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The changing nature of jobs

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PREFACE

In January 2015, the last edition of the *World Employment and Social Outlook* highlighted the lacklustre job creation that continues to plague the world economy and drew attention to the need to address the global jobs gap by bolstering aggregate demand and enterprise investment.

This current volume, *The Changing Nature of Jobs*, brings to the fore a number of trends that underlie the transformations that the labour market is experiencing.

This report, based on an analysis of employment patterns in over 180 countries at all levels of development, finds that employment patterns have changed considerably over the past decade. Full-time, stable employment contracts represent less than one in four jobs and that statistic is not improving noticeably. Moreover, a continuation of past trends would suggest that the incidence of stable employment relationships will represent an even smaller fraction of the total number of jobs in coming years.

Changing patterns of work are likely to influence trends in both aggregate demand and the overall relationship between economic growth, on the one hand, and employment and productivity, on the other. The changing nature of jobs heightens the risk of perpetuating the vicious circle of weak global demand and slow job creation that has characterized the global economy and many labour markets throughout the post-crisis period. Already, the ILO estimates that the global jobs gap is resulting in a shortfall of wages equal to around 1.2 per cent of global output. However, with increasing diversification in forms of work and workplace organization, expansion in employment alone, without due consideration given to the quality of jobs or workers' income security, risks failing to provide robust and sustainable support to aggregate demand.

These considerations raise a wide range of issues from the point of view of policy-making and the ILO itself. First, it is crucial to establish the extent to which the diversified work patterns that are emerging are the product of external factors, such as the rise of new technology and the process of production fragmentation and evolution of value chains that accompany it. The evidence in this report seems to suggest that the spread of global value chains is associated with the diversification of forms of work, as well as higher productivity (though this does not necessarily translate into increased earnings for the workers employed in those value chains). On the other hand, employment patterns vary significantly across countries, suggesting that governments, enterprises and workers have some leverage over the types of jobs that are created.

Second, the impact of different types of employment on individual well-being and social cohesion also needs to be assessed. The report shows that average incomes for workers in non-standard forms of work tend to be lower than is the case with stable jobs. Furthermore, the rise in informal employment, undeclared and temporary work arrangements, as well as involuntary part-time work, has contributed to the widening of income inequalities, which have been recorded in the majority of countries over the past two decades.

The existence of more diversified work arrangements also raises questions for social dialogue and social cohesion. Workers have different types of employment and enterprises are positioned differently along the value chain. In such a heterogeneous context, the organization of both workers and employers becomes increasingly challenging.

Third, what can policies do? The issue is how to provide adequate labour and social protection for different types of employment, while at the same time nurturing economic growth. As global employment and social conditions shift and evolve in the context of changing economic conditions, there is a need for policies to respond to anticipated changes. In this respect, the report documents considerable policy innovation in a wide range of developed and developing economies.

Their experiences illustrate the quest to achieve both higher productivity and technological innovation coupled with decent work opportunities for women and men is attainable.

Further changes are needed in social protection in the face of such changing conditions. This includes measures to enable the self-employed and those in other forms of employment to participate in social security schemes. Extension of non-contributory mechanisms provides one possible means to increase coverage, particularly for those outside standard employment, notably the self-employed.

The report also highlights cases where labour regulation is adapting to changing forms of work, and reveals that employment protection legislation has modestly increased in many countries and regions. In the cases where the level of protection has fallen in recent years, it has not led to improved employment outcomes. In general, the report indicates the importance of matching regulation to specific economic and labour market conditions.

As we approach the 104th Session of the International Labour Conference, I hope therefore that the findings in this report will help to provide support to ILO constituents in their respective endeavours to achieve better economic and social outcomes, based on sustainable enterprises and decent work for all.

Guy Ryder
ILO Director-General

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EXECUTIVE SUMMARY

The world of work is changing profoundly, at a time when the global economy is not creating a sufficient number of jobs. The ILO estimates that global unemployment figures reached 201 million in 2014, over 30 million higher than before the start of the global crisis in 2008.[1] Moreover, providing jobs to more than 40 million additional people who enter the global labour market every year is proving to be a daunting challenge. In addition to widespread joblessness, the employment relationship itself is facing a major transformation that is bringing further challenges.

The employment relationship is becoming less secure …

This report reveals a shift away from the standard employment model, in which workers earn wages and salaries in a dependent employment relationship vis-à-vis their employers, have stable jobs and work full time. In advanced economies, the standard employment model is less and less dominant. In emerging and developing economies, there has been some strengthening of employment contracts and relationships but informal employment continues to be common in many countries and, at the bottom of global supply chains, very short-term contracts and irregular hours are becoming more widespread (see Chapters 1 and 5 of this volume).

Today, wage and salaried employment accounts for only about half of global employment and covers as few as 20 per cent of workers in regions such as Sub-Saharan Africa and South Asia. In a number of advanced economies, the incidence of wage and salaried employment has been on a downward trend, thus departing from historical patterns. Conversely, own-account work and other forms of employment outside the scope of the traditional employer–employee arrangement are on the rise. In emerging and developing economies, the historical trend towards more wage and salaried employment is slowing down. The incidence of jobs in the informal economy and unpaid family work remain stubbornly high in most developing countries.

In addition, within the pool of wage and salaried workers, new dynamics are emerging. Fewer than 40 per cent of wage and salaried workers are employed on a full-time, permanent basis and even that share appears to be declining. This means that over 6 out of 10 wage and salaried workers worldwide are in either part-time or temporary forms of wage and salaried employment. Women are disproportionately represented among those in temporary and part-time forms of wage and salaried employment.

In short, the standard employment model is less and less representative of today's world of work since fewer than one in four workers is employed in conditions corresponding to that model.

… contributing to a shortage of demand, lower output and growing inequalities …

The ongoing transformation in the employment relationship is leading to important economic and social repercussions. It contributes to the growing divergence between labour incomes and productivity, with the latter growing faster than wages in much of the world. This, in turn, has resulted in a shortage of aggregate demand that has stubbornly persisted throughout the years since the crisis. This report estimates the loss in global demand at $3.7 trillion as a result of unemployment, lagging labour incomes and their effects on consumption, investment and government revenue.

[1] As detailed in the Trends edition of the *World Employment and Social Outlook* published in January 2015.

In addition, the change in the employment relationship may be fuelling income inequalities (Chapter 2). Although the evidence is mixed across countries, on average the standard form of employment is better remunerated than other types of work – and the gap has tended to widen over the past decade. Temporary and informal workers, part-time workers and unpaid family workers, many of whom are women, are also disproportionately affected by poverty and social exclusion.

… and entailing major challenges for policies and institutions built around the standard employment model.

New technology and changes in the way enterprises organize production are key factors behind the shift in employment relationships and the spread of new forms of work. Achieving the standard employment model for the majority of workers is becoming more difficult.

As a consequence, public policies should not focus solely on promoting transitions from non-standard arrangements to permanent, full-time, dependent employment. Consideration should also be given to ensure that adequate protection is in place for workers in all types of employment. The report examines the role of social protection and employment regulations in this regard (Chapters 3 and 4).

Policies to broaden and develop social protection coverage are needed in light of the changing nature of work …

Weak social protection coverage and restriction of eligibility for many benefits to those with regular employment contracts undermines the reach and potential contribution of social protection systems to large portions of the workforce. Accordingly, existing regulations should be revisited to take into account the changing patterns of work. As shown in the report, a number of countries have made substantial progress in this regard and offer possible blueprints for that progress. Where social protection systems are in the process of being established, there is an opportunity to cover various forms of work from the outset. Where systems are already well-established, there is a need to update existing eligibility and coverage to more accurately reflect the composition of the workforce.

Such policy innovations have helped extend the reach of legal, and in some cases effective, social protection to those in non-standard forms of work, through measures such as creating new contributory categories, simplifying registration and tax collection processes and subsidizing contributions to social protection systems. For instance, in Argentina, Brazil, China and South Africa, innovative forms of social protection have helped to improve income security for workers in vulnerable employment situations. In a wide range of advanced and developing economies, governments have pursued combinations of social protection and labour market policies that have resulted in an increase in formal employment.

These positive trends aside, there remain significant gaps in the social protection of workers in different types of employment. For example, contributory social insurance programmes for the self-employed, and pension entitlements for workers in non-standard forms of employment – the majority of whom are women – are still underdeveloped.

… and labour regulation must be adapted to these diverse forms of employment …

The report finds that many governments have responded to the changing patterns of work by adapting and extending the reach of employment regulations. There have been significant improvements in areas of legislation relating to self-employment, part-time work, fixed-term employment and agency work. The report finds that the protective strength of this area of labour regulation has grown steadily over time for most of the countries analysed, thanks in part to the introduction of "equal treatment" legislation, which requires equivalent protection of workers in non-standard and standard employment. Nonetheless, where out-of-date or insufficient legal frameworks do not reflect sufficiently the changing nature of jobs, large numbers of workers are still not covered by employment protection legislation. Moreover, in recent years, some countries, notably in Europe, have made changes that have reduced the level of protection for workers in both standard and non-standard employment, with a view to stimulating employment growth.

The report's analysis of the relationship between labour regulation and key labour market indicators such as unemployment suggests, however, that reducing protection for workers does not lower unemployment. Indeed, the findings in this report suggest that poorly-designed changes that weaken employment protection legislation are likely to be counterproductive for employment and labour market participation, in both the short and the long run. Clearly, there is no "one size fits all" approach in this policy space. Rather, there is a clear need for carefully designed approaches based on specific labour market conditions and on evidence of outcomes rather than ideology. This is more likely to be achieved where social dialogue helps to find the way forward.

Global supply chains can contribute to economic growth but the quality of employment and social upgrading require additional effort.

The report also examines the role of global supply chains with respect to changing employment patterns (Chapter 5). Approximately one in five workers are estimated to work in global supply chains. Sectoral analysis suggests that participation in global supply chains is associated with higher productivity – albeit with a less significant effect in emerging economies. The sectoral analysis further suggests that, on average, workers employed in sectors that participate in global supply chains earn similar wages to workers that are less engaged in global supply chains. Taken together, this divergence in productivity and wages suggests that the proportion of value added going to wages declines over time, leading to lower wage shares and higher income inequality.

The intense competitiveness and short product cycles in some global supply chains also feeds down to workers' contractual arrangements and working hours.

These patterns bring social dialogue and the question of labour market governance to the fore. While corporate social responsibility initiatives are spreading, there is still a need for bolder steps. Collaboration and cooperation by ILO constituents is thus imperative in this regard. Active labour market policies, including up-skilling, training and education are necessary to ensure that job losses deriving from technological advances and globalization of supply chains are offset by other employment opportunities. Both labour regulations and enforcement are needed at the bottom of supply chains. More generally, the implementation of international labour standards, starting with fundamental standards, is crucial to ensuring parallel development of economic and social benefits throughout the supply chain. This is the path to upward, rather than downward, convergence.

1 EMERGING PATTERNS OF EMPLOYMENT: GLOBAL AND REGIONAL TRENDS

Introduction

Nearly eight years have passed since the first signs of crisis emerged in the global economy. Despite encouraging signs of recovery in 2010–11, the more recent period has seen global unemployment march higher, to an estimated 201 million in 2014. There is also significant underemployment, particularly in many emerging and developing countries. As underscored in the ILO's *World Employment and Social Outlook – Trends 2015* report, the post-crisis world has, to date, been characterized by an uneven and fragile job recovery.

Beyond these recent trends, it is crucial to shed light on whether employment patterns have been altered in a fundamental way, pointing to possible longer term shifts. After reviewing global employment and labour productivity trends over the past two decades and analysing their linkages with economic growth (section A), this chapter examines the diversification of employment patterns (section B). This report seeks to develop a clearer understanding of the ways in which changing forms of work and workplace organization are affecting enterprises, workers and the broader world of work, and, ultimately, prospects for sustainable, job-rich economic growth. Finally, the chapter introduces the remainder of the report (section C).

A. The relationship between employment and economic growth

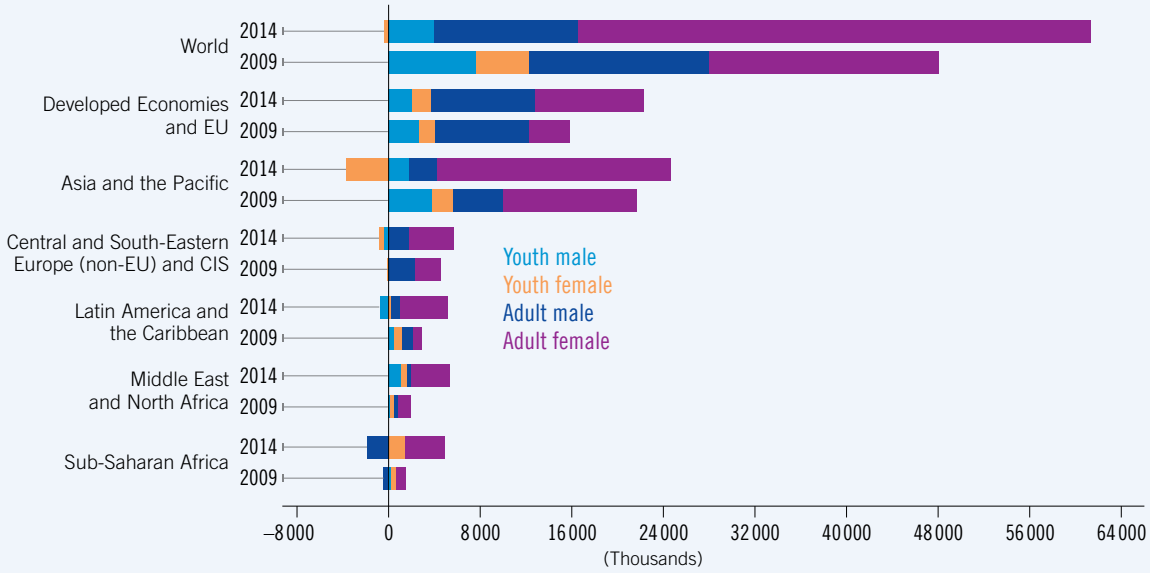
"Jobs gaps" are most significant in advanced economies, with women faring worst in recent years

At the global level, employment growth has stalled at a rate of around 1.4 per cent per year since 2011. This compares favourably with the crisis period (2008–10) when employment growth averaged just 0.9 per cent, but remains significantly below the 1.7 per cent annual rate achieved between 2000 and 2007. While part of the slowdown is due to demographic trends, even after this factor is accounted for a significant gap in employment growth remains, particularly in the Developed Economies and European Union region, in which employment growth since 2008 has averaged only 0.1 per cent annually, compared with 0.9 per cent between 2000 and 2007.

The global jobs gap, which the ILO estimated by comparing pre-crisis trends in employment-to-population ratios (accounting for demographic change) with actual, observed trends since the onset of the crisis, stood at 61 million in 2014. That is, there were 61 million fewer people in employment globally in 2014 than there would have been had pre-crisis employment growth trends continued. As indicated in the *World Employment and Social Outlook – Trends 2015* report, around half of this global jobs gap is due to unexpectedly large declines in labour force participation, with significant numbers of discouraged workers dropping out of the labour market altogether.

Figure 1.1

Global and regional jobs gaps by age-group and sex, 2009 and 2014 (thousands)



Note: See Appendix A for a list of country groupings.

Source: ILO calculations based on ILO, *Trends Econometric Models*, October 2014.

It is important to note, however, that jobs gaps vary widely across regions of the world and between different demographic groups. Figure 1.1 provides estimates of age- and sex-disaggregated jobs gaps for the world as a whole and across six geographic regions. The figure reveals that, in 2014, around 71 per cent of the global jobs gap was accounted for by the gaps in two regions: the Developed Economies and European Union and Asia and the Pacific regions, which together account for approximately 70 per cent of the global labour force.

However, a closer look reveals that the jobs gap in the Developed Economies and European Union region is far more severe than that in Asia and the Pacific. While the Developed Economies and European Union region constituted only 15.4 per cent of the global labour force in 2014, it accounted for more than 37 per cent of the global jobs gap. And 50 per cent of the increase in the global gap between 2009 and 2014 was due to the widening gap in the Developed Economies and European Union over this period. Meanwhile, the labour force in Asia and the Pacific constitutes 55.1 per cent of the global total, but the region accounted for only around 34 per cent of the global jobs gap in 2014.

Analysis of the age- and sex-disaggregated estimates shows that nearly 73 per cent of the global jobs gap in 2014 was due to a shortfall in employment among women (primarily adult women), who comprise only around 40 per cent of the global labour force.[1] Much of the stagnation in global female employment has been due to the sharp decline in female labour force participation and employment that occurred in recent years in India, which had a substantial impact on the overall jobs gap in the Asia and the Pacific region as a whole.[2]

There has also been a comparatively slower recovery in female unemployment rates over the period from 2009 to 2014 in many regions. In the Developed Economies and European Union region, the female unemployment rate decreased by 0.1 percentage points over this period, while the rate among men declined by 0.9 percentage points (table 1.1). In the European Union, unemployment rates among men and women increased between 2009 and 2014, with a larger relative increase among women. Female unemployment rate trends underperformed corresponding trends among men in all regions of the world except Latin America and the Caribbean.

1 Throughout this chapter, "youth" refers to people aged 15 to 24 years; "adults" refers to people aged 25 and above.

2 Kapsos et al. (2014) find that, while a portion of this decline is probably due to difficulties in accurately measuring contributing family work in household surveys, the bulk of the shortfall in India's female employment appears to be due to a relative decline in employment opportunities for Indian women, owing to factors such as occupational segregation and discrimination in the labour market.

Table 1.1

Unemployment rates by sex, 2007, 2009, 2013 and 2014, world and regions (%)

	Males					Females				
	2007	2009	2013	2014	Change 2009–14	2007	2009	2013	2014	Change 2009–14
WORLD	5.2	6.1	5.7	5.7	–0.4	5.9	6.5	6.4	6.3	–0.2
Developed Economies and EU	5.6	8.8	8.6	7.8	–0.9	6.1	7.9	8.4	7.8	–0.1
European Union	*6.6*	*9.0*	*10.9*	*10.1*	*1.1*	*7.9*	*8.9*	*10.9*	*10.4*	*1.5*
Central and South-Eastern Europe (non-EU) and CIS	8.6	10.6	8.0	8.0	–2.6	7.8	9.2	7.5	7.4	–1.8
Asia and the Pacific	4.2	4.6	4.3	4.4	–0.2	3.9	4.2	4.1	4.2	0.0
Latin America and the Caribbean	5.5	6.3	5.2	5.5	–0.7	9.0	9.4	7.8	8.1	–1.3
Middle East and North Africa	8.7	8.2	9.0	9.1	0.9	18.7	19.3	21.3	21.3	2.0
Sub-Saharan Africa	6.9	7.1	6.9	6.9	–0.3	8.8	8.8	8.6	8.7	–0.2

Note: See Appendix A for a list of country groupings. Numbers in the "change" columns refer to percentage point changes and may not correspond precisely to those in the annual unemployment columns due to rounding.

Source: ILO Research Department calculations based on ILO, *Trends Econometric Models*, October 2014.

Insufficient economic growth is holding back employment generation …

The slowdown in employment growth could be a result of the deceleration of economic growth, a change in the relationship between output, employment and productivity, or a combination of these factors. This subsection investigates this issue, primarily by focusing on an indicator that measures the "employment intensity" of economic growth. This indicator provides a numerical estimate of the average percentage change in employment associated with a 1 percentage-point change in output growth over a selected period – the so-called elasticity of employment with respect to output, referred to here as the "employment elasticity".

Looking at trends in employment elasticities over three historical periods (1991 to 1999, 1999 to 2007 and 2007 to 2014), the global employment intensity of growth has not varied significantly, declining slightly from an average of 0.35 during the period from 1991 to 1999 to 0.33 between 1999 and 2007, and then to 0.32 during the crisis and recovery period from 2007 to 2014.[3] Thus, over these periods, each percentage point of global GDP growth has been associated with an increase in employment of between 0.32 and 0.35 per cent.[4] Viewed in this context, the weak global employment performance during the post-crisis period has not been due to a marked decline in the employment intensity per se. Rather, weaker employment performance seems to reflect the fact that global economic growth has been far weaker than during the pre-crisis period.

At a more disaggregated level, however, there has been considerable variation in employment intensity over the period, particularly in the advanced economies. Figure 1.2 provides estimates of employment elasticities and average GDP growth rates over the three periods for developing and advanced country groupings. In the advanced economies as a whole, the largest employment elasticity was registered during the crisis and post-crisis period from 2007 to 2014 and yet overall employment growth during this period was far weaker than in the two pre-crisis periods. The reason for this is that economic growth during this period averaged only 0.7 per cent, which is around 2 percentage points below the growth achieved in the periods prior to the crisis. Consistent with the global picture, in the advanced economies as a whole, the key problem is not that economic growth has been less employment-intensive in recent years, but rather that there has simply not been enough economic growth to accelerate employment generation and prevent the jobs gap from widening.

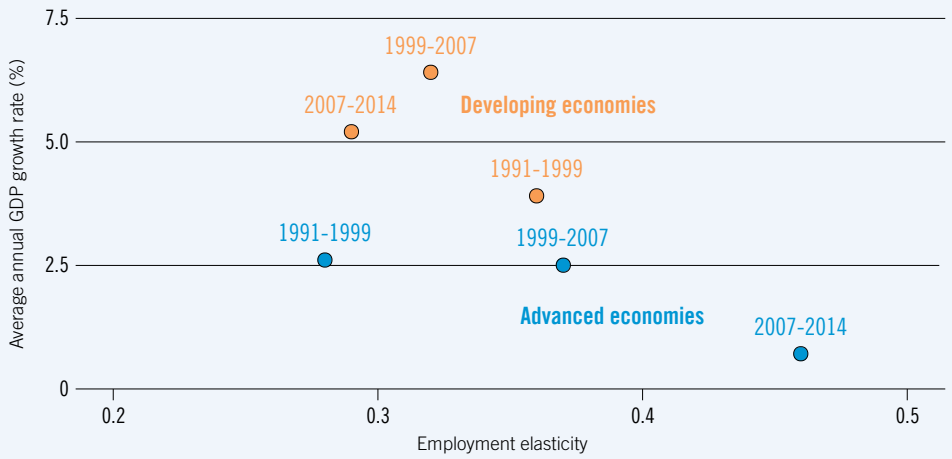
A somewhat different pattern is evident across the developing economies, which exhibited less variation in employment intensity over the three periods. The most employment-intensive growth was achieved in the period from 1991 to 1999 (an employment elasticity of 0.36). However, the combined economic growth and employment growth performance was significantly better in the period from 1999 to 2007, in which average annual economic growth accelerated to 6.4 per

[3] Aggregate employment elasticities were calculated on the basis of country-level employment elasticities, weighted by labour force size. Country-level employment elasticities were calculated through bivariate regressions of log employment on log output.

[4] It is important to note that the employment elasticity also provides an indication of the output–productivity relationship. For a given rate of economic growth, an increase in the employment elasticity corresponds to greater employment intensity, with economic growth driven more by employment growth and less by growth in productivity.

Figure 1.2

Employment elasticities and GDP growth rates, selected periods, advanced and developing country groupings



Source: ILO Research Department calculations based on ILO, *Trends Econometric Models*, October 2014; IMF, *World Economic Outlook Database*, October 2014.

cent (compared with 3.9 per cent between 1991 and 1999), with only a modest decline in the employment intensity. The crisis and recovery period has seen a moderate reduction in the employment intensity in the developing world, with the employment elasticity falling to 0.29 while economic growth declined by 1.2 percentage points.

… a situation which is partly explained by a shortage of global demand …

A potentially key factor explaining the slow recent growth performance is a shortage in global aggregate demand. In particular, the growing disconnect between labour incomes and productivity may have affected private consumption and global demand, thereby also reducing private investment. A vicious circle may be at work, with lower demand affecting output and employment, thereby further depressing demand. Indeed, if employment declines or grows more slowly than under normal circumstances, the aggregate wage bill will be adversely impacted, in turn exerting a negative impact on household consumption and therefore on overall aggregate demand.

By combining the country-level estimates of employment gaps that comprise the ILO's global jobs gap estimate with wage estimates from the ILO's Global Wage Database, it is possible to obtain a global estimate of aggregate wages lost due to the global jobs gap (Appendix B details the methodology and data used). Recalling that the global wage bill reflects the combination of total employment times average wages earned, it is important to note that this estimate considers only the reduction in the global wage bill due to the slowdown in global employment growth. It does not take into account the fact that global wages have also grown more slowly since the onset of the global economic crisis. With increased labour market slack throughout the crisis and recovery period, wage growth has slowed in most regions, with outright contractions in average wages in some of the hardest-hit countries.[5]

The direct impact of the global jobs gap on the aggregate wage bill is substantial. As indicated in table 1.2, in 2013 the global jobs gap corresponded to an estimated $1.218 trillion in lost wages around the world (at purchasing power parity).[6] This is equivalent to approximately 1.2 per cent of

5 See ILO, *Global Wage Report 2014/15*.

6 Throughout this chapter, currency figures expressed with a "$" are in international (PPP-adjusted) dollars. Currency figures in constant US dollars are expressed as "USD". All global wage gap estimates are in constant international (PPP-adjusted) dollars, with base year 2013.

Table 1.2

Estimated wages lost due to jobs gap, 2013, world and regions, 2013 international $ (billions)			
	Wage gap, males	Wage gap, females	Wage gap, both sexes
WORLD	629	589	1218
Developed Economies and EU	531	358	889
European Union	*281*	*186*	*467*
Central and South-Eastern Europe (non-EU) and CIS	46	50	97
Asia and the Pacific	35	114	149
Latin America and the Caribbean	–4	27	23
Middle East and North Africa	7	16	23
Sub-Saharan Africa	14	23	37

Note: Figures may not sum precisely due to rounding.

Source: ILO calculations based on ILO, *Trends Econometric Models*, October 2014; ILO, Global Wage Database.

total annual global output and approximately 2 per cent of total global consumption.[7] Regionally, the Developed Economies and European Union accounts for 73 per cent of the total global wage gap, with Asia and the Pacific accounting for a further 12 per cent and the remaining regions accounting for approximately 15 per cent.[8]

What are the effects of this shortfall in wage incomes in terms of global GDP reduction? In the absence of the current global jobs gap, aggregate global wages in 2013 would have been $1.218 trillion above the actual, observed level. Because workers typically spend a significant share of wages earned, there are important multiplier effects to consider when estimating the impact of wages on overall GDP. That is, an increase in the aggregate wages earned through a reduction in the global jobs gap would lead to increased household consumption and thereby increased income, not only for the workers who would directly benefit, but also for enterprises and workers throughout the economy, as they would see higher profits and incomes from selling additional goods and services.

With higher profits and incomes, these firms and workers, in turn, would be able to increase spending and investment, providing additional aggregate income gains. In short, this scenario represents a reversal of the vicious circle of weak employment growth, slow consumer spending and business investment and sluggish overall economic growth that has characterized the global economic landscape since the crisis took hold. As a result of multiplier effects and the virtuous circle of increased wages, higher consumption, increased profits and investment levels resulting from closing the global jobs gap, an estimated $3.7 trillion would be added to global GDP – equivalent to a one-time, 3.6 per cent boost to global output.[9] Importantly, these estimates rest on the assumption that the main constraints to investment lie on the demand side, rather than being due to low profitability (ILO, 2013a). More generally, it is assumed that the world economy is operating well below capacity and that the conventional mechanisms that help to restore the link between production and its capacity are not operating adequately – for instance, because of liquidity traps that limit the efficiency of monetary policy.

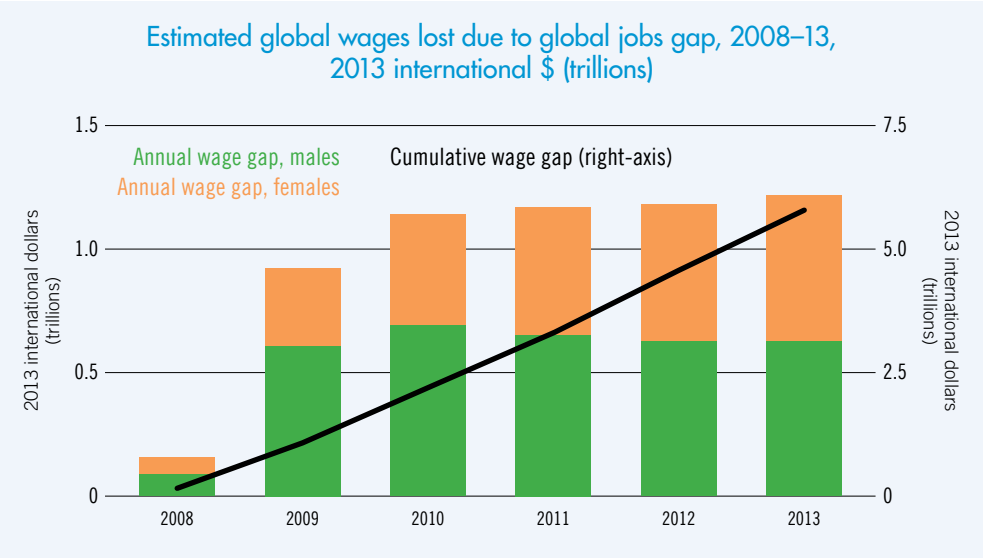
It is also possible to estimate how the wage gap has evolved during the global economic crisis and throughout the recovery (figure 1.3). The annual global wages lost due to the jobs gap jumped from less than $160 billion in 2008 to $920 billion in 2009, rising to over $1.1 trillion annually during the period 2010–2012 and surpassing $1.2 trillion in 2013. In the peak crisis year of 2009, lost

7 Based on IMF, WEO global GDP estimate at purchasing power parity (PPP) for 2013 and World Bank, World Development Indicators database estimate of global consumption share in global GDP for 2012.

8 In addition to the reduction in the global wage bill due to the jobs gap, slower wage growth has also had a substantial impact on the aggregate wage bill. For the Developed Economies and European Union region as a whole, compared with a scenario in which pre-crisis (2000 to 2007) average annual wage growth rates had continued over the period from 2008 to 2013, slower wage growth during the crisis and post-crisis periods corresponded to an estimated $485 billion reduction in the region's aggregate wage bill in 2013. This is equivalent to 55 per cent of the reduction in the wage bill due to the jobs gap in the region, as reported in table 1.2).

9 To provide a global estimate of increased output that would result from eliminating the jobs gap, we apply a global estimate of the average propensity to consume (APC) to the estimates of national wages lost due to the jobs crisis. An APC of 0.75 is applied. The underlying assumption is therefore that, out of every $1 in additional wages earned from closing the global jobs gap, $0.75 will be used for consumption, while $0.25 would be saved. Using an APC of 0.70 yields a global output boost of $2.84 trillion, while an APC of 0.80 yields a global output boost of $4.87 trillion. This range is considered to be conservative, given that historical net household savings rates for countries with available data are typically below 10 per cent (the estimate for the average across the euro area is around 7.8 per cent in 2013; the estimate for the United States is 4.5 per cent). See OECD, *Household savings rates – forecasts* at http://www.oecd-ilibrary.org/economics/household-saving-rates-forecasts_2074384x-table7 [24 Apr. 2015].

Figure 1.3



Source: ILO Research Department calculations based on ILO, *Trends Econometric Models*, October 2014; ILO, Global Wage Database.

Table 1.3

Labour shares of national income (unadjusted) with and without the global jobs gap, world and regions, 2011 (%)

	Labour share (%)	Labour share without jobs gap (%)	Difference (percentage points)
WORLD	44.9	45.6	0.7
Developed Economies and European Union	52.4	53.3	1.0
Central and South-Eastern Europe (non-EU) and CIS	46.6	47.2	0.6
Asia and the Pacific	42.8	43.1	0.3
Latin America and the Caribbean	39.2	39.4	0.1
Middle East and North Africa	25.3	25.6	0.3

Note: Sub-Saharan Africa regional estimates are excluded due to limited labour share data.

Source: ILO Research Department calculations based on ILO, *Trends Econometric Models*, October 2014; ILO, Global Wage Database.

wages among men accounted for two-thirds of the total; however, the share due to lower female employment growth has progressively increased during the recovery period, owing to the weaker relative labour market recovery experienced by women in several regions of the world. In total, between 2008 and 2013, the global jobs gap has resulted in an estimated $5.789 trillion in lost wages.

The wage income gap has also had an adverse impact on the labour share of national income (an issue which is examined in detail in Chapter 2). For the world as a whole, and regionally, it is possible to estimate the impact of the wage gap on (unadjusted) labour shares of national income for the year 2011.[10] At the global level, the wage gap is estimated to have resulted in a reduction of the labour income share by 0.7 percentage points (table 1.3). In the Developed Economies and European Union, the reduction is estimated at 1.0 percentage point, in Central and South-Eastern Europe (non-EU) and CIS, at 0.6 percentage points and in Asia and the Pacific at 0.3 percentage points.

Together, the various components of this global wage gap analysis paint a stark picture of how crisis-induced job losses and the weak global job creation record during the recovery have impacted on the global economy. Aggregate demand has suffered significantly, both directly and indirectly via the consumption channel. At the same time, this analysis implies, via the labour share channel, that labour market weakness has also played a contributing role in the rising inequalities that have been observed in many countries during the recovery.

10 In general terms, the unadjusted labour share is defined as the ratio of compensation of employees to gross value added, both measured in nominal terms. The adjusted labour share takes into consideration the positive contribution of labour income (from the self-employed). See ILO, *Global Wage Report 2010/11* (Technical Appendix II) for a description of adjusted and unadjusted labour shares of national income. Wage estimates included in this analysis do not include employer social contributions.

… and partly by productivity trends …

It can also be argued that productivity growth may have slowed down, thereby contributing to the weak economic growth performance mentioned above.[11] Average productivity trends within a country are closely linked with trends in employment and output: growth in the number of persons in employment and productivity growth (the amount of additional output produced on average per worker) together determine overall economic growth developments. Therefore, alongside employment patterns, trends in labour productivity are a crucial determinant of long-term economic growth.[12]

Productivity gains are a necessary (but not sufficient) precondition for sustained increases in real wages and consumption levels. Productivity, at the enterprise or national level, can increase through a variety of ways, including increased investment in fixed capital, better infrastructure, structural transformation, accelerating innovation and technology, adopting more efficient business practices, enhancing workers' education and skill levels, improving workers' health and safety and promoting more effective social dialogue at the workplace. At the enterprise level, holding all else constant, if labour productivity increases, a business becomes more profitable. This additional profitability could be used to pay higher wages to the enterprise's workers, lower prices for the enterprise's goods and services (which benefits consumers) and/or increase profits for the enterprise's owners. How the additional profits are allocated to those purposes is the result of institutional and other factors.

Increased productivity can also enable enterprises to produce the same (or even a greater) amount of output with fewer workers, which can lead to a reduction in employment. Productivity growth can indeed destroy jobs, particularly in those industries and occupations most affected by emerging technologies that reduce demand for labour (box 1.1), but it is also an essential ingredient for creating new employment opportunities. Critical issues for mitigating the adverse effects of this "creative destruction" include ensuring that workers are equipped with the skills needed to take up emerging employment opportunities, that economies are generating sufficient numbers of new decent and productive employment opportunities and that social protection systems provide adequate protection for those adversely affected.

A look at aggregate productivity trends alongside employment growth trends for the world as a whole reveals that labour productivity growth rates have seen a considerably faster recovery than employment growth rates during the recovery period from 2010 to 2014 (figure 1.4). Global labour productivity growth declined from an average annual rate of 1.5 per cent in the pre-crisis period to –1.0 per cent during the crisis years, but then rebounded to 1.4 per cent between 2010 and 2014.

In the developed economies, both productivity and employment growth rates plunged into negative territory during the crisis; however, during the recovery period, productivity has rebounded much more strongly than employment growth. In the developing world as a whole, productivity growth remained positive during the crisis years and has increased at an average annual rate of 3.7 per cent during the recovery period – a slowdown from the 4.1 per cent annual growth achieved prior to the crisis.

11 See Gordon (2012) and Gordon (2014) for a discussion of reduced productivity growth in the United States.

12 The indicator "labour productivity" is defined throughout this chapter as output per worker.

Box 1.1

Technology and jobs: A zero sum game?

Inherent in the "future of work" debate is the role of technology. Indeed, as automation and innovation continue to gather momentum in everyday services and manufacturing, there is the potential for a new wave of industrial revolution, one that is underpinned by microchips and robotics.

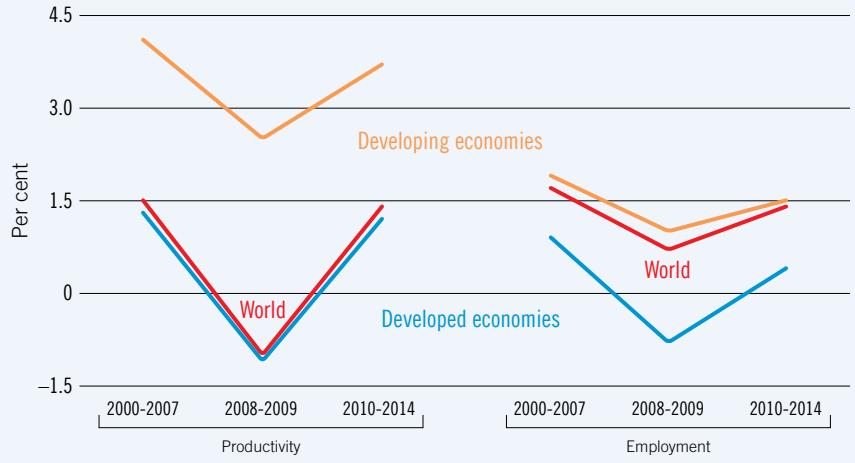
Technology and innovation go hand in hand with value addition and growth, with the resultant wealth accumulation allowing for reinvestment in research and development and further innovation-led productivity. Today, such advancement is observable across a wide spectrum of technologies, including green and energy technologies, biotechnology and bioengineering, nanotechnology and material science, information technology and big-data science. All of these developments offer increasing opportunities for business creation and employment, as well as wider impacts in the economy (such as lower prices and lower carbon emissions). According to the OECD (2013a), innovative young firms accounted for nearly half of all job creation among OECD member states over the past decade. In addition, ILO (2014c) cites the concept of "digital Taylorism" (Brown et al., 2011), in which new technologies in services could drive further employment gains in developing countries through outsourcing. Nonetheless, despite the fact that technological advancement has many beneficiaries, many are excluded.

In recent decades, technological innovation, and particularly advanced automation, has been replacing ever more complex tasks and consequently higher skilled jobs, a process which shows little sign of abating. In recent years, for instance, digital technology has visibly eroded employment in manufacturing and retail, while also having an impact on highly skilled services, including in financial, medical and legal spheres. In the developed economies these advances favour those who are highly skilled in technical areas or who work in capital intensive industries and those with wealth and resources, while those in labour intensive industries are most at risk (see ILO, 2013b). The result, as Autor (2014) argues, is that technological advancement is widening the gap between the highly skilled, high-wage and lower-skilled, low-wage workers.

Nonetheless, an attempt to stem the tide of technological advancement would not represent a viable strategy, as it would also limit productivity growth and improvements in output. Instead, the question is how policies can most effectively realize the benefits while ensuring protections for those adversely affected and inclusiveness in the economy and labour market. Stiglitz (2014), for instance, states that market restructuring is typically slow to react to rapid technological change, leading to high and long-term unemployment and widening inequality. Moreover, while innovation and technology have the capacity to produce substantial net gains, in practice, actual redistribution rarely takes place to a sufficient extent. Consequently, the onus is on governments to create a favourable environment for the creation of decent jobs and to tackle inequalities. The policy response is complex because it needs to take into account the ongoing transformation in the employment relationship, which is examined in detail later in this report.

Figure 1.4

Average annual productivity and employment growth, world, developed and developing economies, selected periods (%)



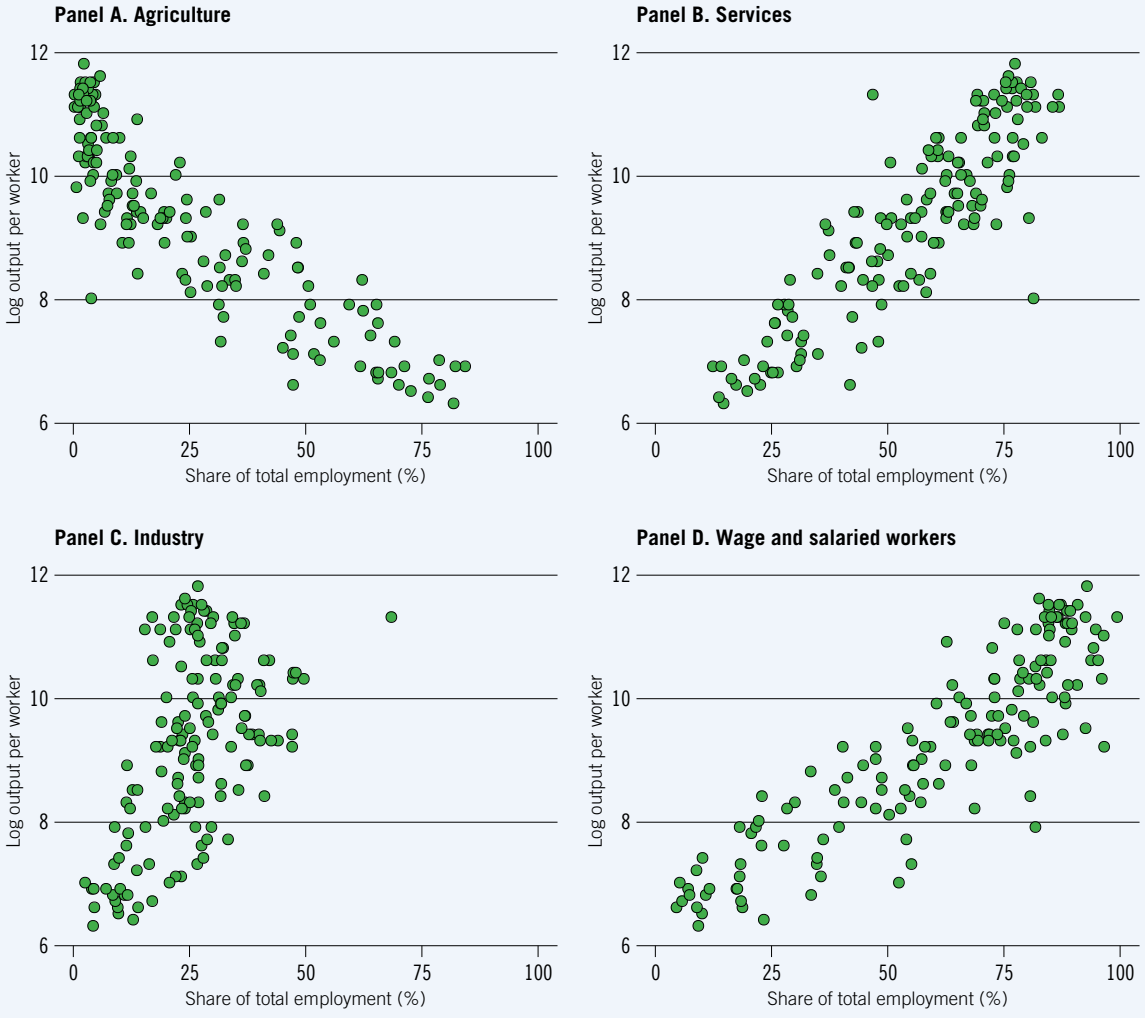
Source: ILO, *Trends Econometric Models*, October 2014.

… reflecting economic structure and enterprise size.

Economic and labour market structure, in terms of the distribution of workers across industries, plays a key role in the abovementioned productivity trends. Looking at the relationship between national productivity levels and the distribution of employment across broad sectors in each country, there is a strong, negative correlation between the share of employment in agriculture and average levels of labour productivity; a strong, positive correlation between productivity levels and the share of employment in services; and a somewhat weaker, positive relationship between productivity and the share of employment in industry (figure 1.5).[13]

Figure 1.5

National productivity levels (log output per worker in constant 2005 USD) versus the distribution of employment across sectors and status groupings, most recent year

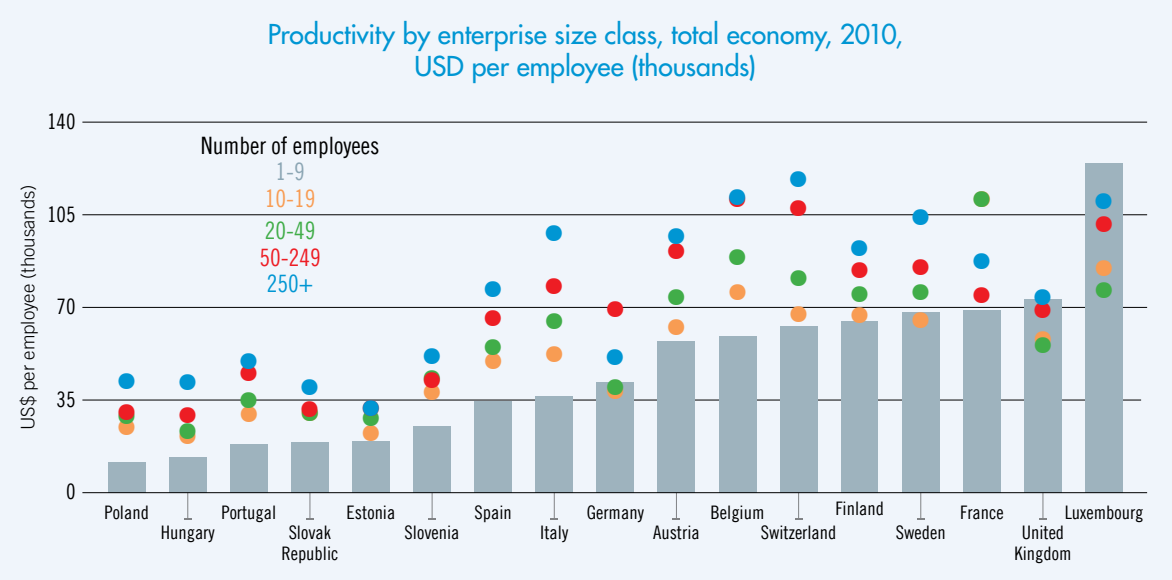


Note: R-squared estimates corresponding to scatter plots: agriculture (0.80), industry (0.29), services (0.78) and wage and salaried employment (0.79). Fifty-four per cent of the observations in the figure correspond to the year 2013. Eighty per cent of the observations are from 2010–2013, with the remaining 20 per cent prior to 2010.

Source: ILO, *Trends Econometric Models*, October 2014; ILO, *Key Indicators of the Labour Market* (KILM), 8th edition.

[13] The weaker relationship between shares of employment in industry and average productivity levels reflects wide differences between countries in terms of productivity levels in the manufacturing sector, with small-scale industrial enterprises being the norm in many developing countries, particularly among the least developed. At the same time, despite the strong correlation between the share of workers in the services sector as a whole and average productivity levels, there is often wide variation in average productivity levels and employment quality across different services sub-sectors. The extent of structural transformation as well as the type of transformation that a country has experienced are both strongly influential in determining its overall level of productivity.

Figure
1.6



Source: OECD, *Entrepreneurship at a Glance*, 2013b.

The share of wage and salaried workers in total employment is also strongly related to average productivity levels across countries – a reflection of lower average productivity levels among own-account workers and contributing family workers, groups which continue to constitute more than 70 per cent of total employment in South Asia and Sub-Saharan Africa, more than 40 per cent of employment in South-East Asia and the Pacific, and more than 30 per cent of employment in East Asia, Latin America and the Caribbean and North Africa. In addition to lower productivity levels and lower average earnings, workers in these two "vulnerable employment" groups are also far less likely than wage and salaried workers to benefit from social protection systems (Chapter 3) and less likely to be unionized or to benefit from collective bargaining. Particularly in South Asia and Sub-Saharan Africa, the stubbornly high shares of workers in vulnerable employment and very limited growth in the share of workers in wage and salaried employment over the past few decades are key factors underpinning the regions' low productivity levels in comparison with other regions of the world (figure 1.5).

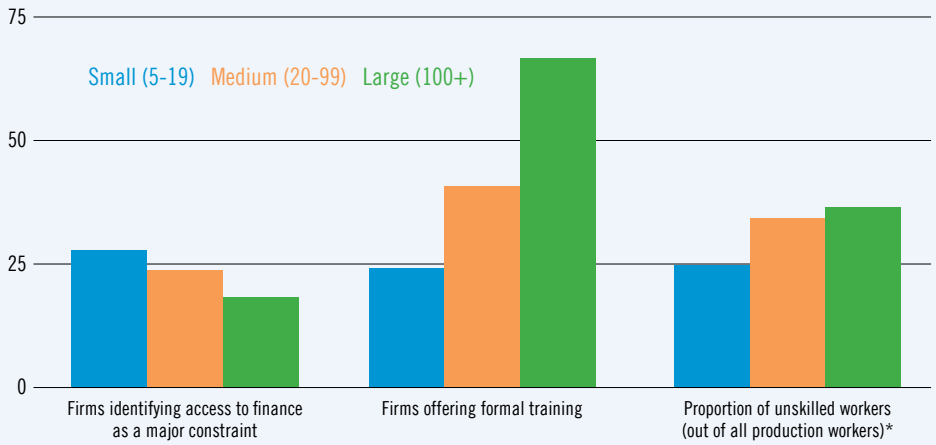
Another important factor in determining average productivity levels is the distribution of enterprises across class sizes. Economies with a higher proportion of large firms and a higher proportion of employment in large firms tend to have higher levels of per capita gross domestic product (GDP) and, accordingly, higher average productivity levels.[14] In 14 out of 17 developed economies with comparable data, the largest firms (those with 250 or more employees) had the highest levels of output per worker (figure 1.6). The smallest firms were the least productive in 13 of the 17 economies. Taking a simple average across the full sample of countries, the largest firms have average output per worker levels which are nearly double those of the smallest firms and 1.3 times the levels in medium-sized firms with 20–49 employees.

Aside from benefiting from economies of scale that allow for more efficient production, large firms also tend to have better access to credit and to spend more on training their workforce (figure 1.7). Indeed, in addition to the evidence that large firms tend to have higher average productivity levels, based on the most recent available data from 134 developing countries in the World Bank's Enterprise Surveys Database, firms with 100 or more employees also had faster productivity growth rates than small and medium-sized firms, with large firms reporting annual productivity growth of 3.2 per cent on average, compared with 1.3 per cent for medium-sized firms (with 20–99 employees) and 1.7 per cent for small firms (with 5–19 employees). If sustained over a longer time horizon, this productivity growth differential would bring significant competitive benefits to large firms, as they would be more likely to see increased profitability and to be able to afford wage increases to attract top talent.

14 See Poschke (2014) for more details.

Figure
1.7

Firm characteristics by enterprise size class, selected developing economies, most recent year (%)



Note: Data for 134 developing countries included. Median values are given.
* Indicates data are available for manufacturing firms only, which includes figures for 109 countries.
Source: Enterprise Surveys (http://www.enterprisesurveys.org), World Bank.

Across a subset of countries with data on manufacturing firms only, it is noteworthy that larger firms have the highest share of unskilled production workers among the three enterprise size groups, with the smallest firms having the lowest shares of unskilled workers. The ability to have higher average productivity levels and higher productivity growth rates alongside a greater proportion of unskilled workers could reflect relatively more capital- and technology-intensive production among larger firms (Chapter 5 of this report discusses enterprise dynamics in more detail, with a focus on global production patterns).

In the context of weak global aggregate demand and the persistent jobs gap that is particularly acute in the developed world, this analysis of trends in labour productivity suggests different challenges and areas for policy focus in developed as compared with developing regions. In the developed economies as a whole, the stronger relative recovery in productivity growth in comparison with employment growth, coupled with the persistent weakness in aggregate demand, suggests the need for pro-employment policies and stronger linkages between productivity growth and real wage growth. For a sustainable recovery to take hold in the advanced economies, aggregate demand will need to be supported by growth in consumption, which, in turn, will require an expansion in employment and in workers' purchasing power.

In developing regions, the recent slowdown in productivity growth suggests the need for policies to boost productivity and investment, support productive structural transformation and accelerate economic growth, including through policies to increase levels of domestic demand. Such policies include investing in education and training, infrastructure investment, strong social protection systems, and policies on minimum wages and collective bargaining. Policies should also aim to provide an enabling environment for enterprises, including supporting small enterprises so that they can better manage some of the disadvantages they face in comparison with large firms.

B. A diversified labour market

It is important to examine changing patterns of work in order to shed light on the trends identified in section A. Work patterns are indeed likely to influence trends in both aggregate demand and the overall relationship between economic growth, on the one hand, and employment and productivity growth, on the other. For example, if overall employment growth is due to an increase in the number of unpaid family workers, this is likely to lead to different outcomes in terms of consumption, productivity and aggregate demand in comparison with employment growth driven by an increase in the number of wage and salaried workers. The purpose of this section is to review patterns in different types of work.

Despite tremendous progress, poverty and vulnerability remains widespread among the world's workers

In 2014, nearly a quarter of the world's workers were living with their families on less than $2 per day, with 10 per cent of all the world's workers living in extreme poverty, on less than $1.25 in daily per-capita household consumption. These figures represent tremendous progress, as less than two decades ago half of the world's workers were living below the $2 poverty line.

Focusing on developing countries, in 2014 more than half of the developing world's workers were either poor or near poor, with 28 per cent living below the $2 poverty line and a further 25 per cent living on between $2 and $4 in daily per-capita consumption (table 1.4). In South Asia and Sub-Saharan Africa, more than 8 in 10 workers remained either poor or near poor in 2014. Importantly, while the past two decades have seen significant progress in reducing working poverty across the developing world, the share of workers living just above the poverty line (between $2 and $4) rose in the developing world as a whole and in the majority of developing regions. Thus, despite the very favourable progress in reducing the share of workers living in poverty, a large segment of the developing world's workforce remains either poor or vulnerable to slipping into poverty. These trends also suggest that poverty and vulnerability are likely to remain widespread for some time.

Table 1.4

Share of workers living in poverty (below $2) and near-poverty (between $2 and $4) in total employment (%), 1991, 2000 and 2014, selected regions

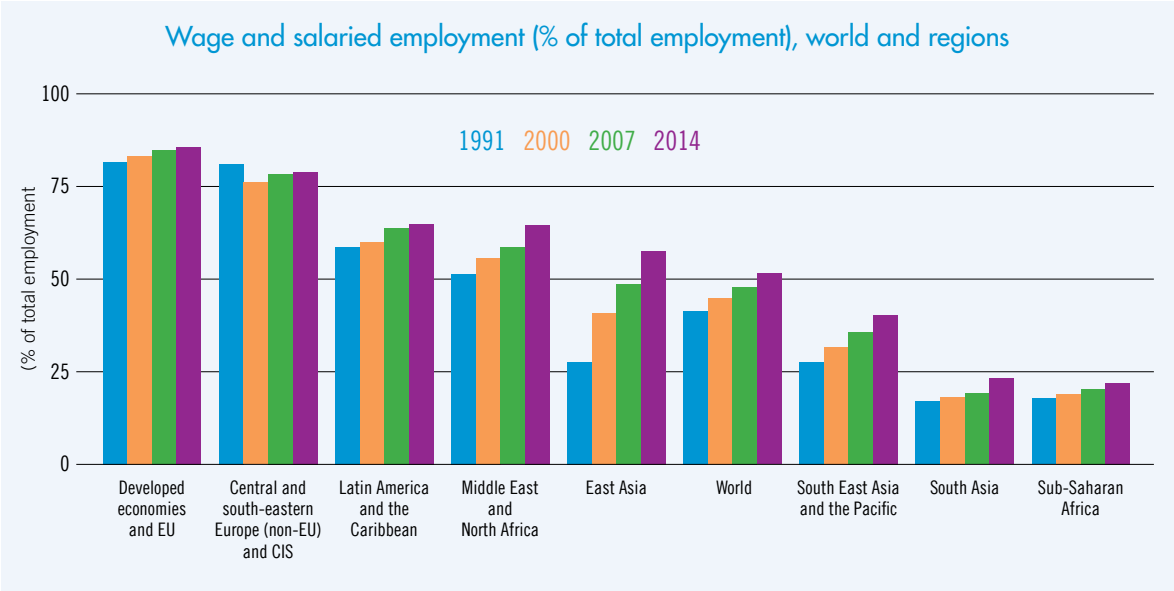
	Poor (less than $2)			Near poor (between $2 and $4)		
	1991	2000	2014	1991	2000	2014
Developing world	68.2	55.9	28.0	14.3	22.5	25.2
Central and South-Eastern Europe (non-EU) and CIS	6.0	10.5	2.1	16.2	24.7	10.1
Latin America and the Caribbean	16.5	15.3	5.3	22.6	22.1	13.2
East Asia	85.0	56.0	11.4	11.1	27.3	21.7
South-East Asia and the Pacific	74.1	64.0	23.9	14.7	20.8	34.5
South Asia	85.1	78.5	54.4	12.4	17.9	34.2
Middle East and North Africa	20.3	16.4	10.5	32.0	34.3	31.0
Sub-Saharan Africa	76.1	77.9	61.1	14.4	13.6	23.4

Source: ILO, *Trends Econometric Models*, October 2014; Kapsos and Bourmpoula (2013).

Wage and salaried employment is growing, but still only accounts for half of global employment

Globally, only five in ten workers are in wage and salaried employment, with wide variation across different regions of the world (figure 1.8). In the Developed Economies and EU, as well as Central and South-Eastern Europe (non-EU) and CIS, around eight in ten workers are employees, whereas in South Asia and Sub-Saharan Africa the figure is closer to two in ten, with around 75 per cent of workers either in own-account work or employed as contributing family workers. Nearly half of all workers in South-East Asia and the Pacific and more than 40 per cent in East Asia are in these two vulnerable employment statuses, characterized by a higher likelihood of being engaged in the informal employment and a lower likelihood of benefiting from labour and social protection coverage (Chapters 3 and 4).

