



# **Global Employment Trends for Youth 2013**

A generation at risk

Copyright © International Labour Organization 2013

First published 2013

Publications of the International Labour Office enjoy copyright under Protocol 2 of the Universal Copyright Convention. Nevertheless, short excerpts from them may be reproduced without authorization, on condition that the source is indicated. For rights of reproduction or translation, application should be made to ILO Publications (Rights and Permissions), International Labour Office, CH-1211 Geneva 22, Switzerland, or by email: [pubdroit@ilo.org](mailto:pubdroit@ilo.org). The International Labour Office welcomes such applications.

Libraries, institutions and other users registered with reproduction rights organizations may make copies in accordance with the licences issued to them for this purpose. Visit [www.ifrro.org](http://www.ifrro.org) to find the reproduction rights organization in your country.

---

Global Employment Trends for Youth 2013: A generation at risk / International Labour Office – Geneva: ILO, 2013

ISBN 978-92-2-127483-4 (print)

ISBN 978-92-2-127484-1 (web pdf)

International Labour Office

Youth employment / youth unemployment / skills mismatch / youth / economic recession / developed countries / developing countries

13.01.3

*ILO Cataloguing in Publication Data*

---

The designations employed in ILO publications, which are in conformity with United Nations practice, and the presentation of material therein do not imply the expression of any opinion whatsoever on the part of the International Labour Office concerning the legal status of any country, area or territory or of its authorities, or concerning the delimitation of its frontiers.

The responsibility for opinions expressed in signed articles, studies and other contributions rests solely with their authors, and publication does not constitute an endorsement by the International Labour Office of the opinions expressed in them.

Reference to names of firms and commercial products and processes does not imply their endorsement by the International Labour Office, and any failure to mention a particular firm, commercial product or process is not a sign of disapproval.

ILO publications and electronic products can be obtained through major booksellers or ILO local offices in many countries, or direct from ILO Publications, International Labour Office, CH-1211 Geneva 22, Switzerland. Catalogues or lists of new publications are available free of charge from the above address, or by email: [pubvente@ilo.org](mailto:pubvente@ilo.org)

Visit our website: [www.ilo.org/publns](http://www.ilo.org/publns)

This publication was produced by the Document and Publications Production,  
Printing and Distribution Branch (PRODOC) of the ILO.

*Graphic and typographic design, layout and composition,  
proofreading, printing, electronic publishing and distribution.*

PRODOC endeavours to use paper sourced from forests managed  
in an environmentally sustainable and socially responsible manner.

Code: DTP-CORR-WEI-VOGT

# Contents

Acknowledgements . . . . .	ix
<b>1. Introduction . . . . .</b>	<b>1</b>
1.1 Overview . . . . .	1
1.2 Organization of the report . . . . .	2
1.3 Main findings . . . . .	3
1.3.1 Global trends (Chapter 2) . . . . .	3
1.3.2 Trends in advanced economies (Chapter 2) . . . . .	3
1.3.3 Trends in developing regions (Chapter 2) . . . . .	4
1.3.4 The skills mismatch challenge (Chapter 3) . . . . .	4
1.3.5 School-to-work transition surveys (Chapters 4 and 5) . . . . .	5
1.3.6 Policies to promote decent work for youth (Chapter 6) . . . . .	6
<b>2. Global youth employment crisis worsening . . . . .</b>	<b>7</b>
2.1 Youth labour markets in advanced economies . . . . .	10
2.1.1 Quality of youth employment . . . . .	12
2.2 Youth labour markets in developing regions . . . . .	13
2.2.1 South Asia . . . . .	13
2.2.2 East Asia . . . . .	14
2.2.3 South-East Asia and the Pacific . . . . .	15
2.2.4 Central and South-Eastern Europe (non-EU) and CIS . . . . .	17
2.2.5 Latin America and the Caribbean . . . . .	19
2.2.6 Middle East . . . . .	19
2.2.7 North Africa . . . . .	19
2.2.8 Sub-Saharan Africa . . . . .	20
<b>3. Youth unemployment, employment and skills mismatch in advanced economies . . . . .</b>	<b>23</b>
3.1 Skills mismatch between labour supply and demand . . . . .	25
3.1.1 Skills mismatch and unemployment . . . . .	26
3.2 Skills mismatch by occupation . . . . .	27
3.2.1 Incidence and consequences of mismatch . . . . .	27
3.2.2 Measurement . . . . .	28
3.2.3 Overeducation and undereducation in a sample of countries . . . . .	29
3.3 Explaining employment and skills mismatch . . . . .	34
3.3.1 The impact of macro factors on mismatch . . . . .	34
3.3.2 The impact of gender, age, immigrant background and disability on mismatch . . . . .	35
3.3.3 The impact of family characteristics on mismatch . . . . .	35
3.3.4 The impact of labour market experience on mismatch . . . . .	36

<b>4. Youth labour markets in developing economies:</b>	
<b>Preliminary evidence from the ILO school-to-work transition surveys . . .</b>	37
4.1 Introduction . . . . .	37
4.2 Measuring and analysing youth labour markets in developing economies . . . .	37
4.2.1 The dichotomy of youth labour markets in developed and developing economies . . . . .	38
4.2.2 Alternative framework for portraying youth labour markets in developing economies . . . . .	40
4.3 Measuring job quality . . . . .	42
4.3.1 Quality of employment indicators and the dominance of low-quality employment in developing economies . . . . .	42
4.3.2. Skills mismatch . . . . .	44
4.3.3 Unravelling job satisfaction in developing economies . . . . .	46
<b>5. Labour market transitions of youth in developing economies . . . . .</b>	49
5.1 Introduction . . . . .	49
5.2 Defining labour market transitions . . . . .	50
5.3 Stages of transition in developing economies . . . . .	51
5.3.1 A cross-country comparison . . . . .	51
5.3.2 A detailed transition analysis for Liberia . . . . .	53
5.4 Labour market flows and durations of transition . . . . .	55
5.4.1 Labour market flows . . . . .	55
5.4.2 Duration of labour market transitions . . . . .	58
<b>6. Policies for youth employment . . . . .</b>	61
6.1 A global framework to tackle the youth employment crisis . . . . .	61
6.1.1 Stimulate demand and create jobs for youth through pro-employment macroeconomic policies . . . . .	61
6.1.2 Invest in education and training to enhance employability and facilitate the school-to-work transition . . . . .	63
6.1.3 Improve labour market integration of young people through targeted labour market policies . . . . .	66
6.1.4 Provide career options to young people by supporting entrepreneurship and self-employment . . . . .	68
6.1.5 Ensure that young people receive equal treatment and are afforded rights at work . . . . .	69
6.2 Conclusions . . . . .	70
<b>Bibliography . . . . .</b>	73
<b>Annexes</b>	
Annex A. World and regional tables . . . . .	79
Annex B. OECD country tables . . . . .	85
Annex C. Skills mismatch tables . . . . .	93
Annex D. Selected tables from the SWTS, ten countries . . . . .	100
Annex E. Note on global and regional projections . . . . .	105
Annex F. Skills mismatch . . . . .	109
Annex G. Global Employment Trends – Regional groupings . . . . .	111

## Boxes

1.	Youth employment: A G20 priority . . . . .	6
2.	Voluntary and involuntary part-time youth employment in Indonesia. . . . .	16
3.	Measuring skills mismatch . . . . .	24
4.	Work4Youth: An ILO project in partnership with The MasterCard Foundation . . . . .	38
5.	Work4Youth tools and methodological framework . . . . .	49
6.	How the LDES complements SWTS results and strengthens interpretation. . . . .	54
7.	Future research and products of the Work4Youth project . . . . .	59
8.	Approaches to boost aggregate demand and promote youth employment. . . . .	62
9.	The Peruvian action plan for youth employment . . . . .	62
10.	A skilled workforce for strong, sustainable and balanced growth . . . . .	63
11.	The role of employment services in facilitating youth labour market transitions . . . . .	64
12.	Gaining work experience through dual apprenticeship in selected European countries . . . . .	64
13.	ILO tools for anticipating skills needs . . . . .	65
14.	Youth transitions to formal employment through labour market reforms: The case of Argentina. . . . .	66
15.	Youth guarantees: A response to the youth employment crisis? . . . . .	66
16.	Youth employment programmes: Lessons from evaluation . . . . .	68
17.	Lessons learned from successful youth entrepreneurship programmes . . . . .	69
18.	Collective agreements on policies for youth employment . . . . .	70
19.	Global youth employment repositories . . . . .	71

## Figures

1.	Global youth unemployment and unemployment rate, 1991–2013 . . . . .	8
2.	Youth unemployment rate estimates and projections, 2008–18 . . . . .	8
3.	Global and regional gender gaps in youth unemployment rates, selected years . . . . .	10
4.	Decomposition of changes in the employment-to-population ratio, 2007–12 . . . . .	10
5.	Youth unemployment rates, 2008 and 2012 . . . . .	11
6.	Share of youth unemployed who have been unemployed for at least six months, 2008 and 2011 . . . . .	12
7.	Part-time employment rates in the Philippines and Thailand, by sex, 2008–12 . . . . .	16
8.	Young workers in informal employment in the Russian Federation, by sex and age group, 2012 . . . . .	18
9.	Economic context and skills mismatch . . . . .	24
10.	Skills mismatch and youth unemployment rates in selected countries, 2000–11 . . . . .	27
11.	Average incidence of skills mismatch, all age groups . . . . .	32
12.	Average incidence of skills mismatch, age group 15–29 . . . . .	32
13.	Average incidence of skills mismatch, by sex and age group . . . . .	33
14.	Distribution of youth population by regular and irregular employment, unemployment (relaxed definition) and inactivity for four LDCs and four high-income countries . . . . .	39
15.	Comparing the traditional and alternative framework of labour market status in Armenia and Togo . . . . .	41
16.	Expanded indicators measuring quality of work . . . . .	43
17.	Distribution of youth population by stage of transition . . . . .	52
18.	Share of transitioned youth in total youth population, by sex . . . . .	53

19. Liberia: Stages of transition (categories of “transited” and “in transition”) by household income level, educational attainment and geographic area . . . . .	54
20. Flows to stable and/or satisfactory employment (transited category) . . . . .	56
21. Duration of transition to stable and/or satisfactory employment . . . . .	59

## Tables

1. Incidence of overeducation in European countries . . . . .	28
2. Incidence of undereducation in European countries . . . . .	28
3. ISCO major groups and skill levels . . . . .	29
4. Incidence of overeducation by age group . . . . .	30
5. Incidence of undereducation by age group . . . . .	31
6. Country-level trends in youth (aged 15–29) mismatch incidence . . . . .	34
7. Selected overeducation model results for youth . . . . .	35
8. Selected undereducation model results for youth . . . . .	35
9. Employment by characteristics of education (share in total employment) . . . . .	45
10. Shares of overeducated and undereducated young workers in FYR Macedonia and Togo by ISCO-88 major occupational group . . . . .	46
11. Job satisfaction rates by level of educational attainment, urban/rural residence, household wealth, regular/irregular/informal employment and overqualification and underqualification . . . . .	47
12. Indicators on path of transition for transited youth in Armenia and Cambodia, by sex . . . . .	57
13. Average duration of transition for youth in the “in transition” category . . . . .	60

## Annex tables

A1. Global unemployment and unemployment rates, youth (15–24), adult (25+) and total (15+), 2007–13 . . . . .	79
A2. Youth unemployment rates 2008–18, by region and sex . . . . .	80
A3. Change in youth unemployment and unemployment rates between 1998 and 2008 and between 2008 and 2012, by region . . . . .	81
A4. Youth labour force participation rates 2008–18, by region and sex . . . . .	82
A5. Global and regional youth employment-to-population ratios, 2008–18 . . . . .	83
A6. Global and regional ratios of youth-to-adult unemployment rates, 2008–18 . . . . .	84
B1. Youth unemployment rates, second quarter, 2000–12 . . . . .	85
B2. Share of unemployed youth who have been unemployed for at least six months, both sexes, 2000–11 . . . . .	89
B3. NEET rates in OECD economies, age group 15–29, 2000–10 . . . . .	90
B4. Incidence of part-time work, youth, 2000–11 . . . . .	91
B5. Incidence of temporary employment, youth, 2000–11 . . . . .	92
C1. Skills mismatch between labour supply and demand, youth, 2000–11 . . . . .	93
C2a. Unemployment rate of youth with primary education, both sexes, 2000–11 . . . . .	94
C2b. Unemployment rate of youth with secondary education, both sexes, 2000–11 . . . . .	95
C2c. Unemployment rate of youth with tertiary education, both sexes, 2000–11 . . . . .	96

<b>C3.</b>	Country-level trends in youth: skills mismatch incidence and macro-level variables, age group 15–29 . . . . .	97
<b>C4.</b>	Summary of overeducation model results . . . . .	98
<b>C5.</b>	Summary of undereducation model results . . . . .	99
<b>D1.</b>	Source information . . . . .	100
<b>D2.</b>	Youth labour market indicators, ten SWTS countries, both sexes, age group 15–29, 2012 . . . . .	100
<b>D3.</b>	Youth labour market indicators, ten SWTS countries, males, age group 15–29, 2012 . . . . .	101
<b>D4.</b>	Youth labour market indicators, ten SWTS countries, females, age group 15–29, 2012 . . . . .	101
<b>D5.</b>	Indicators on quality of employment, ten SWTS countries, both sexes, age group 15–29, 2012 . . . . .	102
<b>D6.</b>	Stages of labour market transition, ten SWTS countries, both sexes, age group 15–29, 2012 (share in total youth population) . . . . .	102
<b>D7.</b>	Stages of labour market transition, ten SWTS countries, males, age group 15–29, 2012 (share in male youth population) . . . . .	103
<b>D8.</b>	Stages of labour market transition, ten SWTS countries, females, age group 15–29, 2012 (share in female youth population) . . . . .	103
<b>D9.</b>	Flows to completed labour market transition, nine SWTS countries, both sexes, age group 15–29, 2012 (share in total transited youth) . . . . .	104
<b>D10.</b>	Indicators on the path of transition for youth who have completed their labour market transition, nine SWTS countries, both sexes, age group 15–29, 2012 . . . . .	104

# Acknowledgements

The *Global Employment Trends for Youth 2013* report was coordinated by Theo Sparreboom from the Employment Trends Team, headed by Ekkehard Ernst. Alexander Tarvid (ILO consultant) provided substantive inputs for Chapter 3. Sara Elder and Gianni Rosas from the Work4Youth project of the Youth Employment Programme prepared Chapters 4 and 5 and Chapter 6, respectively. Additional inputs were provided by Matthieu Cognac, Phu Huynh, Steven Kapsos, Kee Beom Kim, Donna Koeltz, Olga Koulaeva, Rebecka Rask, Dorothea Schmidt, Olga Strietska-Ilina, Julia Surina, Sher Verick and Christina Wieser.

The production of the report was supervised by Moazam Mahmood, Director of the Economic and Labour Market Analysis Department, and José Manuel Salazar-Xirinachs, Assistant Director-General for Policy. The team wishes to acknowledge the helpful comments and suggestions on the draft provided by various ILO regional and country offices including Diego Rei and Cynthia Samuel-Olonjuwon from the Regional Office for Africa; Guillermo Dema from the Regional Office for Latin America and the Caribbean; James Howard, Director-General's Office; Christine Evans-Klock, Director of the Skills and Employability Department and Laura Brewer from the same department; Azita Berar-Awad, Director of the Employment Policy Department; and two anonymous peer reviewers.

Specific mention should be made of Evangelia Bourmpoula, who prepared the global and regional estimates on the basis of the Global Employment Trends econometric models and provided helpful research assistance. Leman Yonca Gurbuzer and Yves Perardel, within the Youth Employment Programme, tabulated the data from the school-to-work transitions surveys shown in Chapters 4 and 5. The publication would not have been possible without the contributions of other members of the ILO's Employment Trends Team – Philippe Blet, Anne Drougard and Alan Wittrup.

The analysis provided in the *Global Employment Trends* series is only as good as the available input data. We take this opportunity to thank all institutions involved in the collection and dissemination of labour market information, including national statistical agencies, the ILO Department of Statistics and the European Social Survey project. We encourage additional collection and dissemination of country-level data in order to improve the analysis of employment trends provided in future updates of this report.

We would like to express our thanks to colleagues in the ILO Department of Communication and Public Information for their continued collaboration and support in bringing the Global Employment Trends to the media's attention worldwide. Charlotte Beauchamp coordinated the editing and review processes.

Finally, the ILO would like to acknowledge the support given by The MasterCard Foundation on this edition of the *Global Employment Trends for Youth*, under the scope of the Work4Youth partnership.

# 1. Introduction

## 1.1 Overview

### **It is not easy to be young in the labour market today.**

The weakening of the global recovery in 2012 and 2013 has further aggravated the youth jobs crisis and the queues for available jobs have become longer and longer for some unfortunate young jobseekers. So long, in fact, that many youth are giving up on the job search. The prolonged jobs crisis also forces the current generation of youth to be less selective about the type of job they are prepared to accept, a tendency that was already evident before the crisis. Increasing numbers of youth are now turning to available part-time jobs or find themselves stuck in temporary employment. Secure jobs, which were once the norm for previous generations – at least in the advanced economies – have become less easily accessible for today's youth.

The global youth unemployment rate, estimated at 12.6 per cent in 2013, is close to its crisis peak. As many as 73 million young people are estimated to be unemployed in 2013.<sup>1</sup> At the same time, informal employment among young people remains pervasive and transitions to decent work are slow and difficult.

The economic and social costs of unemployment, long-term unemployment, discouragement and widespread low-quality jobs for young people continue to rise and undermine economies' growth potential.

### **Skills mismatch is adding to the youth employment crisis.**

Skills mismatch on youth labour markets has become a persistent and growing trend. Over-education and over-skilling coexist with undereducation and under-skilling, and increasingly with skills obsolescence brought about by long-term unemployment.

Such a mismatch makes solutions to the youth employment crisis more difficult to find and more time consuming to implement. Moreover, to the extent that young people in employment are actually overqualified for the job they are doing, society is losing their valuable skills and forfeiting stronger productivity growth that would have been achieved had these young people been employed at their appropriate level of qualification.

### **In developing regions, where 90 per cent of the global youth population lives, stable, quality employment is especially lacking.**

Developing regions face major challenges regarding the quality of available work for young people. This report confirms that in developing economies where labour market institutions, including social protection, are weak, large numbers of young people continue to face a future of irregular employment and informality. Young workers often receive below-average wages and are engaged in work for which they are either overqualified or underqualified. As much as

<sup>1</sup> Unless otherwise specified, figures in this chapter refer to youth aged 15–24.

two-thirds of the young population is underutilized in some developing economies, meaning they are unemployed, in irregular employment – most likely in the informal sector, or neither in the labour force nor in education or training.

### **In advanced economies long-term unemployment has arrived as an unexpected tax on the current generation of youth.**

Youth unemployment and its scarring effects are particularly prevalent in three regions: Developed Economies and European Union, the Middle East, and North Africa. In these regions youth unemployment rates have continued to soar since 2008. Youth unemployment increased by as much as 24.9 per cent in the Developed Economies and European Union between 2008 and 2012, and the youth unemployment rate was at a decades-long high of 18.1 per cent in 2012. On current projections, the youth unemployment rate in the region will not drop below 17 per cent before 2016.

As was discussed in the 2010 edition of *Global Employment Trends for Youth*, there is a price to be paid for entering the labour market during hard economic times. Much has been learned about “scarring” in terms of future earning power and labour market transition paths (ILO, 2010a). Perhaps the most important scarring is in terms of the current young generation’s distrust in the socio-economic and political systems. Some of this distrust has been expressed in political protests such as anti-austerity movements in Greece and Spain.

### **Creative and wide-ranging policy solutions are needed.**

Improving youth labour market outcomes requires an in-depth understanding of employment and labour market issues that are country specific. Analysis of youth labour markets, with particular emphasis on the issues that characterize youth transitions to decent work, is crucial for determining country-specific needs and for shaping policies and programmatic interventions.

A global movement framed by the ILO’s “call for action” (as outlined in Chapter 6) is required to break the vicious circle that keeps so many millions of youth out of education and stuck in non-productive employment and poverty.

## **1.2 Organization of the report**

This issue of *Global Employment Trends for Youth* provides an update on youth labour markets around the world, focusing both on the continuing labour market crisis and on structural issues in youth labour markets.<sup>2</sup>

Chapter 2 sets the stage with an overview of youth labour markets at the global and regional levels. Chapter 3 focuses on the skills mismatch in advanced economies; it examines recent trends and identifies groups that are more vulnerable to mismatch, which include youth in general and young women in particular. Chapter 4 turns attention to the situation facing youth in developing regions where labour is abundant, capital is scarce and a stark duality exists between the shrinking but still dominant traditional economy and the “modern” economy. The chapter proposes a model for greater disaggregation of traditional indicators, using data from the results of the school-to-work transition surveys undertaken as part of the Work4Youth partnership between the International Labour Office and The MasterCard Foundation. Chapter 5 continues the examination of youth labour markets in developing economies, using the newly available micro-data, but focusing on the topic of labour market transitions. New data on

<sup>2</sup> Previous editions of the *Global Employment Trends for Youth* (2004, 2006, 2008, 2010, 2011 and 2012) are available from the ILO’s website at [www.ilo.org/trends](http://www.ilo.org/trends).

paths and duration of transition offer a unique insight into how young people transition from the end of schooling (or first entry into economic activity) to a stable job in the labour market or, alternatively, remain stuck in less productive and less beneficial categories of economic activity such as unemployment or self-defined non-satisfactory self-employment. Chapter 6 closes with an overview of policy options, which build on the findings in this report as well as on recent recommendations made by the ILO in various international meetings.

## 1.3 Main findings

This is a dense report, packed with data and information. The following summary aims at assisting readers to grasp the main findings and updates in youth labour market trends.

### 1.3.1 Global trends (Chapter 2)

The global youth unemployment rate, which had decreased from 12.7 per cent in 2009 to 12.3 per cent in 2011, increased again to 12.4 per cent in 2012, and has continued to grow to 12.6 per cent in 2013. This is 1.1 percentage points above the pre-crisis level in 2007 (11.5 per cent).

By 2018 the global youth unemployment rate is projected to rise to 12.8 per cent, with growing regional disparities, as expected improvements in advanced economies will be offset by increases in youth unemployment in other regions, mainly in Asia.

Global youth unemployment is estimated to stand at 73.4 million in 2013, an increase of 3.5 million since 2007 and 0.8 million above the level in 2011. Rising youth unemployment and falling labour force participation contributed to a decrease in the global youth employment-to-population ratio to 42.3 per cent in 2013, compared with 44.8 per cent in 2007. Part of this decrease is due to rising enrolment in education. The global youth employment-to-population ratio is projected to be 41.4 per cent in 2018.

Globally, the ratio of youth to adult unemployment rates hardly changed in recent years, and stands at 2.7 in 2013. Young people therefore continue to be almost three times more likely than adults to be unemployed, and the upward trend in global unemployment continues to hit them strongly.

The global employment-to-population ratio declined by 1 percentage point between 2007 and 2012. This was due to falling labour force participation and rising unemployment, while changes in the demographic structure helped to raise the employment-to-population ratio. The contribution of youth unemployment to the decline in the employment-to-population ratio was particularly pronounced in the Developed Economies and European Union region and in East Asia.

### 1.3.2 Trends in advanced economies (Chapter 2)

Since 2009, little progress has been made in reducing youth unemployment in the Developed Economies and European Union as a whole. The youth unemployment rate in 2012 is estimated at 18.1 per cent, the same rate as in 2010 and the highest level in this region in the past two decades. If the 3.1 per cent discouragement rate is taken into account, the discouragement-adjusted youth unemployment rate becomes 21.2 per cent. The youth unemployment rate is projected to remain above 17 per cent until 2015, and decrease to 15.9 per cent by 2018.

Between 2008 and 2012, the number of unemployed young people increased by more than 2 million in advanced economies, growing by almost 25 per cent. In the second quarter

of 2012 the youth unemployment rate exceeded 15 per cent in two-thirds of advanced countries. However, there are significant variations across countries and some countries are showing positive results. The youth unemployment rate was below 10 per cent in six countries in the Developed Economies and European Union in the second quarter of 2012, and in three countries, youth unemployment rates are currently below the level in the same quarter of 2008 (Germany, Israel and Switzerland).

From 2008 to 2010, the proportion of young people not in employment, education or training in the youth population, the “NEET” rate, increased by 2.1 percentage points to reach 15.8 per cent as an average of OECD countries. This means one in six young people were without a job and not in education or training.

The youth unemployment crisis in advanced economies is also reflected in longer job search periods and lower job quality. In the majority of OECD countries, one-third or more of young jobseekers are unemployed for at least six months.

In Europe, an increasing proportion of employed youth are involved in non-standard jobs, including temporary employment and part-time work, and evidence shows that a significant part of the increase is involuntary rather than by choice. Youth part-time employment as a share of total youth employment in Europe was 25.0 per cent in 2011. Another 40.5 per cent of employed youth in the region worked on temporary contracts.

### 1.3.3 Trends in developing regions (Chapter 2)

Regional youth unemployment rates show large variations. In 2012, youth unemployment rates were highest in the Middle East and North Africa, at 28.3 per cent and 23.7 per cent, respectively, and lowest in East Asia (9.5 per cent) and South Asia (9.3 per cent). Between 2011 and 2012, regional youth unemployment rates increased in all regions except in Central and South-Eastern Europe (non-EU) and Commonwealth of Independent States (CIS), Latin America and the Caribbean, and South-East Asia and the Pacific. Encouraging trends of youth unemployment are observed in, for example, Azerbaijan, Indonesia and the Philippines.

From 2012 to 2018, the youth employment-to-population ratio is projected to decrease in all regions except in the Developed Economies and European Union. The largest decrease is projected in the Asian regions, ranging from 1.1 percentage points in South Asia to 2.5 percentage points in East Asia.

In countries and regions with high poverty levels and high shares of vulnerable employment, the youth employment challenge is as much a problem of poor employment quality as one of unemployment. For instance, South Asia and Sub-Saharan Africa present relatively low regional youth unemployment rates, but this is linked to high levels of poverty, which means that working is a necessity for many young people. In India, there is evidence that youth unemployment rates are higher for families with incomes over the US\$1.25 poverty rate than for those with incomes under this poverty line.

The NEET rate for young people is high in some developing regions where figures are available. For instance, in Latin America and the Caribbean this rate was estimated at 19.8 per cent in 2008.

### 1.3.4 The skills mismatch challenge (Chapter 3)

This report examines two types of skills mismatch, using levels of educational attainment as a proxy for skills. The first type consists of mismatch between the supply of and demand for skills, and is based on a comparison of the educational attainments of the employed and the unemployed. The second type concerns mismatch between the skills that young people possess and those required by their jobs.

In advanced economies, the evidence shows there is a higher risk of mismatch for those at the bottom of the educational pyramid, which is reflected in relatively high unemployment rates for the low skilled in comparison with the high skilled. This type of mismatch increased from 2010 to 2011, signalling a deterioration of the labour market position of low-skilled youth.

With respect to the second type of mismatch, the evidence from advanced economies shows that young people (aged 15–29) are far more exposed to overeducation than workers aged 30 and above, and are also less likely to be undereducated. Overeducation of youth in advanced economies increased by 1.5 percentage points in the period 2002 to 2010, reflecting in part increases in educational attainment. However, the strong increase in overeducation in the past two years (by 1.4 percentage points) suggests another consequence of the economic crisis: youth with higher levels of education are increasingly taking up jobs that they are overqualified to do. The growing phenomenon of overeducation therefore implies a crowding out of youth at the bottom of the educational pyramid. The less educated youth find themselves at the back of the queue even for those jobs for which they are best qualified. Apart from youth, labour market groups that often face an elevated mismatch risk include women, persons with disabilities and migrants.

### 1.3.5 School-to-work transition surveys (Chapters 4 and 5)

Labour markets for young people in developing economies are very different from those in developed economies. The irregular nature of employment among youth and the tendency for youth in developing economies to leave education early are the labour market characteristics that contrast most directly with those of youth in developed economies. Compared with advanced economies, these countries face the additional challenges of underemployment and working poverty, with young people making up the bulk of the workers in the informal economy in both rural and urban areas.

Youth unemployment is a serious issue in low-income economies. When using a relaxed definition of unemployment (where active job search is not a criterion for inclusion), the unemployment rate doubles in many low-income economies. In fact, when this definition is applied, the average relaxed unemployed rate in least developed economies often comes out even higher than that of the high-income economies. Moreover, the unemployed young people in low-income economies do not benefit from the social protection systems that are available to their counterparts in developed economies.

Low-quality employment dominates in the ten developing economies examined in Chapter 4. Looking at averages across the ten countries, as many as eight out of ten young workers are in informal employment, six out of ten lack a stable employment contract and one-third are underqualified for the work that they do, with consequences for both the productivity of the enterprise and the security of the workers themselves. The high levels of underutilization of young labour in developing economies are a hindrance to development. As many as 60 per cent of young persons in developing regions are either without work, not studying, or engaged in irregular employment. In other words, nearly two-thirds of youth in developing economies are not achieving their full economic potential.

New data presented in Chapter 5 provide a unique portrait of how young people move from the end of schooling (or entry to first economic activity) to a stable job or, alternatively, remain stuck in categories of economic activity marked by informality, uncertainty and working poverty. In the ten developing countries analysed, young males are more likely than young females to complete the transition to stable and/or satisfactory employment. Household wealth, greater investment in education and urban origins are also seen to offer advantages in the labour market transition of youth. “Shopping around” among labour market experiences is not the norm in developing economies. When few labour market opportunities exist, young people tend to stick with the job that they have, regardless of its quality.

### 1.3.6 Policies to promote decent work for youth (Chapter 6)

Five key policy areas that can be adapted to national and local circumstances were identified by the representatives of governments, employers and workers of the 185 ILO member States at the International Labour Conference in June 2012 and are included in the resolution “The youth employment crisis: A call for action”.<sup>3</sup> The policy areas include: (i) employment and economic policies to increase aggregate demand and improve access to finance; (ii) education and training to ease the school-to-work transition and to prevent labour market mismatches; (iii) labour market policies to target employment of disadvantaged youth; (iv) entrepreneurship and self-employment to assist potential young entrepreneurs; and (v) labour rights that are based on international labour standards to ensure that young people receive equal treatment. These main policy areas and examples of good practices with details on specific interventions are discussed in Chapter 6 in view of the analysis in this report and the discussions in meetings such as the G20 Summits (see box 1).

#### Box 1. Youth employment: A G20 priority

The alarming situation of young people in the labour markets of most G20 countries has been the subject of discussions and deliberations at G20 Summit meetings. At the London Summit on Growth, Stability and Jobs (April 2009), the Leaders adopted a Global Plan for Recovery and Reform and committed to “support those affected by the crisis by creating employment opportunities”. They also called upon the ILO to work with other relevant organizations and to “assess the actions taken and those required for the future”. This was followed by the Pittsburgh Summit where Leaders committed to put quality jobs at the heart of the recovery process, decided to convene the first Meeting of Labour and Employment Ministers, and requested the ILO to prepare the G20 Training Strategy (see box 10).

The second Meeting of Labour and Employment Ministers (Paris, September 2011) discussed the main youth employment challenges in G20 countries and highlighted the role of policies to increase both quantity and quality of jobs for young people (OECD and ILO, 2011). The Ministers’ policy recommendations were endorsed by the Leaders in Cannes (November 2011). They revolved around improving active employment policies – particularly for young people and other vulnerable groups, establishing social protection floors, promoting international labour standards and strengthening the coherence of economic and social policies. The Summit also established an Employment Task Force, with an immediate priority for 2012 of youth employment.

