percentage of countries with negative changes out of the ones that changed legislation	Percentage of countries with any change	Percentage of countries with negative changes out of the ones that changed legislation
Advanced economies	35	49	76	26	44	29	50
Central and South Eastern Europe and CIS	20	50	60	40	100	30	83
East Asia, South East Asia and the Pacific	10	30	0	0	N/A	0	N/A
South Asia	7	14	0	0	N/A	0	N/A
Latin America and the Caribbean	19	11	50	0	N/A	0	N/A
Middle East and North Africa	9	22	50	11	0	33	0
Sub-Saharan Africa	31	16	60	13	75	19	83
Total	131	31	60	18	65	19	60

Note: Changes in employment protection legislation refer to all changes – whether resulting from legislation, case law or collective bargaining. "Countries with negative changes" refers to reductions in the stringency of employment regulations for permanent and temporary employment (e.g. notice periods, severance payments, valid grounds for dismissal, probationary periods, maximum length of fixed-term contracts) as well as for collective dismissals (e.g. definition of collective dismissal, consultation with workers' representatives and public administration).
* Cut-off date is March 2012.

Source: IILS based on EIRO, ILO EPLex database and national sources.

Meanwhile, 23 countries out of 131 (18 per cent) have modified their legislation for fixed-term contracts (also known as temporary contracts) – out of these, 15 countries (65 per cent) reduced employment protection for fixed-term employees by increasing the maximum length of fixed-term contracts, increasing the number of reasons for their conclusion and reducing the level of protection ascribed to them (Figure 2.2, panel B). In particular, in Central and South-Eastern Europe, all the interventions on fixed-term employment have reduced employment protection. Meanwhile, in the case of advanced economies, less than half of all countries with any legislative change reduced protection for temporary workers.

Furthermore, 25 countries out of 131 (19 per cent) have made changes to the legislation governing collective dismissals for economic reasons. In 60 per cent of

Figure 2.3 Change in the "employment protection legislation index" between 2007/08 and 2010/11

Notes: An increase in the value of the "index" denotes that legislation is more stringent and a reduction in the value of the "index" indicates less stringent legislation.

Source: ILO estimates based on OECD methodology (www.oecd.org/employment/protection) and ILO EPLex database.

these cases (15 countries), the new legislation facilitates the use of collective dismissals, for example, by reducing the administrative procedures to be followed or increasing the numerical benchmark above which a dismissal is considered collective. In Central and South-Eastern Europe and sub-Saharan Africa the changes in the legislation of collective dismissals have relaxed the regulation in 83 per cent of the cases.

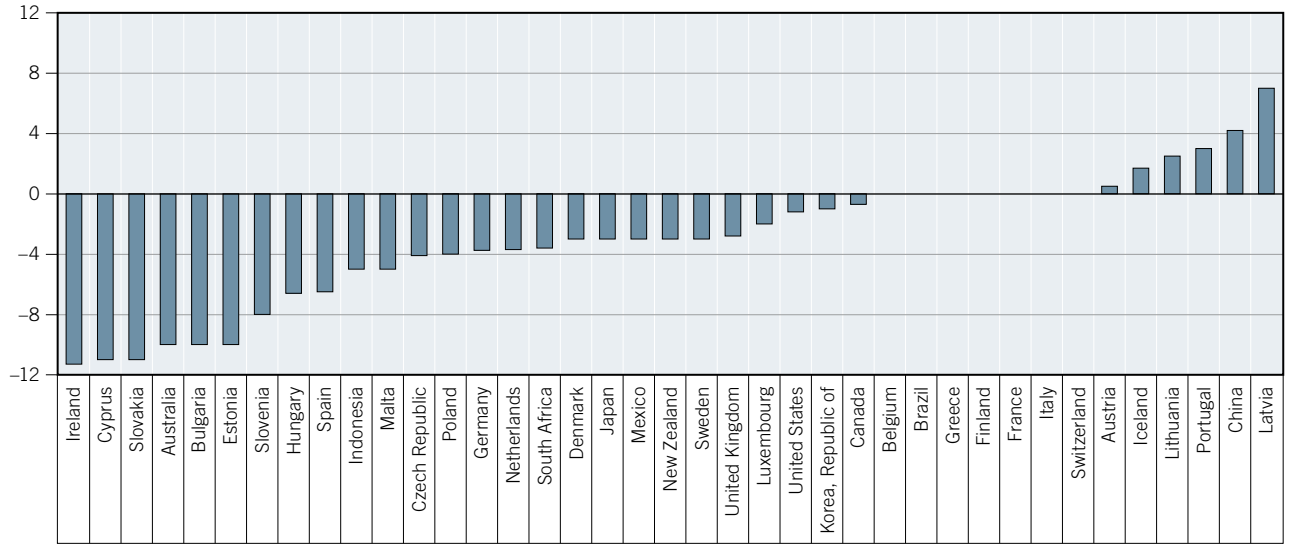
In order to quantify these changes, employment protection legislation indicators based on the OECD methodology[3] were updated for the year 2010/11 for 43 countries. Changes which took place between the pre-crisis (2007/08) and post-crisis (2010/11) period could be identified, not only for the overall "indicator" (Figure 2.3), but also for each of the three components capturing respectively: (i) the legislation for individual permanent contracts; (ii) the legislation for temporary contracts; and (iii) the legislation applying to collective dismissals. The analysis confirms the shift towards less protection among the 43 countries and that it was particularly pronounced in Southern and Eastern Europe. In contrast, the analysis also shows some countries reinforced their employment protection (mostly key emerging economies, but also Denmark, Japan and the Republic of Korea).

… as well as decentralization and deregulation of collective bargaining.

Leading up to the global crisis, industrial relations were already under strain, but the process of decentralization and deregulation has been hastened by the crisis. In some instances, collective bargaining has been regarded as an impediment to the correct functioning of the economy and social partnership viewed as an obstacle to implementing austerity and anti-crisis measures. These reforms have promoted the decentralization and/or the deregulation of collective bargaining – for example, by introducing opt-out clauses to sectoral agreements or giving greater legal validity to firm-level bargaining (see Appendix B for some country examples). This trend

3. See www.oecd.org/employment/protection for more information.

Figure 2.4 Proportion of workers covered by collective agreements (change between 2000/01 and 2008/09 in percentage points)



Note: The 2000/01 data for Bulgaria, Brazil, Cyprus, Indonesia, Latvia, Lithuania, Malta, Mexico, Portugal, Republic of Korea and South Africa refers to either 2002 or 2003. Similarly, the 2008/09 data for Australia, Denmark, Estonia, Finland and New Zealand refers to 2007 data. Definition of coverage: employees covered by wage-bargaining agreements as a proportion of all wage and salary earners with the right to bargain. The figures are adjusted for the possibility that some sectors or occupations are excluded from the right to bargain (removing such groups from the employment count before dividing the number of covered employees by the total number of dependent workers in employment, see Traxler 1994). Cross-country comparisons of the data should be made with some caution, especially as regards emerging and developing countries given the size of the informal sector in many of these countries.

Source: ICTWSS database.

is particularly evident in those countries where the presence of established collective bargaining institutions has provided room for deregulation. In particular, in 60 per cent of countries in Central and South-Eastern Europe that introduced changes to their industrial relations, there has been a move towards deregulation and decentralization of collective bargaining (for example, Hungary, Lithuania and Romania). In many cases, reforms have reduced workers' representation rights by generally increasing the requirements for creating a trade union or limiting the ability to call a strike.

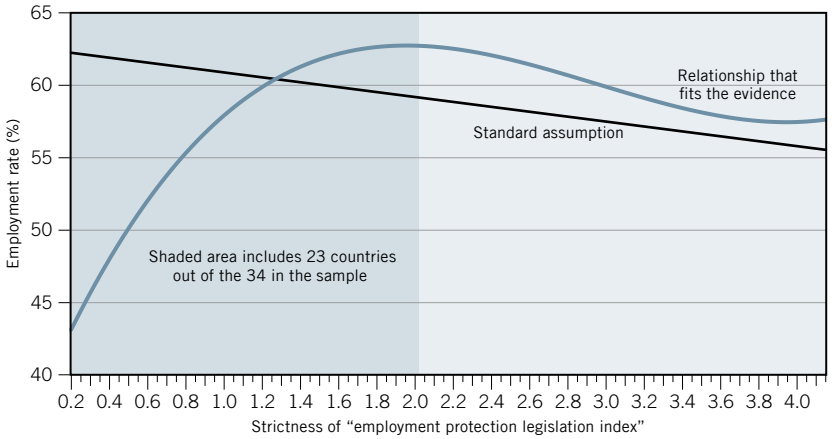
Meanwhile, 26 out of the 40 countries where the data on bargaining coverage is available have shown a decline in the coverage rate between 2000/01 and 2008/09 (Figure 2.4). Some of the decline is attributable to the broader trend that was already taking place before the crisis, while in many others the decline was accelerated by the financial and economic crisis.

B. Assessing the labour market effects of changes in employment protection regulations and collective bargaining

Empirically, less protection has generally not meant higher employment …

Previous studies that found a rather ambiguous impact of employment protection legislation on aggregate employment rate may be due to the fact that most research has taken a cross-country approach and concentrated on the link between labour legislation and aggregate stock data, such as the effects on employment or unemployment levels. Another possible explanation may be provided by the lack of a satisfactory

Figure 2.5 "Employment protection legislation index" and aggregate employment rates: Standard assumption versus evidence-based relationship



Notes: Simulations are based on fixed-effects estimations of the employment rate using actual data for 34 countries.

Source: IILS estimates (see Appendix A for details).

indicator for employment protection legislation, particularly for temporary employment (fixed-term contracts).[4] However, empirical work exploring the effect of labour legislation based on disaggregated information (by gender or age as well as within-country studies) finds some impact of legislation on particular groups.[5] Indeed, the simulations conducted for this chapter suggest that there is a non-linear relationship between employment protection legislation and employment rate.

Allowing for a linear relationship between "employment protection legislation index" and employment rate – as most previous studies have done – suggests that going from the lowest value for the index (the United States) to the highest value (Portugal), the employment rate decreases from 62 per cent to 55 per cent (Figure 2.5). In other words, less protection means more jobs. However, this relationship or assumption is misleading. In fact, when simulations allow for a non-linear relationship between "employment protection legislation index" and employment, the negative impact of employment protection legislation on employment begins only around 2.1 (on the OECD range). Below 2.1, as the value of the index increases, employment rate also increases – in particular, it increases from 43 per cent to 63 per cent between the "employment protection legislation index" scores of 0.2 and 2.1 (Figure 2.5). This simple exercise shows that the impact of labour legislation on aggregate employment rate is far from being a linear negative relationship. In fact, at very low levels of employment protection, increases in protection are associated with higher employment rates. This is mainly due to the fact that at low levels of stringency, adjustment occurs through quantity of labour rather than prices – this effect is positive but decreasing until the "employment protection legislation index" value of around 2.[6]

In recent years, several authors have stressed the role of relative strictness of employment protection legislation between regular and temporary contracts to better understand the impact on labour market duality (see Boeri and Garibaldi, 2007). According to this reasoning, the key determinant of labour market duality is the gap between the stringency of labour legislation for regular and for temporary

4. For more details, see Cazes et al. (forthcoming).

5. Bassanini and Duval (2006) find no impact of employment protection legislation on male employment but a negative impact on female employment. Meanwhile, they identify a positive relationship between employment protection legislation and the employment of older workers (male and female) but a negative or zero impact for younger workers. For a review of these effects, see Cazes and Tonin, 2010.

6. For a more theoretical analysis, see Cazes and Nesporova (2007).

Box 2.1 Employment protection legislation and labour market duality during the crisis: Issues and considerations

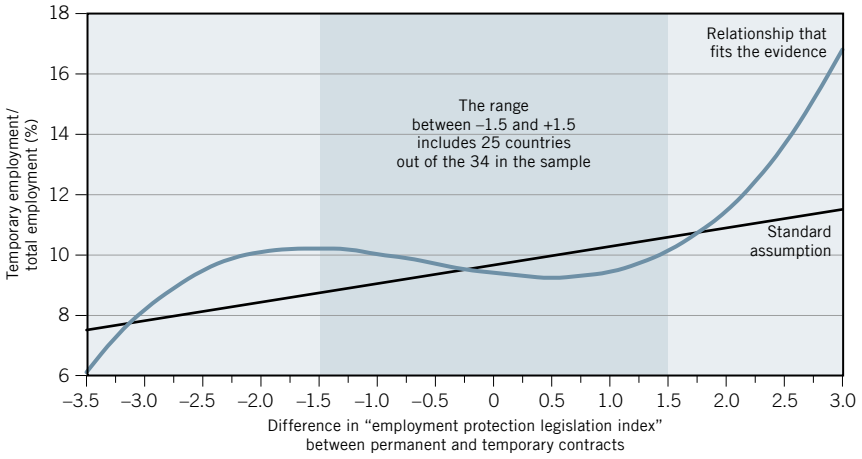
Within the flexibility debate, the question of the structure of employment protection legislation and its possible impact on labour market duality (defined as the share of temporary employment out of total employment) has increasingly been attracting interest, in particular in Southern European countries, such as Italy, Portugal and Spain. Although the crisis of 2008–09 brought the duality in OECD labour markets into sharp focus, it is by no means a new phenomenon. As discussed by Boeri and Garibaldi (2007) and Eichhorst and Marx (2010), there has been growing duality in European labour markets over some decades as a consequence of partial (or two-tier) labour market reforms. Indeed, the share of temporary employees increased on average in the European Union (EU) from 9.0 per cent in 1987 to 15.1 per cent in 2006, before the crisis hit these workers, with a resultant fall in the share (to 13.6 per cent in 2009). Given the different treatment meted out to different groups of workers, the effects of those partial reforms in employment protection legislation have been disproportionately felt by new entrants (young, women and immigrants) as well as low-skilled and less experienced workers (Khan, 2007; Dolado et al. 2007).

Determining whether this duality intensified or not during the jobs crisis of 2008 is not a straightforward matter. First, the relationship between employment protection legislation and duality in the labour markets would need to be further investigated, both theoretically[1] and empirically, given the various effects (direct, substitution) that the structure of labour legislation may ultimately have on labour market segmentation. Second, in times of crisis, the (few) firms which hire may tend to use mostly fixed-term contracts due to high degrees of uncertainty in demand patterns. At the same time, the (many) firms which reduce their labour force may disproportionately affect non-standard forms of employment, in particular fixed-terms contracts.[2] This contractual duality has created an objective increase in instability (as measured by shorter tenure) among youth (see Cazes and Tonin, 2010), which may have contributed to an overall feeling of insecurity and dissatisfaction within this group.

[1] There are fewer studies that model reforms in the context of dualism between permanent and temporary contracts, one exception being Boeri (2010), which is based on a Mortensen-Pissarides type model.
[2] For more detail see Cazes and Tonin (forthcoming).

Source: Cazes et al. (forthcoming).

Figure 2.6 Relative strictness of labour legislation for regular contracts with respect to temporary contracts and incidence of temporary employment: Standard assumption versus evidence-based relationship



Notes: Simulations are based on fixed-effects estimations of the temporary employment rate using data for 30 countries.

Source: IILS estimates (see Appendix A for details).

workers. Indeed, simulations presented in Figure 2.6 show that, when considering a linear relationship, which is the classic assumption in the literature, as the gap in stringency increases, the share of temporary employment in total employment also rises (see also box 2.1). However, when considering a non-linear relationship, this positive association holds only for the extremes – that is, when the difference in stringency is very high. For the intermediate gaps (say, between –1.5 and 1.5),

the employment rate has a variability of around 1 percentage point and more than 80 per cent of the observations fall within this range. This shows that the assumption that decreasing the stringency of employment protection legislation will lead to a reduction in labour market duality is simply not correct. Therefore, when the gap is at an intermediate level, implementing stricter or less strict legislation will not be adequate to address labour market duality.

… and some recent changes in employment regulations may be counterproductive in terms of employment levels …

To assess the recent changes in employment protection legislation on labour market outcomes, a cross-country analysis was conducted for a range of OECD countries, comparing pre-crisis (2007) and post-crisis (2010) situations (see Appendix A for more details and methodological considerations). More specifically, the change[7] that occurred in various labour market outcomes between 2007 and 2010 is regressed on the change in GDP that occurred in the same period and on the level of employment protection as measured by the OECD indicator for 2008.[8] In particular, aggregate unemployment rates (both for the whole workforce and for youth), employment to population ratio, and the share of permanent employment among employees are used as dependent variables to test how employment protection legislation is related to the labour market response to the crisis. For instance, whether, for a given drop in GDP, unemployment responded more or less strongly in countries that entered the crisis with a higher level of "employment protection legislation index". Since the structure of labour legislation may be expected to play an important role in determining labour market outcomes, the impact of both the overall "employment protection legislation index" and the three sub-indices on regular and temporary contracts and on collective dismissal is also considered in the analysis. As a robustness check, some specifications also include control variables, such as the trade union density in 2007 and the degree of coordination of wage bargaining in 2007.

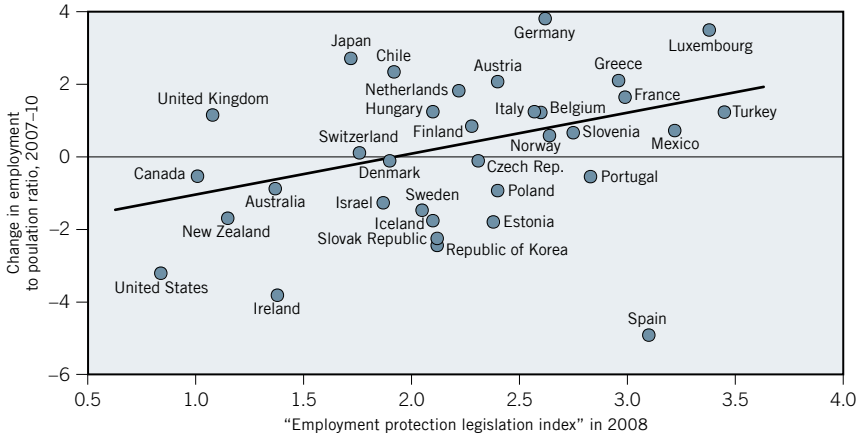
Figure 2.7 shows the relationship between "employment protection legislation index" and the absolute change in the dependent variable after netting out the effect of GDP changes (significant at the 5 per cent level). The figure shows that there is some evidence to suggest a positive impact of the overall index on the employment rate. However, the relationship is not significant (p-value: 11 per cent) when controlling variables, such as trade union density or coordination, are introduced. This is not surprising, given the lack of robustness of such cross-countries studies. Nevertheless, it is an interesting finding given the evidence presented above, which challenges the existence of a systematic negative effect of employment protection legislation on employment.

With regard to employment structure, there seems to be no significant relationship between the change in the share of permanent employment among employees and employment protection legislation, as indicated by the small and non-significant value of the coefficient. This is not surprising, given the complex

7. The importance of considering changes instead of levels is that any time-invariant differences across countries are cancelled out.

8. The reason for using the "OECD indicator" for 2008 rather than the updated "indicator" is due to the fact that indicators of labour market outcomes (such as employment/unemployment rates) are not yet available for 2011, while most of the legislative reforms took place in 2010–2011, some of them being announced but not actually implemented. Therefore, the effects of employment protection legislation cannot be expected to be detected in 2010 figures.

Figure 2.7 Relationship between aggregate employment and the "employment protection legislation index"



Note: The y-axis shows the residual of a regression on GDP change and the x-axis shows the change in employment to population ratio between 2007 and 2010. For a list of country codes, please see Appendix A of chapter 1.

Source: ILO estimates (see Appendix A for details).

relationship between legislation and labour market duality, as discussed above. It confirms that some cautious recommendations should be made in the debate on the role played by employment protection on increasing labour market duality. As mentioned above, assessing causality between employment protection legislation and dual labour markets is a not straightforward exercise.

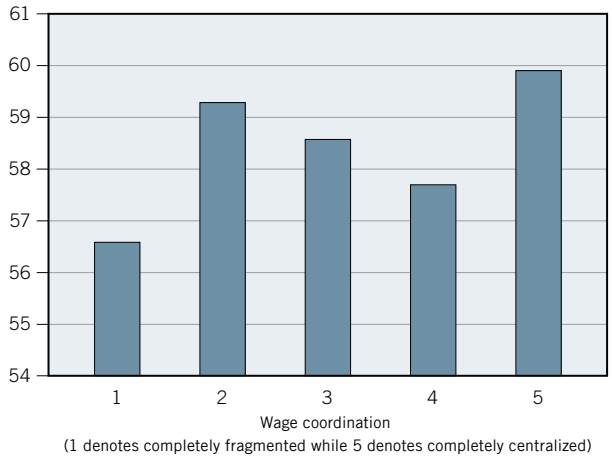
… and private-sector investment.