Figure 1.8



Source: ILO, *Trends Econometric Models*, October 2014.

Between 2015 and 2019, an estimated two-thirds of net new employment growth around the world will be wage and salaried employment, with around 30 per cent of new employment accounted for by growth in own-account and contributing family workers – predominantly due to employment growth in Sub-Saharan Africa and South Asia.[15] In Sub-Saharan Africa, two-thirds of all employment growth is likely to be among own-account workers and contributing family workers. In South Asia, around half of new employment is likely to be in these two employment statuses. In the other developing regions, the bulk of net new employment over the next five years is expected to be accounted for by growth in wage and salaried employment. All else being equal, if wage and salaried employment accounts for an increasing share of net employment growth, this would tend to bolster the linkage between changes in employment and economic growth.

Part-time employment is widespread, particularly among women, and is generally increasing

Part-time employment is widespread. Across 86 countries, covering 65 per cent of global employment, more than 17 per cent of persons in employment were working on a part-time basis of less than 30 hours per week (figure 1.9). Women were far more likely than men to be found in part-time employment, with 24 per cent of employed women across the sample of countries working on a part-time basis, compared with 12.4 per cent of employed men. Among wage and salaried workers, the incidence of part-time employment is lower, at 11.6 per cent (8.2 per cent among male employees and 15.9 per cent among female employees). The highest incidence of part-time employment is found among contributing family workers, where more than one out of three workers works on a part-time basis.

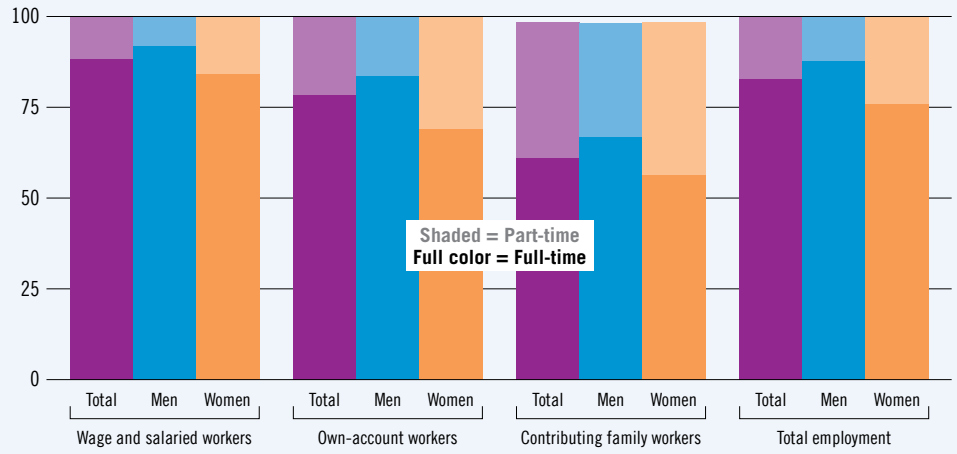
In the vast majority of countries with available information, the rise in the number of part-time jobs outpaced gains in full-time jobs between 2009 and 2013.[16] In France, Italy, Japan, Spain and the EU-28 more broadly, increases in part-time employment occurred alongside losses in full-time jobs – leading in some instances to overall job losses during this period. For instance, in the EU-28, full-time employment declined by nearly 3.3 million, while part-time employment increased by 2.1 million. Among the countries with available data, only Brazil, the Russian Federation and the United States saw overall employment gains, driven predominantly by an increase in full-time employment over this period. In each of these cases, the increase in full-time jobs more than offset declining part-time employment. It should be stressed that, in the countries for which information

15 ILO, *Trends Econometric Models*, October 2014.

16 OECD, Full-time Part-time employment statistical table: "FTPT employment based on a common definition". https://stats.oecd.org/

Figure 1.9

Part-time and full-time employment by employment status (% of total), most recent year



Note: Based on 86 countries, representing 65 per cent of total employment (26 per cent in low-income countries; 64 per cent in middle-income countries and 95 per cent in high-income countries). Full-time employment is defined as more than 30 hours of work per week.

Source: ILO Research Department, based on household survey data.

is available, much of the increase in part-time employment has been involuntary (that is, workers have moved into part-time work because full-time job opportunities were not available).[17]

Permanent contracts remain scarce for the world's workers

Among countries with available data, covering 84 per cent of total global employment, only around one-quarter (26.4 per cent) of workers are employed on a permanent contract, with around 13 per cent on a temporary or fixed-term contract and the significant majority (60.7 per cent) working without any contract (figure 1.10). Among high-income economies, more than three-quarters of workers are on a permanent contract (of which less than two-thirds are full time), a further 9.3 per cent are on a temporary contract and only 14 per cent are without a contract. Among middle-income countries with available data (covering 88 per cent of all employment in middle-income countries), nearly 72 per cent of all workers are employed without a contract, with only 13.7 per cent working under a permanent contract. Across the 13 low-income countries with available data (covering 49 per cent of total employment in low-income countries), only 5.7 per cent of workers are employed with a permanent contract, with nearly 87 per cent of workers having no contract at all; the majority working either as own-account workers or contributing family workers.[18]

The large share of the world's workers without an employment contract is thus closely linked to the persistently large share of workers engaged in own-account or contributing family work in the developing world. Yet, even among wage and salaried workers, only around half are working on a permanent contract. These data paint a stark picture of the reality behind widespread perceptions of insecurity in the global labour market. While much of this perceived insecurity is a direct result of the large shares of workers engaged in non-wage employment, a significant proportion of the world's employees also face insecurities in terms of their employment contracts.

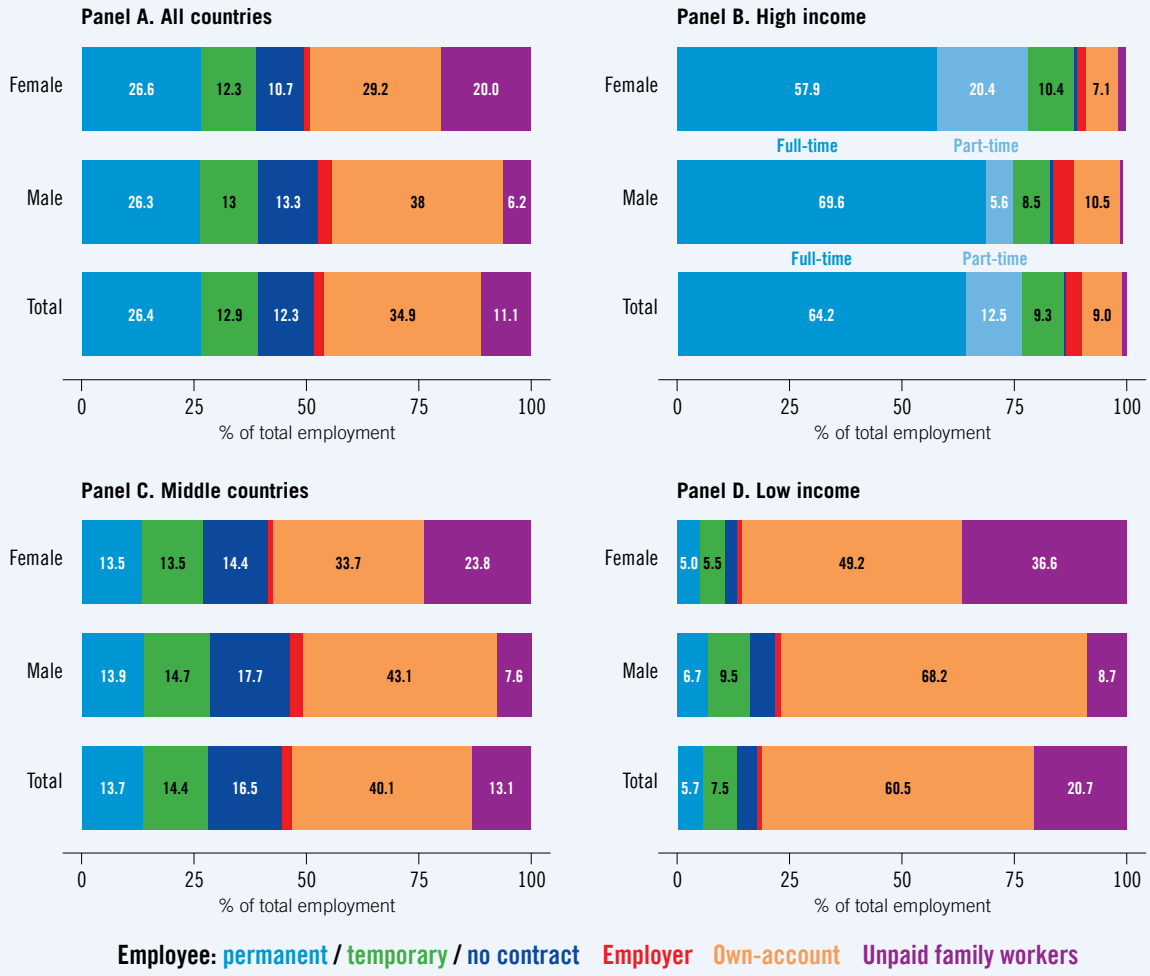
What are the recent trends in employment by contract type? Sufficient data are available to investigate changes over time for 33 high-income countries, covering nearly 92 per cent of total employment across all high-income countries (table 1.5). Among these countries, 84.6 per cent of workers were employed on either a permanent or a temporary contract in 2004. This share declined slightly to 83.4 per cent in 2012. This decline was offset by the emergence of a category of employees engaged without a contract, which stood at 1.1 per cent in 2012, as well as a modest increase in the share of own-account workers. These trends point to a decline in employment security across the workforce in high-income economies between the pre- and post-crisis periods.

17 For instance, in the EU-28, involuntary part-time employment (as a share of total part-time employment) increased from 22.4 per cent in 2007 to 29.2 per cent in 2013.

18 Restricting the analysis to employees, rather than total employed, the share of employees without a contract in high-, middle- and low-income economies for which data are available is 0.8, 32.5 and 26.5 per cent, respectively.

Figure
1.10

Distribution of employment by employment status and contract type (%), most recent year, selected income groupings



Note: Country groupings correspond to World Bank income classification. Estimates based on 90 countries, representing 84 per cent of total employment (13 low-income countries, representing 49 per cent of total employment; 42 middle-income countries, representing 88 per cent of total employment; 35 high-income countries, representing 92 per cent of total employment). The most common year is 2012 (for 43 countries). The breakdown of permanent into full and part time is only available for high-income countries. The most recent year falls between 2012 and 2014 for 56 per cent of the countries, between 2010 and 2011 for 26 per cent and between 2006 and 2009 for 18 per cent.

Source: ILO Research Department, based on household survey data.

Table
1.5

Type of contract as a percentage of employment, high-income countries, 2004 and most recent year (%)

	Total		Male		Female	
	2004	Latest	2004	Latest	2004	Latest
Employee: permanent	74.0	73.2	73.1	71.2	74.9	75.4
Employee: temporary	10.6	10.2	9.4	9.2	12.2	11.4
Employee: no contract	0.0	1.1	0.0	1.0	0.0	1.1
Employer	4.7	3.9	5.9	5.4	3.0	2.2
Own-account	9.2	10.4	10.8	12.3	7.1	8.0
Unpaid family workers	1.5	1.3	0.7	0.8	2.7	1.9

Note: Based on 33 high-income countries for which information is available for both years, representing 91.5 per cent of total employment. The year 2012 corresponds to the most recent year for the vast majority of the countries.

Source: ILO Research Department, based on household survey data.

C. Conclusions and structure of report

With changing patterns of work and diverse employment challenges, breaking the vicious circle will require differentiated policies

This chapter has analysed the vicious circle of weak global aggregate demand, slow growth and slow employment creation that has characterized the global economy and many labour markets throughout most of the post-crisis period. It has argued that, in the present context, and particularly in the advanced economies, it is important to recognize that pro-employment policies also promote aggregate consumption and economic growth. At the same time, persistently large shares of workers in non-wage employment in some regions and growth both in the incidence of involuntary part-time employment and in the number of workers engaged on either temporary contracts or working without a contract risks limiting the potential contribution of increased

Box 1.2

Defining types of employment

The *Resolution concerning the International Classification of Status in Employment (ICSE-93)*, adopted by the 15th International Conference of Labour Statisticians in 1993, classifies persons by their status in employment according to key criteria related to economic risk and type of authority, as well as work arrangements that fall outside the realm of the standard employment relationship. Recently, an ILO typology to characterize non-standard forms of employment was developed and presented in the Report on Non-standard forms of employment, discussed at the Meeting of Experts on Non-Standard Forms of Employment (February, 2015).

According to the ICSE-93, a job is classified with respect to the type of explicit or implicit contract of employment of the person with other persons or organizations. The basic criteria used to define the groups of the classification are the type of economic risk, an element of which is the strength of the attachment between the person and the job, and the type of authority over the establishments and other workers which the job incumbents have or will have.

Selected ICSE-93 Group Definitions

Paid employment jobs are those jobs where the incumbents hold explicit (written or oral) or implicit employment contracts, which give them a basic remuneration that is not directly dependent on the revenue of the unit for which they work (this unit can be a corporation, a non-profit institution, a government unit or a household). Some or all of the tools, capital equipment, information systems and/or premises used by the incumbents may be owned by others, and the incumbents may work under the direct supervision of, or according to strict guidelines set by, the owner(s) or persons in the owners' employment.

- *Wage and salaried employment (employees)*: Employees are all those workers who hold the type of job defined as "paid employment jobs". Employees with stable contracts are those employees who have had, and continue to have, an explicit (written or oral) or implicit contract of employment, or a succession of such contracts, with the same employer on a continuous basis.

Self-employment: Self-employment jobs are those jobs where the remuneration is directly dependent on the profits (or the potential for profits) derived from the goods and services produced (where own consumption is considered to be part of profits). The incumbents make the operational decisions affecting the enterprise, or delegate such decisions while retaining responsibility for the welfare of the enterprise. (In this context, "enterprise" includes one-person operations.)

- *Own-account workers*: Own-account workers are those workers who, working on their own account or with one or more partners, hold the type of job defined as "a self-employment job", and have not engaged on a continuous basis any "employees" to work for them during the reference period. It should be noted that, during the reference period, the members of this group may have engaged "employees", provided that this is on a non-continuous basis. (The partners may or may not be members of the same family or household.)
- *Contributing family workers*: Contributing (unpaid) family workers are those workers who hold a "self-employment" job in a market-oriented establishment operated by a related person living in the same household, who cannot be regarded as a partner, because their degree of commitment to the operation of the establishment, in terms of working time or other factors to be determined by national circumstances, is not at a level comparable to that of the head of the establishment.

ILO typology of non-standard forms of employment

There is no official definition of non-standard forms of employment (NSFE). Typically, this status is considered to cover those work arrangements that fall outside the realm of the standard employment relationship, understood as work

employment levels to consumption and aggregate demand. These forms of employment also tend to be associated with lower productivity gains.

The analysis presented in this chapter points to a number of broad areas for policy focus. In the advanced economies facing persistent jobs gaps, the importance of kick-starting employment growth and boosting wages is paramount, in order to support economic growth. In the developing world, which has experienced a productivity slowdown that threatens to curb development prospects and limit economic growth potential, policies aimed at boosting labour productivity growth, such as investments in education and training, health and infrastructure are of critical importance. Specific policies within the fiscal, monetary and labour market realms must be determined based on country circumstances and priorities. However, with increasing plurality and diversification in forms of work and workplace organization, such policies must acknowledge that an expansion in employment alone, without due consideration given to the quality of employment and workers' income security and social protection, is unlikely to provide robust and sustainable support to aggregate demand.

that is full-time, indefinite, as well as part of a subordinate, but bilateral, employment relationship. The ILO considers the following employment arrangements to be non-standard: (1) temporary employment; (2) contractual arrangements involving multiple parties, including temporary agency work; (3) ambiguous employment relationships, including dependent self-employment and disguised employment relationships; and (4) part-time employment (ILO, 2015a, 2015b). As workers in NSFE are in a dependent employment relationship, independent self-employed workers, even if working informally, are excluded from this category. NSFE, nonetheless, includes workers in either formal or informal employment arrangements, as long as their contractual status covers one of the four categories included in the ILO definition. More specifically:

(1) *Temporary employment* concerns workers that are engaged for a specific period of time, including under fixed-term, project- or task-based contracts, as well as seasonal or casual work, including day-labourers. Fixed-term contracts can be either written or oral, but are characterized by a predefined term. In the majority of countries, fixed-term contracts are regulated by specific legal provisions on the maximum length, the number of renewals, and valid reasons for recourse. Casual work is the engagement of workers on an occasional and intermittent basis, for a specific number of hours, days or weeks, in return for a wage dictated by the terms of the daily or periodic work agreement; casual work is a prominent feature of informal waged employment in low-income developing countries.

(2) *Contractual arrangements involving multiple parties*, including temporary agency work, encompass the situation in which a worker is deployed and paid by a private employment agency or service provider, but the work is performed for the user firm. In most countries, an employment contract or relationship normally exists between the agency and the worker, whereas a commercial contract binds the agency and the user firm. Although the worker is recognized as being in an employment relationship, because of the multiple parties involved there may be limitations imposed on the rights of the worker or confusion regarding rights, particularly if the worker has provided services at the user firm for an extended period of time.

(3) *Ambiguous employment relationships* arise when the respective rights and obligations of the parties concerned are not clear, or when inadequacies or gaps exist in the legislation, including with regard to the interpretation of legal provisions or their application. One area that sometimes lacks legal clarity is *dependent self-employment*, where workers perform services for a business under a civil or commercial contract but depend on one or a few clients for their income or receive direct instructions with respect to how the work is to be carried out. These workers are typically not covered by the provisions of labour or social security law, although a number of countries have adopted specific provisions to extend some protections to dependent self-employed workers. *Disguised employment relationships* occur when the employer treats an individual as other than an employee, in a manner that hides his or her true legal status as an employee, depriving workers of the statutory protection that is due to them.

(4) In *part-time employment*, the normal hours of work are fewer than those of comparable full-time workers. Many countries have specific legal thresholds that define part-time in contrast to full-time work. For statistical purposes, part-time work is usually considered as working fewer than 35 hours, or 30 hours, per week.

It should be noted that the ILO typology of non-standard forms of employment focuses on employees and on the dependent self-employed, and therefore excludes other self-employed workers.

Source: *Resolution concerning the International Classification of Status in Employment (ICSE)* adopted by the Fifteenth International Conference of Labour Statisticians in 1993 and ILO (2015a, 2015b).

The remainder of this report examines these critical issues in more detail. Chapter 2 explores how changing work patterns in relation to non-standard forms of employment are impacting on income security and income inequalities (box 1.2 discusses definitions of different types of employment, including non-standard employment). Chapter 3 analyses global trends in social protection coverage and the relationship between types of employment and effective social protection coverage in law and in practice. The chapter also explores the question of whether social protection systems ensure adequate income security. Chapter 4 focuses on legislation regulating different forms of employment. The chapter provides an empirical assessment of the impact of changes in regulation on a number of key labour market and economic indicators. Finally, Chapter 5 analyses how changes in global production patterns are impacting on workers, enterprises and the employment relationship. The chapter provides an estimate of global supply chain-related jobs, examines the impacts of the internationalization of production on working conditions and highlights key policy challenges related to this phenomenon.

Appendix A
Country and regional groupings

Developed Economies and European Union

*European Union**
Austria (advanced)
Belgium (advanced)
Bulgaria (emerging)
Croatia (emerging)
Cyprus (advanced)
Czech Republic (advanced)
Denmark (advanced)
Estonia (advanced)
Finland (advanced)
France (advanced)
Germany (advanced)
Greece (advanced)
Hungary (advanced)
Ireland (advanced)
Italy (advanced)
Latvia (emerging)
Lithuania (advanced)
Luxembourg (advanced)
Malta (advanced)
Netherlands (advanced)
Poland (emerging)
Portugal (advanced)
Romania (emerging)
Slovakia (advanced)
Slovenia (advanced)
Spain (advanced)
Sweden (advanced)
United Kingdom (advanced)

North America
Canada (advanced)
United States (advanced)

Other Developed Economies
Australia (advanced)
Israel (advanced)
Japan (advanced)
New Zealand (advanced)

Western Europe (non-EU)
Iceland (advanced)
Norway (advanced)
Switzerland (advanced)

Central and South-Eastern Europe (non-EU) and CIS

Central and South-Eastern Europe
Albania (developing)
Bosnia and Herzegovina (developing)
Serbia (emerging)
Montenegro (developing)
The former Yugoslav Republic of Macedonia (emerging)
Turkey (emerging)

Commonwealth of Independent States
Armenia (developing)
Azerbaijan (developing)
Belarus (emerging)
Georgia (developing)
Kazakhstan (emerging)
Kyrgyzstan (developing)
Republic of Moldova (developing)
Russian Federation (emerging)
Tajikistan (developing)
Turkmenistan (developing)
Ukraine (emerging)
Uzbekistan (developing)

South Asia

Afghanistan (developing)
Bangladesh (developing)
Bhutan (developing)
India (emerging)
Maldives (developing)
Nepal (developing)
Pakistan (developing)
Sri Lanka (developing)

South-East Asia and the Pacific

South-East Asia
Brunei Darussalam (emerging)
Cambodia (developing)
Timor-Leste (developing)
Indonesia (emerging)
Lao People's Democratic Republic (developing)
Malaysia (developing)
Myanmar (developing)
Philippines (developing)
Singapore (advanced)
Thailand (emerging)
Viet Nam (developing)

Pacific Islands
Fiji (developing)
Papua New Guinea (developing)
Solomon Islands (developing)

East Asia

China (emerging)
Hong Kong, China (advanced)
Korea, Democratic People's Rep. of (developing)
Korea, Republic of (advanced)
Macau, China (advanced)
Mongolia (developing)
Taiwan, China (advanced)

Latin America and the Caribbean

Caribbean
Bahamas (developing)
Barbados (developing)
Cuba (developing)
Dominican Republic (developing)
Guadeloupe (developing)
Guyana (developing)
Haiti (developing)
Jamaica (developing)
Martinique (developing)
Puerto Rico (emerging)
Suriname (emerging)
Trinidad and Tobago (developing)

Central America
Belize (developing)
Costa Rica (emerging)
El Salvador (developing)
Guatemala (developing)
Honduras (developing)
Mexico (emerging)
Nicaragua (developing)
Panama (developing)

South America
Argentina (emerging)
Bolivia (developing)
Brazil (emerging)
Chile (emerging)
Colombia (emerging)
Ecuador (developing)
Paraguay (developing)
Peru (developing)
Uruguay (emerging)
Venezuela, Bolivarian Republic of (emerging)

Middle East

Bahrain (emerging)
Iran, Islamic Republic of (developing)
Iraq (developing)
Jordan (developing)
Kuwait (emerging)
Lebanon (developing)
Oman (emerging)
Qatar (emerging)
Saudi Arabia (emerging)
Syrian Arab Republic (developing)
United Arab Emirates (emerging)
Occupied Palestinian Territory (developing)
Yemen (developing)

North Africa

Algeria (developing)
Egypt (developing)
Libya (developing)
Morocco (developing)
Sudan (developing)
Tunisia (emerging)

Sub-Saharan Africa

Eastern Africa
Burundi (developing)
Comoros (developing)
Eritrea (developing)
Ethiopia (developing)
Kenya (emerging)
Madagascar(developing)
Malawi (developing)
Mauritius (emerging)
Mozambique (developing)
Réunion (developing)
Rwanda (developing)
Somalia (developing)
Tanzania, United Republic of (developing)
Uganda (developing)
Zambia (developing)
Zimbabwe (developing)

Middle Africa
Angola (developing)
Cameroon (developing)
Central African Republic (developing)
Chad (developing)
Congo (developing)
Congo, Democratic Republic of (developing)
Equatorial Guinea (developing)
Gabon (developing)

Southern Africa
Botswana (developing)
Lesotho (developing)
Namibia (developing)
South Africa (emerging)
Swaziland (developing)

Western Africa
Benin (developing)
Burkina Faso (developing)
Cape Verde (developing)
Côte d'Ivoire (developing)
Gambia (developing)
Ghana (developing)
Guinea (developing)
Guinea-Bissau (developing)
Liberia (developing)
Mali (developing)
Mauritania (developing)
Niger (developing)
Nigeria (developing)
Senegal (developing)
Sierra Leone (developing)
Togo (developing)

* Note that a new classification system of the ILO regional grouping is forthcoming.

Appendix B
Estimating the global wage gap

The global and regional wage gap estimates presented in this chapter are aggregated from national employment and wage gap estimates for 178 countries. This appendix describes the data and methodology used to generate the estimates.

Average wage data (corresponding to employees and in 2013 local currency units) for 116 countries were taken from the ILO's Global Wage Database. These 116 countries cover 93.3 per cent of global GDP and 90.1 per cent of global employment.

Average annual wages were derived for these 116 countries on the basis of the monthly wage estimates (multiplying monthly wages by 12). Next, annual wages were econometrically estimated for the remaining 62 countries for which reported wage data were unavailable (corresponding to 6.7 per cent of global GDP and 9.9 per cent of global employment). This was done through a regression of average annual real wages in 2013 international (PPP-adjusted) dollars on average output per worker data for the same year, taken from ILO, *Trends Econometric Models*, October 2014. Regional interaction terms were used for the following regions: (1) Developed Economies and European Union; (2) Central and South-Eastern Europe (non-EU) and CIS; (3) East Asia; (4) South-East Asia and the Pacific; (5) South Asia; (6) Latin America and the Caribbean; (7) Middle East; (8) North Africa; (9) Sub-Saharan Africa. Region 1 was the omitted group.

For 13 countries (Central African Republic, Democratic Republic of Congo, Eritrea, Guinea, Guinea-Bissau, Haiti, Democratic People's Republic of Korea, Liberia, Mozambique, Niger, Rwanda, Somalia, Togo), the real wage was assumed to equal output per worker. For five non-wage reporting countries with a significant share of output in extractive industries (Angola, Equatorial Guinea, Gabon, Iraq, Libya, Nigeria and Syrian Arab Republic), wages were estimated by multiplying each of these countries' output per worker productivity levels by the average ratio of wages to labour productivity for oil-exporting reporting countries, including Algeria, Iran, Kuwait, Russian Federation and Saudi Arabia. This was done to avoid overestimation of average wages based on the productivity–wage relationship, as countries with large extractives sectors tend to have very high average levels of output per worker.

The historical wage series was produced using available real wage growth estimates from the Global Wage Database, covering 130 countries. For 48 countries for which wage growth estimates were unavailable, (simple) average wage growth estimates were calculated for each of the nine regions above and applied to non-reporting countries from each region.

Estimates of nominal female, male and total average monthly wages were available for 75 countries from the Global Wage Database. Ratios of female-to-total and male-to-total average wages were calculated for these countries. For non-reporting countries (103), regional averages were applied across the nine regions. These ratios were then used to provide estimated female and male average annual wages. In the final step, for each year between 2008 and 2013, estimated female and male annual wages at the country level were multiplied by the corresponding country-level female and male jobs gap estimates.

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2 EMPLOYMENT PATTERNS, POVERTY AND INCOME INEQUALITY

Introduction

Chapter 1 provided an overview of the diversification of employment patterns and its links with economic growth. The purpose of this chapter is to assess the income effects arising from changes in employment patterns. The chapter examines the contribution of labour income to total income for different categories of workers and its evolution over the past decade (section A). The analysis is based on micro-data surveys for 40 countries, comprising 31 advanced economies and the European Union (EU); and 9 emerging and developing economies.[1] The chapter then looks at the impact of changing work patterns on poverty (section B) and income inequalities (section C). Finally, policy implications from the findings are discussed, drawing on selected country experiences (section D).

A. Incomes across different types of employment

In this chapter, income is defined as the flow of monetary revenues received from work (wage, salary or income from self-employment or own production[2]), capital[3] (interest, profit or dividends), land (rent) or private transfers (inter-household transfers, alimony, remittances). These are the different categories of "market income". In addition, the chapter takes into consideration income received through social transfers, as well as tax payments and contributions made to social security, in order to arrive at "disposable income" (see Appendix B, figure 2B.1).[4] In the countries under analysis, an average of 77.4 per cent of all workers are paid employees (i.e. in dependent paid employment), while the share of self-employed is 22.6 per cent. Out of the paid employees, and for the purposes of the analysis, a distinction is made between permanent/full-time/formal employees on the one hand, and temporary/part-time/informal employees[5] on the other. As noted in Chapter 1, the proportions of different categories of employment vary substantively across regions. In advanced economies, a higher proportion of workers are in paid, permanent employment compared with emerging and developing economies, where the share of self-employment and informal employment is higher.

1 Throughout the chapter we use the term advanced economies and the EU, which covers the advanced and Central and Eastern European (CEE) countries, and is consistent with the ILO region "Developed Economies and the EU" as set out in the Appendix A of Chapter 1. For emerging and developing economies we group together regions with income classification. Appendix A of this chapter provides data sources and the years covered; Appendix B describes the different components of income used for the analysis as well as the data limitations and methodological issues. Due to data limitations, some of the countries are not included in some of the tables and figures.

2 This includes income from own production for both agricultural and non-agricultural work.

3 The monetary revenues included in capital income are those that are regular in nature. We do not include one-time revenues or receipts (cash inheritances, capital gains, gambling, lottery, etc.) in this analysis.

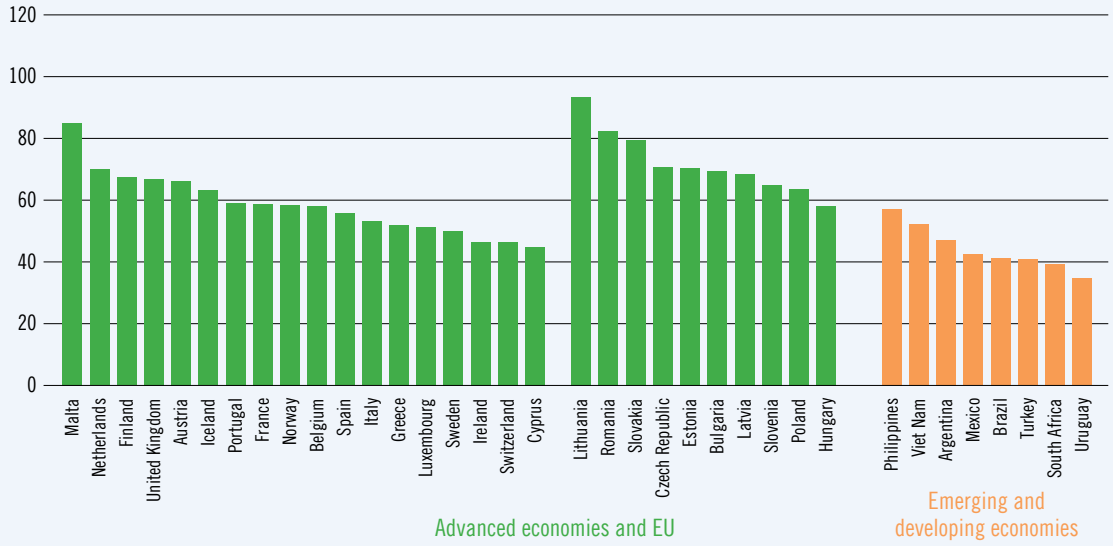
4 "Stocks" or "assets" are not considered as such in this analysis; only income flows are covered.

5 Depending upon the data availability for the respective country informal employees are defined as those who are (a) not registered with or do not pay contributions to social security (Argentina, Mexico, South Africa, Turkey, Uruguay, Viet Nam), (b) not registered to social security and/or do not have a formal contract (Brazil), (c) short-term or seasonal employees or work for a different employer on a day-to-day or week-to-week basis (Philippines).

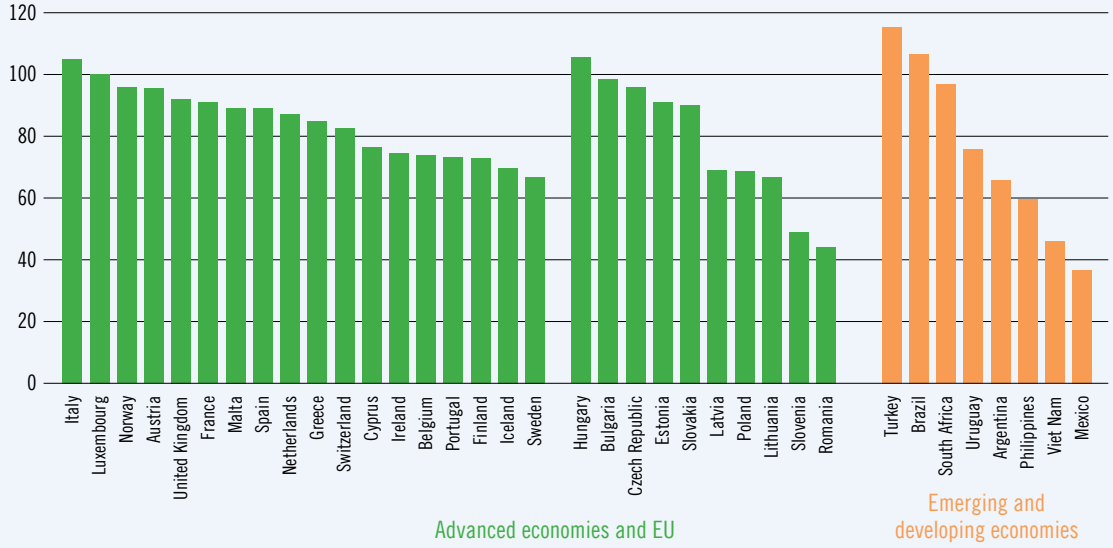
Figure
2.1

Ratio of labour incomes by type of employment

Panel A. Average annual wage income of temporary/informal as a share of the average annual wage income of permanent/formal employees, latest year available (%)



Panel B. Average annual income from self-employment as a share of the average annual wage income of permanent/formal employees, latest year available (%)



Note: For all countries, two groups of employees are distinguished. For European countries, the distinction is between permanent and temporary employees; for emerging and developing economies, the distinction is between formal and informal employees.

Source: ILO Research Department estimates based on household surveys (see Appendix A, table 2A.1).

Permanent workers earn significantly more than their non-permanent counterparts …

The average annual incomes for all employees and self-employed are in the range USD 7,000–47,500[6] in the advanced economies and the EU, and USD 3,000–14,750 in the emerging and developing economies under analysis. The average annual incomes for permanent employees are higher than this overall average in all countries. Temporary workers in the advanced economies are paid less than their permanent counterparts; their wages are between 15 per cent (Malta) and 55 per cent (Cyprus) lower. In the emerging and developing economies, informal wage employees earn less than formal wage employees. Wages of informal employees are between 43 per cent (Philippines) and 65 per cent (Uruguay) lower than wages of formal employees[7] (figure 2.1, panel A).

There is greater variability in the average incomes of the self-employed. Among the advanced economies and the EU, in Hungary and Italy self-employed workers earn more than permanent wage workers, while in Bulgaria and Luxembourg the earnings of the self-employed are similar to permanent wage workers. In all other countries, self-employed earn between 67 per cent and 96 per cent of what permanent wage workers earn, except for in Romania and Slovenia, where this ratio is lower (figure 2.1, panel B). In the emerging and developing economies the picture is quite varied across and within geographic regions. In Brazil and Turkey, self-employed earn more than formal wage workers, while in South Africa it is almost similar to formal wages. In the remaining countries, the ratio ranges between 76 per cent (Uruguay) and 37 per cent (Mexico).

In all the countries under analysis, women have lower average annual incomes than men. For the most recent year for which data is available, on average, women earned between 57 per cent (Switzerland) and 97 per cent (Philippines) of what men earned.[8] These findings are consistent with ILO (2014a), where women's average wages are found to be between 4 and 36 per cent lower than men's.[9] Since the mid-2000s, the gender gap in the average annual incomes has decreased in almost all the countries under analysis by between one (Bulgaria, Czech Republic, France, Greece, Italy, Slovakia) and eight (Lithuania, Luxembourg) percentage points.[10] The gender gap increased in only four countries (Iceland, Malta, Poland, Viet Nam) under analysis by between one and five percentage points.

… and the gap has tended to increase over the past decade.

The development of average annual wages between temporary and permanent workers since the mid-2000s differs among the advanced economies and EU countries. In emerging and developing economies, the wage gap between formal and informal employees narrowed in most countries under analysis except Mexico, Turkey and Uruguay (figure 2.2, panel A). The ratio of average annual income for the self-employed to average annual wages of permanent workers has diverged in all advanced economies and the EU, except for Estonia, Iceland and Spain. In emerging and developing economies, the gap between self-employed incomes and formal wages has widened in 50 per cent of the countries under analysis (figure 2.2, panel B). In the majority of the countries self-employed incomes declined over the past decade, which could be due to the global recession and it is also probable that those who are laid off from paid employment enter self-employment depressing the incomes of the self-employed and leading to widening of the income gap.

6 Figures in real terms (base year 2010) and adjusted for purchasing power parity.

7 Other emerging economies like India and Russia are not considered in this analysis due to data availability constraints. However, partial evidence for these countries lends support to the findings of this report. For example, in India the rural casual workers earn 54 per cent less than regular salaried workers in rural areas and 62 per cent less than regular salaried workers in urban areas (GoI, 2013).

8 Detailed sex-disaggregated tables for this chapter are available upon request.

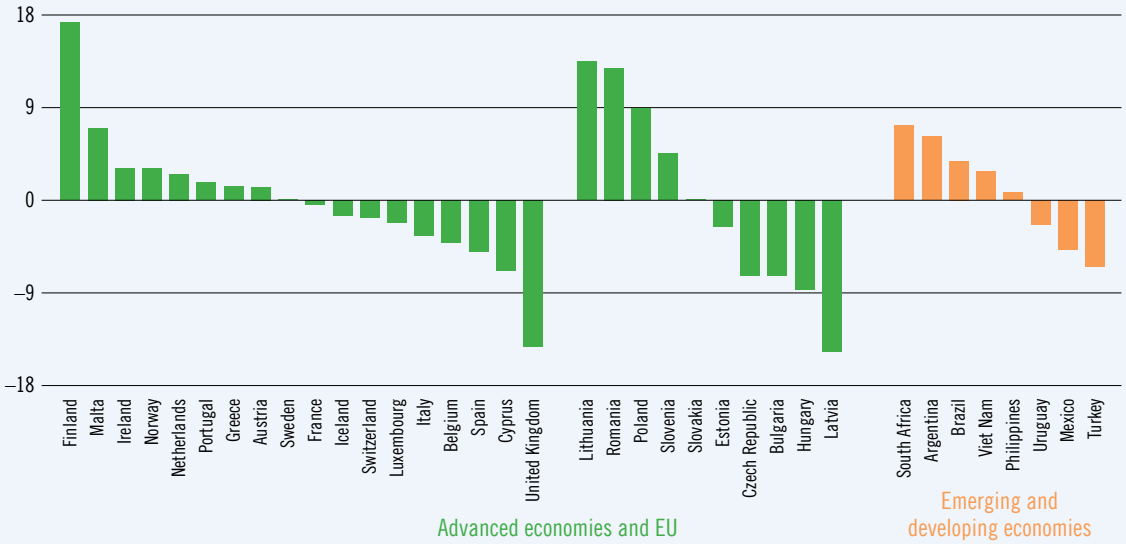
9 A number of studies exploring the factors behind the gender wage gap have found that even after controlling for education, age, job tenure, occupation and other labour market characteristics, the gender gaps in remuneration persist (ILO, 2009, 2014a; UNDP, 2013; Rubery and Grimshaw, 2011).

10 The decline in gender wage gaps over the past decade in Latin America has also been observed by other researchers (Nopo and Hoyos, 2010).

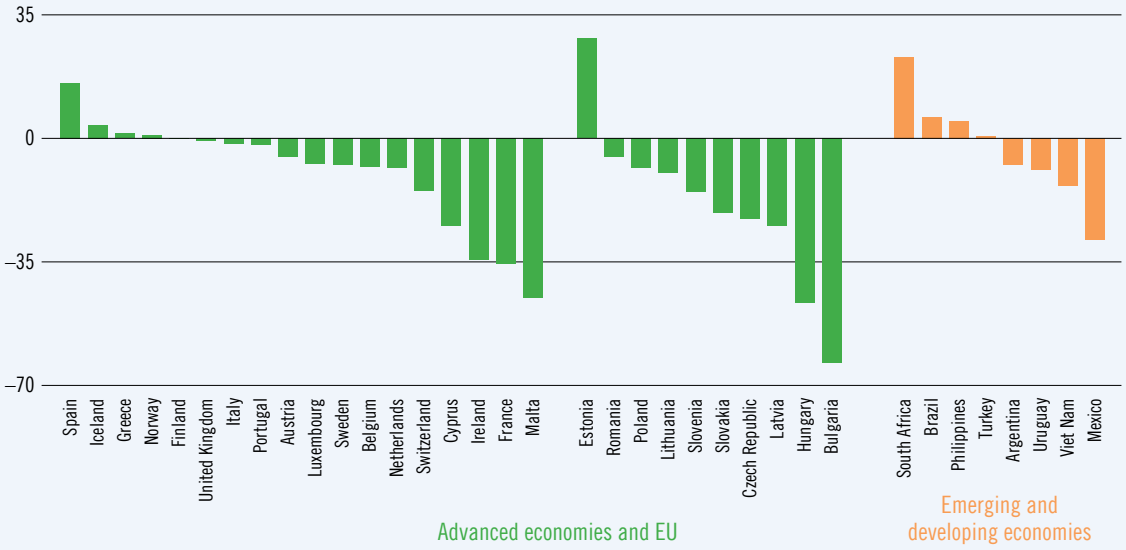
Figure
2.2

Change in labour income ratios by type of employment

Panel A. Change in the ratio of average annual wages of temporary/informal employees to average annual wages of permanent/formal employees between the mid-2000s and the latest year available (percentage points)



Panel B. Change in the ratio of average annual self-employment income to average annual wages of permanent/formal employees between the mid-2000s and the latest year available (percentage points)

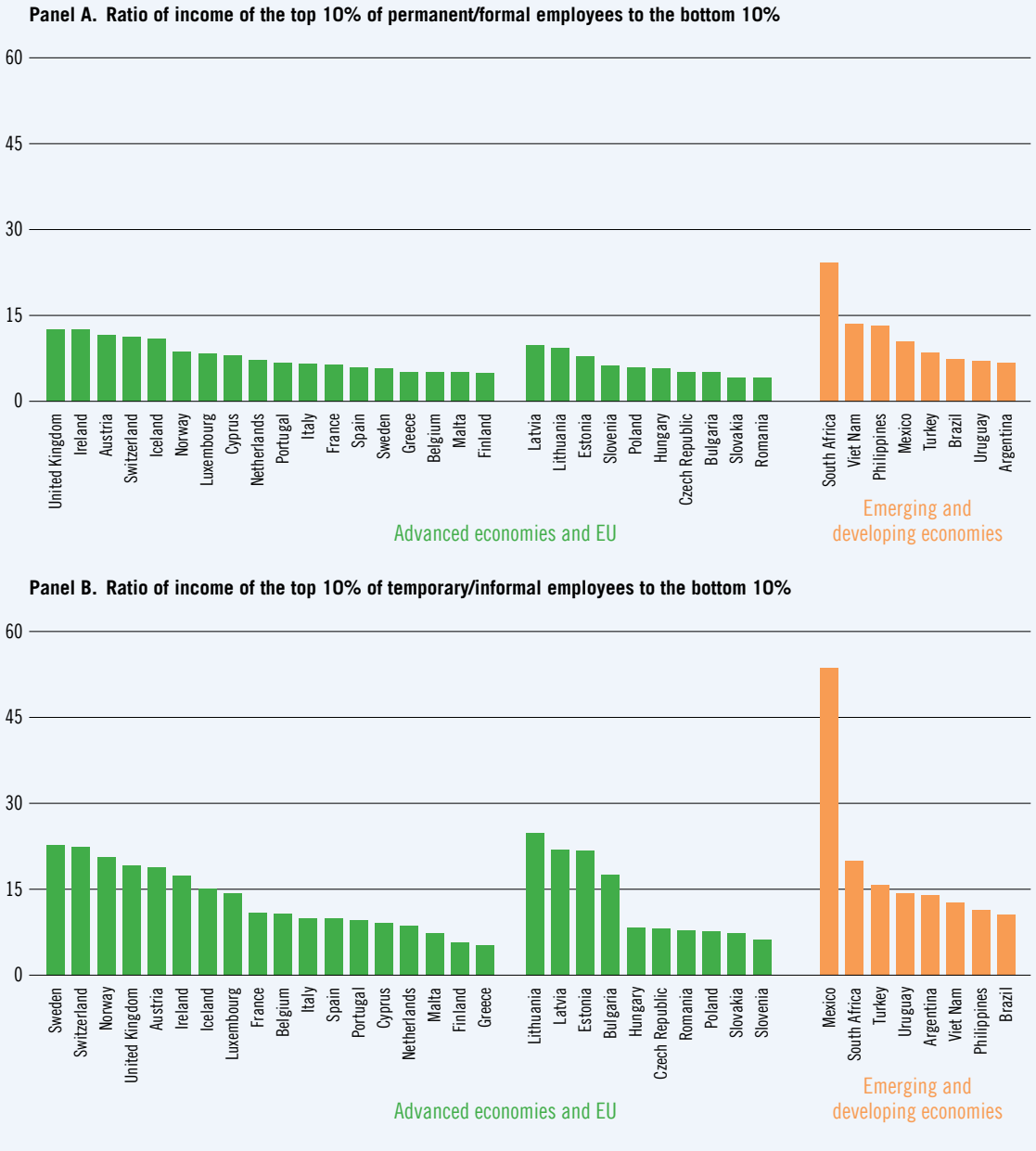


Note: For all countries, two groups of employees are distinguished. For European countries, the distinction is between permanent and temporary employees; for emerging and developing economies, the distinction is between formal and informal employees.

Source: ILO Research Department estimates based on household surveys (see Appendix A, table 2A.1).

Figure
2.3

Inequality of labour incomes by type of employment, latest year available



Note: For all countries, two groups of employees are distinguished. For European countries, the distinction is between permanent and temporary employees; for emerging and developing economies, the distinction is between formal and informal employees.

Source: ILO Research Department estimates based on household surveys (see Appendix A, table 2A.1).

The ratio of income between earners at the top and the bottom of the income distribution are much higher for temporary/informal wage workers than for permanent/formal wage workers (figure 2.3, panels A, B). The ratios differ across regions. The gap between the top and bottom earners has widened for permanent workers in about 42 per cent of the countries. In the case of temporary workers it has widened in about 36 per cent of the countries (Appendix C, figure 2C.1). A rise in pay of top executives was observed at the beginning of the recent global recession, wherein chief executive officers earned between 71 and 183 times more than the average employees (ILO, 2008).[11]

[11] Apart from the rising income gaps, there are also changes in the distribution of labour and capital. A number of recent studies have documented the decline in labour shares and the possible reasons behind such a trend. For details see ILO (2008, 2011a, 2013); Stockhammer (2013); Cornia (2012).

Differences in labour income across working groups are generally not compensated by other incomes

These growing disparities are important because labour income is the key source of revenues for the majority of working households.[12] In advanced economies and the EU, labour income constitutes about 85–95 per cent of total income for households headed by a permanent employee, and 70–95 per cent for households headed by a temporary employee or self-employed worker. In emerging and developing economies, labour income constitutes more than 86 per cent of total household income for formal employees,[13] while it varies across countries for temporary and self-employed workers (figure 2.4). In some of the emerging and developing economies there is a comparatively higher dependence on labour income, which in a sense shows that in the absence of a well-established social security system, labour incomes are very important to sustaining livelihoods, especially in old age.

Overall, the contributory and non-contributory social transfers are relatively important in Nordic countries (Iceland, Finland, Norway and Sweden), while in Southern Europe (Greece, Italy, Portugal and Spain) and Central and Eastern European (CEE) countries, contributory social transfers are a key source of revenues in addition to labour incomes. The situation in emerging and developing economies is more diverse. Private transfers play an important role in the Philippines, South Africa and Viet Nam; a combination of contributory and non-contributory social transfers and private transfers in Argentina and Mexico; contributory and non-contributory social transfers and capital incomes in Brazil; and contributory social transfers, capital income and private transfers in Turkey (figure 2.4, panel A). The contribution of other types of income by work status varies across countries, though the overall trend is similar for permanent and temporary workers (figure 2.4, panels B, C).

Among households headed by a self-employed worker, income from work accounts for 74 to 94 per cent of total household income in advanced economies. The second most important income component is capital income. In CEE countries, capital is relatively less important, with contributory and non-contributory social transfers playing a bigger role. The picture in emerging and developing economies is relatively diverse (figure 2.4, panel D).

In the case of households with unemployed heads, income from work accounts for 9 to 61 per cent of total household income in advanced economies and the EU. In Nordic countries (Finland, Norway and Sweden), the Netherlands and the United Kingdom, there is a considerable dependence of households on non-contributory social transfers to meet their consumption and material needs, while in many of the Southern European countries (Greece, Italy and Portugal) and Cyprus, contributory social transfers along with private transfers are important sources of income for the households. In Austria, Belgium, France, Iceland, Ireland, Switzerland and the United States, contributory social transfers are the second most important source of income after income from work. In CEE countries and emerging and developing economies, apart from income from work, non-contributory social transfers and private transfers make a significant contribution to household income (figure 2.4, panel E).

Finally, in the case of economically inactive households, contributory social transfers are the most important source of income across all countries, except for Mexico, the Philippines, South Africa and Viet Nam among the emerging and developing economies (figure 2.4, panel F). In emerging and developing economies, private transfers make a significant contribution to household income, with the exception of Brazil. In the Nordic countries, about 10 to 20 per cent of the total income comes from non-contributory social transfers for the economically inactive households, while a substantial proportion of their incomes comes from contributory social transfers. In other advanced economies and EU countries contributory social transfers constitute a substantial proportion of household income for these households.

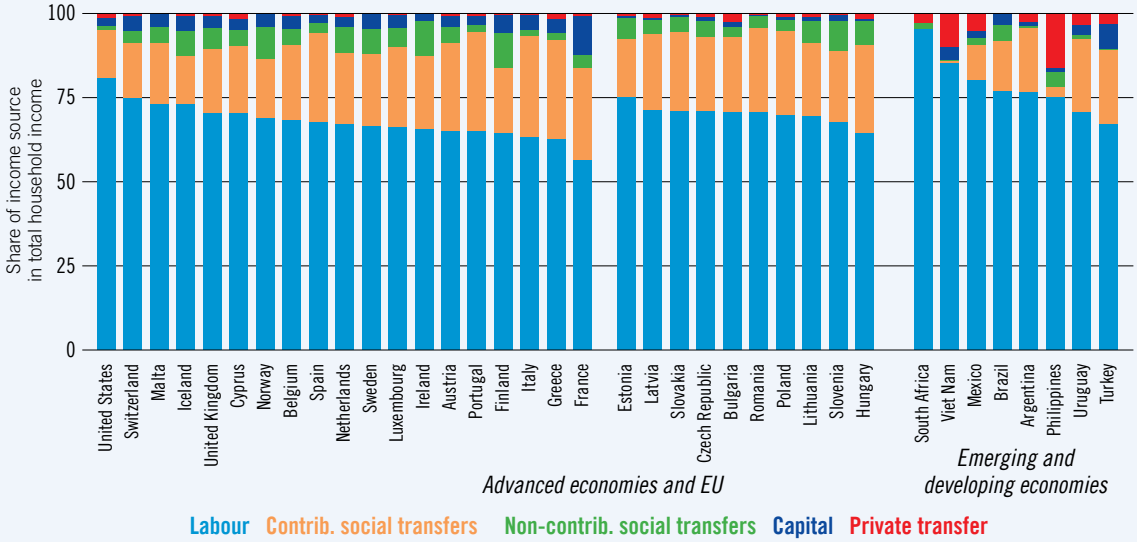
12 Working households are defined as those where the "household head" is working.

13 A recent ILO (2014a) report also shows that the share of labour income in total household income is quite high in a large number of countries.

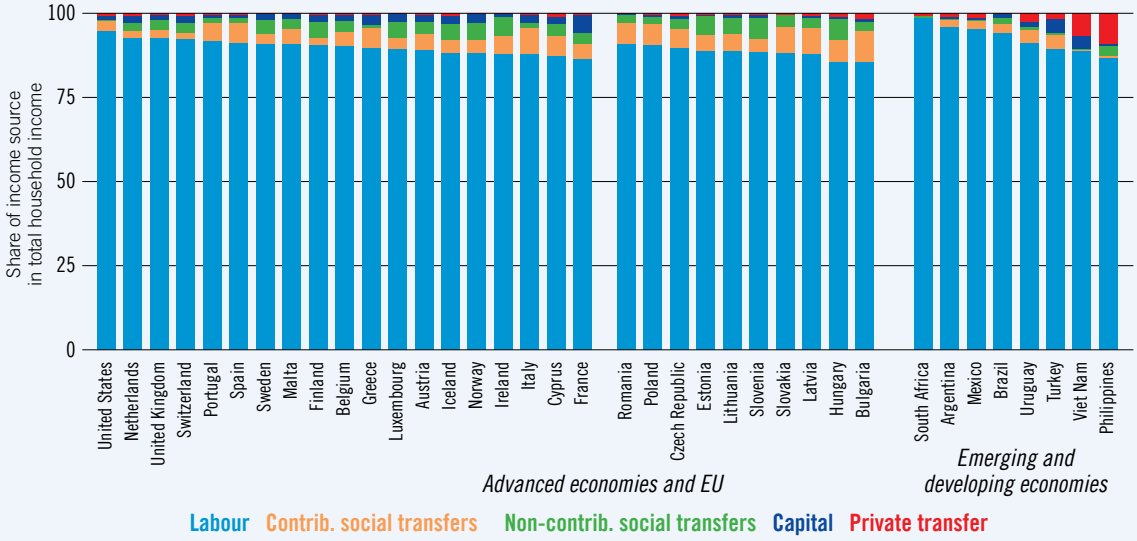
Figure
2.4

Sources of income by type of employment of the household head, latest year available

Panel A. All households



Panel B. Permanent/full-time/formal employee



Panel C. Temporary/part-time/informal employee

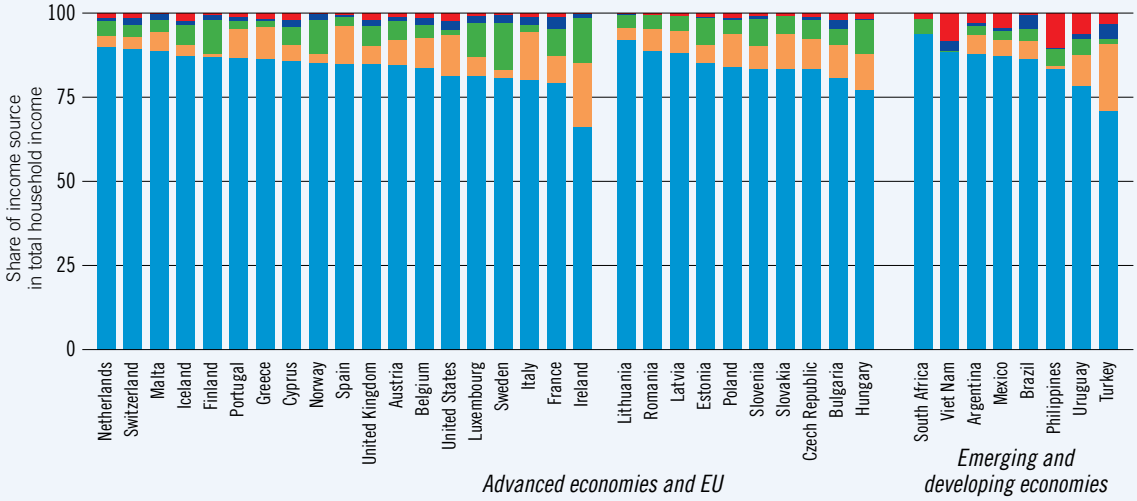
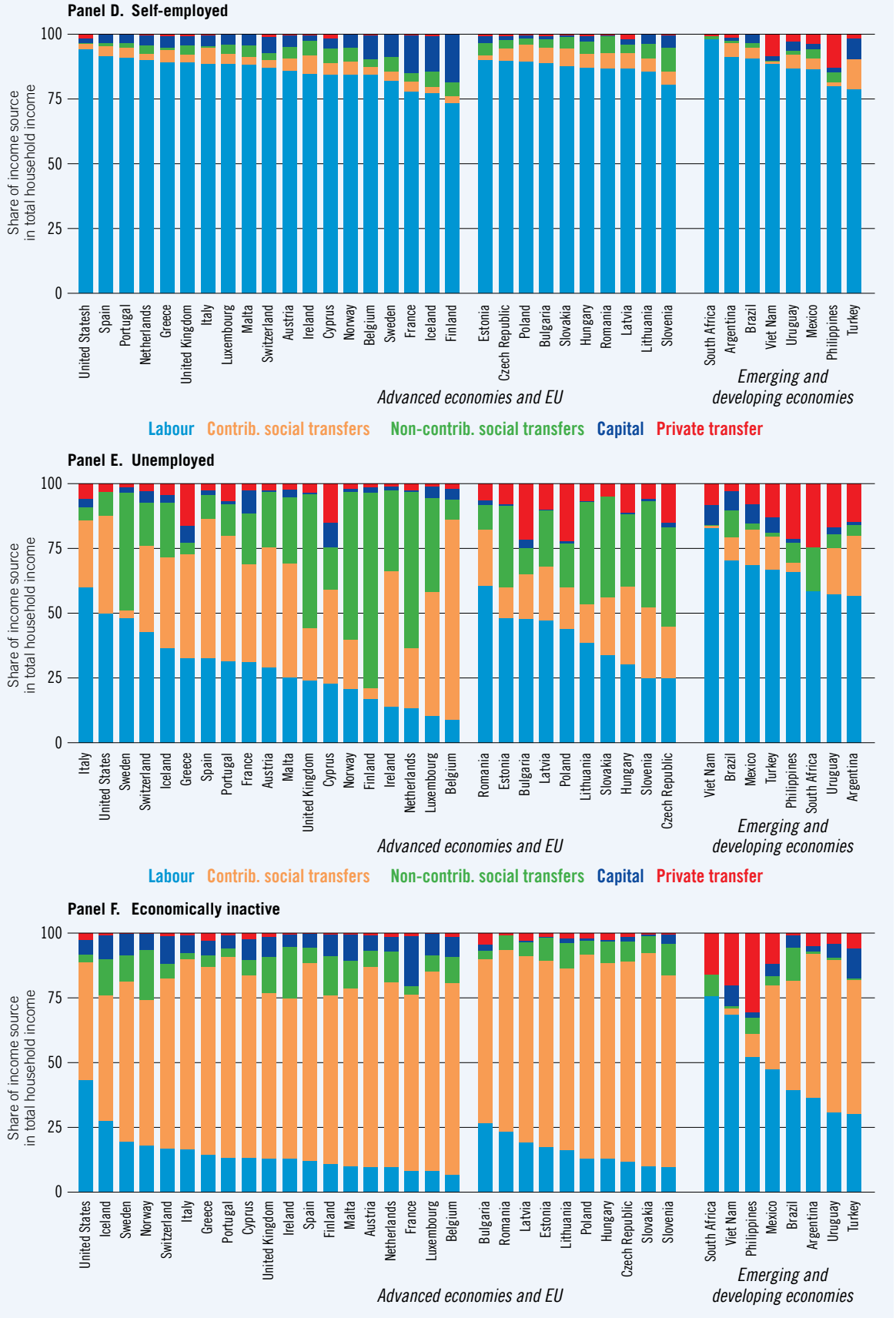


Figure 2.4 *cont.*



Note: For all countries, two groups of employees are distinguished. For European countries, the distinction is between permanent and temporary employees; for the United States, the distinction is between full-time and part-time employees; for emerging and developing economies, the distinction is between formal and informal employees.