The Employment Task Force was convened under the Mexican Presidency with a request for support from the ILO and other partners in reviewing youth employment policies and programmes, particularly apprenticeships and other measures to ease the school-to-work transition. The main conclusions of the Employment Task Force on the strategies for youth employment in G20 countries were endorsed by the Ministers of Labour and Employment (Guadalajara, May 2012) and by the Leaders’ Summit (Los Cabos, June 2012). Conclusions include (i) strengthening quality apprenticeship

systems and other school-to-work transition programmes in collaboration with the social partners; (ii) providing career guidance and facilitating acquisition of work experience with a view to promoting decent work; (iii) supporting the provision of youth entrepreneurship measures; (iv) exploring voluntary technical cooperation programmes, bilaterally or together with international organizations, as a means to share “best practices” in addressing youth employment; (v) requesting the ILO, OECD and other international organizations to work with national institutions in order to better understand the situation of young people in G20 countries and implement national youth employment initiatives with the support of the social partners. The Leaders extended the mandate of the Employment Task Force for another year under the Russian Presidency.

The social partners have actively contributed to the G20 priority on youth employment. The Business organizations (B20) and the Trade Union organizations (L20) of the G20 countries urged the Leaders to address the employment situation in general and of young people in particular in order to prevent “the risk of a growing share of the population losing faith in the global economy”. They also drew the attention of the Leaders in Cannes to the key elements that could make nationally defined social protection floors relevant in all countries, the need to implement fundamental principles and rights at work, and the importance of promoting coherence of actions in the multilateral system.

Young people’s concerns about the lack of decent jobs for them and their peers were voiced by representatives of young people selected by each country of the G20. In May 2012 the representatives of young people met at the Y20 Summit (Puebla, Mexico) and developed a set of conclusions to call the attention of G20 Leaders to global priorities (including global stability and financial inclusion, international trade, sustainable development and green growth, food security and the future of the G20). A specific set of conclusions revolved around the creation of quality jobs for young people.

Source: Based on information posted on ILO’s G20 website, [www.ilo.org/g20](http://www.ilo.org/g20).

<sup>3</sup> The full text of the 2012 resolution “The youth employment crisis: A call for action” can be found on the ILO website at: [http://www.ilo.org/ilc/ILCSessions/101stSession/texts-adopted/WCMS\\_185950/lang-en/index.htm](http://www.ilo.org/ilc/ILCSessions/101stSession/texts-adopted/WCMS_185950/lang-en/index.htm).

## 2. Global youth employment crisis worsening

Since the unprecedented increase in youth unemployment between 2008 and 2009, the global youth unemployment rate has remained at very high levels. From 2009 to 2011 the youth unemployment rate decreased from 12.7 per cent to 12.3 per cent. It increased again to 12.4 per cent in 2012 and has continued to grow to 12.6 per cent in 2013. This is 1.1 percentage points above the 2007 level of 11.5 per cent. Global youth unemployment is estimated to be 73.4 million in 2013, which is an increase of 3.5 million since 2007 and 0.8 million above the 2011 level<sup>4</sup> (figure 1 and table A1).<sup>5</sup>

Projections for 2014 show a further increase to 12.7 per cent and the gradual acceleration of economic growth in the medium-term is not expected to result in an improvement of job prospects for youth at the global level. By 2018, the global youth unemployment rate is projected to stand at 12.8 per cent (figure 2 and table A2). Regional disparities are, however, likely to increase, as some improvement in youth unemployment rates in advanced economies in the medium term will be offset by the increase in unemployment rates in other regions.<sup>6</sup>

Gender differentials in youth unemployment rates are small at the global level and in most regions. Regional youth unemployment rates are lower for young women in the advanced economies and East Asia (figure 3 and table A2). However, large gaps between female and male rates are evident in some regions such as North Africa and the Middle East and, to a lesser extent, Latin America and the Caribbean.<sup>7</sup>

In comparison to adults, youth continue to face a disadvantageous labour market situation. Globally, the ratio of youth to adult unemployment rates has hardly changed in recent years, and stands at 2.7 in 2013 (tables A1 and A6). Youth therefore continue to be almost three times more likely than adults to be unemployed, and the upward trend in global unemployment continues to hit them strongly.

The adverse labour market conditions for youth are also evident in global employment rates. The global employment-to-population ratio – the share of the working age population that is employed – declined by 1 percentage point between 2007 and 2012. This was due to falling labour force participation and rising unemployment, while changes in the demographic structure caused an increase in the employment-to-population ratio (figure 4).

Disaggregation by age group shows that rising youth unemployment and falling youth participation account for –0.5 percentage points of the overall decline,<sup>8</sup> compared with a contribution of –0.8 percentage points from these two factors for adults, despite the fact that youth accounted for less than 20 per cent of the global labour force before the crisis. In other words, the contribution of youth labour market outcomes was disproportionate to the relative size of the youth population (ILO, 2013a).

<sup>4</sup> As shown in figure 1, the highest global youth unemployment rate occurred in 2002, which was the result of the relatively high youth unemployment rate in several regions at that time, including Latin America and the Caribbean, South-East Asia and the Pacific and North Africa.

<sup>5</sup> All tables referenced A to D can be found in corresponding annexes at the end of the report.

<sup>6</sup> The advanced economies include the European Union and other developed economies; Annex G lists regional groupings and countries.

<sup>7</sup> See also *Global Employment Trends for Women* (ILO, 2012b) for a discussion of gender differentials in recent labour market trends.

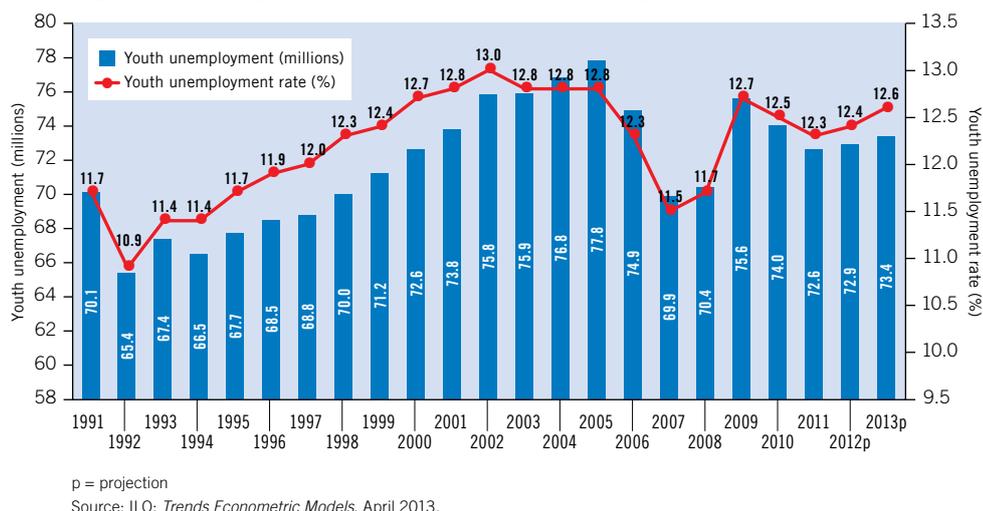
<sup>8</sup> Part of the decline in youth participation is due to rising enrolment in education.

At the global level, the youth employment-to-population ratio decreased from 44.2 per cent in 2008 to 42.3 per cent in 2013 (table A5). At the regional level, the contribution of youth unemployment to the decline in the employment-to-population ratio was particularly pronounced in the Developed Economies as well as in East Asia (figure 4).

From 2012 to 2018, global and regional youth employment-to-population ratios are projected to decrease in all regions except in the Developed Economies and European Union. The largest decreases are projected in the Asian regions, ranging from 1.1 percentage points in South Asia to 2.5 percentage points in East Asia (table A5).

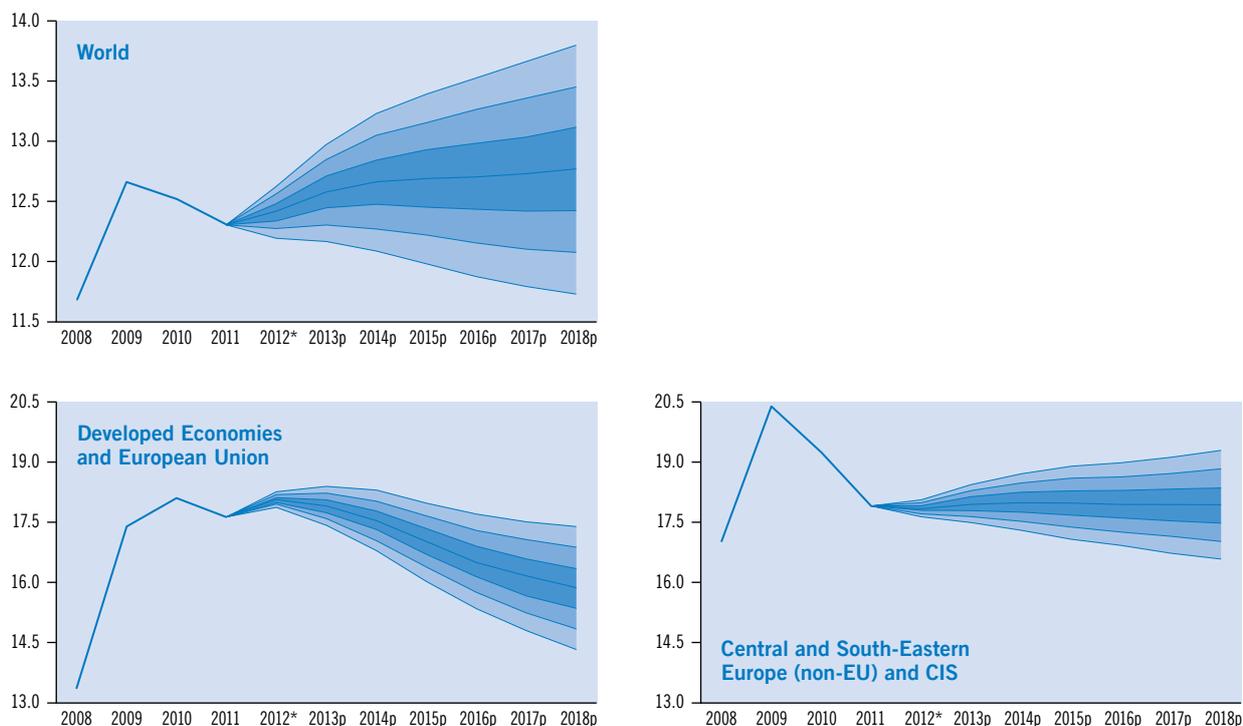
### After a brief recovery, global youth unemployment continues to rise.

Figure 1. Global youth unemployment and unemployment rate, 1991–2013

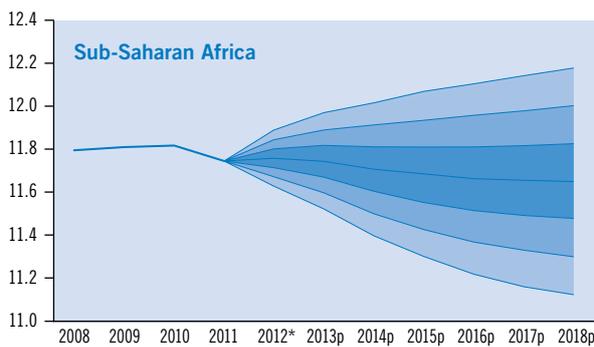
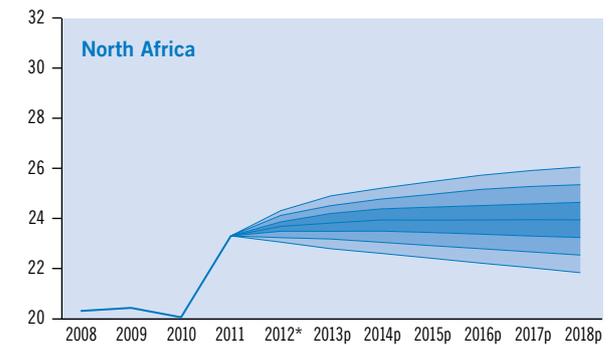
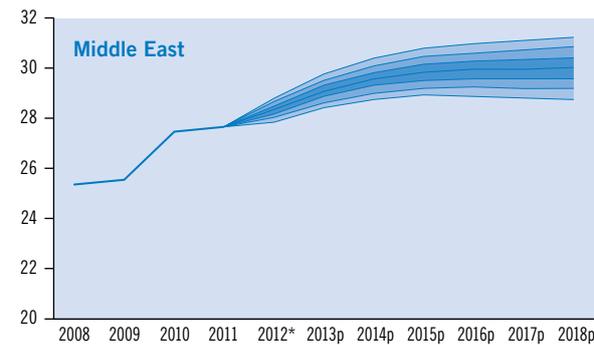
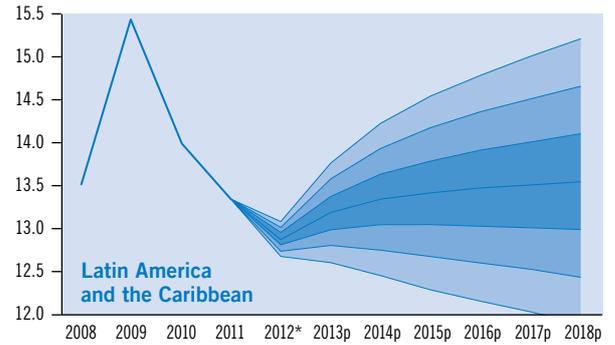
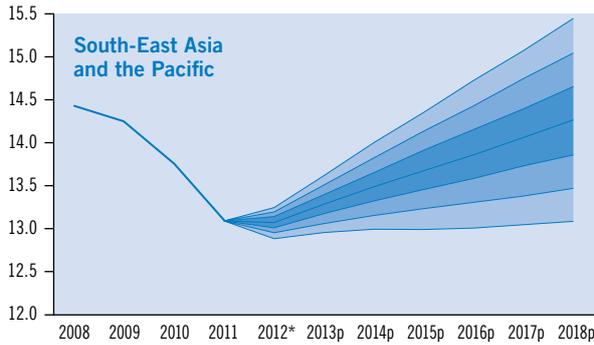
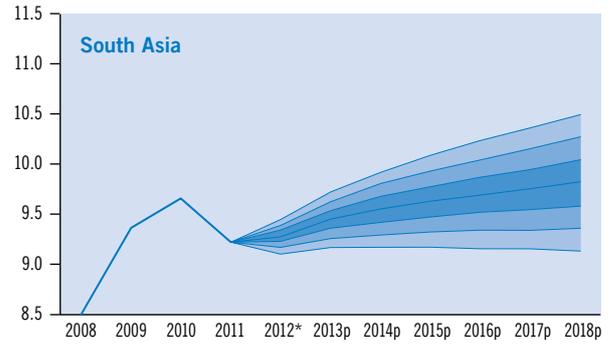
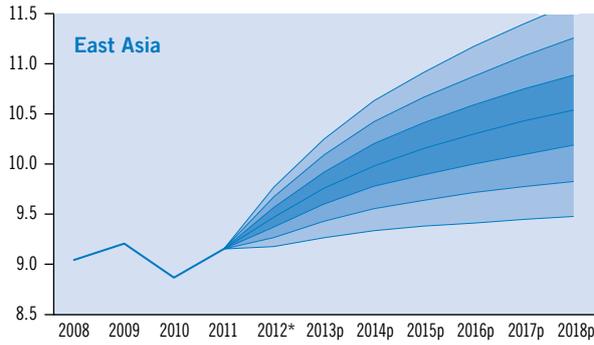


### In most regions, the youth unemployment rate is on an upward trend.

Figure 2. Youth unemployment rate estimates and projections, 2008–18 (%)



**Figure 2. (concl.)**



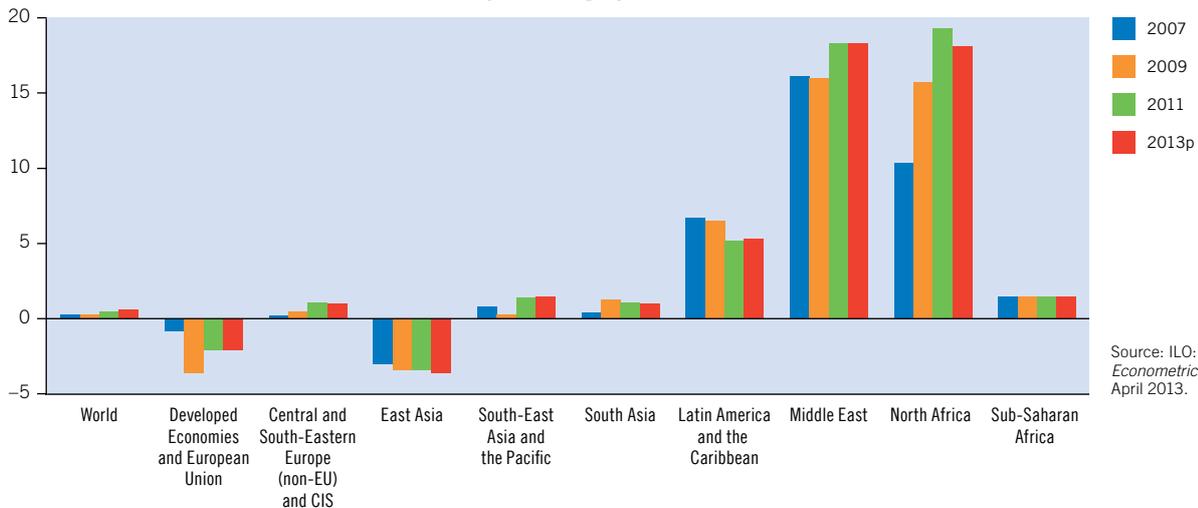
\* = preliminary estimate; p = projection.

Note: The charts depict the evolution of global and regional unemployment rates between 2008 and 2012 as well as unemployment rate projections for 2013 to 2018. Projections are presented in the form of a fan chart, indicating the probability of various outcomes for the unemployment rates. Each shade of the fans corresponds to one-third of the confidence interval around the central projection (see Annex E for methodological information).

Source: ILO: *Trends Econometric Models*, April 2013.

## Gender gaps in youth unemployment rates are exceptionally large in the Middle East and North Africa.

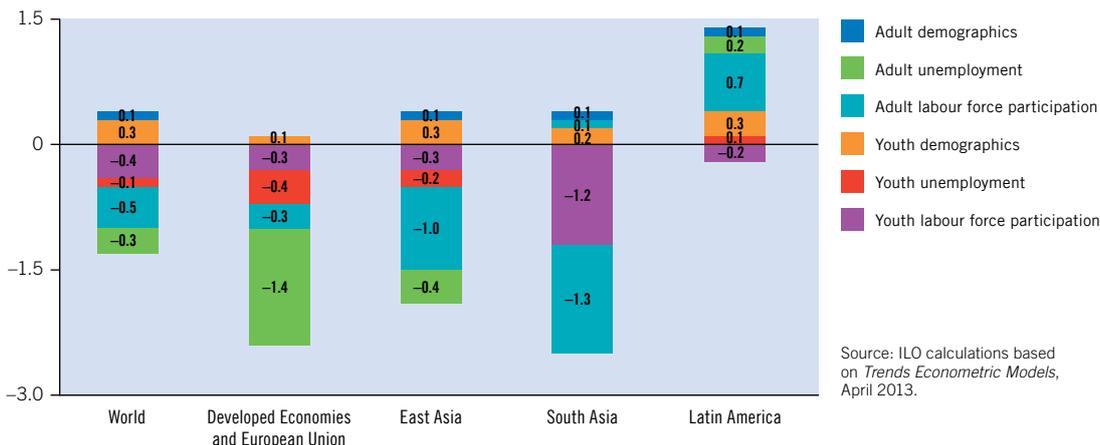
**Figure 3. Global and regional gender gaps in youth unemployment rates, selected years (female rate minus male rate, percentage points)**



Source: ILO: *Trends Econometric Models*, April 2013.

## Youth suffer disproportionately from inadequate employment growth.

**Figure 4. Decomposition of changes in the employment-to-population ratio, 2007–12**



Source: ILO calculations based on *Trends Econometric Models*, April 2013.

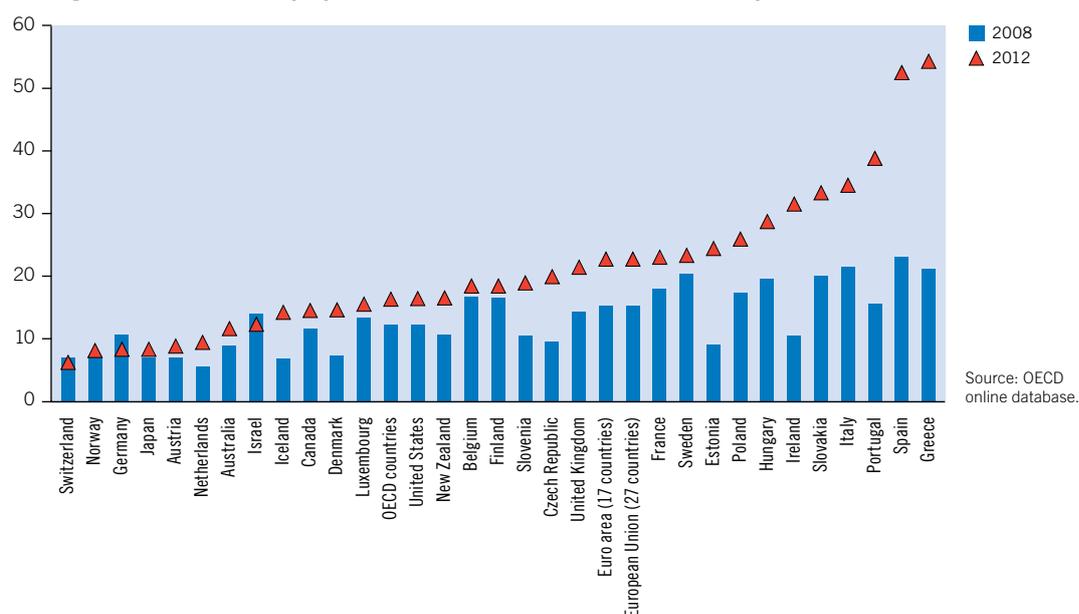
## 2.1 Youth labour markets in advanced economies

Since 2009, little progress has been made in reducing youth unemployment in the advanced economies. The youth unemployment rate in 2012 is estimated at 18.1 per cent, which is the same rate as in 2010 and represents the highest level in advanced economies in the past two decades. On current projections, the youth unemployment rate in the advanced economies will not drop below 17 per cent before 2016 (figure 2).

Between 2008 and 2012, the number of unemployed young people increased by more than two million, which is the equivalent of almost 25 per cent growth (table A3). By the second quarter of 2012, the youth unemployment rate exceeded 15 per cent in two thirds of advanced economies, and in Greece and Spain youth unemployed accounted for more than half of the economically active youth population (figure 5). According to OECD data, the youth unemployment rate in 2012 recorded the highest quarterly rate in the past ten years in at least ten countries, and the same is true for the Euro area as a whole. However, there is also variation in country experiences. The youth unemployment rate was below 10 per cent in

## Youth unemployment rate exceeds 15 per cent in two-thirds of advanced economies.

Figure 5. Youth unemployment rates, 2008 and 2012 (second quarter, %)



six countries in the Developed Economies and European Union region in the second quarter of 2012 (Austria, Germany, Japan, the Netherlands, Norway and Switzerland), and in three countries the youth unemployment rate was below the level in the same quarter of 2008 (Germany, Israel and Switzerland) (table B1).

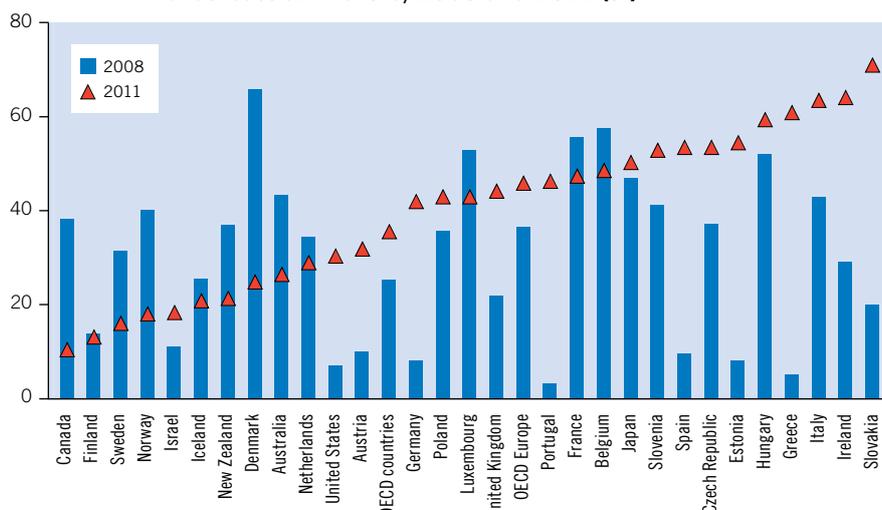
The massive increase in youth unemployment is reflected in the duration of unemployment. In the OECD countries, on average more than one-third of unemployed youth had been unemployed for at least six months in 2011, up from around one-quarter in 2008. In ten countries at least half of the unemployed youth have been looking for a job for more than six months (figure 6). The share of the unemployed youth who had been unemployed for at least six months increased from the second quarter in 2008 to the second quarter in 2012 in 19 countries, while it decreased in 12 countries (table B2).

High and increasing unemployment rates coupled with longer periods of job search have resulted in many young people giving up the search altogether and becoming discouraged (see, for example, Bell and Blanchflower, 2011). “Adjustment” of the unemployment rate to include discouraged workers would add an estimated 3.1 percentage points to the youth unemployment rate in the advanced economies in 2012, raising the rate to 21.2 per cent. The adjusted number of unemployed/discouraged youth would rise to 13.0 million, compared with 10.7 million youth who were actually unemployed in 2012.

Another sign of discouragement in the labour market is the growth in the number of young people neither in employment nor in education or training, the “NEET” group. Because they are neither improving their future employability through investment in skills nor gaining experience through employment, NEETs are particularly at risk of both labour market and social exclusion. In addition, the NEET group is already in a disadvantaged position due to lower levels of education and lower household incomes (Eurofound, 2011). Between 2000 and 2008, the average NEET rate (the proportion of the NEET group as a percentage of the youth population aged 15–29) decreased by 1.4 percentage points in OECD countries (table B3). However, from 2008 to 2010 the rate increased by 2.1 percentage points to reach 15.8 per cent. In other words, around one in six young persons are without a job and not in education or training. In the European countries these trends are more pronounced both before and after the peak of the economic crisis. In Estonia, Iceland, Ireland and Spain the NEET rate increased by more than 5 percentage points between 2008 and 2010.

## More than one-third of unemployed youth have been unemployed for at least six months.

**Figure 6. Share of youth unemployed who have been unemployed for at least six months, 2008 and 2011 (%)**



Source: OECD online database.

The long-term consequences of persistently high youth unemployment are well known and likely to become more serious the longer the youth unemployment crisis continues. Valuable work experience is not acquired and professional skills may erode. Unemployment experiences early in a young person's career are likely to result in wage scars that continue to depress their employment and earnings prospects even decades later. A study by Kahn (2010) estimated that a 1 percentage point increase in unemployment in the United States results in a 6 to 7 per cent decrease in the wages of college graduates. In addition, although the cost in terms of foregone wages decreases over time, it still remains significant 15 years later. Bell and Blanchflower (2011) showed that unemployment in a person's early twenties negatively affects employment and earnings prospects, as well as health and job satisfaction, up to two decades later. Early unemployment experiences also raise the risk of future unemployment and/or a protracted period of unstable employment (Arumlamplam, Gregg and Gregory, 2001). Such consequences may result from a deterioration of skills, but may also be caused by prospective employers' negative perceptions of youth who have been out of work for prolonged periods. Moreover, these effects are believed to be more severe for youth entering the workforce with an education level below the tertiary level who are already in a relatively disadvantaged position compared with their better-educated peers (see Chapter 3). Apart from its detrimental effects on future wages and employability, youth unemployment may have a negative impact on happiness, job satisfaction and health for many years (Morsy, 2012).

### 2.1.1 Quality of youth employment

Youth are increasingly employed in non-standard jobs, including temporary employment and part-time work. Non-standard work may be beneficial to workers if such work reflects preferences to combine work with other activities including study or care work. Demand for non-standard work can be induced by the need of firms to regulate the size of their workforce in accordance with the business cycle or to deal with peaks in demand during the weekends or after regular working hours. Part-time work can also serve as a stepping stone to a full-time position. Similarly, temporary employment may be a preferred option when planning future activities.

Part-time employment rates vary widely across economies, reflecting female labour force participation rates, institutional factors such as the availability and extent of child benefits

and views of social partners (see, for example, Buddelmeyer, Mourre and Ward, 2008; OECD, 2010). However, the growth of temporary and part-time work, in particular since the height of the global economic crisis, also suggests that such work is often the only option available to young workers (ILO, 2012a). For many companies, non-standard contracts are an attractive option given the heightened uncertainties under which they have been operating in recent years (ILO, 2013a).

For the OECD as a whole, the incidence of part-time work for youth increased from 20.8 per cent in 2000 to 29.3 per cent in 2011. In the European Member States of the OECD, youth part-time employment as a share of total youth employment grew from 18 per cent in 2000 to 22.3 per cent in 2008, but it jumped to 25 per cent in 2011 (a growth of almost 1 percentage point per year) (table B4). In North America, part-time work as a share of youth employment increased from 28.4 per cent in 2000 to 31.2 per cent in 2007. During the crisis, it increased further to 34.3 per cent in 2009. Contrary to the European countries, the incidence of part-time work decreased in 2010 and 2011. In 2011, 32.0 per cent of North American youth worked part time.

Similarly, the pace of increase in temporary work as a share of total youth employment in Europe accelerated from 0.3 percentage points annually during 2000-08 to 0.6 percentage points between 2008 and 2011 (table B5). In North America, youth temporary work decreased between 2000 and 2008, but has slightly increased since 2008. In 2011, 40.5 per cent of European youth worked on temporary contracts, compared with 14.5 per cent of North American youth.

## 2.2 Youth labour markets in developing regions

Developing regions face major youth employment challenges, but also show large variations in the extent and development of youth unemployment. In 2012, youth unemployment was highest in the Middle East and North Africa, at 28.3 per cent and 23.7 per cent, respectively, and lowest in East Asia (9.5 per cent) and South Asia (9.3 per cent, see table A2). Such differences are due to a variety of reasons, including economic conditions and institutional factors. Chapter 4 offers a more in-depth view of the peculiarities of youth labour markets in a selection of developing economies.

### 2.2.1 South Asia

The youth unemployment rate in South Asia decreased in 2011 by 0.4 percentage points to reach 9.2 per cent, but increased to 9.3 per cent in 2012. Projections suggest a continuing upward trend in South Asia in the coming years for both young men and young women (figure 2 and table A2). The youth employment-to-population ratio is expected to continue its downward trend, from 37.2 per cent in 2012 to 36.1 per cent in 2018. In 2008, the youth employment-to-population ratio stood at 40.3 per cent in South Asia (table A5).

One in ten economically active youth in South Asia are unemployed, as employment is often taken up due to the necessity to make a living, even among the young. South Asia has one of the highest regional working poverty rates, and almost one in four workers are counted among the working poor, while working poverty rates are often higher for youth. In India, for example, which represents three-quarters of South Asia's population, the working poverty rate in 2010 was 33.7 per cent for youth at the US\$1.25 poverty level, compared with 28.5 per cent for adults. Aggregate youth unemployment rates tend to rise if family incomes increase. In India, the unemployment rate for poor youth in 2010 was 9.7 per cent, compared with 10.5 per cent for youth living in families with an income per capita above the US\$1.25 poverty

line. This is the result of large differentials in youth unemployment rates for females (12.9 per cent for non-poor young women versus 3.1 per cent for poor young women). The difference is far less for young males, and the unemployment rate for poor young men (10.0 per cent) is actually slightly higher than for non-poor young men (9.7 per cent).<sup>9</sup>

Unemployment rates in South Asia also tend to rise by level of educational attainment, which is related, in part, to family income. In Sri Lanka, the highest unemployment rate is found among those with at least a higher secondary education: 5.5 per cent for men and 11.7 per cent for women in the second quarter of 2012. In comparison, the unemployment rate for Sri Lankans who did not complete their lower secondary education is just 1.7 per cent for men and 3.3 per cent for women (Sri Lanka Department of Census and Statistics, 2012). A similar pattern prevails in India, where unemployment rates increase rapidly for highly skilled workers, particularly women. At the same time, Indian employers have trouble hiring staff: according to the 2011 Manpower Talent Shortage Survey, 67 per cent of Indian employers stated that they had difficulties filling positions.<sup>10</sup> Skills mismatch therefore appears to be particularly serious in South Asia and may well contribute to youth unemployment.