It is difficult to tease out the relationship between employment protection and GDP growth and therefore it is not surprising that most studies find no, or an insignificant, relationship between the two variables. In this chapter, a novel approach is employed by looking at the link between "employment protection legislation index" and private business investment (namely, private sector gross fixed capital formation as a percentage of GDP). The impact on investment stems from the fact that decisions regarding allocation of capital, besides labour, are also dependent on labour market regulation (see Chapter 4 for a discussion of investment trends and drivers).

From a theoretical standpoint, the impact of labour legislation on investment could be either positive or negative. On the one hand, strictness of legislation might discourage businesses from expanding production, resulting in lower aggregate investment. Similarly, in industries where labour and capital are complementary factors of production, the impact of legislation on employment and investment would be in the same direction (either positive or negative depending on the employment intensity). On the other hand, a relatively strict labour legislation might discourage the use of labour and encourage firms to adopt capital-intensive technologies, therefore increasing aggregate investment.

Indeed, there is a hump-shaped relationship between private sector investment and strictness of employment protection legislation. There is a positive relationship between the two variables until the "employment protection legislation index" score of 2.7, which is slightly above the average level of strictness among the OECD countries. Beyond 2.7, the relationship between the two is negative. This is consistent with the relationship between labour legislation and employment rate considered earlier (see Figure 2.5). Meanwhile, in the case of developing and emerging countries, there are not enough data points to carry out simulations but simple correlations show that there is a positive relationship between employment protection legislation and private sector investment.

Figure 2.8 Coordination of wage bargaining and employment rate



Note: Simulations are based on fixed-effects estimations using data for 34 countries.

Source IILS estimates (see Appendix A for details).

The empirical linkages between collective bargaining and employment levels are also complex.

The premise that higher levels of coverage and a more centralized level of bargaining have a negative impact on aggregate employment is not straightforward. In fact, simulations following the same guidelines as before show that the level of coordination over wage-setting is non-linear (Figure 2.8). The lowest employment rate is associated with a coordination value of 1, which stands for not only full decentralization but also fragmentation (that is, disorganized decentralization, meaning that negotiations over wages are not only at firm level but also without any coordination). For coordination values of 2 to 5, there is a U-shaped relationship between employment and bargaining. In other words, the highest employment rates occur in a fully decentralized but organized bargaining system (score of 2) and in a totally centralized bargaining system (score of 5). Meanwhile, within the intermediate level of coordination, there are relatively lower levels of employment. To sum up, disorganized decentralization has a negative impact on employment and is associated with even worse results than intermediate levels of coordination.

C. Policy considerations

As shown in the preceding section, poorly designed reforms of employment regulations and collective bargaining can have adverse consequences on employment and investment, which can be difficult to rectify. This, combined with lacklustre reform of the financial system (where the global crisis originated), may also fuel perceptions that the policy response is unfair.

Instead, in the past few years, the countries that have achieved the best labour market and macroeconomic results have been those that opted for a coherent approach which reinforces labour market institutions and incorporate the need to adjust to macroeconomic shocks. This requires both proper design of the regulations and a comprehensive approach which considers the broader set of labour market institutions and social protection, with a view to enhancing overall employment security.

- In *Australia*, the global crisis interrupted a long period of sustained economic growth. In a deteriorating macroeconomic context, the social partners and the national Government decided to structurally reform the system of industrial relations with the approval of the Fair Work Act in 2009. The overall objective of the reform was to achieve an industrial relations framework that is "fair to the employees and flexible for business". Under the new legislation, employers are legally required to conclude firm-level agreements if the majority of workers ask them to do so. Moreover, if the national industrial relations institution believes that bargaining at the firm level is not adequately developed, then those firms are required to participate in multi-employer bargaining. Furthermore, if one employee in the company belongs to a trade union, the union has the right to be involved in the negotiations. While it is difficult to judge the efficacy of the Fair Work Act, Australia is widely regarded as a success story in terms of its economic and labour market recovery following the global crisis.
- Even through the global crisis, *Austria* has done remarkably well in terms of macroeconomic and employment performance, while maintaining the balance between employment security and ability to respond to shocks. For example, in 2008, the Government increased severance payments and tightened the regulation on gender-related discrimination. Moreover, in 2003, Austria's severance payment system underwent a number of modifications; primarily the introduction of a new system of individual savings accounts, under which the employer is required to contribute 1.54 per cent of each employee's salary every month to a corresponding severance fund. Payment begins on the employee's second month of work and is untaxed. These measures have allowed workers to accumulate severance pay uninterrupted by job changes, thus helping to encourage job mobility. In addition, the contributions are intended to act as a supplementary pillar to the pension system.
- During the decade preceding the global crisis, *Denmark* represented an example of successful reconciliation between employment security and flexibility. However, this model has come under severe strain in recent years, mainly as a result of the global crisis. In order to respond to the crisis, the Government and the social partners decided to reinforce employment protection. For example, severance pay was included for the first time in a national agreement in the sectors covered by LO (Danish Confederations of Trade Unions) and the Confederation of Danish Employers (LO). The 2010 national collective agreement in the manufacturing industry extended the right to severance payments to hourly employees with a minimum of 3 years of service. The joint actions undertaken by the Government and the social partners avoided the dismantling of the Danish system of employment protection and prevented workers from having to bear the consequences of the recession disproportionately.
- In 2009, the Government of *Jordan* decided to implement a series of measures aimed at avoiding the worsening of the economic situation and deterioration of employment security. Consultations with the social partners in the newly instituted tripartite forum "Economic and Social Council" favoured the implementation of such an approach and all the three pillars of employment protection legislation (permanent employment, temporary employment and collective dismissal) have been reformed. First, in cases of unjustified and unfair individual dismissal of permanent employees, labour courts may now impose either the reinstatement of the employee or the payment of financial compensation linked to seniority. Second, in order to narrow the gap between

permanent and temporary workers, the right to severance payments has been extended to fixed-term employees. As a consequence, Jordan has emerged from the crisis in a stronger position than its neighbours in the region.

- In Latin America, several countries have moved towards a more inclusive labour market. For example, in *Argentina*, labour market institutions and collective bargaining continued to work together in response to the global crisis. All the main anti-crisis measures have been approved after extensive consultations with the social partners and have aimed at increasing the coverage of employment protection legislation and social security. Employment has recovered and the incidence of informality has declined. Similarly, in *Brazil*, the crisis interrupted a strong period of economic growth as GDP declined in 2009 for the first time in almost 20 years. A consultative council in 2008 presented a series of recommendations, including increasing employment protection and raising public investment, that were later included in the anti-crisis measures approved by the Government. Furthermore, in 2009 a tripartite council approved the extension of unemployment benefits and adopted a programme which allowed employers to temporarily lay off workers, provided that vocational training was offered during the period. Unemployment has now returned to pre-crisis levels.
- *South Africa* provides an important example of a country that brought together social partners to design and implement policy responses to the global crisis. Following the long-standing national tradition of tripartite policy-making, the Government and the social partners decided to develop a coordinated response to the crisis. The consultation process began in October 2008 and resulted in the "Framework for South Africa's response to the international economic crisis" in February 2009. This national framework agreement identified six priorities for developing the response to the crisis: investment in public infrastructure, macroeconomic policy, industrial and trade policy, employment and social measures, global coordination and social partnership.
- In 2009, *Viet Nam* introduced a scheme to help workers who were laid off during the global crisis – by providing loans for job training and self-employment. Furthermore, the Government reinforced workers' rights of association and strengthened employment protection in cases of unfair dismissal. Viet Nam provides an example of a country that managed to respond to the macroeconomic shock of the global crisis while strengthening and augmenting the institutions for employment protection and industrial relations.

Appendix A
Empirical analysis

This appendix provides the background to the empirical analysis used in section B of this chapter. First, it is important to note that the regressions are used to understand how employment protection legislation and collective bargaining are associated with employment and macroeconomic performance. Table A1 provides the list of countries included for the empirical analysis (note that for section A, a broader selection of countries is used as the analysis relies largely on qualitative data). In terms of estimation, the chapter uses a model with fixed effects, where fixed effects correspond to countries. According to the standard specification with country-specific effects, the relationship between labour market performance and labour market institutions can be written as (Lazear, 1990; Addison and Teixeira, 2003b; Bassanini and Duval, 2006):

$$y_{it} = \alpha_t + \beta_t + \sum_j X_{ijt}\, b_j + e_{it}$$

where y denotes the dependent variable (employment rate, temporary employment rate and investment to GDP ratio), X is the set of explanatory and control variables, and a and β are time- and country-specific fixed effects. All regressions are shown in table A2. For the purposes of the chapter, regressions were run on the dependent variables employing several different specifications and table A2 shows the results using the simplest models. The results are generally robust and the model allows for non-linearity for both employment protection legislation and wage-bargaining indicators. For regressions using dummies for wage-bargaining coordination, the results were similar.

Table 2A1. Summary of variables used in the empirical analysis

Variable	Definition	No. of countries	Years*	Source
Employment rate	Share of employment with respect to the population	43	1980–2010	LFS** or other comparable surveys
Temporary employment rate	Proportion of temporary employment with respect to total employment	43	1980–2010	LFS or other comparable surveys
Employment protection legislation	This is the synthetic indicator provided by the OECD on employment protection strictness. The rank goes from 0 to 6, where 0 denotes the least strict employment protection and 6 the strictest one.	43	1985–2008	OECD
Wage coordination of collective bargaining	Collective bargaining systems according to the coordination: ranges from 1 to 5, where 1 denotes fragmented bargaining mostly at company level and 5 denotes economy-wide bargaining	43	1980–2010	ICTWSS***
Investment	Private sector gross fixed capital formation as a share of GDP	146	1980–2009	UN national accounts
Social well-being	Aggregate subjective variable provided by the Gallup World Poll	194	2006–2011	Gallup World Poll

* Not all years are available for all countries, depending on the variables. ** Denotes labour force surveys. *** ICTWSS stands for Database on Institutional Characteristics of Trade Unions, Wage Setting, State Intervention and Social Pacts.

Table 2A2. Empirical analysis of employment and investment (regression models with fixed-term country effects)*

	Employment rate			Temporary employment rate		Investment rate**	
emprotleg	–0.0170	0.3110				15.5150	16.5134
emprotleg^2		–0.1189				–5.8905	–6.4328
emprotleg^3		0.0134				0.7394	0.8274
WageCoord			0.1377				
WageCoord^2			–0.0495				
WateCoord^3			0.0054				
emprotleg dif				0.0060	–0.0054		
emprotleg dif^2					0.0035		
emprotleg dif^3					0.0022		
Constant	0.6258	0.3734	0.4722	0.0965	0.0938	6.0420	5.2334
σ_u	0.1053	0.1249	0.1003	0.0477	0.0483	3.2179	3.1661
σ_e	0.0271	0.0254	0.0277	0.0219	0.0212	1.9388	1.9532
ρ	0.9378	0.9604	0.9290	0.8257	0.8380	0.7337	0.7243
N observations	554	554	731	439	439	452	494
n groups	34	34	37	30	30	23	29

* All coefficients are statistically significant at conventional levels. ** The first column refers only to advanced economies while the second column refers to all countries.

Appendix B

Recent changes in labour legislation and collective bargaining – selected country examples[9]

The purpose of this appendix is to provide some country examples and a more detailed examination of recent changes in employment protection legislation and collective bargaining that have taken place in the past 5 years (2008–2012). It is important to bear in mind the fact that the changes introduced depend to a significant extent on country-specific conditions, notably the degree of severity of the crisis, the nature of labour market institutions and the external pressures. Finally, this information is provided for illustrative purposes only and, as such, it does not entail a value judgement of the desirability or relevance of the reforms. Neither does this information give any indication of the enforcement of the new rules and regulations.

9. This section was prepared by Clemente Pignatti Morano (IILS) with significant contributions from Michel Binon, Mélanie Jeanroy, Angelika Muller and Corinne Vargha (ILO Dialogue).

1. High-income economies[10]

Social dialogue and collective bargaining

Out of the 43 high-income countries with available information, 20 have reformed regulations relating to industrial relations and 11 regulations relating to workers' representation. In the majority of cases, reforms have gone in the direction of decentralization of collective bargaining. For example:

- *Greece:* Law 3899 (2010) allows for companies of any size that experience adverse financial and economic conditions to conclude collective agreements containing less favourable conditions than those agreed in the relevant sectoral agreements.
- *Hungary:* In 2011, a reform of the labour code compromised the role of social dialogue at the national level by rendering the tripartite council "National Interest Reconciliation Council" a purely consultative rather than decision-making institution. The reform also limited the possible motivations for strikes and protests and raised the level of essential public services that should be guaranteed during a strike.
- *Italy:* Law 138 (2011) allows for company-level agreements to deviate from sectoral agreements.
- *Slovakia:* In December 2010, Parliament modified measures regulating the extension of collective agreements to non-signatory parties and requiring the consent of the employer as a preliminary condition. In July 2011, Parliament approved an amendment to the Labour Code regarding the formation of trade unions (which must now represent at least 30 per cent of the workforce in the firm).
- *Spain:* The new legislation introduced in February 2012 established that, in cases of contradictory measures between bargaining levels, firm-level agreements take precedence over sectoral or regional agreements.

In two high-income countries, labour market reforms aimed to reinforce industrial relations:

- *Australia:* The Fair Work Act 2009 reinforced the role of trade unions at the company level and the coordinating function of industry-wide agreements. Employers are now legally required to conclude company-level agreements if required by the majority of workers. Moreover, if the national industrial relations institution believes that bargaining at the firm level is not adequately developed, then those firms are required to participate in multi-employer bargaining. Furthermore, if one employee in the company belongs to a trade union, the union has the right to be involved in the negotiations.
- *Republic of Korea:* Following the amendments to the Trade Union and Labour Relations Adjustment Act in 2010, more than one union may be established in each firm. However, firms are required to engage in collective bargaining with only one union being selected as the bargaining representative organization in the company.

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10. For operational and analytical purposes, economies are divided among income groups according to 2010 gross national income (GNI) per capita, calculated using the World Bank Atlas method. The groups are: low income, US$1,005 or less; middle income, US$1,006–12,275; and high income, US$12,276 or more.

Employment protection legislation

Out of the 43 countries with available information, 19 modified legislation regarding employment protection for permanent contracts, 12 regarding fixed-term contracts and 11 countries regarding collective dismissals for economic reasons. For example:

- *Estonia:* Severance payments in cases of individual dismissals for economic reasons have been reduced from 2–4 months to 1 month, the grounds for justified dismissal have been broadened and in cases of unjustified dismissal there is no longer the possibility of reinstatement. In addition, the authorization by the labour inspectorate of collective dismissals for economic reasons has been abolished. Finally, the principle of priority for rehiring in cases of collectively dismissed workers has been removed.
- *Greece:* Law 3863 (2010) reduced the length of notice period for individual dismissals from 5 to 3 months, reduced severance payments for white-collar workers and allowed employers to pay individuals in instalments. The new legislation also changed the definition of collective dismissals from four to six employees for companies with fewer than 20 employees and from 2 to 5 per cent of the workforce in companies with more than 150 employees. Finally, the time limit after which a fixed-term employment contract is automatically considered to be of indefinite duration has been raised from 2 to 3 years.
- *Hungary:* New legislation allows for the regularization (rather than the revocation) of an individual dismissal made by an unauthorized person. In addition, compensation in case of unfair dismissals is reduced from no limit to a maximum of 12 months' salary.
- *New Zealand:* The new justification test for individual dismissal provides for the administration and the judicial authorities to have less control. Additionally, in cases of unlawful dismissal reinstatement is no longer considered as the first solution.
- *Portugal:* For contracts from 1 November 2011, redundancy pay in the case of collective and individual dismissals for economic reason and for individual dismissals based on a worker's unsuitability has been reduced to 20 days' wages (from 30 days prior to the reform). In addition, the time limit for consultations in cases of collective dismissals has been reduced.
- *Slovakia:* The period of application for rehiring in cases of collectively dismissed workers has been shortened.
- *Spain:* The 2010 and 2012 labour market reforms modified the legislation of both individual and collective dismissals. For individual dismissals, notice periods in cases of dismissals for objective causes have been reduced from 30 to 15 days. In cases of unfair individual dismissals, the employee is no longer entitled to their salary that accrues during the tribunal proceedings if the dismissal is contested. Moreover, the employee is now only entitled to 33 days' salary per year of service (compared to 45 previously). Finally, consultations between the employer and workers' representatives in cases of collective dismissals have been reduced to a maximum of 30 days in companies with more than 50 employees and 15 days in smaller companies.

Some countries have reinforced the protection of workers in the event of individual and collective dismissals. For example:

- *Australia:* Employers are now required to consider alternatives to collective dismissal for economic reasons and a redundancy payment scheme has been introduced in cases of individual and collective dismissals.
- *Belgium:* The obligation to notify the labour administration in cases of collective dismissal has been reinforced.
- *France:* New legislation regarding collective dismissals (for economic reasons) has been introduced, which requires the employer to pay the commensurate salary when workers are asked to move abroad for the same job.
- *Hungary:* There is now a notice period for the dismissal of temporary agency workers. In addition, in case of dismissals of permanent employees due to a "transfer of business", the employee is now entitled to a severance payment.

2. Middle-income economies

Social dialogue and collective bargaining

Among the 67 countries in this group, industrial relations have been reformed in 20 countries, while regulations regarding workers' representation have been amended in 26 countries. Some of the changes have resulted in greater decentralization of industrial relations. For example:

- *Lithuania:* A reform of labour code in 2009 had temporarily introduced (until the end of 2010) the possibility for collective agreements between employers' representatives and employees' representatives to set less favourable conditions (for example, in terms of severance pay and notice period) than those foreseen in the labour code.
- *Romania:* The Law on Social Dialogue 62 of 2011 abolished collective bargaining at the national level and eliminated the automatic extension of collective agreements to non-signatory parties. The new legislation has also increased the minimum number of workers necessary for the formation of a trade union, raised the threshold of trade unions' representation for the conclusion of collective agreements and relaxed the conditions for dismissal of trade unions' representatives.

In contrast to this trend, in many middle-income economies – especially outside the European Union – labour market reforms have been aimed at reinforcing industrial relations. For example:

- *Democratic Republic of the Congo, Djibouti, Gabon, Jordan, Lao People's Democratic Republic* and *the Syrian Arab Republic:* Tripartite national councils were instituted (or reinforced) to promote social dialogue on the main economic and social issues.
- *El Salvador* and *Republic of Moldova:* New guarantees on freedom of association for trade unions have been introduced.
- *Senegal:* In Senegal, Decree 1413 of 2009 provides practical guidance for employees participating in collective bargaining at the enterprise level.

Employment protection legislation

Out of the 67 middle-income economies with available information, employment protection legislation for permanent employment has been modified in 15 countries, legislation of temporary employment in eight countries and the regulation of collective dismissals for economic reasons in eight countries. For example:

- *Armenia:* Fixed-term contracts can now be renewed an unlimited number of times and with no restrictions on their maximum duration.
- *Belarus:* The obligation to notify third parties in cases of individual dismissals of permanent employees for economic reasons has been suppressed.
- *Former Yugoslav Republic of Macedonia:* The principle of priority for rehiring collectively dismissed workers has been removed.
- *Gabon:* Restrictions on renewing fixed-term contracts of short duration have been removed.
- *Latvia:* Notice periods in cases of collective dismissals have been reduced from 60 to 45 days and the labour administration may extend this limit only up to 60 days (rather than 75 as was previously the case).
- *Mauritius:* The requirement to obtain permission from the labour administration in cases of collective dismissal has been removed.
- *Romania:* The maximum length of fixed-term contracts has been extended and a collective agreement to allow the use of these contracts for the development of a project, programme or works is no longer needed. Moreover, public sector employees and workers on fixed-term contracts have been excluded from the protection provided in the case of collective dismissals. For workers on permanent contracts, the priority for rehiring after a collective dismissal has been reduced from 9 months to 45 days.

Meanwhile, some middle-income economies have reinforced employment protection. For example:

- *Jordan:* In the past few years, Jordan has reinforced its employment protection legislation. First, in cases of unjustified and unfair individual dismissal of permanent employees, labour courts may now impose either the reinstatement of the employee or the payment of financial compensation. Second, the right to severance payments has been extended to workers on fixed-term arrangements.
- *Lithuania:* The new legislation impedes the dismissal of workers on permanent contracts who intend to have a child.