Source: ILO Research Department estimates based on household surveys (see Appendix A, table 2A.1).

There are also significant differences between male- and female-headed households in terms of the composition of total household income, especially among the self-employed, unemployed and economically inactive. For households headed by a female who is engaged in self-employment, contributory and non-contributory social transfers in advanced economies and the EU, and private transfers in emerging and developing economies constitute an important share in the household income compared with male-headed households. This is also true for households with an unemployed head. For economically inactive households, contributory social transfers constitute a comparatively high proportion of the household income for both male- and female-headed households in Latin America and Turkey. In Asian countries and South Africa, private transfers play a more important role in the household income for female-headed households.

B. Changing work patterns and poverty

The links between economic growth and poverty are complex. In some emerging and developing economies, economic growth has been accompanied by a lower incidence of poverty (see Chapter 1). However, this decrease was not always significant, and the proportion of the extreme poor[14] seems to have remained stable over the past decades (Ravallion, 2014). Moreover, there are significant cross-country differences in the growth–poverty relationship. According to a recent report, extreme poverty was reduced from 36 per cent in 1990s to 18 per cent in 2010 at the global level, but the number of poor people living in sub-Saharan Africa increased from 290 million in 1990 to 414 million in 2010 (UNCTAD, 2014). In the Arab region, extreme poverty decreased from 5.5 per cent in 1990 to 4.1 per cent in 2010 due to progress in Egypt, Jordan and the Syrian Arab Republic. However, the incidence of extreme poverty is estimated at 7.4 per cent for 2012 (UN-LAS, 2013). Asia and the Pacific saw a major drop in extreme poverty of about 745 million people between 1990 and 2010 (ADB, 2014). The purpose of this section is to assess whether the diversification in employment patterns described in Chapter 1 plays a role in poverty dynamics.

In order to assess the relationship between different employment situations and poverty, we adopt a more nuanced definition of poverty than the broad categories of $1.25 PPP/day and $2 PPP/day. For this analysis the poverty threshold is defined differently for advanced economies and the EU and for emerging and developing economies. In advanced economies and the EU, the poverty threshold is defined as a relative measure and is set at 60 per cent of the median income. In emerging and developing economies, it is defined as an absolute measure which is based on the minimum level of income deemed adequate to sustain a basic standard of living at the national (rural/urban) level.

Poverty disproportionately affects temporary workers and the unemployed

Poverty rates according to these definitions range between 9 and 24 per cent in advanced economies and the EU. Among emerging and developing economies, poverty rates range from 7 per cent in Uruguay to around 46 per cent in South Africa (figure 2.5, panel A).[15] Poverty rates vary by the type of employment of the household's head. They are generally higher among temporary employees and the self-employed than among permanent employees (figure 2.5, panels B, C, D). The poverty rate has increased the most in advanced economies and the EU, while it has declined in most emerging and developing economies across all types of employment.

The poverty rates are highest among households headed by an unemployed person, with the share varying between 16 and 84 per cent (figure 2.5, panel E). These figures have remained stable or have marginally declined in the majority of the advanced economies and EU countries. However,

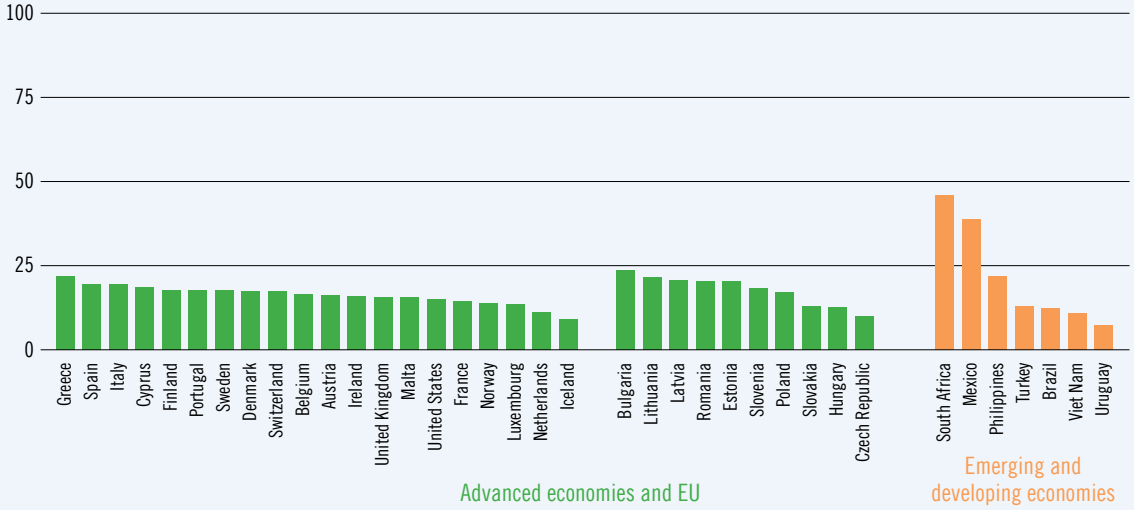
14 Extreme poverty is defined as average daily consumption of $1.25 or less and means living on the edge of subsistence (World Bank, 2014).

15 As we are using national poverty lines the consumption baskets might be different, yielding different poverty rates, which are not necessarily comparable across countries.

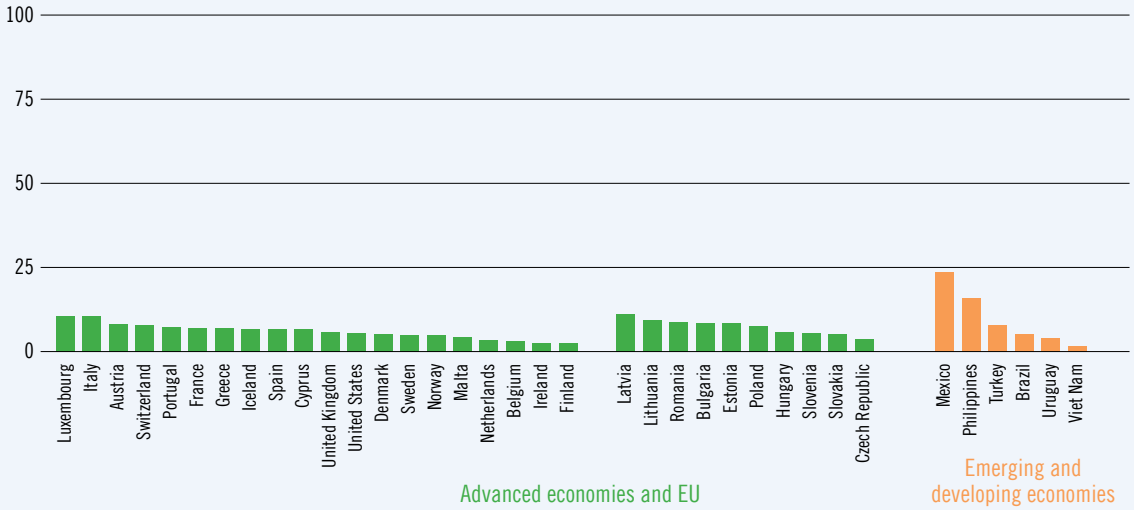
Figure
2.5

Poverty rates by type of employment of the household head, latest year available (%)

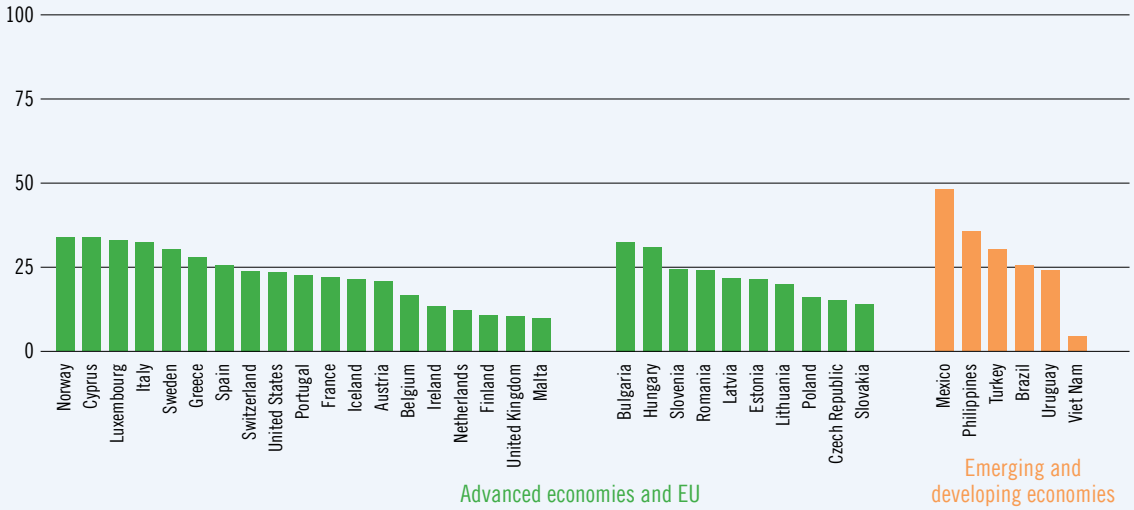
Panel A. All households

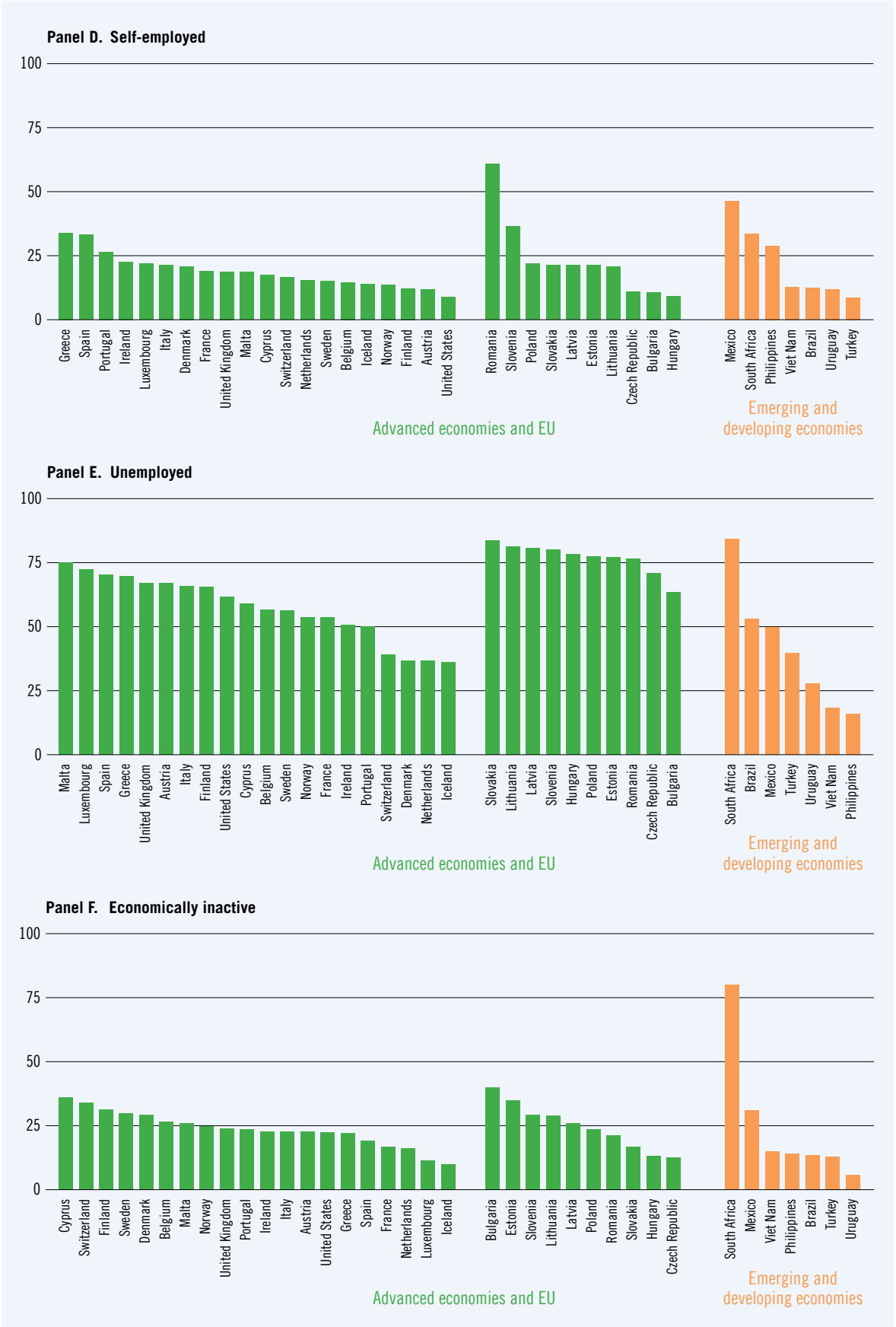


Panel B. Permanent/full-time/formal employee



Panel C. Temporary/part-time/informal employee





Note: For all countries, two groups of employees are distinguished. For European countries, the distinction is between permanent and temporary employees; for the United States, the distinction is between full-time and part-time employees; for emerging and developing economies, the distinction is between formal and informal employees. For advanced economies and the EU we use a relative measure of poverty and for emerging and developing economies we use an absolute measure of poverty.

Source: ILO Research Department estimates based on household surveys (see Appendix A, table 2A.1).

among unemployed the poverty rates have increased in countries such as Greece, Portugal and Spain, and perhaps surprisingly also in Finland, Norway and Sweden. In emerging and developing economies, poverty rates among households headed by an unemployed person have declined in Brazil, South Africa, Turkey and Uruguay, while they have remained more or less stable in the Philippines and have increased in Mexico and Viet Nam.

The poverty rates among households headed by an economically inactive person vary between 10 and 40 per cent in advanced economies and the EU. The proportions have declined or remained stable since the mid-2000s in most of the countries, except for Poland and Sweden. In emerging economies, the poverty rate for such households varies widely, with South Africa at 80 per cent and Uruguay at 6 per cent. The proportions have declined or remained stable since the mid-2000s (figure 2.5, panel F). Across gender, overall the poverty rates among female-headed households are higher than the ones among male-headed households in all countries under analysis, except for Mexico, the Philippines, Turkey and Viet Nam.

Social transfers are an important source of income for poor households, especially in advanced economies and the EU

For households who are poor, work might not always be the major source of income to meet their consumption and material needs. These households might depend upon other sources, such as income from social transfers (contributory and non-contributory), income from private transfers (including remittances) and capital income. These different sources of income are also very important for those who are not actively participating in the labour market, namely the unemployed, the elderly and those who are economically inactive. There is significant cross-country heterogeneity among the households regarding their dependence on different sources of income.

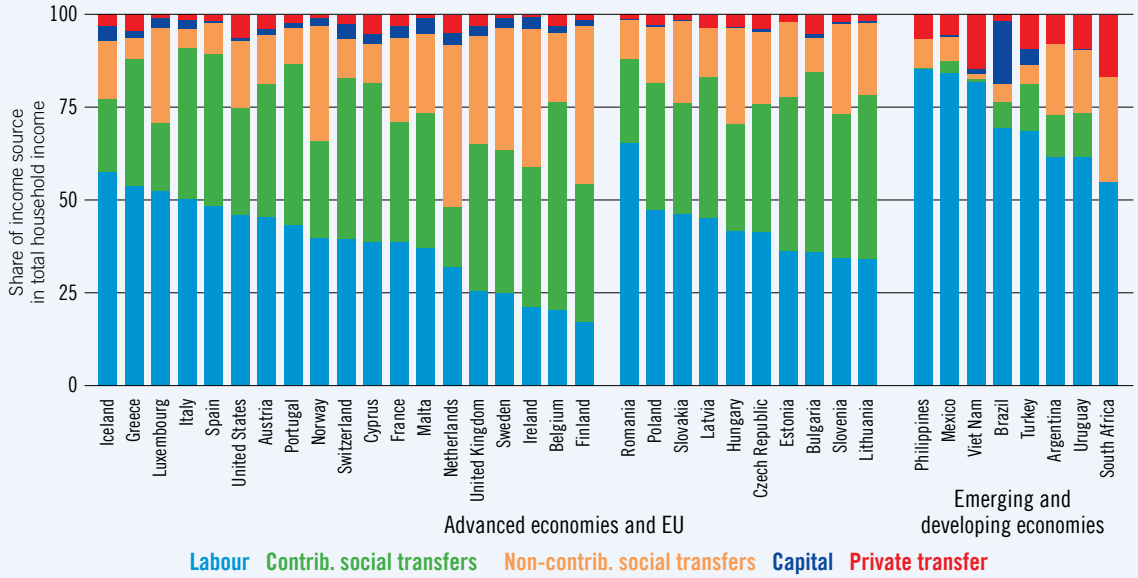
In advanced economies and the EU, the contribution of labour income to total household income for households who are below the level of relative poverty ranges from about 17 per cent (Finland) to 66 per cent (Romania). In the Southern European countries (Greece, Italy, Portugal and Spain), labour income constitutes over 43 per cent of the total household income for households who are below that level. Contributory social transfers are the second most important source of income for such households in these countries, and non-contributory social transfers only make up a small part of their incomes. Among the Nordic countries (Finland, Iceland, Norway and Sweden) there is a large variation in the contribution of labour income to household income (18 per cent in Finland and 58 per cent in Iceland). In Finland, non-contributory social transfers (43 per cent) are the most important source of income for households below the relative poverty line, followed by contributory social transfers (37 per cent). In Norway and Sweden, both non-contributory and contributory social transfers are equally important sources of household income for poor households. In Iceland, non-contributory and contributory social transfers constitute a smaller proportion of the total household income compared with other Nordic countries, and labour income constitutes the most important source of income (figure 2.6).

The Netherlands exhibits a very interesting picture, as non-contributory social transfers constitute a significant proportion of the income of households below the level of relative poverty. Ireland and the United Kingdom follow a trend similar to Norway and Sweden. In Belgium, Switzerland and the United States, contributory social transfers have a much more significant contribution to household income compared with other sources. In CEE countries, labour income constitutes about 34 per cent (Lithuania) to 66 per cent (Romania) of the total household income. The next important source of income is contributory social transfers, followed by non-contributory social transfers and private transfers (figure 2.6).

In the emerging and developing economies, the situation is quite different. Labour income constitutes about 56 to 70 per cent of the total income for poor households in all the countries under analysis except for Mexico, the Philippines and Viet Nam, where the share of labour income in total household income is even higher, above 80 per cent. In South Africa, apart from labour income (56 per cent), non-contributory social transfers (29 per cent), followed by private transfers (16 per cent), contribute significantly to the total household income for households who are below the level of absolute poverty. Income from private transfers largely comes from remittances. Non-contributory social transfers include a number of grants and benefits that were introduced over the past decade. The contribution of other sources of income varies across the emerging economies:

Figure
2.6

Sources of income for households below the relative/absolute poverty line, latest year available (%)



Note: For all countries, two groups of employees are distinguished. For European countries, the distinction is between permanent and temporary employees; for the United States, the distinction is between full-time and part-time employees; for emerging and developing economies, the distinction is between formal and informal employees. For advanced economies and the EU we use a relative measure of poverty and for emerging and developing economies we use an absolute measure of poverty.

Source: ILO Research Department estimates based on household surveys (see Appendix A, table 2A.1).

in Mexico and the Philippines, private transfers and non-contributory social transfers are found to be equally important; in Brazil, capital income is the second most important source; in Turkey, contributory social transfers and private transfers are the next important source; in Uruguay, non-contributory social transfers; in Argentina, social transfers both contributory and non-contributory are the second most important source of income; and in Viet Nam, private transfers are the second most important source with social transfers playing a very small role (figure 2.6).

Across gender, in all the countries labour income constitutes a higher proportion of total income for male-headed poor households than for female-headed poor households. In advanced economies and the EU, contributory and non-contributory social transfers constitute a more significant proportion of household incomes for poor female-headed households compared with poor male-headed households. In emerging and developing economies, private transfers (largely remittances) and non-contributory transfers constitute a relatively high proportion of household incomes for female-headed households.

C. Changing work patterns and income inequality

There has been a renewed interest in income distribution and concern about rising inequality among publics and policy makers, especially since the 2008 global recession (Berg, 2015; ILO, 2008, 2011b, 2014a; Piketty, 2014; Ostry, Berg and Tsangarides, 2014; ADB, 2012; UNRISD, 2010; Gustafsson, Shi and Sicular, 2008). Between the early 1990s and the mid-2000s, which was a period of relatively rapid economic growth, the total income of high-income households expanded faster than that of low-income households in about two-thirds of advanced, emerging and developing economies (ILO, 2008). A similar pattern was seen in three-quarters of the OECD countries over the past two decades (Cingano, 2014). A recent study also shows that about half of the growth in overall income inequality is due to the growth in earnings inequality (ILO, 2014a). Inequality could also rise due to a combination of factors like technological change, globalisation, industrial restructuring, change in bargaining power of labour and capital, weakened redistributive mechanisms, financialisation, etc., which we do not explore in this chapter. This section analyses the trends in market and disposable income inequality to determine whether changing employment patterns have an influence on inequality.

In all countries under analysis, market income inequality has remained high or increased since the mid-2000s …

The Gini coefficients for market income[16] inequality are quite high in emerging and developing economies, followed by advanced economies and the EU.[17] Looking at trends for advanced economies over the past decade, the disparity in the distribution of market incomes has risen in about 40 per cent of the countries, and in the remaining countries it has remained the same or has marginally declined, as in the case of Norway. In contrast, in the CEE countries the Gini coefficient for market incomes has fallen or remained stable in 8 of the 11 countries under analysis, and it has risen in the others. In the emerging and developing economies, the Gini coefficient for market incomes has increased in 2 out of the 9 countries under analysis, and has remained stable or has declined in others (figure 2.7, panel A).[18]

The Gini coefficient of disposable income[19] has declined in most of the countries over the past decade, except in Austria, Denmark, France, Mexico, Spain and Sweden[20] (figure 2.7, panel B). In the Latin American region, the reduction in income inequality is due to the reduction in wage inequality through well-designed minimum wage policies, public transfers to the poor[21] and also through expansion of education (ILO, 2014a; Cornia, 2014; Ferreira et al., 2012; Lopez-Calva and Lustig, 2010). Both transfer systems and taxes have had a significant effect in reducing income inequality. In the aftermath of the global recession, several countries responded by introducing a number of social assistance schemes or expanding public transfers (Bonnet et al., 2012), which offset the inequality impact of high unemployment following the crisis.

16 Market income comprises labour income, capital income and private transfers. See Appendix B, figure 2B.1 for more details.

17 The analysis here is a point-to-point comparison which may be sensitive to the selection of years analysed, although every effort was made to minimize this potential bias. Apart from establishing the trends in inequality, in this section we are much more interested in how different sources of incomes are associated with overall inequality.

18 Income inequality in India has also remained stable between 2004–5 and 2009–10 based on per capita consumption expenditure. In the Russian Federation the income inequality based on per capita has increased between 2005 and 2010 (Lee and Rusconi, 2014).

19 Disposable income is defined as market income plus social transfers (contributory and non-contributory) minus contributions to social security and taxes. See Appendix B, figure 2B.1 for more details.

20 The rise in income inequality in Sweden is associated with the decline in trade union membership (OECD, 2011; Noah, 2012).

21 See discussion on Brazil in Section D.

Figure
2.7

Market and disposable income inequality, mid-2000s and latest year available

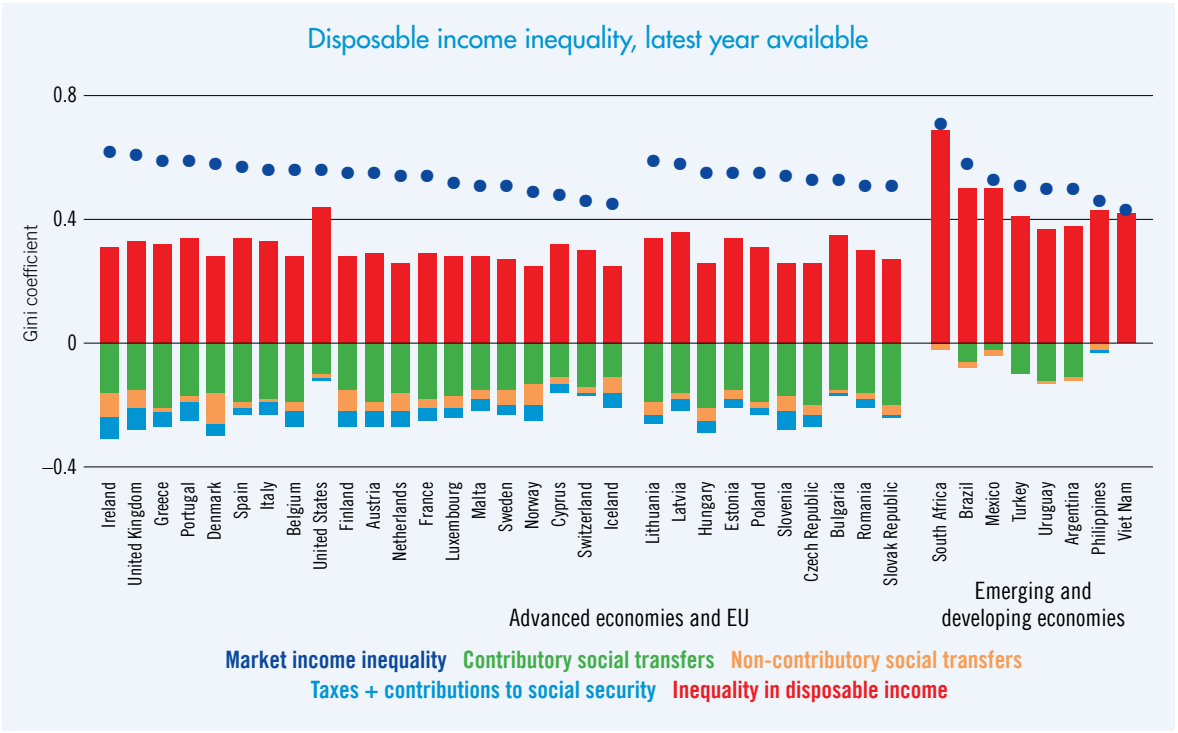
Source: ILO Research Department estimates based on household surveys (see Appendix A, table 2A.1).

… a trend aggravated by the rising incidence of non-permanent forms of employment as well as growing unemployment and inactivity …

Increases in market income inequality have been largely driven by changes in the distribution of wages and incomes in the majority of the countries. Labour income inequality has increased in all advanced economies except Malta, the Netherlands and Norway. However, in the majority of the CEE and emerging and developing economies, labour income inequality has declined, except for the Czech Republic, Latvia, Lithuania, Mexico, Slovenia and South Africa.

A detailed analysis of different sources of income (see Appendix B for methodology) shows that labour markets are central to the evolution of market income inequality (Appendix C, table 2C.1). For households headed by permanent employees, income inequality ranges between 0.26 (Denmark) and 0.57 (South Africa) in the most recent year for the countries under analysis.

Figure **2.8**



Source: ILO Research Department estimates based on household surveys (see Appendix A, table 2A.1) and Eurostat.

When households with temporary-employee heads are included, inequality increases in all advanced economies. In CEE countries, inequality among employee heads has declined in all countries except Bulgaria and Latvia since the mid-2000s (Appendix C, table 2C.1). An increase in real minimum wages and annual growth rates of over 5 per cent in Estonia and Romania (European Commission, 2015) could be responsible for the decline in inequality in these countries.[22]

Among the emerging and developing economies, inequality among employee-headed households has declined since the mid-2000s in Argentina, Brazil, Uruguay and Viet Nam. Different factors are responsible for this trend. For example, in Argentina, the expansion of employment during economic recovery was a significant factor, while rising minimum wages and promotion of collective bargaining also may have contributed to the decline (Gasparini and Cruces, 2010). The increase in minimum wages was also important in reducing income inequality in Brazil (Lustig et al., 2012), and the restoration of wage councils and increase in real wages could have led to a reduction in income inequality in Uruguay (Amarante et al., 2011).

When households with self-employed heads are included in the measurement, inequality is higher in all countries except for some CEE countries (Bulgaria, Hungary, Latvia and Lithuania), Cyprus and Iceland. The increase in labour income inequality is comparatively high in emerging and developing economies, where high proportions of workers are self-employed and work in sectors with low productivity. Inequality increases by more than three percentage points in one-third of the countries when households with unemployed heads are included (Appendix C, table 2C.1).[23] Likewise, when economically inactive households are included in the analysis, income inequality increases by more than 10 percentage points in over 90 per cent of the countries (Appendix C, table 2C.1). We include unemployment benefits and retirement pensions at a later stage, as part of the contributory social transfers. However, if one were to account for them at this point, then that increase in inequality would be comparatively lower.

22 On the other hand, it is also possible that increased participation of women in the labour force over the past decade could further widen the labour income distribution. This is because women are more engaged in part-time work than men, which could widen the wage gap (Eurostat, 2011).

23 In Greece, Ireland, Portugal and the United Kingdom the high labour income inequality and the increase since the mid-2000s could be due to low employment rates. Also, the share of part-time workers is quite high in Ireland and the United Kingdom (European Commission, 2015). Another reason could also be the presence of multiple-earners and no earners in the household, which could lead to an increase in labour income inequality, an issue requiring further exploration.

… and which is partially offset by tax and benefit systems.

In the advanced economies and the EU, transfers and taxes have been effective in reducing the market income Gini coefficient – by between 12 percentage points in the United States and 31 percentage points in Ireland. For example, the Gini coefficients of market incomes for, Austria, Belgium, Finland and the United States are quite similar. However, differing redistributive policies lead to quite different disposable income Ginis, with Austria, Belgium and Finland showing much lower disposable income inequality than the United States, which has the highest disposable income inequality among advanced economies. Similarly, for Ireland, which has the highest Gini coefficient for market income among advanced economies, the Gini coefficient is reduced by 31 percentage points, largely due to transfers and taxes (figure 2.8).

The inclusion of contributory social transfers reduces inequality by between 9.8 (the United States) and 20.7 percentage points (Greece) among the advanced economies. These contributory social transfers largely include retirement pensions and unemployment benefits. The redistributive impacts of contributory social transfers have increased in most of the advanced economies compared with the mid-2000s, except for Austria, Luxembourg, Norway and Sweden. Non-contributory social transfers also have inequality-reducing effects in all the advanced economies. In the Nordic countries, Ireland and the Netherlands non-contributory social transfers reduced inequality by between 4.9 and 10.3 percentage points, while in other countries the redistributive impacts are lower. In CEE countries, both transfers and taxes seem to have reduced the Gini coefficient by more than 20 percentage points in all countries. The inequality-reducing effects of contributory social transfers are particularly strong, notably in Hungary. Non-contributory social transfers have a comparatively smaller effect (figure 2.8; Appendix C, table 2C.1).

In the emerging and developing economies, transfers are relatively effective in reducing inequalities. Contributory social transfers in Brazil, Turkey and Uruguay and social transfers in Argentina are effective in reducing income inequality, while in South Africa non-contributory social transfers have a small effect in reducing inequality (figure 2.8). Yet, in many emerging and developing economies only a small proportion of workers have access to social protection (see Chapter 3 for more details). Extending the coverage of contributory social transfers to all workers would lead to a more substantial effect in reducing inequality.

Finally, taxes play a very important role in reducing inequality in all countries, except in Turkey and the United States (figure 2.8; Appendix C, table 2C.1). In the emerging and developing economies information on taxes is often not available, thus complicating the analysis.[24]

About one-third of the countries have been able to reduce disposable income inequality despite the increase in temporary, part-time and informal wage work

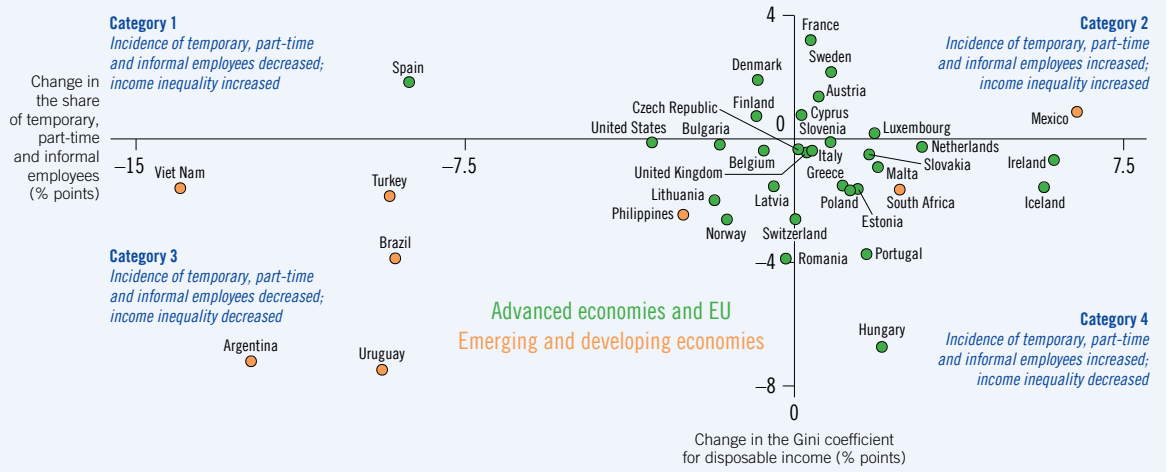
Over the past decade, the incomes of permanent workers have remained more or less stable in the majority of the countries under analysis. In contrast, the incomes of temporary workers or those in informal employment have fallen in the majority of the countries, which could lead to a widening of income gaps across the different types of work. To assess whether changes in the incidence of temporary, part-time and informal employees have led to an increase/decrease in inequality, countries have been grouped into four categories depending on the trends since the mid-2000s in the incidence of temporary, part-time and informal employees, as well as the changes in inequality in disposable incomes during the same period.

Category 1 consists of countries where the incidence of temporary, part-time and informal employees has decreased and disposable income inequality has increased (see figure 2.9, category 1). This category comprises Denmark, Finland, Spain and the United States. The nature of institutions is quite different between countries in this category. Denmark and Finland have a high proportion of part-time work and their dependence on such employment has helped them to curtail the growth of temporary employment. Women constitute a substantial share of the part-time workers. On the other hand, Spain has reduced its temporary employment since the

24 For the emerging and developing economies under analysis, data on contributions to social security is available for Brazil, Turkey and Uruguay. Turkey and Viet Nam are the only emerging and developing economies under analysis where the data from the household survey also includes information on taxes.

Figure
2.9

Change in the share of temporary, part-time and informal employment and change in the Gini coefficient for disposable income between the mid-2000s and the latest year available



Note: For all countries, two groups of employees are distinguished. For European countries, the distinction is between permanent and temporary employees; for the United States, the distinction is between full-time and part-time employees; for emerging and developing economies, the distinction is between formal and informal employees.

Source: ILO Research Department estimates based on household surveys (see Appendix A, table 2.A1) and Eurostat.

global recession, and much of this employment has probably resulted in unemployment, causing income inequalities to rise.

Category 2 consists of countries where the incidence of temporary, part-time and informal employees and disposable income inequality have increased (see figure 2.9, category 2). In Austria, Cyprus and Sweden there was an increase in labour and capital income inequality compared with the mid-2000s. This increase was not offset by transfer and tax policies, resulting in higher disposable income inequality.

Category 3 consists of countries where both the incidence of temporary, part-time and informal employees and disposable income inequality have decreased (see figure 2.9, category 3). The group of countries in this category includes a large number of CEE countries and emerging and developing economies. A number of Latin American economies have in the past decade been able either to generate more employment opportunities as a result of economic growth and other macroeconomic policies, or to formalize the informal workers through a number of innovative schemes (Berg, 2011; Gasparini and Cruces, 2010).

Category 4 consists of countries where the incidence of temporary, part-time and informal employees has increased and market income inequality has decreased (see figure 2.9, category 4). This group comprises the largest number of countries under analysis. In all the countries in this category except Malta, the Netherlands and Slovakia, there has been an increase in labour income inequality since the mid-2000s, partly as a result of an increase in the incidence of temporary, part-time and informal employees. However, contributory social transfers in all advanced economies played a much more important role in reducing disposable income inequality compared with the mid-2000s. Non-contributory social transfers were quite effective in reducing inequality in Greece, Iceland and Ireland. In some of the countries, taxes have also been effective in reducing inequality. For example, in the United Kingdom, the introduction of a 50 per cent marginal income tax rate in April 2010 on top incomes might have led to a reduction in inequality (Cribb et al., 2012). Similarly, in Iceland the capital income tax rate was increased from 18 to 20 per cent, which would have affected income distribution. The social security contributions have also been raised twice since the global recession in 2008 (Daniel et al., 2011). The analysis shows that despite an increase in the incidence of temporary, part-time and informal employees, disposable income inequality has reduced in a number of countries, largely through social protection policies and tax systems since the global recession.

D. Concluding remarks: Lessons from country experiences

The chapter finds that, in general, permanent and formal types of employment tend to provide higher incomes than other types of employment. The chapter also highlights significant differences across countries, which show that policies can help ensure adequate incomes in the context of rapidly changing employment patterns. To illustrate the role of country policies in responding to changing employment patterns, this section discusses a range of experiences from diverse regions and income groups.

Integrated social protection and labour market policies have helped reduce inequality in Brazil

Inequality in Brazil rose steadily until the late 1980s. Since then, there was a small decline during the 1990s and a more substantial and steady decline from about 2000 (Barros et al., 2010; Cornia, 2014), although inequality remains high compared with other countries (Barros et al., 2010). This decline has contributed to a massive reduction in poverty (see figure 2.5, panel A). Similarly, while informal employment grew steadily during the 1980s and 1990s, this trend has since been reversed and informal employment fell from 54.8 per cent of total employment in 2001 to 44.2 per cent in 2013.[25]

These positive changes are the result of coherent social protection and labour market policy interventions, combined with a period of strong economic growth facilitated by favourable global economic conditions. The integrated nature of social protection and labour market policies was particularly important. Notably, in Brazil the minimum wage not only serves as a floor for formal sector wages, but also provides a benchmark for informal wage agreements and a minimum payment level for pensions, enabling this one policy lever to have a wide-ranging impact on poverty and inequality (Amann and Barrientos, 2014). There have been significant increases in the value of the minimum wage, rising from BRL 291.0 (Brazilian reals) in January 1995 to BRL 422.4 in January 2002 and BRL 809.2 in 2015.[26] Rural non-contributory pensions were significantly expanded from 1991, linking payments of the Previdência Rural (1991) – a non-contributory pension scheme for informal workers in agriculture, mining and fishing – and the Benefício de Prestação Continuada (BPC) (1996) – a non-contributory pension scheme for the elderly and those with disabilities – to the minimum wage (Barros et al., 2010; Huber and Stephens, 2012; Gomes dos Santos, 2013).

Another important social policy transformation was in the area of non-contributory cash transfers. Targeted and conditional cash transfer schemes, first implemented in Brasília, were scaled up into a national programme, Bolsa Escola, in 2001. Bolsa Família was subsequently introduced in 2003, combining and reforming existing programmes and significantly expanding coverage from 5.1 million families under Bolsa Escola to some 14 million families under Bolsa Família by 2014.

As a result of these various schemes, by 2007, 45 per cent of Brazilians lived in a household that received some form of public transfer (Barros et al., 2010). This approach has been described as "basic universalism" – the combination of social insurance and intentionally broadly targeted social assistance, framed as a citizenship right (Filgueira et al., 2005; Huber and Stephens, 2012).

Estimates of the relative contribution of different programs and policies to the decline in inequality vary considerably (Soares, 2013); however, one of the mostly widely cited studies suggests that about half of the decline in inequality to 2007 was the result of greater equality in the distribution of labour income, while the remainder is the result of social spending (Barros et al., 2010). In particular, investment in education since the 1990s has resulted in a decline in the skills premium, while the increase in the minimum wage has raised earnings for unskilled workers, both of which contribute to reduced inequality in labour income (Barros et al., 2010). Meanwhile, about 30 per cent of the change in inequality is due to increasing social security benefits, which are tied to the minimum wage, about 10 per cent due to Bolsa Família and 10 per cent due to the BPC (Barros et al., 2010).

[25] Source: Instituto de Pesquisa Econômica Aplicada (IPEA), IPEAData, accessed 23 April 2015. http://www.ipeadata.gov.br/

[26] Instituto de Pesquisa Econômica Aplicada (IPEA), IPEAData, updated 15 April 2015. http://www.ipeadata.gov.br/

Similarly, research suggests that the rise in formal employment has multiple causes, including: strong economic growth and job creation – in part linked to the commodities boom (Amann and Barrientos, 2014); reduced labour supply as a result of demographic change and increased educational enrolment; regulatory change for small and micro enterprises that reduced taxation and bureaucratic requirements – notably the "Simples" law – and thus reduced informality; and improved labour inspection practices (Berg, 2011). "Simples", introduced in 1996, aimed to formalize informal enterprises by simplifying and reducing taxes, social security contributions and tax regulations for micro and small enterprises. Further reforms in 2008 also targeted individual micro-entrepreneurs, providing a simplified registration and a unified tax and social security scheme with contributions paid in one monthly payment (ILO, 2015).

Social transfers have reduced poverty in South Africa, though inequality remains high

As the preceding analysis has shown, unemployment remains a serious challenge in South Africa, as indeed it has been since the 1970s, while high rates of inequality have an even longer history. Despite a small decrease in inequality in recent years, South Africa remains one of the most unequal countries in the world.[27] Among the main initiatives pursued by the government over the last 20 years has been expansion of coverage of social grants. For example, coverage of the means-tested and non-contributory social pension expanded significantly, from about 3 million in the late 1990s to some 6 million in 2003 (Seekings and Nattrass, 2005). In addition, the means-tested Child Support Grant was introduced in 1998 for children under the age of 6. Over subsequent years, the qualifying age has gradually been raised to 18, with the result that it reached more than 10 million of the poorest children by 2010 (Levy et al., 2014; Patel, 2013; Seekings, 2013). An analysis of the percentage of households with access to social grants shows that between 2002 and 2012, access to social grants increased for households in the bottom three deciles (figure 2.10, panel A), which corroborates other studies (e.g. Bhorat and Westhuizen, 2010).

For households in the bottom decile, about 70 per cent of their incomes accrued from social grants, while for the next two deciles social grants constituted less than 40 per cent (figure 2.10, panel A). The result is that these means-tested grants have significantly contributed to the reduction of poverty (Seekings, 2013; Patel, 2013). That said, our analysis shows that redistributive policies through benefits have only a small inequality reducing effect (0.02 per cent in 2012) (see Appendix C, table 2C.1). These results are similar to other studies that conclude that the social pension has not reduced inequality and that the child support grant has had a modest impact (Schiel et al., 2014).

If we look at the employment characteristics of the households in the bottom deciles, we find that the number of unemployed is quite high (figure 2.10, panel B), and that these households are the top recipients of social grants. Despite widespread unemployment, in particular amongst women (Mpedi, 2013), there is very limited social protection for unemployed working-age adults. The contributory unemployment insurance system covers only 45 per cent of the labour force, excluding those who have been unable to make contributions (Patel, 2013). Social assistance programmes are reserved for children and the elderly. To address this gap, the government established an Expanded Public Works Programme (EPWP) in 2004 which aimed to create 1 million temporary jobs in the first five years and a further 2 million job opportunities per year by 2014 (Mpedi 2013), as well as providing training opportunities for the unemployed. The programme is primarily focused on addressing the income needs of unemployed households.

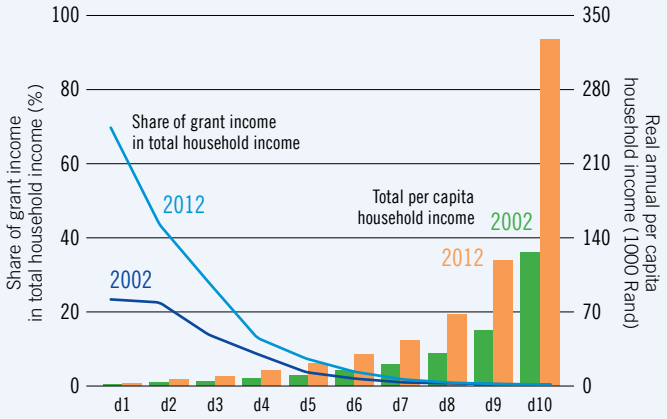
The limited success of social transfer mechanisms in reducing poverty and inequality reflects in part the dualism in the labour market due to a capital-intensive pattern of industrialization. This has created a formal economy which has high productivity, relatively high collectively bargained wages, social security and other benefits. On the other hand, there exists an informal sector with low productivity, low wages, fewer benefits and not much opportunity for mobility (UNRISD, 2010).

[27] These high rates of inequality have far-reaching consequences, including a higher prevalence of HIV/AIDS among the poorest groups, according to a recent study (Wabiri and Taffa, 2013).

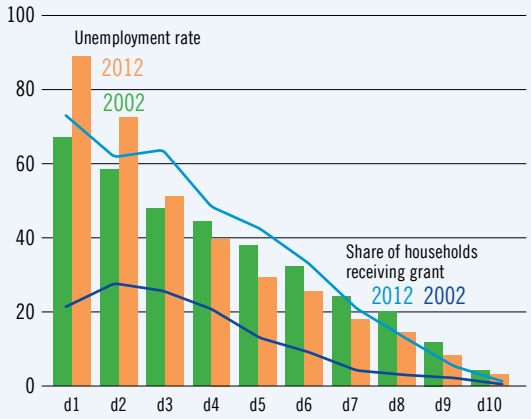
Figure
2.10

Social grants in South Africa

Panel A. Annual per capita household income and income grants as a proportion of total household income, by household income decile, South Africa, 2002–12



Panel B. Household access to social grants and unemployment rates by household income decile, South Africa, 2002–12 (%)



Source: ILO Research Department estimates based on the General Household Survey, South Africa.

Social protection expansion and increases in minimum wages in China have helped tackle poverty and inequality

Since the late 1990s the Chinese government has extended social insurance and social assistance schemes in both urban and rural areas in response to growing inequality and unemployment. The government introduced social insurance schemes that combine social pooling and individual accounts for pensions and basic medical insurance for urban employees and urban residents who are not affiliated to a particular employer (Guan, 2005; Cook, 2008; Zhu, 2013). In addition, there is a contributory unemployment insurance system, a basic living allowance, vocational training and job referrals for retrenched former state-owned enterprise (*xiagang*) workers (Wong and Ngok, 2006), the majority of whom are women (Appleton et al., 2006; Sato, 2006; Cook and Dong, 2011). The government also introduced an urban social assistance programme, the Minimum Living Security System (MLSS or *dibao*), from the mid-1990s, given the failure of existing employment-based social insurance programmes to address the challenges of rising unemployment and poverty. The MLSS provides means-tested benefits for all urban families below a threshold (Guan, 2005; Cook, 2008) and coverage was expanded from 11.7 million people in 2001 to 23.1 million in 2010 (Ngok, 2013).

From 2000 there has also been a major expansion of social protection in rural settings (see Chapter 3). In 2002 the government established the New Cooperative Medical Scheme (Guan, 2005; Cook, 2012) and, by 2011, 831 million farmers, 97.5 per cent of the rural population, were enrolled (Zhu, 2013). In response to China's ageing population and rural–urban migration, which left many older persons behind in rural areas, the government introduced a new contributory, state-subsidized rural pension in 2009 (Zhu, 2013). The scheme expanded rapidly, covering 326 million farmers by 2011, and there are plans to extend the scheme countrywide by 2020 (Zhu, 2013, p. 48). Provision of non-contributory social assistance has also increased with the rural MLSS established in the late 1990s. The scheme had low coverage until 2007, when it was extended to most provinces and expanded coverage from 3 million people in 2001 to 50 million in 2010 (Ngok, 2013; Cook, 2012; Guan, 2005; Zhu, 2013). Similarly, the Five Guarantees programme, which has existed since the 1950s to provide support for the poorest and most vulnerable in rural communities, expanded significantly based on the decision to provide central state funding in 2006 (Zhu, 2013).

The global recession had a fairly strong impact on the Chinese labour market, when a 20 per cent drop in demand for China's exports led to large job losses – 6.7 million in 2008 according to official figures, but as high as 20–30 million when including migrant job losses, according to some estimates in 2009 (Cook, 2012). The government's response included a massive fiscal stimulus involving spending on housing, rural infrastructure, the social sector, environmental programmes

and industry-specific support that succeeded in returning China to economic growth and job creation, with a major reduction in unemployment by the end of 2009 and in 2010 (Cook 2012). Alongside this stimulus, labour market policies were introduced to provide occupational training for the unemployed and farmers, with some 11 million rural people receiving such training in 2011 alone (Zhu, 2012). The government also established a network of employment information centres throughout rural areas to help people find work in small towns (Cook, 2012; Zhu, 2013). There has also been an attempt to improve the incomes of low-paid workers by increasing minimum wages systematically since 2010, which has improved rural migrant wages (Yang et al., 2014) and also urban wages, which could also have an impact on poverty.

The Netherlands normalized part-time work to promote economic restructuring and gender equality

Social policy in the Netherlands has undergone a series of reforms since the 1980s, with a growing emphasis on workfare and active labour market policies, while welfare provision is increasingly reserved only for those who are unable to work (Clegg and Van Wijnbergen, 2011; Yerkes and van der Veen, 2011). These reforms have been seen as part of a "Dutch model" that has delivered strong employment growth, low inflation rates, falling public deficits and relatively strong social policy provision (Plantenga, 2002). One important aspect of these reforms has been the promotion and normalization of part-time work as a means of reducing unemployment (Cousins and Tang, 2004).

In a context of high and rising unemployment, the Wassenar Accord of 1982 set the stage for employers and workers to work together to achieve structural improvements in employment (Plantenga, 2002; Hoogenboom, 2011). Initial reforms focused on wage moderation in exchange for reduced working hours. However, by the second half of the 1980s this focus on the length of the working week was replaced by the promotion of part-time jobs (Plantenga, 2002). The expansion of part-time work was seen to serve three main purposes: first, to achieve a better distribution of available employment opportunities and thereby reduce unemployment; second, to aid restructuring of the economy, enabling businesses to open for longer hours; and, third, to promote gender equality (Plantenga, 2002). Regarding the latter, part-time work is considered a central means of promoting the "Combination Model", which argues that unpaid and paid work should be equally valued and shared between men and women (Plantenga, 2002; Cousins and Tang, 2004).

The result has been a high prevalence of part-time work compared with other European countries, especially for women. This increased focus on part-time work coincided with a rapid rise in women's labour force participation from the 1980s with the result that 59.6 per cent of all jobs held by women were part time in 2003 (Yerkes and Visser, 2006, p. 240). As such, some have argued that the Netherlands' previous male-breadwinner model has been replaced by a "one-and-a-half earner model" (Yerkes and Visser, 2006).

Initial union resistance to the growth of part-time work in the 1980s subsequently turned to efforts to promote its normalization (Cousins and Tang, 2004; Yerkes and Visser, 2006; Wielers and Raven, 2013). This was achieved progressively through: a 1993 reform that abolished minimum hours of work thresholds for minimum wages, minimum holiday pay and social security; legislation on equal treatment of part-time workers in 1996 (*Wet Gelijke Behandeling*); and the Working Hours Adjustment Act (*Wet Aanpassing Arbeidsduur*) in 2000 that gives workers the right to request an increase or decrease in their working hours (Plantenga, 2002; Yerkes and Visser, 2006).

While in many countries part-time work is often associated with marginalization and low pay, research has shown that in the Netherlands, part-time work tends to be a choice, with low rates of involuntary part-time work (Yerkes and Visser, 2006; Wielers and Raven, 2013). Furthermore, part-time work is not as clearly associated with low-skilled workers as is the case in some other countries (Cousins and Tang, 2004). Despite the considerable progress that has been achieved in securing conditions of part-time work, there continue to be some challenges. In particular, despite legal parity, in practice some inequality in pay remains and part-time work involves lower participation in job training and reduced career development prospects (Plantenga, 1996; Yerkes and Visser, 2006). Moreover, while the Combination Model aims to promote gender equality, part-time work continues to be dominated by women who remain responsible for the majority of unpaid care work (Plantenga, 1996; Yerkes and Visser, 2006).

Following the global recession, the Netherlands undertook a number of initiatives to promote employment. For example, one initiative allowed crisis-hit firms that were otherwise financially healthy to retain workers on part-time arrangements, reducing working hours by 20–50 per cent. This initiative is known as "part-time unemployment" (*Deeltijd Werkloosheidswet*). Workers received partial unemployment benefits to provide some compensation for their reduced working hours, while employers were required to provide training opportunities during the hours that employees were not working (Yerkes and van der Veen, 2011). This initiative has previously been credited with preventing large-scale lay-offs (Delsen, 2010). In addition, the government temporarily increased its focus on "employability" policy, specifically targeting employees at risk of job losses. Notably, the state doubled existing training funds with a view to enabling employees "to move into a new line of work in another sector" (Yerkes and van der Veen, 2011, p. 439).

Towards an integrated approach to promote equality and employment

In the context of trends of rising inequality in many advanced, emerging and developing economies and high rates of poverty in many developing economies, a common response in recent years has been to extend social protection coverage (see Chapter 3). In many developing economies, there has been a particular emphasis on the expansion of non-contributory social assistance programmes to reach previously uncovered groups. These social assistance programmes have frequently achieved successes in terms of ameliorating the worst problems of poverty, as is the case in South Africa. Furthermore, when integrated with labour market policies and a broader set of policy initiatives, including education and healthcare, this set of policy initiatives has the potential to have a positive impact on both poverty and inequality, as the case of Brazil demonstrates.

However, it is also clear that labour market policies and institutions cannot achieve their optimal impact on poverty and address labour market inequalities in isolation. Indeed, given that this chapter has demonstrated that labour incomes constitute the main source of income inequality, the question remains as to how to generate sufficient numbers of quality jobs for the unemployed while ensuring better income and career prospects for those in non-standard forms of employment and unlocking the potential of small enterprises. Social and labour market policies constitute an essential part of the response to these challenges. However, past analyses have shown that the generation of large numbers of quality jobs that lead to sustainable reductions in both poverty and inequality require not only interventions in labour markets and social protection systems but also a coordinated response that pays attention to the employment intensity of the growth path, through specific development strategies and industrial policy focused on job creation (UNRISD, 2010; UNCTAD, 2014; ILO, 2014b). As such, detailed analysis of the development strategies and macroeconomic policies that can support job creation and enterprise expansion, and how these can be integrated with improved incomes and social protection coverage, is an important area for additional research.

While it is beyond the remit of this chapter to draw conclusions regarding such development strategies, it is worth noting some of the constraints that the contemporary globalized economy and the changing production practices associated with technological progress place on national development strategies and employment creation. For example, researchers have frequently noted a global trend towards increasingly capital-intensive industrial production, with the result that late industrialization creates much less employment than was the case in the early industrializing countries (Kapsos, 2005; Ghosh, 2008; Heintz, 2009; UNRISD, 2010; UNCTAD, 2014). Not only is industrial production decreasingly employment-intensive, but research suggests that countries are beginning the process of de-industrialization – frequently considered a feature only of advanced economies – at successively earlier stages of economic development (Rodrik, 2015). This raises important questions regarding the potential for industrialization to resolve employment shortages and thereby to link economic growth to reducing poverty and inequality in emerging and developing economies. These global constraints should therefore constitute a central aspect of future research on the links between national development strategies and employment creation.