## 2.2.2 East Asia

Youth unemployment rates have been at a higher level in East Asia since the economic crisis in 2008 and 2009. In 2007, the regional youth unemployment rate was 7.9 per cent, but since 2008 the rate has been close to or above 9.0 per cent. The increase in recent years has been more marked for young men (up from 10.4 per cent in 2010 to 11.2 per cent in 2012) than for young women (up from 7.2 per cent in 2010 to 7.6 in 2012). Projections suggest an upward trend in youth unemployment in East Asia, with the regional rate reaching 10.0 per cent in 2014 (figure 2 and table A2).

The higher level of youth unemployment rates in comparison with the pre-crisis period, as well as the more recent rise, can be illustrated by monthly indicators. In Taiwan, China, for example, the youth unemployment rate was 13.0 per cent in July 2012, compared with 12.9 per cent in July 2011. This is lower than the high of 15.6 per cent in July 2009, but still considerably above the rate in 2007 at 11.3 per cent. Similarly, in Macau, China, the youth unemployment rate increased from 6.5 per cent in August 2011 to 7.4 per cent in August 2012, compared with 7.2 per cent in August 2007. Conversely, in the Republic of Korea, the youth unemployment rate decreased from 8.3 per cent in October 2011 to 7.2 per cent in October 2012, which is just below the rate in the same month in 2007 (7.3 per cent; ILO, 2013b).

Unemployment rates in several East Asian countries are lowest for tertiary educated workers.<sup>11</sup> A consistent pattern in the Republic of Korea for many years has been the relatively high unemployment rate for those with secondary and post-secondary non-tertiary education. In more recent years differences between unemployment rates by level of education reduced significantly. In 2010, the most recent year for which these data are available, the unemployment rate for workers with secondary and post-secondary non-tertiary education was 3.5 per cent, compared with 3.1 per cent for workers with a lower level of education and 3.3 per cent for those with tertiary education (OECD, 2012).

<sup>9</sup> ILO calculation based on the 2010 India National Sample Survey.

<sup>10</sup> Available at: <http://us.manpower.com/us/en/multimedia/2011-Talent-Shortage-Survey.pdf>.

<sup>11</sup> Differences in unemployment rates for workers with different levels of educational attainment are one indication of skills mismatch. For more information see Chapter 3 and Johansen and Gatelli (2012).

### 2.2.3 South-East Asia and the Pacific

Youth unemployment rates in South-East Asia and the Pacific are considerably higher than in East Asia and South Asia: the regional rate in South-East Asia and the Pacific reached 13.1 per cent in 2012. Youth in this region seem to be particularly challenged, as the ratio of youth-to-adult unemployment rates is estimated at 5.2 in 2012. In other words, young people in South-East Asia and the Pacific are over five times more likely to be unemployed than adults. Globally, the ratio was 2.8, and in South Asia it was 4.0, both in 2012 (table A6).

The regional youth unemployment rate in South-East Asia and the Pacific was moving downwards between 2005 and 2011 (figure 2 and table A2). However, on current projections, the regional youth unemployment rates will rise from 13.3 per cent in 2013 to above 14 per cent by 2017.

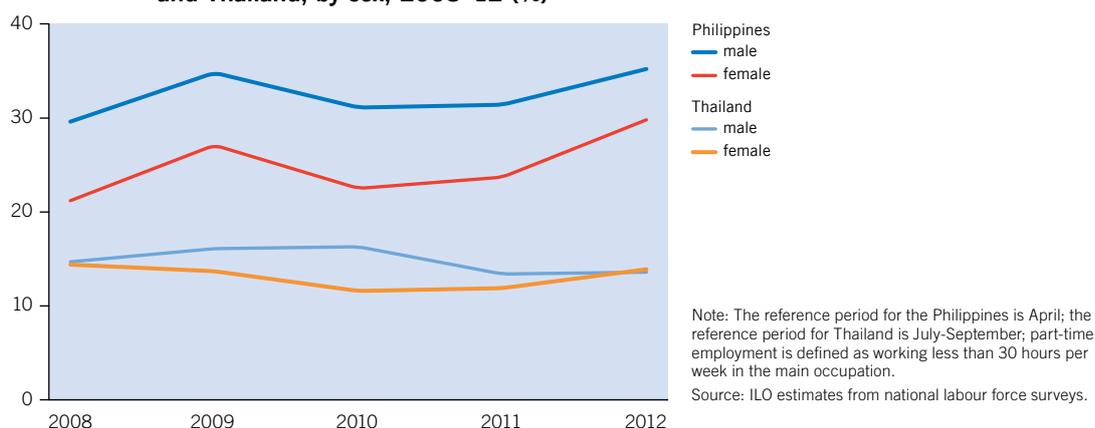
Nevertheless, trends in youth unemployment have been encouraging in the two most populous countries in South-East Asia and the Pacific: the Philippines and Indonesia. The youth unemployment rate in the Philippines was 16.0 per cent in the second quarter of 2012, compared with 16.6 per cent in the same period of 2011 and 18.8 per cent in the same period of 2010. In Indonesia, youth unemployment has declined significantly from 23.0 per cent in 2011 to 19.6 per cent in 2012 (ILO, 2013a). In the Philippines, unemployment rates for young men declined relatively more rapidly during the same period, with the rate for young men falling by 3.2 percentage points compared with 2.1 percentage points for young women. Conversely, in Indonesia, the rate for young women fell by 6.6 percentage points during the respective period, compared with 3.7 percentage points for men.

Since the onset of the global economic and jobs crisis in 2008, part-time work seemed to have become an increasingly significant part of labour market adjustments for youth in the Philippines, while in other countries such as Thailand part-time work is on a downward trend. In the Philippines, youth aged 15–24 saw a decrease in unemployment from 18.6 per cent in April 2008 to 17.3 per cent in April 2009. During that one-year period, however, the share of youth working part time (less than 30 hours per week) increased notably from 26.6 per cent to 32.0 per cent. Following a subsequent fall in part-time employment in 2010 and 2011, youth part-time employment again spiked in 2012 at 33.2 per cent – an increase of 2.5 million workers. Moreover, while part-time employment remains higher among young Filipino men than their female counterparts, the increase in the part-time employment rate since 2008 has been considerably higher among female youth (8.6 percentage points) than male youth (5.5 percentage points).

In contrast, part-time employment among young people in Thailand is significantly lower than in the Philippines (figure 7). The share of Thai youth in part-time work has fluctuated but trended downward from 14.6 per cent (712,000) in 2008 to 13.7 per cent (651,000) in 2012, with slight increases in 2009 and 2012. However, an important development is the increase in part-time employment among young Thai females in recent years to 13.9 per cent in 2012, now marginally exceeding the rate of 13.6 per cent for male youth. In many countries, including Indonesia, a large share of part-time workers would prefer to work full time (see box 2).

## Part-time work is important for youth in developing economies.

**Figure 7. Part-time employment rates in the Philippines and Thailand, by sex, 2008–12 (%)**



### Box 2. Voluntary and involuntary part-time youth employment in Indonesia

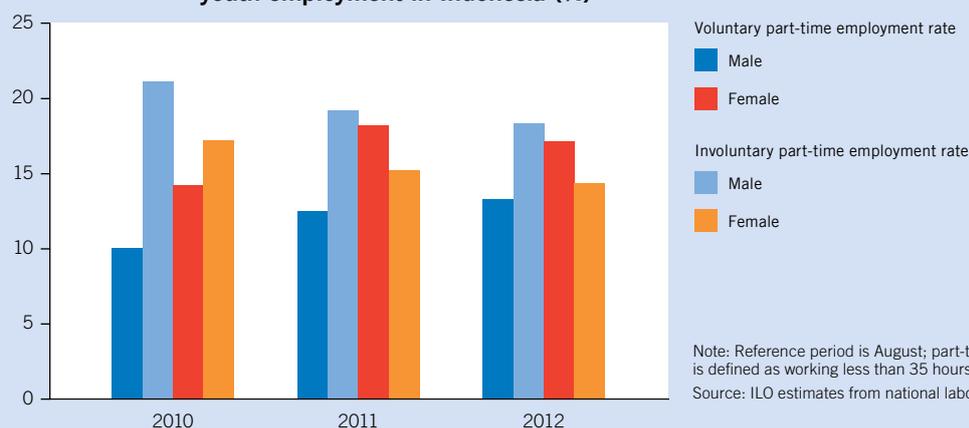
Youth unemployment rates in Indonesia have fallen in recent years, from 23.0 per cent in 2011 to 19.6 per cent in 2012 as the Indonesian economy has been able to maintain solid growth rates, growing by 6.2 per cent in 2012. In recent years the growth in part-time work has played an important role in expanding employment and reducing unemployment among youth in Indonesia, with part-time work accounting for 36.4 per cent of the increase in youth employment between 2010 and 2012.

In 2012, 31.5 per cent of the employed youth in Indonesia were working part time, defined in Indonesia as working less than 35 hours a week. Amongst these young

part-time workers, the majority (53.1 per cent) preferred working additional hours, although the proportion of such workers among all young part-time workers has decreased substantially from 62.6 per cent in 2010 to 53.1 per cent in 2011.

In Indonesia, young women are more likely than young men to be in voluntary part-time work. The voluntary part-time employment rate for young women in 2012 was 17.1 per cent, compared with 13.3 per cent for young men. In contrast, the involuntary part-time employment rate for young men was 18.3 per cent, compared with 14.3 per cent for young women.

**Box figure 1. Voluntary and involuntary part-time youth employment in Indonesia (%)**



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

Together with South-East Asia and the Pacific and Latin America and the Caribbean, Central and South-Eastern Europe (non-EU) and CIS is one of the three regions in which the regional youth unemployment rate did not increase from 2011 to 2012. The youth unemployment rate came down from a high of 20.4 per cent in 2009 to 17.9 per cent in both 2011 and 2012, and is projected to remain slightly higher (18 per cent) until 2018 (figure 2 and table A2).

In some countries with a large youth population share the situation is far worse than the regional figures suggest. In Armenia, despite the economic recovery, average youth unemployment in 2010 stayed at 39.1 per cent, and remained even higher for young women. The unemployment rate for females aged 16–24 was 48.2 per cent, compared with 32.2 per cent for males (ILO, 2012c, p. 6). In contrast, Azerbaijan benefited from a decline in the youth unemployment rate from 18.4 per cent in 1999 to 11.0 per cent in 2010 (ILO, 2012d). A similar positive trend was observed in Turkey where the youth unemployment rate in 2012 was 17.5 per cent, compared with 25.3 per cent in 2009 and 20.0 per cent in 2007.<sup>12</sup>

In the Russian Federation, the youth unemployment rate in July 2012 stood at 15.8 per cent, which was four times higher than the unemployment rate for those aged 30–49. National figures conceal large regional disparities, with youth unemployment rates ranging from 5 per cent in Moscow to 51.3 per cent and 86.7 per cent in Chechnya and Ingushetia, respectively.<sup>13</sup> Data on informal employment from the ILO's school-to-work transition survey (SWTS) in the Russian Federation in 2012 reveal that 50.9 per cent of all young workers were employed informally (figure 8).<sup>14</sup> Young women were slightly less likely than men to be employed informally (49.7 per cent and 51.9 per cent, respectively), with the younger cohorts more exposed to informality than young adults (aged 25–29). The share in informal employment in The former Yugoslav Republic of Macedonia (hereinafter "FYR Macedonia") is similar to the Russian Federation at 48.4 per cent in 2012, but the share in Armenia is much higher, at 64.2 per cent (table D5). An analysis of informality among youth living in the selected countries in Eastern Europe and the Caucasus shows that, in 2009, one-third of total youth employment was in the informal economy.

Skills mismatches are substantial in the Russian Federation's labour markets, as the unemployment rate for workers with an advanced education is far lower than for workers with a basic education (4.3 per cent versus 16.2 per cent; ILO, 2013b). Mismatch is also a serious concern in some other countries of the region (see also Chapter 4). On the one hand, there are not enough jobs for young university graduates. On the other hand, there is high and unmet demand for technicians of all skill levels and for skilled blue-collar workers.

Gender disparities are apparent in both youth unemployment and youth labour force participation in Central and South-Eastern Europe (non-EU) and CIS. In 2012, female youth labour force participation was 34.1 per cent, compared with 49.6 per cent for young men (table A4). The gender gap in youth unemployment rates in the same year was 1.1 percentage points (figure 3).

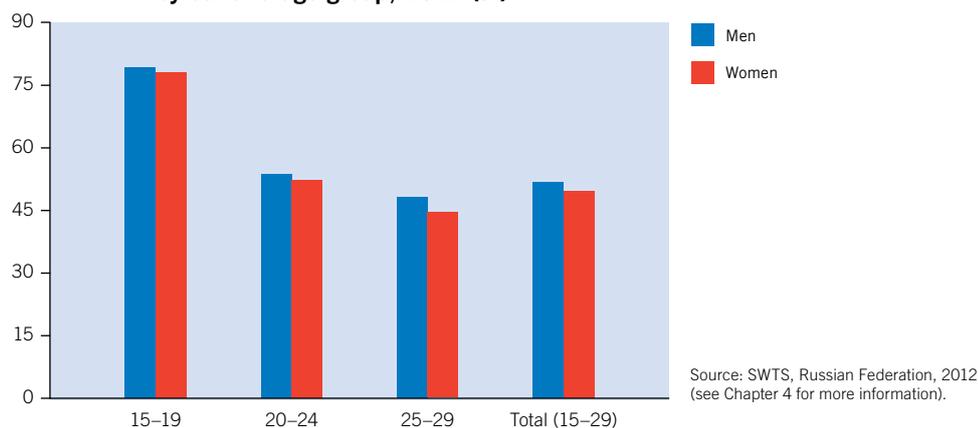
<sup>12</sup> 2012 Household Labour Force Survey, TurkStat (Turkish Statistical Institute).

<sup>13</sup> *Review of policies for youth employment in the Russian Federation* (ILO, forthcoming).

<sup>14</sup> Informal employment is measured according to the guidelines recommended by the 17th International Conference of Labour Statisticians. It includes the following sub-categories of workers: (a) paid employees in "informal jobs", i.e. jobs without a social security entitlement, paid annual leave or paid sick leave; (b) paid employees in an unregistered enterprise with size class below five employees; (c) own-account workers in an unregistered enterprise with size class below five employees; (d) employers in an unregistered enterprise with size class below five employees; and (e) contributing family workers.

## Informal employment accounts for half of young workers in the Russian Federation.

Figure 8. Young workers in informal employment in the Russian Federation, by sex and age group, 2012 (%)



### 2.2.5 Latin America and the Caribbean

The youth unemployment rate in Latin America and the Caribbean decreased from 17.6 per cent in 2003 to 13.5 per cent in 2008. The global economic crisis resulted in a sharp increase in the rate to 15.4 per cent in 2009, but from 2010 the regional youth unemployment rate resumed its downward path to reach 12.9 per cent in 2012. On current projections, youth unemployment is expected to increase in the medium term.<sup>15</sup>

Strong economic growth in the region has improved social and labour conditions, but young people do not seem to have fully benefited from these improvements. The ratio of youth to adult unemployment rates, which stood at 2.5 in 2000, gradually increased and in more recent years a value of 2.8 has been common. In Argentina, for example, the ratio stood at 3.0 in the early years of the past decade, but it reached 3.3 in 2007 and increased to 3.6 in 2011. Similarly, values of 3.0 or higher seemed to have become common in Brazil in recent years. Finally, in the Bolivarian Republic of Venezuela the ratio of youth-to-adult unemployment rates reached 2.7 in 2011, the highest value observed in the past 10 years (ILO, 2011a).

Unemployment rates in Latin America and the Caribbean often show large differences for workers with different levels of education, and these differences are not always in favour of those with the highest educational achievements. In Peru, in July 2012, the highest rate of unemployment was among workers with an intermediate level of education, at 7.1 per cent, compared with 6.6 per cent for workers with either a basic level or an advanced level. In Chile, workers with a secondary education also have the highest unemployment rate, at 7.3 per cent in October 2012 (compared with 4.5 per cent for primary educated workers and 5.9 per cent for tertiary educated workers). Similarly, in Argentina, the rate for secondary educated workers was 8.6 per cent in May 2012 (compared with 8.2 per cent for workers with a primary education and 3.1 per cent for workers with an advanced education; ILO, 2013b).

In Peru, secondary educated workers constitute 19 per cent of the unemployed, but in both Argentina and Chile these workers make up a much higher proportion of the unemployed (49 per cent 54 per cent, respectively; ILO, 2013b). Skills mismatch in these countries therefore seems to be concentrated to a significant extent among secondary graduates. This is partly due to an increase in the demand for workers with a college education relative to those with secondary education (Menezes Filho, 2013).

<sup>15</sup> Regional estimates presented here diverge from those published in the *Panorama Laboral* (ILO, 2012j), mainly as a result of differences in geographical coverage. Work on convergence in these estimates is currently being undertaken.

While youth unemployment in Latin America and the Caribbean is a cause of concern, equally worrying is the fact that 19.8 per cent of the region's youth fall in the NEET category (ILO, 2010d). ILO data show that the largest share of NEETs (51.7 per cent) in the region were engaged in household tasks, 23.1 per cent were unemployed and the remaining 25.2 per cent were neither working nor studying for other reasons. Because they are not improving their future employability through investment in skills or work experience, NEETs are particularly at risk of labour market and social exclusion.

## 2.2.6 Middle East

The Middle East has the highest youth unemployment rate of all regions. More than one in four economically active young people are unemployed. The youth unemployment rate for 2012 is estimated at 28.3 per cent, and is projected to increase gradually to 30.0 per cent in 2018 (figure 2 and table A2).

The employment situation is particularly bleak in Jordan and the Occupied Palestinian Territory, where 29.9 per cent (2011) and 38.8 per cent (2010) of young people in the labour force were unemployed. Furthermore, in Saudi Arabia and the Islamic Republic of Iran, 28.3 per cent (2012) and 23.0 per cent (2008), respectively, of 15–24-year-olds in the labour force were unemployed (ILO, 2011a and 2013b).

Together with North Africa, the Middle East is one of the two regions in which the total unemployment rate (across all age groups) exceeded 10 per cent in 2012. However, given the high youth-to-adult ratio of unemployment rates (3.8), as well as the youthful population in this region, youth bear the brunt of the unemployment problem, constituting 44.7 per cent of the unemployed. Young people in the region face joblessness despite the relatively low labour force participation rate of youth, which is the lowest of all regions (at 30.3 per cent in 2012; table A4). However, youth labour force participation rates vary widely in the region. Qatar shows a participation rate of 68.8 per cent in 2011 while Jordan's youth participation is 2.7 times lower, at 25.2 per cent (ILO, 2011a).

There are large gender differences in the employment situation for young people in the Middle East. While the unemployment rate for young males is estimated at 24.5 per cent in 2012, 42.6 per cent of young females in the labour force were unemployed. The unemployment rate for young women is high despite the fact that the female labour force participation rate is the lowest of all regions, at 13.2 per cent in 2012. Female labour force participation is particularly low in Jordan, where only 9.5 per cent of young women participate in the labour force. In contrast, the regional youth male participation rate – 46.5 per cent – is comparable to the rates in the advanced economies (ILO, 2011a).

## 2.2.7 North Africa

As in the Middle East, the youth unemployment rate in North Africa is very high, at 23.7 per cent in 2012. The unemployment rate for young women is even higher, at 37.0 per cent, compared with 18.3 per cent for young men in 2012. Unemployment affects youth to a greater extent than adults; the youth unemployment rate in 2012 was 3.4 times the adult unemployment rate. The outlook for the coming years remains bleak, with youth unemployment projected to remain close to 24 per cent until 2018 (figure 2 and table A2).

Despite the disadvantaged position of young people, their share in total unemployment has been (slowly) decreasing due to demographic changes – in particular the share of youth in the total population has been falling. In 2000, one in three persons of working age were aged between 15 and 24, but in 2012 this proportion had dropped to 28 per cent, and it is projected to fall to one in four persons in 2015. Demographic trends are less important in explaining

the share of women in total (female and male) unemployment, which is primarily driven by differences in labour force participation rates. At the regional level, the female youth labour force participation rate in North Africa is the second lowest in 2012 – only 19.7 per cent of young females of the working-age population participate in the labour force while 46.8 per cent of young males participate. The gap between male and female youth participation is not expected to become much smaller in the medium term. It is projected that in 2017, 20.1 per cent of young women will be in the labour force.

There is great heterogeneity between countries in terms of youth unemployment by sex. In 2011, the youth unemployment rates for males and females in Morocco were fairly close, with young men facing a slightly higher unemployment rate (18.1 per cent) than young women (17.4 per cent). In Algeria, on the other hand, young women were far more likely to be affected by unemployment than young men. The female youth unemployment rate in this country was 37.5 per cent in 2010, while the male youth unemployment rate stood at 18.7 per cent (ILO, 2011a).

Skills mismatches are a structural labour market problem in North Africa, which can be illustrated using unemployment rates by educational attainment. The unemployment rates for persons with tertiary-level education are among the highest in the world, at 21.4 per cent, 18.9 per cent and 17.4 per cent in 2010 in Algeria, Egypt and Morocco, respectively. In Algeria and Egypt, they are higher than for persons with primary or secondary education, pointing at a mismatch between the supply of and demand for skills and education. In most advanced economies, persons with higher levels of education are less likely to be unemployed, but this does not seem to apply to North African economies, as prospects of finding jobs for those having completed tertiary education are grim.

### 2.2.8 Sub-Saharan Africa

Although the regional youth unemployment rate in Sub-Saharan Africa is lower than in most other regions, it is significantly higher than the adult unemployment rate. Compared with an adult unemployment rate of 5.9 per cent in 2012, youth are twice as likely to be unemployed, with an estimated youth unemployment rate of 11.8 per cent in 2012. Youth unemployment rates much higher than the regional average are found in South Africa, where over half of young people in the labour force were unemployed in the first three quarters of 2012, and in Namibia (58.9 per cent in 2008), Réunion (58.6 per cent in 2011) and Lesotho (34.4 per cent in 2008; ILO, 2011a and 2013b). On current trends, the youth unemployment rate is projected to remain close to 11.7 per cent in the coming years.

Similarly to South Asia, the relatively low regional youth unemployment rate in Sub-Saharan Africa is linked to the high levels of poverty. The region has by far the highest rate of working poverty, estimated at 40.1 per cent in 2012 at the US\$1.25 per day level, and working is a necessity for many young people. At the US\$2 per day level, the working poverty rate rises to 64 per cent; only South Asia has a working poverty rate at comparable levels (although the working poverty rate at the US\$1.25 per day level is significantly lower in South Asia). However, even though high levels of working poverty persist in Sub-Saharan Africa, the shares of working poor at \$1.25 and \$2 per day have dropped in the past 15 years from peaks of almost 59 and 77 per cent respectively in 1994 to their lowest level yet in 2012 (ILO, 2011a).

Given the high poverty levels and high share of vulnerable employment, youth employment in Sub-Saharan Africa is as much a qualitative as a quantitative problem (ILO, 2013a).<sup>16</sup> Wage

<sup>16</sup> Vulnerable employment is defined as the sum of own-account work and unpaid family work; this definition is subject to some limitations: (1) wage and salary employment is not synonymous with decent work, as workers may carry a high economic risk despite the fact that they are in wage employment; (2) a worker may be classified in one of the two vulnerable groups but still not carry a high economic risk, especially in the developed economies. For a discussion, see Sparreboom and Albee (2011).

and salaried workers account for almost half of employment at the global level (48.4 per cent in 2012), but this proportion is only 21.4 per cent in Sub-Saharan Africa, compared with 63.8 per cent in Latin America and the Caribbean and 49.4 per cent in East Asia. Many youth start their working life as unpaid family workers, one of the two categories of vulnerable employment, and at some point become own-account workers, the other category. The theme of poor-quality employment is specifically addressed in Chapter 4.

Skills mismatch is an issue in Sub-Saharan Africa, as in many countries unemployment rates for the better educated are low in comparison with unemployment rates for the low skilled. In South Africa, for example, the unemployment rate in 2011 for persons with tertiary education was 8.8 per cent, compared with a rate of 29.0 per cent for those with primary education. However, where there is only a small formal sector and aspiring jobseekers look for secure employment, the opposite pattern can arise. In the United Republic of Tanzania, for example, the unemployment rate for those with secondary education and above has been consistently higher than the rate for those with lower levels of education (ILO, 2010b). The relatively high rates for persons with higher levels of education are not an indication of an abundant supply of educated workers, as underqualification is widespread in low-income economies such as Tanzania (Sparreboom and Nübler, forthcoming). Similarly, the unemployment rate in Togo in 2012 was 7.5 per cent for youth aged 15–29, but almost one out of four young people with post-secondary education were unemployed. However, the latter group accounted for only 13.3 per cent of unemployed youth in this country.<sup>17</sup>

<sup>17</sup> SWTS, Togo, 2012. See Chapter 4 for more information.

### 3. Youth unemployment, employment and skills mismatch in advanced economies

The global economic crisis caused a massive reduction in jobs, often concentrated in only a small number of sectors. As a result, ever more young unemployed have been forced to consider jobs in sectors or occupations in which they did not work previously, or had not envisaged before entering the labour market. A mismatch may therefore exist between the skills these young people possess and the skills that are demanded by prospective employers. Such a mismatch between skills supply and demand hampers the reallocation of labour and puts upward pressure on unemployment rates.

Other forms of skills and qualifications mismatch may also have worsened. Workers may increasingly be employed in occupations that underutilize their skills set (overqualified workers) or in occupations that normally require skills they do not possess (underqualified workers). In both cases, skills mismatch affects the job satisfaction and wages of individual workers, as well as the productivity of firms. It may also lead to increases in turnover of staff (Quintini, 2011). Most importantly, qualification mismatch prevents countries from realizing the full potential of their labour force and constrains productivity growth.

This chapter examines skills mismatch in advanced countries, where increasing educational attainment has contributed to a higher incidence of overeducation. Chapter 4 deals with skills mismatch issues in developing countries, where undereducation is still widespread as educational attainment is much lower. Both in advanced and developing countries, however, the extent and types of skills mismatches vary widely, making it necessary to use multiple indicators.

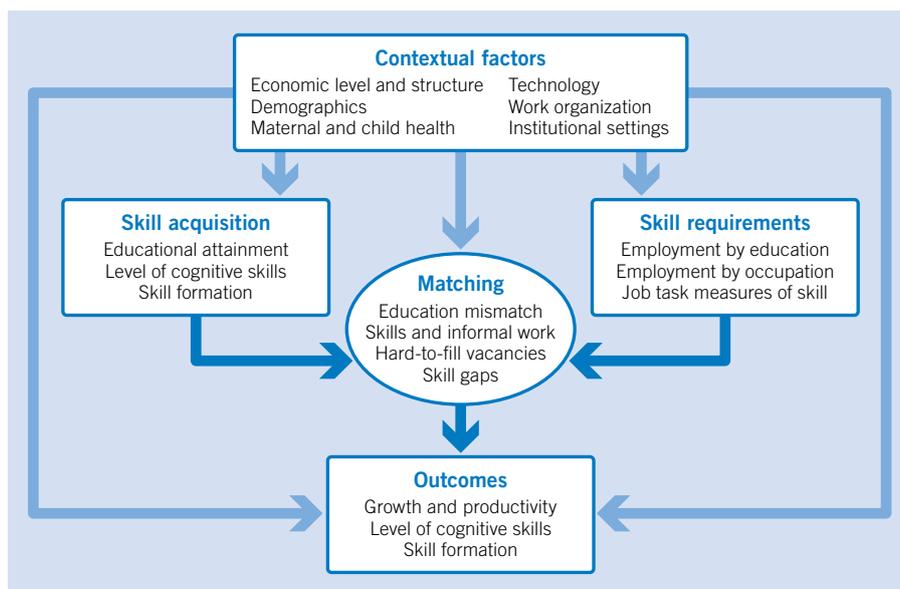
The issue of skills mismatch has received renewed attention in the advanced economies due to the economic crisis, but various forms of mismatch are always present in the labour market. Skills demand and supply are influenced by a range of factors including for example the level of economic development of a country, technological change and demographics. The extent to which skills supply and demand are matched is a major factor shaping economic and labour market outcomes, economic growth, productivity and competitiveness (see figure 9). Therefore, the formulation and implementation of effective education and training policies, including responsive education and training systems, are a continuous challenge for all countries. Meeting this challenge requires linking skills development to employment and economic development, involving social partners and key stakeholders in skills development systems, and effective labour market information and analysis systems.<sup>18</sup>

This chapter examines two types of skills mismatch (see box 3 on the measurement of skills mismatch). The first type is based on a comparison of the educational attainments of the employed and the unemployed. The main finding regarding this type of mismatch is the high risk of mismatch for those at the bottom of the educational pyramid.

The second type consists of mismatch between jobs held by young workers and the qualifications they possess. The main findings regarding this type of mismatch are that youth (aged 15–29) are far more exposed to overeducation than workers aged 30 and above, and are also far less likely to be undereducated. It is also demonstrated that the economic crisis had a major impact on mismatch, in particular with regard to the incidence of overeducation.

<sup>18</sup> See ILO Recommendation No. 195 (2004) on human resources development.

**Figure 9. Economic context and skills mismatch**



Source: Presentation to the G20 Working Group on Human Resource Development by the ILO, OECD, UNESCO and the World Bank, 2012.

### Box 3. Measuring skills mismatch

There is no agreed definition of skills mismatch. Skills mismatch is an encompassing term which refers to various types of imbalances between skills offered and skills needed in the world of work, and it applies equally to the employed and the unemployed. Skills and competencies per se are not measured by the regular statistical programmes of most countries. That is why skill proxies are used, such as qualifications, years of schooling and occupations. Some of the more frequently discussed types of skills mismatch include those listed in the table below.

Each type of mismatch can be measured in several ways, and each measurement method has advantages and disadvantages. For instance, the measurement of mismatch between demand and supply on the labour market based on a comparison of the structures of educational attainment of the employed and the unemployed may clearly indicate which level of education is in short supply. But this does not provide information about areas of education that are in demand. This also means that no conclusions can be drawn with regard to vocational training or specific fields of training.

In this report, we analyse educational attainment mismatch based on two measures:

- (a) A comparison of the educational attainments of the employed and the unemployed (section 3.1). In developed economies, this comparison often demonstrates the relatively favourable position of youth with higher levels of education, which is reflected in lower unemployment rates for those with a tertiary education. As was illustrated in Chapter 2, the situation is more diverse in the developing world, where it is not unusual to find higher rates of unemployment for the better educated.
- (b) The educational attainment of workers in comparison with the level of educational attainment assigned to occupations (section 3.2). Workers in a particular group who have the assigned level of education are considered well matched. Those who have a higher (lower) level of education are considered overeducated (undereducated). In general, in the developed world, increasing educational attainment has contributed to the incidence of overeducation. In many developing countries attainment levels are much lower and so undereducation and underskilling are more widespread (see Chapter 4).

Skill shortage (surplus)	Demand (supply) for a particular type of skill exceeds the supply (demand) of people with that skill
Skill gap	Type or level of skills is different from that required to adequately perform the job
Vertical mismatch	The level of education or qualification is less or more than required
Horizontal mismatch	The type/field of education or skills is inappropriate for the job
Overeducation (undereducation)	Workers have more (less) years of education than the job requires
Overqualification (underqualification)	Workers hold a higher (lower) qualification than the job requires

For more information, see Bartlett (2012), Cedefop (2010) and Johansen and Gatelli (2012).

Apart from youth, labour market groups that often face an elevated risk of mismatch include women, persons with disabilities and migrants.

Both types of mismatch concern structural issues in the labour market that are not necessarily correlated with measured unemployment rates. The reason for this is that changes in unemployment rates are to a large extent driven by cyclical economic factors and less so by structural conditions. However, for individual countries and particular labour market groups mismatch can be related to unemployment rates.