3. Low-income economies

Social dialogue and collective bargaining

Changes in industrial relations in low-income countries have occurred in six out of the 20 countries with available information. Reforms have mainly focused on the creation of new institutions or the clarification of existing provisions. The regulation of workers' representation has been changed in only two countries out of 20. Some examples are as follows:

- *Burkina Faso:* Decree No. 806 of 2010 regulates the procedures to be followed in case of signature of a collective agreement, while Decree 841 of 2009 modifies the regulations covering the nomination of representatives for the Chamber of Trades.
- *Mozambique:* Decree No. 50 of 2009 approved the regulation of the national industrial tribunal.
- *Tajikistan:* The Government Decree No. 173 of 2008 adopts the statute of the "Tripartite commission on regulation of social and working relations".

Employment protection legislation

Six countries out of 20 have modified employment protection legislation of permanent contracts; three countries the requirements for fixed-term contracts; and six countries the procedures and the requirements for collective dismissals. Overall, the main changes have aimed to relax the regulations over individual and collective dismissals. For example:

- *The Central African Republic:* The obligation to obtain the authorization from the Labour inspection in cases of collective dismissals has been removed.
- *Kyrgyzstan:* The obligation to notify the public authority in cases of individual dismissals for economic reasons has been suppressed.
- *Malawi:* Severance payments in cases of collective dismissals have been reduced from 30 to 25 weeks' pay for employees with 10 years of service, and from 80 to 65 weeks' pay for employees with 20 years of service.
- *Rwanda:* The obligation to consult workers' representatives in cases of individual and collective dismissals for economic reasons has been eliminated.
- *Zimbabwe:* Severance payments in cases of individual dismissals have been reduced from 4–6 to 2–4 months' pay.

One low-income country reinforced regulations over individual and collective dismissals, namely:

- *The Democratic Republic of the Congo:* A Ministerial Order now obliges employers to report any dismissal to the regional office of the labour inspectorate and the regional office of the national employment agency within 48 hours.

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Fiscal consolidation and employment growth*

3

Main findings

- In the wake of the global crisis prompted by the demise of the financial systems of advanced economies, many countries used fiscal policy as an anti-cyclical device. Although this step helped to attenuate the crisis, it also led to higher fiscal deficits and increased public debt. Between 2007 and 2009, public debt as a percentage of GDP increased in over 91 per cent of the 168 countries analysed in this chapter and has increased further in 2010 in over 71 per cent of these countries. On average, in advanced economies, public debt as a percentage of GDP increased during this period by almost 24 percentage points, reaching 95 per cent in 2010. Similarly, in the group of emerging economies, debt ratios increased during the period in 71 per cent of the countries analysed, but only moderately (by 7.7 percentage points on average), reaching 35.5 per cent of GDP in 2010. On the contrary, in the developing countries analysed, public debt ratios fell by 5.5 percentage points, on average, to 52 per cent of GDP in 2010.
- In the face of these trends, since public deficits reached their peak in 2009, almost 93 per cent of the advanced countries have adopted fiscal consolidation measures. Much of the effort has been focused on spending cuts rather than raising revenues. Fiscal spending as a percentage of GDP decreased by 1.4 percentage points between the third quarters of 2009 and 2011, while the share of revenues in GDP increased by 1.2 percentage points during the same period. The reduction in government wage bills accounted for 36 per cent of the decline in government expenditure, cuts in government investment contributed to almost 30 per cent of the expenditure reductions and cuts in social spending to over 22 per cent. The increase in taxes on income and wealth contributed to almost 77 per cent of the increase in government revenues and the

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increase in indirect taxes to almost 42 per cent of the increase. In contrast, social contributions declined. Budget plans in advanced economies for 2012 will see continued fiscal consolidation along similar lines, especially in certain European countries.

- In examining the range of policies measures introduced, a slightly different picture emerges among emerging and developing countries. In fact, only 28 per cent of the selected group of emerging and developing countries put in place policies aimed directly to reduced social security benefits during the crisis compared to 65 per cent in the case of advanced economies. The range of policies introduced varied considerably. In some countries, governments introduced pension reforms that either reduced pension entitlements (e.g. Hungary and Ireland) or increased retirement age (e.g. Canada, Belgium, France, Greece and Spain). Other changes include reductions in unemployment benefits (Czech Republic, Netherlands and the Ukraine) and reductions in entitlements for sick leave (Estonia). In contrast, a number of developing economies tried to extend either the coverage (Chile, India and Uganda) or the benefits (Argentina, Armenia and Cape Verde) of pension schemes.
- Evidence presented in this chapter shows that the pace and content of fiscal consolidation measures are important if countries are to foster fiscal stability while simultaneously boosting employment growth. In fact, the current path of consolidation will lead to weak employment growth and a worsening of the fiscal position in the medium-term. This is mainly because lower public investment has a negative effect on the economy and jobs which cannot be compensated by higher private investment. In contrast, a fiscally neutral change in the composition of expenditures and revenues would create between 1.8 and 2.1 million jobs in the following year alone, depending on the policy mix selected. In the case of emerging and developing countries, efforts should be placed on public investment and social protection to reduce poverty, income inequality and stimulate aggregate demand. For advanced economies, the focus should be on ensuring that unemployed persons, especially youth, receive adequate support to find new jobs.
- Finally, the significant variability in the pace and intensity of fiscal consolidation across regions and countries, highlights the absence of policy coordination. Many countries are focusing on cutting their own fiscal deficits quickly, in the expectation that other countries will take the lead in boosting global growth. Such an approach may appear to be effective in the near-term but could prove counterproductive. Indeed, inward-looking policies in the context of a global crisis may adversely affect other countries and the global recovery more broadly.

Introduction

In response to the financial and economic crisis that erupted in 2007/08, governments mobilized sizable fiscal support to safeguard the financial sector and put forth stimulus measures in an effort to stimulate aggregate demand. The increase in government spending at the time was seen as a necessary to support the economy until private sector demand would recover. Yet, the boost to growth was short-lived as private sector business activity and investment in the real economy continued to falter (see also Chapter 4). Government revenues have since dramatically

deteriorated principally through shortfalls in tax revenues.[1] As a result, public debt ratios in the majority of countries analysed have increased significantly and are set to continue their upward trend over the coming years.[2] Going forward, the key question is how to stimulate economic activity against the backdrop of pressures on governments to reign in expenses and weak private sector demand.

With this in mind, this chapter will assess the magnitude and nature of the fiscal consolidation challenge. In particular, while fiscal unbalances need to be addressed, the challenge is to do so without damaging further recovery prospects while safeguarding public finances. In this regard, emphasis will be placed on the important employment and social implications of poorly-designed fiscal cuts. In particular, section A examines briefly the evolution of fiscal balances and the recent build-up of public debt and looks at the recent government efforts to consolidate public finances. This section also examines the manner in which governments intend to raise revenue and how they will attempt to reduce expenditures during 2012. Finally, section B assesses the employment and fiscal implications of a change in the composition of austerity, highlighting how the two goals can be achieved simultaneously and in fact, if properly designed, can be mutually reinforcing.

A. Debt dynamics and ongoing fiscal consolidation efforts

Public debt has increased in the majority of countries analysed since the start of the global crisis, especially in advanced economies …

Since the onset of the crisis in 2007, public debt[3] has increased rapidly in advanced economies,[4,5] driven by a deep recession and a double dip in terms of falling GDP in a number of countries. Indeed, between 2007 and 2009 (when deficits reached their peak) fiscal deficits worsened in over 93 per cent of the countries analysed, increasing by 7.8 percentage points to reach an average deficit of 8.5 per cent of GDP in 2009. Meanwhile, public debt as a percentage of GDP increased in over 91 per cent of the countries analysed in this group and increased further in 2010 in over 71 per cent of the countries analysed (Figure 3.1). On average, between 2007 and 2010 the debt ratio increased by almost 24 percentage points, reaching 95 per cent of GDP in 2010. According to estimates, debt ratios will

1. See Chapter 3 of the *World of Work Report 2010: From one crisis to the next* (IILS, 2010) for an analysis of the different channels through which the crisis affected fiscal balances during the crisis.
2. See Cecchetti et al. (2010), Escudero and López (forthcoming) and IMF (2012).
3. Public debt in this chapter is measured as the ratio of general government gross debt to GDP. Gross debt consists of "all liabilities that require payment or payments of interest and/or principal by the debtor to the creditor at a date or dates in the future. This includes debt liabilities in the form of SDRs, currency and deposits, debt securities, loans, insurance, pensions and standardized guarantee schemes, and other accounts payable" (IMF, 2011b). This definition of debt is consistent with the definition given in the *Government Finance Statistics Manual* (GFSM) and the *System of National Accounts 2008* (SNA, 2008).
4. The sample analysed comprises 168 countries, of which 45 are advanced economies, 49 are emerging economies and 74 are developing countries. See Appendix A of Chapter 1 for the list of countries analysed and their income groups.
5. "Advanced economies" refers to high-income countries, that is, countries with a gross national income (GNI) per capita of US$12,276 or more. "Emerging economies" refers to upper-middle income countries (GNI between US$3,976 and US$12,275) and "developing economies" to low- and lower-middle income countries (GNI of US$3,975 or less).

increase further in 2011, despite a contraction of fiscal deficits. There is, however, considerable heterogeneity in terms of the worsening of debt levels in advanced economies:

- Ireland and Iceland, for example, show the steepest increases – at 70 and 63.3 percentage points, respectively – albeit from relatively low initial levels of public debt to GDP. Interestingly, other countries, where debt levels had remained relatively low before the crisis, saw significant increases in public debt levels, notably Spain, the United Kingdom and the United States.
- Greece, Japan and, to a lesser extent, Italy, which already had public debt ratios of over 100 per cent in 2007, have also seen sharp increases – of 37.3, 32.3 and 15.4 percentage points, respectively.
- In contrast, oil-producing Arab countries, such as Kuwait, Oman and Saudi Arabia, saw their already low ratios of debt decrease further.

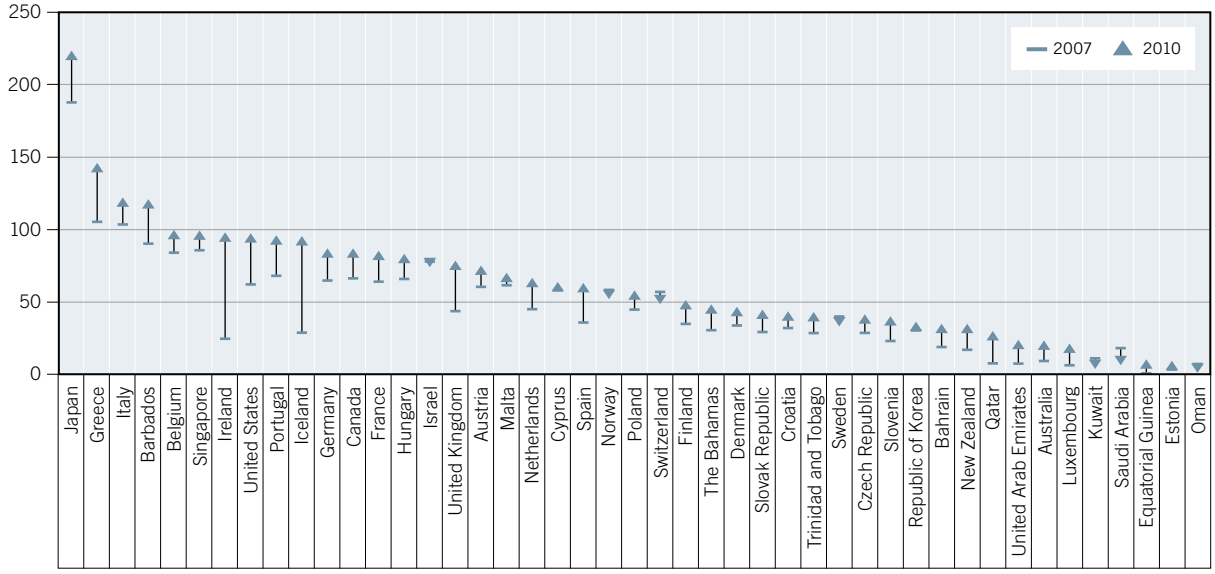
The situation and overall trend in the emerging and developing economies stand in stark contrast to those of advanced economies. These countries had accumulated fiscal space during the years preceding the crisis, which allowed them to respond to the crisis with limited effects on fiscal balances and debt accumulation. In emerging economies, for example, fiscal balances deteriorated by 4.7 percentage points on average, passing from a surplus of 1 per cent of GDP in 2007 to a 3.7 per cent deficit in 2009. This weakening of fiscal positions, combined with low rates of economic growth and higher inflation rates, pushed debt ratios upwards, but only moderately (i.e. by 7.7 percentage points on average during the crisis). In developing countries, the increase in fiscal deficits – of 4 percentage points – did not translate into an increase in public debt, mainly due to strong economic growth.[6] In fact, between 2007 and 2010, public debt ratios in this group of countries fell by 5.5 percentage points, on average, to reach 52 per cent of GDP in 2010. Moreover, estimates for 2011 show that fiscal deficits and debt ratios declined in both groups of countries. Some variation exists, however, among countries:

- In emerging economies, 71.4 per cent showed an increase in the ratio of public debt to GDP; however, the magnitude of the changes varied greatly. The highest increases in debt levels among emerging economies between 2007 and 2010 were observed in Latvia (32 percentage points from one of the lowest ratios of debt in the group – 7.8 per cent) and Jamaica (29 percentage points from one of the highest ratios of debt in the group – 114.2 per cent). In contrast, the Seychelles attained a reduction in debt ratio of almost 50 per cent – to 83 per cent in 2010. Likewise, Argentina and Gabon saw their levels of debt declining by 18 percentage points each, and Ecuador by 12 percentage points.
- In the case of developing countries, there was even more heterogeneity. The overall decrease in the debt ratio was the result of declines in 58 per cent of the countries analysed. This was particularly true among African countries (i.e. Burundi, the Democratic Republic of Congo, Guinea-Bissau and Togo), although Iraq and Liberia also had declining debt ratios. Meanwhile, almost 42 per cent of the countries analysed experienced an increase in public debt ratios, among these Armenia, Georgia and Ukraine.

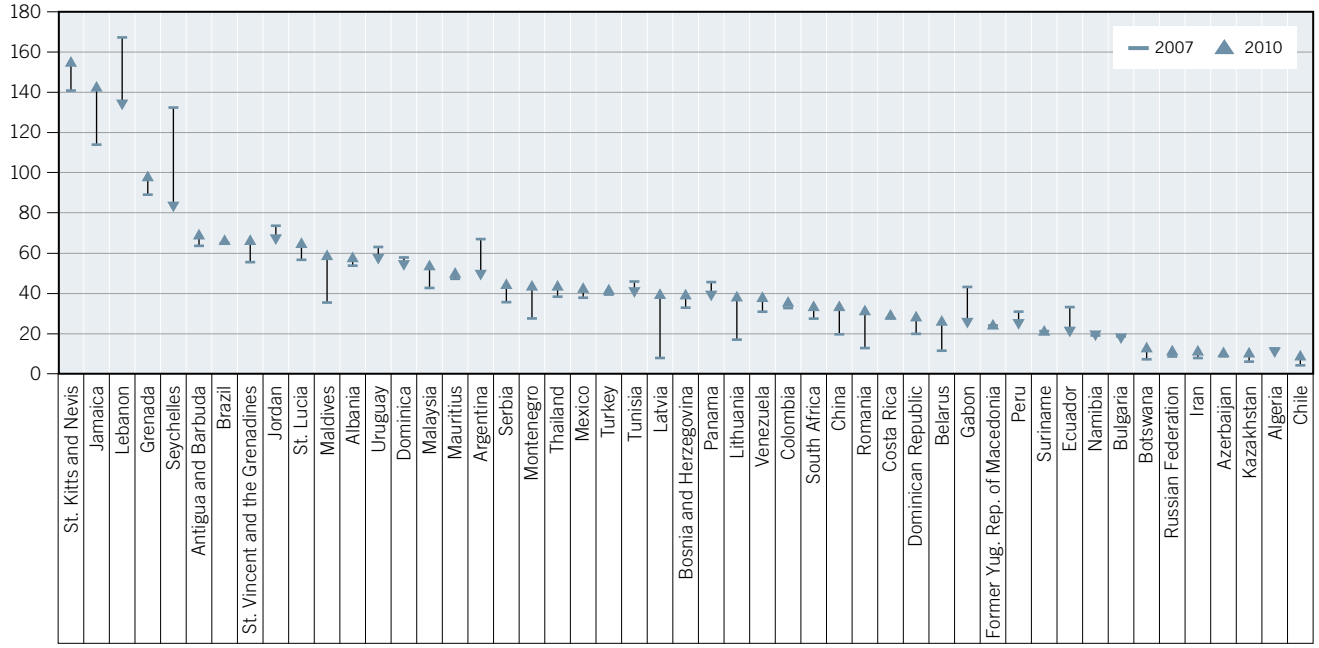
6. Between 2007 and 2010, public gross debt in the group increased by 13.6 per cent, while GDP grew by almost 24 per cent.

Figure 3.1 Change in public debt* and fiscal balance as a percentage of GDP between 2007 and 2010

Panel A. Advanced economies



Panel B. Emerging and developing economies



* General government gross debt.

Note: The sample analysed comprises 168 countries, of which 45 are advanced economies, 49 are emerging economies and 74 are developing countries. See Appendix A of Chapter 1 for the list of countries analysed, their income groups and country codes.

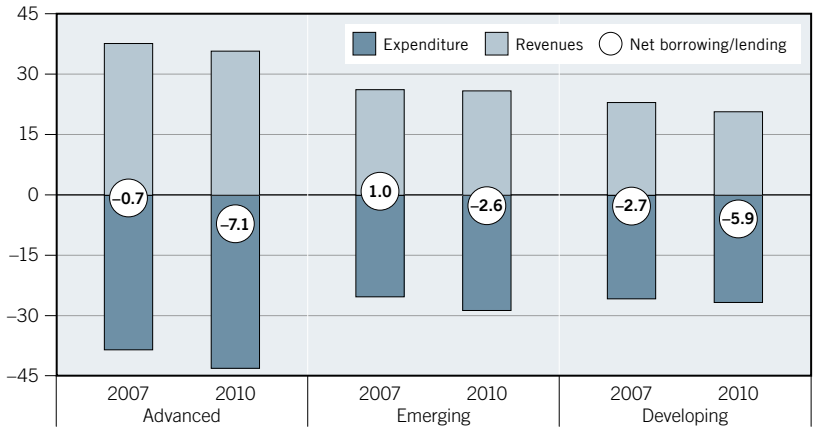
Source: IILS calculations based on IMF (2011a).

… and it is important to adopt a medium-term fiscal consolidation strategy.

Public deficits have increased in 82 per cent of the countries analysed during the crisis, that is, in 96 per cent of the advanced economies, in 86 per cent of the emerging economies and in 72 per cent of the developing economies.

In advanced economies, the increase in fiscal expenditure was the main destabilizing factor – 4.6 percentage points between 2007 and 2010 (Figure 3.2). Yet, fiscal revenues also deteriorated, falling by 1.9 percentage points during this period. In emerging economies, the increase in public expenditure was even

Figure 3.2 Composition of fiscal balances by country group (percentages of GDP)



Note: The sample analysed comprises 168 countries, of which 45 are advanced economies, 49 are emerging economies and 74 are developing countries.

Country group averages correspond to weighted averages based on 2010 purchasing power parity (PPP) GDP weights.

Source: IILS calculations based on IMF (2011a).

higher – 3 percentage points – relative to the average deterioration of fiscal positions – 3.6 percentage points. In comparison, the increase in fiscal deficit in developing countries was clearly a response to the 3.3 percentage point decrease in fiscal revenues.

These findings are all the more worrying in advanced economies since fiscal balances continue to bear the weight of the sluggish labour market recovery (see Chapter 1). In addition, the crisis-related increase in deficits comes at a time when many advanced economies are facing significant pressures to improve their budget balances in order to stabilize unfunded liabilities arising from their aging populations.

Bringing fiscal balances back onto a sustainable track, so that governments can start to put in place the necessary structural reforms, is of the utmost importance. Indeed, a number of countries have begun to implement measures to consolidate their public finances. The challenge, however, is to find a mix of measures that will allow for medium-term deficit reduction without endangering the incipient economic and labour market recovery. The remainder of this section examines the manner in which countries are attempting to reduce expenses and increase revenues to achieve fiscal stability.

A majority of countries have responded by reducing social expenditures and limiting public investment ...