Appendix A
Data sources and coverage

Table 2A.1

Data sources and years covered		
Country	**Data source**	**Years**
Argentina	Enquesta Permanente de Hogares, INDEC, www.indec.gov.ar	2005, 2013
Austria	EU Statistics on Income and Living Conditions (EU-SILC), Eurostat	2005, 2011
Belgium	EU Statistics on Income and Living Conditions (EU-SILC), Eurostat	2005, 2010
Brazil	Pesquisa Nacional por Amostra de Domicilios (PNAD), Instituto Brasileiro de Geografia e Estatística (IBGE)	2005, 2012
Bulgaria	EU Statistics on Income and Living Conditions (EU-SILC), Eurostat	2006, 2011
China	China Urban Labour force survey, Chinese Academy of Social Sciences (CASS)	2005, 2010
Cyprus	EU Statistics on Income and Living Conditions (EU-SILC), Eurostat	2005, 2011
Czech Republic	EU Statistics on Income and Living Conditions (EU-SILC), Eurostat	2005, 2011
Denmark	EU Statistics on Income and Living Conditions (EU-SILC), Eurostat	2005, 2011
Estonia	EU Statistics on Income and Living Conditions (EU-SILC), Eurostat	2005, 2011
Finland	EU Statistics on Income and Living Conditions (EU-SILC), Eurostat	2005, 2011
France	EU Statistics on Income and Living Conditions (EU-SILC), Eurostat	2006, 2011
Greece	EU Statistics on Income and Living Conditions (EU-SILC), Eurostat	2006, 2011
Hungary	EU Statistics on Income and Living Conditions (EU-SILC), Eurostat	2005, 2011
Iceland	EU Statistics on Income and Living Conditions (EU-SILC), Eurostat	2005, 2011
Ireland	EU Statistics on Income and Living Conditions (EU-SILC), Eurostat	2005, 2010
Italy	EU Statistics on Income and Living Conditions (EU-SILC), Eurostat	2006, 2011
Latvia	EU Statistics on Income and Living Conditions (EU-SILC), Eurostat	2006, 2011
Lithuania	EU Statistics on Income and Living Conditions (EU-SILC), Eurostat	2006, 2011
Luxembourg	EU Statistics on Income and Living Conditions (EU-SILC), Eurostat	2005, 2011
Malta	EU Statistics on Income and Living Conditions (EU-SILC), Eurostat	2007, 2011
Mexico	Encuesta Nacional de Ingresos y Gastos de los Hogares (ENIGH), Instituto Nacional de Estadística y Geografía (INEGI)	2005, 2012
Netherlands	EU Statistics on Income and Living Conditions (EU-SILC), Eurostat	2005, 2011
Norway	EU Statistics on Income and Living Conditions (EU-SILC), Eurostat	2005, 2011
Philippines	Family Income and Expenditure Survey (FIES), Philippine Statistics Authority	2003, 2009
Poland	EU Statistics on Income and Living Conditions (EU-SILC), Eurostat	2005, 2011
Portugal	EU Statistics on Income and Living Conditions (EU-SILC), Eurostat	2006, 2011
Rep. of Korea	National household income and expenditure survey data, National Statistics Office, Seoul	2006, 2012
Romania	EU Statistics on Income and Living Conditions (EU-SILC), Eurostat	2006, 2011
Slovakia	EU Statistics on Income and Living Conditions (EU-SILC), Eurostat	2005, 2011
Slovenia	EU Statistics on Income and Living Conditions (EU-SILC), Eurostat	2005, 2011
South Africa	General Household Survey and Labour Force Survey, Statistics South Africa	2002, 2007, 2012
Spain	EU Statistics on Income and Living Conditions (EU-SILC), Eurostat	2006, 2011
Sweden	EU Statistics on Income and Living Conditions (EU-SILC), Eurostat	2005, 2011
Switzerland	EU Statistics on Income and Living Conditions (EU-SILC), Eurostat	2007, 2011
Turkey	Income and Living Conditions Survey, Turkish Statistical Institute	2005, 2011
United Kingdom	EU Statistics on Income and Living Conditions (EU-SILC), Eurostat	2005, 2011
Uruguay	Encuesta Continua de Hogares, Instituto Nacional de Estadísticas	2006, 2013
Unites States	Consumer Expenditure Survey, Bureau of Labor Statistics (BLS)	2005, 2012
Viet Nam	Household Living Standard Survey (HLSS), General Statistics Office of Viet Nam	2006, 2010

The authors are particularly grateful for data provided by Eurostat and the Turkish Statistical Institute. The responsibility for all conclusions drawn from this data and the other sources listed above lies entirely with the authors. We would also like to thank Du Yang, Institute of Population and Labour Economics (CASS), Beijing and Shin-Wook Kang, Korea Institute for Health and Social Affairs (KIHASA) for providing us with the data analysis for China and Republic of Korea respectively.

Appendix B
Sources of income, data limitations and methodologies

Data limitations and related methodological issues

In a comparative analysis across countries with completely different data sources, there are data limitations and a number of methodological issues that can arise. The first issue relates to the comparability of data across countries. The way in which data is collected and provided differs from country to country. Regarding the income variables, there are some countries for which we have both the gross and net values, while in some countries like Argentina, Brazil, China and South Africa the incomes are reported after tax.

The second issue relates to the method of data collection and reporting. In the case of European countries we use the EU-SILC data. Even though this dataset is somewhat harmonized as all countries provide the same variables to Eurostat, the method of data collection and reporting differs substantially between individual countries. Some countries use register data, while others collect data using country-specific surveys.

The third issue relates to standardization, wherein Verma and Betti (2010) note that for the EU-SILC dataset there is no standardized procedure across countries regarding the manner in which negative, zero and very large values are treated. Top or bottom coding of income variables leads to lower inequality figures.

The fourth issue relates to the variable set available for comparison. Not all countries collect and provide all the variables needed to do a complete analysis of the accounting framework presented in the methodology. Notably, South Africa lacks information on some of the income components, which limits a complete analysis.

The fifth issue relates to comparability across time periods. As countries adapt their survey over time, this might lead to changes in some variables, or addition of new variables or omission of

Figure **2B.1**

Different components of income used for the analysis

Household income accounting framework	
Labour income	Head is permanent/formal employee: Wages + bonuses
	+ Head is temporary/informal employee: Wages + bonuses
	+ Head is self-employed: Income from self-employment + own production
	+ Head is unemployed
	+ Head is economically inactive
Other sources	+ Capital/investment: rents, shares, profits, dividends
	+ Private transfers: inter-household transfers, alimony, remittances
	= **Market income**
Social transfers	+ Contributory: retirement pensions; unemployment, sickness, maternity and survivor's benefits
	+ Non-contributory: child support grant, old-age benefits, etc.
Contrib. + taxes	− Contributions to social security
	− Taxes
	= **Disposable income**

Source: Authors' definitions based on the literature.

previously existing variables.[28] In countries where we observed such a change, we tried to be as consistent as possible over time.

The sixth issue relates to disaggregation of some of the income components. For example, with regard to social transfers, Eurostat requests the countries to provide aggregate variables for the EU-SILC database. As a result, in some cases, this might lead to a mix of contributory and non-contributory benefits, and it is difficult to separate them.

The seventh issue relates to defining the household "head" as in the EU-SILC database there is no explicit question about who is the "head" in the household. For this reason, we assume that the "head" is the main earner of the household for these countries. In the emerging economies, the household "head" is clearly defined in the survey and we take that variable into consideration for the analysis.

Methodology for factor source income decomposition

There are a number of different approaches to the decomposition of sources of factor income. The earlier works on income decomposition used an additive decomposition method (Rao, 1969; Fei and Ranis, 1974). This approach allowed factor contributions to be generated and produced both positive and negative contributions, which summed exactly to total income inequality. A popular approach used among researchers to examine the factors influencing inequality is the income accounting framework (Förster and Whiteford, 2009;[29] Fuest et al., 2009; Standing et al., 2010). In the accounting approach, income components are added one after another and inequality measures are computed at each step.

As we are interested in examining what components of income increase or reduce inequality, we adopt an accounting framework similar to that used by Fuest et al. (2009) in analysing which components of income lead to an increase or reduction in inequality. This approach helps us to assess the extent to which redistribution is achieved by social transfers and taxes. Similar to Jenkins (1995), we also investigate the relationship between income from work and household income, for which we take into consideration the employment status of the household's head. As Jenkins mentions, "the breakdowns complement each other, since changing work patterns can be viewed as affecting both the number of household members contributing to household income and the income sources of each household member" (ibid., p. 41). This approach also allows the impact of increases in unemployment rates to be captured. For this purpose, we classify the households by employment status of the head or main wage-earner (permanent/full time/formal or temporary/part time/informal employee, self-employed and unemployed), and the households with heads of each of these employment statuses are introduced sequentially. At the next stage, we include the households with head which is economically inactive (unoccupied, retired) (see figure 2.B1). As a measure of inequality we use the Gini coefficient. It is computed at each step, after the addition of either an additional group of households or a particular income component.

An important aspect in the accounting framework is the ordering of the different factor components, which plays a central role. Depending upon where a particular component is introduced, the impact on inequality can vary in its magnitude or even in its sign. We adopt the following order, which is displayed in figure 2.B1: we begin with labour income (wages and self-employed incomes and other work-related benefits[30]) as described above. We then include capital or investment income, comprising interest, dividends, shares and rents. We then add private transfers, which consist of inter-household transfers, remittances, alimony, income from charity organizations, etc. Next, we include income from contributory social insurance followed by non-contributory social security benefits. The main components of contributory social insurance are retirement pensions and unemployment benefits as well as sickness, maternity and survivor's benefits, etc. Non-contributory social benefits encompass child support grant, old-age benefits, etc. Finally, we subtract contributions to social security as well as personal income tax, which results in disposable income. For all the income concepts we use the square root equivalence scale in order to account for different household sizes.

28 For instance, in South Africa a question on pensions was included in 2012 but not available in 2002 and 2007. For consistency reasons we decided not to include it in the present analysis. The results including pensions for 2012 can be obtained upon request.

29 Their framework is adapted from Smeeding et al. (1990).

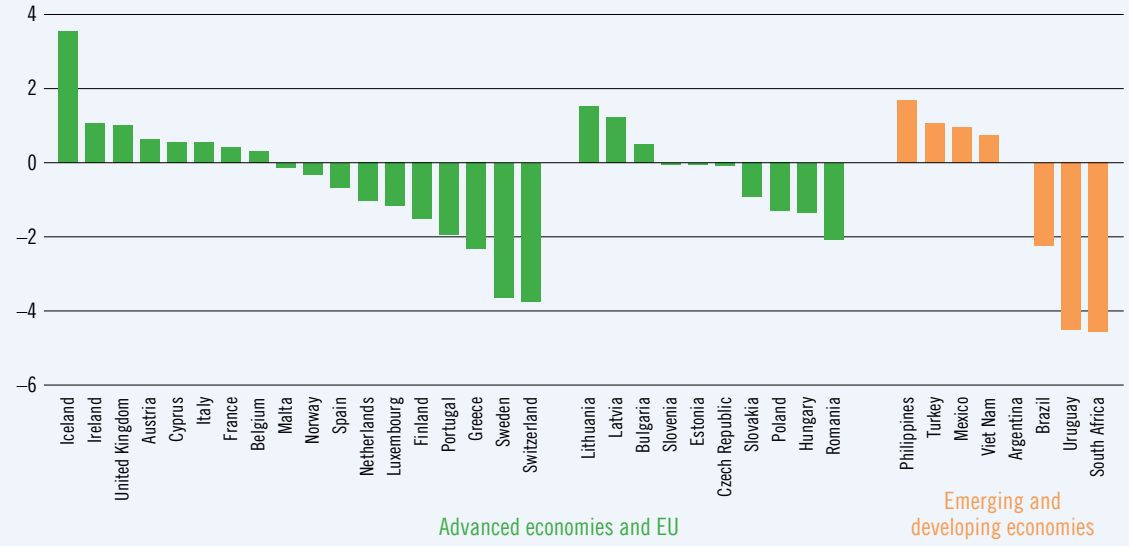
30 Bonuses, work-related social security (mainly contributory programmes), paid leave, maternity leave, etc.

Appendix C
Figures and decomposition tables

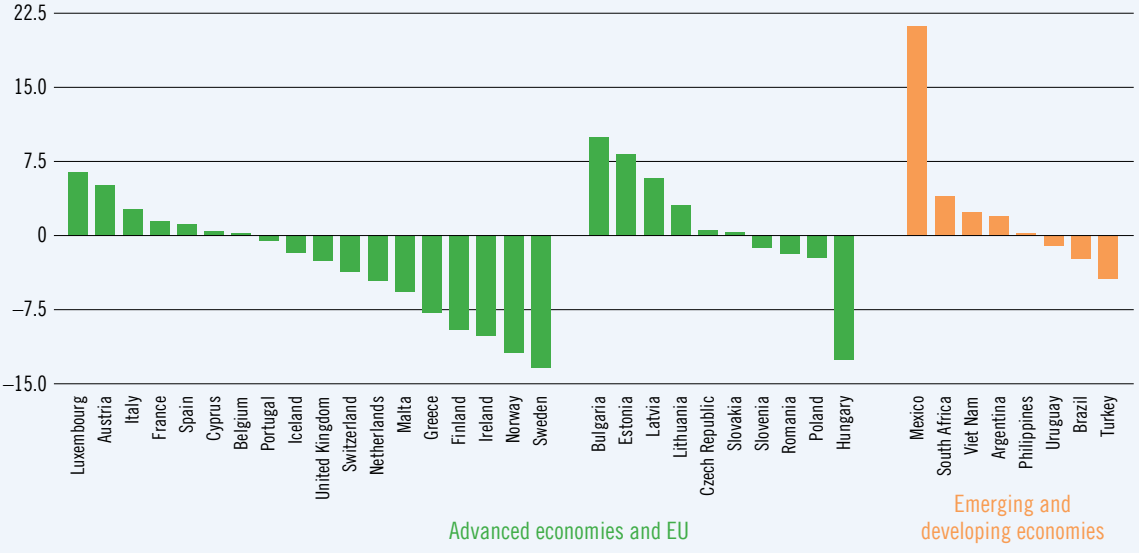
Figure **2C.1**

Change in inequality of labour income by type of employment, mid-2000s to latest year available

Panel A. Change in the ratio of income of the top 10% of permanent/formal employees to bottom 10%



Panel B. Change in the ratio of income of the top 10% of temporary/informal employees to bottom 10%



Note: For all countries, two groups of employees are distinguished. For European countries, the distinction is between permanent and temporary employees; for emerging and developing countries, the distinction is between formal and informal employees.

Source: ILO Research Department estimates based on household surveys (see Appendix A, table 2A.1).

Table 2C.1

Decomposition of inequality: Accounting framework, latest year available

	Inequality (Gini coefficients)					Labour income		Market income			Disposable income
	Country	Permanent/ full-time/formal employee heads	All employee heads	+ Self-employed heads	+ Unemployed heads	All households labour income	+ Capital income	+ Private transfers	+ Contributory social transfers	+ Non-contrib. social transfers	– Taxes and contributions
Advanced economies and EU	Austria	31.8	32.9	33.3	35.7	57.2	55.8	55.2	36.3	33.5	28.5
	Belgium	27.0	28.2	29.1	36.8	57.7	56.1	55.6	36.3	33.2	27.8
	Bulgaria	33.0	33.8	33.2	36.5	54.8	54.2	52.6	37.4	36.2	34.9
	Croatia	31.1	32.1	31.5	36.0	60.3	59.7	58.8	41.2	36.4	31.8
	Cyprus	32.4	33.2	32.6	34.4	50.9	49.3	48.0	37.3	34.9	32.4
	Czech Republic	29.2	30.2	31.1	33.3	54.0	53.8	53.0	33.1	30.2	26.2
	Denmark	25.7	26.5	27.7	31.3	56.9	57.9	57.7	42.0	31.7	28.0
	Estonia	32.9	33.3	34.6	37.0	55.3	55.3	54.8	39.9	37.4	34.4
	Finland	26.8	28.8	29.3	34.6	56.6	55.5	55.2	39.8	32.4	27.7
	France	28.6	30.6	32.9	35.7	58.0	54.3	53.6	35.8	33.0	29.3
	Greece	28.3	31.0	36.5	40.0	62.5	60.9	59.4	38.7	37.2	32.2
	Hungary	32.7	34.1	33.7	36.6	56.9	56.7	55.5	34.3	30.4	26.4
	Iceland	30.9	31.3	30.9	33.6	47.3	46.0	45.4	34.6	30.1	25.4
	Ireland	36.4	38.1	39.2	46.8	63.4	62.6	62.4	46.5	38.5	31.4
	Italy	31.0	32.6	35.1	37.2	58.1	56.4	56.1	37.7	36.8	32.9
	Latvia	37.2	37.7	37.6	41.4	59.0	59.0	57.9	41.8	39.9	36.1
	Lithuania	35.1	35.9	35.0	39.7	60.0	60.0	59.2	40.7	37.1	33.8
	Luxembourg	32.7	33.8	34.9	36.7	54.1	52.5	52.4	35.4	31.5	28.4
	Malta	29.3	30.7	31.3	33.1	53.1	50.8	50.6	35.6	32.4	28.4
	Netherlands	27.0	28.3	29.8	35.9	56.0	54.9	54.2	38.1	31.8	26.4
	Norway	28.5	28.9	29.2	30.5	50.6	49.3	49.1	35.9	29.4	24.9
	Poland	33.0	34.4	34.7	35.9	55.8	55.6	54.7	35.6	33.4	31.3
	Portugal	37.9	38.8	38.9	42.1	60.6	59.3	58.7	41.2	39.6	34.0
	Romania	31.9	32.3	34.8	35.4	51.7	51.6	51.5	35.6	33.6	30.4
	Slovakia	27.6	28.2	28.5	30.8	50.9	50.8	50.5	31.0	28.4	26.9
	Slovenia	31.3	32.1	32.4	35.3	55.1	54.6	54.3	37.1	32.5	26.3
	Spain	30.0	32.2	34.7	41.2	58.2	57.1	56.9	37.9	36.2	34.2
	Sweden	27.0	28.3	28.7	30.8	53.0	50.6	50.5	35.2	30.2	26.9
	Switzerland	28.9	29.6	30.0	30.8	48.8	47.2	46.5	32.8	30.5	29.6
	United Kingdom	38.2	38.5	40.1	42.3	63.0	61.3	60.8	45.6	39.5	32.6
	United States	38.7	42.0	42.8	43.5	56.8	56.2	55.5	45.8	44.7	43.7
Emerging and developing economies	Argentina	35.0	37.9	39.2	40.5	52.1	51.7	49.7	38.4	37.8	–
	Brazil	45.6	47.8	50.3	51.3	59.3	57.9	57.7	51.6	49.7	49.6
	Mexico	44.3	48.7	51.6	52.1	56.2	56.0	53.1	51.3	49.7	–
	Philippines	46.3	47.9	45.6	45.6	48.2	48.4	45.6	45.5	43.7	42.7
	South Africa	57.1	59.7	61.3	66.0	73.1	–	71.2	–	69.2	–
	Turkey	40.2	42.2	43.8	44.6	55.9	53.8	51.4	41.5	41.1	41.1
	Uruguay	33.9	36.2	39.2	40.0	52.5	52.0	49.8	37.8	36.8	37.2
	Viet Nam	42.7	43.1	42.8	43.2	45.2	45.6	42.9	42.4	42.2	42.2

Note: For all countries, two groups of employees are distinguished. For European countries, the distinction is between permanent and temporary employees; for the United States, the distinction is between full-time and part-time employees; for emerging and developing economies, the distinction is between formal and informal employees. See Appendix B for methodology.

Source: ILO Research Department estimates based on household surveys (see Appendix A, table 2A.1).

Table 2C.2

Decomposition of inequality: Accounting framework, mid-2000s

	Inequality (Gini coefficients)					Labour income		Market income			Disposable income
	Country	Permanent/ full-time/formal employee heads	All employee heads	+ Self-employed heads	+ Unemployed heads	All households labour income	+ Capital income	+ Private transfers	+ Contributory social transfers	+ Non-contrib. social transfers	– Taxes and contributions
Advanced economies and EU	Austria	30.4	31.0	31.5	34.6	55.4	55.0	54.4	34.1	31.3	27.0
	Belgium	26.9	27.8	28.7	37.6	57.6	56.0	55.6	36.1	33.6	28.0
	Bulgaria	30.1	32.6	33.4	37.6	55.3	54.8	53.9	38.6	36.8	34.9
	Croatia	32.0	33.1	32.6	36.4	60.6	60.0	59.4	42.1	37.5	32.5
	Cyprus	29.7	30.6	29.7	30.2	46.8	45.9	45.1	34.8	33.2	31.4
	Czech Republic	30.0	31.0	32.0	34.6	53.9	53.7	53.2	35.3	31.1	26.3
	Denmark	26.1	25.6	27.5	30.0	54.0	53.6	53.4	40.0	29.7	25.9
	Estonia	35.5	35.9	36.5	37.9	55.7	55.6	55.2	40.9	38.7	35.1
	Finland	27.4	29.9	30.5	34.4	55.1	54.2	54.0	39.7	31.6	26.8
	France	27.4	29.7	31.2	34.4	56.4	54.0	53.4	33.7	30.1	25.9
	Greece	31.6	34.0	38.6	39.5	58.3	56.9	54.9	40.3	39.0	33.6
	Hungary	37.4	38.3	40.3	42.5	62.0	62.0	61.4	41.8	37.5	32.9
	Iceland	28.6	28.4	28.4	28.7	41.7	41.4	40.8	32.7	29.8	26.8
	Ireland	34.6	36.1	36.5	39.2	56.9	56.1	55.7	44.1	37.4	31.9
	Italy	30.7	32.2	34.9	36.2	57.9	56.8	56.2	38.2	37.3	33.1
	Latvia	36.6	37.0	36.8	38.2	53.3	53.2	52.5	41.9	40.1	37.5
	Lithuania	36.1	36.9	36.3	38.0	55.8	55.6	54.9	41.8	39.9	35.6
	Luxembourg	32.7	33.1	34.2	35.5	53.9	52.1	51.9	34.4	31.2	28.0
	Malta	30.6	30.8	30.8	32.2	54.2	51.1	51.0	37.2	34.0	29.9
	Netherlands	27.1	28.8	30.7	36.9	56.7	55.2	54.4	38.8	32.5	26.5
	Norway	26.9	27.9	28.9	29.9	51.9	52.4	52.1	37.7	30.6	27.3
	Poland	36.0	37.6	38.0	40.6	61.7	61.6	60.5	38.9	35.5	32.8
	Portugal	40.9	41.9	41.3	43.2	59.6	59.0	58.6	44.1	42.5	37.6
	Romania	34.7	35.3	36.8	37.7	52.6	52.6	52.0	39.6	37.4	34.1
	Slovakia	29.8	30.5	31.8	33.8	54.7	54.6	54.4	33.6	30.7	27.2
	Slovenia	31.8	32.9	32.1	33.0	53.2	52.9	52.7	37.2	32.6	26.2
	Spain	30.3	31.6	32.6	34.2	51.7	51.0	50.7	35.6	34.6	32.2
	Sweden	27.0	28.9	29.8	31.3	52.6	50.6	50.5	34.6	28.2	24.5
	Switzerland	30.2	30.6	31.0	31.6	48.4	46.8	46.4	33.8	31.6	32.0
	United Kingdom	33.2	33.6	34.3	35.7	58.4	57.0	56.8	43.3	38.0	32.8
	United States	38.9	42.0	43.5	43.7	55.4	54.6	53.9	45.2	44.3	43.6
Emerging and developing economies	Argentina	39.6	43.9	45.5	47.6	56.7	56.3	54.0	45.3	44.8	–
	Brazil	48.8	51.4	54.3	55.5	61.3	60.4	59.9	55.6	53.6	53.3
	Mexico	42.9	47.1	50.4	50.4	54.5	54.4	50.8	49.4	48.6	–
	Philippines	45.6	48.1	46.9	46.8	48.8	48.9	47.6	47.3	46.0	44.9
	South Africa	–	58.3	59.9	65.9	73.1	–	72.6	–	70.7	–
	Turkey	37.8	42.3	44.5	45.5	56.6	54.4	51.9	43.2	42.9	42.8
	Uruguay	42.3	45.1	48.3	49.7	61.9	61.0	57.6	44.9	42.9	44.5
	Viet Nam	41.7	45.2	46.0	46.0	47.8	47.9	45.0	43.6	43.6	43.6

Note: For all countries, two groups of employees are distinguished. For European countries, the distinction is between permanent and temporary employees; for the United States, the distinction is between full-time and part-time employees; for emerging and developing economies, the distinction is between formal and informal employees. See Appendix B for methodology.

Source: ILO Research Department estimates based on household surveys (see Appendix A, table 2A.1).

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3 SOCIAL PROTECTION COVERAGE ACROSS EMPLOYMENT PATTERNS

Introduction

For any social protection system, the extent of its coverage and the levels of benefits it provides are critical factors in determining its capacity to replace income from work or other sources and to smooth fluctuations in income. The purpose of this chapter is to assess how different employment patterns – as documented in Chapter 1 – are treated in over 170 countries from the point of view of social protection. It examines trends since the early 1990s in the coverage of pensions and unemployment benefits as provided by legislation (section A). The chapter also considers the extent to which these laws and regulations are actually implemented in practice and quantifies gaps between coverage by laws and regulations and their effective implementation (section B). In examining the legal and effective coverage, this chapter distinguishes between contributory and non-contributory social protection mechanisms. It also assesses how effective the various types of schemes are at reaching their intended beneficiaries, given different employment patterns. Based on this analysis, the chapter discusses the ability of social protection systems to ensure adequate income security, thereby complementing the analysis of Chapter 2.

A. Legal social protection coverage by status in employment

Social protection systems are designed to provide income protection to individuals and households in need of such protection.[1] While such systems exist in many countries, they do not always provide adequate or effective protection, for three main reasons. First, there are cases where in the absence of social protection legislation, coverage is simply not available. In 2013, just over one-third of countries had social protection schemes that were established by law and covered all social protection contingencies, as defined in the ILO Social Security (Minimum Standards) Convention, 1952 (No. 102). Even in many of these countries coverage was limited to a subset of the population. Second, social protection legislation sometimes excludes certain groups.[2] The third reason is partial implementation, whether due to inadequate enforcement of legal coverage or lack of affiliation (section B). Notwithstanding these limitations, substantial progress has been made in certain facets of social protection.

1 The notion of social protection adopted by the ILO covers all measures that provide benefits, whether in cash or in kind, to secure protection from a lack of work-related income (or insufficient income) caused by sickness, disability, maternity, employment injury, unemployment, old age or death of a family member; lack of (affordable) access to health care; insufficient family support, particularly for children and adult dependants; general poverty; and social exclusion (ILO, 2014a). In this chapter, the analysis of coverage gaps focuses on periodic cash benefits for old age and survivors (for those reaching retirement age) and unemployment. Estimates of legal coverage for pension or unemployment benefits mainly cover programmes under the responsibility of government, where benefits are delivered either directly through government institutions or mandated to private entities. Coverage by private pension schemes is included when affiliation is compulsory and benefits provided are periodic and do not complement an existing basic pension.

2 For contributory schemes, legal coverage is largely determined by status in employment and type of employment contract. For non-contributory provisions, causes for exclusion relate to national institutional capacities and resources, priorities and visions for social protection.

There has been an increasing trend in the legal coverage of old-age pensions over the past two decades…

By 2013, 93 per cent of the 178 countries under analysis provided pension benefits by law. This compares with only about one-third of countries in the 1950s. In most regions, pension benefits represent the largest component of social protection expenditure.[3] Since 1990, many countries in the developing world have adopted new laws or reformed existing legislation to improve coverage. They have done so through various means: establishment of large-scale non-contributory pensions;[4] expansion of coverage under existing schemes, by relaxing or removing conditions for eligibility; and/or development of specific schemes for the self-employed. These changes corrected inappropriate terms that had excluded the majority of the population. The observed trend reflects a change in fundamental policy thinking. Based on experience, the expectation that economic growth would draw workers into formal employment and thus provide them with social protection was shown to be unrealistic. Instead, the more recent policy goals recognize that social protection should be extended to groups outside of standard employment relationships.[5]

In 2013, 77 per cent of people of working age were legally covered by an old-age pension, compared with 47 per cent in 2000 and 32 per cent in 1990 (figure 3.1).[6] Legal pension coverage for women is lower than for men. Indeed, 74 per cent of women are legally covered, of which only 26 per cent are covered by compulsory contributory schemes. This reflects lower labour market participation among women and their over-representation in sectors or employment statuses less likely to be covered by legislation.

Countries in Asia and the Pacific and in Latin America and the Caribbean are at the forefront in terms of increasing legal coverage. In Asia, just over 10 per cent of the working-age population was legally covered in 1990. This proportion almost tripled between 1990 and 2000, and doubled again from 2000 to 2013. This expansion was largely supported by the development of non-contributory pensions and by the introduction of legislation allowing voluntary affiliation to contributory schemes. The two largest countries in the Asia region, China[7] and India,[8] provide important examples. In Latin America, reforms have focused on extending pension systems to workers outside the formal economy. By 2013, more than 90 per cent of people of working age (including informal workers) were legally covered by a pension scheme, compared with 60 per cent in 1990. Although non-contributory schemes have existed for decades, the observed trend in the past few years is unprecedented in terms of the intensity and speed of expansion. Between 2000 and 2013, at least 18 countries in the region introduced reforms to increase pension coverage through non-contributory schemes (World Bank, 2014; ILO, 2014a).

3 Worldwide, old-age and survivors' pensions represent 37 per cent of public social protection expenditure, or 3.3 per cent of gross domestic product (GDP) (ILO, 2014a). This is the main component of public social protection expenditure in all regions with the exception of Sub-Saharan Africa.

4 For example, Lesotho's pension-tested old-age pension scheme, launched in 2004; Timor-Leste's universal support allowance for the elderly, introduced in 2008; and Swaziland's pension-tested old-age grant, established in 2005 and further expanded in 2010.

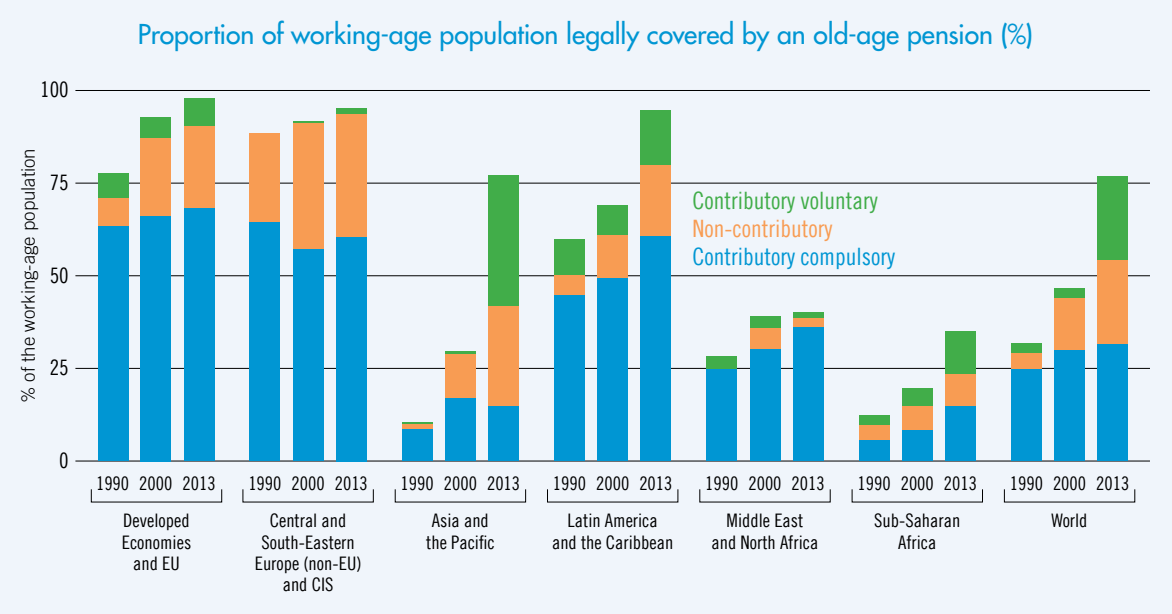
5 Employees in standard employment are those in full-time, indefinite and subordinate direct employment relationship (ILO, 2015d). See also box 1.2 in Chapter 1.

6 See Appendix A for the definition and limitations of legal coverage estimates.

7 In 2009, China started a process of extension of pension coverage that aims to achieve universal coverage by 2020. The introduction of the rural pension scheme in 2009 and the urban pension scheme for workers otherwise not covered in 2011 were the first steps in consolidating the two new pension schemes announced in 2014 (ILO, 2014a; ISSA, 2013; Ringen and Ngok, 2013). In January 2015, China's State Council announced pension reforms for civil servants and public sector employees, bringing them under the purview of the urban basic pension insurance scheme, with a view to complete integration of the system.

8 In India, legal pension coverage jumped from less than 5 per cent in 1990 to 33 per cent in 2000 and more than 80 per cent in 2013. The main reason is that voluntary affiliation to the New Pension Scheme was made available in 2009 to nearly all Indian citizens. The National Pension Scheme or New Pension Scheme (NPS) was operationalized on 1 January 2004, originally for state government and public sector employees. Since 1 May 2009, all Indian citizens aged 18–55 can open a National Pension Scheme account on a voluntary basis; however, there is no matching contribution from the government in the open system (ISSA, 2013).

Figure
3.1



Note: Global estimates based on legal information on old-age and survivor's pensions for 178 countries in 2013, 173 countries in 1990 and 2000, weighted by the working-age population. The numbers refer to old-age pension and survivor's (above pensionable age) periodic cash benefits.

Source: ILO Research Department based on SSA/ISSA, 2013, 2014a, 2014b, 2014c; ILO, 2015a, 2015b, 2015c; European Commission, 2015; SSA, 1989, 1999; United Nations, Department of Economic and Social Affairs, 2015; national legislation and statistical offices.

…mainly benefitting those in an employment relationship…

Not surprisingly, legal pension coverage is highest among employees; gaps in coverage for workers in different employment statuses are acute, especially in Sub-Saharan Africa and in the Middle East and North Africa (figure 3.2). In 1990, 64.7 per cent of all employees were legally covered by a cash pension benefit after retirement, of which 97 per cent were covered by a compulsory contributory mechanism; by 2013, 88.3 per cent of employees were covered, of which 76 per cent were subject to compulsory contributory rules. Thus, irrespective of the level of protection provided, compulsory social insurance contributed less to the extension of legal coverage to employees than non-contributory schemes or voluntary affiliation.[9] Voluntary affiliation explained 75 per cent of the expansion of legal coverage in this group; however, it should be noted that voluntary coverage has rarely resulted in significant effective coverage. Employees in small enterprises, domestic workers[10] and casual or temporary workers are subject to such mechanisms. This is important because levels of protection and the consequences regarding social inclusion or formalization of employment and public finance vary between the different types of schemes.

Despite these advancements, 20 per cent of employees in low-income countries and 12 per cent globally are still not legally covered by an old-age pension scheme (see section B for a discussion of implementation which can lead to significantly higher exclusion in practice). The main factors that affect whether workers are excluded from legal coverage are:

- The absence of an employment contract or the use of contracts that exclude casual workers,[11] apprentices, temporary or seasonal workers or any workers employed for less than a specified minimum length of time. Such legal exclusions are less common in the case of pensions, but are used for occupational injury or unemployment benefits and, to some, extent for sickness and maternity benefits (at least for cash benefits).

9 Legal coverage through compulsory contributory pension schemes increased from 62.5 per cent to 66.9 per cent from 1990 to 2013.

10 In Honduras and Paraguay, for instance, domestic workers can now join on a voluntary basis.

11 Exclusion of casual workers from existing legislation on pension exists in all regions. In Africa, it occurs in Gambia, Kenya, Liberia (where they might be covered by non-contributory benefits), Madagascar (for farmers and casual agricultural workers working less than three months a year) and Swaziland. In Asia, it particularly occurs in the Pacific islands (notably Marshall Islands, Palau and Papua New Guinea) and in the Middle East (Bahrain and Yemen). In Latin America and the Caribbean, several countries exclude casual workers from social insurance coverage but instead provide a non-contributory pension (Antigua and Barbuda, Belize, Guyana and Jamaica). In Canada, casual workers with annual earnings below 3,500 Canadian dollars are formally excluded from the earnings-related pension.

- The type of employer, whether public, private or households, as in the case of domestic workers (box 3.1).
- The size of the enterprise,[12] with the rationale that the bigger the enterprise, the more able it is to make contributions and absorb the administration costs of social protection. With advances in IT contributing to reducing employers' administration costs, several countries have gradually lowered or eliminated the size threshold below which enterprises are not required to make social protection contributions. Bahrain,[13] India,[14] the Republic of Korea[15] and Viet Nam[16] are examples of countries that extended the coverage step by step.
- The number of hours worked per week or per month.
- The economic sector: the agricultural sector is often excluded without the provision of an alternative specific scheme, including in countries where this is the main source of employment.[17]

There are other factors[18] that might disadvantage workers in non-standard employment (for example, lower levels or reduced duration of benefits or stricter eligibility conditions) but which do not necessarily result in a total exclusion from coverage. The possible impacts of such factors are not specifically considered in the estimates of legal coverage presented in this chapter.

...with a gradual extension to other groups, mainly through non-contributory and voluntary contributory pension schemes...

The link between employment and social protection has changed over the past two decades. The increased role given to non-contributory social protection mechanisms and to attempts to widen coverage through voluntary affiliation has reduced the importance of increasing legal coverage by expanding or introducing compulsory pension insurance.

Between 1990 and 2013, the proportion of legal pension coverage based on non-contributory schemes increased by a multiple of more than 5, contributing to more than 40 per cent of the total increase in legal coverage worldwide. As illustrated by recent developments in the Asia and the Pacific and Sub-Saharan Africa regions, a number of countries have established large-scale non-contributory pension schemes,[19] in some cases as the main or only pension scheme.

Likewise, attempts to widen coverage through voluntary affiliation to contributory pension schemes represent 44 per cent of the increase in legal coverage recorded over the past two decades.

12 In 2013, in the Lao People's Democratic Republic employees of private sector and state-owned enterprises with fewer than ten employees were explicitly excluded from pension coverage (Decree No. 207, 1995, implemented in 2001). The same exception applies in Nepal for the Pension and Provident Fund. In Iraq, Liberia, Nigeria and Pakistan, employees of firms with fewer than five workers are still excluded from pension coverage (SSA/ISSA, 2013). In Papua New Guinea, the limit for entitlement to pension coverage is fixed at 15 or more employees; In India, compulsory coverage by the Employees' Provident Fund and survivors' (deposit-linked) insurance is restricted to employees in firms with at least 20 workers in selected industries.

13 In Bahrain, workers in establishments of less than ten workers, not covered in 1990, may now contribute voluntarily.

14 In India, voluntary affiliation for employees of firms with fewer than 20 workers is now possible, if the employer and a majority of employees agree to contribute.

15 In the Republic of Korea, the National Pension Scheme, covering workers in establishments with ten or more employees, was implemented in 1988. In 1992, the compulsory coverage was expanded to firms with five or more employees. It was expanded further in 1995 to farmers, fishers and the self-employed who reside in rural areas, and, finally, in April 1999, to the self-employed in urban areas.

16 In Viet Nam, the compulsory coverage of the private sector was first restricted to enterprises with ten or more employees. Since 2005, all enterprises, whatever their size, have been obliged to register all their employees with a labour contract of at least three months with the Viet Nam Social Security (SSA/ISSA, 2013; Bonnet et al., 2012). In 2006, the Social Insurance Law expanded the coverage of the pension system to farmers and the self-employed on a voluntary basis (World Bank, 2009).

17 In countries such as Benin, Madagascar, Saudi Arabia and Yemen, agricultural workers are explicitly excluded from social protection for pensions. Iraq's Social Protection Law excludes temporary agricultural employees, while similar legislation in Nicaragua excludes seasonal agricultural workers. In Spain, agricultural workers, small farmers and household workers are included, but under certain conditions (SSA/ISSA, 2013, 2014a, 2014b, 2014c).

18 Partial legal exclusion or ineligibility occurs when certain groups of employees, e.g. temporary or part-time and the self-employed, face stricter eligibility conditions or lower levels of benefits stated in the law (Alphametrics Ltd, 2009).

19 In 2014, at least 110 countries provided non-contributory pensions. The majority of the countries (56 per cent) targeted people below a defined level of income or "means". Before 1950, only 20 countries did so, mainly the Developed Economies and European Union but also including countries from Latin America (Uruguay (1919), Barbados (1937), Trinidad and Tobago (1939) and Guyana (1944)) and sub-Saharan Africa (South Africa (1927) and Namibia (1949)). Until the 1990s, non-contributory pensions tended to be established as a complement to existing contributory schemes. The 1990s represented the first significant wave of their rapid development in developing countries. This trend continued over the following decade, with lower-middle-income countries and a few low-income countries (e.g. Lesotho, Swaziland and Timor-Leste) establishing such schemes, usually as the main mechanism to ensure a minimum level of income security for older people.

Figure
3.2

Old-age pension legal coverage by employment status (%)

Note: Global estimates based on 172 countries in 1990; 180 countries in 2013. The numbers refer to old-age pensions and survivor's (above pensionable age) periodic cash benefits. Global estimates weighted by total employment.

Source: ILO Research Department based on SSA/ISSA, 2013, 2014a, 2014b, 2014c; ILO, 2015a, 2015b, 2015c; European Commission, 2015; SSA, 1989, 1999; United Nations, Department of Economic and Social Affairs, 2015; national legislation and statistical offices.

Box 3.1

Domestic workers under the scope of main contributory pension schemes

Domestic workers – mainly women – represent 3.6 per cent of wage employment worldwide (ILO, 2013a). Some European countries have explicit coverage for domestic workers under social protection legislation. Belgium, France, Germany, Greece, Italy, Portugal, Spain[1] and Switzerland have included domestic workers in retirement schemes. Other countries cover workers' compensation schemes[2] or general health schemes.[3] In Uruguay, all employers, including those of domestic workers, are legally required to register employees with the Social Welfare Bank (Banco de Previsión Social), through which employers and employees make monthly payments to the employees' pensions and health funds (UN Women/ITUC, 2013). In Paraguay, a new law is currently being discussed to make it possible for domestic workers to acquire pension rights in line with the ILO Domestic Workers Convention, 2011 (No. 189). Other countries in Central and South America have also taken action in recent years to include domestic workers in regulatory provisions (Belize, Brazil and Venezuela).

1. Legislation extending the general social security system to domestic workers was adopted in Spain in 2011 (UN, 2014). 2. Austria, Belgium, Denmark, France, Germany, Italy, Portugal, Spain and Switzerland (canton of Geneva) (ILO, 2013a). 3. Belgium, France, Germany, Greece, Italy, Netherlands, Portugal, Spain and Switzerland (canton of Geneva) (ILO, 2013a).

Voluntary affiliation was adopted by law in a significant number of countries, most notably in China.[20] It is one of the main approaches adopted in social protection legislation to extend coverage to the self-employed in the Sub-Saharan Africa and Asia and the Pacific regions.

As a result, compulsory contributory schemes are no longer the main legal arrangement for providing pensions for older people, especially in low- and middle-income countries. In 2013, compulsory contributory pensions represented only 41 per cent of total legal pension coverage, compared with 78 per cent in 1990. The expansion of legal coverage through compulsory contributory pension schemes has been constrained by various factors, including persistent informal employment and a high incidence of low-paid jobs. The Latin American and the Caribbean region can be seen as one exception. In this region, contributory compulsory mechanisms account for a relatively high share of the increase in legal coverage.[21] Colombia and Costa Rica (Durán Valverde et al., 2013), for instance, transformed initial coverage of the self-employed from voluntary to compulsory affiliation while adopting complementary measures, such as subsidizing contributions or simplifying registration of payment processes, to facilitate the transition.

…notably in favour of the self-employed.

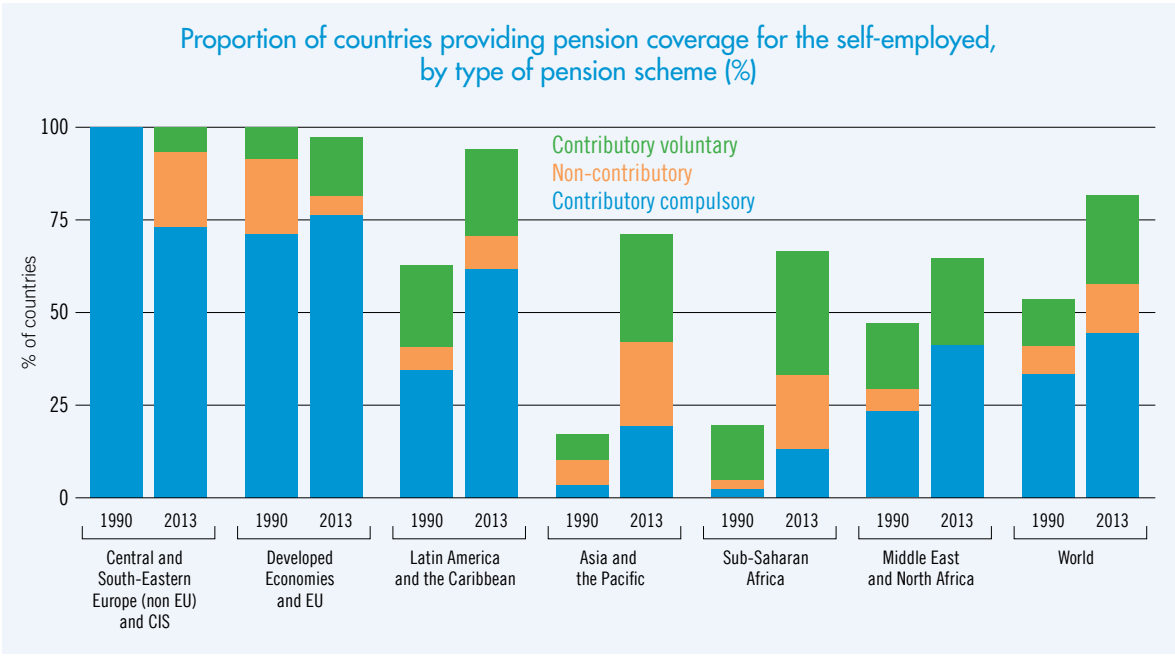
The rapid extension of legal coverage to the self-employed is one of the most important developments since the 1990s. The increased use of non-contributory mechanisms and the option provided by legislation for voluntary affiliation have supported the significant extension of legal coverage to this group (figure 3.3). In 2013, 147 of the 181 countries examined (81.2 per cent) provided pension coverage for the self-employed, which is twice the proportion in 1990.

The result is an increase in the proportion of the self-employed who are legally covered (irrespective of the level of protection provided and consideration about the effective implementation of this legal coverage). As of 2013, 77 per cent of the self-employed were legally covered by some type of pension scheme, compared with 29 per cent in 1990, in other words, 2.5 times higher coverage. Over the same period, the proportion increased by a factor of 8 in low-income countries and by a

20 The voluntary nature of the new National Rural Pension Scheme (initiated in late 2008) and the Urban Residents Pension Scheme, targeting urban citizens not eligible for the urban employees' pension system (launched in July 2011), may be temporary. These two reforms, initiated on a voluntary basis, are expected to be integrated into one unified pension system covering both urban and rural residents (announced in February 2014) and become compulsory for their respective constituents by 2020. In this chapter, estimates are based on the voluntary nature of the affiliation to these schemes. Some global estimates excluding China are provided in addition. When excluding China from the analysis, voluntary affiliation contributes only 16.3 per cent of the increase in legal coverage since 1990; 62.1 per cent of the increase in legal coverage is then based on non-contributory mechanisms.

21 In Latin America, legal pension coverage increased by 34.7 percentage points from 1990 to 2013. Contributory compulsory affiliation accounted for 46.3 per cent of this increase. The development of non-contributory pension schemes accounted for 39 per cent of the increase, and the remaining 14.7 per cent was voluntary affiliation.

Figure 3.3



Source: ILO Research Department (see figure 3.2).

factor of 4 in middle-income countries.[22] Likewise, coverage among unpaid family workers tripled from 20 per cent in the 1990s to 61 per cent in 2013, mainly through non-contributory mechanisms covering larger groups of the population.

Unemployment protection lags behind pension coverage…

While there has been a clear and widespread trend towards extending legal pension coverage, the same has not been observed for unemployment protection. One reason for this lies in the relevance of the concept of "unemployment" in many emerging and developing countries. In these countries, important inroads have been made, instead, to provide at least a basic level of income security, through employment guarantee schemes or other forms of public employment programmes for the working poor and the underemployed.[23]

As a result, unemployment benefits are still not available in the majority of countries and legal unemployment coverage among the labour force is limited (figure 3.4). In 2013, only 87 out of 205 countries (42.4 per cent) had unemployment protection schemes anchored in legislation that provide periodic cash benefits – mainly the Developed Economies and European Union and countries from Central and South-Eastern Europe and CIS – compared with 68 (33.5 per cent) in the early 1990s.[24] A limited number of emerging and developing countries (mainly in Asia and Latin America) have established unemployment schemes. In 2013, only slightly more than 30 per cent of the labour force is legally covered by unemployment benefits (cash periodic), up from 17.5 per cent in the early 1990s.[25]

22 The extension in China to reach universal pension coverage influences the magnitude of these results but not the structural trend. Without China, the proportion of employers and own-account workers legally covered increased by 1.8 times between 1990 and 2013 (from 41.3 per cent to 74.3 per cent) globally, and from 25.9 per cent to 69.3 per cent in middle-income countries. More than 85 per cent of this increase in legal pension coverage has been based on either non-contributory mechanisms or some legal provision allowing for voluntary affiliation. Voluntary affiliation explains most of the increase in legal pension coverage to own-account workers and employers (62.8 per cent) when China is included, compared with one-third without China. Non-contributory mechanisms explain respectively 24 per cent and 43 per cent of the increase with and without China.

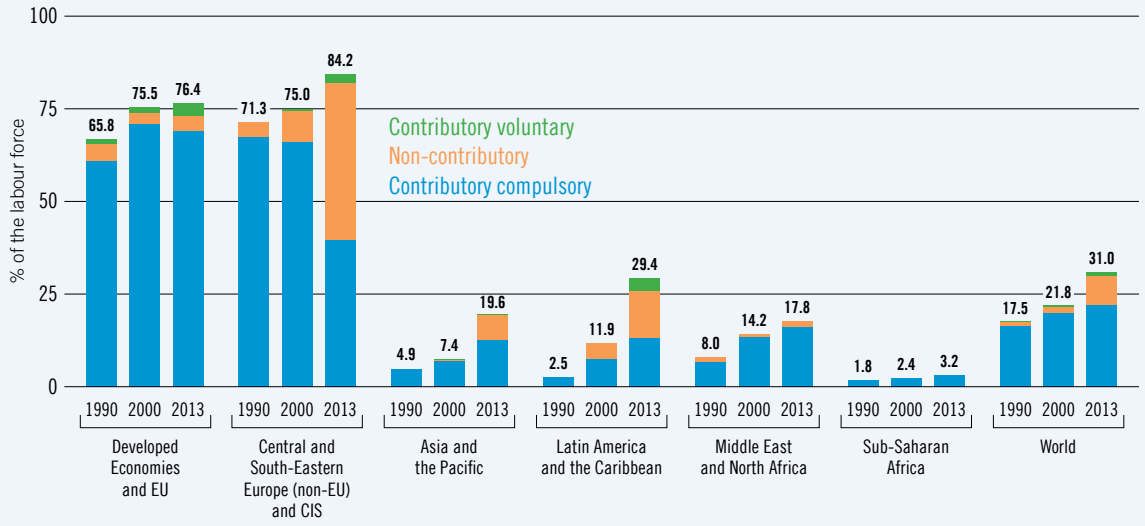
23 Some public employment programmes, such as India's Mahatma Gandhi National Rural Employment Guarantee Scheme or the Productive Safety Nets Programme in Ethiopia, provide employment or alternatively cash or food transfers for those who are permanently or temporarily unable to work, or for whom work is not available (ILO, 2014a, 2014b).

24 This proportion covers legal provision for unemployment insurance, unemployment social assistance providing partial income replacement to unemployed people. In addition, 17.1 per cent of the 205 countries considered here provide severance payments.

25 In the 1990s, the Developed Economies and European Union and Central and South-Eastern Europe and CIS represented 26 per cent of the labour force but 83 per cent of those legally protected for unemployment benefits. In 2013, these proportions were respectively 21 per cent and 53 per cent, notably as a result of the increase in legal coverage in Asia and the Pacific and Latin America and the Caribbean.

Figure 3.4

Proportion of the labour force legally covered by periodic unemployment benefits (%)



Note: Regional estimates based on 191 countries for 1990 and 2000 and 192 countries in 2013. The numbers refer to periodic cash benefits. Regional estimates weighted by the labour force. For the majority of countries from Central and South-Eastern Europe and CIS, information for 1990 refers to 1991 or early 1990s.

Source: ILO Research Department based on SSA/ISSA, 2013, 2014a, 2014b, 2014c; SSA, 1989, 1999; European Commission, 2015; Council of Europe, 2015; ILO, 2015a, 2015b, 2015c; national legislation.

In 2013, compulsory contributory unemployment benefits represented 71.4 per cent of total legal coverage, down from 94.2 per cent in 1990. Non-contributory unemployment protection schemes gained some importance, representing one-quarter of legal coverage; 3 per cent were based on voluntary affiliation. This is partly a result of the introduction of new types of schemes, such as the Indian national employment guarantee schemes, which afforded coverage to previously excluded workers. However, it also reflects a shift in some countries away from social insurance benefits to a lesser social assistance type of benefit following a policy trend that advocated lowering employers' social security contributions, which, it was hoped, would encourage employment growth. Russia contributed significantly to the weight of this shift when the compulsory unemployment insurance introduced in 1991 was replaced in 2001 by a non-contributory system.

…and is almost exclusively available to employees in standard forms of employment.

In 2013, 40 per cent of employees were legally covered by unemployment benefits (figure 3.5); these constituted close to 90 per cent of all people covered by legislation.[26] Starting from the 1970s, some countries gradually expanded the legal coverage by unemployment benefits, typically covering employees. In 1972, Canada included public servants, and the United States removed rules restricting coverage to employers with more than a minimum number of employees. In 1998, the Republic of Korea expanded coverage of its employment insurance system to all employees by including all workplaces, irrespective of size. Viet Nam currently restricts unemployment insurance coverage to employees with permanent or open-ended contracts in enterprises with at least ten workers, although it is planning to eliminate the latter condition (Carter et al., 2013). More than 80 per cent of the increase in legal unemployment coverage between 1990 and 2013 came from further inclusion of employees. Low- and middle-income countries typically offer the least unemployment protection.[27]

[26] They represent 98 per cent of those legally entitled to compulsory contributory benefits. In most regions, unemployment protection relies largely on unemployment insurance.

[27] Less than 2 per cent of employees in low-income countries are legally entitled to unemployment benefits or an employment guarantee. In middle-income countries, this proportion has almost doubled since 1990, reaching 35.9 per cent in 2013. In high-income countries, 85.3 per cent of employees are legally entitled. This proportion has increased by 11.7 percentage points since 1990.

Figure
3.5

Unemployment benefit legal coverage by employment status (%)

Note: Regional estimates based on 191 countries for 1990 and 2000 and 192 countries in 2013. The numbers refer to periodic cash benefits. Global estimates weighted by total employment.

Source: ILO Research Department (see figure 3.4).

Box 3.2

Social protection for those in minijobs or on zero-hours contacts?

In Germany, it is estimated that, in 2014, nearly one in five workers,[1] or about 7.5 million people held so-called "minijobs", referring to low-wage employment contracts that allow a person to earn up to €450 a month free of tax for a small number of hours worked. "Minijobs" benefit from tax subsidies, are only partially covered by the compulsory public pension system[2] and are fully exempt from unemployment insurance (ILO/European Commission, forthcoming; ILO, 2013b; OECD, 2014).

In other countries, such as the United Kingdom, "zero-hours contracts" have been developed (BIS, 2014). In general terms, a zero-hours contract is an employment contract in which the employer does not guarantee the individual any work, and the individual is not obliged to accept any work offered. Such contracts do not have a specific meaning in law. An individual on a zero-hours contract could be an employee, a worker or a self-employed person, depending on what the contract says and how the working arrangements operate in practice (CIPD, 2013). The level of protection (either employment or social protection) attached to a zero-hours contract will depend on the status of the contract, as established by case law. The issue has become part of a public debate in several countries, such as the Netherlands[3] and Italy (ILO, 2015d; EurActiv, 2014).

1. Federal Employment Agency employment statistics (employment covered by social insurance and marginally employed), September 2014. 2. According to new rules, individuals who began their employment on 1 January 2013 or later are subject to compulsory pension insurance. However, "Minijobbers" have the option of being exempted upon application from this obligation. Employers pay flat-rate social insurance contributions of 30 per cent (15 per cent for pensions, 13 per cent for health and 2 per cent for taxes) (Federal Ministry of Labour and Social Affairs, Germany, 2015). 3. Data from the Netherlands Office of Statistics show that, in 2012, there were 346,000 workers on on-call contracts, while up to 860,000 were working under contracts providing less than 12 hours of work per week (EPSU, 2014).

In addition to the criteria mentioned for pensions, employees may be excluded from coverage by existing unemployment social protection legislation because they are public sector employees[28] on the grounds of their permanent contracts, or because of strict qualifying conditions regarding their access to social insurance-related unemployment benefits.[29]

Seasonal or temporary workers are sometimes explicitly excluded from legal coverage (as in the cases of Egypt, Thailand and Viet Nam), or they may be excluded indirectly, because they are less likely to meet the qualifying conditions. Non-explicit indirect exclusions are more numerous. They can occur as a consequence of a failure to complete a qualifying period for contributions or to meet eligibility criteria, perhaps based on a minimum number of hours of work or a minimum level of earnings. These exclusions have a disproportionate impact on women. Some countries, such as Japan, the Republic of Korea and South Africa,[30] restrict eligibility among employees by fixing a minimum number of hours of work, which has possible consequences for part-time workers (ILO, 2014d) and casual and temporary workers whose hours are below the minimum threshold. In Germany, Japan and the Republic of Korea, workers with low earnings are excluded.

Other forms of employment frequently do not qualify for the social protection that employees with standard employment relationships enjoy. For instance, domestic workers rarely benefit from unemployment protection, with notable exceptions such as Brazil, France, Germany, South Africa, Uruguay and Venezuela. Other categories of workers such as zero-hours contracts or "minijobs" are also often excluded from legal coverage (box 3.2). This may exacerbate the problems associated with low labour incomes as documented in Chapter 2. In addition to being confronted by working poverty, these employees often lack income security once they retire or if they lose their job.