### 3.1 Skills mismatch between labour supply and demand

Mismatch between the supply of skills and demand for skills can be quantified with an index of dissimilarity.<sup>19</sup> The index is based on a comparison of the structure of educational attainment of the employed and the unemployed, and mismatch is captured if unemployment rates differ between workers with different levels of educational attainment.<sup>20</sup> The index ranges from 0 (no mismatch) to 1 or 100 per cent (full mismatch). If, for example, unemployment rates are the same for workers with primary, secondary and tertiary education, the index would equal 0. If, on the other hand, all workers with primary and tertiary education are employed and all those with secondary education are unemployed, the index would equal 100 per cent (see Annex F for methodological details). The index by itself does not provide information regarding the level of education which is relatively in demand. It should also be noted that the index shows large variations over time, especially for some smaller countries. This has to do with the fact that the index is based on three levels of education, and small countries in particular may be hit by asymmetric shocks, affecting workers in one skill category more strongly and thereby moving the index even over short periods of time.

A wide range in this type of skills mismatch is seen across countries. In a sample of 28 European countries, skills mismatch was less than 10 per cent in eight countries in 2011, and exceeded 20 per cent in four countries (Belgium, Finland, Luxembourg and Sweden) (table C1). It should be noted that this type of mismatch is not an indication of the quality or responsiveness of education and training systems. High-quality education and training improves the employability of workers, and in this way contributes to low unemployment. However, among those who are unemployed there are likely to be many workers who did not benefit from the education system to the same extent as the employed.

A high level of the mismatch index reflects wide differences in unemployment rates between youth with different levels of education. In Sweden, for example, the unemployment rate for youth with primary education or lower (38.6 per cent) was more than three times the rate for youth with tertiary education (12.4 per cent) in 2011 (tables C2a and C2c). Although the difference in Sweden is very large, the pattern of lower unemployment among workers with a higher level of education is seen in many countries (ILO, 2012a; OECD, 2012). But there are also examples of countries with a more similar pattern of unemployment rates by level of education, which is reflected in a low value of the mismatch index. In Switzerland, for instance, the index was 1.6 per cent in 2011. The unemployment rate for youth with primary education was 7.8 per cent in 2011 in this country, compared with 7.5 per cent for youth with secondary education and 8.5 per cent for youth with tertiary education.

<sup>19</sup> The so-called Duncan and Duncan index of dissimilarity (ID) is well known in other fields of labour market analysis; it is arguably the most widely used measure of labour market segregation by sex (Anker, Melkas and Korten, 2003), and similar indices have been used to measure skills mismatch (see, for example, Estevão and Tsounta, 2011).

<sup>20</sup> On the use of unemployment rates by educational attainment to measure skills mismatch, see, for example, Johansen and Gatelli (2012).

As noted above, the level of mismatch is relatively high in Belgium, and the rise in recent years reflects the deteriorating position of workers with a low level of education. The unemployment rate for workers with primary education in Belgium increased from 2009 to 2011 (from 30.2 to 31 per cent), while the rate for workers with secondary and tertiary education decreased (from 20.5 to 15.5 per cent and from 16.6 to 12.1 per cent). Similarly, the rise in the average index for 28 countries with available data from 13.2 per cent in 2010 to 13.7 per cent in 2011 reflects a deteriorating position of youth with primary education in most countries. From 2010 to 2011, the unemployment rate for youth with primary education increased in 18 out of 28 countries, while the unemployment rate for youth with tertiary education decreased in 17 out of 28 countries (tables C2a and C2c).

### 3.1.1 Skills mismatch and unemployment

Although skills mismatch hampers the matching of jobseekers and job openings, it is not necessarily correlated with unemployment rates. The reason for this is that unemployment rates are driven by many macro factors. Countries with strong economic growth may experience mismatch, but this may attract little attention if many job openings are created and youth unemployment is on the decrease for all skills levels.

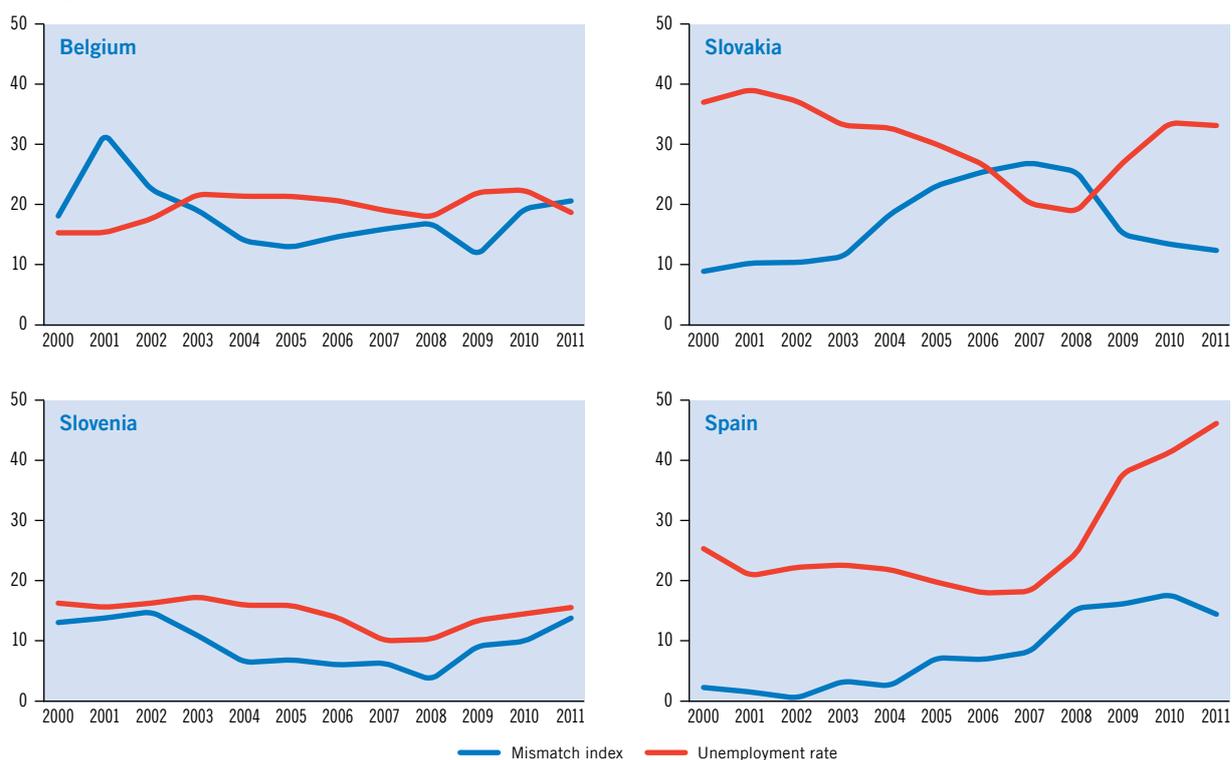
To illustrate some of the possible patterns, figure 10 plots movements in unemployment rates and the mismatch index at the country level. In Belgium and Slovakia, mismatch and unemployment have largely moved in opposition, while in Slovenia and Spain they have moved largely in tandem. In Spain, the mismatch index increased for most of the period 2002–10, while in Belgium and Slovenia the index rose from 2009 to 2011. In Belgium, Slovenia and Spain the rise of the index reflected a deterioration of the (relative) position of unemployed with a low level of educational attainment.<sup>21</sup> Accordingly, much can be gained in these countries if employment policies target this group of unemployed youth.

Monitoring consistent changes and relatively high levels of skills mismatch is important because in many cases there is an overlap between disadvantaged groups such as NEETs and youth with low levels of education. In Slovakia, this type of mismatch declined as the unemployment rate of workers with secondary and tertiary education increased (from 24.3 to 30.7 per cent and from 22.4 to 24.0 per cent, respectively), while the rate for primary educated workers decreased from 2009 to 2011 (from 64.5 to 63.6 per cent). Nevertheless, the position of workers in Slovakia with secondary and tertiary education remained far more favourable than that of workers with primary education.

<sup>21</sup> Even if unemployment rates increased for all workers, the rate for workers with primary education increased more in relation with the level of unemployment. In Spain, for example, the unemployment rate for youth with primary education more than doubled from 2002 to 2010, which was not the case for workers with secondary and tertiary education.

## Skills mismatch may or may not move together with youth unemployment rates.

Figure 10. Skills mismatch and youth unemployment rates in selected countries, 2000–11 (%)



Source: ILO calculations based on Eurostat (see Annex C and Annex F).

### 3.2 Skills mismatch by occupation

Besides the skills mismatch between labour supply and demand, there is a mismatch between the skills that employed (young) people have and the skills required in their jobs. Workers can be overeducated or undereducated for the jobs or occupations they hold. Concerns over this second type of mismatch have been rising in many countries, where increasing educational attainment levels occur alongside high unemployment rates. In general, overeducation is explained by competition for jobs, which pushes the better educated into jobs or occupations with lower remuneration usually taken by those with a lower level of education (Karakaya, Plasman and Rycx, 2007). This type of skills mismatch and its negative implications are likely to increase in times of economic and labour market crisis.

#### 3.2.1 Incidence and consequences of mismatch

As there are many approaches to and definitions of undereducation and overeducation, estimates for this second type of skills mismatch typically vary widely. In country studies reported in the literature, between 10 per cent and one-third of the employed are found to be overeducated and around 20 per cent are undereducated, which results in a total mismatch of between 30 per cent and 50 per cent of the employed in European countries (table 1 and table 2 below). Only a few of the studies focus specifically on youth and comparisons between youth and adults should therefore be made cautiously. Nevertheless, the findings appear to be in line with studies for all age cohorts.<sup>22</sup>

<sup>22</sup> Agut, Peiró and Grau (2009); Barone and Ortiz (2010); Betti, D'Agostino and Neri (2011); Chevalier (2003); Frenette (2004); Guironnet and Peypoch (2007); McGuinness and Bennett (2007); Støren and Wiers-Jensen (2010); and Verhaest and Omey (2010).

**Table 1. Incidence of overeducation in European countries (%)**

	All	Male	Female	Youth (aged <30)
Austria				1.1–9.6
Belgium	10.5–54.2			21.7–49.1
Czech Republic				1.5–7.1
Finland	11.1			3.3–14.1
Germany	11.8–60.6	12.3–14.1	10.7–19.1	2.2–12.6
Italy	13.9–71.5	14.9	12.8	4.0–19.0
Netherlands	11.2–30.6	8.7–11.5	12.2–13.6	2.9–41.7
Norway	16.6–32.6			2.5–20.4
Portugal	12.6–33.0			
Spain	15.0–37.2			6.5–24.8
Switzerland	14.9	15	14.7	
United Kingdom	13.0–36.8	25	27	19.0–53.0

Note: The table shows the range in incidence of overeducation in each country according to the studies listed below.

Source: Barone and Ortiz (2010); Bauer (2002); Brynin and Longhi (2009); Büchel and Battu (2003); Büchel and Van Ham (2003); Budría (2011); Cainarca and Sgobbi (2012); Chevalier (2003); Cuttillo and Di Pietro (2006); Dekker, De Grip and Heijke (2002); Groot and Van den Brink (2000); Hartog (2000); Jauhainen (2011); Jensen, Gartner and Rässler (2010); Karakaya, Plasman and Rycx (2007); McGuinness and Bennett (2007); Murillo, Rahona-López and Salinas-Jiménez (2012); Ortiz and Kucel (2008); Støren and Wiers-Jenssen (2010); Sutherland (2012); Verhaest and Omeij (2010); Wirz and Atukeren (2005).

**Table 2. Incidence of undereducation in European countries (%)**

	All	Male	Female	Youth (aged <30)
Belgium	25.8–32.4			
Germany	12.1	10.4	15.6	
Italy	17.1	17.7	16.3	11.7
Netherlands	12	3.8–16.7	2.1–14.3	
Portugal	17.0–38.0			
Spain	11.0–25.6			
United Kingdom	17			

Note: The table shows the range in incidence of undereducation in each country according to the studies listed below.

Source: Bauer (2002); Cainarca and Sgobbi (2012); Groot and Van den Brink (2000); Hartog (2000); Karakaya, Plasman and Rycx (2007); Murillo, Rahona-López and Salinas-Jiménez (2012).

Research also shows that the overeducated face a number of disadvantages compared to the well matched. For the overeducated, wages are higher than for the well matched at the same job, but returns to the years of schooling beyond the required level are lower. The overeducated also earn less than those who have the same level of education but do have a job that matches their education. Undereducated workers earn less than the well matched at the same job, but more than workers with the same educational level and a matching job (Groeneveld and Hartog, 2004; Hartog, 2000; Rubb, 2003).

Overeducated workers do not enjoy faster wage growth than the well matched (Korpi and Tåhlin, 2009), but overeducation has been linked to upward mobility (Dekker, De Grip and Heijke, 2002). However, lack of career opportunities may result in limited commitment to the workplace (Blenkinsopp and Scurry, 2007), and evidence shows that the overeducated are more likely to engage in a job search (Wald, 2005). Tarvid (2012) found that overeducated graduates are always less satisfied with their jobs than their well-matched counterparts.

### 3.2.2 Measurement

Skills mismatch in the sense of overeducation or undereducation means that workers have either more education or less education than is required. This report uses a common measure of this type of skills mismatch based on the International Standard Classification

**Table 3. ISCO major groups and skill levels**

ISCO major group	Broad occupation group	Skill level
1: Legislators, senior officials, managers 2: Professionals 3: Technicians and associate professionals	High-skilled non-manual	Tertiary (ISCED 5–6)
4: Clerks 5: Service workers, shop, market sales workers	Low-skilled non-manual	Secondary (ISCED 3–4)
6: Skilled agricultural and fishery workers 7: Craft and related trades workers 8: Plant and machine operators and assemblers	Skilled manual	
9: Elementary occupations	Unskilled	Primary (ISCED 1–2)

Note: Excluding armed forces occupations.

of Occupations (ISCO) (see, for example, Quintini, 2011). This normative measure starts from a division of major occupational groups (first-digit ISCO levels) into four broad groups (table 3) and assigns a level of education to each occupational group in accordance with the International Standard Classification of Education (ISCED).<sup>23</sup> Workers in a particular group who have the assigned level of education are considered well matched. Those who have a higher (lower) level of education are considered overeducated (undereducated). For instance, a university graduate working as a clerk (a low-skilled non-manual occupation) is overeducated, while a secondary school graduate working as an engineer (a high-skilled non-manual occupation) is undereducated.

An advantage of the ISCO-based measure is that the definition of mismatch does not change over time; the results are therefore strictly comparable. A disadvantage of this measure is that, by construction, it does not allow for either overeducation in major groups 1 to 3 or undereducation in major group 9.<sup>24</sup>

The data used in this chapter are from the European Social Survey (ESS), rounds 1 through 5 (Norwegian Social Science Data Services, 2002; 2004; 2006; 2008; 2010). This is a biennial survey covering over 30 countries, but country coverage differs by round: out of 34 countries for which data are available, only 16 appear in all five rounds.<sup>25</sup>

In most contexts, a young person is defined as a person aged 15–24, and this definition has been used in most of this report so far. For the purpose of measuring mismatch in the sense of overeducation or undereducation, the upper age bound is extended to 29 years. This is in recognition of the fact that some young people remain in education beyond the age of 24 years.

### 3.2.3 Overeducation and undereducation in a sample of countries

Countries differ markedly in mismatch patterns (table 4 and table 5). Overeducation in 2010 ranged from below 10 per cent in seven countries (Czech Republic, Hungary, the Netherlands, Poland, Portugal, Sweden and Switzerland) to above 20 per cent in Cyprus and the Russian Federation. Similarly, undereducation in 2010 was below 10 per cent in three countries (Hungary, the Russian Federation and Ukraine), and above 30 per cent in five (the Netherlands, Poland, Portugal, Spain and the United Kingdom). Overeducation is more prevalent among

<sup>23</sup> The assignment of skill levels to major occupational groups is based on ILO (2012f).

<sup>24</sup> Given that workers in advanced economies usually have at least a completed primary education; this situation is different in a developing country context (see Chapter 4).

<sup>25</sup> ISCO sub-major groups with less than five observations in a particular country and round of the survey have been excluded from the analysis. This mainly concerns legislators and senior officials (ISCO: 11), precision/handicraft and related workers (ISCO: 73), stationary plant and related operators (ISCO: 81), and agriculture/fishery and related labourers (ISCO: 92).

**Table 4. Incidence of overeducation by age group (%)**

	2002			2004			2006			2008			2010		
	Young (15–29)	Mature (30+)	Total												
Austria	3.4	3.6	<b>3.6</b>	4.0	6.0	<b>5.7</b>	3.7	5.9	<b>5.4</b>	8.7	6.4	<b>7.0</b>			
Belgium	8.2	10.5	<b>10.0</b>	15.5	10.7	<b>11.8</b>	9.7	8.8	<b>8.9</b>	11.8	8.2	<b>8.9</b>	18.5	12.6	<b>13.6</b>
Bulgaria							5.5	8.0	<b>7.6</b>	5.7	7.4	<b>7.1</b>	14.7	10.8	<b>11.2</b>
Croatia										16.6	11.7	<b>12.8</b>	13.3	12.9	<b>12.9</b>
Cyprus							22.6	13.5	<b>15.5</b>	21.3	16.8	<b>17.9</b>	33.2	17.6	<b>21.0</b>
Czech Republic	6.0	7.5	<b>7.3</b>	6.4	5.7	<b>5.8</b>				5.4	7.1	<b>6.8</b>	6.8	7.8	<b>7.6</b>
Denmark	15.1	11.4	<b>12.0</b>	12.9	13.0	<b>12.9</b>	6.5	10.9	<b>10.4</b>	7.7	13.3	<b>12.5</b>	8.9	10.6	<b>10.4</b>
Estonia				8.0	13.9	<b>12.7</b>	8.9	13.5	<b>12.5</b>	9.8	10.5	<b>10.3</b>	16.5	20.0	<b>19.5</b>
Finland	14.1	8.7	<b>9.7</b>	14.9	11.2	<b>11.8</b>	11.9	10.4	<b>10.7</b>	10.4	9.6	<b>9.7</b>	10.6	11.6	<b>11.5</b>
France	24.0	5.9	<b>9.7</b>	19.0	6.2	<b>8.3</b>	15.9	9.2	<b>10.4</b>	12.1	8.3	<b>8.9</b>	14.6	9.3	<b>10.1</b>
Germany	7.3	13.7	<b>12.9</b>	8.5	11.2	<b>10.8</b>	6.1	9.1	<b>8.7</b>	10.3	10.6	<b>10.6</b>	4.7	11.1	<b>10.1</b>
Greece	11.3	7.5	<b>8.3</b>	21.8	10.9	<b>12.7</b>				16.2	9.9	<b>11.2</b>	15.3	12.6	<b>13.0</b>
Hungary	4.9	6.8	<b>6.4</b>	8.9	7.4	<b>7.7</b>	11.8	10.2	<b>10.6</b>	23.6	12.5	<b>14.6</b>	10.4	8.7	<b>9.0</b>
Iceland				23.3	14.3	<b>16.4</b>									
Ireland	21.0	9.9	<b>12.4</b>	15.9	11.9	<b>12.9</b>	28.5	14.7	<b>18.0</b>	38.5	19.9	<b>23.2</b>	18.2	18.1	<b>18.1</b>
Israel	14.4	10.6	<b>11.6</b>							21.0	15.1	<b>16.6</b>	15.0	14.4	<b>14.6</b>
Italy	4.5	1.7	<b>2.1</b>	5.3	4.0	<b>4.2</b>									
Latvia							9.0	13.3	<b>12.2</b>	17.4	17.8	<b>17.8</b>			
Lithuania										15.7	30.8	<b>27.7</b>	16.5	16.5	<b>16.5</b>
Luxembourg	5.6	5.9	<b>5.8</b>	3.8	3.5	<b>3.6</b>									
Netherlands	4.9	2.5	<b>3.0</b>	4.6	4.0	<b>4.1</b>	7.3	4.3	<b>4.8</b>	3.1	2.1	<b>2.3</b>	5.9	3.6	<b>3.9</b>
Norway	4.9	5.8	<b>5.6</b>	18.4	8.0	<b>9.6</b>	13.5	8.4	<b>9.4</b>	10.6	6.6	<b>7.3</b>	10.9	12.5	<b>12.2</b>
Poland	8.7	1.8	<b>3.6</b>	9.5	3.4	<b>5.0</b>	11.4	4.4	<b>6.3</b>	11.9	3.0	<b>5.5</b>	11.6	3.3	<b>5.4</b>
Portugal	4.7	0.9	<b>1.9</b>	3.9	2.5	<b>2.9</b>	4.7	1.7	<b>2.3</b>	7.3	1.9	<b>2.9</b>	9.0	3.5	<b>4.5</b>
Romania							8.1	8.9	<b>8.7</b>	14.5	9.0	<b>10.1</b>			
Russian Federation							24.6	34.2	<b>32.1</b>	32.8	34.0	<b>33.7</b>	26.4	34.4	<b>32.6</b>
Slovakia				8.3	8.9	<b>8.7</b>	6.6	9.6	<b>8.9</b>	12.7	9.4	<b>10.0</b>	11.7	11.0	<b>11.1</b>
Slovenia	7.5	4.6	<b>5.3</b>	9.2	3.9	<b>5.1</b>	6.0	7.5	<b>7.2</b>	14.5	11.5	<b>12.3</b>	14.4	9.2	<b>10.1</b>
Spain	14.8	7.4	<b>9.2</b>	13.1	7.3	<b>8.8</b>	14.7	7.8	<b>9.7</b>	12.4	9.3	<b>10.0</b>	12.7	11.4	<b>11.6</b>
Sweden	4.3	3.6	<b>3.7</b>	7.0	4.6	<b>5.0</b>	8.8	5.0	<b>5.6</b>	7.9	4.3	<b>4.9</b>	11.1	6.3	<b>7.0</b>
Switzerland	4.7	6.5	<b>6.2</b>	7.6	9.7	<b>9.4</b>	4.0	5.3	<b>5.1</b>	4.6	5.6	<b>5.4</b>	3.7	10.4	<b>9.2</b>
Turkey				5.8	5.7	<b>5.8</b>				8.0	7.6	<b>7.7</b>			
Ukraine				38.3	34.6	<b>35.3</b>	40.2	32.5	<b>34.0</b>	20.3	28.4	<b>26.6</b>	30.0	27.7	<b>28.1</b>
United Kingdom	9.4	5.6	<b>6.4</b>	11.2	6.4	<b>7.6</b>	19.9	12.0	<b>13.7</b>	12.0	12.8	<b>12.6</b>	24.0	12.9	<b>15.1</b>

Source: ILO calculations based on the European Social Survey (Norwegian Social Science Data Services, 2002; 2004; 2006; 2008; 2010).

workers aged 15–29 than among those aged 30 and above. The opposite is true in the case of undereducation, which in the large majority of countries is less common among the young.

Overeducation increased in the sample of countries from 2002 to 2010 by 2.6 percentage points. Given the fact that the assessment of skills mismatch is based on the ISCO, an increase in overeducation over time in part reflects an increase in the educational attainment levels of workers. However, the sharp rise between 2008 and 2010 (by 1.5 percentage points) is likely to also reflect greater competition for jobs associated with the employment crisis. In particular, low-skilled non-manual jobs are increasingly taken by workers with tertiary education (figure 11).

**Table 5. Incidence of undereducation by age group (%)**

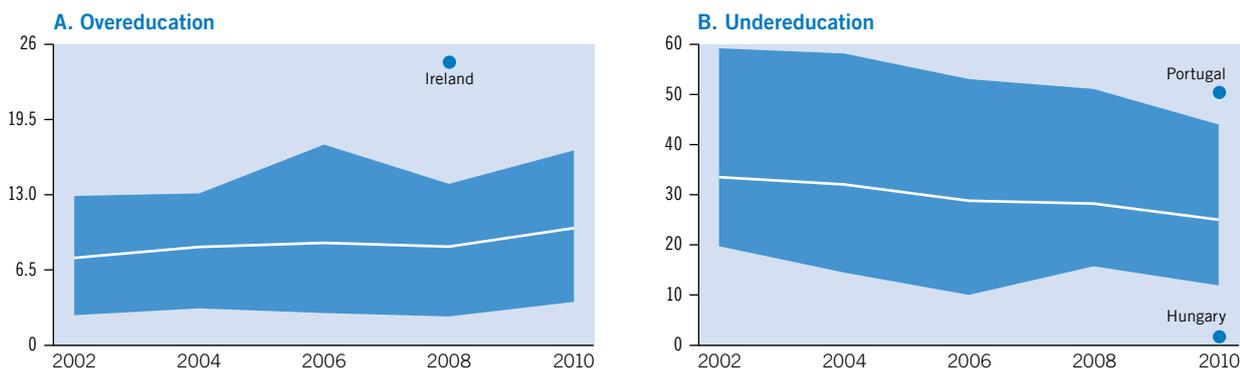
	2002			2004			2006			2008			2010		
	Young (15–29)	Mature (30+)	Total												
Austria	38.1	45.0	<b>43.8</b>	43.0	33.9	<b>35.5</b>	40.2	40.1	<b>40.1</b>	31.1	35.9	<b>34.7</b>			
Belgium	24.7	28.9	<b>27.9</b>	19.8	29.3	<b>27.2</b>	29.2	29.5	<b>29.4</b>	18.0	29.2	<b>27.2</b>	24.0	24.1	<b>24.1</b>
Bulgaria							21.2	21.6	<b>21.5</b>	21.0	23.7	<b>23.4</b>	18.1	20.1	<b>19.9</b>
Croatia										13.6	17.1	<b>16.3</b>	6.3	17.5	<b>15.5</b>
Cyprus							11.6	22.3	<b>19.8</b>	8.9	24.4	<b>20.6</b>	10.8	20.7	<b>18.6</b>
Czech Republic	25.8	24.3	<b>24.5</b>	23.9	27.7	<b>27.1</b>				28.8	25.7	<b>26.3</b>	18.2	20.8	<b>20.3</b>
Denmark	28.3	25.6	<b>26.0</b>	25.0	16.8	<b>18.2</b>	31.8	20.9	<b>22.2</b>	33.1	19.6	<b>21.5</b>	38.6	23.9	<b>25.6</b>
Estonia				25.9	24.4	<b>24.7</b>	30.5	24.7	<b>25.9</b>	32.9	29.6	<b>30.2</b>	23.7	20.4	<b>21.0</b>
Finland	16.5	34.6	<b>31.2</b>	21.3	27.1	<b>26.2</b>	19.4	23.9	<b>23.0</b>	16.4	24.5	<b>23.1</b>	18.4	23.1	<b>22.4</b>
France	9.6	31.7	<b>27.0</b>	15.4	34.9	<b>31.7</b>	11.4	28.3	<b>25.3</b>	22.8	28.5	<b>27.5</b>	16.6	32.2	<b>29.7</b>
Germany	34.4	22.6	<b>24.2</b>	33.0	24.1	<b>25.4</b>	33.4	25.0	<b>26.3</b>	29.9	23.8	<b>24.6</b>	44.2	21.3	<b>24.9</b>
Greece	33.8	48.2	<b>45.2</b>	18.1	38.3	<b>34.9</b>				24.4	37.3	<b>34.6</b>	18.1	30.6	<b>28.7</b>
Hungary	21.5	24.1	<b>23.6</b>	24.2	24.3	<b>24.3</b>	17.3	12.5	<b>13.5</b>	16.9	21.7	<b>20.8</b>	5.5	6.9	<b>6.6</b>
Iceland				34.9	30.0	<b>31.1</b>									
Ireland	25.4	38.6	<b>35.6</b>	21.9	42.0	<b>36.9</b>	20.9	32.4	<b>29.6</b>	10.5	28.3	<b>25.1</b>	16.6	23.7	<b>22.1</b>
Israel	31.2	31.4	<b>31.4</b>							22.9	28.4	<b>27.0</b>	24.2	27.3	<b>26.5</b>
Italy	45.2	54.7	<b>53.3</b>	35.9	45.5	<b>43.8</b>									
Latvia							25.1	19.4	<b>20.9</b>	13.5	16.8	<b>16.3</b>			
Lithuania										12.4	7.5	<b>8.5</b>	13.1	15.4	<b>15.1</b>
Luxembourg	39.2	41.3	<b>40.9</b>	39.6	45.4	<b>43.8</b>									
Netherlands	46.5	53.5	<b>52.1</b>	41.3	49.0	<b>47.6</b>	49.1	48.4	<b>48.5</b>	39.7	49.2	<b>47.4</b>	45.0	48.2	<b>47.7</b>
Norway	14.3	25.1	<b>23.1</b>	13.0	24.3	<b>22.5</b>	9.5	21.8	<b>19.4</b>	15.0	20.2	<b>19.3</b>	16.0	15.4	<b>15.5</b>
Poland	46.6	58.6	<b>55.6</b>	41.5	54.7	<b>51.1</b>	34.9	54.2	<b>48.9</b>	34.7	49.1	<b>45.1</b>	23.2	45.9	<b>40.1</b>
Portugal	58.7	64.2	<b>62.8</b>	55.7	62.4	<b>60.9</b>	50.9	57.2	<b>55.9</b>	42.9	57.6	<b>54.8</b>	36.6	58.9	<b>54.9</b>
Romania							31.1	26.1	<b>27.1</b>	29.4	34.3	<b>33.3</b>			
Russian Federation							11.8	8.6	<b>9.3</b>	8.1	6.5	<b>6.8</b>	9.1	8.3	<b>8.5</b>
Slovakia				22.3	27.9	<b>26.6</b>	17.8	27.8	<b>25.5</b>	22.2	23.8	<b>23.6</b>	27.5	19.4	<b>20.6</b>
Slovenia	20.1	33.0	<b>29.9</b>	20.6	27.5	<b>25.9</b>	23.3	26.5	<b>25.8</b>	24.8	26.9	<b>26.4</b>	20.2	21.9	<b>21.6</b>
Spain	37.2	45.6	<b>43.6</b>	40.7	45.1	<b>44.1</b>	46.3	43.4	<b>44.2</b>	42.8	42.6	<b>42.6</b>	35.8	35.5	<b>35.5</b>
Sweden	21.5	39.6	<b>36.9</b>	18.2	35.4	<b>32.5</b>	18.7	34.0	<b>31.6</b>	16.3	33.0	<b>30.0</b>	19.7	25.3	<b>24.5</b>
Switzerland	47.4	32.6	<b>34.9</b>	33.6	31.5	<b>31.8</b>	34.4	31.4	<b>31.9</b>	35.8	34.3	<b>34.6</b>	42.2	26.3	<b>29.2</b>
Turkey				43.8	54.1	<b>50.4</b>				48.4	58.1	<b>55.2</b>			
Ukraine				4.0	4.7	<b>4.6</b>	5.5	5.3	<b>5.4</b>	10.0	7.1	<b>7.8</b>	2.4	2.4	<b>2.4</b>
United Kingdom	45.4	47.8	<b>47.3</b>	34.4	48.5	<b>45.1</b>	35.7	36.8	<b>36.6</b>	32.3	33.9	<b>33.6</b>	25.5	34.1	<b>32.4</b>

Source: ILO calculations based on the European Social Survey (Norwegian Social Science Data Services, 2002; 2004; 2006; 2008; 2010).

Undereducation decreased in the sample of countries across all age groups. From 2002 to 2010, it decreased by 7.7 percentage points, which again partly reflects a rise in workers' educational attainment levels. But similar to overeducation, the downward trend in undereducation accelerated in the two most recent survey years. Like the strong increase in overeducation, the large decrease in undereducation (by 2.9 percentage points) is consistent with an increase in competition for jobs between 2008 and 2010.