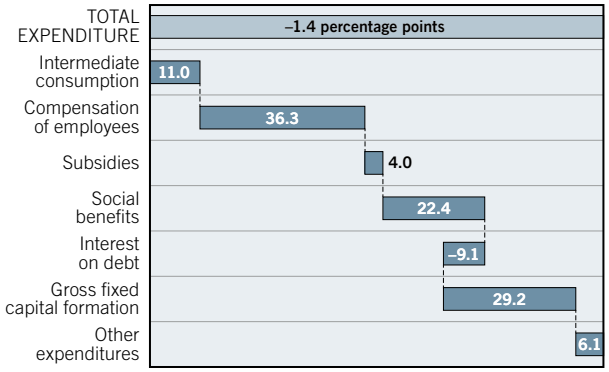
It is important to bear in mind that the worsening of fiscal positions has less to do with the specific social and labour market measures put in place to address the impacts of the crisis and more to do with the bailouts of the financial system, general spending increases and losses in tax revenues. Indeed, direct fiscal support to safeguard the financial sector has been substantial – accounting for more than 7 per cent of GDP in advanced G20 countries (and as much as 12 per cent in the United Kingdom). [7] Similarly, other measures such as the purchase of toxic assets, loan guarantees or direct acquisition of banks, as was the case in Ireland, had important effects on government deficits and their ability to acquire new financing, notably at reasonable rates. Moreover, there is considerable uncertainty regarding contingent liabilities that will affect fiscal balances in the future.

Yet with public deficits reaching their peak in 2009, almost 93 per cent of the countries have adopted fiscal consolidation measures – either by reducing

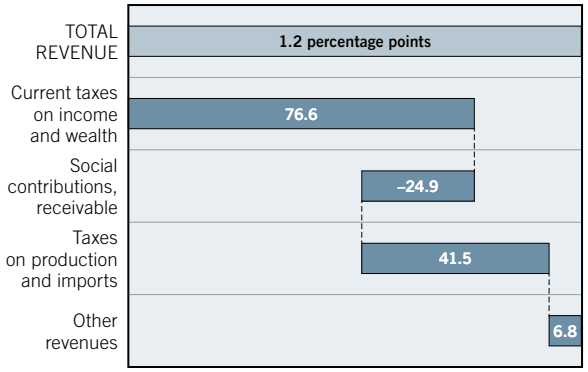
7. As detailed in the *World of Work Report 2010* (IILS, 2010).

Figure 3.3 Factors contributing to the reduction of expenditures and growth of revenues in advanced economies, Q3 2009–Q3 2011 (percentages)

Panel A. Contribution to the reduction of fiscal expenditure



Panel B. Contribution to the increase in fiscal revenues



Note: The sample analysed comprises 28 advanced economies. This sample is smaller than the previous ones due to the lack of up-to-date quarterly information on National Accounts for a number of countries.

Country group averages correspond to weighted averages based on 2010 PPP GDP weights.

Source: IILS calculations based on Eurostat and OECD National Accounts databases, national sources and IMF (2011a).

expenditures, increasing revenues, or both – with important implications for employment and social conditions. In fact, since 2009 efforts to consolidate have focused on the expenditure side – fiscal spending as a percentage of GDP decreased by 1.4 percentage points between the third quarters of 2009 and 2011 – with important cuts to wages, investment and social spending. In particular, between the third quarters of 2009 and 2011 compensation of employees contributed over 36 per cent of the decline in government expenditure (Figure 3.3, panel A).

The same situation arose with respect to social spending,[8] which accounted for 22.4 per cent of the decrease in government expenditure. Importantly, in a number of countries the fall in public expenditure on compensation of employees and social spending was the result of specific measures put in place by governments to lessen the burden of public sector wages and social security spending on public finances (Box 3.1). Paradoxically, in some of the countries where spending on social benefits as a percentage of GDP decreased, such as Hungary, Italy, Luxembourg, Poland, Portugal, Slovakia and Spain, the number of unemployed individuals continued to rise (by 1.4 million in the third quarter of 2011) compared to the same quarter in 2009.

Another important factor in the reduction of government expenditure was productive investment, which not only decreased as a percentage of GDP but fell in value by 6 per cent during the same period, contributing 29.2 per cent of the decrease in total expenditure.[9]

On the income side, the share of revenues in GDP increased by 1.2 percentage points in the two years to Q3 2011. This increase was mainly due to an increase in tax revenues despite a reduction in social contributions received (Figure 3.3, panel B). More specifically, the increase in taxes on income and wealth contributed almost 77 per cent of the increase in government revenues and the increase in taxes on production and imports accounted for almost 42 per cent of the increase.

8. Social spending includes social benefits and social transfers in kind made through market producers, as defined by the *System of National Accounts 2008* (SNA, 2008).
9. See Chapter 4 for a more detailed analysis on the evolution and drivers of total investment during the crisis.

Box 3.1 Public sector wages and social security policies as fiscal consolidation measures

Policies directed at public sector wages: In the face of the deepening crisis and the need for fiscal consolidation, public sector wage cuts and wage freezes were at the top of the political agenda for a number of governments.

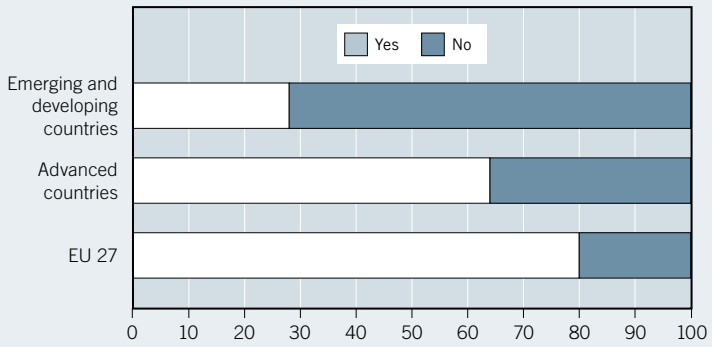
Between 2008 and 2011, the governments of 27 of the 45 countries with available information implemented policies designed to cut or freeze public sector wages. This tendency is more pronounced among advanced economies (22 of the 35 countries analysed); although five of the ten emerging and developing countries analysed show a similar trend. Governments in the European Union have been the most likely to introduce either wage cuts or wage freezes in civil servants' wages during the crisis, with 80 per cent of the countries analysed adopting such measures.

The sharpest cuts in public sector wages have been registered in economies that are suffering the most from the sovereign debt crisis (e.g. Greece, Ireland and Portugal) as well as in countries that have experienced substantial contractions in GDP (for example, Estonia, Latvia, Lithuania and Romania). On the contrary, countries benefitting from a sustained economic expansion (such as Argentina, Hong Kong and Singapore) have raised public sector wages.

Social security policies: Similarly, since 2008, 31 of the 71 countries with available information have introduced cuts in social security benefits, including pensions. As with wage policies, the trend is more marked for advanced economies, with 65 per cent of the countries having put in place at least one policy aimed at reducing social security benefits during the crisis, compared to 28 per cent in emerging and developing countries. The European Union still presents the strongest trend, with 80 per cent of the EU members having introduced this type of measure.

Cuts in social security benefits took different forms. In some countries, national governments introduced pension reforms that either reduced pension entitlements (for example, Hungary, Ireland, Latvia, Lithuania, Macedonia and Moldova) or increased retirement age (such as Albania, Belgium, Bulgaria, Estonia, France, Greece, Hungary, Italy, Netherlands, Romania and Spain). Other changes include reductions in unemployment benefits (Czech Republic, Hungary, Ireland, Latvia, Netherlands, Romania, Serbia, Switzerland and Ukraine) and reductions in entitlements for sick leave (Estonia). Meanwhile, a number of developing economies tried to extend either the coverage (Chile, India and Uganda) or the benefits (Argentina, Armenia and Cape Verde) of pension schemes.

Figure 3.4 Percentage of countries that have introduced cuts in social security benefits since 2008



Source: IILS calculations based on national sources.

Likewise, emerging European Union countries[10] and Turkey have also adopted fiscal consolidation measures since 2009. Between the third quarters of 2009 and 2011, total spending as a percentage of GDP in these countries fell by 2.5 percentage points, driven mainly by a 1.3 percentage point decrease in social benefits and a 1.1 percentage point fall in compensation of employees. On the income side, this group of countries experienced a 1.8 percentage point increase in total revenues as a percentage of GDP; the main factor behind this rise being the 1 percentage point increase in the indirect taxes ratio.

10. This analysis includes Bulgaria, Latvia, Lithuania and Romania.

... and the prospects are for further austerity in most advanced economies ...

In 2012, fiscal policies in the majority of advanced economies will continue to be characterized by austerity. A comparative analysis of the different measures planned in the 2012 government budgets shows that countries will continue their consolidation efforts in 2012 and will do so mainly through expenditure cuts relative to GDP (Table 3.1). Among the select group of countries analysed, the United Kingdom, Portugal and Ireland show the largest cuts in public spending – by 2.8, 2.3 and 1.8 percentages points, respectively. In the United Kingdom and Ireland, productive investment is bearing the brunt of cuts – falling by 2 and 1.2 percentage points, respectively, whereas in Portugal, compensation of public sector employees (reduction of 1.6 percentage points) is the focus of planned cutbacks.

In France, Spain, the United States and Japan, the focus of government expenditure reductions are the result of cuts in social benefits. Only Denmark and Finland have plans to increase total expenditures in 2012. Greece also shows an increase in total expenditure, but it is a result of an increase in interest payments on public debt. Meanwhile, Germany is consolidating, but at a slow pace.

On the income side, seven of the 18 countries analysed are planning an increase in revenues in 2012 and in all of these countries – with the exception of Portugal – the increase will come from increased taxation, especially from personal income taxes and corporate taxes. For example, in the United States and Australia current taxes on income and wealth will rise by 1.7 and 1.4 percentage points, respectively. In Portugal, on the other hand, it is the rise in indirect taxation that will drive the increase in public revenues.

... with little coordination across countries.

There is considerable variation in the intensity with which countries plan to implement this consolidation process (Escudero and López, forthcoming). In some countries, for example Australia and France, the expectation is that the planned austerity measures will ensure debt stabilization over a very short period, i.e. less than 2 years. In Portugal the plan is to attain debt stabilization over the next 3 years. Meanwhile, in one-quarter of the countries analysed, despite the widespread adoption of austerity measures, primary fiscal balances that allow for public debt stability will not be attained in the medium term – for example, Greece will only attain a debt-stabilizing primary balance in ten years and Japan in 12 years. There are also countries that have chosen a path of austerity despite having sufficient fiscal space. Indeed, Norway is planning to have a primary surplus of almost 13 per cent, although a 1 per cent surplus would be adequate. The same principle applies in Sweden and Switzerland. Together, these countries saved or cut over US$1 trillion that could have been allocated to foster further aggregate demand.

It is critical to bring public finances under control. And the pace of consolidation must take into account country-specific circumstances and outlook. However, the significant variability in the intensity of consolidation highlights the absence of policy coordination between countries. Countries are attempting to cut their own fiscal deficits quickly in the expectation that other countries will take the lead in boosting global growth. However, such inward-looking policies must be carefully considered in the face of a global crisis as they may adversely affect other countries and the global recovery more broadly. The remainder of this chapter will consider this, and other policy issues, in greater detail.

Table 3.1 Change in fiscal expenditures and revenues as a percentage of GDP by category between 2011 and 2012 (percentage points)

	TOTAL EXPENDITURE	Intermediate consumption	Compensation of employees	Social benefits	Interest on debt	Investment	Other expenditures	TOTAL REVENUE	Current taxes on income and wealth	Social contributions	Taxes on production and imports	Other revenues
Australia	**–0.5**		△	–0.2*	0.1	–0.1		**1.3**	1.4		–0.1	–0.1
Austria	**–0.6**	0.0	0.0	–0.1	0.1	0.0	–0.6	**–0.1**	0.4	–0.2	–0.1	–0.3
Canada	**–0.4**			0.1	–0.1			**–0.1**	–0.1	0.0	0.0	–0.1
Denmark	**0.9**			0.4	–0.3	0.3	0.5	**–0.6**	0.0	0.0	0.1	–0.8
Finland	**0.7**							**1.7**				
France	**–0.4**	0.3	1.1	–2.4*	0.5	0.1	0.1	**0.4**	0.2		0.1	0.2
Germany**	**–0.3**		0.0	–0.2	0.1	–0.3	–0.1	**0.6**			0.5	0.1
Greece	**0.2**	0.1	–0.7	0.4	0.9		–0.4	**1.6**	1.5		0.2	–0.1
Ireland	**–1.8**	–0.4	–0.5	–0.4	0.9	–1.2	–0.1	**–0.4**	0.4	–0.3	–0.1	–0.4
Japan	**–0.8**			–0.6	0.0			**–0.6**	△		△	–0.7
Korea, Rep. of	**–0.6**			–0.04	–0.02	▽	▽	**–0.4**	0.04	–0.1	–0.4	0.0
Norway	**0.2**		0.2	0.3	–0.1	–0.1		**–2.0**		0.2	0.1	–2.3
Portugal	**–2.3**	0.0	–1.6	–0.6	0.9	–0.3	–0.8	**–0.9**	–0.3	–0.5	1.2	0.4
Spain	**–0.9**		–0.1	–1.1	0.1	–0.1	0.3	**–0.3**	–0.2	–0.8	–1.4	2.1
Sweden**	**–1.3**			–0.3	–0.4		–0.6	**–2.3**		–1.7		–0.5
Switzerland	**–0.1**	–0.01	0.01	–0.04	–0.02	–0.1		**0.03**	0.1		0.01	–0.2
United Kingdom	**–2.8**			–0.1	–0.3	–2.0	–0.2	**–0.3**	–0.3	–0.1	–0.1	0.2
United States	**–1.7**			–1.0*	0.1			**2.2**	1.7	0.7	0.2	–0.1

* In the United States, value corresponds to change in spending on social security mandatory programmes. In Australia, it corresponds to change in spending on social welfare and health. In France, the change is due to a reduction of special intervention social programmes, such as Aid for Social Housing (Aide pour le lodgement (APL)), the Active Solidarity Revenue (Revenu de solidarité active (RSA)) or the Disabled Adult Allowance (Allocation pour adulte handicapé (AAH)). ** In Germany, figures correspond to the Federal Government budget plan and, in Sweden, to the Central Government budget plan.

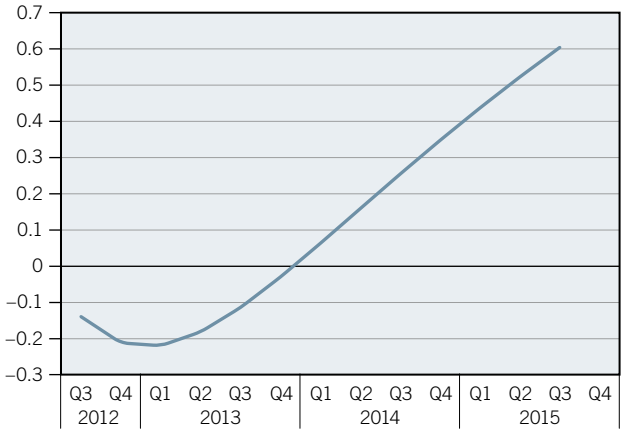
Source: IILS estimates based on planned government budgets for 2012, national sources.

B. Employment effects of fiscal consolidation: Austerity versus socially-responsible approaches

Since 2010, there has been an increased tendency among advanced economies to focus on austerity measures – mainly centred on continued reductions in social spending, downward pressure on wages and cuts in public investment combined with raising direct taxation – with the intention of stabilizing fiscal balances quickly. The measures have, to a large extent, been counterproductive, not only in terms of fiscal stability but also in terms of employment objectives. In particular, as Chapter 1 illustrated the labour market recovery in the majority of countries remains sluggish: in over 90 per cent of the countries that have implemented austerity measures, unemployment rates are still above their 2007 levels; and in close to half of them the unemployment rate had increased further by the end of 2011. The problem has been exacerbated by the lack of a coordinated approach.

However, fiscal stability should not be an end in itself but the means to achieve a quicker and more equitable economic and labour market recovery. In order to foster future fiscal stability while protecting people and promoting jobs, a more effective and coordinated approach to fiscal consolidation is required. With this

Figure 3.5 Simulation: Debt dynamic following fiscal consolidation*, debt to GDP ratio (percentage point deviation)



* Fiscal consolidation depicts a scenario where public investment to GDP ratio is cut by 7.8 per cent, while income taxes are increased by 3.8 per cent. The cut to the public wage ratio was not included due to methodological constraints. Policies are assumed to take effect in mid-2012 and the effects of these policies are measured until the end of 2015.

Note: For the purposes of this exercise, the GEL model has been calibrated for the group of 33 advanced countries analysed in this section using estimates attained below. Moreover, public investment to GDP ratio has been set at 3 per cent, interest payments to GDP at 2.6 per cent, tax revenue to GDP at 22 per cent, income tax at 57 per cent of total tax and debt to GDP ratio at 80 per cent.

Source: IILS calculations based on GEL model. See Charpe and Kühn (2012) for further detail.

in mind, an econometric analysis has been undertaken for a panel of 33 advanced countries with quarterly data on labour and macroeconomic variables to shed light on the relationship between austerity and the composition of fiscal balances, and employment creation.[11] The period of analysis is 2007 to 2011, to enable assessment of the short-term effects of fiscal variables on employment during the crisis.

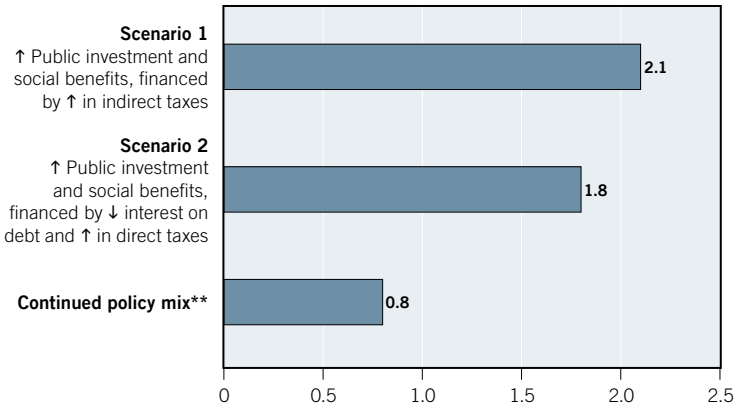
Fiscal austerity in its current form will affect jobs and fiscal positions over the medium term …

If austerity measures continue in the current form until the first half of 2013, employment in the group of advanced countries is expected to grow only moderately – by 0.2 per cent.[12] Moreover, once the general equilibrium effect associated with rebalancing public deficits is taken into account, fiscal consolidation will not be sustainable in the medium term. Indeed, a simulation carried out using the IILS' Global Economic Linkages (GEL) model illustrates that fiscal consolidation of this nature would prove ineffective in reducing public debt due to the pervasive effects it may have on the economy more broadly (Figure 3.5). More specifically, this analysis shows that fiscal consolidation reduces debt in the short-term but in 2014, debt levels begin to rise again. This occurs through two main transmission mechanisms. First, lower public investment has a negative effect on productivity, which in turn drives private investment downwards. Second, sluggish employment growth puts pressure on fiscal balances. As a result, the current composition of fiscal consolidation, e.g. lower investment – especially in times of crisis – have detrimental effects on employment and, more widely, on output, but they are also ineffective in reducing public debt in the medium term.

11. The analysis is based on the basic Keynesian principle that government fiscal balance can alter the aggregate level of employment in the short term. Keynesian models predict that an increase in government expenditure will raise labour demand, through the increase in real wages and output. See, for instance, Blinder and Solow (1973); Pappa (2009); Monacelli et al. (2010). See Appendix A and Escudero and López (forthcoming) for the methodology of the econometric analysis carried out, exact specifications of the different equations and detailed results.

12. This first specification was carried out to capture the effects that changes in particular spending and revenue items would have on employment creation – fiscal variables are therefore included in the model as a percentage of GDP. The analysis shows that in the short term, and during times of crisis, the two types of expenditures that were subject to deeper cuts as part of the consolidation efforts – compensation of employees and public investment – have the strongest effect on employment. On the revenue side, income taxes also revealed a highly significant relationship to employment.

Figure 3.6 Simulations: number of jobs that would be created between Q2 2012 and Q2 2013 depending on different policy mix scenarios,* advanced economies (millions of jobs)



* All scenarios simulate changes in the composition of fiscal balances. They are based on the assumption that increases in expenditures are either offset by reductions in other expenses or financed by increases in revenues. Expenditure items are measured as a percentage of total expenditures and revenue items as a percentage of total revenues.

** The "continued policy mix" corresponds to austerity in its current form.

Source: IILS calculations based on OECD and national sources.