The availability of unemployment benefits to the self-employed remains limited. Globally, 11 per cent of the self-employed were legally covered for unemployment benefits in 2013, compared with 5 per cent in 1990. The corresponding proportion in high-income countries was 32 per cent and 17 per cent in 2013 and 1990, respectively.

The number of countries which provide such protection by law increased modestly, from 27 in 1990 to 34 in 2013. Many of these countries cover only some of the self-employed; in Canada, for example, only fishers are legally covered. Half of these countries provide protection through non-contributory

28 In Argentina, public service employees, employees of private teaching institutions and universities are excluded, as well as domestic workers. Similarly, government workers are excluded in Chile, Denmark, Republic of Korea and Thailand. In France, public institutions must self-insure or opt in to the general unemployment insurance scheme.

29 Which in many countries determined future eligibility to unemployment-related social assistance benefits.

30 A minimum of 20 scheduled working hours per week in Japan; at least 60 hours a month or 15 hours a week in the Republic of Korea; and more than 24 hours a month in South Africa.

or voluntary-based affiliation. In Austria,[31] Germany, Mauritius, the Republic of Korea, Romania and Ukraine, all or some self-employed can join the schemes on a voluntary basis. In Estonia, Ireland[32] and the United Kingdom, coverage is provided through a non-contributory scheme.

It is not uncommon for the self-employed to face stricter conditions of eligibility or lower levels of benefits. For example, in Denmark, where self-employed workers enjoy the same social protection entitlements as employees, a three-week waiting period is imposed on the self-employed for unemployment benefits, while no such restriction is applied to employees. In Luxembourg, the self-employed must have completed at least two years of compulsory pension insurance contributions to qualify for unemployment benefits, whereas only six months of contributions are required for employees (European Commission, 2015). Stricter conditions to qualify also apply in Finland,[33] where both qualifying and reference periods are different for self-employed persons and employees.

B. Social protection coverage in practice: Implementation gaps

Whether for pensions or for unemployment, the extension of legal coverage does not in itself ensure that all those people who are legally covered are covered effectively, or that the levels of benefits are adequate. In practice, the extension of effective coverage may significantly lag behind that of legal coverage. Implementation coverage gaps occur when, despite being covered by existing laws and regulations, people do not have effective access to their benefits. There are many reasons why this happens. The determining factors range from the effectiveness and efficiency of national institutions to deliver benefits and services to budgetary constraints and low institutional capacity. Appropriate implementation and enforcement mechanisms are necessary to ensure the proper administration of social protection institutions and services (ILO, 2013c), including transparent and traceable mechanisms that are effective in targeting and reaching beneficiaries. Implementation gaps result also from factors such as the appropriateness of the benefits, individuals' ability to contribute and their awareness of entitlements and confidence in institutions.

There are major gaps in effective implementation of legal pension coverage…

In all countries, effective pension coverage is consistently less than legal coverage (figure 3.6). Between 2000 and 2013, both legal and effective pension coverage increased (circles moving from the bottom left to the top right positions in the figure). However, in the majority of countries, effective coverage increased less than legal coverage, thereby resulting in wider implementation coverage gaps.

In 2013, 77 per cent of people of the working-age population were legally covered by a pension scheme and 51.5 per cent of people in old age effectively received a pension.[34] The recent developments in contributory pension coverage, which will affect future generations of pensioners, does not account for this difference.[35] In 1990, gaps in legal coverage explained almost 80 per cent of the absence of effective pension coverage; the remaining 20 per cent resulted from implementation coverage gaps. By 2013, the situation was considerably different: implementation coverage gaps explained 55 per cent of total gaps in pension coverage.[36]

31 From 2009, a new Voluntary Unemployment Scheme was introduced for the self-employed who were also already covered by pension schemes. Those entitled to join the Voluntary Unemployment Insurance Scheme include self-employed persons who pay pension insurance contributions according to the Act on Social Insurance for the Self-Employed (GSVG) or according to the Act on Social Insurance for Freelancers (FSVG), as well as self-employed lawyers and civil engineers.

32 With the exception of fishers, who pay optional contributions.

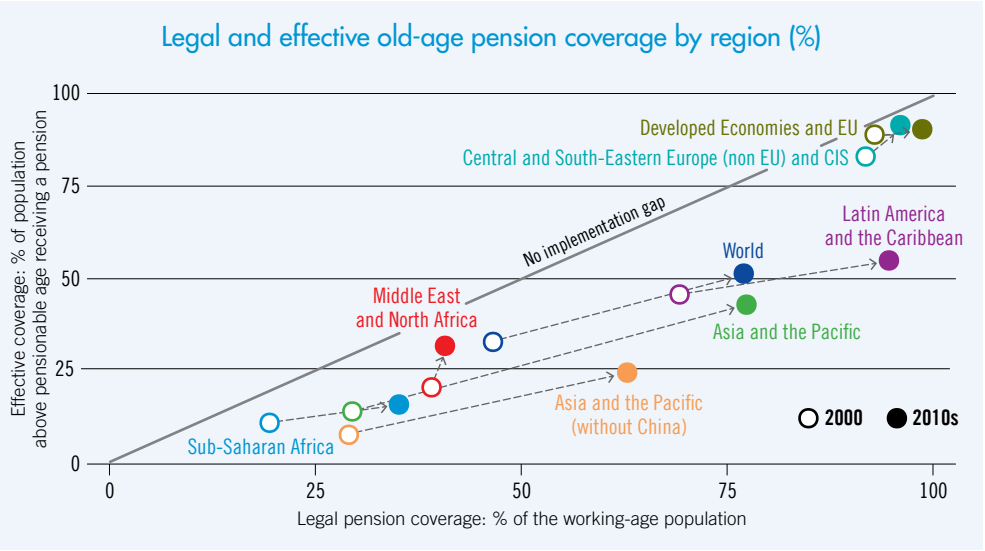
33 For the basic unemployment allowance, employees should have completed at least 26 weeks of employment during the last 28 months, compared with 18 months of entrepreneurship during the last 48 months for the self-employed.

34 In 2000, 46.6 per cent of those of working age were legally covered and 33.5 per cent of people in old age received a pension.

35 Legal and effective coverage are not strictly comparable. In the case of newly established contributory schemes, the required minimum period of contributions to be eligible explains part of the implementation gap. Some of the limitations associated with the direct comparison of legal and effective coverage can be found in Appendix A.

36 In 2013, close to half of the people in old age did not receive any pension: 22 per cent were excluded by law and 26 per cent were legally covered but had no effective access (see Appendix B).

Figure 3.6



Note: Top right corner: universal coverage (both legally stated and implemented). Circles below the diagonal: implementation gap. On the diagonal: effective coverage equals legal coverage, i.e. full implementation of legal coverage. Based on 137 countries in 2000 and 168 countries in 2013. Weighted aggregates.

Source: Legal coverage, see figure 3.1; effective coverage: ILO, 2014a, 2015e, and national sources.

Today, 43 countries experience both low legal and effective pension coverage (group 1 in figure 3.7). By contrast, 65 counties have reached near universal pension coverage in terms of people receiving benefits (group 4). The Developed Economies and European Union and countries of Central and South-Eastern Europe and CIS represent more than 70 per cent of all countries in this group. Despite this success, there are serious concerns about the maintenance of adequate levels of benefits as a result of fiscal consolidation polices (ILO, 2014a). Other countries in this group, such as Bolivia, Botswana, Lesotho, Namibia,[37] South Africa,[38] Swaziland or Timor-Leste, demonstrate the relevance of non-contributory pensions in countries where informal employment dominates.

Since 2000, less than 60 per cent of the increase in legal pension coverage has been effectively implemented. For a large number of countries, important reforms on the legal side[39] have not yet been fully implemented, resulting in a significant increase in implementation gaps (groups 2 and 3). The extensive reliance on voluntary affiliation, which affects 60 per cent of the countries in group 2, is one of the factors inhibiting effective expansion. The development of policies to address these gaps (including the refinement of legislation and the redesign of schemes) resulted in tangible results in some countries (group 3) in terms of effective pension coverage. In this respect, coherence between different mechanisms also matters. Cabo Verde, Chile, Costa Rica (Durán Valverde et al., 2013), Tunisia (Friedrich Elbert Stiftung, 2011; ILO, 2002), Argentina (box 3.3) and Uruguay have gradually extended coverage since the 1990s through a mix of contributory and non-contributory mechanisms, improving the coherence of the pension system and focusing, in recent years, on measures to facilitate the effective coverage of the self-employed (Durán Valverde et al., 2013; ILO, 2014e; FORLAC, 2014a, 2014b). China, Ecuador, the Republic of Korea and Venezuela have also taken significant steps since 2000.

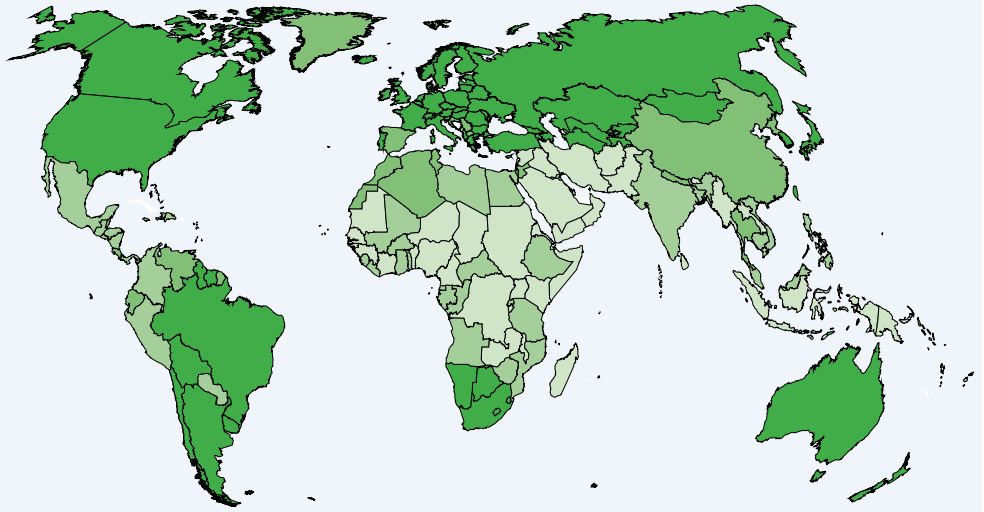
37 The South African apartheid government extended the social pension to white residents in Namibia in 1949. The watershed date for removing discrimination in the pension system was at independence in 1990 (CPRC, 2007).

38 South Africa was the first country in Africa to institute a state pension. The first parliamentary proposal for an old-age grant was made in 1922 and was instituted in 1928. Act No. 22 entitled all "white" and "coloured" residents of South Africa aged 65 years and older to receive a pension, subject to an income-based means test. In 1944, black South Africans were first granted the right to claim the pension, albeit at a lower rate than the value transferred to white and coloured residents. Then, with the end of the apartheid government in 1994, the pension was finally equalized across all citizens (CPRC, 2007).

39 Certain countries deviate from this classical process, as a number of programmes have emerged in recent years that provide some degree of protection but lack a legal foundation.

Figure
3.7

State of pension coverage: A global picture



Note: group 1: countries with legal coverage below 30 per cent in 1990 or 40 per cent in 2000 or 50 per cent in 2013 and with no significant increase in legal coverage between 1990 and 2013 (below a factor of 3); group 2: legal coverage above 30 per cent in 1990 or 40 per cent in 2000 or 50 per cent in 2013 or significant increase in legal coverage (at least by a factor of 3) between 1990 and 2013 and effective coverage below 50 per cent in 2013; group 3: effective coverage above 50 per cent in 2013 but below 80 per cent; group 4: both legal and effective coverage above 80 per cent.

Source: ILO Research Department based on SSA/ISSA, 2013, 2014a, 2014b, 2014c; ILO, 2014a, 2015a, 2015b, 2015c; European Commission, 2015; SSA, 1989, 1999; United Nations, Department of Economic and Social Affairs, 2015; national legislation and statistical offices.

Box
3.3

Consolidating social protection in Argentina

Traditionally, Argentina has provided social protection coverage to different groups of workers through specific schemes and/or sub-systems organized along the social protection insurance contributive model. To address the relatively high levels of informality, these schemes have been gradually merged and non-contributory schemes added as part of the system (ILO, 2012).

In particular, in response to the crisis in the early 2000s the government launched a strategy of creating productive jobs as a driver of recovery, along with the introduction of carefully designed social measures as key factors of this strategy. For instance, in 2002, the Heads of Household Programme (Programa Jefes y Jefas de Hogar) was launched to provide income support for more than two million unemployed people and those working in the informal economy (Bertranou and Mazorra, 2009). The changes to the economic model started in 2003 have brought about strong economic recovery, with a substantial increase in formal employment. The greater fiscal space enabled the implementation of a new generation of income protection and employability programmes – including, Plan Familias; Employment and Training Insurance programme (Seguro de Capacitación y Empleo) (Bertranou and Mazorra, 2009); and the development of policies aimed at increasing coverage of old-age benefits through the Pension Inclusion Plan (PIP) and of transfers for children and adolescents, through the Universal Child Allowance (AUH) (ILO, 2012, ILO, 2014a).

In the area of pensions, the PIP increased pension coverage for the elderly from 67.7 per cent in the second quarter of 2005 to a 90.8 per cent in the fourth quarter of 2011. During this period, the private pension fund scheme was re-nationalized by late 2008 and unified the existing public pension funds scheme (ILO, 2014a). In that same year, the law on pension mobility was enacted, which allowed an automatic adjustment of benefits aimed at preserving their purchasing power (Bertranou et al., 2011).

Moreover, Argentina carried out important efforts to reduce informal employment through a comprehensive strategy which includes measures to reinforce labour inspections and to reduce administrative and tax burdens to encourage firms' formalization and workers' affiliation. The incidence of informal employment decreased by 14.5 percentage points since 2003, to 34.6 per cent at the end of 2012 (Bertranou et al., 2013).

…especially as regards systems that rely on voluntary contributions.

Legal coverage based mainly on voluntary affiliation mechanisms typically results in larger implementation gaps.[40] In 2000, just over a quarter of legal coverage based on such mechanisms was effectively implemented. In 2013, this proportion was higher (53 per cent), mainly due to effective implementation in China. If China is excluded, the figure drops to about one-third.

Examples from Latin America and the Caribbean confirm the difficulties in attracting the self-employed on a voluntary basis. In eight countries in the region, pension coverage for the self-employed is voluntary. This is the case for Bolivia, El Salvador, Grenada, Guatemala, Mexico, Nicaragua, Paraguay and Venezuela (although in Bolivia the non-contributory Renta Dignidad is available for all citizens). In 24 countries, including Argentina, Brazil, Costa Rica and Uruguay, affiliation is compulsory and has resulted, not surprisingly, in higher rates of coverage of the self-employed. Coverage rates are about 30 per cent, 28.5 per cent and 43.3 per cent in Argentina, Brazil and Uruguay, respectively. They are significantly lower in El Salvador (10.1 per cent), Guatemala (2.8 per cent) and Nicaragua and Paraguay (less than 0.5 per cent). Similar results were observed for domestic workers. Where coverage is compulsory, schemes typically achieve effective coverage of 20 per cent to 30 per cent of the target population, while voluntary schemes achieve less than 5 per cent effective coverage (Mesa-Lago, 2008).

In general, compulsory contributory mechanisms have proved to be more effective in reaching the intended target groups. They tend to be particularly effective in countries with universal legal pension coverage, i.e. typically in countries with high proportions of employees and where the incidence of permanent contracts is high.[41] In those countries, more than 90 per cent of people legally covered are effectively reached. In other countries with usually higher levels of informal employment, the implementation of the legislation based on compulsory contributory schemes faces constraints: financial barriers for people legally covered combined with weak institutional capacity result in low rates of implementation of legal coverage (less than 50 per cent in 2013). In such contexts, non-contributory schemes (with 75 per cent of legal coverage effectively implemented) may be more effective in reaching intended beneficiaries.

Non-standard forms of employment and self-employment are disproportionately affected by implementation weaknesses…

The analysis of effective affiliation by employment status focuses on contributory schemes[42] that are either compulsory or voluntary (figure 3.8). A number of observations emerge. First, there is a generally low level of effective coverage by contributory pension schemes – which suggests that measures are needed to enhance implementation and highlights the role of non-contributory schemes in certain circumstances. Second, employees are effectively better covered than other working groups. At the global level, 52 per cent of employees are currently affiliated to a pension scheme, compared with 16 per cent of the self-employed. Third, differences in coverage by contributory schemes by status in employment are amplified in lower-income groups of countries. Men are better covered than women, but there are significant variations across regions. In Sub-Saharan Africa, 8 per cent of working women contribute to a pension scheme, compared with 13 per cent of their male counterparts. In the Middle East and North Africa, and to some extent Latin America and the Caribbean, gender differences in effective pension coverage through contributory schemes result from lower participation rates among women, which are only partially compensated by the fact that the minority of women in employment usually access better conditions of employment. Older women still tend to face a higher risk of poverty than men as a result of lower coverage rates and, more importantly, lower levels of benefits (ILO, 2014a).

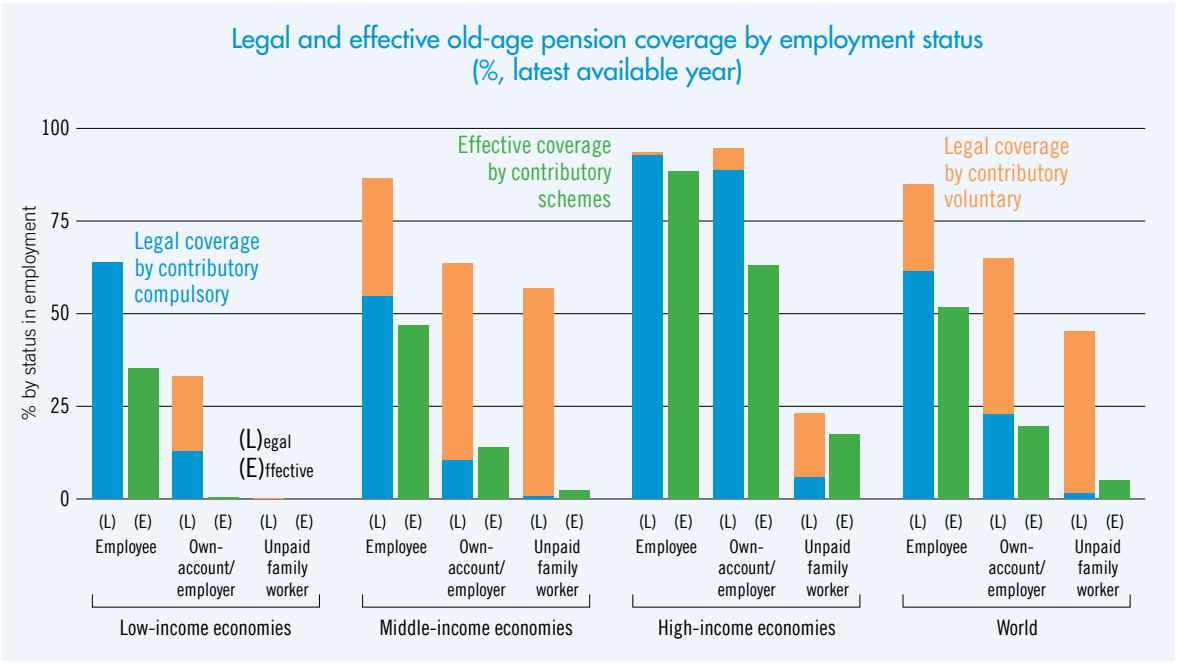
Outside the Developed Economies and European Union and some countries in Latin America and the Caribbean, pension coverage through contributory schemes is primarily directed at employees. Employees benefit not only from relatively high levels of legal coverage, but also from the most

40 Appendix A provides a definition of the categories of countries depending on the main features of their national pension systems.

41 Workers with permanent contracts represent 74 per cent of total employment and 86 per cent of employees.

42 The quantification of the effective future coverage by non-contributory pension schemes of people currently of working age is not possible. Legal pension coverage by non-contributory schemes by status can be used as a reference (figure 3.2).

Figure 3.8



Note: Global estimates on effective affiliation to contributory pension schemes based on 111 countries representing 86 per cent of total employment, weighted by total employment. Numbers refer only to coverage by contributory mechanisms (compulsory or voluntary). Effective coverage is measured as the proportion of employed by status in employment contributing to a pension scheme. Country grouping corresponds to World Bank income classification.

Source: ILO Research Department: see figure 3.1 for legal coverage; household survey data for effective coverage (detailed sources available in Appendix E).

Table 3.1

Legal pension coverage by contributory mechanisms effectively implemented by employment status (%, latest available year)

	Status in employment	Legal pension coverage by contributory schemes	Effective affiliation to old-age pension schemes	Legal pension coverage by contributory scheme effectively implemented	Legal pension coverage by non-contributory schemes
Low-income economies	Employee	63.7	35.1	55.1	18.5
	Own-account/employer	33.0	0.3	0.8	19.2
	Unpaid family worker	0.1	0.0	0.0	20.1
Middle-income economies	Employee	86.5	46.7	54.0	0.3
	Own-account/employer	63.7	13.8	21.6	16.0
	Unpaid family worker	56.8	2.3	4.1	21.1
High-income economies	Employee	93.6	88.5	94.6	2.3
	Own-account/employer	94.7	62.9	66.4	4.0
	Unpaid family worker	23.0	17.3	75.1	61.5
Total	Employee	85.0	51.8	60.9	2.7
	Own-account/employer	64.9	19.6	30.2	14.5
	Unpaid family worker	45.1	5.1	11.3	27.1

Note: See figure 3.8.

Source: ILO Research Department (see figure 3.8).

effective rate of implementation of this legal coverage. Worldwide, just above half[43] of employees (51.8 per cent) contribute to a pension scheme that entitles them to a pension in the future. An additional 2.7 per cent would expect to benefit from a non-contributory pension. Affiliation rates among employees range from 35.1 per cent in low-income countries to 88.5 per cent in high-income countries. Less than 45 per cent of employees contribute to a pension in Asia and the Pacific, Sub-Saharan Africa and the Middle East and North Africa, compared with 90 per cent in the Developed Economies and European Union, 76 per cent in Central and South-Eastern Europe and CIS countries and 65 per cent in Latin America and the Caribbean. Worldwide, 39 per cent of employees legally entitled to contributory benefits are currently not contributing (table 3.1).

[43] Global estimates based on 111 countries and weighted by total employment (Appendix C).

One of the obstacles to the implementation of contributory social protection among employees is the lack of a formalized employment contract. More than 25 per cent of all employees do not have any employment contract.[44] Employees in informal employment exceeds employees in formal employment in a number of countries (ILO, 2014f).[45]

Effective affiliation to a contributory social protection scheme depends not only on the existence of a contract but also on the type and duration of the contract. According to available data, 42.1 per cent of all employees[46] have a permanent contract (only 24.5 per cent in Asia and the Pacific) and 32.5 per cent of all employees work on a temporary contract. The rate of affiliation for non-permanent employees is lower everywhere than for permanent employees. There is an almost perfect correlation between the proportion of permanent employees in total employment and the proportion of employed contributing to a pension scheme.[47] Nearly 80 per cent[48] of employees with a permanent contract are currently contributing to a pension scheme, compared with just above half (51 per cent) of employees with temporary contracts. Variations in coverage are more limited in the Developed Economies and European Union region (figure 3.9, panel A), while gaps in protection and disparities between permanent and temporary employees are both significantly higher in other regions. In low-income countries even permanent employees, who are usually a minority of those employed, lack contributory social protection: according to available data,[49] 45 per cent of permanent employees and less than 18 per cent of temporary employees are contributing to a future pension. It is estimated that 19 per cent of employees may benefit from a non-contributory pension, either universal or means tested. The coverage of employment-related workers' pensions is lowest in African countries and the majority of countries there also lack non-contributory protection; income security for people in old age relies on work, family, community or other non-governmental support.

Public versus private sector employment also influences the effective rate of affiliation to pension schemes (figure 3.9, panel B), as do the number of hours worked (panel C) and the size of enterprise (panel D). Close to 75 per cent of employees in the public sector are affiliated to a contributory pension scheme. This proportion falls dramatically among employees in the private sector (41 per cent contributing), and even more so when considering all statuses in employment (31.2 per cent). This last proportion becomes negligible in low-income countries (less than 2 per cent).

In the case of part-time workers, the application of thresholds regarding the minimum number of hours to be worked to be eligible tends to result in significant proportions of part-time workers being excluded in practice from social protection. Globally, more than 55 per cent of employees in full-time employment are affiliated to a pension scheme, compared with 41.6 per cent of those working part-time.

The size of an enterprise is another determining factor affecting the affiliation rate. Large enterprises usually have the highest levels of productivity, provide higher wages and are more able to afford the cost of formalization (including the cost of social protection). Also, social dialogue mechanisms are potentially more available in larger enterprises, which can favour affiliation. In addition, larger enterprises are more exposed to labour inspection. Focusing on employees, 40.3 per cent are covered in enterprises with fewer than 10 workers. The proportion reaches 70 per cent in enterprises with at least 50 workers. Gaps in coverage are, of course, accentuated when including independent workers.

44 Global estimates based on 90 countries and weighted by total employment (ILO Research Department).

45 Acknowledging that being under a formalized employment contract is only one of the criteria used to define informal employment. In India, for example, 84.9 per cent of employees were in informal employment in 2009–10. In other countries from Asia (Indonesia, Pakistan, Philippines, Sri Lanka and Viet Nam), Latin America (Bolivia, Ecuador, El Salvador, Honduras, Nicaragua, Paraguay and Peru) and Africa (Madagascar, Mali, Uganda, United Republic of Tanzania and Zambia), between 50 per cent and 70 per cent of employees are in informal employment. In Argentina, Brazil, Colombia, Lesotho, Liberia, Mexico and Namibia, the figure is between one-third and close to half of employees (ILO, 2014f).

46 Global estimates based on 90 countries and weighted by total employment. Additional results available in Appendix D.

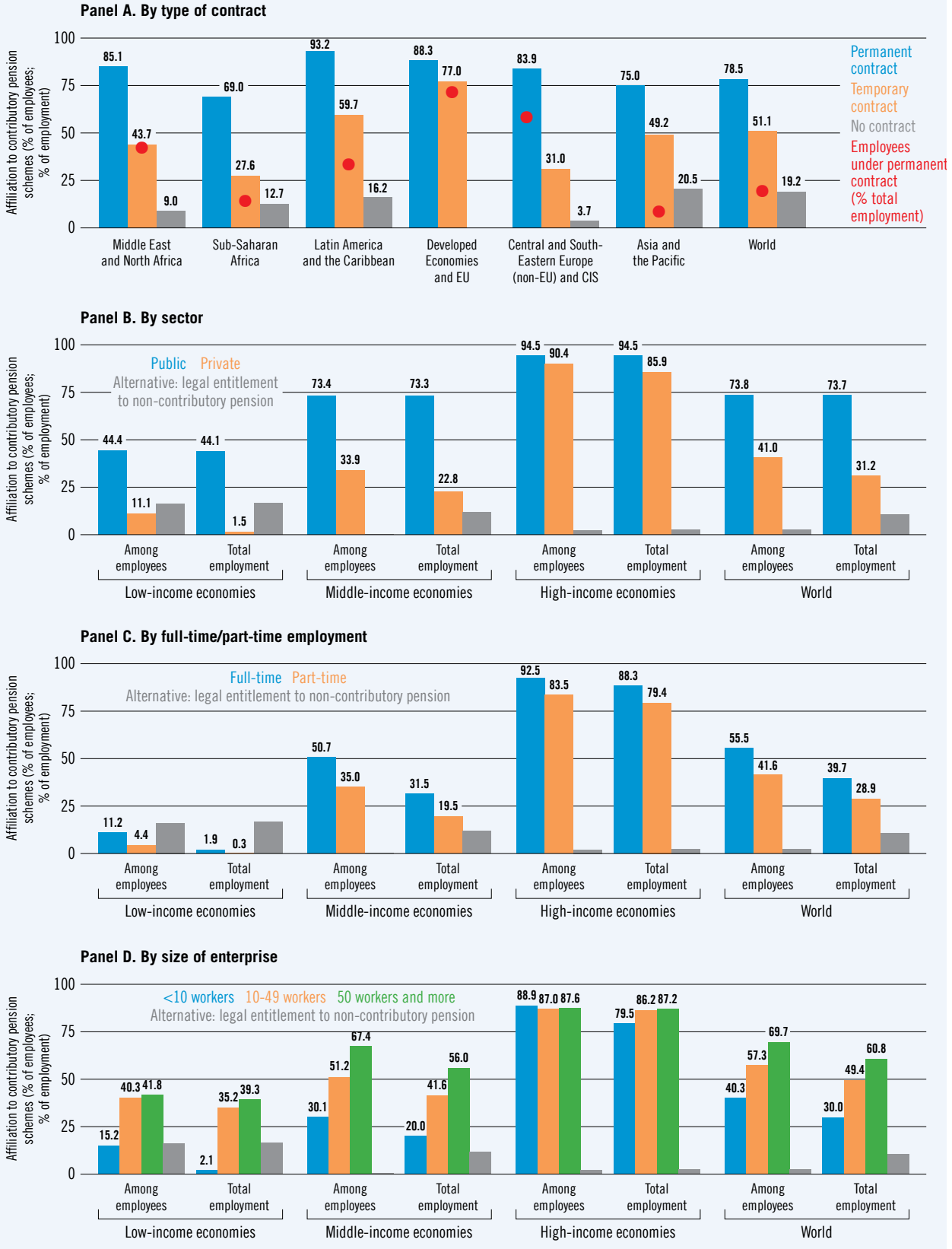
47 The correlation coefficient (r) is 0.947, based on 80 countries. The relation is, as would be expected, significantly weaker if beneficiaries of old-age pensions (from both contributory and non-contributory schemes) are considered ($r = 0.834$).

48 Global estimates based on 79 countries, representing close to 70 per cent of total employment.

49 Thirteen low-income countries, with information representing 60 per cent of total employment in this group of countries.

Figure
3.9

Proportion of employees/total employed contributing to a pension scheme (%, latest available year)



Note: Global estimates weighted by total employment based on survey data (detailed results are given in Appendix D). Panel A: available for 79 countries, representing 68 per cent of total employment; panel B: 82 countries, representing 75 per cent of total employment; panel C: 73 countries, representing 70 per cent of total employment; panel D: 73 countries, representing 66 per cent of total employment. Panel C: Part-time employment is based on a common 30-usual-hour cut-off. Panel D: The categorization by size of enterprise is the same for all countries, with exceptions (see note in Appendix D). Panels B to D: Country grouping corresponds to World Bank income classification.

Source: ILO Research Department based on household survey data (detailed sources available in Appendix E).

…with very low coverage for the self-employed.

The self-employed are both less likely to be covered according to the legislation and are less likely to contribute to a pension scheme (figure 3.8). This is partly due to the extended use in legislation of voluntary-based affiliation and persistent high levels of informality. On a worldwide basis, just above 20 per cent of own-account workers and employers and 5 per cent of unpaid family workers are affiliated to a contributory pension scheme. Affiliation of the self-employed to contributory pension schemes is close to non-existent in low-income countries. An additional 15 per cent of own-account workers and employers and 27 per cent of unpaid family workers may receive non-contributory benefits once reaching the pensionable age (table 3.1). Most critical is the situation in countries where more than half of the people employed are self-employed. There, effective affiliation rates for contributory pension schemes among non-employees are lower than 2 per cent. This is reflected in the low level of implementation of legal provision based on contributory mechanisms in lower-income groups of countries or in countries where self-employment dominates.

In high-income countries, affiliation rates among the self-employed are higher; however, still more than 30 per cent of employers and own-account workers do not contribute despite their legal coverage. The main issue in high-income countries relates to implementation. In Germany, for instance, most of the self-employed have the option of joining the public pension insurance system voluntarily, but less than half do so (European Union, 2013). Several countries, notably in Latin America and Europe, have adopted measures to overcome some of these obstacles and enhance access to contributory schemes for the self-employed. In France, the "auto-entrepreneur" status adopted in 2008 is an example of such a measure. Experiences presented below, and adjustments and improvement over time, point to ways of overcoming some of the barriers to effective extension to groups outside standard forms of employment.

Policy measures to enhance the effective affiliation of the self-employed and those in other forms of non-standard employment

Constraints to affiliation by the self-employed may include the financial ability to contribute, sometimes heavy administrative procedures, the inappropriateness of benefits, the levels and periodicity of collection of contributions, lack of confidence in the institutions in place and inadequate awareness about entitlements. The incidence of these barriers and the need for incentives to overcome them are particularly high in the case of voluntary affiliation. Three examples of measures to overcome obstacles to affiliation to contributory schemes are presented below: differentiated contributory categories, simplified procedures and subsidization of contributions.

Differentiated contributory categories

This first set of measures is illustrated by the case of Cabo Verde. The National Social Welfare Institute in Cabo Verde has implemented significant reforms to improve the registration of the self-employed. In 2009, the registration of independent workers for social insurance became compulsory, and benefits granted to this category of workers matched those legally established for employees. This process was supported by the adoption of a specific contribution system based on income categories, leaving some flexibility for workers to choose which category to contribute to. The value of the contribution is based on a reference income, but cannot be below the minimum salary for public administration (Durán Valverde et al., 2013).

Simplifying procedures: Registration and tax collecting procedures

Simplifying registration procedures and combining social protection contributions and taxes into a single package are measures that have been adopted to encourage formalization. The measures target own-account workers and micro-enterprises with sales, profits or income below a certain level. They are usually associated with consolidated monitoring and identification systems, for example the taxpayer registration number in Ecuador, and the integrated form for contribution settlement and single registry of contributors in Colombia (Durán Valverde et al., 2013).

The Monotributo (Monotax) in Uruguay and the French auto-entrepreneur status are also examples of these mechanisms. In early 2000, most Uruguayan self-employed workers were excluded from social protection coverage. The Monotax was initiated in 2001. The benefits were not immediate,

as six years after its introduction only 17.6 per cent of self-employed workers were covered by the social protection system. A major reform was undertaken and significant changes implemented in 2007, eliminating several restrictions on the conditions to join the scheme. Following this, in 2011 the Social Monotax was created as a special Monotax regime for one-person enterprises or joint entrepreneurship. The Social Monotax can be accessed by individuals in households earning below the poverty line or in situations of socioeconomic vulnerability (ILO, 2014e). By 2013, 42.7 per cent of independent workers were covered.

The French Government launched the auto-entrepreneur status in 2008. This simplified system is in many respects similar to the Brazilian Super Simples system and the Uruguayan Monotax. Auto-entrepreneurs are independent workers with an annual turnover under €81,500 for trading activities, or under €32,600 for service provision (Government of France, 2015). The main objectives are to simplify the process for creating a very small individual company and to legalize undeclared work. The creation process can be completed online within two days. Social security contributions are established as a package expressed as a percentage of income,[50] which can also incorporate income taxes (the universal package). Auto-entrepreneurs benefit from the same protection as employees in respect of health-care benefits and maternity and family allowances. Contributions give entitlements to the basic and complementary pensions managed by existing schemes covering independent workers, with the level of benefits depending on annual turnover. Six years later, close to 1.5 million enterprises have been created, and there are around 1 million active auto-entrepreneurs (UAE, 2014). Three out of four auto-entrepreneurs created their enterprise as a direct result of this scheme (INSEE, 2012).

Subsidizing contributions

Social protection directed to the poor is often subsidized. In Costa Rica, the subsidization of contributions of low-income independent workers helped to raise coverage rates to 60 per cent in health insurance and 44.8 per cent in pension insurance in 2009 (Durán Valverde et al., 2013). In New Zealand, KiwiSaver, a defined contribution national pension savings plan, offers the self-employed a subsidy of 1,000 New Zealand dollars (NZD) as a "kick-start" payment for those joining the scheme. In addition, a tax credit of half the member's contribution up to a maximum of 542 NZD per annum is paid to encourage contributions. The self-employed can choose their contribution level, and the scheme allows lump sum as well as regular contribution payments (ISSA, 2012).

Expanded coverage still may not meet the objective of income security in old age

While effective expansion of pension coverage can contribute to income security in old age, the level of income security will ultimately depend on the level of benefit received. Pensions from non-contributory schemes appear to be, in some contexts, the most effective means of extending coverage to those in informal employment or low-paid work; however, in more than 25 per cent of the 62 developing countries with a non-contributory pension, beneficiaries receive less than 1.25 USD PPP (purchasing power parity) a day, and in 75 per cent, less than 5 USD PPP a day (figure 3.10). In Bangladesh, India and Mozambique, the monthly pension is lower than 10 USD PPP, representing less than 5 USD a month.

Given that government budgets are limited, there will be a trade-off between the amount by which coverage can be extended and the levels at which benefits can be paid. To date, this trade-off has often resulted in benefit levels being low – although providing a relatively stable income, to the extent that financing is reliable and sustainable.

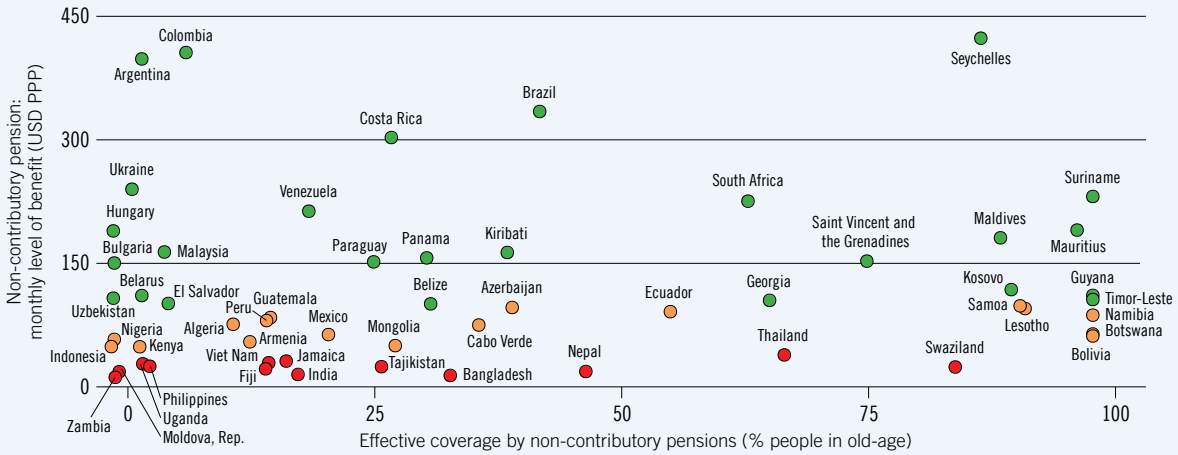
Considering not only non-contributory pensions but total social protection spending on benefits for people in old age, some first results highlight that between 2000 and 2013 the number of pensioners increased by a factor of 2, but resources allocated to their benefits increased by a factor of 1.5.[51] At the global level, the average amount spent per beneficiary has decreased by 20 per cent

50 The percentage of income varies from 13.3 per cent to 22.9 per cent, depending on the sector within which the business is located, and can also incorporate income taxes (the universal package, with an additional 1 per cent to 2.2 per cent).

51 Based on 151 countries. Sources: ILO Research Department, based on ILO, 2014a, 2015e; ADB, 2015; Eurostat, 2015a; OECD, 2015; United Nations, Department of Economic and Social Affairs, 2015; World Bank, 2000, 2015a, 2015b; and national sources.

Figure 3.10

Non-contributory pensions: Coverage and level of benefits (emerging and developing countries)



Note: Red dots represent countries where the level of non-contributory pension is below 1.25 USD PPP per day; orange dots represent levels below 3 USD PPP per day.
Source: HelpAge International, 2015; ILO, 2014a; and national sources.

since 2000. This decrease can be attributed to the downsizing of benefits in contributory schemes due to fiscal consolidation polices being implemented in a large majority of countries (ILO, 2014a; Ortiz et al., 2015); and the trend in favour of non-contributory schemes that provide lower benefits, which is furthermore accompanied, in contributory schemes, by the transfer of the economic risks associated with accumulating pension entitlements onto individuals (ILO, 2014a).

In 2013, the number of beneficiaries from non-contributory pensions[52] as a share of total pension beneficiaries was higher than the share of resources allocated to them as part of total expenditure on benefits for persons in old age. Worldwide, beneficiaries from non-contributory pensions represented one-third of old-age pensioners, but they received only 5 per cent of resources allocated to old-age benefits.[53] The magnitude of the gap in benefit levels between non-contributory and contributory pensions raises doubts about the ability of some non-contributory pensions to meet fully the objective of income security, despite the universality of coverage in some cases.

A decreasing minority of unemployed can rely on periodic unemployment benefits…

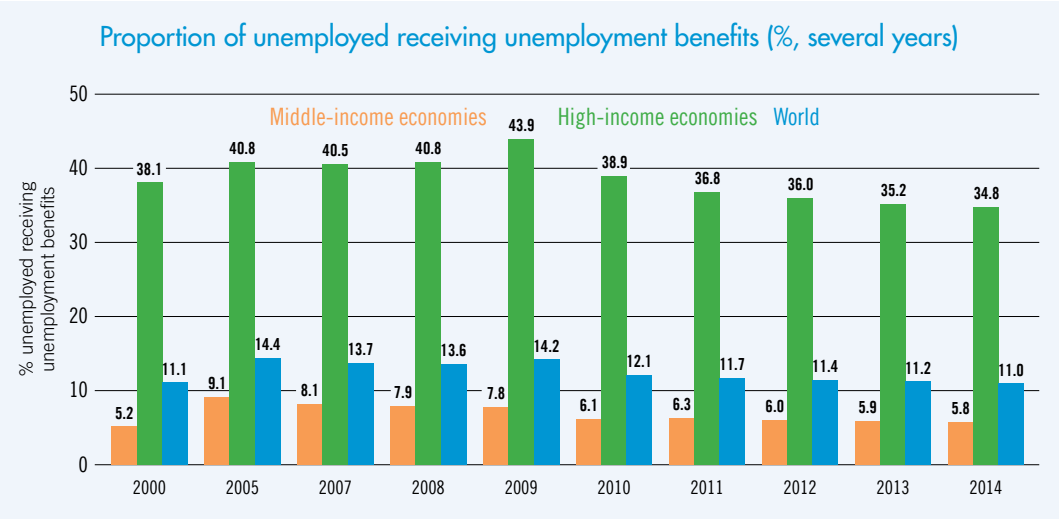
There has been a constant decrease since 2007 in the proportion of unemployed people receiving unemployment benefits (figure 3.11). There are several factors behind this, including the increase in the average duration of unemployment, the growth of forms of employment that typically do not give access to unemployment benefits, difficulties in meeting the minimum qualifying period for entitlement to social insurance unemployment benefits, and changes in the design of unemployment benefits (such as eligibility conditions and the duration and level of unemployment insurance or assistance benefits).

In high-income economies, after a peak in 2009 (with 43.9 per cent of unemployed people receiving benefits), the proportion decreased to 34.8 per cent in 2014, well below the pre-crisis levels. In other words, even in countries where unemployment protection is well established, only around one-third of the unemployed benefit from income security, receiving either unemployment insurance or unemployment assistance benefits. Others may participate in active labour market programmes and receive so-called "activity benefits" (in Sweden, for instance) or may benefit from

52 Non-contributory public servant pensions are not included.

53 Globally, less than 0.25 per cent of GDP is spent on non-contributory pensions: from less than 0.015 per cent of GDP in Kenya, Papua New Guinea and Zambia, to more than 2 per cent of GDP in Australia, Mauritius, the Netherlands and New Zealand (ILO Research Department based on HelpAge International, 2015; ILO, 2014a; World Bank, 2015b; National Bureau of Statistics of China, 2015; and national sources). Estimates based on 177 countries, weighted by the population above statutory pensionable age.

Figure 3.11



Note: In low-income countries the proportion of unemployed receiving benefits is lower than 0.1 per cent (not included in the graph). Country grouping corresponds to World Bank income classification. Global estimates weighted by the labour force.

Source: ILO Research Department based on national sources; and ILO, 2015b.

general social assistance. Most high-income economies are affected, irrespective of the nature of unemployment benefit provided. Australia and New Zealand,[54] where unemployment benefits are non-contributory, have been following a similar downward trend. An increased share of unemployed individuals have exhausted their rights to unemployment benefits. In Greece, Spain and Sweden, the proportion of the unemployed receiving benefits dropped by 30 to 40 percentage points between 2007 and 2014; in Greece in May 2014, the proportion was well below 10 per cent (Greece Manpower Employment Organization, 2015; ILO/European Commission, forthcoming). In Sweden, the decrease has largely been driven by government actions. As part of the measures adopted, Sweden has tightened eligibility conditions by increasing the required contributory period while also shortening the maximum duration of benefits.

The qualifying period (in terms of contributions) plays a critical role in limiting accessibility to unemployment insurance benefits, but it may also enhance the inclusion of workers on the margin of standard employment (box 3.4). The majority of countries require a worker to have contributed for between six months and 12 months before they will qualify for unemployment benefits.[55] At the global level, this qualifying period increased from 40.3 weeks in 2000 to 42.7 weeks in 2013. This trend reflects the situation in the Developed Economies and European Union and Central and South-Eastern Europe and CIS regions, but not necessarily the trends observed in other regions. The combination of higher proportions of workers in non-standard forms of employment and stricter qualifying conditions explains most of the decrease in the proportion of unemployed receiving unemployment benefits. Most Eastern European countries (including Estonia, Lithuania, Poland, Romania, Slovakia and Slovenia) significantly increased the minimum number of months of contributions required before receiving entitlements compared with the early 2000s. France is an exception to this trend, with one of the shortest qualifying periods required. Box 3.4 gives further examples of measures taken by other countries to include workers at the margin.

54 In New Zealand, the proportion of unemployed receiving unemployment benefit fell from 46.5 per cent in 2006 to 32.9 per cent in 2013. In Australia, the proportion fell from 69.7 per cent to 55.1 per cent over the same period.

55 In 2013, considering the 75 countries that provide unemployment insurance benefits for which information is available, 72 per cent required six to 12 months of contributions. This proportion was 65 per cent in 2000.

Box 3.4

Designing qualifying periods to enhance the inclusion of workers at the margin of standard employment

In France today it is only necessary to have worked for four months in the previous 28 months (previously six months over 20 to 26 months) to qualify for unemployment benefits. This measure was implemented in 2009, and was followed by additional measures in 2013 to reinforce unemployment insurance efficiency and reduce the appeal of short-term contracts. To this end, the 2013 labour market agreement created a scale of unemployment insurance contributions with a view to discouraging short-term contracts; the shorter the contract, the higher the contribution for the employer.[1]

Another strategy has been to provide specific provisions for temporary or seasonal workers, such as shorter periods of contributions required to qualify for unemployment benefits. However, such favourable eligibility conditions sometimes correspond to lower benefits (replacement rate or duration). In Israel, the qualifying contribution period is shorter for daily workers than for other workers, although the maximum duration of benefit is also reduced (SSA/ISSA, 2013). In Argentina, temporary workers need to have worked 90 days (13 weeks) in the 12 months before unemployment to qualify, compared with six months in the previous three years for workers with permanent contracts. In Chile,[2] six months of contributions are required for temporary workers compared with 12 months for permanent workers. Slovakia has extended the period of reference for temporary workers.[3]

Italy is a good example of adjustment of both eligibility conditions and benefits for workers on non-standard forms of contract (now Mini-Aspi). In this case, the replacement rate was increased to 75 per cent of the wage for a maximum duration of half the number of weeks of contributions. Eligibility criteria were relaxed to 13 weeks of contributions in the previous 12 months (ILO/European Commission, forthcoming).

Finally, specific allowances could be implemented as an option to cover seasonal workers. In Greece, the special seasonal allowance aims to provide income support to seasonal workers and, in particular, to those in construction, tobacco workers, actors, tillers, forest workers, musicians, etc. Specific rules for both eligibility and benefits are also applied in France for artists and some workers in the entertainment sectors, who benefit from more generous rules, although this raises the issue of adverse selection and moral hazard (Carter et al., 2013; ILO, 2015f).

1. Rates paid by employers depend on the duration of each contract. Contributions range from 4 per cent for employees with permanent contracts and temporary agency workers to 7 per cent in the case of fixed-term contracts of one month or less (ILO/European Commission, forthcoming). 2. Chile's Law 20.328 (2009), which introduced the social insurance component, extended coverage to temporary workers, namely fixed-term workers whose contract does not exceed 12 months, and task or project contract workers whose contract is subject to the completion of a pre-specified task. Access to benefits is facilitated through relaxed qualifying conditions, but is associated with limited unemployment benefits compared with those for permanent workers (lower levels of benefits, and duration limited to two months compared with five months for permanent workers). 3. Workers are required to have at least two years of unemployment insurance contributions to qualify, but the period of reference considered is three years for permanent workers and four years for temporary workers.

…and receive lower levels of benefits.

A shift to social assistance (means tested) contributes to a decrease in the level of unemployment benefits relative to wages. This shift is usually the result of a combination of labour market trends (long-term unemployed with exhausted right to social insurance or other unemployed failing to meet the minimum qualifying period to be eligible) and reforms in unemployment schemes. Ireland and Germany are examples of countries where such trends have been observed.

In Ireland, the increased number of unemployed receiving the jobseekers' allowance (income- or asset-tested unemployment assistance) was offset by the drop in those receiving the jobseekers' benefit (social insurance). Between October 2008 and April 2013, the duration of jobseekers' benefit (social insurance) was cut from 18 months to nine months, or from 12 months to six months, depending on the number of months of contributions, moving many unemployed onto social assistance.[56] In Germany, the tightening of eligibility criteria for unemployment insurance in 2006[57] caused quite a number of long-term unemployed to move from social insurance to (general) social assistance. Between 2005 and 2013, the share of those receiving insurance benefits fell by 10 percentage points[58] in the eight years following the reform (ILO/European Commission, forthcoming).

56 In Ireland, unemployment assistance, without any limit of time until the age of 66, is not only paid to the unemployed who have exhausted their entitlement but also to all those who do not qualify for unemployment insurance and meet the means or asset test (a number that increased dramatically after 2009).

57 The reference period for eligibility for unemployment insurance benefits was shortened from 36 to 24 months, while keeping unchanged the reference period of employment and the benefit duration was lowered to a maximum of 12 months.

58 The ratio of insurance benefits to assistance benefits changed from 43:57 to 33:67.

Between 2007 and 2011–13, the relative level of benefits compared with wages decreased in 23 out of 29 European countries examined, as well as in Australia, Japan and the United States (Eurostat, 2015b; LIS, 2015; ILO, 2015g; and national sources). In Greece, the drop in the (nominal) minimum wage in March 2012 directly impacted the basic unemployment benefit, which was equal to 55 per cent of the minimum wage (ILO/European Commission, forthcoming). In Ireland, Portugal, Romania and Sweden, the relative level of benefit compared with the median wage dropped by more than 20 percentage points between 2007 and 2011–12.[59] In Romania, unemployment benefit in 2012 represented less than 30 per cent of the national median wage. The situation was similar in Hungary, Latvia and Lithuania, and the proportion was just above 30 per cent in Germany, Greece, Poland, Slovakia and the United States.

C. Concluding remarks

This chapter has shown that over the past two decades most emerging and developing countries have made significant progress in addressing gaps in legal coverage for pensions by including new categories of workers within the scope of laws and regulations. Progress with respect to unemployment protection has been far less than for pensions, and remains largely absent in developing countries. In most cases, employees in non-standard forms of employment and the self-employed are excluded from unemployment protection. And, when they are protected, they usually receive lower levels of protection.

The extension in legal pension coverage has been brought about mainly by non-contributory mechanisms and attempts to extend coverage by legislating voluntary affiliation. Levels of protection, reliability in operations and financial sustainability, and positive effects on formalization of employment and social inclusion associated with these different mechanisms are not equivalent. They have also led to very different levels of effective pension coverage.

Despite the overall positive steps made towards improving pension coverage – including among workers in non-standard forms of employment and the self-employed – recent experience suggests some concerns for policy. While non-contributory mechanisms can support vulnerable workers, such as those in the informal economy, they also need to be made coherent with the goal of extending contributory schemes. There is a risk that non-contributory schemes may have a negative effect on the willingness of enterprises and workers to participate in contributory schemes. More importantly, it has raised the issues of income security for the beneficiaries as well as the availability, reliability and sustainability of resources. Worldwide, beneficiaries of non-contributory pensions represent one-third of old-age pensioners, but they receive only 5 per cent of resources allocated to old-age benefits. The levels of benefits are typically low, in many cases below the poverty line. This trend in favour of non-contributory schemes that provide lower benefits is accompanied by the downsizing of benefits in contributory schemes due to the fiscal consolidation polices being implemented in a large majority of countries. Furthermore, attempts to widen coverage through the introduction of voluntary contributory schemes, especially for the self-employed, have rarely resulted in increased effective coverage.

It is not yet clear to what extent these trends together will result in improved social protection and welfare for societies. More research is needed on the impacts that different funding sources of social protection have on income security, on the economy and on labour markets, including on different forms of employment. These impacts are still to be investigated and certainly constitute an important area for future research.

[59] Calculations based on microdata from Eurostat, 2015b; LIS, 2015; ILO, 2015g; and national sources (administrative data).

Appendix A
Definitions and methods

The analysis of the evolution and composition of changes in both legal and implementation gaps refers to a large extent to the distinctions between contributory and non-contributory schemes and, for contributory schemes, between compulsory and voluntary affiliation.

For *contributory schemes*, contributions made by protected persons and/or by their employers directly determine entitlement to benefits (acquired rights). The most common form of contributory social protection scheme is a statutory social insurance scheme. Contributory schemes can be wholly financed through contributions, but more often they are partly financed from taxation or other sources. Affiliation to contributory schemes by protected persons can be compulsory or voluntary.

Non-contributory schemes normally require no direct contribution from beneficiaries or their employers as a condition of entitlement. They are usually financed through taxes or other state revenues, or, in certain cases, through external grants or loans. Such schemes are also referred to as "tax-financed" schemes and would typically include universal schemes for all residents, categorical schemes for certain broad groups of the population and means-tested schemes (such as social assistance schemes) (ILO, 2014a).

Coverage, particularly for pensions, can be divided into two phases: (1) the period of time an active worker contributes to a social protection system to acquire the right to a future benefit, and (2) the period of time that a retiree receives that benefit. Table A3.1 below summarizes the reference populations that have been considered for the different measures presented in this chapter.

Table 3A.1

Indicators of coverage: Reference population and scope

Figure No.	Indicator of coverage	Reference population	Scope
3.1	Estimate of legal pension coverage	Reference population: those of working age (15–64). The objective is to identify groups legally covered by an old-age or survivor's pension once they reach pensionable age	Contributory and non-contributory; compulsory and voluntary affiliation
3.2 and 3.5	Estimates of legal pension and unemployment coverage by status in employment	Reference population: workers by status in employment (employees; own-account workers and employers; and unpaid family workers)	Contributory and non-contributory; compulsory and voluntary affiliation
3.4	Estimate of legal unemployment coverage	Reference population: the labour force (people either employed or unemployed)	Contributory and non-contributory; compulsory and voluntary affiliation
3.6	Legal and effective pension coverage	Horizontal axis: (same as figure 3.1) Vertical axis: beneficiaries. The first general assessment of effective pension coverage refers to the proportion of people in old age receiving either an old-age or survivor's pension (see below for comparability issues)	Contributory and non-contributory; compulsory and voluntary affiliation
3.8	Legal and effective pension coverage by status in employment	Legal (same as figure 3.2). Effective coverage by status in employment refers to contributors to a pension scheme (i.e. the proportion of people of each status in employment currently contributing to a pension scheme)	Contributory; compulsory and voluntary affiliation
3.9	Effective pension coverage	Active contributors to pension schemes or general social security schemes delivering old-age pension benefits as part of other social security benefits	Contributory; compulsory and voluntary affiliation

Note: This complements, for the purpose of the analysis carried out in this chapter, Appendix II: Measuring social security coverage, ILO, 2014a.

A. Estimates of legal coverage and legal coverage gaps

Estimates of legal coverage for a given social security function (branch) and type of benefit are based on the number of people of working age (for pensions) or in the labour force (for unemployment) to whom social protection legislation applies or the proportion of a defined reference group. Estimates refer strictly to the extent of coverage and do not take into account the differences in levels of protection, reliability and sustainability of financing associated with the different types of schemes.

Estimates of legal coverage use both information on the groups covered by statutory schemes for a given social security function in national legislation and available statistical information quantifying the number of persons concerned at the national level (ILO, 2014a). The main qualifying criteria mentioned in national legislation are social and demographic (age, residency, citizenship or poverty

status) and most often relate to the employment situation (economically active or not, employed or unemployed; status in employment: employee, employer or own-account or unpaid family worker; institutional sector and economic sector; size of enterprises and type of employment contract: casual, temporary or part-time).

The quantification uses international data sources as well as micro data (see Appendix E).

Estimates of legal old-age and survivor's pension coverage include the following:

- Legal coverage by an old-age or survivor's pension through a contributory compulsory pension scheme. In the case of survivor's pensions, estimates use the percentage distribution of men and women above 65 years by current marital status (United Nations, Department of Economic and Social Affairs, 2012) and inactivity rates among the working-age population. The assessment of legal coverage by survivor's pensions focuses on future pension entitlement for survivors above retirement age.
- Legal coverage by a contributory old-age pension based on voluntary affiliation.
- Legal coverage by a non-contributory pension. Estimates for future coverage by non-contributory pensions differ depending on eligibility criteria: (i) for universal old-age pensions, coverage is set as 100 per cent or reduced accordingly when the age for eligibility is above 65 years; (ii) for pension-tested old-age pension schemes, similar principles are applied after legal coverage by existing contributory schemes has been taken into account; and (iii) estimates of future coverage by means-tested pensions are the most prone to errors: these are based on the poverty rates in the population aged 65 and over or, alternatively, on the actual coverage rates for existing means-tested non-contributory pension schemes.