## Overeducation is increasing and undereducation is decreasing across all age groups.

**Figure 11. Average incidence of skills mismatch, all age groups (%)**

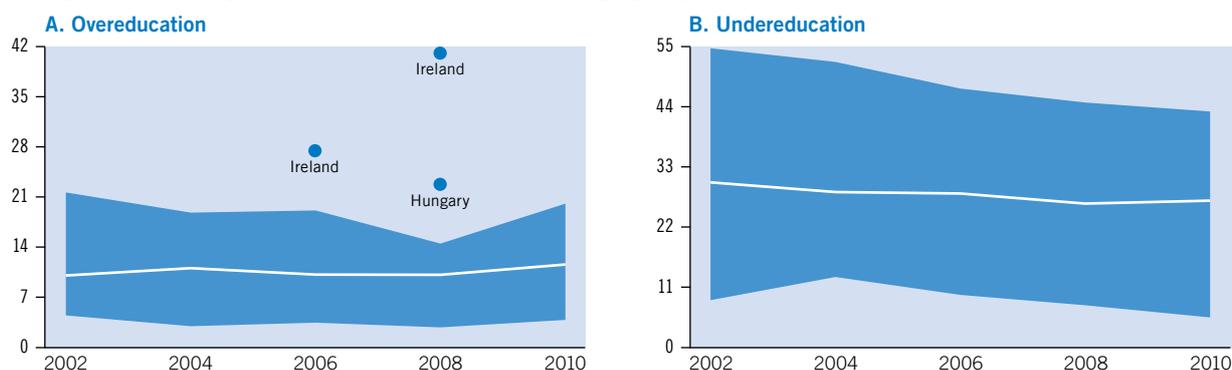


Note: The figure shows unweighted averages based on data from countries appearing in all five ESS rounds (Belgium, Denmark, Finland, France, Germany, Hungary, Ireland, the Netherlands, Norway, Poland, Portugal, Slovenia, Spain, Sweden, Switzerland, United Kingdom); the shaded area shows the range of incidence across countries. Labelled points outside shaded areas represent countries that have a significantly different incidence of skills mismatch from other countries in a particular round. These outliers have an incidence either above  $p_{75} + 1.5 \times IQR$  or below  $p_{25} - 1.5 \times IQR$ , where  $p_{25}$  and  $p_{75}$  are, respectively, 25th and 75th percentiles of the incidence distribution in a given round and  $IQR$  is the interquartile range (i.e.  $p_{75} - p_{25}$ ). The outliers are excluded from the average values.

Source: ILO calculations based on the European Social Survey (Norwegian Social Science Data Services, 2002; 2004; 2006; 2008; 2010).

## Overeducation is increasing and undereducation is decreasing for youth.

**Figure 12. Average incidence of skills mismatch, age group 15–29 (%)**



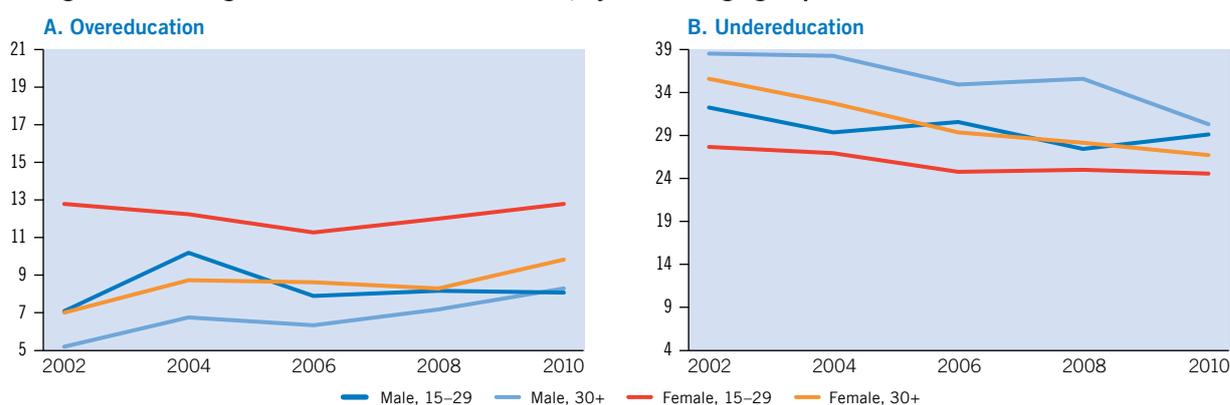
Note: The figure shows unweighted averages based on data from countries appearing in all five ESS rounds (Belgium, Denmark, Finland, France, Germany, Hungary, Ireland, the Netherlands, Norway, Poland, Portugal, Slovenia, Spain, Sweden, Switzerland, United Kingdom); the shaded area shows the range of incidence across countries. Labelled points outside shaded areas represent countries that have a significantly different incidence of skills mismatch from other countries in a particular round. These outliers have an incidence either above  $p_{75} + 1.5 \times IQR$  or below  $p_{25} - 1.5 \times IQR$ , where  $p_{25}$  and  $p_{75}$  are, respectively, 25th and 75th percentiles of the incidence distribution in a given round and  $IQR$  is the interquartile range (i.e.  $p_{75} - p_{25}$ ). The outliers are excluded from the average values.

Source: ILO calculations based on the European Social Survey (Norwegian Social Science Data Services, 2002; 2004; 2006; 2008; 2010).

Skills mismatch dynamics for the young (aged 15–29) are somewhat different from the picture those across all age groups. There are greater differences across countries, even if extreme cases are excluded from the analysis (figure 12). Between 2002 and 2010 youth overeducation increased by 1.5 percentage points, but there was a decline from 2004 to 2008. Similar to the pattern across all age groups, youth overeducation increased strongly during the height of the economic crisis from 2008 to 2010 (by 1.4 percentage points), but unlike the trend across all age groups youth undereducation also increased (by 0.5 percentage points, compared with a decrease by 3.4 percentage points during 2002 to 2010). The increase in undereducation from 2008 to 2010 may be due to changes in the occupational structure, in particular less growth of unskilled occupations taken by youth.

## Overeducation is more prevalent among young women than young men while undereducation affects young men more.

Figure 13. Average incidence of skills mismatch, by sex and age group (%)



Note: The figure shows unweighted averages based on data from countries appearing in all five ESS rounds (Belgium, Denmark, Finland, France, Germany, Hungary, Ireland, the Netherlands, Norway, Poland, Portugal, Slovenia, Spain, Sweden, Switzerland, United Kingdom). Countries that have significantly different skills mismatch incidence from other countries in that round in at least one of four categories compared (young males, young females, mature males, and mature females) are excluded from the calculation of the averages in that round. These outliers have incidence either above  $p_{75} + 1.5 \times IQR$  or below  $p_{25} - 1.5 \times IQR$ , where  $p_{25}$  and  $p_{75}$  are, respectively, 25th and 75th percentiles of the incidence distribution in a given round and IQR is the interquartile range  $(p_{75} - p_{25})$ . The outliers are Belgium (round 5), Denmark (round 1), Germany (round 1), Hungary (round 4), Ireland (rounds 3-5), and the United Kingdom (round 3).

Source: ILO calculations based on the European Social Survey (Norwegian Social Science Data Services, 2002; 2004; 2006; 2008; 2010).

Considering gender differentials in skills mismatch, across age groups it is found that women are more frequently overeducated and less frequently undereducated than men, and that both results appear to be stable over time (figure 13). This is consistent with studies of the determinants of overeducation, which often conclude that women have a higher skills mismatch risk than men. Such gender differentials may be attributable to several factors, including differences in educational attainment between men and women, traditional gender roles and pressures on women to take caring roles and to reconcile work and family life, while discrimination may also play a role. Another explanatory factor might be that some fields of study in which women are strongly represented, such as economics, law and arts and humanities are more likely to be exposed to overeducation in the labour market (Barone and Ortiz, 2010; Betti, D'Agostino and Neri, 2011; Cutillo and Di Pietro, 2006; Jauhiainen, 2011; Wirz and Atukeren, 2005).

Figure 13 also shows that on average the young often face a higher overeducation risk and a lower undereducation risk than those aged 30 and above, although the difference had mostly disappeared for men in 2010.

Considering country-specific trends in skills mismatch (as opposed to averages), we find that overeducation for youth consistently increased in five countries, and decreased only in Greece.<sup>26</sup> Trends in undereducation are less clear-cut, as undereducation consistently increased in four countries and decreased in seven (table 6).

In conclusion, this section suggests that the global economic crisis had a major impact on skills mismatch, and in particular on overeducation. Young people with a high level of education increasingly take up employment that requires lower levels of education, which is likely to be due, at least in part, to the scarcity of jobs.

<sup>26</sup> Several factors may have contributed to the exceptional trend in Greece, including changes in the occupational structure due to the impact of the economic crisis, and migration of workers. Examination of these factors is beyond the scope of the current report.

**Table 6. Country-level trends in youth (aged 15–29) mismatch incidence**

	Overeducation trend		Undereducation trend	
	Increasing	Decreasing	Increasing	Decreasing
Austria				X
Bulgaria	X			X
Denmark	X		X	
Estonia	X			
Greece		X		
Hungary				X
Norway			X	
Poland				X
Portugal	X			X
Slovakia			X	
Slovenia	X			
Spain				X
Switzerland			X	
United Kingdom				X

Trends are shown only if found in all five rounds, or in the last four observable rounds, or in rounds 3–5.

Note: See Annex C, table C3 for full table.

### 3.3 Explaining employment and skills mismatch

This section presents some specific factors that affect skills mismatch, based on a microeconomic model that examines the correlation between the probability of mismatch and an individual's personal and family characteristics, labour market experience and the following macro labour market variables: (1) the share of tertiary graduates in youth employment, (2) the youth unemployment rate, and (3) the share of the employed working in high-skilled non-manual occupations. The methodology is detailed in Annex F, and the data are again from the European Social Survey, rounds 1 through 5 (Norwegian Social Science Data Services, 2002; 2004; 2006; 2008; 2010). Table 7 presents the results for the correlates for overeducation and table 8 presents the results for correlates for undereducation (see tables C4 and C5 for more detailed results).

#### 3.3.1 The impact of macro factors on mismatch

Results suggest that two of the macro-level factors cause a sizeable part of skills mismatch development over time. A higher share of tertiary graduates increases the incidence of overeducation and decreases the incidence of undereducation. It appears that an increase in the number of tertiary graduates creates stronger competition and therefore increases the chances of overeducation. The share of employed working in high-skilled non-manual occupations has a negative effect on overeducation risk and a positive effect on undereducation risk.

Perhaps surprisingly, the unemployment rate performs weakly as a skills mismatch risk predictor. It increases the risk of overeducation for men (both young and mature), reinforcing the argument that the employment crisis increased job competition, but not for women. A higher unemployment rate also decreases the risk of undereducation for mature men, but does not affect the risk of undereducation for women. It thus appears that, in terms of macro-level variables, individual skills mismatch is mainly affected by the occupational and educational distribution of the employed.

**Table 7. Selected overeducation model results for youth**

	Male	Female	Total
<b>Macro-level factors</b>			
Tertiary graduates, share			
Unemployment rate			
ISCO 1–3, share			
<b>Demographics</b>			
Age			
Age <sup>2</sup> /100			
Young			
Female			
<b>Number of children (relative to no children)</b>			
1			
2			
3+			
<b>Partner employment status (relative to no partner)</b>			
Unemployed			
Employed			
Supervising others			
<b>Immigrant background (relative to non-immigrant)</b>			
Minority			
Parent-immigrant			
Both parents immigrants			
<b>Potentially negative factors</b>			
Student			
Person with disability			
Was unempl. for 3 months			
Was unemployed for 1 year			
Informal employment			

Note: Red cells show significant negative effects (odds ratios < 1), green cells show significant positive effects (odds ratios > 1), white cells show insignificant effects, and grey cells show variables not included in a given model.

**Table 8. Selected undereducation model results for youth**

	Male	Female	Total
<b>Macro-level factors</b>			
Tertiary graduates, share			
Unemployment rate			
ISCO 1–3, share			
<b>Demographics</b>			
Age			
Age <sup>2</sup> /100			
Young			
Female			
<b>Number of children (relative to no children)</b>			
1			
2			
3+			
<b>Partner employment status (relative to no partner)</b>			
Unemployed			
Employed			
Supervising others			
<b>Immigrant background (relative to non-immigrant)</b>			
Minority			
Parent-immigrant			
Both parents immigrants			
<b>Potentially negative factors</b>			
Student			
Person with disability			
Was unempl. for 3 months			
Was unemployed for 1 year			
Informal employment			

Note: Red cells show significant negative effects (odds ratios < 1), green cells show significant positive effects (odds ratios > 1), white cells show insignificant effects, and grey cells show variables not included in a given model.

### 3.3.2 The impact of gender, age, immigrant background and disability on mismatch

The models show that youth (aged 15–29) are significantly more exposed to overeducation risk than mature workers (aged 30 and above) and are significantly less likely to be undereducated. The results also demonstrate that, in accordance with the descriptive statistics discussed before, women are more frequently overeducated than men. At the same time, women (of all age groups) are less prone to undereducation. These results suggest that women are more likely to be in a lower-level occupation than they should be.

Among migrants, young women are at a disadvantage, but young men are *less* likely to become overeducated if they have one immigrant parent. Young men with a migrant background do face a higher exposure to undereducation.

Disability increases the risk of overeducation for young men and mature women. Disability also increases the risk of undereducation for young women and mature men.

### 3.3.3 The impact of family characteristics on mismatch

Contrary to what could perhaps have been expected, having children makes young people less vulnerable to overeducation. However, young people with a child consistently face a higher risk of undereducation.

Having a partner, whatever his or her employment status, decreases the overeducation risk for mature men and women. It also reduces the risk of overeducation for young men. Living with a partner usually raises the risk of undereducation.

### 3.3.4 The impact of labour market experience on mismatch

Young people who study in parallel to working experience increased risk of overeducation, and also increased risk of undereducation. The fact that undereducation is correlated with learning activities seems intuitively clear, but the correlation with overeducation is more difficult to explain.

Experience of medium-term unemployment increases the risk of overeducation and decreases the risk of undereducation (except for young women). Long-term unemployment has the same effect on overeducation as medium-term unemployment, but does not affect the young. The effects on undereducation are different, as unemployment increases the exposure of the young – both men and women – and of mature men.

Informal employment, defined as work without a (written) contract, consistently increases the exposure to overeducation of the young as well as the mature. Again, the effect on undereducation is different for men and women. It has a generally negative effect for women (both young and mature) and a positive effect for mature men.

## 4. Youth labour markets in developing economies: Preliminary evidence from the ILO school-to-work transition surveys

### 4.1 Introduction

Young people face several challenges when entering the labour market, particularly in developing economies. Not only do they need to find a job, and preferably one that corresponds to their level of qualifications, they also want to develop a foundation for a lasting, stable employment relationship that helps them to progress in life. To characterize these challenges and to support policy-makers in designing adequate instruments to support the transition of young people into employment, the ILO has developed its school-to-work transition survey (SWTS), a household survey of young people aged 15–29 years.<sup>27</sup> This chapter and Chapter 5 present results for ten countries, based on surveys conducted in 2012 within the scope of the ILO's Work4Youth partnership with The MasterCard Foundation (box 4).<sup>28</sup>

The Work4Youth partnership aims to strengthen the production of labour market information specific to youth and to work with policy-makers on the interpretation of data, including on transitions to the labour market, for the design or monitoring of youth employment policies and programmes. Results from surveys in the remaining 18 target countries will be made available throughout 2013. The list of target countries is provided in box 4. A second round of SWTS will take place in each of the 28 countries in 2014/15.

Section 4.2 discusses the challenges of measuring youth employment in developing countries. It also introduces the justification behind the call for implementation of more detailed measures and measurement tools to look at youth labour markets in developing economies. Section 4.3 provides a statistical portrait of youth labour markets in ten developing countries, showing how, for many young people, regular employment remains a dream, with the reality more likely to be employment in a low-quality job.

### 4.2 Measuring and analysing youth labour markets in developing economies

A principal theme of this chapter is that labour markets in developing economies do not look like those in developed economies. Developing economies have an abundance of labour, a scarcity of capital and a stark duality between the shrinking but still dominant traditional economies and the “modern” economies (strongly manifested across rural and urban geographies)

<sup>27</sup> While in other contexts, a young person is defined as a person aged 15–24 years, for the purpose of the SWTS the upper age bound is extended to 29 years. This is in recognition of the fact that some young people remain in education beyond the age of 24 so that the age extension will therefore capture more information on the post-graduation employment experience of young people.

<sup>28</sup> The ten countries discussed in Chapters 4 and 5 are: Armenia, Cambodia, Egypt, FYR Macedonia, Jordan, Liberia, Malawi, Peru, Russian Federation and Togo. Data for all ten available SWTSs to date are presented in Annex D. Both raw and tabulated data will be made available in a forthcoming database. Detailed summations of the findings with conclusions and policy recommendations will be made available in national reports for each of the SWTS countries. The publication series “Labour market transitions of young men and women” will be added to the Work4Youth website at [www.ilo.org/w4y](http://www.ilo.org/w4y). The first planned reports, on Liberia and FYR Macedonia, will be available as of May 2013.

#### Box 4. Work4Youth: An ILO project in partnership with The MasterCard Foundation

The Work4Youth (W4Y) project is a partnership between the ILO Youth Employment Programme and The MasterCard Foundation. The five-year project has a budget of US\$14.6 million and will run to mid-2016. Its aim is to “promot[e] decent work opportunities for young men and women through knowledge and action”. The immediate objective of the partnership is to produce more and better labour market information specific to youth in developing countries, focusing in particular on transition paths to the labour market. The assumption is that governments and social partners in the project’s 28 target countries will be better prepared to design effective policy and programme initiatives once armed with detailed information on:

- what young people expect in terms of transition paths and quality of work;
- what employers expect in terms of young applicants;

- what issues prevent the two sides – supply and demand – from matching; and
- what policies and programmes can have a *real* impact.

Work4Youth target countries:\*

- **Asia and the Pacific:** Bangladesh, Cambodia, Nepal, Samoa, Viet Nam
- **Eastern Europe and Central Asia:** Armenia, Kyrgyzstan, FYR Macedonia, Republic of Moldova, Russian Federation, Ukraine
- **Latin America and the Caribbean:** Brazil, Colombia, El Salvador, Jamaica, Peru
- **Middle East and North Africa:** Egypt, Jordan, Tunisia
- **Sub-Saharan Africa:** Benin, Liberia, Madagascar, Malawi, Togo, Uganda, United Republic of Tanzania, Zambia

\* The final (28th) Work4Youth country has not yet been identified.

(Campbell, 2013). Non-standard forms of employment – for example, work in informal enterprises, casual day labour and household production activities – are common; far more common than formal work, with fixed contract, regular pay and entitlements, in a private enterprise.

The SWTS analytical framework has been built around disaggregated and nuanced indicators that highlight the specific labour market challenges of youth in developing economies. The emphasis is placed on quantification of areas of non-standard employment and labour underutilization in order to better capture the realities of youth labour markets in developing economies. The preference within the SWTS framework is to look not at links to economic production, but rather at links to the economic well-being of the youth population.<sup>29</sup> The indicators should be able to generate information concerning whether or not young people are achieving what they expect from the labour market.

#### 4.2.1 The dichotomy of youth labour markets in developed and developing economies

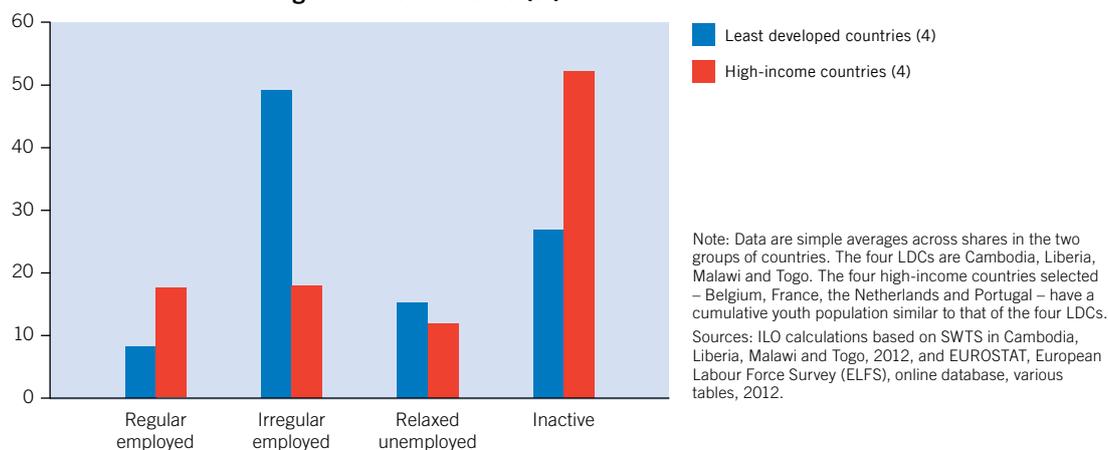
Figure 14 suggests how labour market experiences and the quality of jobs for young people differ significantly between developed and developing countries. It compares aggregate data on youth labour market situations from four least developed countries (LDCs) – Cambodia, Liberia, Malawi and Togo – with aggregate data from four high-income European countries (Belgium, France, the Netherlands and Portugal). The two groups are presented according to the distribution of the youth population in the following four categories: (a) regular employment, defined as wage and salaried workers holding a contract of unlimited duration (in the case of high-income countries) or a contract of duration greater than 12 months (in the case of the LDCs) plus self-employed youth with employees (employers);<sup>30</sup> (b) irregular employment, defined as wage and salaried workers holding a contract of limited duration, i.e. set to terminate after a period of time (less than 12 months in the case of the LDCs and

<sup>29</sup> The SWTS analytical framework was designed with an eye on the current efforts to adapt the international framework of statistics on the economically active population. The forthcoming International Conference of Labour Statisticians, to be held in Geneva in October 2013 and led by the ILO Department of Statistics, will discuss a comprehensive review of the standard guidelines on how we measure the economically active population and its subcomponents. The status of the discussion and rationale behind the reforms are summarized in ILO (2013c).

<sup>30</sup> Regular employment and irregular employment as used throughout the section require data on status in employment and employment by contract type and duration.

## Levels of economic development are reflected in the shares of young people in irregular employment and inactivity.

**Figure 14. Distribution of youth population by regular and irregular employment, unemployment (relaxed definition) and inactivity for four LDCs and four high-income countries (%)**



undefined in the case of the high-income countries), self-employed youth with no employees (own-account workers) and contributing family workers; (c) unemployed (relaxed definition), defined as persons currently without work and available to take up work in the week prior to the reference period; and (d) the residual inactive youth.

Two conclusions can be drawn from figure 14. First, the main differences between youth in developing economies and in developed economies are in the shares of irregular employment and inactivity. Second, unemployment rates are remarkably similar when using the relaxed definition. The explanation behind the variations between the shares in irregular employment and inactivity is to be found in the levels of educational attainment. In developed economies, most young people go to school and complete at least secondary level education. In developing economies, educational enrolment rates remain low and educational attainment levels are still extremely low, with still only small proportions attaining a secondary education qualification. The average educational attainment rates among the young population in Cambodia, Liberia, Malawi and Togo in 2012 were: 62.2 per cent with completed primary level education or lower, 33.7 per cent with completed secondary level education, and 4.1 per cent with a higher-level degree.

In developed economies, most students engage in education full time and are recorded in the statistics as economically inactive, pushing the inactivity rate in high-income countries up to 50.3 per cent. In many developing economies, the majority of the young people who might otherwise be studying if born in a developed economy are instead engaged in irregular employment (49.6 per cent). And within the category of irregular employment, most (85.0 per cent) are own-account workers and contributing family workers. In contrast, of those in irregular employment in the developed economies, nine out of ten engage in temporary wage employment. The remaining one in ten engages in self-employment.

Within the analytical framework of the SWTS, the “relaxed” definition of unemployment is preferred. Unemployment as defined according to the international standards requires a person to meet three criteria for inclusion: they (a) did not work in the reference period, (b) were available to take up a job had one been offered in the week prior to the reference period, and (c) actively sought work within the past 30 days (for example, by registering at an employment centre or answering a job advertisement). The difference in the “relaxed” definition of unemployment (also known as “broad unemployment”) and the “strict” definition is in the relaxation of the “seeking work” criterion (c). According to the international standards, the seeking work criterion may be relaxed “in situations where the conventional means

of seeking work are of limited relevance, where the labour market is largely unorganized or of limited scope, where labour absorption is, at the time, inadequate or where the labour force is largely self-employed”.<sup>31</sup>

In most developed economies, a young person has to prove that they have actively sought work – by registering at an employment centre or applying for job vacancies, for example – to qualify for unemployment benefits. Very few developing economies offer unemployment benefits to their populations. Young people, therefore, have little motivation to actively seek work when they feel there is none readily available and where labour markets are highly informal. A person without work is more likely to wait for word-of-mouth informal connections to lead to occasional work than to engage in an active job search. Relaxing the active job search criterion from the unemployment definition can have a significant impact on results in low-income economies that lack social protection. The aggregate unemployment rate (relaxed definition) for the four LDCs comes to 20.7 per cent. This is more than double the result given when including an active job search as criterion for the definition of unemployed (aggregate unemployment rate (strict definition) is 9.3 per cent).

These results underline the premise that relaxing the active search criterion in the measurement of unemployment makes a substantial difference to the results and their interpretation.<sup>32</sup> The figure demonstrate that joblessness among young people is a significant issue in low-income economies, even more so given the lack of available social protection. In fact, the unemployed share (relaxed definition) in the group of least developed countries in our sample is even higher than that in the high-income countries (15.2 and 12.1 per cent, respectively).

#### 4.2.2 Alternative framework for portraying youth labour markets in developing economies

As stated above, the SWTS analytical framework has been built around disaggregated and nuanced indicators that attempt to emphasize areas of non-standard employment and labour underutilization. Comparing standard labour market indicators – those reflecting only the volume of broad categories of economic activity – with a greater disaggregation of indicators available through the access to the SWTS micro data sets allows us to draw a more detailed picture of challenges that youth face in developing economies. In Armenia, for instance, the traditional distribution of the youth population across three broad categories of economic activity – employment, unemployment and inactivity – indicates that 13.3 per cent of Armenian youth are currently unemployed (see figure 15, first column). One-third of Armenian youth are in employment, but the largest share, 56.1 per cent, is inactive. This suggests that the majority of the 15–29 age group in Armenia are still in school and so classified among the inactive. The problem arises when they exit school, when they are likely to face lengthy periods of unemployment before settling into a job.

In contrast, when using more nuanced indicators of the youth labour market in Armenia, a more negative picture emerges. The disaggregation confirms that the majority of the inactive are in school, but that another 15.4 per cent of youth are neither in the labour force nor in education or training (NLFET).<sup>33</sup> These youth are neither contributing to economic production nor investing in their human capital through engagement in education or training, although it is important to note the contribution of youth staying at home voluntarily to care for their children and households. In addition, 10.1 per cent of young people are confined to irregular employment and 16.8 per cent of youth face unemployment according to the relaxed definition (see the definitions in section 4.2.1). This suggests that instead of there being an

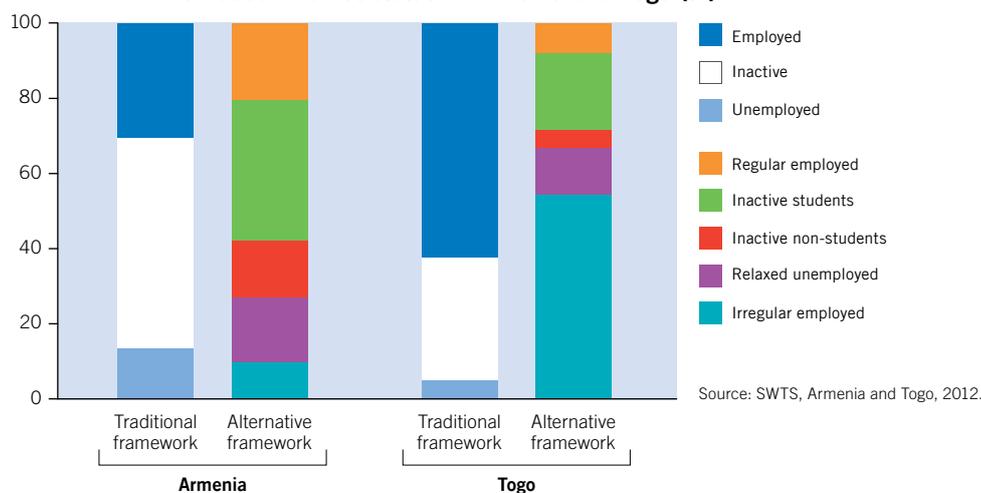
<sup>31</sup> Resolution concerning statistics of the economically active population, employment, unemployment and under-employment, adopted by the 13th International Conference of Labour Statisticians, October 1982.

<sup>32</sup> See also Sparreboom (1999).

<sup>33</sup> The category is similar to the NEETs presented in Chapter 2 but with the exclusion of the unemployed.

## Only the new framework identifies the full extent of the underutilized youth population in developing economies.

**Figure 15. Comparing the traditional and alternative framework of labour market status in Armenia and Togo (%)**



unutilized labour potential of 13.3 per cent, policy-makers should be worried that as much as 42.3 per cent of youth can be considered as falling in the category of underutilized labour.<sup>34</sup> In other words, the target area for monitoring and evaluating potential problems in the youth labour market has more than tripled in size.

When the detailed categorization is applied to a low-income developing economy such as Togo, the labour market picture changes more dramatically. It is here that the need to move beyond traditional labour market categorizations becomes clearer. The third column in figure 15 shows that in Togo, 62.4 per cent of young people are working, only 5.0 per cent are unemployed and another 32.6 per cent are inactive. If one ignores issues of quality of employment, this snapshot of the youth labour market in Togo looks good. And if one compares it with the traditional categorization in Armenia, it might seem that the youth in Armenia are worse off.

The picture changes dramatically, however, when consideration is given to an aspect of job quality and when the wider definition of unemployment to include those who have given up on searching for a job is applied. Based on this criterion, a mere 8.0 per cent of Togo youth are in regular employment, while 20.1 per cent are inactive students, hopefully increasing their human capital to improve their employment prospects in the future. The remaining categories are less positive: 54.3 per cent of youth are engaged in low-productive, irregular employment, 12.6 per cent are unemployed (relaxed definition) and 4.9 per cent are neither in the labour force nor in education (NLFET). Putting the irregularly employed, unemployed and inactive non-students together, the labour underutilization rate of Togolese youth is now 71.9 per cent, a figure that should cause concern among policy-makers.

<sup>34</sup> The labour underutilization rate is calculated as the sum of the shares of youth in irregular employment, unemployed (relaxed definition) and neither in the labour force nor in education/training (inactive non-students).

## 4.3 Measuring job quality

### 4.3.1 Quality of employment indicators and the dominance of low-quality employment in developing economies

The SWTS also allows measurement of the quality of jobs to which young people have access. The series of charts in figure 16 attempts to characterize job quality in youth labour markets. Five different indicators are used, which correspond to five dimensions of work – wages, qualifications, stability, formality and satisfaction:<sup>35</sup>

- the share of own-account workers and paid employees with below-average weekly wages or income<sup>36</sup> (poorly paid);
- the share of overeducated or undereducated workers<sup>37</sup> (qualification mismatch);
- the share of workers with a contract with a duration of less than 12 months, own-account workers and contributing family workers<sup>38</sup> (irregular employment);
- the share of workers in informal employment<sup>39</sup> (informal employment); and
- the share of workers who claim dissatisfaction with their current job (non-satisfactory employment).

The right-hand side of each chart in figure 16 represents the indicators of better quality employment, based on average or above-average wages, qualifications, stability, formality (security) and satisfaction. In the low-income countries<sup>40</sup> – Cambodia, Liberia and Malawi – and also in Peru (an upper middle-income country), there is a clear bias toward lower quality jobs, with the interesting exception of job satisfaction. Apparently, it takes a lot to make a young person in a developing economy express dissatisfaction with their job. In fact, the seeming contradiction of a young person working in a job that brings little in terms of monetary reward, stability and security claiming job satisfaction is likely to be a reflection of the optimism of youth, the national culture and the ability to adapt to realities where so few “good” jobs exist. Perhaps the value given to having a job – any job – outweighs issues of job quality. This is addressed further in the following section.