… yet, a fiscally neutral re-orientation towards public investment and social benefits can boost employment creation …

Mindful of the challenge that countries face in achieving the stability of fiscal balances, a second specification was carried out to assess directly the impact of changes in the composition of the fiscal balance on employment creation. The results – consistent with those of the empirical literature – show that the ratios of public wages and public investment to total expenditure have a positive and significant impact on employment in the short term and during times of crisis.[13] Based on these relationships, several scenarios were simulated to illustrate the potential impact that a fiscally neutral change in the composition of fiscal balances, such as a change in the policy mix, while keeping 2011 deficits constant, would have on employment creation (Figure 3.6). A number of interesting results arise from the analysis:

- An increase in expenditure in public investment and social benefits – by 1 percentage point each year – financed by an increase in revenues derived from indirect taxation, seems to be the most effective policy mix in terms of employment creation (Scenario 1). Indeed, 2.1 million jobs would be created by Q2 2013 with this policy mix, compared to only 0.8 million jobs if countries continue to implement the austerity policies of 2011.
- Alternatively, if this scenario is financed in part by a decrease in interest on public debt and in part by an increase in the ratio of direct taxes to total revenues, 1.8 million jobs would be created by Q2 2013 (Scenario 2).

… which, in the case of social benefits, can also help to address poverty and inequality while boosting aggregate demand.

In addition to stimulating job creation, social policies can play an important role in reducing poverty, income inequality and supporting domestic demand – the former two issues being of particular concern (as discussed in Chapter 1). With this

13. In terms of the revenue composition, the ratio of both indirect and direct taxes to total public income has a significant negative relationship with employment in the short term; however, income taxes have a more profound effect on employment. For a detailed explanation of the various relationships and the economic interpretations of these results, please refer to Appendix A.

in mind, emerging and developing economies can leverage existing fiscal space to improve and enhance social protection. Some progress is being made. For instance, China has embarked on a vast programme to extend social protection, including old age pension and universal health insurance for rural areas. India is planning to launch its universal health coverage based on the existing Rashtriya Swasthya Bima Yojna (RSBY) for the poor. Further efforts of this nature can also support the recovery process and boost domestic demand, notably in surplus countries. For example in China, an increase of 1 percentage point of GDP in public social expenditures (education, health, and pensions) would translate into an increase of household consumption by 1.25 percentage points of GDP.[14]

Moreover, in the context of a fiscally-neutral shift in austerity, programmes can be effective in reducing poverty and income inequality, without eroding public finances. For example, in Uruguay, the government introduced in 2007 the *Plan for Social Equity* to reduce poverty and inequality. The reforms were designed to be revenue neutral and contributed to the decline in the national poverty rate from 18 per cent in 2007 to 8 per cent in 2010. In addition, income inequality as measured by the Gini index also fell over the same period from 47.6 to 45.3. Similarly, the comprehensive *Poverty Eradication Action Plan of 1997-2008* in Uganda contributed significantly to reverse the upward trend in poverty (poverty rates fell by 6 percentage points between 2005 and 2009).

In advanced economies, efforts are needed to ensure that the unemployed workers continue to receive adequate income support while being encouraged to transition to areas where new jobs are being created. This means placing emphasis on skills training and upgrading through active labour market programmes – with a focus on youth for whom skills erosion is a particular challenge. In a number of countries, e.g. Austria, Belgium and the Netherlands, new training programmes have tried to favour the school-to work-transition and to ensure youths remain attached to the labour market. Here, the successful delivery of these programmes will hinge on an effective employment service. Indeed, training provisions and active labour market programmes more generally have a greater likelihood of success if delivered through an efficient employment services.

A sustainable and global recovery will only be possible through improved coordination.

Choosing the correct combination of expenditure and revenue when implementing austerity measures and consolidating public finances at the right pace, crucial though they are, will not be enough to achieve a sustainable recovery, notably for jobs and incomes. International policy coordination is also needed. There is a growing risk that so many countries moving in the same direction will trigger a wage or tax competition that will lead to a combined race-to-the-bottom strategy. Yet, historical evidence from the Great Depression of the 1930s and the deep recessions of the 1970s and 1980s,[15] and more recent empirical evidence[16] has suggested that the gains for coordinated policy efforts are substantial:

14. Barnett and Brooks (2010).
15. Oudiz et al. (1984).
16. A number of theoretical and empirical analyses, based on a variety of approaches, have argued about the significant gains from coordination. See, for example: Canzoneri et al. (2005), Cooley and Quadrini (2002), Kollmann (2002), Pappa (2002), Sutherland (2002) and Tchakarov (2002).

- *Coordinated responses boost aggregate demand:* Advantageous coordination in the fiscal sphere has the potential to allow all countries to reach a higher level of economic growth.[17] One of the channels through which this occurs is that a fiscal stimulus in a country increases its aggregate demand, which results in an increase in aggregate demand of partner countries through increased trade (with the effects being more significant when countries have stronger links in commodity and financial markets).[18] In 2011, with almost 64 per cent of all EU 27 exports remaining within the EU 27, it is clear that there are considerable potential gains to be made from policy coordination.[19] Additionally, expansionary fiscal policies may raise output while pushing inflation downwards due to a domestic exchange rate appreciation.[20]

- *Uncoordinated response leads to more uncertainty and volatility:* As the current economic crisis has proved, lack of political will to coordinate policy responses creates an environment of uncertainty that has detrimental consequences for economic and employment growth. The current uncertainty, for example, has had an especially adverse effect on banks and bank lending, with particularly adverse consequences for small and medium-sized enterprises. Moreover, as Chapter 4 shows, uncertainty and volatility give firms an incentive to delay investment and employment decisions.

- *Other gains from policy coordination:* Closer policy coordination has more benefits than purely macroeconomic ones. For example, in general, countries have imperfect knowledge of the actions taken in other countries. Thus, there are informational gains to be made from closer harmonization of macroeconomic policies. Moreover, there is an important potential for strengthening political ties that comes from closer policy coordination. A virtuous cycle of closer policy coordination can be established; one that enhances macroeconomic and social gains, which in turn further reinforces the harmonization of policies, and so on.

17. Oudiz et al. (1984).
18. As early as the 1980s, Oudiz et al. (1984) had found that the direct demand effects on German output of a fiscal stimulus in the United States was 0.02 per cent, which could be tripled or quadrupled if US imports from the rest of Europe were taken into account
19. ITC (International Trade Centre), Trade Map database.
20. Naturally, the degree of international asset substitutability and the extent of wage indexation in each economy play an important role in the size of the effects.

Appendix A

Fiscal policy, expenditure and revenue composition and the effect on employment: An empirical analysis

Section C provided additional insights for policy-making through several simulations that illustrated the effects that different fiscal policies (in terms of continued fiscal consolidation, but mainly regarding changes in the composition of fiscal balances) could have on employment. This appendix explains how the model was constructed and provides the quantitative basis for simulating the policy scenarios presented in section C. The analysis draws on a cross-sectional time-series econometric model based on a panel of 32 countries[21] with quarterly data during the period 2007 to 2011. The results of the exercise (estimated coefficients and levels of significance of variables) are presented in table 3A.2. For a more detailed explanation of the economic interpretations of these results, please refer to Escudero and López (forthcoming) and the body of section C.

The analysis is based on the fundamental Keynesian principle that government fiscal balance can alter the aggregate level of employment in the short term.[22] With the aim of assessing the impact of fiscal balance variables on employment, a semi-simultaneous equation model was estimated. The model includes two equations with real GDP and employment as dependent variables.

Based on the economic theory that describes the relationship between economic growth and fiscal policy,[23] the following model was estimated:

$$ln(GDP)_{it} = \alpha_0 + \alpha_1 ln(GDP_{it-1}) + \alpha_2 ln(privategkf_{it}) + \alpha_3 ln(trade_{it}) + \alpha_4 ln(labour_{it}) + \alpha_5 ln(primary_{it}) + \alpha_6 ln(secondary_{it}) + \alpha_7 ln(FISCAL_{it}) + \varepsilon_{it} \quad (1)$$

Where:
GDP, represents real gross domestic product; *privategkf*, private investment; *trade*, terms of trade; *labour*, labour force; *primary*, primary enrolment rate; *secondary*, secondary enrolment rate; and *FISCAL*, a vector of independent fiscal variables.

The second equation of our model is a standard labour demand equation where employment is derived from output level, labour costs and capital input:[24]

$$ln(employment)_{it} = \beta_0 + \beta_1 ln(wages_{it}) + \beta_2 ln(gkf_{it}) + \beta_3 ln(GDP_{it}) + e_{it} \quad (2)$$

Where:
employment represents the total employed population; *wages*, compensation of employees of the overall economy; *gkf*, gross capital formation of the overall economy; and *GDP*, real gross domestic product.

With the aim of shedding light on the potential effect that fiscal variables have on employment, the *GDP* parameter of equation (2) is substituted by equation (1).

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21. The 32 economies included in this analysis are: Austria, Belgium, Bulgaria, Canada, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Japan, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovak Republic, Slovenia, Spain, Sweden, the United Kingdom and the United States.
22. See Blinder and Solow (1973); Pappa (2009); and Monacelli et al. (2010).
23. See Gupta et al. (2005).
24. See, for example, Layard and Nickell (1986).

This results in a new equation (3), which allows for an estimation of the relationships between fiscal balance composition variables and employment:[25]

$$ln\,(employment)_{it} = \delta_0 + \delta_1 ln(GDP_{it-1}) + \delta_2 ln(privategkf_{it}) + \delta_3 ln(FISCAL_{it}) + \upsilon_{it} \quad (3)$$

Based on this employment definition, two different specifications were established for assessing, first, the effects of changes in particular expenditure and revenue items on employment creation and, second, the impact of changes in expenditure and revenue composition on employment creation.

Model A. Impact of particular fiscal balance components on employment

The first specification (4) was carried out to capture the effects of changes in particular spending and revenue items on employment creation. Fiscal variables are therefore included in the model as a percentage of GDP, with no additional fiscal balance. Model A is formulated as follows:

$$\begin{aligned}\ln\,(employment)_{it} &= \delta_0 + \delta_1 ln(GDP_{it-1}) + \delta_2 ln(privategkf_{it}) + \delta_3 ln(pubwages_GDP_{it}) \\ &+ \delta_4 ln(interest_GDP_{it}) + \delta_5 ln(benefits_GDP_{it}) + \delta_6 ln(publicgkf_GDP_{it}) \\ &+ \delta_7 ln(indtaxes_GDP_{it}) + \delta_8 ln(incometaxes_GDP_{it}) + \upsilon_{it}\end{aligned} \quad (4)$$

Where:
pubwages_gdp represents public expenditure on wages and salaries; *interest_gdp*, interest payments on public debt; *benefits_gdp*, public expenditure on social benefits; *publicgkf_gdp*, public investment; *indtaxes_gdp*, indirect taxes received; and *incometaxes_gdp*, income taxes received.

Model B. Impact of changes in expenditure and revenue composition on employment

Mindful of the challenge that countries face in achieving the stability of fiscal balances without damaging an incipient economic recovery and hurting the labour market further, a second specification (5) of the employment model was carried out. In this second model, fiscal variables are measured in relation to total expenditures or total revenues, in order to assess directly the impact of changes in the composition of expenditure and revenue on employment creation. Model B is formulated as follows:

$$\begin{aligned}ln\,(employment)_{it} &= \delta_0 + \delta_1 ln(GDP_{it-1}) + \delta_2 ln(privategkf_{it}) + \delta_3 (pubwages_exp_{it}) \\ &+ \delta_4 (interest_exp_{it}) + \delta_5 (benefits_exp_{it}) + \delta_6 (publicgkf_exp_{it}) + \delta_7 (indtaxes_rev_{it}) \\ &+ \delta_8 (incometaxes_rev_{it}) + \delta_9 (contribut_rev_{it}) + \upsilon_{it}\end{aligned} \quad (5)$$

Where:
pubwages_exp represents public expenditure on wages and salaries (as a percentage of total expenditure); *interest_exp*, interest payments on public debt (as a percentage

25. This extended employment equation does not include some of the variables included in the economic growth model described in equation (1). The variables terms of trade, primary and secondary enrollment rates and labour force were excluded from equation (3) because the level of significance of these variables was not sufficiently high to be meaningful for the model.

Table 3A.1 Definitions and sources of variables used in the regression analysis

Variable	Definition	Source
Employment	Employed persons aged 15-64	OECD. Stat; Eurostat and National sources
Real GDP	Gross domestic product in real terms	OECD. Stat; Eurostat and National sources
Private investment	Gross capital formation of private sector	OECD. Stat; Eurostat and National sources
Public wages and salaries	Compensation of employees of General Government	OECD. Stat; Eurostat and National sources
Interest payments	Interest payments on public debt	OECD. Stat; Eurostat and National sources
Social benefits	Social benefits other than social transfers in kind	OECD. Stat; Eurostat and National sources
Social transfers in kind	Expenditure on products supplied to households via market producers	OECD. Stat; Eurostat and National sources
Public investment	Gross capital formation of General Government	OECD. Stat; Eurostat and National sources
Indirect taxes	Taxes on production and imports	OECD. Stat; Eurostat and National sources
Income taxes	Current taxes on income, wealth etc.	OECD. Stat; Eurostat and National sources
Social contributions	Social contributions receivable by General Government	OECD. Stat; Eurostat and National sources

of total expenditure); *benefits_exp*, public expenditure on social benefits (as a percentage of total expenditure); *publicgkf_exp*, public investment (as a percentage of total expenditure); *indtaxes_rev*, indirect taxes received (as a percentage of total revenues); *incometaxes_rev*, income taxes received (as a percentage of total revenues); and *contribut_rev*, social contributions (as a percentage of total revenues).

Estimation of the models

Both models were estimated first using time fixed effects following the results in favour of this estimator by the Hausman test. Both models were estimated with controls for unobservable time-specific effects in order to remove time-related shocks from the errors and prevent "contemporaneous correlation", which is the most likely form of cross-individual correlation.

Fixed individual effects were also used when estimating the models, given that unobserved country-specific effects is a common problem encountered when working with panel data. Excluding unobserved country-specific effects could lead to serious biases in the coefficient estimated, particularly when these effects are correlated with the other covariates.[26]

Models were also controlled for multicollinearity, following the VIF regress command, and for heteroskedasticity using the robust option available. However, both models failed to pass the latter with this first fixed effects estimator.

It is important to note that fixed effects estimators are based on the assumption of strict exogeneity, which is a very strong assumption, and frequently unrealistic, especially when dealing with fiscal policy variables (a common issue with fiscal policy specifications is the likely presence of endogeneity or reverse causality)

26. Gupta et al. (2005).

and when using dynamic specifications (that is, the presence of intertemporal endogeneity). Under these circumstances, it has been widely demonstrated that coefficients estimated through fixed effects might be inconsistent and downward biased.

To address the abovementioned specification problem, a final robustness test was carried out, by running both models through a generalized method of moments (GMM) estimator, using as instruments the lagged values of the dependent variable. Model A has been estimated by differenced-GMM (Arellano and Bond, 1991), and model B has been estimated by System-GMM (Blundell and Bond, 1997). GMM estimators have the potential to address both endogeneity and serial correlation problems arising from the dynamic specification of the model. Both models showed robust results in the tests for the validity of instruments (Hansen test) and the presence of serial correlation (Arellano and Bond test for serial correlation in the errors).

Finally, in model B, the two-step option of the system GMM was used given the presence of heteroskedasticity and the serial correlation arising from the dynamic form of the models. Indeed, this option uses a consistent estimate of the weighting matrix (taking the residuals from the one-step estimate) in the absence of homoscedasticity, which is asymptotically more efficient. It has been demonstrated that this specification has the downside of making standard errors severely downward biased; which is why the Windmeijer finite-sample correction to the two-step covariance matrix was used to solve this problem.[27]

Results of the models

Results from the baseline regressions are consistent with the empirical literature[28] and are highly significant. These results are detailed in table 3A.2.

Model A: The analysis shows that, in the short term and during times of crisis, public spending on compensation of employees and public investment have a strong effect on employment – a 1 per cent decrease (increase) in each of these expenditures (as a percentage of GDP) would lead, respectively, to a 0.08 and 0.05 per cent decrease (increase) in employment. On the revenue side, income taxes also revealed a positive and highly significant relationship with employment.

Model B: The findings of the analysis show that the ratios of public investment and public wages to total expenditure have a positive and significant impact on employment in the short term and during times of crisis. A 1 percentage point increase in each of these two ratios would raise employment by 0.43 and 0.3 per cent, respectively.[29] An increase in the debt burden, on the other hand, tends to be harmful for employment (since an increase in the ratio of interest payments to total expenditures by 1 percentage point reduces employment by 0.22 per cent).

27. Windmeijer (2005).

28. The effect of expansionary fiscal policy on growth and employment in the short term remains a subject of intense debate. However, a significant number of studies (mainly carried out in a sample of advanced economies) have drawn the conclusion that positive changes in government spending stimulate economy and employment growth. See Ardagna (2001); Baxter and King (1993); Fatás and Mihov (2001); Dalsgaard et al. (2001); Hemming et al. (2002); and Ludvigson (1996) for examples of these analyses. Gupta et al. (2005), in particular, show that budget composition plays a role in explaining the effect of fiscal policy on growth – which occurs mainly through private sector responses to fiscal policy.

29. These figures correspond to the value of their effect (public investment and public wages) given their coefficients (6.3 per cent and 5.2 per cent, respectively) multiplied by the part of the change in employment each variable explains (6.8 per cent and 5.6 per cent, respectively).

Table 3A.2 Regression results

	Ln of employment	
	Model A	**Model B**
Lag of ln of Real GDP	0.093 (6.08)***	0.296 (2.02)**
Ln of private investment	0.072 (4.13)***	0.288 (1.85)*
Ln of public wages and salaries (% of GDP)	0.081 (3.20)***	
Ln of interest payments (% of GDP)	–0.042 (–8.94)***	
Ln of social benefits (% of GDP)	0.109 (4.23)***	
Ln of public investment (% of GDP)	0.045 (8.09)***	
Ln of indirect taxes (% of GDP)	–0.034 (–1.87)*	
Ln of income taxes (% of GDP)	0.057 (2.21)**	
Ln of social contributions (% of GDP)	–0.011 (3.35)***	
Public wages and salaries (% of total expenditure)		0.052 (2.88)***
Interest payments (% of total expenditure)		–0.045 (–1.83)*
Social benefits (% of total expenditure)		0.036 (2.04)**
Social transfers in kind (%of total expenditure)		0.137 (2.41)**
Public investment (% of total expenditure)		0.063 (3.14)***
Indirect taxes (% of total revenues)		–0.032 (–1.85)*
Income taxes (% of total revenues)		–0.068 (–3.15)***
Social contributions (% of total revenues)		–0.054 (–3.04)***
Constant		3.27 (2.67)***

Notes: Absolute value of z-statistics in parentheses. Significance levels: * at 10 per cent; ** at 5 per cent; *** at 1 per cent.

All variables were tested for non-stationarity through the augmented Dickey-Fuller test and the Phillips-Perron test. In all cases the tests rejected the null hypotheses of non-stationarity at 1 and 5 per cent levels.

Both models were tested for first and second order serial correlation in the errors. Models showed, as expected, first order but not second order correlation. Finally, all instruments were found to be valid according to the Hansen test.

In terms of the revenue composition, the ratio of taxes – both indirect and direct taxes – to total public income has a negative and significant relationship with employment in the short term. However, a 1 percentage point increase in the ratio of income taxes (i.e. direct taxes) to total revenues has a more marked effect on employment (-0.49 per cent) than the indirect tax ratio (–0.11 per cent).

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Investing in a sustainable recovery*

4

Main findings

- World investment as a share of GDP fell to its lowest level on record during the global crisis and, at 19.8 per cent of GDP in 2010, remains 3.1 percentage points lower than the historical average. These developments mask a pronounced downward trend in advanced economies and an increase in the share of investment in GDP in emerging and developing countries. However, the chapter finds that a common trend in all regions is that investment in small firms has been impacted disproportionately by the global crisis. This is crucial since small firms are key engines of job creation.
- Those countries that experienced fewer investment losses during the global crisis also tended to have the fewest employment losses. And stagnant investment seems to act as a constraint on job recovery. Further analysis in this chapter shows that a direct increase of real investment to pre-crisis levels would have a significant impact on employment and reduce unemployment levels by almost 9 per cent.
- Importantly, investment has become more volatile, consequently affecting the predictability of the production and employment horizon. Global investment volatility increased by roughly 170 per cent between the pre- and post-crisis periods, with volatility of investment increasing more markedly in advanced economies. More volatile investment not only robs the economy of the stimulus necessary to increase job creation, but limits the overall quality of the jobs created. Increased investment volatility has gone hand-in-hand with the trend rise in the incidence of temporary and part-time employment (described in Chapter 1).
- It is therefore crucial to address both investment levels and volatility. This requires, first, improving demand prospects so as to encourage firms to invest their cash assets – which, according to the chapter, have reached unprecedented

* Excellent research assistance was provided by Florian Hartmann and Laurie Barnier.

levels especially in advanced economies and Asia. Second, it is urgent to improve access to finance among small firms. Targeted tax deductions for investment by these firms may help as well. Third, the chapter shows that well-designed public investment could play a crucial role in improving the overall investment climate while "crowding in" private investment.