In the case of unemployment, when unemployment assistance is conditional on previous eligibility to social insurance, legal coverage is first measured as part of the assessment of contributory mechanisms. When unemployment benefits are means tested, the effective proportion of the unemployed receiving these allowances is usually applied.

This approach was applied for approximately 170 countries for both pensions and unemployment legal coverage.

Table 3A.2

Definition of social protection coverage gaps	
Legal coverage gap	= Universal coverage – Legal coverage
Implementation gap	= Legal coverage – Effective coverage
Total coverage gap	= Universal coverage – Effective coverage
	= Legal coverage gap + Implementation gap

B. Legal and effective coverage are not strictly comparable, but one can assess the extent of limitations

It is possible to compare legal coverage by contributory schemes (both compulsory and voluntary) with effective affiliation to pension schemes (table 3.1). This leads to a partial analysis that excludes non-contributory schemes. In figure 3.6, two different reference populations are compared: those of working age (to assess legal coverage) and those above retirement age (to assess effective coverage).

It can be hypothesized that the current situation for existing pensioners reflects the future situation for those currently of working age. The revised methodology aims to be as comprehensive as possible, to further include legal coverage for non-contributory pensions, survivor's pensions and pensions acquired through voluntary affiliation. The main limitation concerns contributory pensions, mainly when these schemes have recently been extended or established. Entitlements to pension benefits will only come into effect in about 15 to 20 years, when the pension scheme is mature enough to start paying the first old-age pension benefits. As a consequence, effective pension coverage is inevitably lower than legal pension coverage.

In most countries with a pension system based on social security contributions, such schemes have been in place for decades, which reduces the impact of the above limitation. In addition, as shown in figure 3.1, the expansion of pension coverage through contributory compulsory mechanisms has been limited. The limitation particularly concerns voluntary affiliation, notably as used

in China over the past five years. China addressed this limitation by making voluntary affiliation by those of working age a condition for their parents to receive a non-contributory pension. The result of this reform is visible both on the legal side (working age) and the beneficiary side (older people effectively receiving the non-contributory pension). This is not the case in India, where the implementation gap may be overestimated.

In the case of non-contributory pensions, this limitation does not apply. The time needed for a gradual implementation to reach the entire target group can be considered as part of the implementation gap.

Categorization of countries depending of the type of pension system

A categorization of countries based on the principal feature of their national pension system is used throughout section B. It reflects the composition of legal coverage. Countries are classified according to six groups, defined as follows:

- *Wide legal pension coverage gap*: Existing social protection legislation provides entitlement to a periodic old-age or survivor's pension to less than 50 per cent of the working-age population. This group contains 45 countries (25.4 per cent). More than 77 per cent are either from the Sub-Saharan African region or from the Middle East and North Africa. Almost 18 per cent are from Asia and the Pacific.
- *Significant legal gap and pension system mainly based on contributory compulsory coverage*: Countries in this group provide legal entitlement for a pension to at least 50 per cent of the working-age population but have not yet achieved universal legal coverage. In addition, more than two-thirds of legal coverage is based on compulsory contributory schemes. This group contains 26 countries.
- *No legal pension gap and pension system mainly based on contributory compulsory coverage*: More than two-thirds of legal pension coverage are based on compulsory contributory mechanisms. Out of a total of 177 countries, 34 belong to this group. Developed Economies and European Union and Central and South-Eastern Europe and CIS countries account for more than 76 per cent.
- *Legal pension coverage mainly based on non-contributory mechanisms (tax-financed)*: More than two-thirds of people legally covered are entitled to a non-contributory pension. This group includes 15 countries, 40 per cent from the Asia and the Pacific region.
- *Legal coverage by an old-age pension relies largely on voluntary contributions*: The proportion of legal coverage based on voluntary affiliation exceeds the proportion based on compulsory affiliation to contributory schemes. The 14 countries in this group include six countries from Sub-Saharan Africa and six countries from Asia and the Pacific.
- *Legal entitlement to an old-age pension relies on a balanced mix of compulsory contributory and non-contributory mechanisms*: This group covers all countries with available information that do not belong to any of the previous groups. It includes 45 countries, of which two-thirds are from Developed Economies and the European Union or from Latin America and the Caribbean.

Appendix B
Decomposition of total gap in pension coverage

Region	Year	Total gap	Legal gap	Imple-mentation gap	Legal coverage effectively implemented1 and salient gap		
					%	Legal	Imple-mentation
Middle East and North Africa	2000	78.9	66.4	12.5	57.3	●	
	2013	67.3	56.8	10.4	71.5	●	
Sub-Saharan Africa	2000	88.6	76.5	12.1	43.5	●	
	2013	83.4	60.0	23.4	51.1	●	
Latin America and the Caribbean	2000	54.1	27.9	26.2	57.2	●	
	2013	44.5	5.2	39.3	56.9		●
Developed Economies and European Union	2000	9.5	6.9	2.7	97.1	●	
	2013	8.9	2.2	6.7	93.1		●
Central and South-Eastern Europe (non-EU) and CIS	2000	16.7	8.5	8.2	89.9	●	
	2013	6.9	4.3	2.6	97.3		●
Asia and the Pacific	2000	85.7	69.8	15.9	52.6	●	
	2013	56.3	22.1	34.1	55.6		●
Total	2000	67.2	53.4	13.8	61.4	●	
	2013	48.6	22.4	26.2	64.2		●
Level of income [2]							
Low-income economies	2000	92.5	76.9	15.6	37.1	●	
	2013	81.9	57.9	23.9	53.1	●	
Middle-income economies	2000	78.1	62.1	15.9	56.2	●	
	2013	53.5	21.9	31.5	58.7		●
Lower middle-income economies	2000	88.5	69.8	18.7	40.7	●	
	2013	76.5	38.4	38.1	44.1	●	
Upper middle-income economies	2000	67.9	54.7	13.2	71.3	●	
	2013	31.0	5.9	25.1	72.9		●
High-income economies	2000	13.2	8.3	4.9	93.8	●	
	2013	9.9	2.9	7.0	92.2		●
Share of employees in total employment							
Less than 25 per cent	2000	93.5	70.8	22.8	26.1	●	
	2013	78.7	32.6	46.2	37.2	●	
25–49 per cent	2000	88.9	75.4	13.5	55.7	●	
	2013	77.2	57.7	19.5	57.9	●	
50–74 per cent	2000	67.3	56.1	11.2	74.1	●	
	2013	34.0	10.5	23.5	73.4		●
75–89 per cent	2000	18.1	11.3	6.9	91.5	●	
	2013	12.8	4.0	8.9	89.2		●
90 per cent and over	2000	4.8	0.7	4.1	95.6		●
	2013	6.6	1.0	5.6	94.0		●
Groups of countries classified according to legal and effective pension coverage [3]							
Group 1: Limited legal coverage (<50 per cent)	2000	94.5	88.4	6.1	56.8	●	
	2013	89.3	83.0	6.4	64.9	●	
Group 2: Expanding legal coverage without effective implementation yet	2000	91.6	63.6	28.0	25.9	●	
	2013	76.2	24.3	51.9	33.1		●
Group 3: Expanding legal coverage and effective process of implementation	2000	72.4	63.1	9.3	76.3	●	
	2013	27.2	4.1	23.2	76.5		●
Group 4: High legal and effective coverage (> 80 per cent)	2000	12.7	8.1	4.6	94.8	●	
	2013	7.6	1.3	6.3	93.7		●

Note: Weighted aggregates. 1. The share of legal coverage effectively implemented is calculated for the group of countries for which both legal and effective coverage information is available (137 countries in 2000 and 168 countries in 2013). 2. Country grouping corresponds to World Bank income classification. 3. The different groups as defined earlier (see figure 3.7).

Source: same as figure 3.6.

Appendix C
Effective pension coverage by contributory schemes by status in employment

Country	Status in employment (percentage of active contributors to a pension scheme)				Existence of and coverage by non-contributory pension schemes		
	Employee	Own-account worker/ employer	Unpaid family worker	Total employment	None	< 25 per cent	> 25 per cent
Sub-Saharan Africa							
Benin	59.9	0.0	0.0	6.4	●		
Botswana	49.8	0.1	0.0	36.1			●
Burkina Faso	59.6	0.7	0.2	4.5	●		
Burundi	80.9	0.0	0.0	5.6	●		
Cabo Verde	46.5	19.0	13.9	25.7			●
Cameroon	38.0	0.2	0.1	6.7	●		
Côte d'Ivoire	45.9	0.0	0.0	9.6	●		
Ethiopia	65.5	0.8	0.0	2.7	●		
Gambia	9.0	0.0	0.0	3.3	●		
Ghana	41.0	0.0	0.0	8.6	●		
Guinea	58.3	0.0	0.0	14.0	●		
Kenya	80.9	0.0	0.0	33.2		●	
Liberia	30.6	0.0	0.0	7.1	●		
Madagascar	60.3	0.0	0.0	6.2	●		
Malawi	18.0	0.0	0.0	6.9	●		
Mali	14.9	0.2	0.1	1.5	●		
Mozambique	38.2	2.7	0.0	9.4		●	
Namibia	63.6	5.2	0.3	43.8			●
Niger	20.3	0.1	0.0	2.3	●		
Nigeria	32.4	0.7	0.0	4.0		●	
Rwanda	35.7	0.0	0.0	4.5	●		
Senegal	21.2	0.8	0.4	5.3	●		
South Africa	48.9	0.0	0.0	42.0			●
Swaziland	42.1	0.0	0.0	33.0			●
Tanzania, United Republic of	37.1	0.3	0.2	3.6	●		
Uganda	13.2	0.1	0.0	2.6		●	
Zambia	47.9	1.4	0.2	7.0		●	
Zimbabwe	54.8	0.0	0.0	21.3	●		
Middle East and North Africa							
Egypt	53.9	9.8	4.4	40.8	●		
Iraq	46.3	0.0	0.0	29.6	●		
Lebanon	39.2	0.0	0.0	23.7	●		
Morocco	30.8	4.2	0.6	18.5	●		
Oman	14.5	0.0	0.0	13.7	●		
Qatar	3.3	0.0	0.0	3.3	●		
Saudi Arabia	56.4	0.0	0.0	52.1	●		
Yemen	11.1	0.0	0.0	6.4	●		
South-East Asia and the Pacific							
Afghanistan	26.3	0.0	0.0	5.6	●		
Bangladesh	0.0	0.0	0.0	0.0			●
Bhutan	41.8	0.0	0.0	12.6	●		
Cambodia	12.4	0.2	0.1	5.9	●		
China	55.4	26.3	…	39.0			●
India	31.1	0.0	0.0	3.1		●	
Indonesia	26.5	0.0	0.0	9.1		●	
Lao People's Democratic Republic	12.2	0.0	0.0	1.6	●		
Malaysia	59.5	0.0	0.0	44.3		●	

Country	Status in employment (percentage of active contributors to a pension scheme)				Existence of and coverage by non-contributory pension schemes		
	Employee	Own-account worker/ employer	Unpaid family worker	Total employment	None	< 25 per cent	> 25 per cent
Mongolia	60.5	4.4	0.8	39.6			●
Myanmar	56.2	0.0	0.0	5.8	●		
Nepal	22.9	0.0	0.0	4.0			●
Pakistan	20.8	0.0	0.0	7.8	●		
Sri Lanka	46.6	0.0	0.0	26.2	●		
Thailand	34.4	6.4	0.4	17.4			●
Timor-Leste	0.0	0.0	0.0	0.0			●
Viet Nam	50.4	0.5	0.3	19.4		●	
Yemen	11.1	0.0	0.0	6.4	●		
Latin America and the Caribbean							
Argentina	75.6	51.4	48.5	70.3		●	
Bolivia	39.6	3.4	0.4	18.1			●
Brazil	76.3	28.5	9.1	61.7			●
Chile	81.4	…	…	…		●	
Colombia	66.1	10.0	2.6	38.6		●	
Costa Rica	87.2	72.2	75.8	83.8			●
Dominican Republic	52.2	0.0	0.0	29.3		●	
Ecuador	54.2	23.6	18.7	40.4			●
El Salvador	49.9	10.1	3.0	33.0		●	
Guatemala	33.5	2.8	1.5	19.3		●	
Haiti	16.3	0.0	0.0	8.9	●		
Honduras	36.3	0.9	0.1	18.1	●		
Mexico	52.8	3.3	0.9	36.7			●
Nicaragua	40.6	0.9	0.3	19.8	●		
Panama	68.9	5.8	0.0	51.4			●
Paraguay	32.7	0.1	0.0	17.8			●
Peru	55.0	16.2	5.9	31.9		●	
Uruguay	87.7	43.3	29.1	76.1		●	
Venezuela, Bolivarian Republic	66.9	3.9	0.0	41.9		●	
Developed Economies and the European Union, Central and South-Eastern Europe (non-EU) and CIS							
Albania	69.3	…	…	…	…	…	…
Australia	87.2	53.2	0.0	83.7			●
Austria	96.6	60.0	46.8	92.1		●	
Belgium	96.7	8.1	10.3	87.8		●	
Bosnia and Herzegovina	72.0	28.0	0.0	58.1	…	…	…
Bulgaria	93.2	6.7	22.1	85.1		●	
Canada	95.7	80.5	54.0	93.8			●
Croatia	95.9	6.7	0.0	86.6	…	…	…
Cyprus	94.3	10.5	6.7	85.8		●	
Czech Republic	98.9	59.3	48.6	91.8	…	…	…
Denmark	98.2	79.9	…	96.8			●
Estonia	97.3	63.0	0.0	94.5		●	
Finland	99.6	56.7	64.2	94.1			●
France	76.0	52.4	42.0	73.8		●	
Germany	68.9	74.5	41.3	69.2	…	…	…
Greece	96.3	97.9	84.3	96.1		●	
Hungary	98.4	26.2	21.8	88.2		●	
Iceland	96.9	89.1	0.0	95.9			●

Country	Status in employment (percentage of active contributors to a pension scheme)				Existence of and coverage by non-contributory pension schemes		
	Employee	Own-account worker/ employer	Unpaid family worker	Total employment	None	< 25 per cent	> 25 per cent
Ireland	97.8	31.6	3.5	88.2		●	
Italy	98.0	23.4	17.2	80.6		●	
Latvia	92.4	46.9	14.3	88.2		●	
Lithuania	91.7	55.4	20.8	87.7		●	
Luxembourg	99.1	99.8	66.1	99.0	…	…	…
Malta	97.5	51.1	45.8	92.2		●	
Moldova, Republic of	90.3	…	…	64.4		●	
Netherlands	97.7	58.7	47.0	92.3			●
Norway	96.6	50.5	53.6	93.0			●
Poland	81.1	11.7	2.6	67.0		●	
Portugal	97.7	23.5	18.0	88.6	…	…	…
Serbia, Republic of	80.6	45.1	0.0	70.0	…	…	…
Slovakia	97.1	17.1	0.0	84.7	…	…	…
Slovenia	99.1	57.4	37.7	94.8		●	
Spain	82.8	23.4	26.6	73.2		●	
Sweden	97.4	82.3	55.1	96.2			●
Switzerland	99.7	70.8	68.3	96.9		●	
Turkey	75.0	45.7	8.1	59.2		●	
United Kingdom	85.1	18.9	0.0	77.2		●	
United States	96.9	94.9	0.0	96.7		●	

Note: … not available. Data for the latest available year.

Source: ILO Research Department based on survey data, see detailed sources and years in Appendix E.

Appendix D

Indicators of effective coverage for old-age pension benefits, global estimates: Affiliation to contributory pension schemes by status and employment patterns

	Affiliation by status and for total employment, %				Affiliation by type of contract, % employees			Full-time/part-time				Public/private sector				Size of enterprise[1]		
								% employees		% employment		% employees		% employment		% employment		
	Employee	Own-account/ employer	Unpaid family worker	Total employment	Permanent	Temporary	No contract	Full-time	Part-time	Full-time	Part-time	Public	Private	Public	Private	< 10 workers	10–49 workers	50+ workers
Region																		
Middle East and North Africa[2]	42.8	4.4	1.8	32.3	85.1	43.7	9.0	50.9	39.6	37.0	28.7	88.7	19.7	88.7	13.6	18.9	62.5	83.9
Sub-Saharan Africa	44.9	0.5	0.1	9.1	69.0	26.0	12.7	35.0	21.3	10.8	3.6	70.9	18.3	70.3	4.6	3.3	41.2	51.6
Latin America and the Caribbean	64.5	18.8	8.9	47.5	91.7	62.2	16.2	71.2	47.1	58.3	30.3	89.7	59.5	89.6	43.1	19.2	61.6	78.6
Developed Economies and European Union	90.3	64.4	17.9	86.0	88.3	76.9	55.3	92.6	83.7	88.3	79.6	94.5	90.5	94.5	86.0	79.4	86.4	87.3
Central and South-Eastern Europe (non-EU) and CIS[2]	75.8	45.0	6.9	60.5	83.9	31.0	3.7	77.5	42.4	65.8	18.8	88.9	52.2	88.0	39.8	39.3	82.9	93.4
Asia and the Pacific	41.5	12.4	0.0	21.6	75.0	49.2	20.5	44.4	31.0	25.9	17.2	65.5	28.0	65.5	18.4	19.6	36.9	50.4
Total	51.8	19.6	5.1	33.0	78.3	51.0	18.8	55.4	41.6	39.7	28.9	73.8	41.0	73.7	31.2	29.9	49.4	60.8
Income level[3]																		
Low-income economies	35.1	0.3	0.0	5.5	45.4	17.6	8.5	11.2	4.4	1.9	0.3	44.4	11.1	44.1	1.5	2.1	35.2	39.3
Middle-income economies	46.7	13.8	2.3	26.8	81.3	52.0	20.2	50.6	34.9	31.6	19.5	73.4	33.9	73.3	22.8	20.0	41.6	56.0
High-income economies	88.5	62.9	17.3	84.5	87.9	76.4	24.5	92.5	83.5	88.3	79.4	94.5	90.4	94.5	85.9	79.5	86.2	87.2
Groups of countries classified according to legal and effective pension coverage[4]																		
Group 1: Limited legal coverage (<50 per cent)	34.3	0.1	0.0	10.1	62.0	23.5	5.4	33.2	22.6	9.6	6.2	69.5	11.7	69.0	2.6	2.6	37.5	61.9
Group 2: Expanding legal coverage without effective implementation yet	35.7	1.2	0.4	9.8	73.5	23.4	4.6	32.9	12.5	8.4	2.7	62.0	14.9	61.8	5.7	5.3	33.7	45.5
Group 3: Expanding legal coverage and effective process of implementation	55.0	24.7	10.3	38.5	79.3	76.1	35.1	56.6	48.6	43.0	30.7	74.2	44.2	74.1	31.8	31.4	46.1	60.8
Group 4: High legal and effective coverage (>80 per cent)	84.8	55.0	15.3	77.9	90.4	65.5	37.8	88.2	73.3	82.4	65.8	93.2	82.4	93.2	75.8	72.8	84.6	87.5
By share of employees in total employment																		
Less than 25 per cent	32.1	0.2	0.0	3.3	67.9	15.8	3.2	28.4	10.2	3.4	1.0	55.2	8.1	55.0	1.1	3.0	27.8	35.0
25–49 per cent	36.7	2.4	0.8	15.4	83.3	37.8	7.0	50.3	26.1	25.9	8.2	78.3	33.1	78.2	14.9	9.1	35.2	62.2
50–74 per cent	58.3	24.3	6.8	42.1	82.3	73.6	30.6	60.0	49.1	46.7	31.1	79.1	47.5	79.0	34.8	30.2	50.0	65.4
75–89 per cent	80.8	42.6	27.5	74.5	86.9	69.0	29.5	85.2	72.8	79.8	67.4	90.6	81.5	90.5	76.0	61.9	75.0	78.0
90 per cent and over	92.7	86.1	0.9	92.1	98.2	90.3	98.3	90.5	98.1	90.3	97.7	96.7	97.7	96.4	98.4	99.8	99.6	

Note: Weighted by total employment. 1. In some countries the sizes of enterprises differ from the indicated ranges. This applies in: Namibia and Venezuela (1–10; 11–20; 21+ workers); Zambia (less than 5 workers; 5+ workers); India and Viet Nam (1–9; 10–19; 20+ workers); Nepal (1–9; 10+ workers); Canada (1–19; 20–99; 100+ workers); Turkey (1–9; 10–249; 250+ workers). 2. Limited number of countries. 3. Country grouping corresponds to World Bank income classification. 4. The different groups as defined earlier (see figure 3.7).

Sources: ILO Research Department based on household survey data (see Appendix E).

Appendix E
Affiliation to old-age pension schemes by status and employment patterns: Sources of data

Country	Institute responsible	Name of the survey	Years
AFRICA: Based on household survey data			
Botswana	Central Statistical Office	Botswana core welfare indicators survey	2009–10
Burkina Faso	Institut national de la statistique et de la démographie (INSD)	Questionnaire unifié des indicateurs de base du bien-être (QUIBB)	2006
Cabo Verde	Instituto Nacional de Estatística	Inquérito ao emprego e sector informal	2009
Cameroon	Institut national de la statistique	Enquête camerounaise auprès des ménages (ECAM)	2007
Egypt	Central Agency for Public Mobilization and Statistics	Labour force sample survey	2011
Ethiopia	Central Statistical Agency of Ethiopia	Ethiopian rural socioeconomic survey	2011–12
Ghana	Ghana Statistical Services	Ghana living standards survey (GLSS)	2005–06
Malawi	National Statistical Office of Malawi	Malawi labour force survey	2012
Mali	Institut national de la statistique	Enquête emploi permanente auprès des ménages (EPAM)	2010
Morocco	World Bank	Morocco household and youth survey	2009–10
Mozambique	ILO Socio-Economic Security Programme	People security survey	2006
Namibia	Ministry of Labour and Social Welfare	Namibia labour force survey	2012
Niger	Institut national de la statistique	National survey on household living conditions and agriculture	2011
Nigeria	National Bureau of Statistics	General household survey panel	2012–13
Rwanda	National Institute of Statistics of Rwanda	The third integrated household living conditions survey (EICV3)	2011
Senegal	Agence nationale de la statistique et de la démographie	Enquête de suivi de la pauvreté au Sénégal (ESPS)	2011
South Africa	Statistics South Africa	Integrated labour force survey (3rd quarter)	2014
Tanzania, United Republic of	National Bureau of Statistics	Integrated labour force survey	2006
Uganda	Uganda Bureau of Statistics	The Uganda national panel survey	2009–10
Zambia	Central Statistical Office of Zambia	Labour force survey	2009
AFRICA: Administrative sources Benin, Burundi, Côte d'Ivoire, Gambia, Guinea, Kenya, Liberia, Madagascar, Nigeria, Swaziland and Zimbabwe			
ASIA: Based on household survey data			
Australia	Luxembourg income study (LIS) microdata database	Household expenditure survey (HES) and Survey of income and housing (SIH)	2010
Cambodia	National Institute of Statistics	Cambodia labour force survey and child labour survey	2011–12
China	The Survey Research Center (SRC)	Chinese general social survey (CGSS)	2010
India	Ministry of Statistics and Programme Implementation, National Sample Survey Office	Socio-economic survey, 66th round	2009–10
Iraq	Central Organization for Statistics and Information Technology (COSIT)	Iraq household socioeconomic survey (IHSES)	2007
Mongolia	National Statistical Office	Labour force survey	2011
Nepal	Central Bureau of Statistics	Labour force survey	2008
Sri Lanka	Department of Census and Statistics	Sri Lanka labour force survey	2011
Thailand	National Statistical Office	Household socio-economic survey	2010
Viet Nam	General Statistics Office	Labour force survey	2012
ASIA: administrative sources Afghanistan, Bhutan, Indonesia, Lao People's Democratic Republic, Lebanon, Malaysia, Myanmar, Oman, Pakistan, Qatar, Saudi Arabia, Yemen			

Country	Institute responsible	Name of the survey	Years
AMERICAS: Based on household survey data			
Argentina	Instituto Nacional de Estadística y Censos (INDEC)	Encuesta permanente de hogares	2012
Bolivia	Instituto Nacional de Estadística	Encuesta de hogares (EH)	2011
Brazil	Instituto Brasileiro de Geografia e Estatística (IBGE)	Pesquisa nacional por amostra de domicilios (PNAD)	2012
Canada	Luxembourg income study (LIS) microdata database	Survey of labour and income dynamics (SLID)	2010
Chile	Instituto Nacional de Estadísticas	Encuesta nacional del empleo	2011
Colombia	Departamento Administrativo Nacional de Estadística (DANE)	Encuesta longitudinal de protección social para Colombia	2012
Costa Rica	Instituto Nacional de Estadística y Censos	Encuesta nacional de hogares (July)	2013
Dominican Republic	Departamento de cuentas nacionales y estadísticas economicas	Enuestas de fuerza de trabajo (ENFT)	2012
Ecuador	Instituto Nacional de Estadisticas y Censos (INEC)	Encuesta de empleo, desempleo y subempleo (ENEMDU)	2012
El Salvador	Dirección General de Estadística y Censos	Encuesta de hogares de propositos multiples	2009
Guatemala	Instituto Nacional de Estadística	Encuesta nacional de empleo e ingresos (ENEI)	2012
Honduras	Instituto nacional de estadística (INE)	Encuesta permanente de hogares de propósitos múltiples	2011
Mexico	Instituto Nacional de Estadística, Geografía (INEGI)	Encuesta nacional de empleo y seguridad social (ENESS)	2009
Nicaragua	Instituto Nacional de Información de Desarrollo (INIDE)	Encuesta continua de hogares (ECH)	2010
Panama	Dirección Nacional de Estadística y Censo	Encuesta de niveles de vida	2008
Paraguay	Dirección General de Estadìstica, Encuestas y Censos (DGEEC)	Encuesta permanente de hogares (EPH)	2012
Peru	Instituto Nacional de Estadística e Informática (INEI)	Encuesta nacional de hogares (Encuesta continua, ENAHO)	2013
United States	Luxembourg income study (LIS) microdata database	Current population survey (ASEC, annual social and economic supplement)	2013
Uruguay	Instituto Nacional de Estadística	Encuesta continua de hogares	2013
Venezuela (Bolivarian Republic of)	Instituto Nacional de Estadística	Encuesta de hogares por muestreo, 2nd semester	2012
AMERICAS: Administrative sources Haiti			
EUROPE: Based on household survey data			
Austria, Belgium*, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland*, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania*, Slovakia, Slovenia, Spain, Sweden, Switzerland, United Kingdom	Eurostat	EU statistics on income and living conditions (EU-SILC)	2012 *2011
Republic of Moldova	National Bureau of Statistics (NBS)	Labour force survey of Moldova	2010
Serbia, Republic of	Statistical Office of the Republic of Serbia (PBC)	Living standards measurement survey	2007
Turkey	Turkish Statistical Institute (TUIK)	Labour force survey	2011

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4 LABOUR REGULATION AND EMPLOYMENT PATTERNS*

Introduction

The diversification of employment patterns highlighted in Chapter 1 raises the issue of the role and effects of labour regulation. The widespread view that labour regulation has a significant effect on labour market performance is reflected in the policy packages that many countries implemented in response to the financial crisis that peaked in 2008. Particularly in Europe, countries made considerable changes that often reduced the level of protection for workers, with an expectation that this would stimulate employment growth (ILO, 2012). By contrast, in a number of emerging and developing countries, the approach over recent years has been to enhance protection and facilitate transitions to formal employment arrangements.

The theoretical understanding of the economic effects of labour regulation continues to be debated, although recent evidence suggests that there is a fairly wide "plateau" on which labour regulations will have neutral effects on employment performance, allowing considerable scope for country preferences and choices. The World Bank has noted that "estimated effects prove to be relatively modest in most cases – certainly more modest than the intensity of the debate would suggest … Overall, labour policies and institutions are neither the major obstacle nor the magic bullet for creating good jobs for development in most countries" (World Bank, 2013). The empirical assessments of the impact of recent changes are mixed, and depend on what elements are measured.

This chapter explores the relationship between key aspects of labour regulation and a range of labour market and social outcomes. The chapter builds on the ILO's consideration of how labour regulation – considered as a labour market institution – can contribute to equitable and sustainable development (ILO, 2014). Section A introduces a number of methodological considerations and presents a rich new dataset exploited for this purpose, namely the Cambridge University Centre for Business Research's Labour Regulation Index (CBR-LRI). This section also analyses the data, presenting trends in labour market regulation across the world and by region. Section B then briefly reviews some of the recent theoretical and empirical literature on measuring the effects of labour market regulation, including the methods for constructing datasets suitable for empirical analysis. This includes an econometric analysis of the data, treating it as an independent or explanatory variable in relation to a range of outcome or dependent variables of economic and social interest. Finally, section C highlights some lessons drawn from the analysis.

* Leximetric data used in this chapter has been prepared by Zoe Adams, Louise Bishop and Simon Deakin.

A. Labour regulation over time

There are many datasets that document labour market regulation. Indeed, most recently, the ILO launched a set of indicators based on the ILO's database on employment protection legislation, EPLex (ILO, 2015).[1] The database includes information for over 90 countries, standardized in keeping with the content of the ILO's Termination of Employment Convention, 1982 (No. 158).

In an effort to document changes over a longer time period, the chapter utilizes the CBR-LRI that was developed in the mid-2000s expressly to provide longitudinal data on changes in the formal or de jure content of labour law rules (box 4.1). The dataset can be used in the first instance to support a descriptive level of analysis for any country or group of countries in order to illustrate the relative strength of legal protection for workers. The dataset has also been used in a number of earlier studies to determine the direction of causality between labour regulation and economic variables, including those relating to employment and unemployment, productivity and inequality (see section B). The CBR-LRI provides a uniquely detailed and comprehensive account of changes in labour laws, covering both developed and developing countries, over periods of several decades.

Box 4.1 Overview of data, methodology and country coverage

This chapter draws on an expanded version of the initial dataset presented by Deakin et al. (2007). The expanded version contains data for 63 countries, including all EU and OECD countries, as well as selected African, Asian and Latin American countries not otherwise captured. As explained below, the chapter draws only on those variables in the dataset that facilitate assessment of changes in regulation of different forms of employment (DFE) and of employment protection law (EPL). The full dataset by country and variable is available on request.

The dataset was created in collaboration with the Cambridge University Centre for Business Research, using the methodology it designed to establish its Labour Regulation Index (CBR-LRI). This index includes data for five main areas: different forms of employment (referred to in the dataset as "alternative employment contracts"); working time; dismissal; employee representation; and industrial action.

The methodology used to construct the dataset is consistent with the view that labour regulation and labour market institutions are endogenous to labour markets; in other words, "legal systems co-evolve alongside developments in the economy and the political system" (Adams and Deakin, 2014 see also Armour et al., 2009a; Deakin et al., 2007). In this sense, the CBR-LRI reflects "a certain theoretical conception of the relationship between legal rules and social structure. This is based on their endogeneity, mutability, and formality" (Adams and Deakin, 2014).

The CBR-LRI has a total of 40 variables, grouped into five sub-indices. A score is allocated to each individual variable in a range from 0 (little or no protection) to 1 (high protection). The five sub-indices represent the core content of national labour law systems and broadly follow the categories developed by Botero et al. (2004), whose analysis, however, lacked a time-series dimension. Moreover, the individual indicators and the coding algorithm used in the CBR-LRI differ from those of Botero et al. in significant respects. The coding algorithms for the variables used in the chapter, as well as the underlying methodology, are presented in Appendix A.

Given the limited availability of data relating to certain countries and years, the dataset is presented by country groupings according to advanced, emerging and developing status (see Appendix A of Chapter 1), with data for the European Union (EU) presented separately, and for the period 1993 to 2013.

Advanced (non-EU): Australia, Canada, Iceland, Israel, Japan, Republic of Korea, New Zealand, Norway, Singapore, Switzerland and the United States.

European Union (EU): Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden and the United Kingdom.

Emerging: Argentina, Brazil, Chile, China, Colombia, India, Mexico, Qatar, Russian Federation, South Africa and Turkey.

Developing: Algeria, Bolivia, Côte d'Ivoire, Ecuador, Egypt, Ethiopia, Ghana, Kenya, Malaysia, Morocco, Nigeria, Pakistan, Peru and the Philippines.

[1] The EPLex database is available at: http://www.ilo.org/dyn/eplex/termmain.home [30 Apr. 2015]. The EPLex database has a limited time series compared to the CBR-LRI (or compared to the OECD's Employment Protection Indicators). While the CBR-LRI does not provide as detailed or fine-grained an analysis of EPL and related laws as the ILO's EPLex indicators (ILO, 2015), since the latter is not a time series, it cannot be used in longitudinal analysis of the kind conducted here. Because of their highly detailed coding, the EPLex indicators should, in principle, be used in conjunction with the CBR-LRI for the analysis of current laws and regulations in the area of EPL.

Table 4.1

Indicators related to different forms of employment	
1	The law, as opposed to the contracting parties, determines the legal status of the worker.
2	Part-time workers have the right to equal treatment with full-time workers.
3	Part-time workers have equal or proportionate dismissal rights to full-time workers.
4	Fixed-term contracts are allowed only for work of limited duration.
5	Fixed-term workers have the right to equal treatment with permanent workers.
6	Maximum duration of fixed-term contracts.
7	Agency work is prohibited or strictly controlled.
8	Agency workers have the right to equal treatment with permanent workers of the user undertaking.

Note: The numbers refer to variable numbers as specified in Appendix Table 4A.1

This section will explore particular developments in the following two areas: (i) different forms of employment (DFE), and (ii) employment protection law (EPL). The former is concerned with the rules governing self-employment, part-time work, fixed-term employment and agency work. The variables used here correspond to those in the CBR's "alternative employment contract" sub-index (see also table 4.1).

The second area, EPL, is concerned with the rules relating to job security and, in particular, governing such matters as notice periods, redundancy compensation and selection, qualifying or probationary periods affecting dismissal rights, the fairness of dismissal (both substantive and procedural), remedies for dismissal (compensation and reinstatement) and notification of dismissals. As explained in more detail below, to arrive at a measure of EPL that is comparable with those used in the literature, and with other datasets, a selection of variables from the CBR-LRI was employed. The variables in the CBR-LRI sub-index on dismissal law were combined with those relating to the dismissal rights of part-time and fixed-term employees (which are part of the alternative employment contracts sub-index) and with those which are concerned with collective employee voice or co-determination on dismissal issues (which are part of the employee representation sub-index).

Legal regulation of different forms of employment has increased over time …

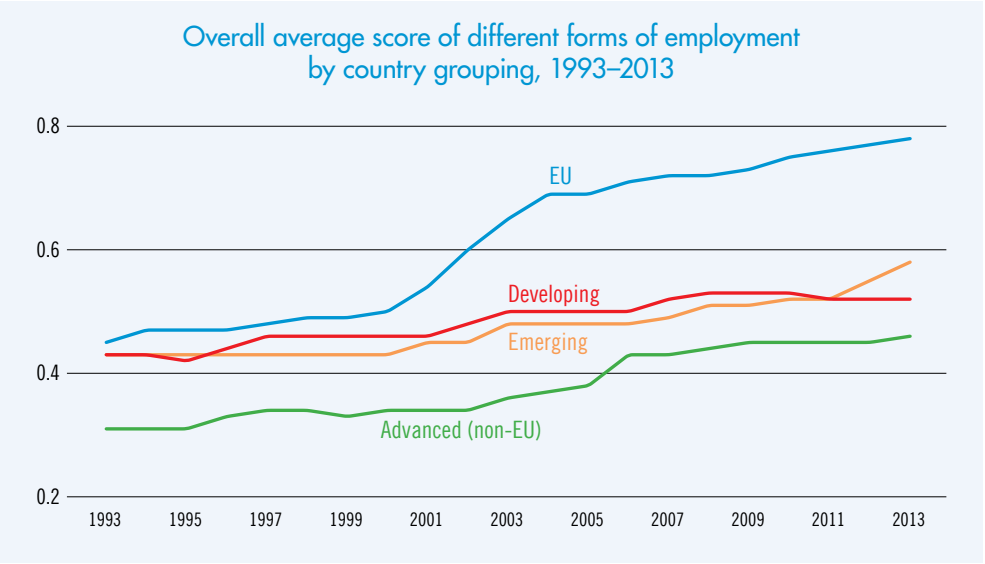
The CBR-LRI sub-index for regulation of DFE is composed of eight variables that relate to the way in which different types of employment contracts are regulated (table 4.1). Among other things, this data can be used to explore whether labour regulation has changed in response to the continuing diversification of employment patterns, and whether it has, in fact, stimulated that process. Some variables measure the level of protection offered to individual workers, such as a requirement that a part-time worker receive equal treatment to that offered to a full-time worker. Other variables measure the strength of regulation of the use of different forms of employment, such as restrictions on the operation of temporary work agencies. Overall, the sub-index measures how labour regulation pursues the goal of ensuring protection for workers, through restrictions on the use of DFE, and/or by requiring equivalent protection for workers in DFE to that received by workers with a standard employment relationship.

Figure 4.1 shows the average of the eight variables for different groups of countries between 1993 and 2013.[2] Overall, the data suggest that the strength of de jure legal regulation regarding DFE has increased in all groups of countries over the period in question, albeit to varying degrees. The increase has been particularly strong in the case of the EU, notably between the period 2000 and 2004. After this period, the strength of de jure legal regulation continued to rise – even during the crisis years – albeit at a much slower pace.

Similar patterns are found in advanced countries outside the EU, as well as in emerging and developing countries, although the changes are far more gradual. This is particularly relevant in developing countries, where changes over time have been modest, and the overall stringency has remained relatively unchanged for the past decade. For advanced (non-EU) countries – which have the lowest stringency among the country groupings – the same gradual pattern emerges, with little

[2] The CBR-LRI contains data going back to 1970. This chapter, however, focuses on the period from 1993 to ensure full country coverage and comparability with existing labour market data (see box 4.1). Analysis of trends in the earlier period covered by the CBR-LRI index will be a focus of future work.

Figure 4.1



Note: Y-axis refers to the score, which ranges from 0 (little or no protection) to 1 (high protection). The list of countries under each of the groups is provided in box 4.1.

Source: ILO Research Department based CBR-LRI dataset.

or no change since the onset of the crisis in 2007. Interestingly, there was a notable increase in regulation in 2006, which was driven entirely by regulatory changes in Norway and the Republic of Korea (see more information below on changes by variable). In emerging countries, the rate of increase was relatively modest between 1993 and 2013, but has begun to rise at a fast pace since 2003.

… largely through equal treatment rules and other regulation of part-time, fixed-term and agency work …

With a view to providing a clearer understanding of the origin of some of these developments over time, table 4.2 shows the overall average level of regulation for DFE, disaggregated by variable and country grouping for the years 1993 (start of the series in this chapter), 2007 (beginning of the crisis) and 2013 (most recent year available). This shows more clearly the areas in which the respective country groupings have made changes over time, noting that in some instances a significant change in one country can move the mean considerably, especially where there is a substantial increase in the relative legal strength of protection.

Generally, there has been a steady rise in the strength of legal regulation determining when and how agency work is permitted, as well as in the strength of legal regulation governing the permitted circumstances and duration of fixed-term contracts. However, the levels and the extent of change vary considerably across regions and countries[3]:

- *Advanced countries (non-EU)*: Compared to 1993, the increases in the indicators "Part-time: equal treatment" and "Fixed-term: equal treatment" were notable, although the latter remains low in comparison to the other regions. The trend with respect to "Part-time: equal treatment" is broadly consistent across countries over the past two decades and with few significant changes since 2007. An exception to this is Japan, where the score for this variable increased quite dramatically in 2008, from 0 to 0.75. On the other hand, "Fixed-term: equal treatment" is far more polarized, with only a few countries making changes since 1993, including Iceland, Norway and the Republic of Korea (moving from 0 to 1), with consequent effects on the overall average. At the same time, however, as of 2013, seven of the 11 countries in this group had a score of 0 for this indicator. The trend seen in the indicator 'Agency: equal treatment' is fairly similar to that of "Fixed-term: equal treatment", i.e. only three countries undertook any change after 1993 (namely, Israel, Norway and the Republic of Korea), and, as of 2013, six countries had a score of 0 for this indicator. Finally, the indicator "Agency: constraints" showed an initial decline between 1993 and 2000, followed by a partial rebound leading up to 2013.

3 The full dataset by country and variable over time is available on request.

- *EU*: Among the 27 countries, both "Part-time: equal treatment" and "Fixed-term: equal treatment" have increased significantly and both have relatively high protection as of 2013. Both variables increased steadily (across the majority of countries) between 1993 and 2007 and have remained little changed since. With respect to "Agency: constraints", the average has nearly doubled since 1993 – in many cases due to the approval and implementation of the EU directives, see box 4.2 below – with more than half of the countries introducing or strengthening de jure regulation, although ten of the countries still had a score of 0 in 2013. Consistent increases have taken place with respect to "Agency: equal treatment": more than half of the countries have increased or introduced regulation since 2007.
- *Emerging countries*: Equal treatment in part-time, fixed-term and agency work explains the increase in the average DFE within this country grouping, with notable changes taking place in China and Mexico. Changes to "Part-time: equal treatment" also took place in Argentina and regulation in South Africa increased for "Fixed-term: equal treatment".

Table 4.2

Average score of different forms of employment by variable and country grouping

	Advanced countries (non-EU)			European Union			Emerging countries			Developing countries		
	1993	2007	2013	1993	2007	2013	1993	2007	2013	1993	2007	2013
How legal status is set	0.65	0.65	0.65	0.72	0.77	0.85	0.71	0.74	0.74	0.73	0.77	0.77
Part-time : equal treatment	0.21	0.59	0.66	0.39	0.95	0.96	0.27	0.48	0.59	0.36	0.45	0.45
Part-time: equal dismissal rights	0.80	0.83	0.86	0.84	0.94	0.96	0.86	0.86	0.86	0.96	0.96	0.89
Fixed-term: constraints	0.25	0.29	0.29	0.43	0.64	0.60	0.45	0.42	0.55	0.37	0.50	0.50
Fixed-term: equal treatment	0.05	0.32	0.32	0.31	0.87	0.95	0.25	0.39	0.49	0.36	0.41	0.41
Fixed-term: max. duration	0.00	0.15	0.25	0.35	0.59	0.57	0.35	0.25	0.25	0.24	0.50	0.50
Agency: constraints	0.38	0.30	0.33	0.24	0.39	0.41	0.19	0.30	0.43	0.21	0.33	0.42
Agency: equal treatment	0.11	0.33	0.35	0.32	0.64	0.92	0.36	0.49	0.69	0.19	0.21	0.25
Average DFE	**0.31**	**0.43**	**0.46**	**0.45**	**0.72**	**0.78**	**0.43**	**0.49**	**0.58**	**0.43**	**0.52**	**0.52**

Note: See table 4.1 for a fuller explanation of the variables and box 1.1 for a list of country groupings. Average scores range from 0 (legislation least stringent) to 1 (legislation most stringent). The full dataset is available on request.

Source: ILO Research Department based on CBR-LRI dataset.

Box 4.2

Equal treatment of workers in different forms of employment

This chapter points to a number of changes in the regulations on different forms of work, including, for example:

Argentina: a 2009 amendment (No. 26,474) to the Employment Contract Act of 1976 (No. 20,744) introduced a principle of equal treatment between part-time and full-time workers in the context of social security.

China: The Labour Contract Law of 2007 (PRC President's Order No. 65 of the 10th NPC) introduced a requirement that agency workers be assured the same minimum labour standards as permanent workers, and that they receive comparable pay (an amendment to the law in 2013 further strengthened the protection by enacting a formal right to equal treatment).

European Union: The relatively significant increases over time in the level of regulation requiring equal treatment in working conditions can be attributed in large part to the requirement to implement EU Council Directive 97/81/EC of 15 December 1997 on part-time work, EU Council Directive 1999/70/EC of 28 June 1999 concerning the framework agreement on fixed-term work concluded by ETUC, UNICE and CEEP and EU Directive 2008/104/EC of the European Parliament and of the Council of 19 November 2009 on temporary agency work.

Norway: The Working Environment Act of 2005 (Act of 17 June 2005, No. 62) introduced a prohibition against discrimination of an employee on the basis of part-time and temporary employment (including agency workers governed by 'temporary work' regime). A 2012 amendment (Act of 22 June 2012) of the Working Environment Act of 2005 enhanced this right by granting agency workers a right to equal treatment in relation to permanent employees of the user undertaking.

Republic of Korea: The Act on the Protection of Fixed-Term and Part-Time Employees (Act No. 8074 of 21 December 2006) introduced a prohibition on discriminatory treatment on the basis of fixed-term employment.

- *Developing countries*: Modest increases were observed across most variables (and most countries). Changes in "Fixed-term: max. duration" and "Agency: constraints" can be observed, with the vast majority of countries increasing the relative strength of legal regulation in certain areas, although, in the same group of 14 countries, roughly two-thirds of countries have a score of 0 for both of these indicators.

… while EPL has remained relatively stable until recently.

Various existing indices and empirical studies define and measure EPL according to different methodologies. Despite these variations, in broad terms EPL can generally be understood as dealing with some or all of the following topics: protection against dismissal (both procedural and substantive); compensation and other remedial requirements in the event of dismissal; regulation of fixed-term contracts; and collective employee consultation over dismissals. The analysis which follows draws on a selection of variables from the full list (Appendix Table 4A.1) that relate to EPL as defined here.

The selection begins with several variables already considered as part of the regulation of different forms of employment: determination of employment status (variable 1); whether part-time workers have access to legal protection concerning dismissal (variable 3); and regulation of the duration of fixed-term contracts (variables 4 and 6). A further nine variables are collected in the sub-index for regulation of dismissal. These measure procedural and substantive constraints on dismissal, redundancy selection and payment, and related aspects of dismissal regulation (variables 16 to 24). Also included are two variables relating to legal regulation of co-determination at the workplace, given that in some systems co-determination mechanisms can have a role in dismissal procedures, especially with regard to collective dismissals (variables 30 and 31). Table 4.3 lists the 15 variables that are used in the following analysis of the strength of EPL.

Figure 4.2 shows the average strength of legal regulation for this combination of EPL variables for different groups of countries over the period 1993–2013. Generally, the strength of EPL has remained relatively stable across country groupings over the past two decades, with very slight overall increases apparent over the full length of the period (figure 4.2, panel A). For the EU there is a modest increase, with a discernible starting point in 2000 and leading up to the crisis. However, since the onset of the crisis, the relative legal strength of EPL fell in the EU (figure 4.2, panel B). There was a more modest decrease in the legal strength of EPL in developing countries while advanced and emerging countries continued to increase the level of de jure regulation over the period 2007–2013, and at a similar rate to that seen during the pre-crisis period.

Table 4.4 shows the overall average for EPL, together with a disaggregation according to the selected variables (the list excludes the variables covered in table 4.2, although the average is for all 15 variables). Given that the overall average changes so little over the period, it is not surprising that there is relatively little change in any particular variable. Slight rises in the relative legal strength of regulation governing procedural constraints on dismissals and levels of redundancy compensation,

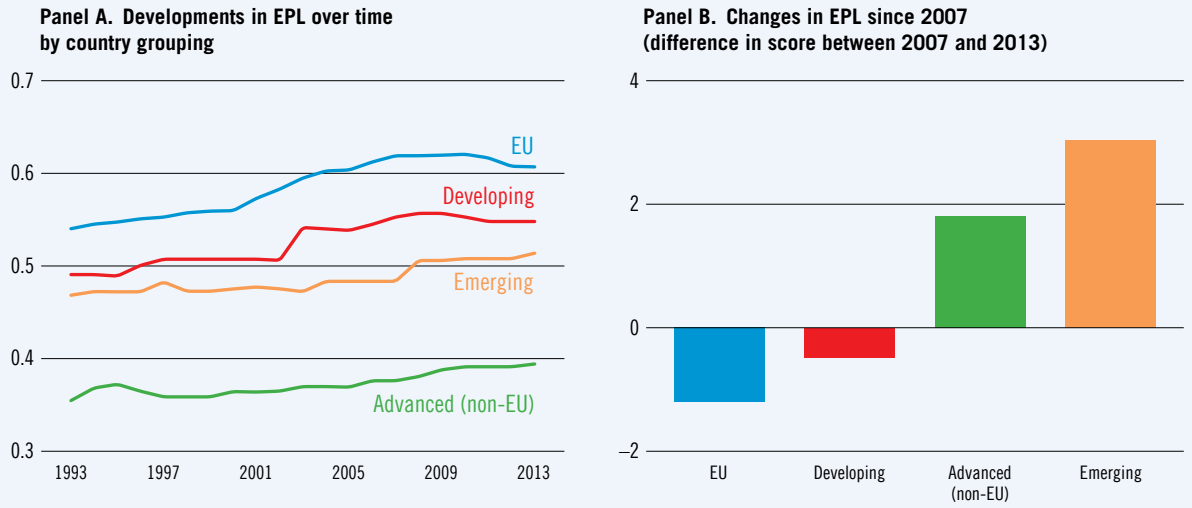
Table 4.3

Variables related to employment protection law	
1	The law, as opposed to the contracting parties, determines the legal status of the worker.
3	Part-time workers have equal or proportionate dismissal rights to full-time workers.
4	Fixed-term contracts are allowed only for work of limited duration.
6	Maximum duration of fixed-term contracts.
16	Legally mandated notice period.
17	Legally mandated redundancy compensation.
18	Minimum qualifying period of service for normal case of unjust dismissal.
19	Law imposes procedural constraints on dismissal.
20	Law imposes substantive constraints on dismissal.
21	Reinstatement normal remedy for unfair dismissal.
22	Notification of dismissal.
23	Redundancy selection.
24	Priority in re-employment.
30	Co-determination: board membership.
31	Co-determination and information/consultation of workers.

Note: The numbers refer to variable numbers as specified in Appendix Table 4A.1

Figure 4.2

Employment protection law by country grouping over time, 1993–2013



Note: See table 4.1 for a fuller explanation of the variables and box 1.1 for a list of country groupings. Average scores range from 0 (legislation least stringent) to 1 (legislation most stringent). The full dataset is available on request.

Source: ILO Research Department based on the CBR-LRI dataset.

Table 4.4

Average score of employment protection law by select variables and country grouping

	Advanced countries (non-EU)			European Union			Emerging countries			Developing countries		
	1993	2007	2013	1993	2007	2013	1993	2007	2013	1993	2007	2013
Notice period	0.35	0.36	0.36	0.39	0.41	0.39	0.32	0.39	0.39	0.28	0.32	0.32
Redundancy compensation	0.21	0.21	0.21	0.33	0.46	0.40	0.80	0.80	0.80	0.64	0.66	0.66
Min. qualifying period	0.83	0.81	0.81	0.85	0.86	0.86	0.89	0.87	0.87	0.90	0.90	0.90
Procedural constraints	0.36	0.39	0.48	0.69	0.72	0.67	0.42	0.59	0.62	0.58	0.70	0.70
Substantive constraints	0.33	0.33	0.36	0.60	0.63	0.63	0.55	0.53	0.59	0.49	0.57	0.60
Reinstatement normal	0.42	0.44	0.44	0.68	0.71	0.65	0.51	0.59	0.64	0.49	0.51	0.51
Notice to third party	0.35	0.35	0.35	0.55	0.55	0.56	0.32	0.43	0.45	0.43	0.52	0.52
Redundancy selection	0.11	0.11	0.11	0.37	0.44	0.46	0.36	0.36	0.45	0.43	0.46	0.46
Re-employment priority	0.20	0.20	0.20	0.30	0.42	0.37	0.27	0.18	0.27	0.23	0.30	0.30
Codeterm.: board m'ship	0.14	0.14	0.14	0.44	0.46	0.47	0.00	0.00	0.00	0.20	0.20	0.17
Codeterm./consultation	0.33	0.39	0.41	0.56	0.67	0.65	0.22	0.22	0.22	0.39	0.41	0.42
Average EPL*	**0.35**	**0.38**	**0.39**	**0.54**	**0.62**	**0.61**	**0.47**	**0.48**	**0.51**	**0.49**	**0.55**	**0.55**

Note: *Although EPL (and the average presented here) includes the following indicators: "How legal status set", "Part-time equal dismissal rights", "Fixed-term constraints" and "Fixed-term maximum duration", they are excluded from this table for presentation purposes only, as they are also part of DFE and shown in table 4.2. See table 4.3 for a fuller explanation of all the variables related to EPL and box 1.1 for a list of country groupings. Average scores range from 0 (legislation least stringent) to 1 (legislation most stringent). The full dataset is available on request.

Source: ILO Research Department based on CBR-LRI dataset.

as well as regulation of whether reinstatement is the normal remedy and whether dismissed workers should have priority in re-employment, are observed. Still, a number of other discernible trends were present within each country grouping:

- *Advanced countries (non-EU)*: The overall changes in EPL among advanced (non-EU) countries were principally driven by the increases in "Fixed-term: maximum duration" and "Fixed-term: constraints" as discussed above (two variables that are included as part of DFE). Minor changes in "Co-determination/consultation" and "Procedural constraints" are noted. The former was due to a change in Australia in 2009.
- *EU*: Over the two-decade period, a large part of the increase in the relative legal strength of EPL has been a function of the changes in legal regulation of fixed-term employment (both constraints on the use of fixed-term employment and regulation of the maximum duration of

Box 4.3

Recent amendments of EPL, selected variables

Regulation of notice periods: In *Estonia*, the Employment Contracts Law 2008 reduced the notice period from two months to 30 calendar days whereas, in *Spain*, Law 35/2010 reduced the notice period from one month to 15 days. In *Slovenia*, the new Employment Relations Act, adopted on 5 March 2013, reduced the notice period from 30 days to 15 days if the worker has been employed less than one year with the employer. In *Belgium*, however, the Act of 26 December 2013 concerning the harmonised statute for blue-collar and white-collar employees on notice periods, introduced a new notice period of 13 weeks for both blue- and white-collar workers with between three and four years' service.

Redundancy compensation: In *Estonia* the Employment Contracts Act of 2008 lowered the legally mandated redundancy compensation from two months' pay to one month's pay and, in *Slovakia*, a 2011 amendment to the Labour Code made redundancy pay conditional upon the employee agreeing to the termination. A subsequent amendment in 2013 (following a change of government) introduced a right to a month's severance pay for workers with between two and five months' service. In the developing country group, changes occurred in *Morocco*, where Dahir (Law) No. 1-03-194 raised the requirement to the equivalent of 96 hours (from 48 hours) for each year of service.

fixed-term employment). Since the crisis, the decline in the relative strength of legal regulation has been related to changes in the indicators related for Redundancy compensation" and "Notice period", both of which fell considerably (see box 4.3). Declines in the indicator for "Redundancy compensation" were concentrated in Estonia, Romania and Slovakia. "Notice period" declines occurred in Estonia, Slovenia and Spain while in Belgium, there was an increase.

- *Emerging*: The changes in EPL since 1993 have been due to movements in the indicators for "Substantive constraints", "Re-employment priority" and "Redundancy selection" – all a result of major changes in China in 2008.
- *Developing:* Some notable changes have included increases in the indicators for "Redundancy compensation" in Morocco, and for "Procedural constraints" in Ghana.

B. The impact of labour regulation on labour market and social outcomes

Labour market regulation has taken on increased significance as a policy tool …

Reforms of labour market regulation are an important tool that policy-makers can use to achieve goals of greater equity and inclusive development. Since the onset of the crisis and the ensuing period of slow growth and jobs deficits, reforms of labour market regulation have intensified and taken on a more central role in the debate on how to address the employment and social challenges. However, the direction of the response has varied widely, particularly between Europe and emerging economies. The changes in Europe in recent years have tended to reduce the strength of labour market regulation, as discussed in section A.[4] In emerging economies, by contrast, the attention to labour market regulation has instead increased protection for workers in an effort to achieve greater equity and inclusiveness; and, in addition, has been seen as a tool to strengthen domestic demand and therefore economic resilience in times of fluctuating global demand and the slower growth of international trade.

[4] In addition, against the backdrop of rather stringent fiscal positions, reforms of labour regulation have often been viewed as a "costless" means – at least in terms of fiscal outlays – of improving labour market and social outcomes – when compared, for instance, to active labour market policies.

… but the impact on employment outcomes continues to be widely debated, partly because of different approaches to assessment.

This raises the important – and widely debated – question of how effective the changes discussed have been in terms of achieving the desired labour market and social outcomes. While classical economic theory predicts that limitations on the ability of employers to dismiss workers should increase the cost of hiring and therefore reduce employment (Skedinger, 2010), those predictions depend significantly on the relationships built into the model and its underlying assumptions.

Reviews of the actual effects of labour market regulation suggest that the effects of EPL on employment and unemployment can be positive or negative, depending on the context, but are generally very limited, and that both excessive and insufficient regulation should be avoided (ILO, 2014). Based on a global literature review (Betcherman, 2012), the World Bank concluded that the identified estimates of the effects of labour market regulation are modest and can be either slightly positive or negative (World Bank, 2013). Studies based on disaggregated information (e.g. by age or gender) find some effect of labour legislation for particular groups, which again can be either positive or negative, but little effect on the entire labour market.[5]

A major challenge in empirically assessing the impact of differing approaches to labour regulation on employment outcomes lies in establishing a methodology that can effectively and transparently measure legal and institutional phenomena that are not easily represented in numerical terms. The problem does not arise for some forms of labour regulation – such as minimum wage regulation, where numerical data can be relatively easily identified – although there are still issues with respect to compliance and enforcement. For many aspects of labour regulation, however, an assessment of the relative strength of the law is necessarily more complex. As the IMF recently noted, measuring labour market regulation and flexibility across countries is sufficiently difficult that it can limit the accuracy of any attempt to measure its effects.[6]

Economic analysis also suggests that formal regulations may be relatively easy to change but that informal rules and practices can be hard to adjust (North, 2005). Similar insights are a commonplace in the field of comparative law, which has shown that, in practice, "foreign laws, institutions, and norms are adopted, adapted, transformed, subverted, partially ignored or provoke changes that were not really anticipated" (Biddulph and Nicholson, 2008).