In all countries analysed, more young people receive below-average wages than average or above-average wages. The pattern is strongest in Cambodia, Liberia, Malawi and Peru, with two-thirds of working youth classified as poorly paid. Informal employment is also an area of concern in all countries examined. In figure 16, the shares of informal employment range from 46.8 per cent in Jordan to 98.3 per cent in Cambodia. Looking at averages across the ten SWTS countries, as many as eight out of ten young workers are in informal employment, six in ten lack a stable employment contract, five in ten are undereducated or overeducated for the work that they do, and six out of ten receive below-average wages.

There is a strong correlation between the share of youth in irregular employment and the share of youth in informal employment due to overlapping categories in the definitions. This correlation is obvious in all countries except Armenia and Jordan. The reason for the two

<sup>35</sup> Countries were selected to represent all of the developing regions.

<sup>36</sup> Monthly wages of employees and daily, monthly or other time-specific earnings of own-account workers were converted into weekly rates for comparability. Contributing (unpaid) family workers are excluded from the calculation.

<sup>37</sup> The methodology applied is that of the normative ISCO-based approach described in Chapter 3. Table 3 provides the matching across ISCO and ISCED educational codes.

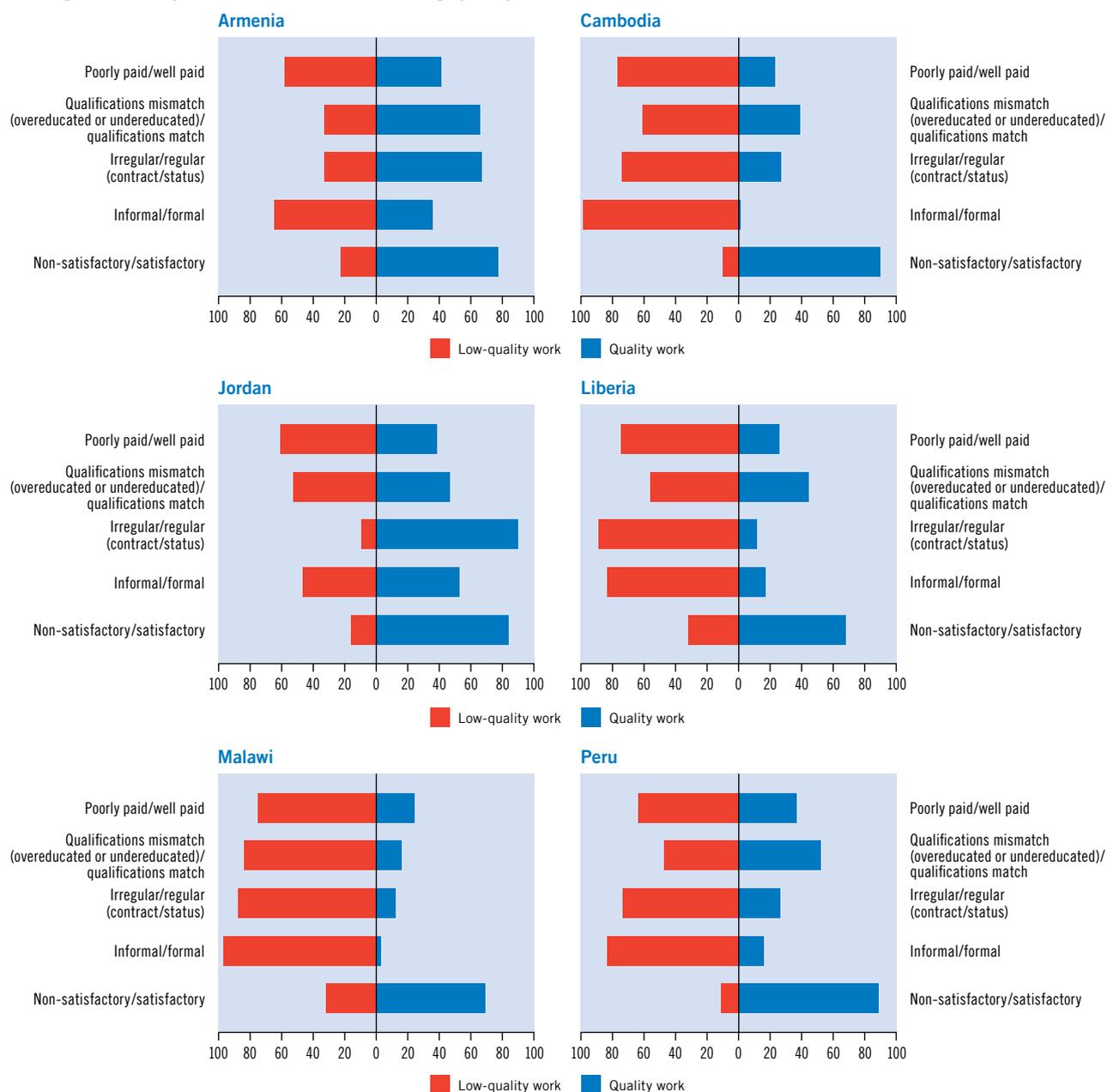
<sup>38</sup> Members of producers’ cooperatives and those not classifiable by status in employment are also included in the category of “irregular employment”. Irregular employment and informal employment are highly correlated due to the inclusion in both categories of own-account workers.

<sup>39</sup> Informal employment is measured according to the guidelines recommended by the 17th International Conference of Labour Statisticians. It includes the following sub-categories of workers: (a) paid employees in “informal jobs”, i.e. jobs without either a social security entitlement, paid annual leave or paid sick leave; (b) paid employees in an unregistered enterprise with size class below five employees; (c) own-account workers in an unregistered enterprise with size class below five employees; (d) employers in an unregistered enterprise with size class below five employees; and (e) contributing family workers.

<sup>40</sup> The World Bank income classifications, July 2011 revision.

## Low-income developing economies with weak labour market institutions and lack of social protection show a strong bias toward low-quality youth employment.

Figure 16. Expanded indicators measuring quality of work (%)



Note: The indicators are shares in total youth employment (aged 15–29), except for (a) the shares of workers earning below and average and above-average wages, which are percentages of employees and own-account workers only, and (b) overeducated and undereducated workers, which are percentages of employed youth with completed education (i.e. excluding currently working students).

Source: SWTS, various countries, 2012.

exceptions has to do with the sub-categories of informal employment. Informal employment is made up of two sub-categories: (1) persons holding an informal job in the formal sector: i.e. those who are engaged in paid work in a registered enterprise who do not receive entitlements such as social security contributions or paid annual leave or sick leave; and (2) persons working in the informal sector: i.e. those who are working with or without pay at an unregistered enterprise. In both Armenia and Jordan, the first category – informally employed in the formal sector – dominates, while in the remaining countries informal employment is dominated by the share of youth employed in the informal sector. The latter sub-category has a strong correlation with the large share of own-account workers and unpaid family workers found in

the category of irregular employment. (See box 14 for an example of one country's struggle to reduce informality among young workers and also section 6.1.4 on support mechanisms to youth entrepreneurs, which can offer a chance to the poorly paid self-employed youth to scale up their profitability.)

Jordan is unique among the countries shown in that it has a very low share of workers engaged in irregular employment (9.1 per cent). In Jordan, the share of young own-account workers – a sub-category of irregular employment – in total youth employment is only 2.8 per cent. This contrasts sharply with the 28.0 per cent average share among the remaining nine countries.

### 4.3.2 Skills mismatch

Figure 16 shows indicators of overeducation and undereducation for countries covered by the SWTS. The methodology followed is that of the normative ISCO-based approach introduced in section 3.2.2. Table 9 provides the distinction between the “non-matching” categories, which are grouped together for presentation in the charts, and also provides the distribution of employment by level of educational attainment.

The results indicate the correlation between levels of educational attainment and the calculated levels of overeducation and undereducation when measured according to the ISCO-based approach. Of the countries with substantial shares of employed youth holding higher-level qualifications (secondary and above), four also show significant shares of overeducated youth (Armenia at 21.6 per cent, FYR Macedonia at 19.0 per cent, Peru at 30.1 per cent and the Russian Federation at 13.8 per cent). Egypt and Jordan are outliers: they have high levels of educational attainment (19.6 and 34.6 per cent of working youth with tertiary education, respectively) but still comparatively low levels of overeducation (11.1 and 9.4 per cent) and high levels of undereducation (33.9 and 43.0 per cent).

A possible explanation for the reverse mismatch phenomenon in Egypt and Jordan is the strong gender segregation of occupations in these countries. Although young women are attaining high levels of education, they still face a difficult time in getting hired in occupations appropriate to their qualifications. Cambodia, Liberia, Malawi and Togo, in contrast, have high shares of working youth with low levels of education (below secondary), which is reflected in the large share of undereducated youth in occupations requiring a higher skills base.

Underqualification in occupations in low-income countries results in low productivity growth and low capacity for economic diversification. Investing in on-the-job training of undereducated workers could have an important impact on the confidence levels and earning potential of the young worker while also raising productivity levels of the enterprise (see section 6.1.2).

**The overeducated working youth suffer as they are unable to reach their productive potential. The productive potential of the economy suffers in the face of large shares of undereducated youth.**

**Table 9. Employment by characteristics of education (share in total employment, %)**

	Overeducated	Undereducated	Primary education or less	Secondary education	Tertiary education
Armenia	21.6	11.4	0.0	57.1	42.9
Cambodia	4.2	56.4	61.8	33.6	4.7
Egypt	11.1	33.9	31.0	49.3	19.6
FYR Macedonia	19.0	14.4	15.5	58.3	26.3
Jordan	9.4	43.0	47.2	18.3	34.6
Liberia	9.3	45.7	44.9	49.7	5.3
Malawi	1.7	81.8	83.3	14.8	1.9
Peru	30.1	17.4	18.7	48.7	32.6
Russian Federation	13.8	31.0	6.9	39.7	53.5
Togo	3.6	54.7	54.5	42.6	2.9

Source: SWTS, various countries, 2012.

Not all occupations are suffering equally in terms of the qualification mismatch. Table 10 presents the share of overeducation and undereducation by major occupational groups as derived from the ISCO-based approach for two of the countries, FYR Macedonia and Togo. These countries were chosen to reflect: (1) a developing economy with strong labour market institutions and high educational attainment; and (2) an economy with weak institutions and low education levels. Note that a limitation of the ISCO-based calculation identified in section 3.2.2 is its inability to generate overeducation data for most highly skilled occupation groups (major groups 1–3). In contrast to most advanced economies, undereducation is evident in the elementary occupations. This is because not all workers in FYR Macedonia and Togo completed primary education (the ISCO-defined qualification for group 9).

Table 10 does support the premise that some highly educated young people in FYR Macedonia are having to “settle” for jobs that they are overqualified for – for example, as clerks, sales workers or general labourers (within the elementary occupations). On the other hand, there are also young people holding positions that do not match their level of educational attainment. Technicians and associate professionals (major group 3) have the highest chance of being undereducated in the country (54.2 per cent), but another third (35.3 per cent) of young people in senior positions or management are undereducated, as are one in four young people in skilled agricultural work and in machine/assembly work.

In Togo, overeducation is evident for young people engaged in elementary occupations (41.7 per cent) and as clerks (17.6 per cent), but in other occupations, the situation is much more one of undereducation. This is not surprising given that slightly more than half of the working youth in Togo finished education at the primary level or lower. There is a high incidence of undereducation in all the major occupational groups except 1, 8 and 9. In particular, almost all technicians and associate professionals (major group 3) hold qualifications that are below the norm prescribed by the ISCO classification (ISCED 5–6).

Some highly educated young people have to take up work in elementary occupations and as clerks, but other occupations tend to include shares of undereducated young people, which can have consequences on labour productivity.

**Table 10. Shares of overeducated and undereducated young workers in FYR Macedonia and Togo by ISCO-88 major occupational group (%)**

Major occupational categories (ISCO-88)	FYR Macedonia		Togo	
	Overeducated	Undereducated	Overeducated	Undereducated
1: Legislators, senior officials and managers	0.0	35.3	0.0	0.0
2: Professionals	0.0	2.1	0.0	52.5
3: Technicians and associate professionals	0.0	54.2	0.0	95.8
4: Clerks	40.6	6.9	17.6	20.9
5: Service workers and shops and market sales workers	13.8	9.1	1.0	52.9
6: Skilled agricultural and fishery workers	7.1	26.5	1.1	63.4
7: Craft and related trades workers	0.7	14.7	0.8	56.2
8: Plant and machine operators and assemblers	2.6	25.6	0.0	0.0
9: Elementary occupations	63.4	2.7	41.7	4.1

Source: SWTS, FYR Macedonia and Togo, 2012.

### 4.3.3 Unravelling job satisfaction in developing economies

In order to improve understanding of why young people remain satisfied with their jobs despite low job quality (figure 16), a detailed analysis of the nuances of job satisfaction rates is presented here. The aim is to determine which personal, household or job characteristics are most closely linked to job satisfaction.<sup>41</sup> The results in table 11 do show some slight variations in satisfaction rates across the variables. For example, in all countries but Egypt, Jordan and Malawi, working youth have a higher likelihood of being satisfied with their employment if they live and work in an urban setting rather than a rural setting. An association can also be seen for household wealth, with living in a wealthier household showing a strong correlation with job satisfaction. Finally, youth who feel underqualified in their work show a greater tendency to be less satisfied with their job than youth who feel overqualified.<sup>42</sup>

In contrast, the regularity of the work in terms of contract terms yields ambiguous results with regard to its impact on job satisfaction. In the three countries where regular employment is most readily attainable (and therefore more closely linked to expectations) – Armenia, FYR Macedonia and Jordan – young people with regular employment are significantly more satisfied with their jobs than those in irregular employment. In the remaining countries, where the proportion of formal employment is smaller, there is less difference between the job satisfaction rates of the two categories.<sup>43</sup>

<sup>41</sup> Responses of “highly satisfied” and “mostly satisfied” are combined in the overall “satisfied” categorization.

<sup>42</sup> This is based on a perception question within the SWTS questionnaire rather than the application of the overeducated and undereducated calculations discussed in section 4.3.2. Young respondents were asked if they feel their education/training qualifications are relevant in performing their current job.

<sup>43</sup> The ambiguous results regarding job satisfaction and characteristics of the job, including formal and informal sector, is supported by recent research from the World Bank. The research on characteristics of satisfaction (job and life) in Ghana found that “workers appear indifferent between formal salaried employment, self-employment without employees, and civil employment. Only the informal salaried show a discount but this finding is not robust across estimation techniques and disappears when conditioning on income. The non-wage benefits of being formal, surprisingly, appear not to affect utility.” (Falco et al., 2012).

Urban, wealthier young people show slight premium on job satisfaction. Informality and other characteristics of quality of work yield ambiguous results.

**Table 11. Job satisfaction rates by level of educational attainment, urban/rural residence, household wealth, regular/irregular/informal employment and overqualification and underqualification (%)**

	Armenia	Cambodia	Egypt	FYR Macedonia	Jordan	Liberia	Malawi	Peru	Russian Federation	Togo
Completed education at primary level or lower	–	87.5	80.5	55.9	81.6	68.8	69.3	90.1	88.3	71.0
Completed education at secondary level or higher	77.6	94.5	69.8	73.2	88.2	64.6	66.2	89.4	93.4	69.9
Urban residence	82.5	94.0	71.4	82.2	83.9	70.3	63.4	89.4	92.0	70.7
Rural residence	63.9	88.9	74.3	60.2	87.2	66.0	69.5	n.a.	89.8	69.0
Above-average household wealth	89.2	97.9	80.7	88.5	88.1	78.2	78.1	94.9	97.1	82.8
Below-average household wealth	60.8	84.5	64.6	53.1	63.7	60.3	67.4	73.4	80.0	66.6
In regular employment	86.5	89.8	87.7	91.3	86.9	69.4	59.7	89.9	91.9	73.5
In irregular employment	60.2	90.1	70.1	52.8	60.8	68.1	70.4	89.2	84.0	70.0
In informal employment	70.9	89.9	71.1	57.7	72.5	68.2	68.8	88.1	87.8	69.6
Feel overqualified	69.9	87.7	52.6	64.2	53.0	49.4	53.8	81.9	78.3	52.3
Feel underqualified	75.0	86.2	74.2	67.6	67.0	63.1	60.8	83.6	87.7	65.2

– = negligible.

n.a. = not applicable (data for Peru cover urban areas only).

Source: SWTS, various countries, 2012.

# 5. Labour market transitions of youth in developing economies

## 5.1 Introduction

The SWTS offers important additional information over traditional labour force surveys. First, through the inclusion of questions on the history of economic activity of young respondents, it provides indicators on labour market transitions in developing economies and the paths that those transitions take. Previously, indicators on labour market transitions have been lacking or, at best, weak. The SWTS, together with the Labour Demand Enterprise Survey (LDES), attempts to fill this gap (see box 5 for more information on the reasoning behind the dual survey approach). The latter survey was applied in only two of the ten countries discussed here and will therefore be discussed only in brief in this chapter, which will concentrate more on showcasing some of the research possibilities made available through the SWTS.

Section 5.2 presents the definition of labour market transition that is used in the SWTS analytical framework and provides details on the methodology behind measurement of the stages of transition. Section 5.3 then shows the methodology put to the test, presenting statistics on the stages of transition of youth within the available project countries and analysing which characteristics of youth provide advantages in attaining stable or satisfactory employment. Finally, section 5.4 looks more closely at the flow concept of transitions and offers insights on the issue of transition durations.

### Box 5. Work4Youth tools and methodological framework

Current labour market information does not provide information on why the school-to-work transition of young people today can be a long and difficult process. At the same time, the goal of improving the transitions of youth is among the top policy priorities of most countries. In response to this obvious information gap, the ILO has developed a research framework: the Labour Market Transition Study concept. The concept entails examining both supply-side and demand-side issues, and the framework accordingly comprises two surveys. First, a detailed household survey covering young people aged 15–29 is conducted at the national level to generate information on the current labour market situation, the history of economic activities and the perceptions and aspirations of youth (ILO School-to-work Transition Survey (SWTS)).

The supply-side picture is then balanced by a second questionnaire, which aims to measure labour demand, particularly for young workers. The Labour Demand Enterprise Survey (LDES) investigates the current and expected

workforce needs of enterprises and the views of managers on the general capacities of available young jobseekers and workers. Without the demand-side picture, the SWTS offers only a roundabout means of arriving at the occupations that are being flooded or starved by the current labour supply (for example, in looking at unemployment rates by occupation). The LDES, in contrast, gets directly to the heart of the matter – identifying current vacancies, vacancies projected over the next two years and, perhaps most importantly, capturing the “hard-to-fill” vacancies. Such information can be of invaluable use to policy-makers in the design or revision of vocational and training programmes. It will also be of great value to employment services and career guidance counsellors for honing their advice to students or jobseekers on the fields of specialization in which they are most likely to attain employment.

More information on the surveys with questionnaires and tabulation plans are available in various modules of the *Methodological Guide*, available at: [www.ilo.org/w4y](http://www.ilo.org/w4y).

## 5.2 Defining labour market transitions

The labour market transition of young people concerns not only the length of time between their exit from education (either upon graduation or early exit without completion) to their first entry into any job, but also qualitative elements, such as whether this job is stable (measured by contract type). The SWTS was designed in a way that applies a stricter definition of “stable employment” than is typically used.<sup>44</sup> By starting from the premise that a person has not “transited” until settled in a job that meets very basic criteria of stability, as defined by the duration of the employment contract, the SWTS analytical framework introduces a new quality element to the standard definition of labour market transitions. However, as seen in Chapter 4, only a very small share of youth in developing economies will ever attain stable employment, and if the “end goal” does not fit the reality, then perhaps the statistics are not framed widely enough. For this reason, it was decided to look also at job satisfaction and to build this into the concept of labour market transition.

More specifically, labour market transition<sup>45</sup> is defined as the passage of a young person (aged 15–29) from the end of schooling (or entry to first economic activity) to the first stable or satisfactory job. Stable employment is defined in terms of the contract of employment (written or oral) and the duration of the contract (greater than 12 months). Bringing in the issue of a contract automatically excludes the employment status of self-employed, where the employment relationship is not defined by a contract. The opposite of stable employment is temporary employment, or wage and salaried employment of limited duration. Satisfactory employment is a subjective concept, based on the self-assessment of the job holder. It implies that the respondent considers the job to be a good “fit” with their desired employment path at that moment in time. The contrary is termed non-satisfactory employment, implying a sense of dissatisfaction with the job.

Based on this definition of labour market transition, the stages of transition are as follows:

- I. Transited** – A young person who has “transited” is one who is currently employed in:
  - (a) a stable job, whether satisfactory or non-satisfactory; or
  - (b) a satisfactory but temporary job; or
  - (c) satisfactory self-employment.
- II. In transition** – A young person is still “in transition” when their status is one of the following:
  - (a) currently unemployed (relaxed definition); or
  - (b) currently employed in a temporary and non-satisfactory job; or
  - (c) currently in non-satisfactory self-employment; or
  - (d) currently inactive and not in education or training, with an aim to look for work later.
- III. Transition not yet started** – A young person whose “transition has not yet started” is one who is either:
  - (a) still in school and inactive (inactive student); or
  - (b) currently inactive and not in education or training (inactive non-student), with no intention of looking for work.

<sup>44</sup> For an overview of transition measurement concepts that will be used by Eurostat for its Member States, see Boateng, Garrouste and Jouhette (2012).

<sup>45</sup> The avoidance of the term “school-to-work” transition is purposive. Looking only at youth who transit from school to the labour market would exclude the share of youth with no schooling, which in some countries is still sizeable. The ILO includes this subset within transition indicators by taking as the starting point the young person’s first experience in economic activity. In order to avoid confusion on the terminology, the author’s preference is to talk about labour market transitions of youth, rather than school-to-work transitions, which make up only a subset.

Two elements of this classification are noteworthy. First, the stages of transition span across the boundaries of economic activity as defined in the standard labour force framework.<sup>46</sup> The “transited” category includes a subset of youth classified as employed; the remaining employed fall within the category of “in transition”, which includes also the strict unemployed and portions of the inactive (namely, those without work, available for work but not actively seeking work<sup>47</sup> and the inactive non-students who have stated an intention to join the labour force at a later stage); and the “transition not yet started” category is the residual of the inactive population.

Second, the stages of transition are not intended to be a normative framework. Because of the inclusion of youth in satisfactory self-employment and satisfactory temporary employment, one cannot say that all young people in the “transited” category have transited to a “good” job. In fact, the majority of young people in self-employment – the own-account workers and unpaid family workers – will be among the poorly paid workers in the informal economy and so will show up on the “bad” job quality side of the charts in figure 16. And by definition, they make up the bulk of the country’s share of irregularly employed. Yet still they have expressed a degree of satisfaction with their job, and they are likely to have finished their transition in the sense that they will remain in the self-employed classification for the remainder of their working lives.

The stages of transition classification offer a flow concept. A person is “in transition” until they have reached a stable position in the labour market; they have a job they are likely to maintain, regardless of whether it is good or bad. For a normative framework, one can apply the breakdown of employment by regular or irregular job status, as presented in Chapter 4.

## 5.3 Stages of transition in developing economies

### 5.3.1 A cross-country comparison

Which stages of transition do young people experience and what are the characteristics of those who have completed the transition? Figure 17 presents the distribution of youth population by stages of transition in the ten SWTS countries (distributions by sex are included in Annex D). The diversity of the shares across countries makes it difficult to draw clear-cut conclusions. Youth who have completed the transition make up the largest share in Cambodia, Egypt, Malawi, Peru, the Russian Federation and Togo, but the categories that rank second vary across this group, and only Cambodia shows a large gap between the share of youth with completed transition (68.6 per cent) and the other categories. Liberia is unique in that the largest share of its youth is currently in transition (47.1 per cent). Youth who have not yet started their transition make up the largest share in Armenia, FYR Macedonia and Jordan, which is likely to reflect the high rates of educational enrolment.<sup>48</sup>

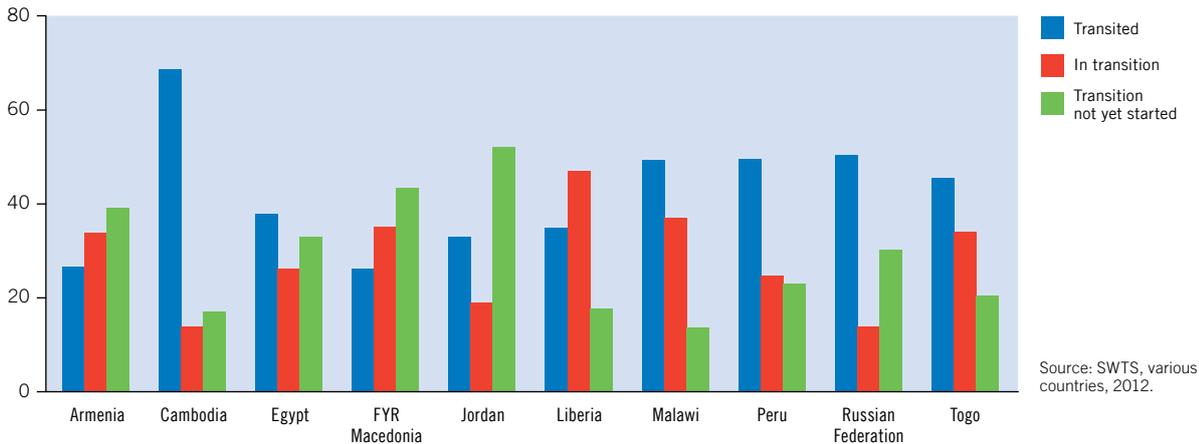
<sup>46</sup> The international guidelines for measuring statistics on the economically active population, set out by the 13th International Conference of Labour Statisticians in 1982, provide the framework for measuring who is counted as employed and as unemployed according to the economic production boundaries set out by the System of National Accounts.

<sup>47</sup> This is the portion added to the “strictly” unemployed to make up the unemployed (relaxed definition).

<sup>48</sup> The 2008 edition of the *Global Employment Trends for Youth* report included data on gross enrolment rates by country and region.

**The distribution of youth across stages of labour market transition varies from country to country.**

**Figure 17. Distribution of youth population by stage of transition (%)**



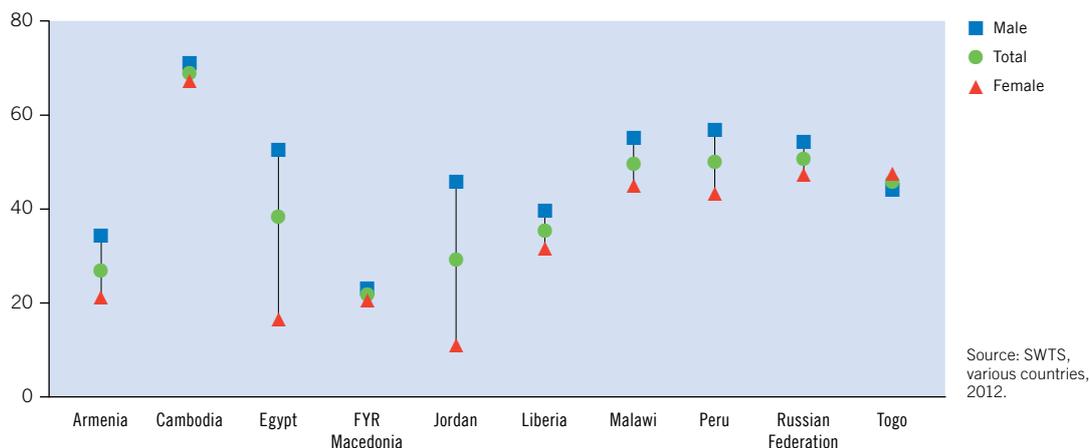
Instead of comparing the distribution of stages of transition across countries, the sub-categories of transition can be compared across countries to provide valuable insights (see table D6). For example, in Cambodia, Egypt, Liberia, Malawi, Peru and Togo – low-income economies except Egypt and Peru, which are lower middle and upper middle, respectively – the majority of youth who have completed the transition are engaged in satisfactory self-employment or temporary employment. In contrast, in Armenia, FYR Macedonia, Jordan and the Russian Federation, the larger share of transited youth comprises those who have attained stable employment. Cambodia also has a fairly sizeable share of youth who have attained stable employment (18.6 per cent), but Cambodia is different in that it has a very small share of youth remaining in transition (13.9 per cent). There are two reasons for this: first, very few Cambodian youth are unemployed, even applying the relaxed definition; and second, Cambodian youth almost always describe themselves as satisfied with their job. Liberia has a large share of youth in unemployment (relaxed definition) (28.9 per cent) and only a small share of youth in stable employment (4.1 per cent). Excluding these two differences, the structures of the youth labour markets in Liberia, Malawi and Togo are quite similar, particularly with regard to the one-third share of youth expressing satisfaction over their engagement in self-employment.

Young men have an advantage when it comes to completing their labour market transition (figure 18). In all countries but Togo, the male share with completed transition is slightly higher than the female share. By far the largest gaps between shares of young women who completed the transition and young men are seen in the Middle East and North African countries of Egypt and Jordan, at 36.1 and 34.8 percentage points, respectively. At the same time, the female share of transited youth is well below that in the other countries, at 16.2 per cent in Egypt and 10.7 per cent in Jordan. Male-female gaps of between 10 and 14 points are also seen in Armenia, Malawi and Peru.

In all countries, the male share in stable employment is higher than the female share (tables D7 and D8). Perhaps the biggest gender differences is the significantly higher likelihood of young women than young men in all countries to remain outside of the labour market without studying yet intending to engage in the labour market in the future. This gender gap is particularly apparent in Armenia, FYR Macedonia and Peru. These young women are likely to be mothers, who are remaining temporarily outside of the labour market to look after their children. In most countries (except FYR Macedonia, Jordan and the Russian Federation), young women are significantly more likely than men to be among the unemployed (relaxed definition).

## Young males are more likely to complete the transition to stable or satisfactory employment.

Figure 18. Share of transited youth in total youth population, by sex (%)



### 5.3.2 A detailed transition analysis for Liberia

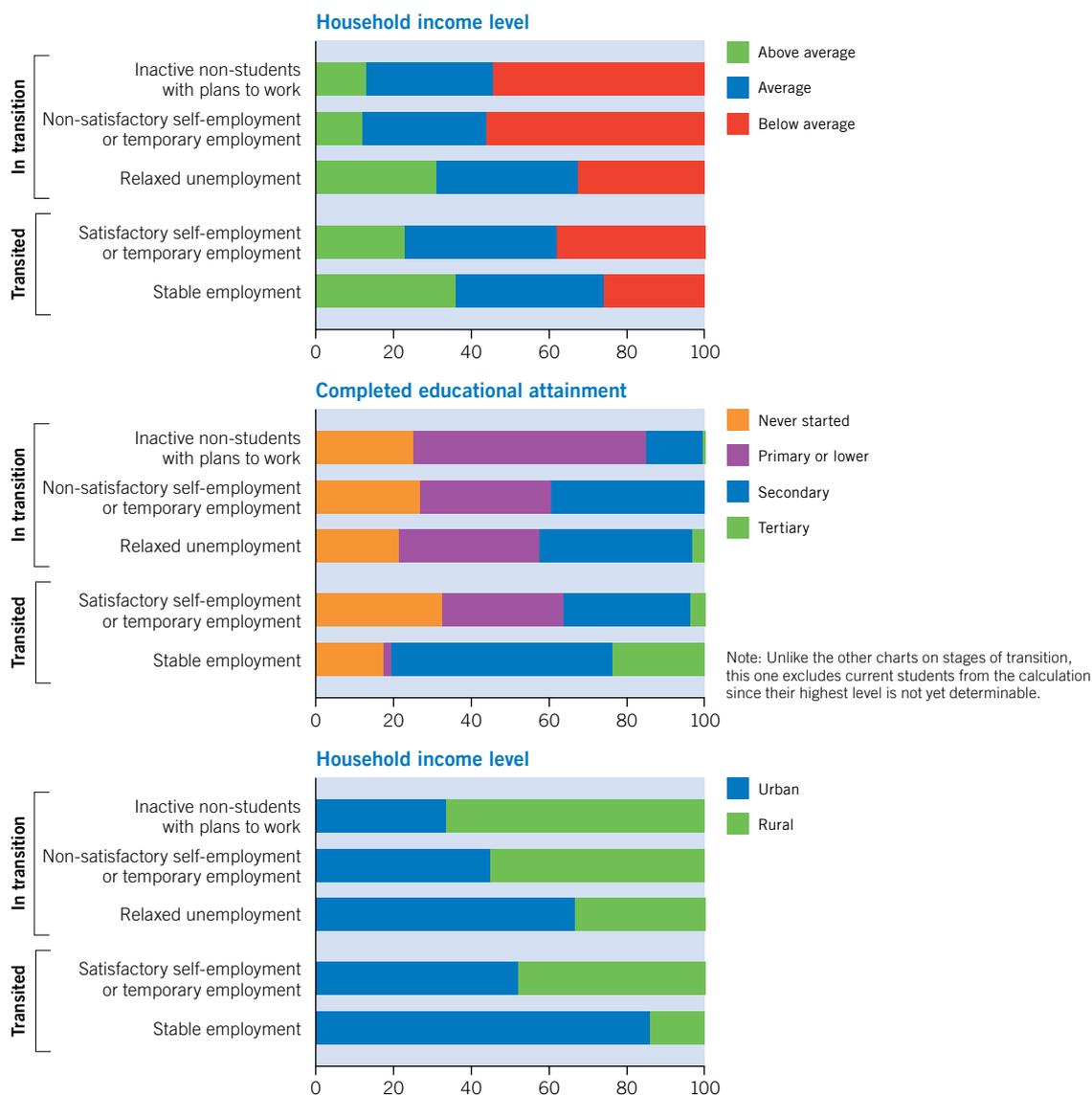
To demonstrate the impact that other variables beyond sex have on the stages of transition indicators, the following analysis concentrates on one country only: Liberia.<sup>49</sup> Figure 19 disaggregates the two economically active stages of transition – the transited youth and youth still in transition – by household income level, level of educational attainment and rural/urban geographic area. Perhaps not surprisingly, youth coming from households of above-average income level are more likely to transit to stable employment. No correlation seems to exist between household income level and unemployment, even though one might assume that only the wealthier households can support young people through a period of unemployment. The shares of youth in unemployment (relaxed definition) are very similar at 30.9 per cent for above-average income households and 32.0 per cent for below-average income households. Finally, the youth in poorer households are much more likely than youth from wealthier households to find themselves in self-employment or temporary employment (satisfactory and non-satisfactory) or to be inactive. Policy responses targeted at easing transitions of the more disadvantaged young people are discussed in section 6.1.3.