Introduction

As Chapter 1 has shown, given the current economic growth environment, the prospects for an employment recovery are muted. The purpose of this chapter is to (i) assess the extent to which higher investment would help to promote recovery prospects, and (ii) examine policies and factors that would trigger higher investment.

It is a fact that global investment activity has weakened since the start of the global crisis. This was, of course, to be expected, as investment is typically more volatile than other demand components. However, the issue arises of whether the slowdown in investment has undermined productive capacity to the point that it represents a constraint on a sustainable growth and employment recovery.

Given the current economic context, private investment may be more influenced by policies that improve overall security for firms and households (economic, political and social) and reduce uncertainty than by more accommodative policies that influence the cost of capital. In this regard, maintaining aggregate demand via wage policies as well as by more direct public investment initiatives, and improved access to finance for small firms can have immediate short-term impacts on investment and employment while also improving long-term growth prospects.

In section A, the chapter reviews pre- and post-crisis trends in investment and critically analyses the extent to which lack of investment acts as a constraint on increased, and better, job prospects. Section B examines the traditional drivers of investment, such as the cost of capital, but also introduces other factors that could be important to the current economic climate, such as the degree of uncertainty facing enterprises and income distribution. Finally, section C discusses the policy implications of the findings and highlights good practices based on country experiences of addressing investment challenges.

A. Global investment and employment trends

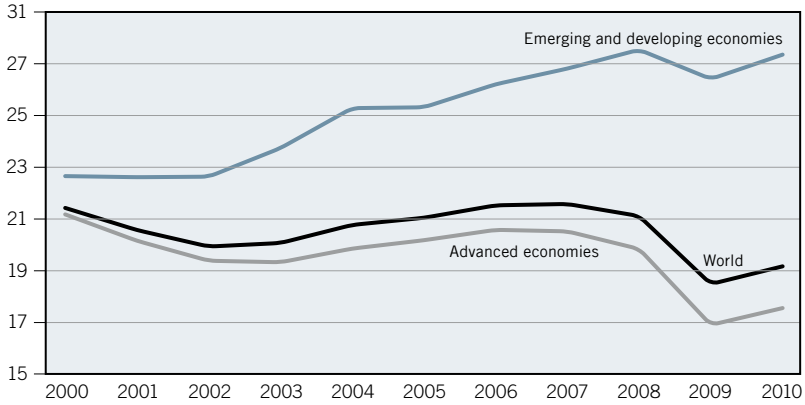
This section discusses pre- and post-crisis trends in investment in advanced and developing countries.[1] It also looks at the crucial link between investment and employment and the extent to which investment has been a driver of employment in previous crisis periods.

Globally, investment has still not returned to pre-crisis levels …

Worldwide investment, measured as the ratio of gross fixed capital formation (GFCF) to GDP, declined considerably in the wake of the global crisis and in 2010 was still about 3 percentage points below its pre-crisis level (Figure 4.1). Although

1. See Appendix A of Chapter 1 for a list of countries by income groupings.

Figure 4.1 Investment to GDP ratio, 2000–2010



Note: The chart presents gross fixed capital formation as a percentage of GDP, both at current prices.

Source: IILS estimates based on World Development Indicators.

a slight rebound in investment has recently been observable, the global annual average growth rate between 2009 and 2010 was only 4 per cent. If growth continues to follow this trend, pre-crisis levels will not be reached until 2014 on a global scale and until 2016 in advanced economies.

The global trends are principally driven by the advanced economies, which represent over 50 per cent of worldwide investment. Advanced countries suffered sharp declines in capital formation during the crisis, while emerging and developing economies suffered a much milder downturn and have already returned to pre-crisis levels of investment.

… and investment volatility has increased …

The severity of the downturn in investment activity since the start of the global crisis can be further revealed by comparing post-crisis figures with pre-crisis historical trends. Table 4.1 summarizes short- and long-term investment trends across regions and in selected economies. The first column presents the historical average of investment to GDP ratios from 1970 to 2010; while column 2 presents historical averages for the pre-crisis period, 1970–2006. Column 7 is the standard deviation of the time series from 1970 to 2006, which gives an indication of how much investment shares vary around their averages during normal times (i.e. the volatility of investment); while column 8 indicates in percentage terms how far below (or above) the historical average the investment share is in 2010.

In 2009, world investment as a share of GDP fell to its lowest level at 19 per cent. This trend was heavily influenced by developments in advanced economies where investment as a share GDP was also at a low point of 17.2 per cent. Although the investment share increased in 2010, in advanced economies it was still more than 20 per cent below its long-term average investment share (column 8). This is all the more striking since the volatility of the investment share during the entire pre-crisis period was only 7.6 per cent.

In emerging and developing countries, the investment share in 2010 was above its long-term average. In emerging economies it was 12.4 per cent above its long-term average, while in developing regions it was as much as 24.9 per cent higher in East Asia and the Pacific, but only 2.9 per cent higher in Latin America and the Caribbean. In East Asia, most of the increase in investment can be attributed to China, where the investment ratio in 2010 was 32.5 per cent above its long-term average, indicative of the country's mobilization of resources for investment since the financial crisis.

Table 4.1 Investment to GDP ratios, 1970-2010

	(1)	(2)	(3)	(4)	15)	(6)	(7)	(8)
Region/country	**Historical weighted average**	**Pre-crisis historical weighted average**	**2007**	**2008**	**2009**	**2010**	**Volatility (%)**	**Current deviation (%)**
World	22.9	23.1	22.5	22.0	19.0	19.8	5.9	–14.4
Advanced economies	22.3	22.7	21.3	20.5	17.2	17.9	7.6	–21.0
Emerging economies	26.5	26.2	28.4	29.7	28.0	29.5	5.8	12.4
Developing regions								
East Asia and the Pacific	33.8	33.2	36.5	38.5	40.7	41.5	11.8	24.9
Latin America and the Caribbean	21.2	21.1	22.3	23.5	20.1	21.7	10.2	2.9
Middle East and North Africa	26.4	26.3	28.3	n/a	n/a	n/a	10.6	n/a
Sub-Saharan Africa	20.6	20.4	21.1	22.0	20.8	23.7	17.2	15.8
China	37.0	36.1	41.7	44.0	48.2	47.8	13.0	32.5
Japan	29.0	29.7	23.7	23.6	20.2	20.2	14.4	–31.9
European Union	21.7	21.9	21.6	21.0	17.9	18.5	9.9	–15.8
United States	19.0	19.3	19.1	17.4	13.9	15.1	7.3	–22.0

Note: The historical period covers 1970 to 2010; the pre-crisis historical average is the period 1970 until 2006. Volatility is defined as the standard deviation of the time series from 1970 to 2006. Current deviation is defined as the deviation of the investment share in 2010 to the pre-crisis average, with the sign indicating whether the deviation is positive or negative.

Source: IILS estimates based on IMF World Economic Outlook (WEO) database and World Development Indicators.

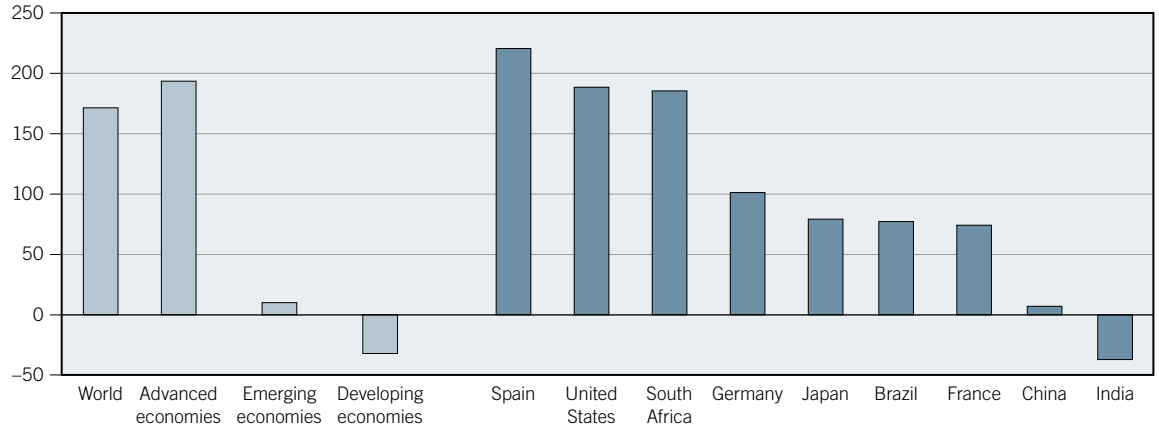
Additionally, the long-term volatility of the investment share is considerably higher in developing regions than in the emerging or advanced economies. For example, in East Asia and the Pacific and Sub-Saharan Africa volatility is particularly high, at 11.8 and 17.2 per cent respectively. This high historical investment volatility in developing economies is due to a number of factors, including increased trade and capital market opening, frequency and depth of economic recessions since the 1970s, and increased "financialization" (UNDESA, 2008).

Since the global crisis, the volatility of investment has increased more in advanced and emerging economies than in developing economies. Global investment volatility increased by roughly 170 per cent between the pre- and post-crisis period, with volatility of investment increasing by 193 per cent in advanced economies and by 10 per cent in emerging economies (Figure 4.2). In developing economies, investment volatility decreased by 32 per cent. The weaker growth prospects in advanced economies, along with heightened perceptions of risk and uncertainty, have marred the stable economic environment that firms and entrepreneurs need in order to make investment decisions, particularly those decisions regarding productive investment. Indeed, perceptions of risk tend to have a more profound negative impact on corporate investment and employment during economic recessions than during economic expansions (Bhagat and Obreja, 2011).

… thereby affecting job quality.

The combination of increased macroeconomic uncertainty and lower (in the case of advanced economies) and more volatile investment not only robs the economy of the stimulus necessary to increase job creation, but limits the overall quality of the jobs created – particularly as there is an increasing demand on the part of firms

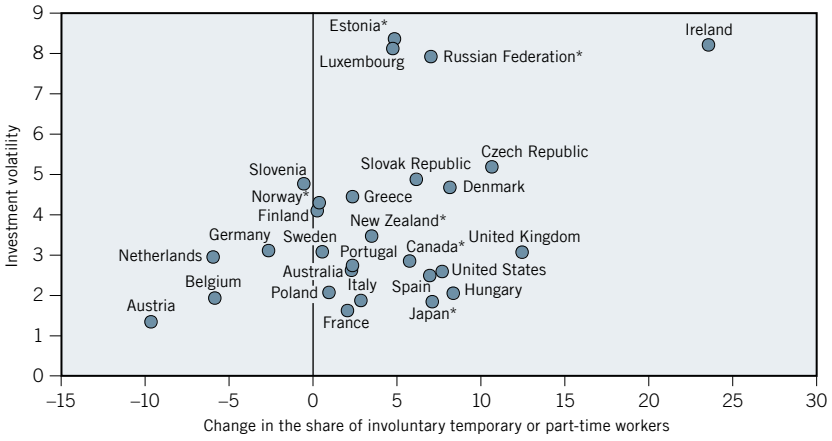
Figure 4.2 Change in investment volatility, 2006–2011 versus 1995–2005



Note: The change in volatility is measured as the percentage change in standard deviations between the two periods.

Source: IILS estimates based on World Development Indicators, 2012.

Figure 4.3 Increased investment volatility associated with lower job quality



Note: Volatility is measured as standard deviations for the period Q1 2006–Q3 2011. An asterisk (*) indicates the share of involuntary part-time employment in total part time employment in 2006–2010; all other indicators refer to the share of involuntary temporary employment in total temporary employment during the same period.

Source: IILS estimates based on OECD.Stat.

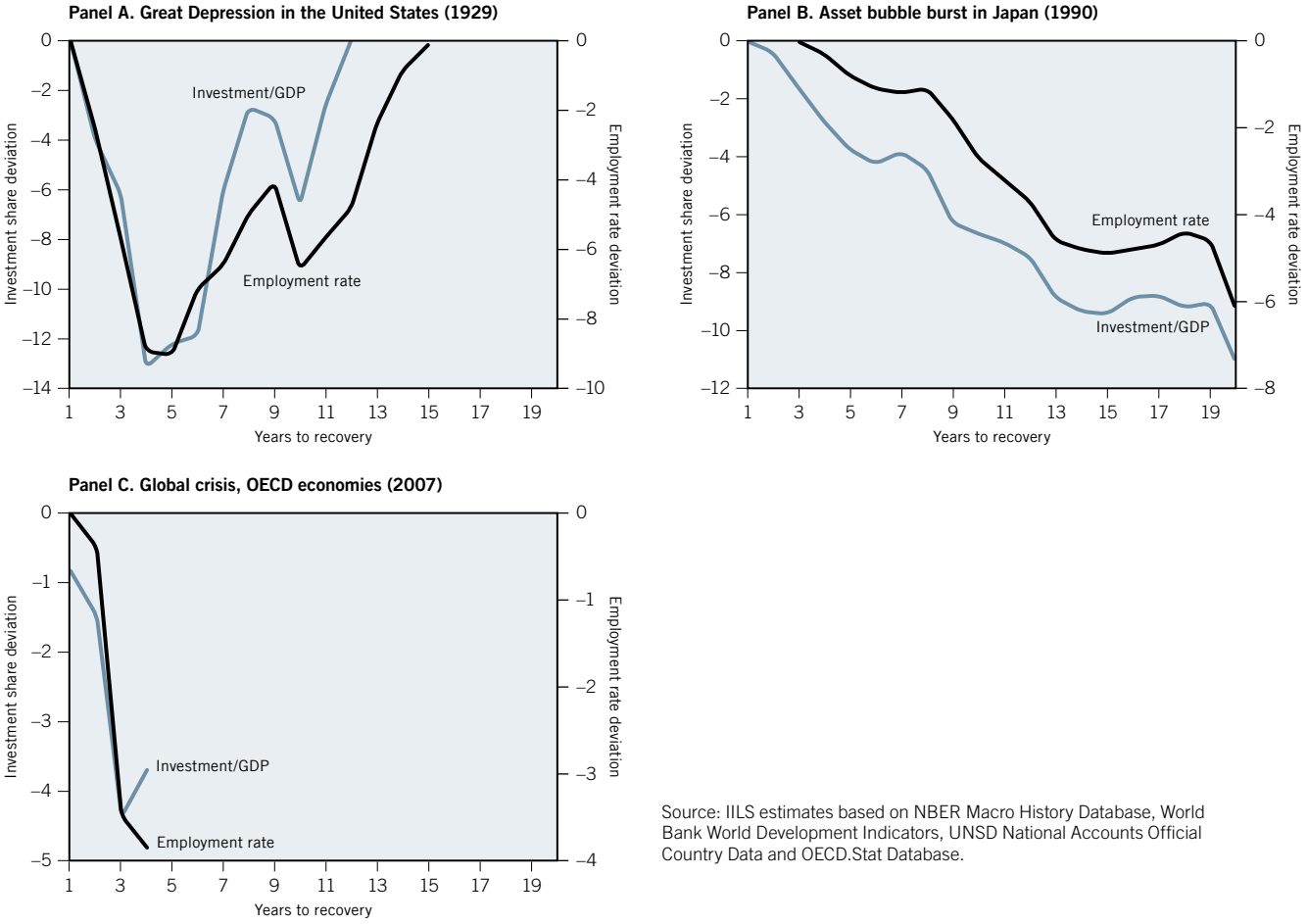
for more flexible hiring and firing practices as a buffer against large and unexpected swings in the overall level of economic activity (see Chapter 2 and UNDESA, 2008). This deteriorating labour market trend is reflected in the increasing share of temporary and part-time employment, which has been closely correlated with increased investment volatility since the crisis (Figure 4.3).

In previous crises, investment recovery tended to lead employment recovery …

In previous crises, investment and employment followed strikingly similar patterns, with employment growth lagging slightly behind the recovery in investment. During the United States' Great Depression from 1929 to 1940, it took investment 12 years to return to pre-crisis levels, and employment 14 years (Figure 4.4, panel A). Since Japan's asset bubble crash (from 1990), two decades have passed and investment and employment have still not returned to their pre-crisis levels (Figure 4.4, panel B).

It is worth noting that in both the United States' Great Depression and Japan's asset bubble crash, an initial turning point in investment and employment was reached at the 5- or 6-year period; however, the duration of the recovery was impacted by the magnitude of the stimulus programme and the time it took before

Figure 4.4 Years to investment and employment recovery in previous crises



Source: IILS estimates based on NBER Macro History Database, World Bank World Development Indicators, UNSD National Accounts Official Country Data and OECD.Stat Database.

austerity measures were implemented (Box 4.1). Currently, in this second phase of the global crisis, the decline in investment rates in OECD economies, though severe, is certainly less than at the same 5-year juncture in the Great Depression. But, it is somewhat similar to that of Japan's asset bubble crash, which should serve as a reminder that even though investment is on the mend, premature austerity could thwart the recovery and lead to a slow downward spiral (Figure 4.4, panel C).

… which is consistent with investment–employment patterns during the current crisis

Figure 4.5 compares the loss in investment with that of employment in selected economies during the period 2007–2010. In general, the figure shows that the countries with smaller declines in investment as a share of GDP have the best outcomes in terms of employment.

In the Eastern European economies, where there have been considerable investment declines, these declines have been accompanied by increases in unemployment. In contrast, Brazil, China and the Philippines all performed relatively well during the global crisis in terms of employment and also managed to improve their investment to GDP ratio. Between 2007 and 2010, Brazil's investment to GDP ratio increased by 0.9 percentage points, China's by 6.4 percentage points and the Philippines by 3.6 percentage points; while the unemployment rate fell by 2.6 percentage points in Brazil and remained virtually flat in China and the Philippines. In all cases, public infrastructure investment has been an important component of total

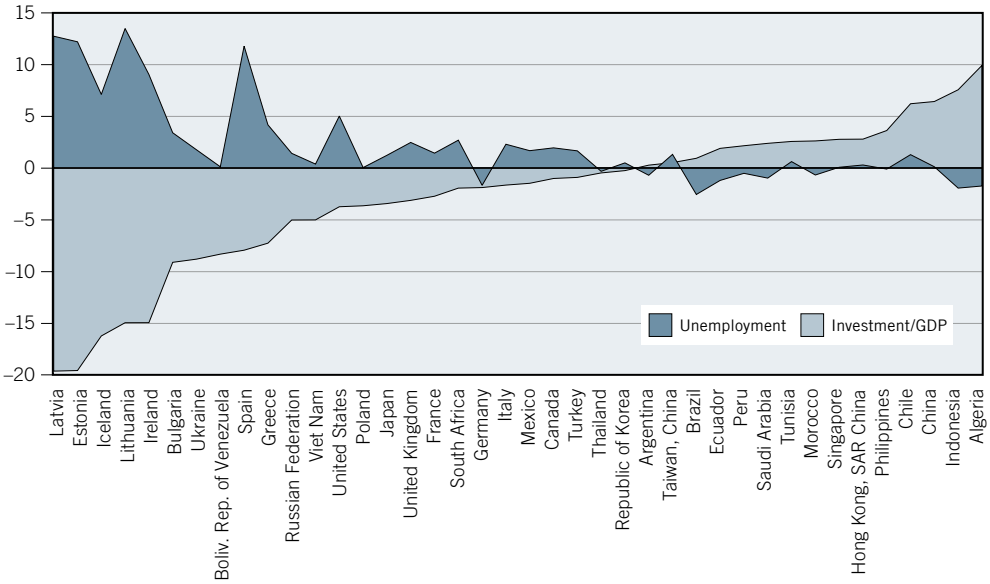
Box 4.1 A tale of two crises

During the Great Depression, unemployment increased from 4 per cent in 1929 to its peak of 25 per cent in 1933. A Keynesian-style economic stimulus, in the form of the "New Deal", led to an initial increase in demand for investment and employment between 1932 and 1937. The programmes implemented, which included public works for the unemployed, subsidies for farmers, numerous business regulations and increased government spending and entitlements under the Social Security Act, pushed government spending from about 12 per cent of GDP in the 1920s to 20 per cent in the 1930s. However, in an effort to balance the budget during the nascent recovery contractionary policies were implemented, which were accompanied by steep declines in both employment and investment (DeLong, 2008). It was not until the economic expansion associated with the Second World War that growth finally recovered and investment and employment achieved pre-crisis levels.

In Japan, after the burst of the asset bubble in 1990, the economy fell into a long and still ongoing "growth recession", during which growth was not strong enough to increase the use of idle resources, such as labour and capital. A series of small stimulus packages in the 1990s, which included public investment in roads and bridges, helped to stem the deceleration in private investment and also employment losses (Krugman, 2008) (Figure 4.4, panel B). However, the introduction of tax increases in 1997 to address the growing deficit killed off the recovery before it had gained an adequate foothold.