Despite the complexity of these issues, the urgency of the need to promote more and better jobs, together with methodological developments in the analysis of cross-country time-series data, have increased interest in attempting to measure and predict the effects of labour regulation (Cazes and Aleksynska, 2014). The expanded CBR-LRI dataset, covering 63 countries, including most advanced economies, as well as selected African, Asian and Latin American countries, enables a more in-depth analysis to be undertaken for a relatively large set of countries, over a long time frame.

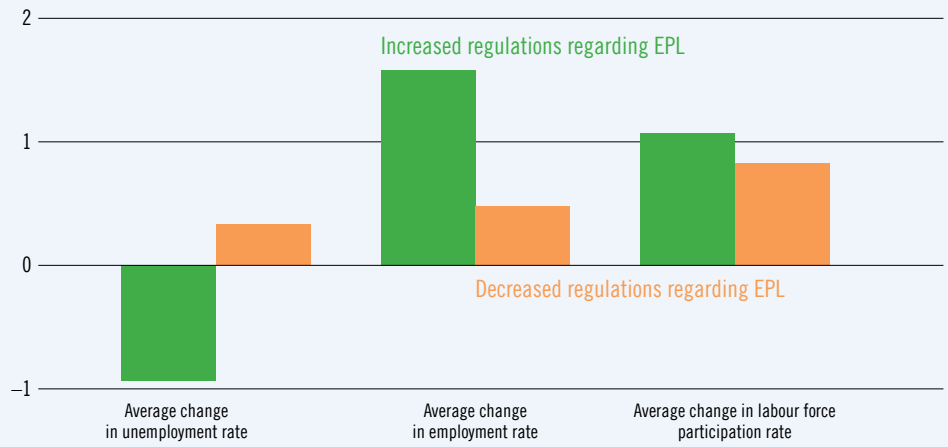
Previous studies using smaller versions of the CBR-LRI data have found that legal regulation which is protective of workers in general has no consistent relationship to unemployment in France, Germany, Japan, Sweden, the United Kingdom and the United States, and that it is positively correlated with labour's share of national income (Deakin et al., 2014). The data for India show that, after controlling for changes in the level of industrial production over time, increases in the relative strength of legal protection for workers are correlated with lower unemployment, with causation running from the economy to the law (Deakin and Sarkar, 2011). A study using CBR-LRI data on collective labour laws in Brazil, China, India, the Russian Federation and South Africa found that higher scores on the employee representation sub-index were correlated with greater equality, as measured by a lower Gini coefficient, with no negative effects on employment (Deakin et al., 2014). A study on the relationship between EPL and innovation using the CBR-LRI data showed that greater relative strength of EPL stimulated higher innovation, based on employee input into new products and processes (Acharya et al., 2014).

5 Bassanini and Duval (2006) find, for instance, no impact of EPL on male employment but a negative effect on female employment.

6 See, for example, IMF (2015).

Figure 4.3

Labour market developments by countries classified by overall changes in EPL (percentage point changes between 1993 and 2013)



Source: ILO Research Department based on *Trends Econometric Models* and CBR-LRI dataset.

A descriptive analysis suggests that changes in regulation are associated with mixed short-term employment outcomes …

In an effort to examine the short-term effects of changes in regulations, the labour market conditions of countries were compared two years after a change in legislation to the conditions prevailing at the time the change occurred. The analysis is restricted to the most recent changes in the 19 main indicators under review in the chapter, with countries divided into two groups, i.e. those where regulation increased and those where regulation declined. Notably, on the one hand, where the changes represented an increase in regulation, the unemployment rate fell, on average, in 15 of these cases. On the other hand, when regulation declined, the results were more mixed, with the unemployment rates falling in some instances and rising in others.[7]

However, labour market reforms might have short-term effects that may be counteracted for over the long run – which requires undertaking a more long-term approach to their assessment. In looking at the changes over a longer period of time (i.e. between 1993 and 2013) and taking a more comprehensive approach (i.e. looking only at changes in the labour market with respect to developments in the EPL indicator) a similar picture emerges. Indeed, in countries where EPL regulations increased, the unemployment rate fell over the longer term while in countries where regulations declined the unemployment rate increased. The employment rate and labour force participation rate increased more in countries where EPL increased than in those where it fell (figure 4.3).[8]

[7] A similar exercise was undertaken using employment rates and labour force participation rates with no discernible deviation in the results.

[8] With respect to developments in DFE and related labour market performances, the results are less clear cut. Indeed, whereas the unemployment rate fell regardless of the direction of the change, it fell at a moderately higher rate when regulations governing DFE fell. However, a decline in regulations was also associated with strong reductions in the employment rate and participation rate, whereas, among countries that increased regulation, the employment rate and participation rate improved. This more nuanced picture can be expected, given the fact that the analysis now considers the effects of the DFE indicator on labour market performances. Indeed, the DFE indicator affects only a share of the labour force and it is also likely to affect the distribution of workers across contracts more than the overall levels of employment/unemployment.

… which is confirmed by more in-depth econometric analysis.

In order to contribute to the debate, the present analysis utilizes the comprehensive new CBR-LRI database – using both the EPL indicator and the DFE sub-indicator discussed above – and performs panel econometric analysis over a sample of 63 countries for the period between 1993 and 2013.

The analysis follows previous studies (e.g. Bassanini and Duval, 2006; ILO, 2012; Addison and Texeira, 2003) and regresses unemployment rate over its lagged value, a range of macroeconomic variables (e.g. growth performances, inflation, trade openness and net lending/borrowing) and a measure of stringency of regulations – in this case as measured by the EPL and DFE indicators separately. Different econometric models are used in order to test the robustness of the analysis (see Appendix B for full details of the methodology used and the results obtained).[9] The different models consistently report that employment law – as measured by either the EPL or the DFE indicators – has a negative but statistically insignificant effect on the unemployment rate. The results are robust to changes in the choice of the covariates (e.g. lagged or contemporaneous values, three- and five-year averages), the introduction of non-linearity into the relationship between EPL (and DFE) and unemployment rates[10] as well as for both advanced and emerging/developing economies. These results confirm – using a new indicator of EPL and a wider range of countries with respect to many other contributions – the findings of a number of previous studies that do not find a statistically significant link between the stringency of employment law and labour market employment levels (see, for instance, Baccaro and Rei, 2006; IMF, 2015).

The analysis also examines whether the stringency of employment law has any effect on other labour market variables – e.g. employment rate and share of self-employment – and social indicators, as measured for instance by the level of inequality (measured by the labour share) or human development (as measured by the Human Development Index). This is of particular importance in the emerging and developing economies context, given that unemployment rates do not capture labour market performances in these groups of countries and that there are often considerable gaps in enforcement of legislation in these countries (e.g. high levels of employment in the informal economy). However, preliminary evidence of the effect on other labour market and social indicators yields no significant results (see Appendix B).

C. Concluding remarks

Since the onset of the crisis, changes in labour regulations have been increasingly viewed as a way to kick-start job creation, although the direction of change has been opposite in the European Union compared to emerging and some other economies. At the same time, there is a growing recognition that labour regulation is necessary "to protect workers from arbitrary or unfair treatment and to ensure efficient contracting between employers and workers" (World Bank, 2015). Importantly, the most recent studies and meta-analyses demonstrate that labour regulation can vary across a wide range without significant effects on the economy or employment creation. The issue is how to design regulation for the particular economic and labour market environment, since regulations that are too lax, as well as those which are too stringent, can be counterproductive to economic growth, job creation, equality, and to social cohesion.

Quantifying changes in the content of labour regulations over time is an important step in understanding how labour regulation and labour markets have evolved in tandem with changing economic circumstances and political and social preferences. However, difficult issues of variable selection and definition must be addressed, along with choices concerning weighting and aggregation. As a new approach to dealing with these challenges, this chapter presents findings from the extended version of the CBR-LRI, an approach which, uniquely, makes it possible to track changes in the content of de jure labour regulation over several decades for a large number of developed and developing countries.

9 In particular, the analysis performs a pooled Ordinary Least Square (OLS) regression, a fixed effect (FE) model with standard errors clustered at the country level and the Generalized Method of Moments (GMM) estimation.

10 See ILO (2012) for evidence of a non-linear relationship between EPL and employment rates.

A key finding from this work is that many countries have responded to the diversification in types of employment by increasing protection for certain non-standard forms of employment. This is notably the case with respect to laws that require equal treatment of part-time workers with full-time workers, and for fixed-term and agency workers with permanent and regular workers. Yet, the analysis of the data in the chapter also points to some considerable polarization with respect to this trend. It is notable that a number of countries have substantially increased the stringency of regulation with respect to different forms of employment, while many others continue to have little or no regulation.

This chapter also finds that EPL has declined since the onset of the crisis in the EU, and to a lesser extent in developing countries. With regard to impact, the descriptive analysis suggests that changes in EPL regulation are associated with mixed employment outcomes. Thus, in a number of instances, labour market outcomes improved at the same time as the stringency of workers' protection increased.

Econometric analysis using panel data and time-series techniques presented in this chapter confirms that there have been no discernible negative effects of the recent increases in legislation to protect workers. This supports the proposition that, if carefully designed, employment regulation can provide protection to workers in different types of employment without harming job creation.

Looking ahead, the extended version of the CBR-LRI presented here will provide a rich benchmark from which to deepen our understanding of the links between labour regulation and labour market outcomes in different countries and regions, and to extend the analysis to cover individual sectors. Future work will also be need to take into account possible gaps between formal law and the actual practice.

Appendix A
Methodology and coding algorithms used to construct the CBR-LRI dataset

The CBR-LRI dataset is a "synthetic index" produced using content analysis of legal text. It aims to summarize legal data in a quantitative form which can be used in statistical analysis. The construction of such an index involves a series of steps.

The starting point is to identify a *phenomenon of interest* which can then, more precisely, be expressed as a *conceptual construct*. In the case of the CBR-LRI, the general phenomenon of interest is "labour law" and the construct which is the focus of the coding process is "labour regulation". The choice of phenomenon is determined here by the aim of the dataset, which is to develop a measure of labour law rules which can be used to assess the economic and social effects of those rules. The construct "labour regulation" presupposes that labour law rules are intended to have, and are capable of having, an effect on the behaviour of employers and workers. Its use does not make any assumptions about the exogeneity of labour law as it is possible that regulation is endogenous to changes in the economy and in the political system. It is, however, being assumed that regulation involves institutional, legal or administrative acts, which can be conceptualized as distinct from the effects they may have on the economy or society more generally. The term "regulation" is chosen because of its neutrality. Where other indices refer to "costs" or "rigidities" imposed on employers, or to "protection" for workers, they can be seen as presupposing that labour rules have particular economic or social effects, which cannot be known in advance of statistical analysis of the relationship between legal and economic data.

The next step is to identify a number of *indicators* or *variables*, which together represent the construct in numerical terms. The CBR-LRI is based on 40 such indicators. These were chosen to represent the core content of national labour law systems in five areas: alternative employment contracts, working time, dismissal protection, employee representation and the law of industrial conflict. They are also the principal sub-indices used in the study of Botero et al. (2004), making it possible to undertake a comparison with their approach. Areas of regulation on which statistical data already exist without the need to develop a synthetic index, such as minimum wage levels,

were not coded for that reason. Discrimination law and social security law pose distinct issues, as does occupational safety and health law; some of these could be added to the dataset, using a similar coding methodology, at a future point (for discussion see Deakin et al., 2007).

The first group of variables, *alternative employment contracts*, refers to rules determining the personal scope of labour law and the extent to which different rules apply to different employment forms. These rules govern how far employers can avoid protective labour law rules by contracting workers as self-employed or independent contractors, on the one hand, or through employment contracts which are less well protected than the "standard" employment relationship of indeterminate, full-time and regular work, on the other. Such "alternative" contracts include those relating to part-time work, fixed-term employment and temporary work. The second group of variables, *working time*, measures the content of legal rules governing the length of the working day and week, weekend working, overtime, annual paid leave and public holidays. The third group contains rules relating to *dismissal* and consists of variables measuring legal regulation of notice periods, severance or redundancy pay, notification of dismissal, qualifying periods for unjust dismissal, substantive and procedural dismissal protection, remedies for unjust dismissal, redundancy selection, and priority in re-employment. The fourth group covers rules on *employee representation*. The relevant variables here include those relating to constitutional protection for freedom of association and collective bargaining, laws on the employer's duty to bargain with collective workforce representatives, the closed shop, extension of sector-level collective agreements, board-level co-determination and works councils. The fifth group, on *industrial conflict*, includes indicators for constitutional protection for the right to strike, unofficial strikes, notice periods, peace clauses, political strikes, secondary action, conciliation, lock-outs and dismissal of strikers.

For each variable, a *coding algorithm* is developed, which sets out a process for translating the textual content of legal rules into a numerical value. The algorithms for the variables used in this chapter are set out in table 4A.1. Most of them make use of graduated scores in order to reflect the range of possible values for most labour law rules, which cannot be well captured by binary coding. Scores vary, in some cases, because of the differing degrees of regulation which may, in principle, apply in respect of a given rule. Variations in scores also reflect, in some instances, different modes of regulation, with strictly binding rules attracting a higher score than those allowing for derogation.

To arrive at a score involves retrieving primary data in the form of legal texts and then applying the relevant coding algorithm to the law in question. This process has been carried out by a team of researchers based in Cambridge and at the ILO in Geneva, who compare individual scores for a given indicator before arriving at a final value through discussion and iteration. In all cases, legal texts (statutes, cases and, where relevant, administrative regulations and collective agreements with binding legal effects) were used as the basis for the codings; these were consulted in law libraries or via online materials. As far as possible, texts were consulted in their original language or in an official (governmental or ILO-authorized) translation.

Because the scores in the CBR-LRI are based purely on content analysis of legal materials, they do not purport to do more than measure de jure law. Thus, the CBR-LRI does not provide evidence of the effectiveness of the law in practice. It can, however, be combined with other datasets, such as the Freedom House indicator used in this chapter, which do provide such evidence, to produce a composite measure which captures elements of de jure labour regulation with data on the effectiveness of legal institutions (see Armour et al., 2009b for an illustration of this technique in the context of the CBR datasets on shareholder protection and the World Bank's Rule of Law Index).

Once each variable is given a score, it becomes possible to aggregate the scores into different sub-indices and to arrive at a score for the index as a whole. With *aggregation*, it becomes necessary to consider the issue of *weighting*. If no weighting is carried out, the dataset contains an implicit weighting, which is that each of the variables is of equivalent importance. There may be no good reason in principle to depart from this approach, and attaching weights to particular indicators because of their hypothesized importance for the operation of labour law systems, in the absence of clear evidence for such a claim, would be to introduce an unnecessary degree of subjectivity into the coding exercise. A good reason to introduce some weighting, however, is that some concepts may be more complex to express than others, and so may therefore be represented by additional numbers of variables within the index as a whole. For this reason, when calculating mean values for the overall index, each of the different sub-indices should, in principle, be given an equal weight. Adjustment to some of the individual indicators may also be required. Thus, within the first

sub-index, alternative employment contracts, the variables for each of the different employment forms could be equally weighted (this can be done by giving a double weighting to variable 1 and by combining variables 4, 5 and 6 to produce a composite score for fixed-term contracts, which is then given a double weighting).[11]

Table 4A.1 below provides a list of the 40 variables and their coding algorithms.

Table 4A.1

Coding algorithms for selected variables

Variables	Algorithm
1. The law, as opposed to the contracting parties, determines the legal status of the worker	• Equals 0 if the parties are free to stipulate that the relationship is one of self-employment as opposed to employee status; 0.5 if the law allows the issue of status to be determined by the nature of the contract made by the parties (as in the case of the English common law "mutuality of obligation" test); and 1 if the law mandates employee status on the parties if certain specified criteria are met (such as form of payment, duration of hiring, etc.). • Scope for scores between 0 and 1 to reflect changes in the strength of the law.
2. Part-time workers have the right to equal treatment with full-time workers	• Equals 1 if the legal system recognizes a right to equal treatment for part-time workers (as, for example, in the case of EC Directive 97/81/EC. • Equals 0.5 if the legal system recognizes a more limited right to equal treatment for part-time workers (via, for example, sex discrimination law or a more general right of workers not be treated arbitrarily in employment). • Equals 0 if neither of the above. • Scope for scores between 0 and 1 to reflect changes in the strength of the law.
3. Part-time workers have equal or proportionate dismissal rights to full-time workers	• Equals 1 if, as a matter of law, part-time workers enjoy proportionate rights to full-time workers in respect of dismissal protection (notice periods, severance pay and unjust dismissal protection). • Equals 0 otherwise. • Scope for further gradation between 0 and 1 to reflect changes in the strength of the law.
4. Fixed-term contracts are allowed only for work of limited duration	• Equals 1 if the law imposes a substantive constraint on the conclusion of a fixed-term contract by, for example, allowing temporary hirings only for jobs which are temporary by nature, training, seasonal work, replacement of workers on maternity or sick leave or other specified reasons. • Equals 0 otherwise. • Scope for gradation between 0 and 1 to reflect changes in the strength of the law.
5. Fixed-term workers have the right to equal treatment with permanent workers	• Equals 1 if the legal system recognizes a right to equal treatment for fixed-term workers (as, for example, in the case of EC Directive 99/70/EC). • Equals 0.5 if the legal system recognizes a more limited right to equal treatment for fixed-term workers (via, for example, more general rights of workers not be treated arbitrarily in employment). • Equals 0 if neither of the above. • Scope for further gradation between 0 and 1 to reflect changes in the strength of the law.
6. Maximum duration of fixed-term contracts	• Measures the maximum cumulative duration of fixed-term contracts permitted by law before the employment is deemed to be permanent. The score is normalized from 0 to 1, with higher values indicating a lower permitted duration. The score equals 1 if the maximum limit is less than 1 year and 0 if it is 10 years or more or if there is no legal limit.
7. Agency work is prohibited or strictly controlled	• Equals 1 if the legal system prohibits the use of agency labour. • Equals 0.5 if it places substantive constraints on its use (in the sense of allowing it only if certain conditions are satisfied, such as a demonstrable need on the part of the employer to meet fluctuations in labour demand). • Equals 0 if neither of the above. • Scope for further gradation between 0 and 1 to reflect changes in the strength of the law.
8. Agency workers have the right to equal treatment with permanent workers of the user undertaking	• Equals 1 if the legal system recognizes a right to equal treatment for agency workers, in relation to permanent workers of the user undertaking, in respect of terms and conditions of employment in general • Equals 0.5 or another intermediate score if the legal system recognizes a more limited right to equal treatment for agency workers (for example, in respect of anti-discrimination law). • Equals 0 if neither of the above. • Scope for further gradation between 0 and 1 to reflect changes in the strength of the law.
16. Legally mandated notice period	• Measures the length of notice, in weeks, that has to be given to a worker with 3 years' employment. Normalize the score so that 0 weeks = 0 and 12 weeks = 1.
17. Legally mandated redundancy compensation	• Measures the amount of redundancy compensation payable to a worker made redundant after 3 years of employment, measured in weeks of pay. Normalize the score so that 0 weeks = 0 and 12 weeks = 1.
18. Minimum qualifying period of service for normal case of unjust dismissal	• Measures the period of service required before a worker qualifies for general protection against unjust dismissal. Normalize the score so that 3 years or more = 0, 0 months = 1

[11] The econometric analysis carried out in this chapter was repeated using this different weighting of the variables relating to fixed-term employment. The results remained the same.

Table 4A.1 *cont.*

Coding algorithms for selected variables	
Variables	**Algorithm**
19. Law imposes procedural constraints on dismissal	• Equals 1 if a dismissal is necessarily unjust if the employer fails to follow procedural requirements prior to dismissal • Equals 0.67 if failure to follow procedural requirements will normally lead to a finding of unjust dismissal. • Equals 0.33 if failure to follow procedural requirements is just one factor taken into account in unjust dismissal cases. • Equals 0 if there are no procedural requirements for dismissal. • Scope for gradations between 0 and 1 to reflect changes in the strength of the law.
20. Law imposes substantive constraints on dismissal	• Equals 1 if dismissal is only permissible for serious misconduct or the fault of the employee. • Equals 0.67 if dismissal is lawful according to a wider range of legitimate reasons (misconduct, lack of capability, redundancy, etc.). • Equals 0.33 if dismissal is permissible if it is 'just' or 'fair' as defined by case law. • Equals 0 if employment is at will (i.e. no cause dismissal is normally permissible). • Scope for gradations between 0 and 1 to reflect changes in the strength of the law.
21. Reinstatement normal remedy for unfair dismissal	• Equals 1 if reinstatement is the normal remedy for unjust dismissal and is regularly enforced. • Equals 0.67 if reinstatement and compensation are, de jure and de facto, alternative remedies. • Equals 0.33 if compensation is the normal remedy. • Equals 0 if no remedy is available as of right. • Scope for further gradations between 0 and 1 to reflect changes in the strength of the law.
22. Notification of dismissal	• Equals 1 if by law or binding collective agreement the employer has to obtain the permission of a state body or third body prior to an individual dismissal. • Equals 0.67 if a state body or third party has to be notified prior to the dismissal. • Equals 0.33 if the employer has to give the worker written reasons for the dismissal. • Equals 0 if an oral statement of dismissal to the worker suffices. • Scope for further gradations between 0 and 1 to reflect changes in the strength of the law.
23. Redundancy selection	• Equals 1 if by law or binding collective agreement the employer must follow priority rules based on seniority, marital status, number of dependants, etc., prior to dismissing for redundancy. • Equals 0 otherwise. • Scope for further gradations between 0 and 1 to reflect changes in the strength of the law.
24. Priority in re-employment	• Equals 1 if by law or binding collective agreement the employer must follow priority rules relating to the re-employment of former workers. • Equals 0 otherwise. • Scope for further gradations between 0 and 1 to reflect changes in the strength of the law.
30. Codetermination: board membership	• Equals 1 if the law gives unions and/or workers the right to nominate board-level directors in companies of a certain size. • Equals 0 otherwise. • Scope for further gradations between 0 and 1 to reflect changes in the strength of the law.
31. Codetermination and information/consultation of workers	• Equals 1 if the works councils or enterprise committees have legal powers of co-decision making. • Equals 0.67 if works councils or enterprise committees must be provided by law under certain conditions but do not have the power of co-decision making. • Equals 0.5 if works councils or enterprise committees may be required by law unless the employer can point to alternative or pre-existing alternative arrangements. • Equals 0.33 if the law provides for information and consultation of workers or worker representatives on certain matters but where there is no obligation to maintain a works council or enterprise committee as a standing body. • Equals 0 otherwise. • Scope for further gradations between 0 and 1 to reflect changes in the strength of the law.

Appendix B*
Methodological approach to the econometric analysis

This appendix provides information on the methodology used in the empirical part of the chapter for estimating the effect of employment legislation on labour market outcomes. We leverage the new CBR-LRI indicator of EPL and the DFE sub-indicator – as presented in Section A of the chapter – and include in the analysis 63 countries between 1993 and 2013. Classical econometric panel-data analysis has been developed for cases in which the number of observations is large and the number of time periods is fixed. Theory proposes various methods for estimating panel regressions where fixed effects (FE) and random effects (RE) estimations are the usual starting points (Baltagi, 2013). We test between these options and opt for the FE model with standard errors clustered at the country level. Additionally, the analysis performs pooled Ordinary Least Square (OLS) regression and a Generalised Method of Moments (GMM) estimation. In all cases, we estimate the following model (Bassanini and Duval 2006; Lazear, 1990; Addison and Texeira, 2003):

$$y_{it} = \alpha_t + \beta * y_{it-1} + \gamma * EPL_{i,t} + \delta * \sum_j X_{it}^j + e_{it}$$

Where y_{it} denotes the unemployment rate of country i at time t; y_{it-1} is its lagged value, EPL is the measure that captures the strictness of the employment law (as measured by either the overall EPL indicator or the DFE sub-indicator); X is the set of covariates included to control for macroeconomic fluctuations (GDP growth, trade openness, inflation and general government net lending/borrowing); while α_t represents time specific fixed effects and e_{it} are the standard errors. Table 4B.1 presents the variables used in the analysis.

The results of the empirical analysis are shown in table 4B.2 – where panel A presents the results for the specifications that include the EPL overall indicator and panel B those for the models with the DFE sub-indicator. Regressions are run separately for the entire sample in the database – 63 countries – and then for advanced economies (36 countries) and emerging and developing economies (27 countries) separately. In each case, the same model (discussed above) is estimated with a pooled OLS (first column), a FE specification (second column) and a GMM estimation (third column). The OLS estimation presents robust standard errors; while in the FE estimation standard errors are clustered at the country level. These two models use yearly values (presented in table 4B.2) as well as three year averages to smooth business cycle fluctuations. However, the latter results generally match with those obtained in the baseline specification of annual averages and are not reported in the table below.

Turning to the GMM model, this is computed using three year averages – thus the results are not strictly comparable with those obtained in the models discussed above with the OLS and FE specifications. In this model, the lag of the unemployment rate, the lag of the EPL (or DFE) indicators and the lag of the inflation rate are treated as endogenous variables; while all other dependent variables are treated as exogenous. The model uses the two-step procedure with Windmeijer

Table 4B.1

Summary of variables used in the empirical analysis

Variable	Definition	Number of countries	Years	Source
EPL/DFE indicators	EPL and DFE indicators of employment law	63	1993–2013	CBR-LRI Database
Unemployment rate	Total unemployment rate (%). Point Estimate	63	1993–2013	GET Database
GDP growth	GDP growth at time *t* (%)	63	1993–2013	GET Database
Inflation	Annual change in the consumer price index	63	1993–2013	IMF World Economic Outlook Database
Government net lending/borrowing	Net acquisition of financial assets minus net incurrence of liabilities as a share of GDP	63	1993–2013	IMF World Economic Outlook Database
Trade openness	Sum of exports and imports of goods and services as a share of GDP	63	1993–2013	World Bank Development Indicators

Source: ILO Research Department.

* Excellent research assistance was provided by Dragos Adascalitei.

Table 4B.2

Empirical analysis of unemployment rates

Panel A. Results of different econometric specifications using the EPL indicator

	Total Sample			Advanced			Emerging and developing		
	Pooled OLS	FE	GMM	Pooled OLS	FE	GMM	Pooled OLS	FE	GMM
Lag of unemployment	0.959***	0.878***	1.603**	0.980***	0.872***	1.133***	0.964***	0.855***	0.960*
	(91.81)	(24.12)	(3.27)	(58.1)	(27.89)	(5.75)	(66.86)	(10.65)	(2.53)
GDP growth	–0.108***	–0.165***	–0.439	–0.269***	–0.310***	–0.299	–0.05*	–0.064***	–0.597
	(–6.82)	(–5.01)	(–0.90)	(–8.69)	(–8.70)	(–0.73)	(–4.41)	(–2.99)	(–1.79)
Trade openness	0.00188*	–0.00838	0.0561	0.00323*	–0.0173	–0.0212	0.000156	–0.00263	0.0739
	(2.3)	(–1.45)	(1.16)	(2.12)	(–1.82)	(–0.67)	(0.15)	(–0.39)	(1.46)
Inflation	0.0125	0.0118	0.421	0.0380**	–0.0111	–0.277	0.00551	0.0114**	0.306
	(1.86)	(1.67)	(0.79)	(2.95)	(–0.98)	(–0.55)	(0.73)	(2.82)	(0.34)
Government net lending/borrowing	–0.0475***	–0.0564**	–1.183*	–0.0472***	–0.0574*	–0.785*	–0.0322*	–0.0373	–0.937***
	(–5.22)	(–2.83)	(–2.45)	(–4.29)	(–2.24)	(–2.45)	(–2.13)	(–1.62)	(–3.60)
EPL	–0.000424	–0.00924	–0.164	0.00287	–0.0247	–0.0171	–0.00756	–0.00682	–0.137
	(–0.24)	(–0.80)	(–0.78)	(1.24)	(–1.58)	(–0.31)	(–1.84)	(–0.48)	(–0.87)
N	1180	1180	363	678	678	209	502	502	154
R-squared	0.94	0.82		0.94	0.87		0.96	0.78	
σ_u		0.58			0.87			0.63	
σ_e		1.02			0.92			1.01	
ρ		0.24			0.47			0.27	
Number of groups		63	63		36	36		27	27
Number of instruments			16			16			16
Hansen j-test (p value)			0.23			0.77			0.43
AB serial correlation test (p-value)			0.70			0.54			0.907

Panel B. Results of different econometric specifications using the DFE indicator

	Total Sample			Advanced			Emerging and developing		
	Pooled OLS	FE	GMM	Pooled OLS	FE	GMM	Pooled OLS	FE	GMM
Lag of unemployment	0.959***	0.890***	0.850*	0.984***	0.878***	0.661***	0.967***	0.856***	0.705***
	(91.6)	(25.12)	(2.13)	(60.15)	(28.16)	(4.14)	(72.12)	(11.59)	(5.37)
GDP growth	–0.121***	–0.16***	–0.238	–0.26***	–0.315***	–0.427*	–0.057***	–0.0648**	–0.222
	(–7.40)	(–5.11)	(–0.95)	(–8.76)	(–9.41)	(–2.03)	(–4.14)	(–2.98)	(–1.13)
Trade openness	0.00193*	–0.00825	0.0366	0.00362*	–0.0168	–0.00269	0.000538	–0.00297	–0.00425
	(2.35)	(–1.44)	(1.25)	(2.19)	(–1.82)	(–0.14)	(0.44)	(–0.45)	(–0.27)
Inflation	0.0127	0.0117	0.203	0.0392**	–0.0115	0.154	0.00626	0.0114**	0.0283
	(1.9)	(1.66)	(0.60)	(3.01)	(–0.91)	(1.04)	(0.85)	(2.39)	–0.21
Government net lending/borrowing	–0.0471***	–0.0555**	–0.652*	–0.0450***	–0.0519*	–0.170	–0.027	–0.0375	–0.0161
	(–5.15)	(–2.91)	(–2.20)	(–4.18)	(–2.11)	(–0.98)	(–1.71)	(–1.64)	(–0.15)
DFE	–0.000828	–0.00245	0.093	0.00000757	–0.0044	–0.0312	–0.007*	0.000349	–0.0337
	(–0.56)	(–0.41)	(1.14)	0	(–0.66)	(–0.64)	(–2.02)	(0.06)	(–0.76)
N	1180	1180	363	678	678	209	502	502	154
R-squared	0.95	0.81		0.97	0.87		0.96	0.78	
σ_u		0.57			0.73			0.67	
σ_e		1.02			0.92			1.03	
ρ		0.23			0.38			0.29	
Number of groups		63	63		36	36		27	27
Number of instruments			16			16			16
Hansen j-test (p value)			0.62			0.15			0.612
AB serial correlation test (p-value)			0.13			0.16			0.469

* p<0.05 ** p<0.01 *** p<0.001

Note: The dependent variable is in all models the unemployment rate. For each group of countries (total sample, developed economies and emerging and developing economies), regressions are computed with a pooled Ordinary Least Square (OLS), a Fixed Effect model (FE) and the Generalised Method of Moments (GMM) estimation. The OLS and FE models are computed using yearly values. The GMM is computed using three year averages and treating the lag of the unemployment rate, the lag of the DFE indicator and the lag of the inflation rate as endogenous variables; while treating as exogenous the other control variables. All models include year dummies. The DFE indicator is included in the regressions on a scale from 0 to 100, corresponding to the score of 0 to 1 described in the text.

Source: ILO Research Department.

standard errors – which should provide a more accurate estimation of both the coefficients and the standard errors (see for instance Kucera and Principi, 2014). The table below also reports the p-values for the Hansen *J* test – whose null hypothesis is that the instruments are not correlated with the residuals – and for the Arellano-Bond test – of second order serial correlation in the residuals. Across the different specifications, these tests generally provide evidence for the validity of the instruments chosen.

Overall, the results generally point towards a statistically insignificant effect of the stringency of employment law on unemployment rates – both in advanced economies as well as emerging and developing. This is true especially in the specifications with the overall EPL indicator (panel A); while the coefficient for the DFE indicator is either positive or negative across models – but always statistically insignificant (panel B).[12]

Additional specifications – not reported below – have been performed to explore the possible non-linearity in the relationship between employment law and unemployment rate – following ILO (2012) – but no supporting evidence emerges. Finally, the analysis is performed using as dependent variables other labour market indicators (e.g. employment rate, share of self-employment) and socio-economic variables (e.g. labour share, human development index); but the results are not statistically significant across specifications – and not reported in this appendix.

These results are in line with those obtained by a number of studies that find no statistically significant effect of EPL on aggregate labour market indicators – see for example Baccaro and Rei (2006) for a review of the debate and IMF (2015) for a recent application. The present analysis confirms this result; while contributing to the existing literature by using a new indicator of employment protection and covering a wide range of advanced, emerging and developing countries.

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[12] The DFE indicator is negative and statistically significant only in the pooled OLS estimation for emerging and developing countries.

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5 CHANGES IN GLOBAL PRODUCTION PATTERNS AND IMPACTS ON ENTERPRISES AND EMPLOYMENT

Introduction

While Chapters 3 and 4 focused on the domestic policy dimensions of the changing employment patterns described in Chapters 1 and 2, this chapter addresses the potential role of a key global factor, namely the development and expansion of global supply chains (GSCs), in shaping some of the employment and income patterns that are currently being observed.

One of the key characteristics of the global economy is the increasing fragmentation of production into different activities and tasks along GSCs, with profound socio-economic impacts (OECD et al., 2014). The rise in GSCs has been facilitated by the reduction in trade and transport costs and by advancements in information and communication technology (ICT). Together, these forces have transformed the world into an interconnected and multipolar production and trading arena. Physical distance is no longer such an obstacle to the movement of goods, services and information. Consequently, the way in which the world economy is structured has dramatically shifted, bringing new types of benefits and risks with differing implications for firms and workers in both advanced and emerging economies.

Section A of this chapter begins with an examination of global trends in the internationalization of production and presents estimates of the number of jobs linked to GSCs. Section B discusses the results of a sector-level analysis in which empirical relationships between firms' GSC participation and selected indicators of work quality are explored, from the perspectives of both the lead firm and the supplier firm. It then discusses the economic benefits and caveats relating to GSCs for firms, in particular highlighting the conditions under which firms' economic gains due to engagement in GSCs can be accompanied by improved working conditions. Finally, the section provides some case-study evidence from the garment and electronics sector. Section C discusses the policy implications of the chapter's findings.

A. Global production patterns and organization of work across borders

This section presents stylized facts on the incidence of GSCs in the world economy. For the purpose of this analysis, and in line with the literature, GSCs are defined as demand–supply relationships that arise from the fragmentation of production across borders, where different tasks of a production process are performed in two or more countries.[1] An example of such a task would be the production of an intermediate input (for instance, car seats or electronic controls) that is required to produce the final output (such as automobiles). It could also be the provision of a particular service (e.g. transport, needed to bring goods to consumers). Firms engage in GSCs either as lead firms, which allocate individual production tasks outside their home country, or as suppliers that perform these tasks for lead firms in other countries.

There are two ways in which lead firms participate in GSCs. First, lead firms can engage *directly* by offshoring or outsourcing selected production stages to foreign countries. When offshoring, firms engage in foreign direct investment (FDI) and either purchase an existing specialized supplier or set up a new production facility in another country. In that case, the task that is performed abroad remains within the ownership boundaries of the lead firm. In contrast, outsourcing refers to an arm's length contract relationship with an independent supplier that performs a particular task for the lead firm. Second, lead firms can be engaged in GSCs *indirectly*, when purchasing a production input from a domestic supplier that, in turn, receives some of its inputs from abroad. With an ever-greater number of direct and indirect supply relationships between firms, GSCs have become increasingly complex (Meixell and Gargeya, 2005).

More than one in five jobs is estimated to be linked to global supply chains …

Based on the above definition, this section provides an estimate for the number of jobs linked to GSCs. For any given country, this estimate is taken as the number of jobs that contribute to the production of goods and services that either are consumed in other countries (i.e. final goods and services) or are further processed in other countries (i.e. intermediate goods and services). See box 5.1 for a more detailed presentation of these estimates and Appendix A for details on the methodology and a comparison with estimates from other institutions.

Based on the ILO methodology, it is estimated that the number of GSC-related jobs has increased rapidly over the past decades, both in absolute terms and as a share of total jobs. Out of 40 countries with available data to which the methodology could be applied, 453 million people were employed in GSCs in 2013, compared with 296 million in 1995 (figure 5.2).[2] Most of the overall increase is driven by emerging economies, where GSC-related jobs grew by an estimated 116 million. Overall, GSC-related jobs represent 20.6 per cent of total employment among the countries analysed, compared with 16.4 per cent in 1995.[3]

However, much of this increase took place between 1995 and 2007, with GSCs rapidly expanded during the 90's and early 2000's, while their expansions slowed during the late 2000's (Constantinescu, et al., 2015). The recent slowdown is also due principally to changes among emerging economies: in the sample countries, GSC-related jobs in emerging economies increased by 160 million during the pre-crisis period from 1995 to 2007, and then decreased by 44 million during the post-crisis period between 2008–13.

1 See also Krugman (1995) and Antràs and Chor (2013) for similar definitions.

2 If only those jobs linked to the exports of intermediates were considered, and jobs linked to the exports of final goods were excluded from the estimate, the number of GSC-related jobs would be just above 250 million. This figure essentially excludes those workers in the supply chain whose task is the final assembly of products and, hence, severely underestimates the true number of workers linked to GSCs (see also box 5.1).

3 Timmer et al. (2014) present global value chain employment figures, which include all workers who form part of the domestic and international value chain producing global manufacturing output. However, they also include cases where the value chain is entirely domestic. Based on this methodology, Timmer et al. (2014) find that 855 million workers worldwide formed part of the global value chain in 2008 – approximately double the number found using the ILO methodology. See Appendix A for further details.

Box 5.1

The ILO methodology for assessing the number of jobs related to GSCs

This report uses a macroeconomic methodology that provides consistent and comparable figures for the number of jobs related to GSCs of 40 countries with available data, disaggregated into 35 sectors.[1] The 7 emerging economies included are Brazil, China, India, Indonesia, Mexico, the Russian Federation and Turkey, while the 33 advanced economies are represented by Australia, Canada, EU-27 countries,[2] Japan, Republic of Korea, Taiwan (China) and the United States.[3] It should be noted that although countries for which estimates are available cover around two-thirds of the global labour force, these are not global estimates.

The number of jobs related to GSCs is estimated using the World Input–Output Database (WIOD) combined with socio-economic accounts on sectoral employment for the period 1995–2011. Estimates for 2012–13 are derived from a forecasting model for GSC-related jobs. The methodology takes into account all jobs related directly or indirectly to exported output. Output can either be used as an intermediate input into the production of a final good or can be the final good itself, which is sold to consumers.

More specifically, figure 5.1 shows how GSC-related jobs are estimated using the hypothetical example of India's garment sector. The squares in the diagram reflect the country and sector of production, while the hexagons reflect the destination of trade for the output of a particular sector. In the chart, all Brazilian jobs related to the production of chemicals that are exported as intermediates to India's garment sector count as GSC-related jobs. Also, the jobs of 80 per cent of workers in India's cotton sector, which are related to producing intermediates for India's garment industry, would indirectly be counted as GSC-related jobs. Finally, 80 per cent of the jobs in India's garment sector (i.e. those jobs corresponding to the share of final output which is exported) count as GSC-related jobs. Indian jobs related to the 20 per cent of final production of garments to be sold in India do not count as GSC-related jobs.

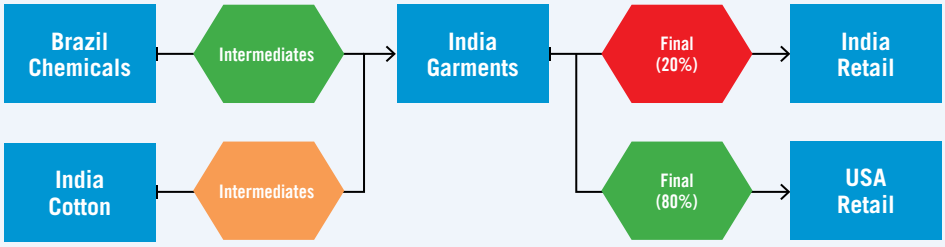
The macroeconomic methodology imputes GSC-related jobs based on a sector's average labour productivity, taking the whole value chain involved in producing the product into consideration. Despite the fact that firm heterogeneity within sectors cannot be taken into account, this method provides a comprehensive estimate of jobs linked to GSCs. The methodology also accounts for offshoring and outsourcing taken together, because the specific contributions of these two processes cannot be disentangled in input–output tables.

The ILO's estimate of GSC-related jobs should be interpreted as an upper bound estimate of the true number of jobs linked to GSCs in the countries analysed. First, there is evidence that productivity in exporting firms tends to be higher, suggesting that exporters use relatively fewer inputs, including less labour, than non-exporters to produce their share in output (Bernard et al., 2007). Second, in some instances, certain exports of final goods should not be counted as forming part of GSCs (by contrast, exported intermediate goods and services are, by definition and in all cases, part of a GSC). For example, jobs related to the final assembly of mobile phones exported from China to the United States should, in principle, not be counted as part of a GSC if the lead firm is a company based in China (they would, however, be related to a GSC if the lead firm were in the United States). Data limitations prevent an assessment of the volume of exports of final goods and services by the country of origin of the lead firm. Therefore, similar to other studies (OECD et al., 2013, 2014; UNCTAD, 2013), the ILO methodology takes into account all exports of final goods and services, regardless of the country of origin of the lead firm. Indeed, excluding jobs related to the exports of final goods from the estimate of GSC-related jobs would be problematic as this would eliminate all outsourced or offshored jobs related to the assembly of final products and would greatly underestimate the actual number of GSC-related jobs.

1 As an alternative, firm-level data could be used to obtain a detailed account of the number of jobs related to GSC activities within an economy. However, such an approach is not feasible on a broad-based scale, owing to coverage and comparability issues across countries. 2 Figures for EU-28 countries cannot be produced due to the lack of data for Croatia. 3 The classification is based on the G20 classification of advanced and emerging economies, with the exception of Taiwan (China).

Figure 5.1

Accounting for GSC-related jobs: An illustration of the chapter's methodology



Source: ILO Research Department.

The decline in GSC-related jobs in the aftermath of the 2007–08 global crisis, especially in the emerging economies that form part of the sample, is likely the result of a number of factors. First, the number of GSC-related jobs and their share in total employment has declined, partly associated with the fact that the crisis hit some export-oriented sectors, such as transport equipment and machinery particularly hard (Escaith, 2010; OECD, 2010). Second, enhanced availability of domestic inputs in some emerging countries (e.g. China) and reduced trade in intermediate inputs of those countries is estimated to explain part of the slowdown in global trade growth since the crisis (IMF and WB, 2015). Finally, there is also some evidence that, as a result of the crisis, previously outsourced or offshored activities were brought back to the country of origin of the lead enterprise – a so-called "insourcing" or "re-shoring" of production (Constantinescu et al., 2015; Buono and Vergara Caffarelli, 2013). These trends might indicate an increased perception of risk related to GSCs during the crisis (Blome and Schoenherr, 2010).

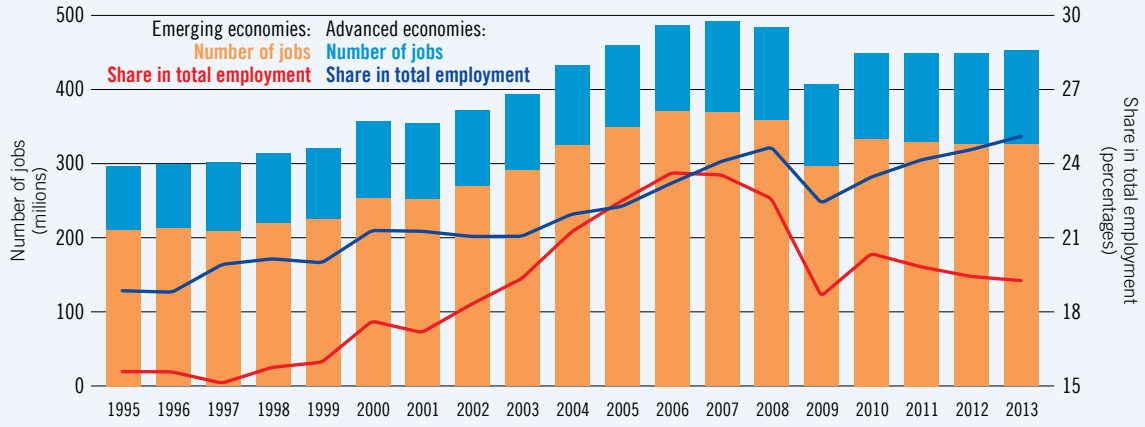
It remains to be seen whether this is a short-term phenomenon related to the above factors and overall weak aggregate demand or the beginning of a longer term trend, arising as a consequence of shrinking differences in wages between countries and therefore less potential for offshoring or outsourcing to create savings on production costs, or enhanced ability of emerging countries to substitute foreign inputs with domestic ones. The stagnant expectations for trade growth in the coming years suggest that the number of GSC-related jobs is not likely to rebound in the near future (WTO, 2015).

In terms of the importance of GSC-related jobs, among the 40 countries included in the estimate, the largest shares in total employment are observed in Taiwan (China), where more than half of all workers are employed in GSC-related jobs, followed by the Republic of Korea and the EU-27, where around one-third of workers are in GSC-related jobs (figure 5.3). The labour markets which are least dependent on foreign demand are those of Japan and the United States, where on average less than 15 and 10 per cent of workers in the most recent 2008–2013 period, respectively, have GSC-related jobs. This finding is partly due to the large internal market and domestic-oriented supply chains (Baldwin and Lopez-Gonzalez, 2014; UNCTAD, 2013), but also due to the fact that outsourcing or offshoring to high-cost locations such as Japan and the United States – across a wide range of sectors – is likely to be less profitable for foreign firms than other locations (Jackson, 2013).

Since the crisis, the economies with largest shares of GSC-related jobs, notably the Republic of Korea Taiwan (China), and the EU-27 witnessed an increase in their shares compared to the pre-crisis period. While, most of the emerging economies (Brazil, China, Indonesia, Mexico and the Russian Federation) as well as the resource-driven advanced economies (Australia and Canada), have seen a decrease in the share of GSC-related jobs in total employment in 2008–13 period

Figure 5.2

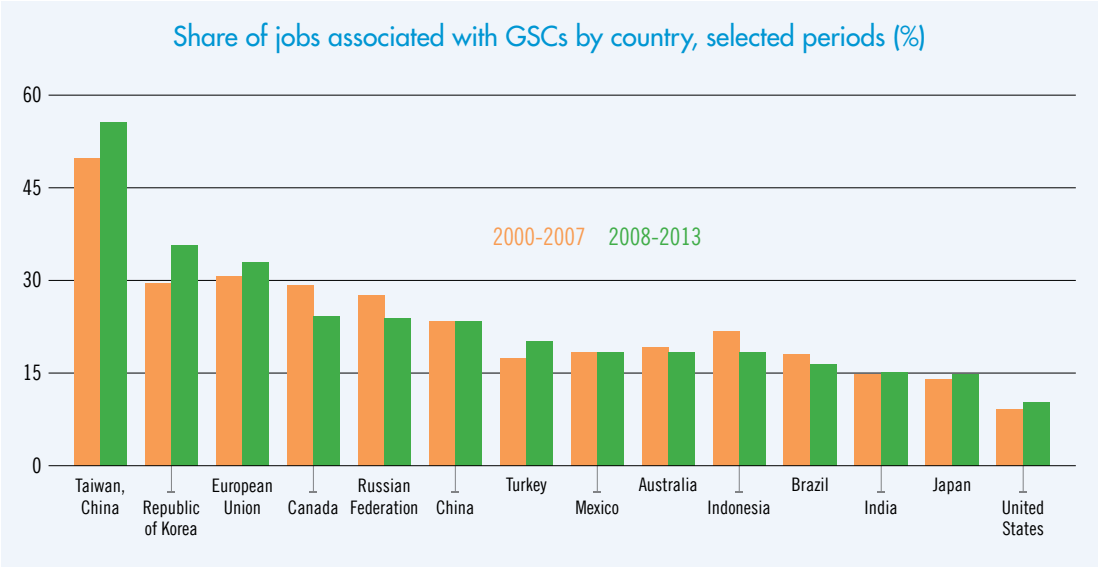
Number and share of jobs associated with GSCs, 1995–2013



Note: This chart shows, on the left-hand scale, the number of GSC-related jobs and, on the right-hand scale, the share of GSC-related jobs in total employment. See box 5.1 for details on the methodology and the list of countries included in the calculations illustrated.

Source: ILO Research Department estimates based on WIOD.

Figure 5.3



Note: This chart shows the average share of GSC-related jobs in total employment for the periods depicted. "European Union" refers to the EU-27 countries. See box 5.1 for details on the methodology.

Source: ILO Research Department estimates based on WIOD.

compared with 2000–2007 period.[4] This suggests, the continued importance of GSC related jobs in advanced economies, in spite of their overall decline in absolute terms. Part of the reason is owing to a higher share of GSC related jobs in the services sector which has been more resilient in some advanced economies (compared with manufacturing). In some of the large emerging economies and a few advanced economies (e.g. Australia and Canada), economic activity, and hence GSC-related jobs, are related to the extraction and processing of natural resource commodities. These sectors tend to have relatively low employment intensities and thus, there is less scope for experiencing employment growth in these activities, which may have led to a decline in the share of GSC-related jobs over the periods. In addition, the decline in the share of GSC-related jobs may also suggest stronger employment growth in other domestic-oriented sectors.

… including the employment of a large proportion of women…

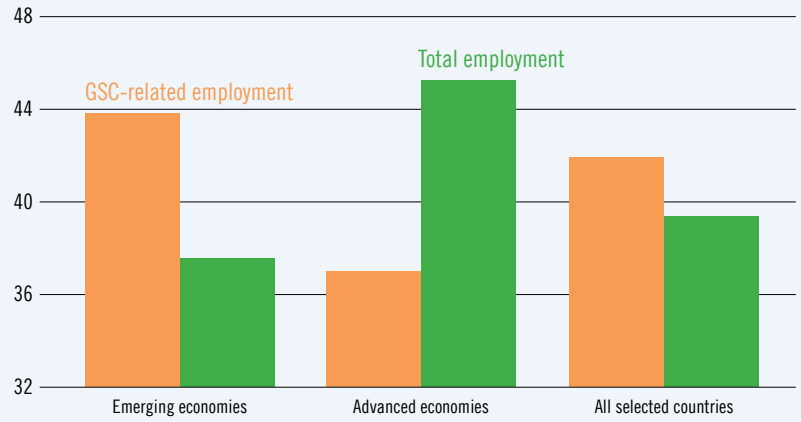
Overall, almost 190 million women were found to be working in GSC-related jobs in the 40 countries for which estimates were available. The share of women in total GSC-employment has broadly remained constant, corresponding to 41.9 per cent in 2013 compared with 41.6 per cent in 2000 (figure 5.4). This share is 2.5 percentage points higher than the share of women in total employment in 2013. These figures suggest that the rise of GSCs may help to mitigate persistent differences in employment trends across sexes, although differences in job quality remain large (see section B).

However, there are considerable regional variations. In emerging economies, women's share in GSC-related employment is higher than their share in total employment and it has been increasing over the past decade, which broadly reflects the global pattern. In advanced economies, women accounted for a significantly lower share in GSC-related jobs than in total employment throughout the 2000–13 period. While women's share in total employment increased between 2000 and 2013, the share of women in GSC-related jobs remained broadly unchanged. One reason for the stagnant gains in the share of women in GSC-related jobs in advanced economies is the retrenchment in female manufacturing jobs over this period. Although the share of women in GSC-related services jobs is higher than in manufacturing in advanced economies, the growth in GSC-related services jobs was not sufficient to offset the negative trend in manufacturing.

[4] These country-specific trends in GSC-related jobs are broadly consistent with trends in estimates of jobs sustained by foreign final demand presented in OECD et al. (2013).

Figure 5.4

Share of women employed in GSCs and in the total economy, 2013 (%)



Note: This chart shows the share of female employment as a percentage of GSC-related jobs (orange column) and as a percentage of total employment (green column). See box 5.1 for details on the methodology and the list of countries included in the calculations illustrated.

Source: ILO Research Department estimates based on WIOD and ILO, *Trends Econometric Models*, October 2014.

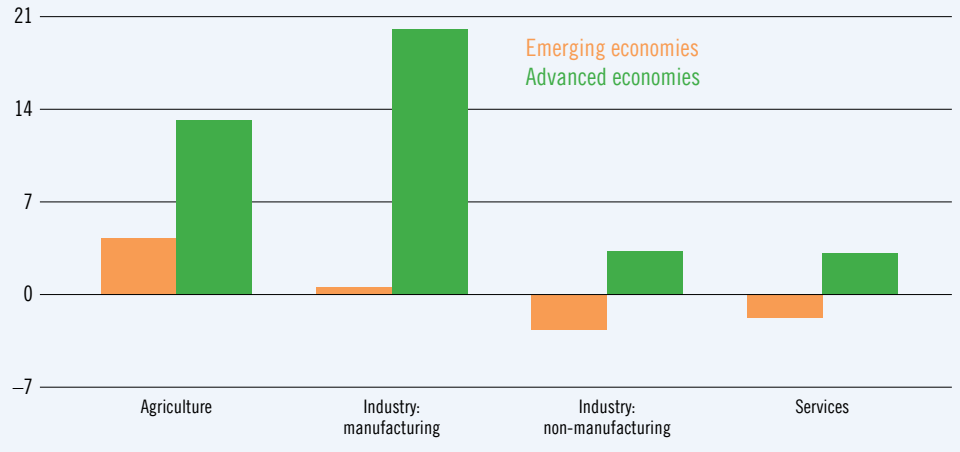
… and a growing incidence of global supply chain related jobs in the services sector.

Between 2000 and 2013, employment gains in services sectors were the main factor behind the rise in the number of GSC-related jobs in the 40 countries considered. However, in emerging economies, manufacturing has been the predominant sector in GSC-related job creation – consistent with the strong overall employment growth in this sector. In advanced economies, the number of GSC-related jobs in agriculture and industry has remained relatively stable, despite an overall decline in the number of jobs in these sectors, leading to an increase in the share of GSC-related jobs in proportion to the total number of sectoral jobs (figure 5.5).

Most of the GSC-related services jobs can be found in wholesale and retail trade as well as in transport and logistics, which are intrinsically more closely linked to GSCs than other services sectors. Much of the increase in GSC-related services jobs in developed economies is, however, also driven by the business services sector, which includes services such as consulting and IT.

Figure 5.5

Change in the share of GSC-related jobs by sector, 2000–13 (percentage points)



Note: This chart shows the change between 2000 and 2013 in the share of GSC-related jobs as percentage of total employment in different sectors. See box 5.1 for details on the methodology and the list of countries included in the calculations illustrated.

Source: ILO Research Department estimates based on WIOD and ILO, *Trends Econometric Models*, October 2014.

The growth in GSC-related services jobs reflects the increased tradability of services, made possible by the IT revolution, which has considerably reduced transaction costs related to services, allowing for an almost instantaneous exchange of information (Blinder, 2009). As a consequence, a large range of services can be provided over almost unlimited distances, which has boosted the importance of the role that services play in GSCs. A further factor underlining the increase in GSC-related services jobs is the "servicification" of manufacturing (Lodefalk, 2010) or the "manu-service" economy (Bryson and Daniels, 2010), which refers to the increased use of services in manufacturing, both in terms of production and sales (Low, 2013; UNCTAD, 2014a). Servicification of manufacturing implies direct and indirect linkages between manufacturing and services, and the so-called "employment multiplier effect" (Kommerskollegium, 2010), where jobs are created not only in the services sectors directly incorporated in manufacturing, but also in the services that are indirectly associated with the directly incorporated services.

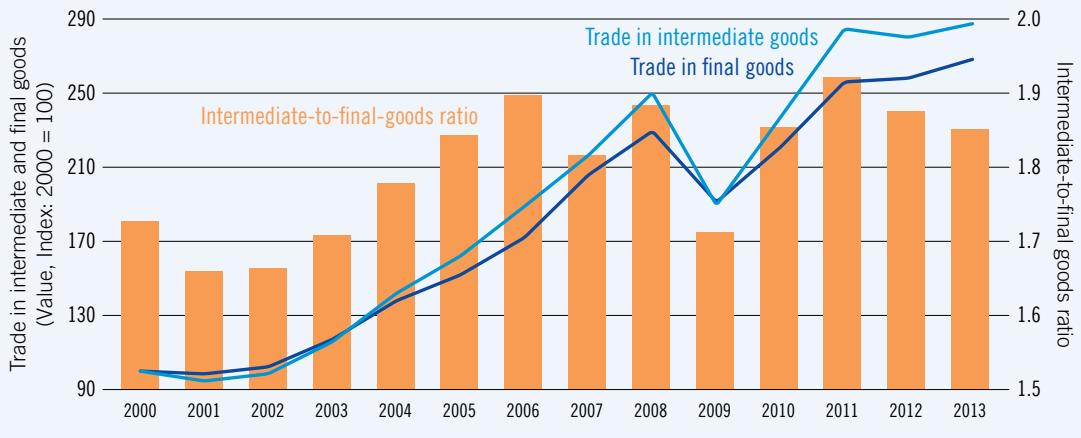
Patterns of trade in intermediate goods provides clues to the evolution of global supply chains …

Almost two-thirds of total goods trade is accounted for by intermediate goods. The share of intermediates in total goods trade has remained broadly constant in the longer term. However, more recently, intermediate goods trade has been growing more quickly than final goods trade, a trend that is probably driven by an increasing fragmentation of the production process (figure 5.6). First, more generally, products have become more and more sophisticated over time, requiring more production stages before final assembly, which may lead to a stronger increase in intermediates trade than final goods trade (Backer and Miroudot, 2013). Second, these complex intermediate production tasks – at least until recently – have increasingly outsourced or offshored to foreign destinations. These tasks involve the production of intermediates rather than the assembly of inputs to the final good, leading also to a corresponding increase in trade in intermediates.