The level of educational attainment of Liberian youth has a strong impact on whether or not they have completed the transition. Almost all Liberian youth with a higher-education degree are in the transition completed category and, within that category, primarily in the share of youth who have attained stable wage employment. Having at least a secondary level qualification is a prerequisite to attaining stable employment in Liberia. These results are supported by those of the survey of enterprises (LDES) run simultaneously with the SWTS in Liberia. The enterprise survey found that 47.7 per cent of enterprises prefer to hire a young person with a tertiary degree or post-secondary vocational training for a professional/management vacancy and 33.8 per cent for a production position (Vansteenkiste, de Mel and Elder, forthcoming). (See box 6 for additional information.) Young people with primary or lower education (including no schooling) dominate the inactive non-students and self-employment or temporary employment (satisfactory and non-satisfactory) categories. Inclusion in national apprenticeship programmes, as discussed in box 12, might help to open the door of lesser educated Liberian youth to a possible future in stable employment.

<sup>49</sup> The SWTS report *Labour market transitions of young women and men in Liberia* will be available in June 2013. Readers are invited to review the paper to gain a better understanding on the context of overall labour market and economic conditions in the country.

## Household wealth, investment in education and urban origins offer advantages in the labour market transition of youth in Liberia.<sup>50</sup>

**Figure 19. Liberia: Stages of transition (categories of “transited” and “in transition”) by household income level, educational attainment and geographic area (%)**



Source: SWTS, Liberia, 2012.

### Box 6. How the LDES complements SWTS results and strengthens interpretation

The LDES (as outlined in box 5) offers a means of capturing the current and projected demand for youth labour.

In the case of Liberia,\* the LDES has shown that there should be numerous employment opportunities in the country over the next two to three years for secondary school teachers, nursing professionals, managing directors, civil engineering technicians, system analysts, electronic engineering technicians, accountants and other high-end skilled workers (Vansteenkiste, de Mel and Elder, forthcoming). Interestingly, the occupations that

are growing are fairly well matched by the fields of study that current students claimed to want to focus on (health and welfare, 24.6 per cent; social sciences, 23.6 per cent; engineering/manufacturing/construction, 14.9 per cent; and education, 13.6 per cent). So there is some hope that future labour market entrants in Liberia will face a fairly smooth transition to employment. But the main challenge in the country has never been among the more educated youth, but rather among the less educated, who remain stuck in self-employment (figure 19).

\* Of the ten SWTS countries discussed in Chapters 4 and 5, the LDES has been implemented in two so far, namely Liberia and Malawi.

<sup>50</sup> It is important to note that the advantages brought to the transition results by urban geography, household wealth and higher education levels are not unique to Liberia. Analyses of the remaining nine SWTS countries show similar results.

Results are more evenly split for the unemployed: 57.5 per cent of them have below secondary-level education and 42.5 per cent have secondary level or above. Again, the results for the unemployed are somewhat contrary to what might be expected, in that the young people with a higher skills level seem no more likely than those with a lower skills level to “hang around” in unemployment; or rather, the two categories are equally likely to be unemployed.

Remaining in education does not guarantee a “good” job in Liberia; it is, however, a prerequisite for the aspiration to stable wage employment. The demand for youth with tertiary education remains strong in Liberia. In fact, the LDES confirmed that the demand is not being met by the national supply, and that some enterprises resort to importing foreign labour from elsewhere to fill higher-level positions. It is interesting to contrast these findings with those of countries in the Middle East and North Africa where unemployment among university graduates remains high (ILO and UNDP, 2012).

As figure 19 also shows, youth in urban areas are far more likely than youth in rural areas to transit to stable employment, and it is important to add that this finding is supported by the analysis of data from all ten countries. The ratio is nearly nine to one in favour of the urban youth. They are also more likely to be unemployed (with a ratio of two unemployed urban youth to one unemployed rural youth) and less likely to be an inactive non-student with an intention to work in the future (with a ratio of one inactive urban youth to two inactive rural youth). The shares of youth in satisfactory or non-satisfactory self-employment or temporary employment are more evenly spread between the two geographic areas.

To summarize, in Liberia the most advantaged youth in terms of completing the labour market transition are young urban males from wealthier households with at least secondary-level education. A similar analysis has been made for the other SWTS countries, which support the universality of the characteristics that make for a more successful transition for young people in developing economies.

## 5.4 Labour market flows and durations of transition

### 5.4.1 Labour market flows

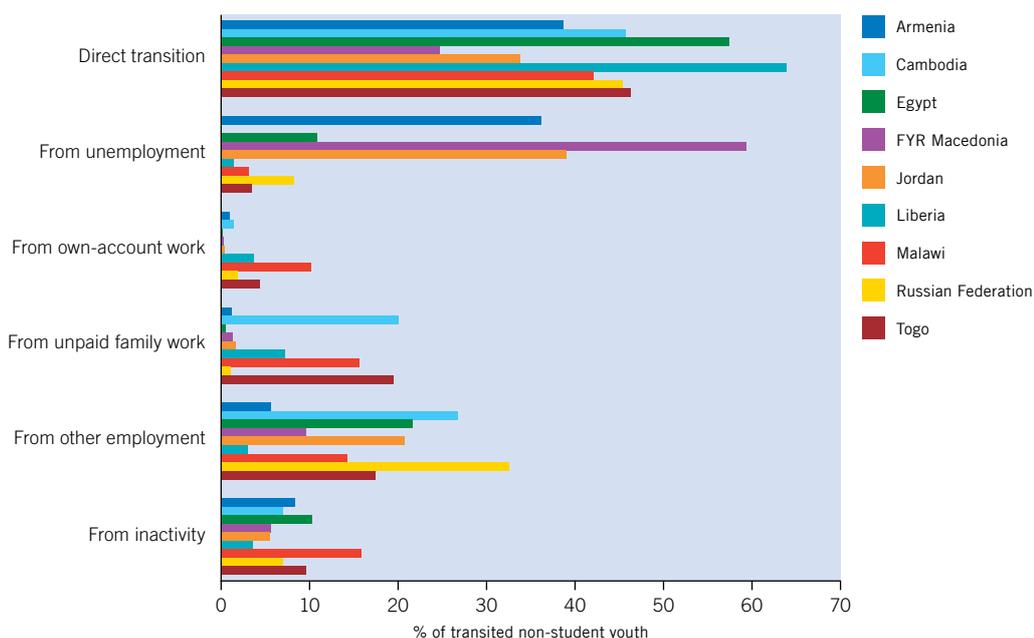
The SWTS allows an analysis of labour market flows by identifying the labour market category held by a respondent prior to transiting to stable or satisfactory employment. Figure 20 shows that in the nine countries examined (note: flow data are not processed for Peru), the vast majority of young people in employment transited directly to stable employment or satisfactory self-employment or temporary employment. This means they had no intermediary spells before acquiring their current job, which is classified as either stable in contract terms or satisfactory self-employment or temporary employment.

Figure 20 suggests that “shopping around” among labour market experiences does not seem to be the norm in developing economies. In the low-income economies of the sample – Cambodia, Egypt (lower middle), Liberia, Malawi and Togo – the majority of young people who experienced a direct transition moved directly to satisfactory self-employment. The large share of youth in this sub-category in the five countries, therefore, helps to explain the greater than 40 per cent incidence of direct transitions (see table D6). Another important finding is that between 20 and 30 per cent of the young people who experienced a direct transition in the five low-income economies completed the transition before the age of 15, i.e. as child labourers. The labour markets in the comparatively higher-income economies, Armenia, FYR Macedonia, Jordan and the Russian Federation, behave differently.<sup>51</sup> In these

<sup>51</sup> The countries are classified as “upper middle income” with the exception of Armenia which is “lower middle”. The World Bank income classifications, July 2011 revision.

**“Shopping around” among labour market experiences does not seem to be the norm in developing economies.**

**Figure 20. Flows to stable and/or satisfactory employment (transited category)**



Note: “Other employment” includes non-satisfactory temporary employment for those who transitioned to stable employment or satisfactory self-employment or temporary employment, and self-employment as employer or wage and salaried worker for those who transitioned to satisfactory self-employment or temporary employment. In the case of Armenia only, “other employment” also includes persons who have transitioned directly from engagement in the army. Armenia maintains mandatory military service (two years) for young men.

Source: SWTS, various countries, 2012.

countries, the majority of young people who experienced a direct transition moved directly to stable employment. At the same time, larger shares of youth in the four countries engaged in active jobseeking (meaning they were classified as unemployed) prior to attaining their current job.<sup>52</sup>

Some, but always less than one-third, of the transited youth have either moved from unpaid work in a family enterprise or have previous experience in paid employment or self-employment as an employer. Perhaps the most interesting finding is how few of the young people have managed to move to stable or satisfactory employment from own-account work. At most, 10.1 per cent of young Malawians moved from own-account work to a job they felt more satisfied with. Another interesting finding is the consistently very low percentage of young people who moved to stable or satisfactory employment from inactivity, suggesting the existence of an “inactivity trap”.

Table 12 presents transition path indicators for Armenia and Cambodia, to provide a more detailed picture of how young people in these countries arrived at the transited stage.<sup>53</sup> When one includes the young people who transitioned directly to stable and/or satisfactory employment to generate an average duration of transition (38.3 per cent in Armenia and 45.3 per cent in Cambodia; see figure 20), the results show a transition duration of slightly longer than one year for transited youth in Armenia (14.9 months) and 9.8 months in Cambodia. Removing from the calculation the number of youth who transitioned directly reveals a very different picture, however. In the two countries, the path to transition was not especially circuitous for those who did not move directly to stable and/or satisfactory work, but it

<sup>52</sup> Note: The strict definition of unemployment requiring an active job search is applied.

<sup>53</sup> As in table 8, the comparison is between a developing economy with relatively strong labour market institutions and high levels of educational attainment (Armenia) and one with weak institutions and low education levels (Cambodia).

**Time spent in unemployment prior to completing the transition is relatively short; however, youth who transit from temporary employment or self-employment are likely to spend significant time in that activity before transiting.**

**Table 12. Indicators on path of transition for transited youth in Armenia and Cambodia, by sex**

	Armenia			Cambodia		
	Total	Male	Female	Total	Male	Female
Average duration of transition (including direct transits)	14.9 months	15.6 months	15.2 months	9.8 months	6.5 months	12.7 months
Average duration of transition (excluding direct transits)	24.9 months	14.5 months	25.0 months	63.7 months	58.5 months	66.3 months
Average number of intermediary activities	1.8	2.2	1.3	1.4	1.4	1.4
Average number of unemployment spells	1.1	1.1	1.1	–	–	–
Average duration of unemployment spells	15.5 months	13.1 months	18.2 months	–	–	–
Average number of temporary employment spells	1.1	1.1	1.0	1.0	1.0	1.0
Average duration of temporary employment spells	12.1 months	13.2 months	9.3 months	30.3 months	37.6 months	26.6 months
Average number of spells of self-employment	1.1	1.1	1.0	1.0	1.0	1.0
Average duration of spells of self-employment	16.8 months	16.6 months	27.4 months	54.7 months	54.0 months	55.2 months

– = not reliable due to small sample.

Note: The path indicators exclude youth who made a direct transition except where indicated.

Source: SWTS, Armenia and Cambodia, 2012.

was lengthy. The typical Armenian youth spent, on average, 24.9 months in transition, with almost two spells of economic activity (unemployment or employment) or inactivity before completing the transition. Young Armenian men experienced slightly more spells of activity than young women; however, one should bear in mind the mandatory military conscription of young men in Armenia, and that time spent in the army would count as one “spell” of activity. In Cambodia, in contrast, there are fewer spells of activity during transition, at an average of 1.4, but the time spent in transition is more than three times as long as the Armenian transited youth. The average Cambodian youth, who had not moved directly to stable and/or satisfactory employment, spent 63.7 months, or more than five years, in transition.

In Armenia, young people who experienced unemployment prior to completing the transition spent, on average, 15.5 months seeking a job. Young women experienced longer spells of unemployment than young men. In both countries, the tendency is for a transited youth to have experienced one spell of temporary employment or one spell of self-employment. The difference between the two countries rests in the duration of the employment spells. Cambodian youth experienced, on average, 30.3 months, or 2.5 years, of temporary employment prior to completing the transition, compared with 12.1 months, or one year, for Armenian youth. Spells of self-employment were longer for both countries, on average of 54.7 months (4.5 years) in Cambodia and 16.8 months (1.4 years) in Armenia. In both countries, young men saw longer spells of temporary employment and young women saw longer spells of self-employment, most likely in the unpaid family worker category.

## 5.4.2 Duration of labour market transitions

Finally, the SWTS also allows for an analysis of the average duration of transition. Table 12 has already presented the average durations of transition in Armenia and Cambodia.<sup>54</sup> The durations of paths of transition can be considered according to the following schema, designed by the ILO:

- I. A **short transition** is classified as one in which, before obtaining the current satisfactory/stable job, the young person underwent either:
  - a direct transition; or
  - a spell (or cumulative spells) of stable or satisfactory employment with no spell of unemployment or inactivity; or
  - a spell (or cumulative spells) of employment of less than or equal to one year with no spell of unemployment or inactivity where the job(s) held is classified as non-satisfactory self-employment or temporary employment; or
  - a spell of unemployment with or without spells of employment or inactivity of less than or equal to three months; or
  - a spell of inactivity of less than or equal to one year.
- II. A **mid-length transition** is classified as one in which, before obtaining the current satisfactory/stable job, the young person underwent either:
  - a spell (or cumulative spells) of non-satisfactory self-employment or temporary employment of between one and two years with no spell of unemployment or inactivity; or
  - a spell of unemployment with or without spells of employment or inactivity of between three months and one year; or
  - a spell of inactivity longer than one year.
- III. A **lengthy transition** is classified as one in which, before obtaining the current satisfactory/stable job, the young person underwent either:
  - a spell (or cumulative spells) of non-satisfactory self-employment or temporary employment of two years or over with no spell of unemployment or inactivity; or
  - a spell of unemployment with or without spells of employment or inactivity of one year or over.

In the nine countries presented in figure 21, most labour market transitions by youth were direct transitions (as shown in figure 20) and were therefore classified as “short” in duration.<sup>55</sup> Only in Armenia, FYR Macedonia and Jordan did “lengthy” transitions comprise more than 20 per cent of all transitions (22.5 per cent, 57.6 per cent and 32.1 per cent, respectively). In these countries, a substantial share of transitioned youth had either been looking for work for more than 12 months or had been engaged in non-satisfactory self-employment or non-satisfactory temporary employment for at least two years before moving to the current stable and/or satisfactory job. The high rates of youth unemployment (relaxed and strict definitions) in the three countries suggest that the majority of the youth spent their transition in long-term unemployment (see table D2). In the other countries, the shares of transitioned youth who experienced lengthy transitions were low, all at below 13 per cent.

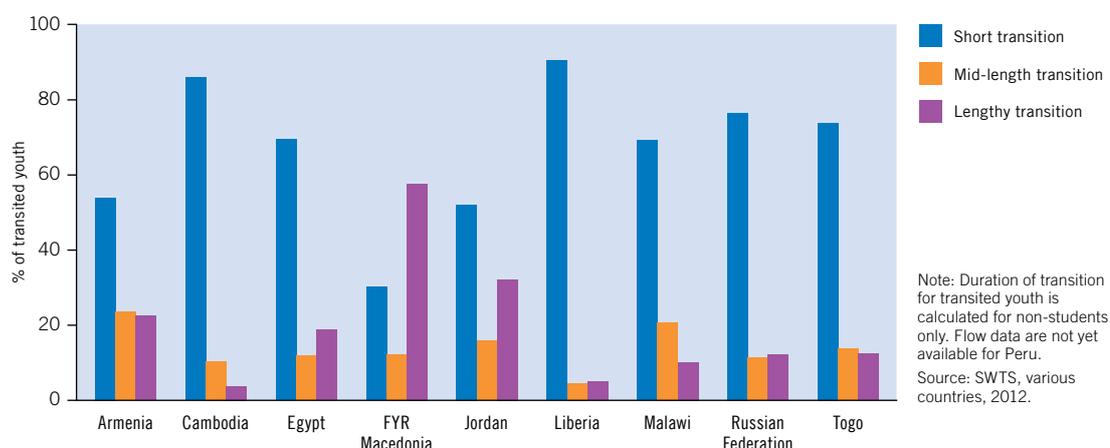
In contrast, the youth who remained in transition were likely to find themselves staying within the category for an extremely long time. The time in transition for the nine countries ranges from 44.4 months, or nearly four years, in Egypt to 95.9 months, or eight years, in

<sup>54</sup> Data on transition durations in other countries are found in table D10.

<sup>55</sup> As demonstrated in the discussion associated with table 12, the average duration of transition including young people who transitioned directly can be much lower than the average duration calculated without the direct transitions. A worthy future exercise would be to apply the categorization of duration in transition to the measures separately, and also to compare the schema of duration for youth who transitioned to stable employment compared to youth who transitioned to satisfactory self-employment or temporary employment. (See box 7 for a presentation of other future research exercises of the Work4Youth Project.) Data on durations of transition for the two sub-categories are available in table D10.

Transition periods are short for most youth in developing economies. Only in Armenia, FYR Macedonia and Jordan, where many transit from unemployment, is the “wait” for stable or satisfactory employment a long one.

Figure 21. Duration of transition to stable and/or satisfactory employment



### Box 7. Future research and products of the Work4Youth project

Chapters 4 and 5 of this edition of *Global Employment Trends for Youth* have been designed to offer a “taste” of the analyses that can follow the ILO SWTS and LDES. Clearly, there is so much more that can be done with the rich emerging data sets. Areas that will be investigated further in future national, regional and thematic reports include the following:

1. An investigation of the gap between the first job and the current job; does the first job affect the transition path?
2. An examination of first-time jobseekers compared with job losers.
3. Unemployment by job reservations, types of job sought, field of specialization (in studies) and job search methods (in comparison with demand issues, including job hiring methods used by employers).
4. The identification of youth who completed the transition within their overall path and then went back to transition; why does this occur?
5. An investigation of age of leaving school and age of first economic activity.
6. What does the transition path of apprentices look like?\* And what about former child labourers?
7. Wages and the links to satisfaction and security.
8. Specific challenges for the self-employed.
9. More on the rural/urban divide.

In addition to 28 national reports that will accompany the completion of the surveys in each round, the Work4Youth project will also produce the following outputs:

1. **Five thematic reports** that utilize the richness of the available data to address topics that are key to the youth employment challenge in low- and middle-income countries;
2. **Five regional reports** that offer a synthesis of results in the three to eight countries per region (Asia and the Pacific, Eastern Europe and Central Asia, Latin America and the Caribbean, Middle East and North Africa, and Sub-Saharan Africa). The reports will look for regional patterns in youth labour market transitions and for distinctions in national policy frameworks that might be transferable between countries.
3. A report on **MDGs and decent and productive employment for youth**, scheduled for late 2014. This will focus on the trends and actions that countries have shown over the ten-year course of the Millennium Development Goals to promote decent and productive work for youth.
4. A **global database** containing a comprehensive set of indicators on the labour market situation for young people aged between 15 and 29 years, in the developing world. The database will also include both raw data sets and tabulated indicators of the SWTS. (See also box 19.)
5. A **global inventory of youth employment policies**. The database will include national policies, policy frameworks and legislation specifically designed for young people, as well as those for the wider labour market. (See also box 19.)

\* The number of youth participating in apprenticeships or internships has proven to be insignificant in all of the SWTS countries so far. At most, 17 of the sample of 2,033 youth in Togo were engaged in an apprenticeship during the survey period (four in formal apprenticeships and 13 in informal apprenticeships).

Togo<sup>56</sup> (table 13). In fact, given the long durations that young people in the nine countries spend in transition, it must be concluded that young people are highly unlikely to complete a transition to stable and/or satisfactory work before they reach adulthood (or age 30, as the upper limit of the SWTS age band). Strengthening the capacity of employment services to provide young people with jobseeking skills, among other services, is one policy response that could help redress the situation of young people who find themselves stuck in the labour market transition (see box 11).

**Many young people will never complete the transition to stable or satisfactory employment, at least not while still classified as “youth”.**

**Table 13. Average duration of transition for youth in the “in transition” category**

	Months	Years
Armenia	61.6	5
Cambodia	87.8	7
Egypt	44.4	4
FYR Macedonia	72.6	6
Jordan	52.4	4
Liberia	63.7	5
Malawi	76.7	6
Russian Federation	50.7	4
Togo	95.9	8

Note: Duration of transition for in-transition youth is calculated for non-students only. Flow data are not yet available for Peru.

Source: SWTS, various countries, 2012.

<sup>56</sup> The bias that the age of the young respondent can bring to the interpretation of duration of transition for those young people still in transition has been considered. The “older” youth, aged 29, for example, could have many more years in the labour market than a 15-year-old. This effect is partly balanced by the older youth who stay in education and therefore postpone their entry to the labour market. Presenting the average duration without adjustments has been preferred to attempting a system of weighting by age of the respondent. Users are encouraged, however, to look for future disaggregation of such data by specific youth cohorts: 15–19, 20–24 and 25–29.

## 6. Policies for youth employment

### 6.1 A global framework to tackle the youth employment crisis

Improvements in youth labour market outcomes can only be achieved through an in-depth understanding of both global and country-specific employment and labour market issues. The analysis of youth labour markets, particularly of the issues that characterize youth transitions to decent work, is key for determining country-specific needs and for shaping policies and programmatic interventions.

There is no one-size-fits all approach to tackling the youth employment crisis. However, there are some key policy areas that need to be considered in relation to national and local circumstances. These areas were identified at the International Labour Conference (ILC) in June 2012 and are included in its resolution “The youth employment crisis: A call for action”, which was adopted by representatives of governments, employers’ organizations and trade unions of the 185 member States of the ILO (ILO, 2012g).<sup>57</sup>

The “call for action” underlines the urgency for immediate and targeted interventions to tackle the unprecedented youth employment crisis that is affecting most countries across all regions. The conclusions that accompany the ILC resolution provide a global framework to help countries shape national strategies that are based on a multi-pronged and balanced approach. The framework covers five main policy areas: (1) employment and economic policies to increase aggregate demand and improve access to finance; (2) education and training to ease the school-to-work transition and to prevent skills mismatches; (3) labour market policies to target employment of disadvantaged youth; (4) entrepreneurship and self-employment to assist potential young entrepreneurs; and (5) labour rights that are based on international labour standards to ensure that young people receive equal treatment and are afforded rights at work. These main policy areas are briefly discussed below in light of the issues identified in this report.

#### 6.1.1 Stimulate demand and create jobs for youth through pro-employment macroeconomic policies

The youth employment crisis will not be overcome without stronger employment growth. This requires coordinated policy efforts to support aggregate demand through pro-employment macroeconomic policies and to foster growth engines through an appropriate balance of export-driven growth and expansion of domestic economies (ILO, 2013a).

Policies that foster strong aggregate demand, increase productive investment and improve access to finance can have a positive impact on young people’s employment prospects (see box 8). Macroeconomic and growth policies can support youth employment by encouraging economic diversification and the development of sectors that are conducive to the creation of jobs for youth. In Europe, for example, a number of sectors have been identified as having a high job-creation potential. These include the green economy, health and social care, and information and communications technology.

<sup>57</sup> The full text of the 2012 resolution “The youth employment crisis: A call for action” can be found on the ILO website at [http://www.ilo.org/ilc/ILCSessions/101stSession/texts-adopted/WCMS\\_185950/lang-en/index.htm](http://www.ilo.org/ilc/ILCSessions/101stSession/texts-adopted/WCMS_185950/lang-en/index.htm).

### Box 8. Approaches to boost aggregate demand and promote youth employment

Policies that promote employment-centred and sustainable growth are vital if young people are to be given a fair chance at a decent job. Youth labour market outcomes are closely related to overall employment trends but are more sensitive to the business cycle. A boost in aggregate demand is key to addressing the youth employment crisis as this will create more job opportunities for young people. ILO research shows that macroeconomic policies can influence youth employment by:

- encouraging **economic diversification and productive transformation**;

Source: ILO (2012h).

- reducing macroeconomic volatility by engaging in timely and **targeted countercyclical policies**;
- loosening constraints on private sector growth, with a particular emphasis on **access to finance for micro, small and medium-sized enterprises**;
- focusing on **targeted demand-side interventions** with particular impact on youth employment (e.g. labour intensive infrastructure works, public employment programmes, wage and training subsidies); and
- ensuring **adequate and predictable funding** for targeted youth employment interventions.

### Box 9. The Peruvian action plan for youth employment

Despite significant economic expansion between 2000 and 2010, two out of every three unemployed persons in Peru in 2010 were young people, four of every five young employed persons worked in precarious jobs and more than half (56 per cent) of the youth population (8 million) would have considered leaving if given the chance.

In order to respond to the youth employment challenge, the government of Peru adopted a national employment policy (2010–14) that assigns priority to youth employment. Such priority has been operationalized through the implementation of a youth employment action plan that revolves around employment creation, employability and entrepreneurship. A national tripartite committee, which includes young representatives of employers' and workers' organizations, oversees the implementation of the priorities of the plan.

More than 390,000 young people were assisted with the measures of the action plan by the end of 2012. Building on

Source: Adapted from ILO (2012h).

the findings of national surveys, the government introduced the following institutional reforms:

- reduction in the “red tape” and costs relating to job applications, through the introduction of a free-of-charge single certificate that contains all pieces of information (“CERTIJoven”);
- skills training-cum-work experience programmes (“Jóvenes a la obra”);
- modernization of career guidance services;
- establishment of a training programme targeting young entrepreneurs (“ProJoven Emprendedor”);
- development of an information system that simplifies market assessments; and
- establishment of an information and orientation service for young people working (or planning to work) abroad (“Infomigra”).

A recent econometric investigation analysed the impact of macroeconomic determinants on youth employment (Matsumoto, Hengge and Islam, 2012). On the demand side, it concluded that the higher the investment, the lower the youth unemployment rate in both industrialized and low- and middle-income economies. In turn, investment is dependent on access to and the cost of credit: when banks are reluctant to lend, or lend only at high interest rates, enterprises face serious impediments to doing business and recruiting young workers.

Policies that offer fiscal incentives, support the development of infrastructure and develop enabling regulations for enterprises operating in competitive sectors with a high youth employment potential can offer a wide range of work opportunities. Similarly, incentives that encourage enterprises to provide work experience to young people can have a significant impact on youth employment outcomes.

An ILO review of the policy frameworks of a number of countries revealed a general underutilization of policy interventions that aim to increase labour demand. It also showed that it is quite uncommon to find a comprehensive set of policy priorities, targets and outcomes for youth employment. Moreover, funding is often allocated for the implementation of programmes with limited outreach and the resources earmarked for policy implementation are mostly underestimated (ILO, 2012h, Chapter 2).

These findings point to the urgent need to develop integrated strategies for growth and job creation that make youth employment priorities explicit. In turn, time-bound youth

employment plans can convert these priorities into concrete action (see the example in box 9). As highlighted by evaluation results, partnerships that involve public authorities and social partners have great potential to improve the effectiveness of youth employment interventions (Quintini, Martin and Martin, 2007).

### 6.1.2 Invest in education and training to enhance employability and facilitate the school-to-work transition

Education and training systems are key determinants of youth employment outcomes: they can provide young people with the right skills and attitudes to prepare them for the world of work and, therefore, facilitate the school-to-work transition.

Despite significant improvements in educational attainment, there is still a considerable number of low-income countries where young people experience low levels of education (see Chapters 4 and 5). Additional investment to improve access to and relevance of education is required in these countries. For young people who never attended school or who left school early, second-chance initiatives can be particularly relevant as they facilitate the acquisition of basic knowledge and competencies for the labour market (UNESCO, 2012).

In many other countries, and irrespective of the level of economic and social development, young people face difficulties in finding a job because of the mismatch between education and training outcomes and labour market requirements. In the Middle East and North Africa, for instance, higher levels of education have not proved sufficient in themselves for securing a decent job. The phenomenon of the “educated unemployed” is closely linked to insufficient growth and diversification and weak aggregate demand. In some advanced economies, the skills mismatch is a persistent and growing trend that is also due to skills depletion brought about by increased incidence of long-term unemployment and labour market detachment among young people. In many countries, overeducation and undereducation coexist. This may cause permanent damage to human capital and the long-term competitiveness of enterprises and economies.

In order to be responsive to labour market requirements, training and skills development strategies should ensure that training provision includes both technical and core skills for employability (e.g. communication, teamwork and problem-solving skills) that are portable across occupations, enterprises and sectors (see box 10). The presence of work experience components in technical vocational education and training (TVET) programmes increases the capacity of trainees to practise their skills in a real work setting. Job search techniques, entrepreneurship and rights of young workers should all be part of the curricula.

The employment services have a significant role in assisting young people make smooth transitions from school to work and in addressing skills mismatches (see box 11).

#### **Box 10. A skilled workforce for strong, sustainable and balanced growth**

The G20 summit that took place in Pittsburgh in September 2009 agreed on the importance of building an employment-oriented framework for future economic growth. The leaders asked the ILO to develop a training strategy to support strong, sustainable and balanced growth. The training strategy constitutes a framework for building bridges between education and training and the world of work. It recognizes the diverse realities and focuses on a common framework for meeting current and future skills needs, using a holistic approach and lifecycle perspective, which encompass the following features:

Source: ILO (2011b).

- broad-based, good-quality general education;
- seamless pathways from education to TVET and to the world of work;
- employability through core skills, continuous learning and portability of skills, which enable workers and enterprises to adjust to change;
- a dynamic development process that uses skills as a driver of change; and
- policy convergence and coordination mechanisms.

### Box 11. The role of employment services in facilitating youth labour market transitions

Many young people are unable to relate the skills and experience they have gained to the needs of enterprises. Through individual career guidance, the preparation of functional curricula vitae and support in the development of employment plans, employment service experts help jobseekers to effectively match their qualifications to the demands of the labour market.