Although, the government implemented a major public works programme in 1998, amounting to 6.7 trillion yen (US$58.2 billion) the impact was short-lived. It was not until 2003 that investment and employment stabilized (owing to a rebound in exports to the United States, China and other emerging economies). The global economic crisis halted this improvement in activity, and investment and employment are again on a downward slide. In essence, the investment share and the employment rate have still not recovered to 1990 pre-crisis levels and changing demographics and lower productivity have made policy responses particularly difficult.

Figure 4.5 Employment and investment changes during 2007–2010, in per cent, selected economies



Note: The Figure shows the per cent change in investment as a share of GDP and the unemployment rate over the period 2007 and 2010. Figures above the axis represent gains in investment and employment, while those below represent losses.

Source: IILS estimates based on IMF WEO database

investment. For example, Brazil allocated (and spent) R$657.4 billion (US$396 billion) between 2007 and 2010 to public infrastructure development, and in China and the Philippines one of the driving forces for growth prior to the crisis was public investment (Brooks and Go, 2011; Chuan, 2007; Son and San Andres, 2009).

Policy simulations further suggest that increasing investment to pre-crisis levels in high-income economies would lead to substantial job gains (Appendix A). In the previous section, it was shown that the average increase of real investment that high-income countries would need in order to return to pre-crisis investment levels is 20 per cent. Taking the example of the United States (where an exogenous

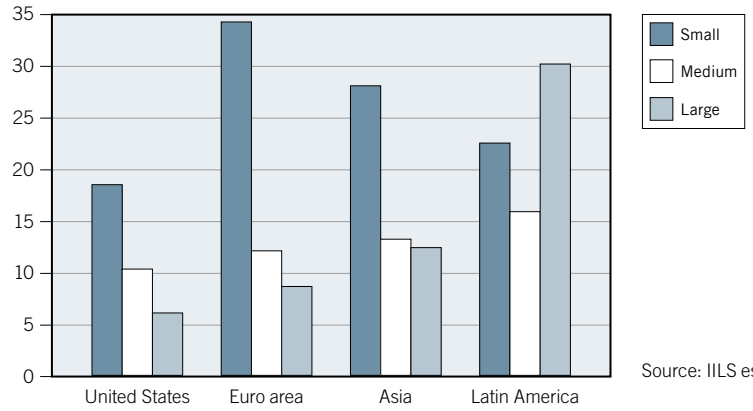
increase of real investment by about 17.8 per cent is needed to achieve pre-crisis levels), the effect on unemployment is computed. The simulation shows that a direct increase of real investment would have a significant impact on employment and reduce current unemployment levels by 8.9 per cent.

B. Drivers of investment

Investment in small firms has been particularly hard hit by the crisis.

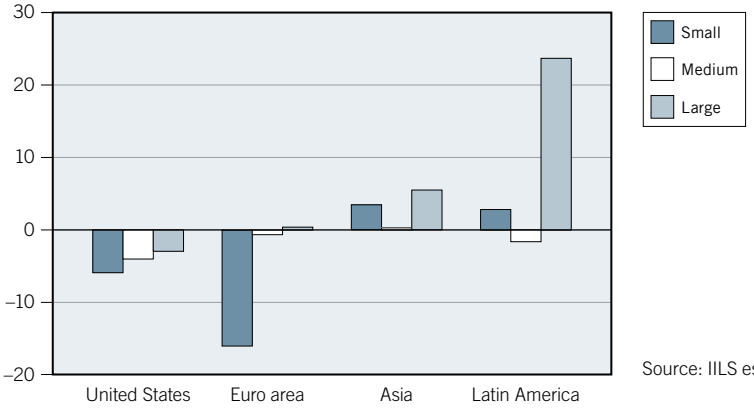
Investment in listed small and medium-sized firms grew at a higher average annual rate than investment in large companies during the pre-crisis period.[2] Between 2001 and 2006, small firms' investment grew at least twice as much annually as larger firms' investment in the United States, the Euro area and Asia, while medium-sized enterprises' investment growth was about 40 per cent greater than investment in large firms in the United States and the Euro area (Figure 4.6). The strong investment growth in small firms is a complement to their job-creating ability – since in many economies small and medium-sized enterprises (SMEs) represent the bulk of employment. For example, in the United States, about two-thirds

Figure 4.6 Average annual investment growth, by company size, 2001–2006



Source: IILS estimates based on FactSet Research Systems.

Figure 4.7 Average annual investment growth, by company size, 2007–2010



Source: IILS estimates based on FactSet Research Systems.

2. Small firms are categorized as the lowest tertile of firms by number of employees (in the sample), large firms the upper tertile and medium sized firms the remainder. The calculations are regionally based, thus absolute firm size differs by region.

of the jobs created are among enterprises with fewer than 5,000 employees (US Census Bureau, 2012).

However, since the onset of the global crisis (2007–2010) smaller firms have been much harder hit in terms of investment declines than larger firms (Figure 4.7) In particular, smaller firms in Europe faced declines in investment growth of about 16 per cent on average per year compared to an increase of 0.3 per cent for large firms between 2007 and 2010. In the United States, smaller firms suffered investment declines of almost 6 per cent annually, while investment in large firms declined by 3.2 per cent during the same period.

SMEs were also more adversely impacted in Asia and Latin America in terms of investment during the crisis. Growth decelerated by close to 20 per cent in small firms in Asia and Latin America, almost treble that of larger firms – from a 22.0 per cent annual average increase pre-crisis, to 3.4 per cent after the crisis in Asia. In Latin American, growth slowed from 22.5 per cent to 2.8 per cent. Larger firms were considerably more resilient during the crisis in these two regions, with growth slowing by about 7 per cent in both Asia and Latin America.

Firms' cash holdings have reached their highest value on record.

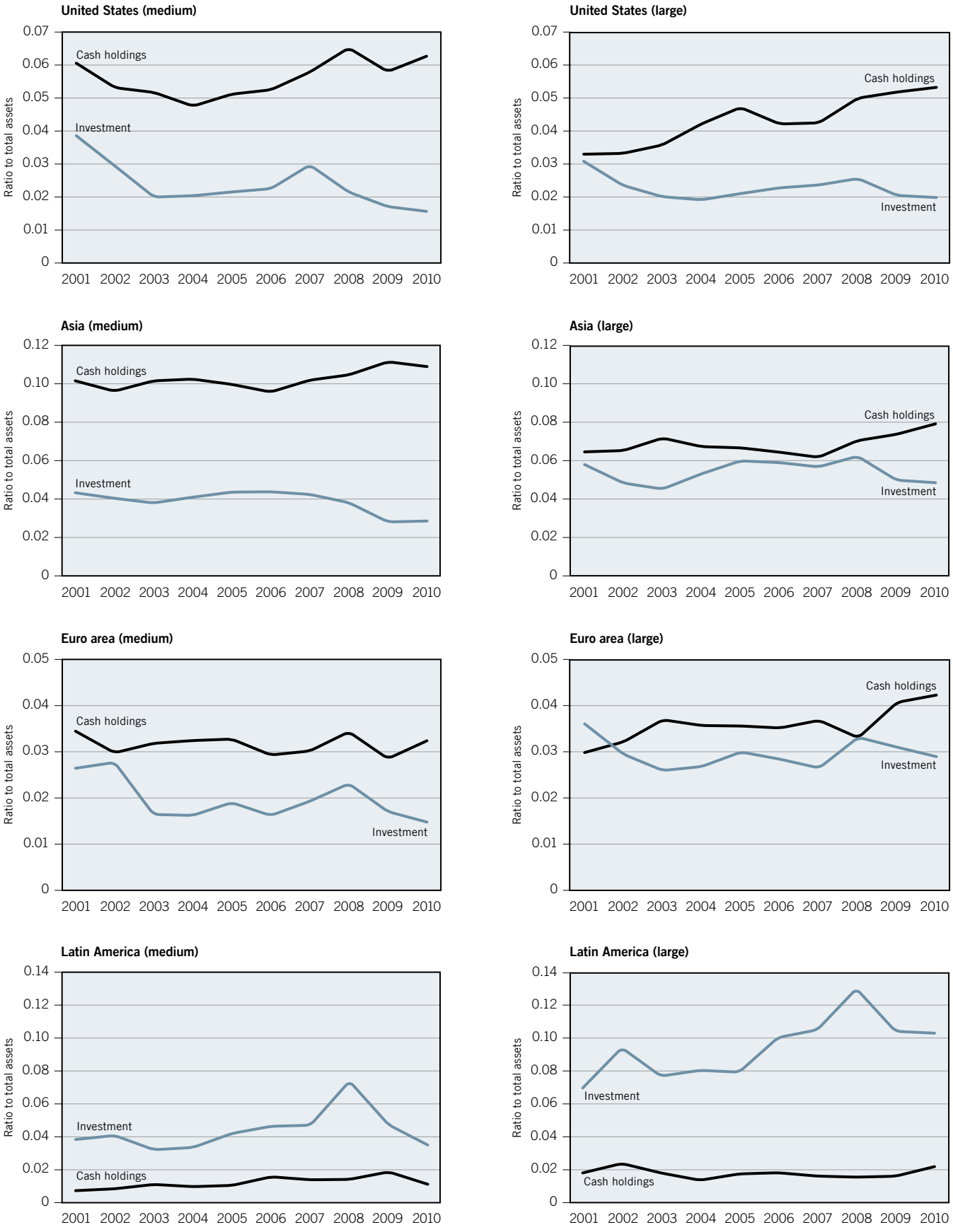
Firms' reluctance to take on additional investment risk is evidenced by their sizable liquid asset holdings, which have reached unprecedented global levels. In general, studies have found that finance-constrained firms tend to hold excess cash to ensure their long-term survival in adverse economic periods and during periods of uncertainty in terms of access to external financing (Baum et al., 2004). The result of such behaviour is that firms forgo investments that could conceivably yield a higher return.

The situation is particularly acute for smaller firms, which are younger, riskier and tend to face more restricted access to external financing than larger firms ((Bigelli and Sànchez-Vidal (2011) and Han and Qiu, 2007)). In general, larger firms tend to hold less liquid assets as a share of total assets than medium-sized firms in the United States and Asia (Figure 4.8). Cash holdings increased markedly in Asia following the global crisis, accompanied by a considerable fall-off in investment across firms of all sizes. In the United States, the share of cash holdings in total assets in medium-sized firms increased from around 5.2 per cent in 2006 to around 6.2 per cent after the crisis; while in larger firms it rose from about 4.2 per cent in 2006 to 5.3 per cent in 2010. Additionally, there is an inverse relationship between investment and cash holdings, with the increase in cash holdings impacting investment more severely in the case of smaller firms than in larger firms. This lends support to the argument that smaller firms finance more of their investment out of cash holdings, and less from external financing (Beck et al., 2008). Nevertheless, large firms, which tend to have better access to external finance, have also increased their cash holdings considerably.

In European and Latin American firms cash holdings as a share of total assets are roughly equivalent across firm size (Figure 4.9). In Europe, in particular, cash holdings of larger firms have increased at a faster pace since 2008 than medium-sized firms, although investment in large firms (as a share of total assets) still remains higher.

In Latin America, where cash holdings are particularly low, investment patterns are much more erratic and suggest greater use of external financing for investment. Nevertheless, medium-sized firms have considerably less investment as a share of total assets than large firms.

Figure 4.8 Cash holdings and investment as a percentage of total assets by firm size, 2001–2010



Source: IILS estimates based on FactSet Research Systems.

In general, lower cost of capital boosts investment …

In theory, investment is characterized as a present sacrifice of resources for future benefits: investment today cannot be paid out as dividends by firms or consumed by households. Hence, on an economy-wide scale, investment is the counterpart to macroeconomic saving, with interest rates acting as a possible equalizer between the two variables. For the household, high interest rates create an incentive to increase saving, while low interest rates have the opposite effect.

For the firm, the market interest rate represents a cost of capital. In this respect, the market interest rate can be used to discount the value of future income streams and to determine if an investment project has a positive net present value (NPV). Firms undertake those projects that have a positive NPV. Increasing the interest rate leads to a decline in NPV, and thus to fewer investment projects being undertaken. Lower interest rates provoke the opposite effect since they raise NPV. Therefore, the interest rate is the classical instrument which policy-makers use in an attempt to stimulate private investment.

However, the mechanism by which investment can be stimulated through interest rate cuts is complex. Costs of capital are determined through long-term real interest rates. Central banks can only influence nominal short-term interest rates. Although large central banks like the United States Federal Reserve System and the European Central Bank have succeeded in lowering short-term interest rates through expansive monetary policies, the term structure of the interest rates can only be marginally controlled and reacts to other factors, such as expected inflation rates or risk considerations of market participants.

Additionally, other factors such as tax rates and tax policies, in the form of depreciation rates, marginal personal income tax rates or marginal corporate tax rates, and tax credits also impact on the cost of capital.

… but reducing capital cost is not sufficient to solve the current crisis.

In the current economic environment, the classical drivers of investment seem inadequate to explain the massive drop in investment that has occurred, particularly in advanced economies. Nominal interest rates have fallen to historical lows in a number of countries, such as the United Kingdom and the United States, and, as the *World of Work Report 2011* has shown, the tax burden on investors and capital owners has been declining in most countries over the past decades.

Thus, since the drop in investment during the crisis has not been caused by an increase in the cost of capital, the extent to which a decrease in the same factors can reverse low investment activity is questionable. Additionally, since short-term nominal interest rates are already close to zero, the possibilities for conventional monetary policy are exhausted. Indeed, studies such as McCulley and Pozsar (2012) suggest that much of the developed world is in a "liquidity trap", a situation which typically arises after the burst of a debt-fuelled asset-price bubble. Although the presence of a liquidity trap is still somewhat controversial, many other prominent economists agree with this view.[3]

In such a situation, tax and interest rate policies have a limited potential and can only play a complementary role in a policy approach that supports a recovery of investment. Other factors, such as income distribution and uncertainty, may have a more prominent role.

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3. See, for example, Evans (2010); Krugman (2011) and Delong (2012).

Box 4.2 Growth and distribution

In underemployed economies – when capital and labour are not fully utilized – an increase of the wage share can have ambiguous effects on economic activity. Depending on how saving and investment decisions react in response to a (policy-induced) change of the wage share, aggregate demand on the goods market can either increase or decline. At the same time, any changes in aggregate demand feed back into an economy's income distribution and affect the wage share, depending on labour's bargaining power and the distribution of productivity gains. After these adjustment processes to the goods market and income distribution have taken place, the economy arrives at a new equilibrium for output and the wage share.

If (equilibrium) output has expanded in response to an initial reduction of the wage share, the economy is referred to as "profit-led", while in the case of a contraction of output the economy is referred to as "wage-led" (see Bhaduri and Marglin (1990)). Belser and Lee (2011) emphasize that wage-led growth hinges critically on the question of whether investment is wage-led. Investment, being part of aggregate demand, is wage-led if an increase of the wage share results in an expansion of investment. The authors mention two important channels that explain how investment could be wage-led. First, if demand is strongly wage-led via the standard accelerator effect in the investment function. Second, if productivity is wage-led and investment reacts to productivity growth, then investment increases in response to wage increases.

Different constellations of aggregate demand, capacity utilization and the distributive schedule result in different responses of the economy to a policy-induced change in income distribution. Economies tend to be wage-led if capacity utilization is low and cyclical movements of the wage share result in a non-linear distribution schedule (see Nikiforos and Foley (2011)).

A shifting income distribution can lead to investment constrained growth.

An important consideration in better understanding why investment has not yet recovered lies in the possible mismatch between saving and investment decisions. Household saving is not automatically channelled into productive investment by firms. Investment decisions are made by firms (or entrepreneurs) and saving decisions are made by a large number of heterogeneous households. These decisions made by different actors in the economy are influenced by the income distribution (Kalecki, 1971).

Growing income inequalities can lead to an inveterate excess of planned saving over investment, creating the need to constantly find sources of additional aggregate demand.[4] If the willingness of governments and households to save is higher than the willingness of firms and entrepreneurs to invest, economies can be caught in a situation of "investment constrained growth". Higher saving and higher income growth can only be achieved if investment increases at the same time, otherwise the mismatch between desired higher saving and constrained investment is inevitably resolved through a contraction of output. Therefore, private households and governments cannot attempt to increase saving at the same time, especially not in all countries simultaneously.

The conjunction between income distribution and economic growth has long been recognized by the economics literature in the Keynesian tradition. The functional income distribution (that is, the distribution of income between labour and capital) can become a key determinant of investment, employment and overall

4. Creating additional domestic investment demand is one option to close this gap. Other possibilities are net exports or additional debt-financed consumption of low-income households. The latter has been identified as one of the sources of the sub-prime mortgage crisis.

aggregate performance. In fact, increasing wages can lead to an expansion of output and eventually to an increase in the growth of capital through increased investment. However, as the *World of Work Report 2011* demonstrated, profit shares have been increasing while their counterpart, the wage share, has declined over the past decades in most countries, thus shifting the distribution of income from labour to capital. The impact of the wage share on economic growth has mainly been discussed in the context of so-called wage-led and profit-led economies (Box 4.2).

Global economic uncertainty can inhibit investment and employment …

Another essential factor that can impede investment activity is economic and political uncertainty, which can have important implications for employment.[5] For instance, Baker et al. (2012) show that for the United States an increase in the level of policy uncertainty foreshadows a drop in private investment of about 16 per cent within one quarter and leads to reductions of aggregate employment of 2.3 million jobs within two years.

A high level of uncertainty gives firms an incentive to delay investment and employment decisions. If many firms postpone making investments or hiring employees, the economy as a whole contracts, generating a recession or trapping the economy in a recessive state. On the contrary, once uncertainty is reduced, firms start hiring and investing again to address pent-up demand. The mechanisms through which uncertainty depresses economic activity can be manifold (see Leahy and Whited (1996)). Gilchrist and Williams (2005), Fernandez-Villaverde et al. (2011) and Pastor and Veronesi (2011) find that uncertainty pushes up the cost of finance; Panousi and Papanikolaou (forthcoming) identify an increasing managerial risk-aversion, and DeMarzo and Uuliy (2006) and Narita (2011) find an intensification of agency problems that reduces the value of both new and existing employment and business and financial relationships.

As previous chapters have shown, investors face high degrees of uncertainty in a number of areas, including job growth, labour regulations and fiscal austerity. As the previous section illustrated, investment rates have continued to struggle, despite significant interest rate cuts and other efforts to revive private investment. Indeed, the degree of uncertainty has increased considerably over the past decades, and particularly during the crisis. One general measure of uncertainty is the Volatility Index (VIX), produced by the Chicago Board Options Exchange (CBOE) (Box 4.3).

Figure 4.9 illustrates the average VIX over a 21-year period from 1990 to 2011. In general, not only did the average value of the index increase during the two decades, but the variability increased as well. Between 1990 and 2000, the average value of the index was 18.9, indicating that investors were anticipating that asset prices would fluctuate by about 19 per cent annually. This investor sentiment varied on average by 5 percentage points over the same time period. From 2001 to 2011 the average index increased to 22.3, with a variability of 9.2 percentage points. Much of the increase in the average is owing to the core crisis period (2008–2010), during which perceived uncertainty increased to an average index value of 29.0, with the variability of the index increasing to a high of 11.6 percentage points.

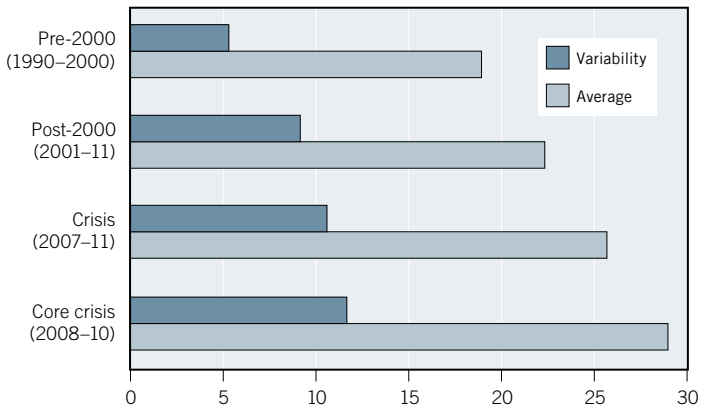
5. See, for example, Bloom (2009), who shows how uncertainty shocks drive the dynamics of investment and hiring behaviour.

Box 4.3 Uncertainty measures and the VIX

The Volatility Index (VIX) of the Chicago Board Options Exchange (CBOE) is a measure of the near-term implied volatility of Standard and Poor's 500 index options. In other words, this index – quoted in percentage points – calculates and provides on a daily basis a general indication of the expected level of volatility as perceived by market participants (or "implied volatility"). The index describes the expected annualized deviation of asset prices in per cent. For example, a VIX of 15 means that investors expect asset prices in the next 30 days to fluctuate by about 15 per cent on an annualized basis. The VIX is today considered to be the most important barometer of investor sentiment and market volatility in the world. Financial market participants also refer to VIX as the "fear index". The index spiked considerably during the global economic crisis, reaching a peak of 60 per cent.