However, as discussed above, the crisis hit global trade flows hard in 2009, causing a decline of around 20 per cent in the value traded compared with the previous year (UNCTAD, 2010). Intermediate goods trade reacted more severely to the downturn than did final goods trade. This is an indication of the so-called bullwhip effect (Forrester, 1961; Altomonte et al., 2012), which describes the phenomenon whereby reductions in final demand lead to even larger reductions in intermediate demand. This occurs because exporters rely on their inventories rather than ordering new inputs, which decreases intermediate goods exports more than final goods exports. In addition, input suppliers face increased uncertainty about the behaviour of the demand for those final goods for which their inputs are required (Ferrantino and Taglioni, 2014). A bullwhip effect has so far been absent following the second trade slowdown in 2012–13.

Figure **5.6**

Global trade in intermediate and final goods



Note: This chart shows, on the left-hand-scale, indices for the value of intermediate and final goods trade (2000 = 100) and, on the right-hand-scale, the ratio of trade in intermediate goods and trade in final goods in terms of values. Global figures are based on export data for 102 countries that have reported data in every year between 2000 and 2013.

Source: ILO Research Department calculations based on OECD Structural Analysis (STAN) database.

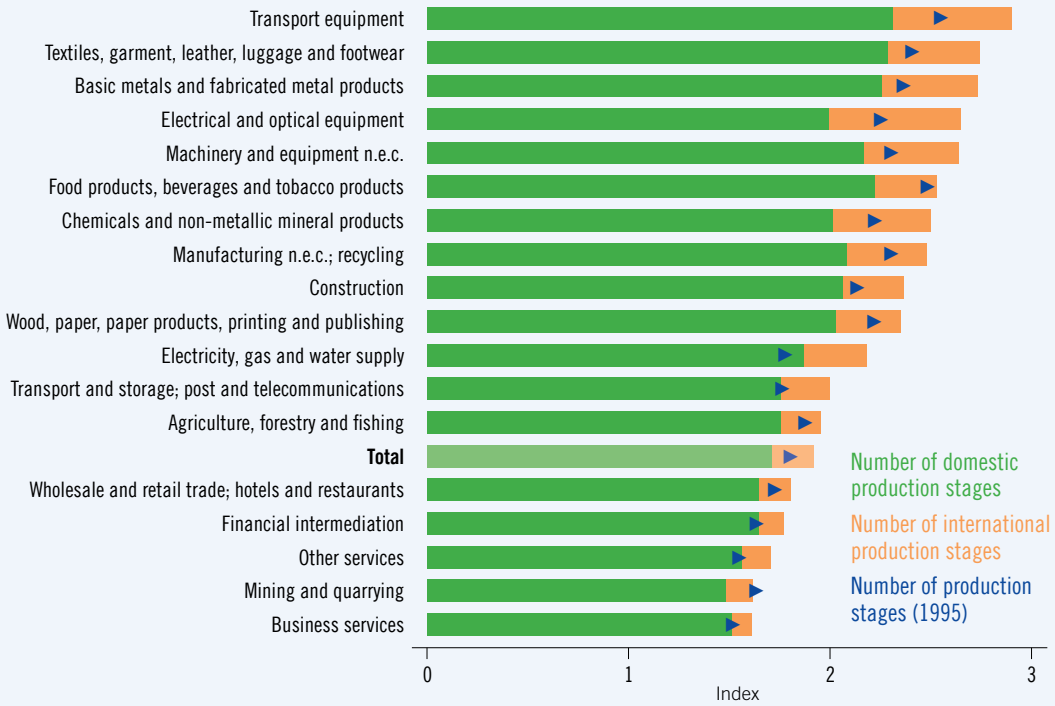
… as does measurement of the increasing fragmentation of production processes.

Figure 5.7 presents evidence on the increase in the number of production stages over time in almost all sectors, as an index of the overall number of production stages. The complexity of products differs across sectors and it is particularly those sectors in which the production of goods is fragmented into a large number of different tasks that have a higher likelihood of participating in GSCs. These sectors offer the potential for more tasks to be outsourced or offshored to foreign countries. The highest number of production stages is found in transport equipment, textiles and garment manufacture, basic metals and fabricated metal products, and electrical and optical equipment. The value chain is also relatively long in the production of machinery, food products and beverages, and chemicals and non-metallic mineral products. In contrast, agriculture and mining and quarrying are the sectors with the smallest potential to undergo an international fragmentation of production. While contributing increasingly to GSCs for other sectors' final products, the production of services itself also has a relatively small potential to be internationally fragmented.

Distinguishing between the domestic and the international part of the value chain, it is electrical and optical equipment that has the highest share of production stages performed in foreign countries. This also includes the production of personal computers (PCs), portable devices and telecommunication equipment, which is often scattered across a large number of countries. Also, products in the chemicals and transport equipment sector are, to a large extent, manufactured internationally.

Figure 5.7

Number of domestic and international production stages by sector, index



Note: Data on the number of domestic and international production stages (green and orange column, respectively) refer to 2009, which is the latest year available, and cover the world. The abbreviation "n.e.c." stands for "not elsewhere classified". The sector "Chemicals and non-metallic mineral products" also includes coke, refined petroleum products, nuclear fuel, rubber and plastic products. The index has a value of one in case there is exactly one production stage. The values above one should not be interpreted as actual number of production stages, but as an index. See Backer and Miroudot (2013) for methodological details.

Source: OECD based on Backer and Miroudot, 2013.

Foreign direct investment plays a significant role in the development and patterns of GSCs …

The formation of GSCs not only impacts on international trade flows, but also on FDI. It has been estimated that around one-third of global trade is intra-firm trade and hence probably related to offshoring (Lanz and Miroudot, 2011).[5] FDI is also a measure of offshoring activities, including greenfield investments and mergers and acquisitions. FDI inflows and outflows to and from emerging and developing economies tripled between 2000 and 2013, with only a small blip in 2009 caused by the crisis. By contrast, FDI inflows and outflows to and from advanced economies have more than halved since 2007, declining from close to 1.9 (1.3) trillion USD in the case of outward (inward) FDI to 0.9 (0.6) trillion USD in 2013. This is partly owing to increased aversion to risk and constraints on credit due to the crisis in advanced economies.

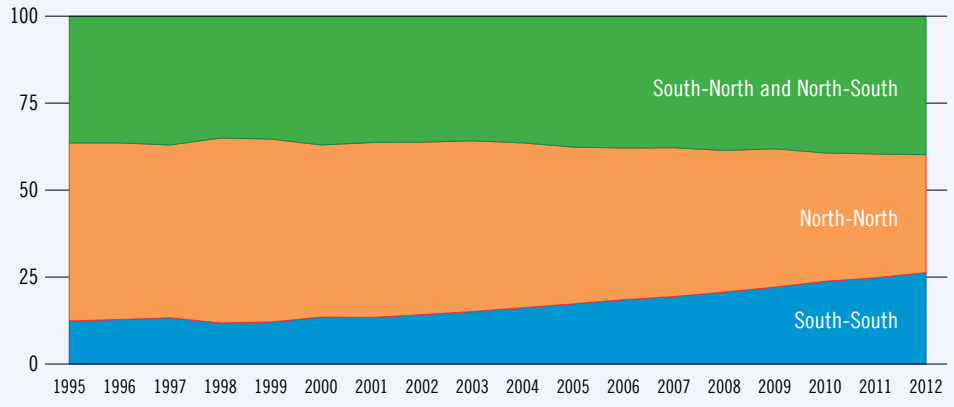
For emerging and developing economies, inward FDI is still significantly higher than outward FDI, but the gap between the two has become steadily smaller since the beginning of the 2000s. This development indicates that firms in emerging and developing economies not only act as suppliers to lead firms in advanced economies, but have increasingly set up production facilities in other countries, participating in GSCs as lead firms. Indeed, there has been a recent trend of transnational corporations from developing economies building up GSCs through the acquisition of foreign affiliates in developed economies that are located in their respective regions (UNCTAD, 2014b). The growth of GSCs in emerging and developing economies through both inward and outward FDI has also been boosted by "export processing zones" (EPZs), special industrial zones with a favourable business environment, including tax exemptions and free provision of infrastructure. EPZs have been set up in some 130 countries for the processing of imported materials that are then re-exported to other countries.[6]

… along with other new forms of engagement of emerging and developing countries in global supply chains …

In line with the increasing FDI coming from developing economies, trade among these countries ("South–South trade") has been on the rise, accounting for almost 5 trillion USD in 2011 and having more than doubled its share in total trade since 1995 (figure 5.8). Also, the share of trade between developing and developed economies has increased over time, albeit to a lesser extent. Another pronounced longer term trend is the decline in trade among developed economies, which is likely to be related to the shift of GSCs that comprised only developed economies to GSCs that now include emerging economies (Athukorala and Nasir, 2012).

Figure 5.8

Trade flows by broad geographic region, 1995–2012 (%)



Source: ILO Research Department calculations based on UNCTAD.

5 The figure is based on a number of assumptions, owing to the lack of transaction-level information on the ownership status of exporter and importer which renders outsourcing and offshoring indistinguishable in the trade data.

6 It is estimated that 66 million people worked in these zones worldwide in 2006, accounting for a large share of workers in GSC-related jobs (Singa Boyenge, 2007; ILO, 2014b).

… and the emergence of regional – as opposed to global – supply chains.

Production stages in GSCs can be scattered globally or regionally. In other words, GSCs can be organized across geographic regions or across different countries within a particular region. While the former is going to boost cross-regional trade, the latter will primarily lead to increased intra-regional trade. The crisis not only led to a decline in total trade but to a change in intra- and inter-regional trade patterns.

There are regional production hubs, notably the EU and North America in the advanced economies region, and Asia, which has seen rapidly expanding regional production networks. Regional trade agreements and free trade areas play an important role in promoting regional production networks. Given appropriate levels of connectivity and physical infrastructure, low–tariff and non-tariff trade barriers within a region provide firms with incentives to shift production into countries of that region.

The ASEAN Free Trade Area (AFTA), for example, has attracted Japanese car manufacturers to produce different parts of the final product in countries of that area (WTO and IDE-JETRO, 2011; Hiratsuka, 2010). Similarly, in North America, the passage of the North American Free Trade Agreement (NAFTA) in 1994 induced some US firms to shift segments of their production process to Mexico.[7] In Europe, the creation of the European Monetary Union (EMU) in the mid-1990s has promoted FDI within the region, giving rise to the so-called German–Central European Supply Chain (GCESC) (IMF, 2013).

When defining advanced economies, Latin America, Africa and Asia as regions, intra-regional trade in Asia represented 16 per cent of the total intra-regional trade value in 2000, but had grown to 35 per cent in 2013. In contrast, advanced economies that used to account for 82 per cent of intra-regional trade in 2000 now account for just 62 per cent. Latin America's share in total intra-regional trade stands at just 2.1 per cent, slightly up from 1.7 per cent in 2000.[8]

B. The impact of global supply chains on employment patterns and enterprises

Trade theory would suggest that the global division of labour through GSCs is economically beneficial for advanced and emerging economies.[9] The overall gains from this process would outweigh adjustment costs and any income losses, thereby entailing net economic benefits. The distribution of these net benefits, however, depends heavily on policies and institutions. While GSCs can create and destroy jobs when parts of the production are shifted across countries, they can also affect different aspects of the quality of jobs, such as wages or the nature of work contracts. In other words, economic benefits do not automatically translate into benefits for workers. This section discusses the channels through which economic and social benefits can materialize as a result of GSC participation.

In order to assess the net impacts of GSCs on countries, firms and workers, it is important to examine how the economic and social benefits and costs are distributed along the value chain. This section therefore presents a sectoral analysis which distinguishes between "backward" and "forward" participation in GSCs and investigates whether a higher level of sectoral participation in GSCs translates into a higher or lower level of labour productivity, average wages and the wage premium on skills. Backward participation refers to GSC participation from the lead firms' perspective and is measured by the value of imported inputs in the overall exports of a particular sector and country. Forward participation takes the supplier firms' perspective and is measured by the share of exported goods and services in a particular sector and country, which are used as imported

7 The emergence of the North American regional supply chain in the garment industry allowed some supplier firms in Mexico to derive economic benefits from interactions with more technology-intensive lead firms in the United States (Gereffi et al., 2002).

8 Numbers have been calculated by the ILO Research Department, based on trade data from UNCTAD.

9 As Baldwin (2013) puts it, GSCs have "revolutionized development options facing poor nations", giving them the possibility of benefitting from the gains generated in the value chain. Indeed, participation in GSCs can provide significant economic benefits to both lead and supplier firms.

inputs to produce other countries' exports (see Appendix B for more details on the methodology and coverage of the analysis).

A sectoral analysis allows us to assess whether stronger GSC participation of a sector as a whole can, on average, be related to increased productivity and profitability. In the absence of firm-level data, such an analysis cannot pin down which firms in the sector (either GSC-related or non GSC-related) are driving these results.[10]

In global supply chain intensive sectors, labour productivity is generally higher …

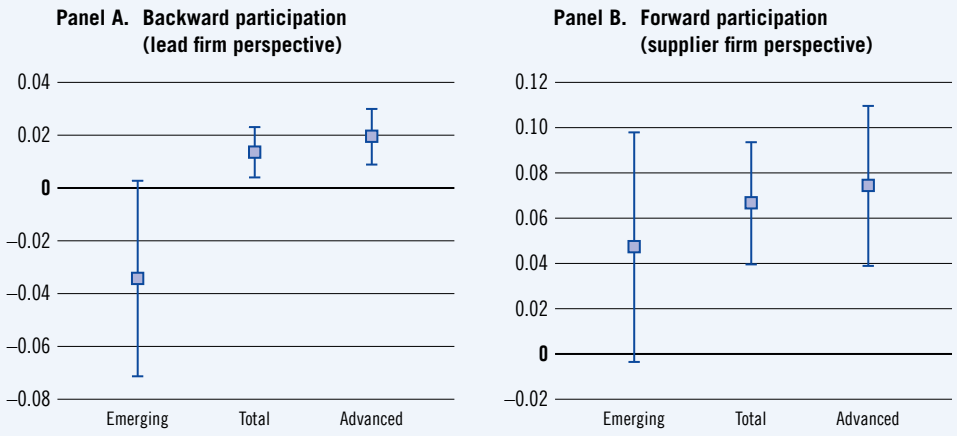
Sectoral analysis suggests that GSC participation is associated with higher productivity – measured as value added per worker (figure 5.9). In essence, sectors that increase their use of imported inputs when producing their exports tend to experience higher productivity levels, at least in advanced economies. For emerging economies, the cost-saving potential of backward GSC participation is lower, given the often lower level of labour costs in these economies, which may then explain the absence of any significant impact at the sectoral level for this group of economies. When considering forward participation, i.e. the participation of sectors in GSCs as suppliers, there is also a large positive and statistically significant productivity effect for developed economies. The effect is not significant for emerging economies.

With regard to backward participation, the empirical firm-level evidence available in the literature strongly supports the premise that there is a positive impact of GSC participation on lead firms' productivity and profitability, in line with the sectoral results obtained for developed economies. The main channels through which lead and supplier firms derive economic gains from GSC participation in terms of increases in productivity are technological diffusion and cost reduction.

For example, Canadian manufacturing firms, which either start or continue to engage in GSCs, experience significantly higher productivity growth than firms that stop engaging in GSCs (Baldwin and Yan, 2014). This finding is in line with results for US manufacturing firms that show enhanced

Figure 5.9

Estimated impacts of global supply chain participation on labour productivity



Note: The chart shows the estimated impact of backward (panel A) and forward (panel B) GSC participation on average productivity in terms of value added per worker. The data points shown correspond to coefficients (a point for the point estimate and a line indicating the 90 per cent confidence interval), estimated with a panel fixed-effect regression model. If the confidence interval comprises only values above (below) 0, GSC participation has a significantly positive (negative) impact on productivity. If the confidence interval comprises 0, no statistically significant relationship between GSC participation and labour productivity is found. For "Total", 3,580 observations (40 countries, 716 country sectors) enter the regressions, which are split into two groups, i.e. "emerging" and "advanced" (see box 5.1). See Appendix B for more details on the methodology.

Source: ILO Research Department estimates based on OECD Trade in Value-Added (TiVA) database and WIOD.

[10] For example, it could be that firms change their working conditions, once they start to participate in GSCs. It could also be that firms that already participate in GSCs, but then increase their participation, change their working conditions. Third, it could be those firms that do not participate in GSCs that change their working conditions. Finally, there could be a composition effect, so that firms entering and exiting GSCs, or even firms entering and exiting the market have an impact on the relation that is empirically observed at the sectoral level.

Box 5.2

Are the economic benefits of GSC participation for lead firms overestimated?

While there is a large consensus of opinion that lead firms gain from GSC participation, opinion is more divided on how significant these gains can be. Economic theories suggest that the size of the gains depends on both individual firm characteristics at the micro level, such as the type of products produced and their labour intensity, and macroeconomic factors, such as exchange rates, corporate taxes and the price of other inputs.

Despite the economic benefits for lead firms of participating in GSCs, several pieces of empirical evidence show that the actual benefit has not always met the business community's expectations. A study by Farreira and Prokopets (2009) shows that firms expected GSC engagement to result in cost savings of around 25 to 40 per cent, whereas the actual rate was around 5 to 10 per cent. Similarly, Aron and Singh (2005) estimate that 50 per cent of firms fail to realize the expected financial benefits of offshoring.

Farrell (2004) attributes the disappointments experienced by some firms to shortcomings in their implementation of GSCs as well as to macroeconomic factors. Rising wealth in emerging economies is not only a source of increasing demand, but it is often accompanied by boosts in energy consumption and the resulting price, which in turn puts upward pressure on transportation costs. Moreover, wage increases in some emerging economies raise production costs. More recently, the post-crisis uncertainty caused by exchange rate fluctuations and the lack of financial stability, as well as the depth and long duration of the recession, is likely to have hindered firms in their attempts to harness the potential of GSCs. Firms' searches for safe havens during the crisis might have contributed to some of the insourcing and re-nationalization of supply chains that was observed during the crisis (see above).

Hidden risks and costs associated with GSCs are hard to identify and therefore not all of them might be included in the net cost equation of firms taking decisions about whether to internationalize parts of their production (see, for example, Dhar and Balakrishnan (2006) for a summary of risk exposure associated with IT outsourcing). Thus, GSC engagement entails more than labour arbitrage, and other factors that are beyond an individual firm's control affect the economic benefits that accrue to firms from setting up GSCs.

productivity as a result of technology spillovers through importing and FDI. Effects are particularly pronounced in high-tech sectors (Keller and Yeaple, 2009). Learning from new technology embedded in imports is one channel considered to explain the positive impact of better access to imported intermediate inputs on firm's productivity in Indonesia (Amiti and Konings, 2007).

While there are economic benefits of GSC participation for lead firms, there are also costs, such as additional transaction costs related to managing supply chains remotely, notably with respect to the search for reliable suppliers, contracting arrangements, monitoring and controlling (Hobbs, 1996), and transferring knowledge (Keller and Yeaple, 2013). Accelerated trade liberalization and improvements in ICT have contributed to a reduction of these transaction costs, which may have helped to increase the prevalence of GSCs. However, it is not uncommon for firms to find that they have underestimated the costs of engaging in GSCs (see box 5.2). This underestimation could then also be a reason why the sectoral analysis on average does not find a positive productivity impact of backward GSC participation for emerging economies.

… especially in sectors that are strong suppliers of intermediates.

As discussed above, results from the sectoral analysis suggest that there is a positive productivity effect when sectors increase their GSC participation as suppliers. Indeed, unit costs typically decrease with larger production ("economies of scale"), in particular in industries that produce homogeneous goods with a limited scope for differentiation and adaptation to customers' individual needs, which may then lead to these positive productivity effects. Additionally, supplier firms may benefit from knowledge and technology transfers, which also include transfers of best organizational management practices (Brach and Kappel, 2009). Long-term contracts in GSCs can also be an important channel of technology transfer, particularly in technology-intensive industries that are characterized by a close relationship between supplier and buyer with a high level of exchange of information.

Empirical evidence from Italian suppliers confirms our sectoral results and shows that there are indeed improvements in firm-level productivity and innovation in response to increased GSC participation, with the magnitude of benefits depending on the GSC governance type (Brancati et al., 2015). Substantial benefits are found, in particular, for small and medium-sized enterprises

(SMEs) (Giovannetti et al., 2014). For some countries, including Slovenia and selected countries in Sub-Saharan Africa, there is empirical evidence for productivity enhancements that arise as a consequence of entry into export markets ("learning by exporting"), including exporting as part of GSC engagement (De Loecker, 2007; Van Biesebroeck, 2005).

However, there is no significant impact of global supply chain participation on sectoral wages …

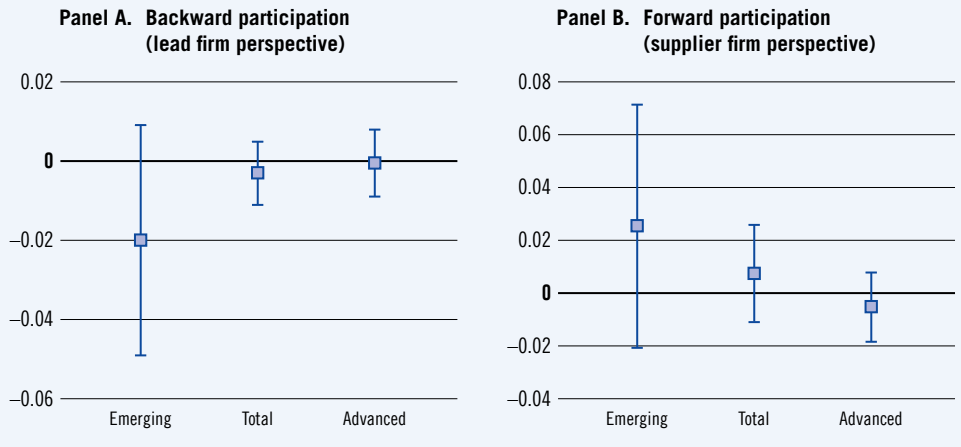
A sectoral regression analysis that investigates the relationship between GSC participation and the average wage per worker does not reveal significant effects in terms of wages, for either forward or backward participation (figure 5.10). This would suggest that, on average, wages of workers in a particular sector do not depend on whether that sector participates in GSCs more or less over time.

The results from the sector-level analysis are in line with the available firm-level evidence that, for the most part, does not find any strong evidence, positive or negative, of an impact of increased GSC participation on wages (Heyman et al., 2007; Almeida, 2007).[11] Examining the causal effect of GSC participation on wages is quite challenging due to the demanding data requirements (Javorcik, 2014). It is true that many studies find that foreign affiliates of multinational enterprises pay higher average wages than domestic firms (Aitken et al., 1996; Budd et al., 2005; Lipsey and Sjöholm, 2004; Robertson et al., 2009; Warren and Robertson, 2011). However, this cannot necessarily be attributed causally to GSC participation. Firms that participate in GSCs are typically highly productive firms that already pay higher wages before participating in GSCs as lead or supplier firms; so self-selection frequently drives these differences in wages.

As a result of the positive impact of GSC participation on labour productivity and the absence of any positive impact on wages, the portion of value added that goes to workers drops. Indeed, this is the result when relating GSC participation directly to the wage share in both emerging and developed economies. These results are in line with earlier country-level research on the impact of globalization on the wage share (Harrison, 2005; IMF, 2007; Jayadev, 2007; Rodrik, 1998; Stockhammer, 2013). Given the ongoing public interest and policy debates over the trend declines in labour shares and the impact of such declines on aggregate demand and inequality, the role of GSC participation requires further attention.

Figure 5.10

Estimated impacts of global supply chain participation on wages



Note: The chart shows the estimated impact of backward (panel A) and forward (panel B) GSC participation on average wages in terms of salaries and wages per worker. The data points shown correspond to coefficients (a point for the point estimate and a line indicating the 90 per cent confidence interval), estimated with a panel fixed-effect regression model. If the confidence interval comprises only values above (below) 0, GSC participation has a significantly positive (negative) impact on wages. If the confidence interval comprises 0, no statistically significant relationship between GSC participation and wages is found. For "Total", 3,580 observations (40 countries, 716 country sectors) enter the regressions, which are split into two groups, i.e. "emerging" and "advanced" (see box 5.1). See Appendix B for more details on the methodology.

Source: ILO Research Department estimates based on OECD TiVA database and WIOD.

11 Studies that do find a wage premium of GSC participation are mainly not able to control for changes in individual worker characteristics that may arise due the composition of the workforce employed by firms, given the lack of matched employer–employee datasets.

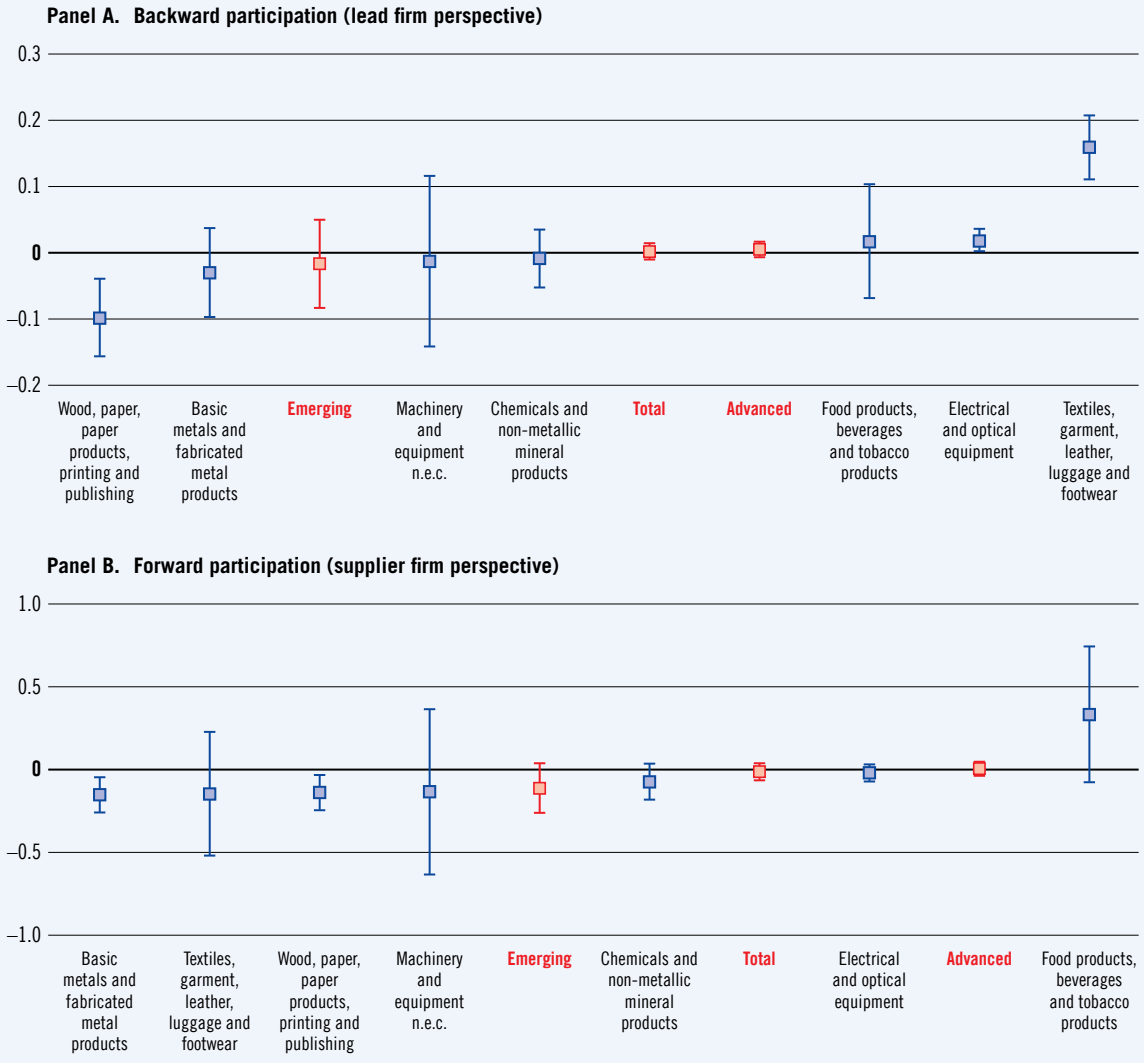
… but global supply chains can affect the demand for highly skilled relative to low-skilled labour.

GSC participation can affect highly skilled and low-skilled workers differently, thus shaping the income distribution. GSCs often break up the production process such that more knowledge-intensive tasks remain concentrated in the lead firm, while less knowledge-intensive tasks are outsourced to suppliers in other countries. GSC participation therefore changes the demand for skills in both the lead and the supplier firm. These changes in demand can then have an impact on the wages of high- and low-skilled workers as well as the ratio between the two. In this respect, GSC participation affects workers differently based on their skill endowment (Feenstra and Hanson, 1995).

In order to conduct an empirical investigation of the relationship between participation in GSCs and the wage premium on skills at the sectoral level, a sectoral measure of the skill premium is constructed as the ratio of the average hourly wage of highly skilled workers to the average hourly

Figure 5.11

Estimated impacts of global supply chain participation on the wage premium on skills, total economy and selected sectors



Note: The chart shows the estimated impact of backward (panel A) and forward (panel B) GSC participation on the wage premium on skills calculated as the ratio between the average hourly wage of highly skilled workers and the average hourly wage of low-skilled workers. The data points shown correspond to coefficients (a point for the point estimate and a line indicating the 90 per cent confidence interval), estimated with a panel fixed-effect regression model. If the confidence interval comprises only values above (below) 0, GSC participation has a significantly positive (negative) impact on the wage premium on skills. If the confidence interval comprises 0, no statistically significant relationship between GSC participation and the wage premium on skills is found. For "Total", 3,555 observations (40 countries, 711 country sectors) enter the regressions, which are split into two groups, i.e. "emerging" and "advanced" (see box 5.1). The sector "Chemicals and non-metallic mineral products" also includes coke, refined petroleum products, nuclear fuel, rubber and plastic products. See Appendix B for more details on the methodology.

Source: ILO Research Department estimates based on OECD TiVA database and WIOD.

wage of low-skilled workers. In overall terms, there does not appear to be a significant impact of GSC participation on the skill premium (figure 5.11). However, this result differs for some sectors.

In terms of backward participation in GSCs, i.e. participation of a sector from a lead firms' perspective, there is, for example, a positive impact on the skill premium for workers in textiles and garment manufacture. Indeed, this is a sector that has experienced extreme shifts in the types of tasks performed in different countries over recent years with high-value-added knowledge-intensive tasks remaining within lead firms and lower-value-added labour-intensive tasks, such as the actual production of clothing, being outsourced. This might have increased the relative demand for highly skilled relative to low-skilled labour in lead firms, putting upward pressure on the wage premium on skills.

Since it is often not high-skill but rather low-skill tasks that are outsourced or offshored, demand for highly skilled workers does not necessarily increase in supplier sectors as a consequence of participation in GSCs, so that there is no additional upward pressure on high-skill wages. This may explain the lack of a significant positive effect of forward participation on the wage premium on skills.

The garment sector illustrates the job opportunities associated with GSCs …

This section provides some detailed evidence, looking more specifically into the garment and the electronics sectors. It is important to further analyse the sectoral characteristics in order to better understand the dynamics of the supply chain relationship and how this has impacted on both firms and workers. In particular, some of the characteristics of GSCs, such as rapid obsolescence in electronics products and the rise of "fast fashion" in garments, have created challenges for firms and workers attempting to meet changing market demands. This requires increased flexibility of supplier firms, which has implications for employment relations as well as for working hours.

Rossi et al. (2014) provide a detailed analysis of employment and labour conditions in the garment global supply chain. What emerges from the study is that the globalization of the garment sector has created a vast number of productive employment opportunities in developing economies. This is particularly the case for vulnerable workers, such as unskilled women, youth and migrants. Since the sector requires a relatively low-skilled workforce and limited capital investment, it is often the first tier in the industrialization process of developing economies (English, 2013). It also facilitates transitions to the formal economy and waged employment for many workers. However the study equally highlights that the vast majority of this employment generated takes place under poor working conditions.[12]

… but also the difficulties in improving working conditions and employment patterns, especially among supplier firms.

Many emerging and developing economies find themselves trapped in the lower tier of production, unable to move up the supply chain to more knowledge-intensive tasks (Dalle et al., 2013), although there are some recent exceptions, for example, China-based retailing.

Lead firms in the garment supply chain tend to be large retailers or design houses that are concentrated in the United States, the EU and Japan, which respectively account for 47.3, 22.2, and 6.9 per cent of global imports in the garment sector (Gereffi and Frederick, 2010). Lead firms source from supplier firms which are concentrated in emerging and developing economies. The largest supplier bases can be found in China, Viet Nam, Indonesia, Mexico, Bangladesh, India, Cambodia, Pakistan, Sri Lanka and Turkey (Gereffi and Frederick, 2010). Some large clothing retailers have recently started to source from suppliers in Africa (e.g. Swedish retailer H&M has started sourcing from garment factories in Ethiopia).[13]

There tend to be many supplier firms vying for orders which reduce their bargaining power (Nathan, forthcoming). The creation of supplier firms in more countries, particularly following the end of the

12 The garment sector has traditionally been characterized by relatively low wages and poor working conditions compared with other sectors. Garment sweatshops existed long before modern-day GSCs in major industrialized cities such as New York and London, attracting low-skilled workers from rural areas as well as migrant workers.

13 See AfDB et al. (2014).

quota based trading system, increased the competition and bargaining power advantages of the lead firms (Gereffi et al., 2006). For example, the profit margins of suppliers in Bangladesh fell from 24 per cent in 1995 to 7 per cent in 2004 (Khatun et al., 2008). Similarly, a case study of Viet Nam reports that a typical profit share of garment manufacturers ranges from 10 to 15 per cent (Knutsen, 2004).

The garment sector is also associated, in some instances, with a high share of short-term contracts and highly variable working hours. This is partly attributed in the literature to the need for garment suppliers to be able to respond quickly to volatile ordering demands. This has also resulted in workers in the same unit having divergent forms of employment status, as in Morocco (Plank et al., 2014); in tiered supply chains, as in Bangladesh (Ahmed and Nathan, 2014) and Romania (Plank et al., 2014); or in home-based work, as in India (Bhaskaran et al., 2013).

Where improvements have been made with respect to working conditions, workers' involvement has played an important role.[14] Financial or continuity commitments from lead firms can also provide an important channel through which to improve labour relations and working conditions in supplier firms. For example, the Bangladesh Accord on Fire and Building Safety commits lead firms to provide suppliers with incentives to make improvements in safety condition such as continuity or increases in orders.[15] Signatories to the Accord also commit to negotiating commercial terms with their suppliers which ensure that it is financially feasible for the factories to maintain safe work-places and make necessary investments in fire and building safety.[16] Enhancing dialogue involving global buyers, suppliers and labour could contribute to progress going forward.

Stable employment arrangements are more prevalent in other sectors, such as electronics

The electronics sector is also characterized by fluctuating orders, due to the short product cycles for electronic products, reflecting rapid obsolescence. However, the relatively higher levels of knowledge intensity required in the supplier firms to meet manufacturers' product specifications, coupled with the organizational structure and stronger inter-linkages between the lead and supplier firm in the supply chain, lead to somewhat different outcomes for employment relationships than can be found in the garment GSC. It is also significant that there are fewer electronic centres of production, which tend to be clustered geographically around East Asia, Brazil and India (Gereffi and Lee, 2014).

The volatility of orders and production is reflected in a high level of temporary and agency workers in some countries and high levels of overtime in others. In countries with a strong supplier base in electronics, domestic regulations have played a key role in determining how GSC-supplier firms react to production flexibility. For example, in Mexico and Thailand there are large numbers of temporary workers (Holdcroft, 2012); while in Malaysia (Samel, 2012) and China (Chan et al., 2013) there are high levels of overtime work. Indeed, Chinese factories face a legal limit (since March 2014) restricting the number of temporary workers to no more than 10 per cent of the workforce.

In India, workers classified as being in stable and direct wage employment in the electronics industry represented about one-third of the workforce in 2011–12, while the proportion of temporary, contractual and indirect wage employment accounted just over 40 per cent in the industry. Among women, however, an estimated two-thirds of female workers in the electronics are in temporary, contractual and indirect wage employment (Nathan, forthcoming).

14 For example, workers' actions including protests and strikes have led to minimum wage increases in some countries, including Cambodia, Vietnam and Bangladesh, in recent years.

15 See: http://bangladeshaccord.org/wp-content/uploads/2013/10/the_accord.pdf (clause 23) [10 May 2015].

16 Ibid. Clause 22.

C. Concluding remarks: Policy considerations for global supply chains

The chapter highlights the growing role of GSCs in terms of job creation. It also shows that GSCs tend to be associated with higher productivity in some countries, but not necessarily higher wages or improved working conditions. In addition, while knowledge and technology transfer can be an important spillover from GSC participation, the wage premium for higher skilled workers is not obvious across sectors. In some sectors, there is intensive cost competitiveness which has implications for relations between lead and supplier firms in terms of bargaining power, distribution of profits and for employment relations in general.

To improve the potential of GSCs to enhance productivity, economic development and creation of decent work, both broad-based policies and policies directed at specific sectors, firms and categories of workers are needed. Country experiences suggest policy options that can help to achieve a more equitable distribution of costs and benefits along the value chain and to better link the economic and social benefits of GSCs. Complementary to sound labour regulations and institutions, lead firms have a role to play in addressing the sustainable development of GSCs.

Broad-based policies are needed to promote a better balance between the economic and social benefits of global supply chains

A set of broad-based policy measures is essential to promote better economic and social outcomes along supply chains, including measures to improve competitiveness and productivity of firms and workers (Gereffi and Sturgeon, 2013; Gereffi and Lee, 2014; UNCTAD, 2013). Policies to enable better integration of GSCs with domestic sectors is essential to maximize spillover effects, such as diffusion of knowledge, technology and best management practices (OECD et al., 2014). In addition, well-designed labour regulations and well-functioning labour market institutions to match skill demands between sectors and improve compliance are essential to translate economic benefits into better working conditions. Social dialogue at the firm, sector, national and international levels is also crucial in this regard, as it may secure both productivity improvements and enhanced worker rights. Chapters 3 and 4 of this volume provide important examples in this respect.

Trade and investment agreements can also be instruments in the promotion of coherent policy frameworks, including with respect to international labour standards. Trade and investment policies that aim to align standards can set the framework for regional and global supply chain development. In this respect, an increasing number of developed and developing countries are entering into trade and investment agreements that integrate labour provisions.[17] Typically, countries commit not to lower domestic labour legislation to attract foreign trade or investment, and to respect international labour standards.[18] Such agreements provide implementation mechanisms to enhance compliance with these commitments, ranging from monitoring (sometimes including involvement of the social partners) to technical cooperation and capacity building to dispute settlement mechanisms. Although inclusion of labour provisions in trade and investment agreements provides an additional tool to promote labour rights, they are usually not shaped to address the particularities of GSCs. The issue of corporate social responsibility is sometimes referred to in these agreements, but is still underdeveloped.[19]

Specific policies for countries, sectors, enterprises and workers

Upgrading towards technologically- and skill-intensive jobs may be the preferred option in the long run, but whether or not this is feasible will depend on the productive capacity of an economy or sector. In this respect, policies to enhance technological capabilities, technology transfer and the development of skills, including on-the-job training, are essential (ILO, 2013). This requires sector-specific and even task- or function-specific policies (depending on the level of development

17 See IILS (2009, 2013); Ebert and Posthuma (2011); UNCTAD (2012); Prislan and Zandvliet (2013).

18 See IILS (2013) for an extensive discussion on the issue.

19 See Peels and Schneider (2014) for an assessment of corporate social responsibility language in bilateral trade and investment agreements.

and fragmentation of the sector).[20] SMEs in particular demand adapted policy responses, such as the promotion of regional production clusters that may facilitate SMEs' integration into supply chains (ESCAP, 2006, 2011).

However, in the short term, some emerging and developing countries may find themselves locked into the lower-tiers of GSCs and policy-makers should focus on shaping a framework for improving wages and working conditions for relatively low-skilled workers through enhanced regulation, compliance and social dialogue. Facilitating the transition from the informal to the formal economy and enhancing the protection of temporary work are important in this regard as outlined in Chapter 3 (ILO, 2014c, 2014d). The conditions of work for women and other vulnerable workers remain a concern. Various countries (such as Brazil, Morocco and Turkey), have established specific administrative bodies and programmes to monitor particularly vulnerable workers (such as migrant and informal workers) who may require special attention or strategies from labour inspection practices.

Lead firms' role in addressing sustainable development of global supply chains

Recent initiatives also suggest an important role for lead firms in improving working conditions and employment patterns in supply chains. Some lead firms are investing in the sustainable development impacts of their supply chain activities by revising their purchasing and pricing practices (e.g. through buyer responsibility agreements) and improving the capacity of their suppliers to deal with fluctuations in demand (Anner et al., 2013). The application of annualized hours schemes and multiskilling have proven useful in reducing the reliance on temporary employment and balancing concerns of competitiveness and the needs of workers (ILO, 2014a). The Bangladesh Accord on Fire and Building Safety is a unique agreement between lead firms and trade unions in the garment sector, chaired and facilitated by the ILO, to promote respect for labour rights in the Bangladeshi clothing industry (see box 5.3).

Enterprises in a number of GSCs have adopted a variety of codes of conduct, corporate social responsibility commitments and private compliance initiatives. These voluntary efforts may contribute to enhanced monitoring and compliance with labour standards, but they are sometimes challenged for lack of transparency or failure to coordinate with, or reinforce, domestic regulation (ILO, 2013). The important role of domestic labour administration and compliance mechanisms should be stressed. Overall, private compliance initiatives can be complementary to, but will rarely be sufficient in the absence of, domestic regulations and enforcement.[21] ILO standards define labour inspection as a public function, but ILO experts have recognized the existence of private compliance initiatives and called for effective cooperation with them (ILO, 2013). The ILO Tripartite Declaration of Principles concerning Multinational Enterprises and Social Policy is also an important instrument in this regard as it provides guidance to governments, workers and employers' organizations and firms on how to maximize the positive economic and social impacts of GSC operations.

Strengthening social dialogue

Finally, social dialogue is crucial for shaping an enabling environment to provide better links between economic and social benefits in GSCs. Social dialogue can secure productivity improvements, through the involvement of the social partners in work organization, safe work practices, technological change or restructuring, and is essential to ensure respect for workers' rights (Tengblad and Docherty, 2009; Lee and McCann, 2011). This can take place at various policy levels, in the firm, sector or national level and also through international social dialogue.

In recent years, an increasing number of International Framework Agreements between multinational enterprises and global union federations have been signed.[22] These differ from other types of private compliance initiatives, as these are negotiated, implemented and monitored by workers' representatives (ILO, 2014b). In this regard, the European Directive 2009/38/EC sets a framework

20 Certain sectors, such as textiles and electronics, are often characterized by a larger level of fragmentation compared with, for instance, mining or agriculture.

21 See Ward (2004); Vogel (2005); Mayer and Gereffi (2010); Locke et al. (2013).

22 A total of 142 agreements had been negotiated by March 2014 (ILO, 2014b).

Box 5.3

The Accord on fire and building safety in Bangladesh

The Rana Plaza factory collapse in Bangladesh in 2013 that killed almost 1,200 workers was a tipping point for the negotiation of new and innovative labour agreements between various stakeholders to improve labour practices in the garment sector in that country (ILO, 2014d). The Accord on Fire and Building Safety in Bangladesh (2013) is an unprecedented, binding agreement between almost 200 buyer firms and two global trade unions. The agreement covers over 2 million workers and 1,700 factories. The ILO acts as neutral and independent chair of the Accord Steering Committee and the Advisory Group but is not a signatory to the agreement. Companies that are signatory to the Accord agree to implement and fund a collective fire and building safety inspection programme under the direction of the Accord's Chief Safety Inspector. Signatories also commit to ensuring that suppliers have the financial capacity to comply with remediation requirements and to provide incentives to make the improvements.[1] Accord members also commit to finance training and capacity building programmes, to establish workplace safety committees and to promote a culture of OSH compliance. A separate group of 26 buyers and retail associations established an agreement to inspect and remediate about 560 factories called the Alliance for Bangladesh Worker Safety (2013).[2] The aim of the Alliance is also to promote working conditions in the Bangladeshi garment sector, through a shared inspection programme, incentives for suppliers to make improvements and in-factory training and support.

The Government of Bangladesh and national employers and trade unions also signed a National Tripartite Plan of Action on Fire Safety and Structural Integrity in the Ready-Made Garment Sector of Bangladesh – a framework document for improving working conditions in the garment industry. Key activities include assessments, strengthening of labour inspection, and worker and management training on occupational safety and health and workers' rights (ILO, 2014d). The ILO assists in the implementation and coordination of the Action Plan and facilitates coordination of the different programmes to work to common standards and approaches.

1 See http://bangladeshaccord.org [26 April 2015]. 2 See http://www.bangladeshworkersafety.org/ [11 May 2015].

for the establishment of European Works Councils to enhance transnational social dialogue at the company level. [23]

In the garment sector, international buyers have been engaged in social dialogue at the regional and international levels to promote respect for labour standards and mitigate tensions along the GSC (ILO, 2013). The ILO/IFC Better Work Programme has been a leader in organizing transnational social dialogue, bringing together key stakeholders in the global garment industry.[24] The monitoring of companies' compliance with labour standards and regular reporting is combined with dialogue at the enterprise, sectoral and national levels. The programme provides advisory and training services to various stakeholders to address issues of non-compliance. It also works closely with international buyers and national tripartite partners to promote the scaling-up of experiences to the national level. For example, Better Work supported the ILO and the Government of Vietnam in designing reforms to the law that open up space for freedom of association and collective bargaining, and Better Work recently helped to establish the first sector wide collective bargaining agreement in the Jordanian garment industry.

23 http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2009:122:0028:0044:EN:PDF

24 For a description of the ILO/IFC Better Work Programme see http://betterwork.org/global/ [26 Apr. 2015]. See also Rossi and Robertson (2011); Rossi et al. (2014).

Appendix A
The ILO's estimates of jobs related to global supply chains

Section A of this chapter presents estimates of the total number of global supply chain (GSC)-related jobs, including disaggregation by country, sector and sex. This appendix describes the data sources and methodologies used to construct these estimates. Part A of this appendix describes in detail the methodology used to derive estimates of GSC-related jobs for 1995–2011. Section B describes how, on the basis of the estimates derived for 1995–2011, estimates for 2012–13 were generated. Section C compares the ILO approach with alternative approaches available in the literature.

A. Estimates of number of jobs related to GSCs in 1995–2011

The derivation of the estimates for GSC-related jobs in 1995–2011 consists of four steps. First, the gross output in each sector required to produce a final good in any sector is computed with the help of the input–output table. For instance, producing a unit of packaged food implies gross output by the agricultural sector, the package producing sector and the food processing sector. Second, sectoral gross output is translated into jobs. Third, the demand vector that would most accurately allow GSC activities to be captured is defined. Fourth, GSC-related jobs are aggregated according to where (sector and country) they are located and the location of the demand they serve.

I. Relating gross output to demand

The first step relates gross output in each sector to demand in any sector, computing the technical coefficients of input required to produce the required output. The simplest example considers one sector where 20 units of gross output are used as intermediate inputs by that sector, and ten units are sold to final demand. Hence, gross output is 30, while value added is ten. An increase in demand by one unit in the first instance requires an increase in intermediate inputs of 2/3, which is the share of intermediates in gross output in the sector. These additional outputs of 2/3 again require additional intermediate inputs of 2/3, implying another increase in gross output of $\left(\frac{2}{3}\right)^2$, and so on. Hence, gross output needs to increase by $\frac{2}{3} + \left(\frac{2}{3}\right)^2 + \left(\frac{2}{3}\right)^3 + \ldots$. This arithmetic sequence has the solution $\frac{1}{1-\frac{2}{3}} = 3$. Therefore, an increase in final demand of one raises gross output in that sector by 3.

The above procedure can be generalized to apply to any m-sector framework. Gross output x is given by the sum of output serving as intermediate input M and final demand f, $x = M + f$. We can then define the technical coefficient matrix $A = Mx^{-1}$. In the above example, $x = 30$, $M = 20$, $f = 10$ and $A = 2/3$. The Leontief inverse, defined by $L = (I - A)^{-1}$ with I being the identity matrix, is the equivalent matrix solution to the sum of the arithmetic sequence shown above. It contains m rows and columns for each of the n countries, and is shown in abbreviated form in table 5A.1.

The cell value $L_{11,11}$ shows gross output produced by sector 1 in country 1 required to produce 1 unit of final demand by sector 1 in country 1. In the above example, the Leontief inverse has only this value, which equals 3. In general, the value $L_{12,34}$ shows gross output in country 1, sector 2

Table 5A.1

Linking demand to sectoral output

			Final product demand by country and sector						
			Country 1			…	Country n		
			Sector 1	…	Sector m	…	Sector 1	…	Sector m
Gross output from sector participating in value chain	Country 1	Sector 1	$L_{11,11}$		$L_{11,1m}$		$L_{11,n1}$		$L_{11,nm}$
		…							
		Sector m	$L_{1m,11}$						
	…	…							
	Country n	Sector 1	$L_{n1,11}$		$L_{n1,1m}$				
		…							$L_{nm,nm}$
		Sector m	$L_{nm,11}$						

required to produce a unit of final demand by country 3, sector 4. This link does not need to be a direct input but can also be indirect, for example with sector 5 in country 6 importing from country 1 and exporting to country 3.

To summarize, the Leontief inverse allows the gross output by each sector required to produce any composition of final demand to be computed. However, all firms are assumed to have the same input mix. For instance, products produced for the domestic or foreign market are assumed to use the same combination of inputs. The 35 sectors included in the World Input–Output Database (WIOD) are the furthest disaggregation allowed when using such a macro database. Despite these limitations, the procedure described is perceived to be the best, and therefore generally accepted, way to utilize input–output tables.

II. Relating gross output to jobs

The WIOD website also contains a database of socio-economic accounts of the same country and year coverage, 1995–2011, as the actual WIOD database itself.[25]

These accounts include, among others, the labour force as well as labour remuneration in each sector.[26] Additionally, the ILO publishes female employment shares on a sectoral disaggregation. This has been combined with the socio-economic accounts related to the WIOD to obtain female employment numbers by sector.

By dividing the sectoral labour force or remuneration by its gross output, the labour requirement per unit of gross output can be computed, thereby yielding sectoral employment and wage figures related to any final demand vector. As in the previous step, the methodology assumes equal technology, and hence equal labour productivity and wages, within sectors, regardless of whether firms are connected to GSCs or not. The methodology is also used by Timmer et al. (2014), while numerous sources compute the value added contribution of a sector in an equivalent way.

III. The GSC demand vector

This step defines the demand vector d that is to be used to link jobs to GSC, and hence is vital in determining the final accuracy of the estimate. GSC-related jobs should be conducting tasks that are part of a GSC, meaning that either inputs are imported, or that outputs are exported as intermediates.

The demand vector (d) is multiplied by the employment per gross output (N/x) and the Leontief inverse (L) shown in table A5.1 to yield jobs related to that demand, $Jobs = diag(N/x)\,L\,diag(d)$.[27] The first element of the vector d contains demand by country 1 in sector 1. When multiplied by the value in the first column and in the row for country n and sector m, it yields the number of jobs in that sector that are due to demand by country 1, sector 1 of the value given in the vector d.

The ILO defines the demand vector as the sum of exports of intermediate and final goods. In an interim stage, the number of GSC-related jobs are computed individually for each "destination" country. For example, the Australian jobs that depend on imports of intermediate and final goods by the United States are computed. This includes not only Australian exports of intermediate and final goods to the United States, but also the jobs implied by the export of Australian intermediates to third countries, which are used for products exported to the United States. The use of exports of final goods in the demand vector risks counting jobs as part of GSCs where the complete value chain is, in fact, domestic and only the final product is exported. However, dropping this category would exclude jobs linked to activities where Australia imports intermediates, adds value (meaning jobs) and exports final goods. The ILO, like the OECD, WTO and UNCTAD, considers that the latter case is more important for traded goods than the former, and hence includes exports of final goods in the demand vector.

25 See www.wiod.org [26 Apr. 2015]. Naturally, yearly sectoral figures for developing countries can only be constructed by using a great deal of imputation.

26 Labour remuneration for non-EU countries is currently only available until 2009.

27 N/x is an element-by-element division, where N and x are column vectors for each sector and country, so that the resulting vector shows employment per gross output. $diag(a)$ creates a square matrix of same length as the vector a, where the elements of a are on the diagonal and the rest is zero. $diag(N/x)L$ multiplies each value of a row n by the nth value of the vector N/x, transforming the gross output relationship of the Leontief inverse into a job relationship. The second part, $L\,diag(d)$ multiplies each value of a column n by the nth value of the vector d.

IV. Aggregation by location and destination

The above computation supplies a matrix showing how many jobs in each sector and country depend on demand from any other sector or country. Hence, for each year between 1995 and 2011 there are 1,400[2] data points, which need to be aggregated to conduct a useful analysis. The aggregation is done by location and by destination. The former aggregates the sectors or countries in which labour is actually employed that contribute to GSCs, while the latter aggregates the jobs that depend on demand by a certain country or group of countries or an aggregation of sectors. For example, Australian jobs in the manufacturing sector that depend on worldwide GSC demand of services could be computed.

B. Estimates of jobs related to GSCs in 2012–2013

Data in the input–output table is only available for 1995–2011, which allows GSC-related jobs estimates to be produced for the same period. Based on a forecasting model, the ILO has also derived estimates for 2012–13. The forecasting model applies panel regression techniques and estimates the growth rates of jobs in a particular country and sector (agriculture, manufacturing, other industry and services) that depend on exports to a particular destination country. Different regressions are estimated for every sector–destination country combination. The approach therefore produces forecasts at a relatively high level of disaggregation.

The regressors that are included in the model are highly significant in most regressions. These are:

- gross domestic product (GDP) growth in the country for which GSC-related jobs are estimated
- GDP growth in the destination country
- sectoral value added growth in the country for which GSC-related jobs are estimated
- total export growth of the country for which GSC-related jobs are estimated
- total import growth of the destination country
- inward FDI as a share of GDP in the country for which GSC-related jobs are estimated
- total employment growth.

C. Alternative measures

OECD et al. (2013) and UNCTAD (2013) define the demand vector in equivalent terms to the ILO as the sum of exports of intermediate and final goods. However, their main measure is the global value chain (GVC) participation rate. This measure is the sum of foreign value added in domestic exports, plus domestic value added in foreign exports, divided by gross exports. It provides a measure of backward and forward integration of industries within GSCs. However, due to the use of foreign value added, the measure cannot be expressed in terms of jobs.

Timmer et al. (2014) compute "global value chain jobs" with a final demand vector that includes total final manufacturing demand by all countries in their study (EU-28). Hence, they compute the number of jobs forming part of the value chain producing manufacturing output, not distinguishing between value chains that are purely domestic or, in fact, global. Their premise is that manufacturing value chains are highly integrated and hence can be considered global. If final demand from all sectors were used in their methodology, then total jobs in the economy would be computed.

Jiang (2013) employs a very narrow definition of jobs forming part of global production networks. These are only jobs that are dependent on intermediate goods exported to be used in exports of a foreign country. While such a definition ensures that the jobs are truly part of a GSC (also including natural resource based jobs), they ignore instances where final goods form part of the GSC, or where the initial stage of an otherwise domestic supply chain is outsourced.

Appendix B
Global supply chain participation and labour markets: A sectoral analysis

Section B of this chapter includes estimates of the impact of GSC participation on selected labour market indicators, including the wage share, working hours and the wage premium on skills. The empirical analysis presented in the chapter is mainly based on two data sources that provide sector-level data on GSC participation and selected labour market indicators (LMI):

(1) OECD TiVA database:

- value of imported inputs in overall exports (backward GSC participation)
- the share of exported goods and services used as imported inputs to produce other countries' exports (forward GSC participation).

(2) World Input–Output Database (WIOD):

- average wage (calculated as the ratio of labour compensation to the number of persons engaged)
- average labour productivity (calculated as the ratio of value added to the number of persons engaged)
- wage share (calculated as the ratio of labour compensation to value added)
- wage premium on skills (calculated as the ratio of highly skilled workers' average hourly wage to low-skilled workers' average hourly wage).

The two databases are matched at the sectoral level, linking measures for GSC participation to LMIs. The analysis covers 18 sectors, including sub-sectors within the three broad sectors of agriculture, industry and services, and 40 countries, including both developed and emerging economies. The analysis includes data for 1995, 2000, 2005, 2008 and 2009, which are the years for which data from both data sources are available.

The following equation is estimated with Ordinary Least Squares (OLS) panel fixed effect regressions:

$$LMI_{ict} = \alpha + \beta\ GSC\_PART_{ict} + \gamma\ \varepsilon_{it} + \delta\ \varepsilon_{ct} + \varepsilon_{ic} + \varepsilon_{ict}$$

where LMI stands for the logarithm of the average wage, the logarithm of average productivity, the wage share, the logarithm of hours worked or the ratio between highly skilled and low-skilled workers' hourly wage, depending on the regression considered.

GSC_PART is a measure of backward or forward GSC participation. For backward participation, the value of imported inputs in overall exports is used, while the share of exported goods and services used as imported inputs to produce other countries' exports serves as a proxy for forward participation. These two indicators do not enter the regression jointly, only separately, in order to avoid any problems that might arise due to multi-collinearity, given the relatively high correlation of 0.4 that can be observed for these two indicators.

ε_{it}, ε_{ct}, ε_{ic} and ε_{ict} respectively stand for sector-time, country-time and country-sector fixed effects, and the idiosyncratic error term. i is a sector index, c is a country index and t is a year index.

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