Identifying and measuring specific sources of uncertainty can be very difficult. Using implied volatility from options prices, the VIX has the advantage of being an operational, quantifiable measure of ex ante uncertainty as perceived by financial market investors. A disadvantage of the VIX is that it not only captures anticipated uncertainty in the real economy (for example, pure business risk) but also anticipated fluctuations in financial markets that could be caused by bubbles or fads. Furthermore, financial market investors may have a different perception of uncertainty than entrepreneurs. Other measures of economic uncertainty and economic policy uncertainty have been suggested by Baker et al. (2012), who focus on policy-related uncertainty, or by Bachmann et al. (2011) who construct several measures of uncertainty based on business survey data from Germany and the United States.

Figure 4.9 Investment uncertainty, averages and standard deviation, 1990–2011



Note: Investment uncertainty is expressed as implied volatility. Average uncertainty is measured as the mean of the daily volatility index (VIX) of the Chicago Board Options Exchange. The variability of uncertainty, i.e. how strongly investors' sentiment has been changing during the period under consideration, has been measured as the standard deviation of quarterly data.

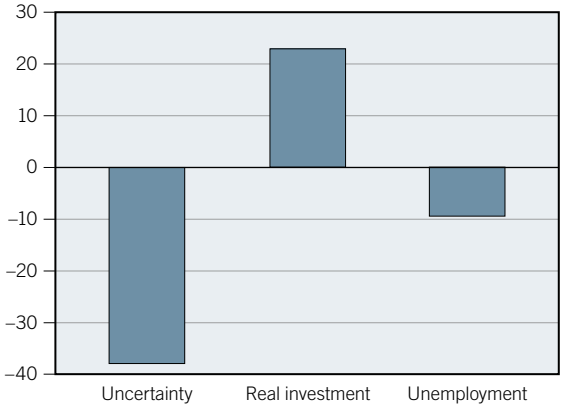
Source: IILS estimates based on Chicago Board Options Exchange.

… while decreasing uncertainty boosts investment and reduces unemployment.

In order to assess the impact of uncertainty on investment and employment, an econometric model in the form of a vector autoregression (VAR) model, quantifies how employment and investment react to changes in the level of uncertainty (see Appendix A).

In a policy experiment, it is shown how real investment growth and unemployment would respond to exogenously decreasing uncertainty to a pre-crisis (2002–2007) VIX level of 19. Such a rollback would entail a reduction of uncertainty by 37 per cent from current levels, which would boost real investment by approximately 23 per cent within two to three quarters. Current unemployment levels would react with a short time lag and fall by approximately 9.5 per cent within two to six quarters after the initial reduction in uncertainty. Based on unemployment numbers of advanced countries in the fourth quarter of 2011, a reduction in global uncertainty would translate into a reduction in unemployment in

Figure 4.10 Investment and employment impact of a reduction in uncertainty



Note: The figure shows the cumulative reaction of investment and unemployment to a reduction in uncertainty. The simulation is based on a system of dynamic equations, which is estimated through a second-order vector autoregression (see Appendix A). The estimated system is subsequently subjected to an exogenous shock that reduces uncertainty by 37 per cent (to return to pre-crisis levels). Cumulative impulse response functions are calculated and show the overall growth of real investment and unemployment six quarters after the shock.

Source: IILS estimates.

advanced countries by 3.7 million people within 18 months.[6] The jobs gap (about 50 million people globally, see Chapter 1) could therefore be closed by about 7.5 per cent (Figure 4.10). Concrete steps that policy-makers can take in order to reduce uncertainty are discussed in section C.

C. Policy considerations

As shown in sections A and B, there is currently a high degree of uncertainty driving private sector investment decisions and, consequently, many firms (particularly in developed economies) prefer to hold cash in an attempt to build up their balance sheets. In circumstances where there is a high degree of uncertainty about future growth in product demand (and labour costs), the cost of overcoming the preference for liquidity may be rather excessive.

In a situation where investment fails to respond to monetary stimuli, other measures such as improving access to loans for finance-constrained firms, providing incentives for business investment and supporting policies to increase private domestic consumption have been shown to encourage private investment. Additionally, direct government investment, particularly in the form of infrastructure development, has been shown to have a particularly strong and long-lasting impact on private investment. Thus, the productivity and employment impacts of such options would justify the additional fiscal spending.

Encouraging job-rich investment requires, first, better financing conditions for SMEs …

From the investors' perspective, economic uncertainty stems mainly from the financing conditions of investment. The opportunities for debt financing of investment have deteriorated during the crisis, especially for SMEs, and section A has demonstrated that SMEs' investment activities have suffered disproportionally in comparison to larger firms, which tend to have better access to external

6. Approximately 39 million people were unemployed in advanced economies during the fourth quarter of 2011. The following 27 advanced countries constitute the group: Australia, Austria, Belgium, Canada, Czech Republic, Denmark, Finland, France, Germany, Hungary, Ireland, Italy, Japan, Luxembourg, Netherlands, New Zealand, Norway, Poland, Portugal, Republic of Korea, Slovak Republic, Slovenia, Spain, Sweden, Switzerland, the United Kingdom and the United States.

financing. Therefore, providing SMEs with sufficient financing options is crucial to improving investment. Many central banks have already injected considerable liquidity into private banks over recent years, but this liquidity is building up in terms of excess reserves as opposed to loans to the private sector. In general, banks have increased their financing of government debt, but obtaining credit for SMEs is still difficult in countries that have been hit hard by the crisis. Direct financing of businesses through public banks or partnerships can be considered as an option in a situation of credit rationing by private business banks.[7]

… second, tackling excessive income inequalities especially in surplus economies …

Uncertainty about future employment and labour income substitutes can depress consumer confidence and lead to increased precautionary saving by households, which inevitably leads to higher business uncertainty with regard to firms' investments. Some deficit-reduction policies can be counterintuitive in this respect. As a large number of countries dealing with high levels of government debt (see Chapter 3) and negative external balances try to reduce internal and external deficits simultaneously within a very short period of time – through policies such as across-the-board wage cuts – this decreases the future income security of households and future government consumption, which will inevitably lead to higher uncertainty among firms. Thus, the challenge for governments is to implement a more careful approach that provides a more visible path to recovery and also encourages investment. This will also help to reduce the risk of social unrest, which has increased in many countries over recent years (see Chapter 1). Uncertainty about the social cohesion feeds back into economic uncertainty. Policy-makers can reduce the risk of social unrest by implementing policies that promote employment creation and address rising inequality.

… and well-designed public investment which helps to "crowd in" private investment and support more and better jobs …

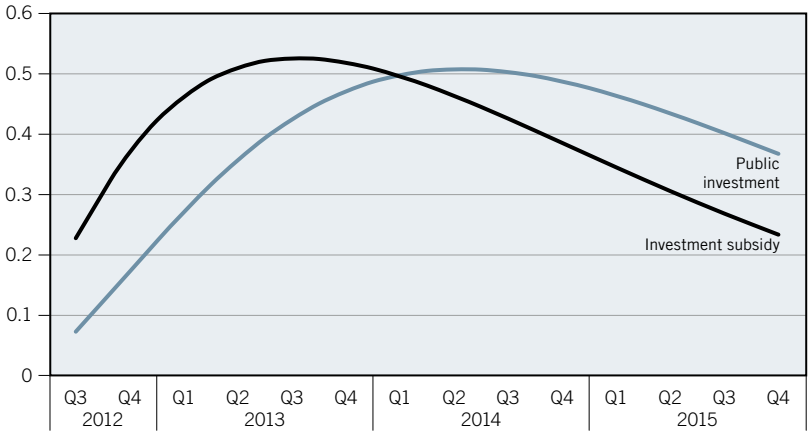
The importance of public investment for stimulating growth during previous crises, such as the Great Depression in the United States and Japan's asset bubble crash, has been discussed in section A of this chapter. In both cases, a recovery was jumpstarted through large fiscal stimuli, but thwarted prematurely owing to concern over the growing deficit situation. Although the debt situation in Europe has left a number of economies with limited options for financing additional fiscal spending, the low cost of public borrowing has also created more space in some economies for additional deficit-financed spending.

The "J-curve" approach to fiscal spending has been used to suggest that those economies with access to low financing costs in capital markets have room to either maintain or enhance deficit-financed fiscal stimuli.[8] The term "J" refers to the shape of the fiscal balance curve, which under deficit-financed spending would initially worsen before improving strongly thereafter. In this approach, after 2 or 3 years of a widening deficit, government revenues would increase owing to the

7. Successful examples of such government initiatives exist in the Industrial and Commercial Finance Corporation (ICFC), which was set up in 1945 by the Bank of England to plug a financial gap that the banks were unable to fill, as well as the loan programme launched by the European Investment Bank (EIB) for financing investments in SMEs.

8. See UNDESA (2012).

Figure 4.11 Public spending 'crowds in' private investment



Note: This figure displays the reaction of private investment under two scenarios. In a first scenario, public intervention takes the form of an increase in public investment to GDP ratio by 1 percentage point. In a second scenario, public intervention takes the form of an increase in investment subsidy by 2 per cent of private investment to GDP ratio. The policies are assumed to take effect in mid-2012 and the effects are measured until the end of 2015.

Source: IILS GEL model.

growth in employment and GDP. Once the recovery has gained an adequate foothold, austerity measures could then be implemented to more gradually reduce the public debt to GDP ratio.

Infrastructure spending has the greatest impact on stimulating private investment, since its effectiveness is independent of business cycle conditions. Simulations with the IILS Global Economic Linkages (GEL) model show the impact of public investment (in the form of infrastructure investment) on private investment in Figure 4.11. The existence of a large stock of public capital provides a positive external influence on firms' production, as public investment acts as a free input for firms, which is productivity enhancing. A 1 percentage point increase in the public investment to GDP ratio leads to a 0.2 percentage point increase in private investment by the fourth quarter of 2012, and peaks at a one for one gain by the second quarter of 2014. Thereafter, private investment spending decelerates until the end of 2015.

Similarly, an investment subsidy can also stimulate private investment by lowering the cost of capital accumulation. The benefit of such a subsidy is that it directly affects investment decisions. Following a 2 per cent increase in the subsidy, private investment increases by 0.5 percentage points at peak.

The benefits of public investment, however are that projects in this domain can also be labour-intensive and have long term benefits, such as broadband telecommunication networks, which can help to alleviate infrastructure bottlenecks. Additionally, in developing economies where the rural economy represents a large share of the economy, agriculture investment has been shown to have an effect on improving productivity, wages and employment.

… as illustrated by public investment in ICT infrastructure …

Improving telecommunications networks plays a crucial role in infrastructure development and overall economic growth. Consequently, a number of developed economies included initiatives to improve telecommunications infrastructure in their initial stimulus packages in 2008/09. In Australia, for example, this represented 10 per cent of the total economic cost of the packages (Qiang, 2010). Although this type of telecommunications investment (which is geared towards building faster fixed lines and wireless next-generation networks) is an important part of long-term development and growth strategies in both developed and developing economies, in the short term it has the capacity to create quality jobs, as

well as increase productivity and investment in other sectors of the economy. The strategy is also cost effective as much of the investment can ultimately be financed by the private sector (ibid.).

Estimates from the United States show that a US$5 billion public investment stimulus in broadband infrastructure would lead to 100,000 direct jobs and 2.5 million indirect jobs, owing to the network effects (Communication Workers of America, 2008).

In terms of financing, broadband infrastructure investment comes close to being self-financed in the sense that governments may provide initial seed money or a line of credit to private operators. In Australia and the Republic of Korea, for example, the government financed 11 per cent and 4 per cent of the total investment cost respectively, with the private sector contributing the rest (Qiang, 2010). In addition, for developing economies it also represents a major source of foreign direct investment (FDI), with developing and emerging economies attracting US$108 billion of FDI for broadband investment from around the world (UNCTAD, 2008).

… and in agriculture and rural areas.

Public investment in agriculture has been shown to have an effect on improving productivity, wages and employment. It is also labour intensive and can have spillover impacts on non-rural sectors of the economy by raising aggregate demand and increasing consumption of durable goods, which stimulates investment demand.

In rural India, for example, where per capita incomes have grown by 12 per cent in recent years, owing to improved agricultural incomes, demand for durable goods has nearly doubled – from 2.6 per cent in 2005 to 4.8 per cent in 2010 (Fontanella-Khan and Lamont, 2012). Similarly, a study by Citigroup (2011) in the Indian province of Uttar Pradesh shows that sales of durable goods by major producers have increased more than 50 per cent since 2006, and tractor sales by as much as 30 per cent.

The following experiences provide examples of public investment policy measures that can lead to increased productivity and wages and which have contributed to growth in the agricultural sector:

- *Public investments in infrastructure:* Investments in infrastructure (irrigation, roads, harbours) contribute to increasing productivity and/or access to markets for producers and to reducing production prices. From 2000, Madagascar launched a new agricultural policy with the aim of increasing the domestic supply of local agriculture and regulating urban supply thanks to imports. The policy to increase local production consisted of providing support to local producers by the development of transport and irrigation infrastructures, improved governance of decision-makers and reinforced coordination between private stakeholders and the state (Gérard et al., 2011). Positive results were observed as early as 2002, with a strong increase in paddy production of 83 per cent between 2002 and 2010.

- *Improving access to credit:* Impact analysis of credit schemes to smallholder farmers in developing countries generally shows that the availability of credit to poor farmers increases investment and helps to improve productivity. For example, a study conducted in the province of Razavi Kharasan in Iran involving 177 farmers compares the level of investments of farmers depending on their

access to credit and confirms the positive effect of credit availability on investments (Kohansal et al, 2008). Some programmes to increase access to credit have involved titling programmes to secure land rights, thus providing farmers with the opportunity to use their property as collateral. However, such policies need to be part of an integrated strategy to ensure their success. In Peru, for example, the land titling programme launched in the 1990s did not facilitate access to credit for rural households as land titles were not deemed sufficient to use as collateral to guarantee a loan (Kerekes and Williamson, 2010).

- *Public investments in human capital:* The Food and Agriculture Organization (FAO) demonstrates the positive impact of the introduction of water-harvesting techniques in sub-Saharan countries on yields and farmers' revenues, and underlines the importance of disseminating knowledge and building farmers' capacities. In Niger, for example, millet yield was doubled or tripled thanks to various water-harvesting techniques ("Projet de Développement rural de Tahoua") that have led to an increase in net profit compared with areas where they were not applied. Furthermore, the investments for water harvesting, which are proven to be successful at the farm level, are both capital extensive and labour intensive (FAO, 2001).

Appendix A

Empirical analysis of investment dynamics

The economic simulations in sections A and B of this chapter are based on a four-dimensional vector autrogressive (VAR) model. The economic dynamic is captured by the following system of equations:

$$x_t = c + A_1 x_{t-1} + A_2 x_{t-2} + \varepsilon_t$$

The column vector x_t contains the log differences of the column vector V_t with $V_t^T = (\Sigma_t\ I_t\ Y_t\ U_t)$, whereby Σ denotes uncertainty, I, real investment, Y, real GDP and U symbolizes the unemployment level. The small letter t is a time index denoting the end of a time period and Δt equals one-quarter of a year. T denotes the transpose of a matrix or a vector. Log differences are denoted by small letters so that, for example, $\sigma_t \equiv \ln\Sigma_t - \ln\Sigma_{t-1}$ and $x_t^T = (\sigma_t\ i_t\ y_t\ u_t)$. ε_t is a four-dimensional white noise process with $E(\varepsilon_t) = 0$, $E(\varepsilon_t\ \varepsilon_t^T) = \Omega$ and $E(\varepsilon_t\ \varepsilon_s^T) = 0$ for s ≠ t. The variance–covariance matrix Ω is assumed to be non-singular.

Data have been available for all variables since Q1 1990. Σ is implied stock market volatility as measured by the Chicago Board Options Exchange Market Volatility Index, VIX (see Box 4.3). The daily observations of the VIX have been transformed into monthly averages in order to be matched with quarterly data on investment, GDP and unemployment. This smoothing of the original VIX series leads to a reduction of the original sample volatility by about 7 per cent.

The vector of constants, c, and the two coefficient matrices, A1 and A2, are estimated by multivariate least squares estimation, yielding:

$$\hat{B} = X\ Z^T\ (Z\ Z^T)^{-1}$$

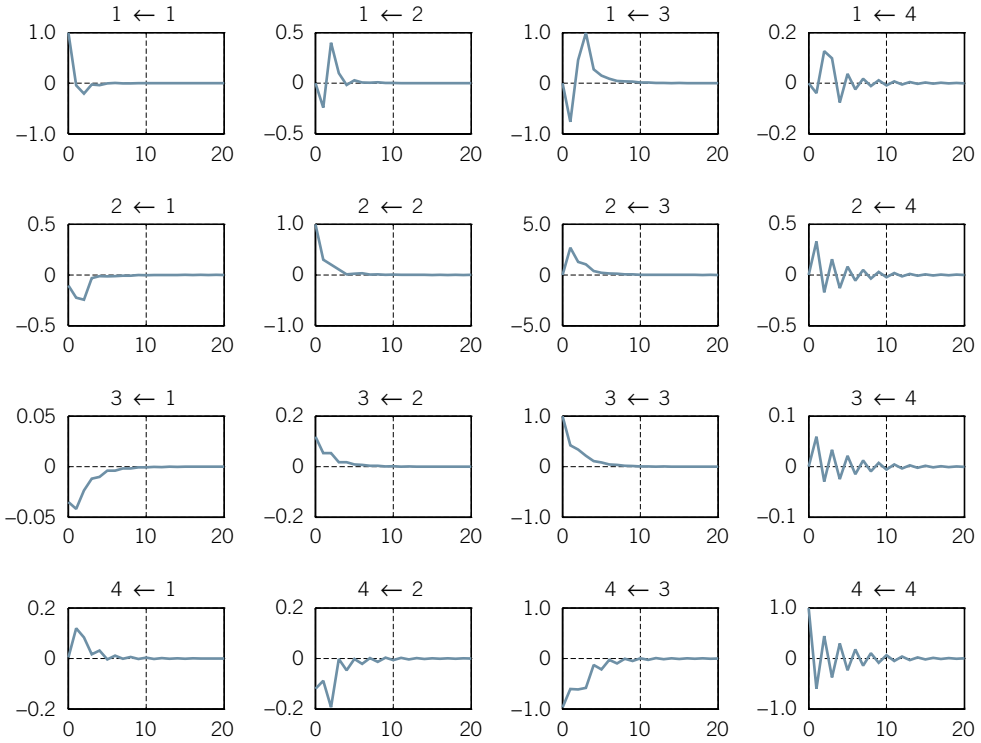
with $B = (c\ A_1\ A_2)$, (4×9); $X = (x_1, \ldots, x_{86})$, (4×86); $Z_t^T = (1\ x_t^T\ x_{t-1}^T)$, (1×9); and $Z = (Z_1, \ldots, Z_{86})$, (9×86), . Numbers in brackets denote the dimensions of the respective matrices.

The following table comprises the entries of matrix $\hat{B}$:

−0.0182	−0.0869	−0.1499	−0.8043	−0.0393	−0.1947	0.3324	1.3004	0.197
−0.0342	−0.122	−0.0158	3.015	0.3306	−0.1634	0.025	0.0183	−0.1537
0.0094	−0.0248	0.0039	0.4795	0.0593	−0.0056	0.009	0.1191	−0.0246
0.049	0.0786	−0.0195	−1.1771	−0.5961	0.0852	−0.1134	−0.1942	0.1701

All z satisfying the condition, $\det(I_4 - \hat{A}_1 z - \hat{A}_2 z^2) = 0$, lie outside the unit circle and the estimated system is therefore stable. I_4 denotes the identity matrix in this context. Satisfaction of the stability condition implies that the estimated VAR process is covariance stationary.

The impact of an exogenous shock to the system can be analysed with the help of impulse response functions (IRF). These IRF show the impact of an innovation of each of the four variables on itself and on each of the other three variables. Since innovations of the VAR are generally not contemporaneously independent of one another orthogonal innovations are constructed which are uncorrelated and have unit variance. The following chart depicts the IRF of such innovations for a period of twenty quarters. The ordering corresponds to the ordering chosen for the elements of vector x_t, thus $i \leftarrow j$ shows the response of the i-th variable in x_t due to



a unit impulse to structural shock *j*. As can be seen from the charts, most of the effects die out within about five quarters.

For the policy simulations, the cumulative responses of the system have been computed for innovations of uncertainty and real investment. For example, an exogenous increase of real investment by 17.8 per cent leads to a response of unemployment levels over the next four years to a decline of 8.9 per cent (section A).

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