These services can liaise with education institutions to provide their career guidance staff with important information on both current and future labour market needs. By providing detailed occupational information, including clear indications of main duties, environmental factors and various entry points associated to occupations in demand, the network of labour offices help ensure that young people have a greater understanding of the field of work they are preparing for. Additional information related to conditions of work and anticipated salary ranges for the various entry points within an occupation also helps to avoid future disappointment or dissatisfaction with chosen career paths. Through collaboration with enterprises, employment services can assist training institutions to combine formal classroom training with on-the-job work experience.

A recent review of public employment services (PES) in EU countries points to the following lessons from interventions to ease the school-to-work transition:

- Person-centred approaches to counselling and guidance appear to be more effective than standard approaches.

Source: Duell and Vogler-Ludwig (2011).

In addition, individualized counselling and the establishment of an individual employment plan early in the period of unemployment is an effective tool for the implementation of activation strategies for young people. Case management and mentorship approaches have also shown good results.

- Profiling systems that build on accurate, timely and reliable labour market information and take into account the whole personal/life situations of young clients make labour market integration strategies more effective.
- Outreach activities need to focus on employers who are potentially willing to employ disadvantaged youth or to offer them work-based training measures. This includes good relationships with local enterprises and links to employers, social enterprises and the voluntary sector.
- In the case of young school dropouts, non-formal types of learning may be more successful than formal education alone. The interaction of classroom and workplace training increases the likelihood of positive labour market outcomes. When combined with other services, the probability of a positive outcome increases further.
- If well targeted, training subsidies for firms that take on low-skilled youth can expand work-based training places for disadvantaged young people. Their effectiveness depends on their design and targeting: both can minimize distortion effects (i.e. deadweight and substitution).

### Box 12. Gaining work experience through dual apprenticeship in selected European countries

The “dual system” of apprenticeship combines school-based education with in-company training. It is a proven system of learning for work in Austria, Denmark, Germany and Switzerland. In these countries, low youth unemployment is often attributed to the effectiveness of this system, which successfully provides large numbers of young people with quality education and training for the recognized qualifications demanded by enterprises. The involvement of the social partners in programme design and implementation ensures that apprenticeship programmes meet labour market requirements.

The German system includes the following key features:

- The content of enterprise-based training is determined jointly by government, representatives of employers’ organizations and trade unions (federal level).

Source: ILO (2011b).

- Individual firms choose their own training methods.
- Training costs are shared between the government and employers (government covers the school-based component; employers finance enterprise-based training).
- Conditions under which apprenticeships take place are determined through collective agreements specifying the minimum apprentice wage.
- Qualifications are awarded upon completion of written and practical exams, set and marked by tripartite external examiners.
- Competent bodies (e.g. chambers of commerce and industry and trade) issue certificates that are recognized throughout the country.
- After graduation, workers can apply to their current employer or another for employment.

Work experience is highly valued by firms and so the lack of such experience constitutes a major obstacle for first-time jobseekers. Many young people are trapped in a vicious circle: they are unable to acquire work experience because they cannot find a first job, but they cannot obtain a job because they do not have work experience. Apprenticeships are a proven system for achieving large-scale impact in youth employment promotion and are a major reason for the low levels of youth unemployment achieved by some European countries (see box 12).

The apprenticeship system is characterized by close collaboration between public policy, training providers, enterprises and social partners. It works best when workplace and classroom learning are combined, there is broad recognition of the skills acquired, the regulations

### Box 13. ILO tools for anticipating skills needs

The methods for anticipating future skills needs include a variety of quantitative and qualitative approaches, and a combination thereof, at different levels of analysis: macro-economic, sectoral, sub-national and local. They may project future employment trends by occupation and level of educational attainment as well as depict specific competencies required for future jobs – depending on the objectives, disaggregation and quality of data.

The results of anticipative analyses may inform policy decisions as well as decisions of individuals about their own career and vocational choices. Efficient anticipative systems include institutional provisions that allow social dialogue with employers and workers for policy-making and for the adjustment of a training offer.

Source: ILO, Skills and Employability Programme.

The ILO, in collaboration with other agencies, will publish the following tools to guide the anticipation of skills needs in 2013:

- a beginners' guide on quantitative forecasting and qualitative foresights and scenarios at a macroeconomic level;
- a guide on employment services and tools for skills anticipation and matching; and
- a practical guide on anticipation and matching of skills at the sectoral level.

The collaborative inter-agency work will continue beyond 2013 and will also include a guide on employers' skills surveys, tracer studies and a guide on the use of labour market information for answering key policy concerns related to skills anticipation and matching.

and contracts (e.g. duration of apprenticeship, remuneration and other working conditions) reflect the outcomes of social dialogue, and when there is a co-financing system involving both public institutions and the private sector. In the better performing systems, apprenticeships are organized within industry sectors by tripartite bodies which identify training needs, curricula, apprenticeship standards and mechanisms for assessing learning outcomes.

All countries share the challenge of equipping their workforce with the skills required not only for the jobs of today but also for those of tomorrow. Long-term trends are redefining jobs and occupations and changing the demand for skills at a fast pace. These include demographic trends, technological changes, the new critical mass of skills in emerging economies and the transition to energy-efficient and greener economies. One way to help prevent skills mismatch and its adverse consequences for the labour market is to ensure that training strategies contain provisions for anticipation of future skills needs and for aligning training delivery with changing needs in the labour market (see box 13).

As shown by the results of the school-to-work transition surveys (see Chapters 4 and 5), the vast majority of young people in less developed economies are engaged in irregular employment, earn a living in the informal economy and cannot afford to lose the income that is essential for survival. This is why interventions aimed at improving training and employment for livelihoods that target disadvantaged young workers are critical for improving earnings and conditions of work in the informal economy or supporting the transition of young workers to the formal economy. Strategies for employment and livelihood can foster the economic empowerment of disadvantaged young workers and provide alternative models for income generation and employment, particularly for young people living in rural areas. Implemented with the involvement of the community, these youth employment interventions usually consist of literacy, livelihood skills and entrepreneurial training. They also include interventions to facilitate access to credit and markets and provide other support services. The programme "Training for Rural Economic Empowerment" (TREE), for instance, supports disadvantaged youth through the identification and assessment of local economic opportunities, design and delivery of community-based training and provision of post-training services.<sup>58</sup> More efforts should be deployed in low-income countries to deliver youth employment and livelihood programmes with a view to improving productivity and working conditions of young workers.

<sup>58</sup> Information on the TREE programme can be found on the ILO website at <http://www.ilo.org/skills/areas/skills-training-for-poverty-reduction/lang-en/index.htm>. There are other similar examples of interventions that aim to increase productivity and break the cycle of low-skilled, low-paid and irregular employment. See, for example, the P.A.C.E. programme for women in the garment industry at [http://www.gapinc.com/content/csr/html/Goals/communityinvestment/our\\_program\\_in\\_action/advancing\\_in\\_theworkplace.html](http://www.gapinc.com/content/csr/html/Goals/communityinvestment/our_program_in_action/advancing_in_theworkplace.html).

### 6.1.3 Improve labour market integration of young people through targeted labour market policies

Labour market policies and programmes that mediate between labour supply and demand can improve the labour market integration of young people, especially if they are well targeted and sequenced. When accompanied by income support and other social protection measures, these packages of measures help mitigate education and labour market failures and skills mismatch, promote efficiency and equity in the labour market, sustain aggregate demand and promote the transition to formal employment (see box 14).

Active labour market policies (ALMPs) focusing on employment planning and job search assistance have proven to be effective in helping young people find jobs. ALMPs that are delivered as comprehensive packages of employment programmes and services have passed the evaluation better than single measures. These interventions usually combine remedial education and training with work-experience programmes and job search assistance, as well as

#### **Box 14. Youth transitions to formal employment through labour market reforms: The case of Argentina**

After the deep economic crisis of the early 2000s, the Argentine government introduced a number of reforms to address high levels of informality. These included Law No. 25.877, which provides for an initial 12-month reduction in social security contributions for new recruits by small and micro enterprises. In parallel, the “Programa de Simplificación Registral” simplified administrative procedures through the establishment of a single worker registration system. To improve compliance by enterprises, in 2005 the government adopted the “Plan Nacional de Regulación del Trabajo” and increased the resources allocated to the Labour Inspectorate. During the first two years of this programme, about one-third of the informal workers identified through labour inspections were registered.

Source: Adapted from OECD and ILO (2011).

These reforms resulted in a reduction of informality among young employees. In addition, Law No. 26.427 established sanctions for enterprises misusing apprenticeships. This law requires the issuance of a fixed-term contract with detailed provisions for training, social security contributions and wages.

Specific measures were adopted to curb informality in the most affected occupations. These measures simplify the registration of domestic workers and allow the deduction of social security contributions from taxes paid by employers. Another measure, known as “Mono-tributo social”, was introduced to target low-earning self-employed people in the informal economy. These measures also allowed for social security to be extended to workers who had formerly been excluded.

#### **Box 15. Youth guarantees: A response to the youth employment crisis?**

Youth guarantees provide young people who fulfil pre-established criteria with an entitlement to certain labour market support measures. The first countries to implement youth guarantees in the 1980s and 1990s were Denmark, Finland, Norway and Sweden. More recently, other countries have embarked on similar programmes. These include Austria, Germany, the Netherlands and Poland.

The primary objectives of the guarantees are to promote labour market integration and prevent long-term unemployment and discouragement among young people. These objectives are broadly similar across countries, although differences exist with respect to the design of national guarantee programmes. These include the types of measures, eligibility criteria, duration of the intervention and compensation.

According to a 2011 evaluation of the Swedish youth guarantee, unemployed 24-year-olds who participated in the programme in 2008 were able to find a job faster than a control group of participants in other PES measures.

Although further research is needed, an ILO review of available data and information on youth guarantees

Source: ILO (2013d and 2012e).

suggests that they can play a significant role in reducing the “scars” of long-term unemployment and discouragement among young women and men (ILO, 2013d). The same review distilled lessons on the prerequisites for well-functioning youth guarantees and analysed the costs involved in implementing these programmes. Timely interventions that are targeted at defined groups of disadvantaged youth, a well-established administrative capacity and budget flexibility, and a strong education and training system are key factors for the success of youth guarantees. ILO’s cost estimates suggest that youth guarantees can be implemented at an annual cost averaging from 0.5 to 1.5 per cent of GDP. The costs vary depending on the availability of the administrative infrastructure for the implementation of guarantees on a larger scale and the size of the eligible population. The possible transfer of guarantees to countries that have a less developed infrastructure and less experience, as well as their extension to a larger eligible group, should take into account the additional resource requirements associated with country-specific characteristics.

incentives for employers to hire disadvantaged young people. The incentives can take the form of wage subsidies, tax cuts or social security exemptions for a limited period for employers who hire young people. They allow the targeting of particularly disadvantaged youth and help raise labour demand during an economic downturn.

Evaluations show that time-bound and well-targeted subsidies can have an employment impact for youth with low productivity, especially in countries with high labour costs. In some cases, ALMPs are administered together with social protection measures (e.g. cash transfers that include transport allowances, childcare grants or housing assistance) to enable participation in the programmes. Especially for those out of work for longer spells, measures should link social protection to active job search.

An example of a comprehensive package of labour market measures for young people is the youth guarantee. The concept of a youth guarantee implies an entitlement to a job, training or education for a defined group of young people seeking employment and an obligation for the public employment service (PES) or another public authority to provide the services and/or implement the programmes within a given period of time. Several countries in Europe have had positive experience in using youth guarantees to prevent long-term unemployment and labour market detachment (see box 15).

In February 2013, the European Union's (EU) Council of Employment and Social Affairs Ministers approved the proposal to guarantee young EU citizens a good quality offer of employment, continued education, an apprenticeship or a traineeship within four months of leaving school or becoming unemployed. In order to implement the guarantees, EU Member States can make full use of the European Social Fund and other structural funds, as well as the additional €6 billion that was allocated for the period 2014–20 to regions where the youth unemployment rate exceeds 25 per cent (European Commission, 2013).

The identification and targeting of disadvantaged groups in the labour market are crucial for the effective design and implementation of ALMPs. There are many examples of approaches that establish “profiles” for young people and develop individualized interventions that match participants’ needs with labour market opportunities. These approaches also have the advantage of allocating resources more efficiently as they allow for providing intensive employment assistance to disadvantaged youth, while other young people are assisted with “standard” support measures such as job search assistance and employment planning.

Several evaluation studies of youth employment programmes have shown that some programmes are successful while others fail to improve young participants’ chances of obtaining a job. Box 16 summarizes some of the advantages and disadvantages of the youth labour market interventions mentioned in this section.

The evaluations of such programmes have helped to identify the main features of successful interventions, which include the following (ILO, 2011c):

- *Formulation and implementation at early stages of joblessness* (unemployment, discouragement or inactivity) are less costly, increase labour market attachment and are more likely to improve the employment chances of young people.
- *Designs that respond to labour market requirements* improve participants’ employment opportunities. Labour market information and control groups are essential for the design, monitoring and evaluation of initiatives.
- *Targeting and tailoring to individual needs and labour market disadvantages* have produced better programme results. Generic targeting based on age may benefit those who could have found a job without participating in the programmes.
- *Comprehensive packages of services* that combine various components relating to both labour demand (e.g. tax incentives, entrepreneurship) and supply (e.g. training, career guidance and job search assistance) can be more effective than single measures.

## Box 16. Youth employment programmes: Lessons from evaluation

Type of programme	Advantages	Disadvantages
Labour market training	Works better with broader vocational and employability skills that are in demand and when it includes work experience and employment services.	May produce temporary, rather than sustainable solutions and, if not well targeted, may benefit those who are already "better off"; training alone may not be sufficient to increase youth employment prospects.
Employment services (job search, career guidance and labour market information)	Can help youth make realistic choices and match their aspirations with employment and training opportunities; improve information on job prospects and on the efficiency, effectiveness and relevance of initiatives.	May create unrealistic expectations if not linked to labour market needs, and they often only cover urban areas and the formal economy.
Employment-intensive public works and community services	Help young people gain labour market attachment and, at the same time, improve physical and social infrastructure and the environment, especially when combined with development and sectoral strategies, and can enhance employability if combined with training.	Low capacity for labour market integration; young workers may become trapped in a carousel of public works programmes; often gender biased; displacement of private sector companies.
Employment subsidies	Can create employment if targeted at specific needs (e.g. to compensate for initial lower productivity and training) and at groups of disadvantaged young people.	High deadweight losses and substitution effects (if not targeted); employment may last only as long as the subsidy.
Entrepreneurship promotion	Can have high employment potential and may meet young people's aspirations (e.g. for flexibility, independence); more effective when combined with financial and other services, including mentoring.	May create displacement effects and have a high failure rate, which limits its capacity to create sustainable employment; is often difficult for disadvantaged youth due to their lack of networks, experience, know-how and collateral.

Source: ILO (2011c).

- *Provision of work experience and the involvement of the private sector* (e.g. through in-company training and work placement) increase employment opportunities, especially where programmes place participants with private companies.
- *Involvement of the social partners* contributes to the effectiveness of programmes and helps in connecting youth with the world of work.

### 6.1.4 Provide career options to young people by supporting entrepreneurship and self-employment

Entrepreneurship can provide career options for young people by unleashing their economic potential. It can also offer greater independence, higher income potential and increased job satisfaction.

In general, young people have fewer business skills, less knowledge and experience, less savings and reduced access to credit, business networks and sources of information than older individuals. Financial institutions regard them as a high-risk group because of their lack of collateral and business experience. For these reasons, entrepreneurship components of youth employment policies are more successful when they combine training, support services and access to finance. Group-based youth entrepreneurship, including cooperatives and social enterprises, can pool together complementary skills and experience that are valuable in starting and running an enterprise.

Strategies to promote entrepreneurship among young people should: (1) support an entrepreneurial culture by including entrepreneurship education and training in school; (2) enact regulations that promote the development of sustainable micro and small enterprises, cooperatives and social businesses; (3) ease access to finance, including by guaranteeing loans and

### Box 17. Lessons learned from successful youth entrepreneurship programmes

The 2007 review of interventions to support young workers, which analysed the data and information in the Youth Employment Inventory, identified a number of key lessons that can be used for the development of successful youth entrepreneurship programmes. These include the following:

- Youth entrepreneurship is one of the most relevant interventions for combating youth unemployment and has a high potential for employment creation.
- Programmes should target specific groups that suffer from specific market barriers, such as women.
- It might be more effective to offer packages with a broad range of services, rather than only providing managerial training or financial support.
- Small programmes run by NGOs and private sector institutes with smaller outreaches and more focused target groups tend to be more effective than larger programmes run by public institutions.
- Conducting more rigorous impact assessments based on a control group approach is indispensable in view of the lack of solid evidence.
- Embedding entrepreneurship curricula in primary, secondary and tertiary education could be an effective way of changing attitudes towards young entrepreneurs.

Source: Based on Betcherman et al. (2007).

supporting micro-credit initiatives; and (4) increase the range of support services (e.g. marketing, distribution chains, exports, public procurement) available to young entrepreneurs.

Interventions to support the transition of young entrepreneurs to the formal economy need to include measures to increase enterprises' efficiency and enhance their capacity to innovate, as well as interventions to raise productivity and improve conditions of work. The Youth Employment Inventory ranked entrepreneurship promotion measures as having the highest positive impact on employment creation among a range of programmes reviewed.<sup>59</sup> Box 17 summarizes the lessons learned from the review of youth entrepreneurship programmes.

#### 6.1.5 Ensure that young people receive equal treatment and are afforded rights at work

Young people continue to suffer disproportionately from decent work deficits and low-quality jobs, measured in terms of working poverty, low pay and/or employment status and exposure to occupational hazards and injury. Many young workers lack opportunities to move to full-time employment from part-time, temporary, casual or seasonal employment. In the informal economy, young people work under poor working conditions in both urban and rural areas. National youth employment policies should ensure that young people receive equal treatment and are afforded rights at work.

The ILC's 2012 resolution identifies a number of key areas that can guide governments and their social partners in developing youth employment policies that are consistent with the provisions of international labour standards. These policies should ensure that young people receive equal treatment and are afforded rights at work.

The enforcement of labour laws and collective agreements should be strengthened, including through a stronger and more effective sanctioning mechanisms, as means to protect young workers and facilitate their transition into stable and decent employment. The development of a coherent wage policy framework that takes account of the observance of minimum wages set by law or collective agreement can give many young people the opportunity to overcome poverty and low-paid work (see box 18).

Increasing the participation of young people in employers' and workers' organizations and in social dialogue and improving their awareness about young workers' rights – including through modules in school curricula – are key instruments for enabling young people to voice their concerns and for improving the quality of jobs available to them.

<sup>59</sup> For the Youth Employment Inventory, see <http://www.youth-employment-inventory.org>.

### Box 18. Collective agreements on policies for youth employment

An ILO review of developments in respect of both single-employer and multi-employer collective agreements has shown that, depending on the type of industrial relations system, issues related to youth employment are included in agreements at different levels (see ILO, 2012h, section 2.10 and table 2.4).

In several European countries, collective agreements typically deal with four types of youth employment issues. The first relates to young people's entrance into the labour market. Agreements aimed at addressing this issue consist

of policies and measures to encourage the recruitment of young workers, including terms and conditions for internships and apprenticeships. The second issue is the stabilization of employment for vulnerable categories of workers, including disadvantaged youth. The third is the improvement of terms and conditions of employment for young workers, including the abolition of an age-based wage rate and the regulation of youth pay within minimum wages legislation. The fourth issue includes the negotiation of training provision for young workers.

Source: Based on ILO (2012h).

## 6.2 Conclusions

The unprecedented youth employment crisis requires countries to take immediate and targeted action. Measures should be balanced among the following instruments, which must be adapted to country-specific needs:

- **Multi-pronged and balanced strategies for growth and job creation.** Youth employment is bound to the overall employment situation: this is why an employment-centred strategy that aims to increase growth and overall aggregate demand would increase the job opportunities for young people. Public–private partnerships and regional and local development can also contribute by providing innovative and scalable solutions.
- **Targeted youth employment action through tripartite consensus and time-bound action plans.** Governments, employers' organizations and trade unions are well placed to determine the action to be taken at national and sectoral levels for the promotion of decent work for youth. Over the past decade, the ILO has assisted several countries in developing national action plans on youth employment. These plans can be used to convert youth employment priorities into concrete action and to strengthen the coordination of youth employment interventions.
- **Apprenticeships, skills training and other work-training programmes.** The combination of skills development with work experience has proven effective, including during the recent crisis. Apprenticeships for low-skilled and inexperienced young people can improve their long-term employability and reduce labour costs for enterprises (ILO, 2012i).
- **Comprehensive packages of labour market measures targeting specific groups of young people.** Youth employment programmes that are targeted at disadvantaged youth and offer a comprehensive package of services, such as youth guarantees, can facilitate the transition of young people to decent work. Active labour market policies that are based on single measures are unlikely to work for disadvantaged youth. More effort should be made to expand youth employment and livelihood interventions that target poor youth in irregular employment. A tailor-made package approach that targets specific groups of young people will be most effective. For instance, evaluations show that wage subsidies to encourage the private sector to hire young people are likely to yield a long-term employment impact if they are combined with counselling and training-cum-work experience support.
- **Employment services.** Labour market intermediation that offers “standard” support to all young jobseekers (for example, self-service, group counselling and job search techniques, including employment planning) and more intensive and targeted assistance for “hard-to-place” youth can respond most effectively to the diverse needs and labour market

difficulties of young people. Early interventions based on profiling techniques and outreach programmes make the services more relevant to young people and assist enterprises in the recruitment process. Partnerships between employment offices and municipal authorities, the social partners, social services and civil society organizations are required to improve the targeting of young people who fall within the reach of the labour offices.

- **Multiple services for entrepreneurship, social enterprises and cooperatives development.** Training support, assistance in accessing credit, markets and networks, and other actions aimed at encouraging entrepreneurship can provide options for young people including during times of crisis. Recovery policies should give priority to access to finance for micro, small and medium-sized enterprises.
- **Bipartite and tripartite cooperation.** Establishing an enabling environment for the successful implementation of employment and labour market interventions for young people requires bipartite and tripartite cooperation. This is confirmed by the results of evaluations of youth employment programmes. Governments, employers' organizations and trade unions all have a role to play, both through fulfilling their own specific mandates and through concerted and joint efforts.
- **Platforms for exchanging knowledge and lessons of what works.** A great deal can be learned from good practice in public policy and from innovative partnerships, but much of the experience gained is not sufficiently well known. More platforms and networks are needed to systematically identify and disseminate lessons on what works. Sharing information through publicly available global repositories, platforms and networks can make a major contribution (see box 19 for examples of global youth employment repositories).

#### Box 19. Global youth employment repositories

Access to relevant information on youth employment policies and programmes provides policy-makers, researchers, youth employment experts and practitioners with tools that can support the policy-making and programme development processes. The ILO has engaged in a number of partnerships for the development of the following global repositories:

- **YEI.** The Youth Employment Inventory is a global repository that provides comparative information on youth employment interventions worldwide. It comprises more than 400 youth employment programmes from some 90 countries. The Inventory documents programme design, implementation and results. It is managed by a partnership between the ILO, the German Ministry of Economic Cooperation and Development, the Inter-American Development Bank, the World Bank and the Secretariat of the Youth Employment Network.
- **YouthSTATS.** The database on youth labour market statistics is a comprehensive set of indicators on the labour market situation of young people between 15 and 29 years of age in the developing world. This database is managed by the ILO's Work4Youth project and the Understanding Children's Work (UCW) programme. It taps into an inventory of over 150 micro data files of household-based surveys run in more than 70 countries. Users are able to browse and export a selection of 50 indicators grouped according to 12 themes. This database is currently being expanded to include entirely new data sets, including the ILO's school-to-work transition surveys.
- **YouthPOL.** The youth employment policy database contains information on national policies for youth employment. Such information is vital for policy-makers seeking to promote decent work for youth. This work-in-progress tool focuses on policies specifically designed for young people, as well as those for the wider labour market. Relevant policies are first analysed through a questionnaire and then classified according to various characteristics, such as policy area, target group and implementation strategies. The questionnaire is available online, and a software will allow users to analyse information and make graphical comparisons across countries, policy areas and themes. YouthPOL is a partnership between the ILO and the Work4Youth project sponsored by The MasterCard Foundation. Additional partnerships are being sought to improve the geographical scope of the database through the collection of information on national policies and to strengthen policy analysis capacity at national level.
- **GoodPRACS.** The good practices initiative on youth employment is a partnership between the ILO Youth Employment Programme and the University of Colima, Mexico. It was launched in March 2012 with the aim of identifying and sharing programmes, projects or practices that have proved effective in promoting decent work for young people. More than 100 practices from over 50 countries were submitted. The proposed initiatives were reviewed by teams of youth employment experts. Five practices (one per region) were identified and programme managers were invited to present them practices at the ILO Youth Employment Forum in May 2012. A second phase of the project was launched in April 2013 to expand the number of good practices hosted by the database.

Source: ILO's Youth Employment Programme, [www.ilo.org/yep](http://www.ilo.org/yep).

# Bibliography

- Agut, S.; Peiró, J.M.; Grau, R. 2009. "The effect of overeducation on job content innovation and career-enhancing strategies among young Spanish employees?", in *Journal of Career Development*, Vol. 36, No. 2, pp. 159–182.
- Anker, R.; Melkas, H.; Korten, A. 2003. "Gender-based occupational segregation in the 1990s", Working Paper No. 16 (Geneva, ILO).
- Arumlamplam, W; Gregg, P.; Gregory, M. 2001. "Unemployment scarring", in *Economic Journal*, Vol. 111, No. 475, pp. 577–584.
- Barone, C.; Ortiz, L. 2010. "Overeducation among European university graduates: A comparative analysis of its incidence and the importance of higher education differentiation", in *Higher Education*, Vol. 61, No. 3, pp. 325–337.
- Bartlett, W. 2012. "Skills anticipation and matching systems in transition and developing countries", Conditions and challenges, ETF Working Paper, Turin. Available at: [http://www.etf.europa.eu/webatt.nsf/0/84E964F6CBD16532C1257AAD0038EC27/\\$file/Skills%20matching%20systems.pdf](http://www.etf.europa.eu/webatt.nsf/0/84E964F6CBD16532C1257AAD0038EC27/$file/Skills%20matching%20systems.pdf) [accessed 21 Apr. 2013].
- Bauer, T.K. 2002. "Educational mismatch and wages: A panel analysis", in *Economics of Education Review*, Vol. 21, No. 3, pp. 221–229.
- Bell, D.N.F.; Blanchflower, D.G. 2011. "Young people and the great recession", IZA Discussion Paper No. 5674 (Bonn).
- Betcherman, G.; Godfrey, M.; Puerto, S.; Rother, F.; Stavreska, A. 2007. *A review of interventions to support young workers: Findings of the Youth Employment Inventory* (Washington, DC, World Bank).
- Betti, G.; D'Agostino, A.; Neri, L. 2011. "Educational mismatch of graduates: A multidimensional and fuzzy indicator", in *Social Indicators Research*, Vol. 103, No. 3, pp. 465–480.
- Blenkinsopp, J.; Scurry, T. 2007. "Hey GRINGO!?: The HR challenge of graduates in non-graduate occupations", in *Personnel Review*, Vol. 36, No. 4, pp. 623–637.
- Boateng, S.K.; Garrouste, C.; Jouhette, S. 2012. *Measuring transition from school to work in the EU: Role of the data source*, Eurostat paper. Available at: <http://crell.jrc.ec.europa.eu/download/Boeteng1.pdf> [accessed 22 Apr. 2013].
- Brynin, M.; Longhi, S. 2009. "Overqualification: Major or minor mismatch?", in *Economics of Education Review*, Vol. 28, No. 1, pp. 114–121.
- Büchel, F.; Battu, H. 2003. "The theory of differential overqualification: Does it work?", in *Scottish Journal of Political Economy*, Vol. 50, No. 1, pp. 1–16.
- ; Van Ham, M. 2003. "Overeducation, regional labor markets, and spatial flexibility", in *Journal of Urban Economics*, Vol. 53, No. 3, pp. 482–493.
- Buddelmeyer, H.; Mourre, G.; Ward, M. 2008. *Why do Europeans work part-time? A cross-country panel analysis*, European Central Bank Working Paper No. 872 (Frankfurt-am-Main).
- Budría, S. 2011. "Are educational mismatches responsible for the 'inequality increasing effect' of education?", in *Social Indicators Research*, Vol. 102, No. 3, pp. 409–437.
- Cainarca, G.; Sgobbi, F. 2012. "The return to education and skills in Italy", in *International Journal of Manpower*, Vol. 33, No. 2, pp. 187–205.
- Campbell, D. 2013. "The labour market in developing countries", in S. Cazes and S. Verick (eds): *Perspectives on labour economics for development* (Geneva, ILO).
- Cedefop. 2010. "Skill mismatch in Europe", Briefing Note, Thessaloniki. Available at: [http://www.cedefop.europa.eu/EN/Files/9023\\_en.pdf](http://www.cedefop.europa.eu/EN/Files/9023_en.pdf) [accessed 22 Apr. 2013].
- Chevalier, A. 2003. "Measuring over-education", in *Economica*, Vol. 70, No. 279, pp. 509–531.

- Cuttillo, A.; Di Pietro, G. 2006. “The effects of overeducation on wages in Italy: A bivariate selectivity approach”, in *International Journal of Manpower*, Vol. 27, No. 2, pp. 143–168.
- Dekker, R.; De Grip, A.; Heijke, H. 2002. “The effects of training and overeducation on career mobility in a segmented labour market”, in *International Journal of Manpower*, Vol. 23, No. 2, pp. 106–125.
- Duell, N.; Vogler-Ludwig, K. 2011. *The role of Public Employment Services in youth integration: A review of European good practice*, Analytical Paper, DG Employment, Social Affairs and Inclusion (Brussels).
- Estevão, M.; Tsounta, E. 2011. *Has the Great Recession raised U.S. structural unemployment?*, Working Paper No. 11105 (Washington, DC, International Monetary Fund).
- Eurofound (European Foundation for the Improvement of Living and Working Conditions). 2011. *Young people and NEETs in Europe: First findings (résumé)* (Dublin).
- European Commission. 2013. *Youth employment: Commission welcomes Council agreement on youth guarantee*. Memo/13/152 (Brussels).
- Falco, P.; Maloney, W.F.; Rijkers, B.; Sarrias, M. 2012. *Heterogeneity in subjective wellbeing: An application to occupational allocation in Africa*, World Bank Policy Research Working Paper No. 6244 (Washington, DC, World Bank).
- Frenette, M. 2004. “The overqualified Canadian graduate: The role of the academic program in the incidence, persistence, and economic returns to overqualification”, in *Economics of Education Review*, Vol. 23, No. 1, pp. 29–45.
- Groeneveld, S.; Hartog, J. 2004. “Overeducation, wages and promotions within the firm”, in *Labour Economics*, Vol. 11, No. 6, pp. 701–714.
- Groot, W.; Van den Brink, H.M. 2000. “Skill mismatches in the Dutch labor market”, in *International Journal of Manpower*, Vol. 21, No. 8, pp. 584–595.
- Guironnet, J.-P.; Peypoch, N. 2007. “Human capital allocation and overeducation: A measure of French productivity (1987, 1999)”, in *Economic Modelling*, Vol. 24, No. 3, pp. 398–410.
- Hartog, J. 2000. “Over-education and earnings: Where are we, where should we go?”, in *Economics of Education Review*, Vol. 19, No. 2, pp. 131–147.
- ILO (International Labour Organization). 2010a. *Global Employment Trends for Youth: Special issue on the impact of the global economic crisis on youth*, section 3.3 (Geneva).
- . 2010b. *Decent Work Country Profile – Tanzania (mainland)* (Dar es Salaam and Geneva).
- . 2010c. *Policy options to support young workers during recovery*, Policy Brief, Youth Employment Programme (Geneva).
- . 2010d. *Trabajo decente y juventud en América Latina* (Lima).
- . 2011a. *Key Indicators of the Labour Market*, 7th edition (Geneva).
- . 2011b. *A skilled workforce for strong, sustainable and balanced growth: A G20 training strategy* (Geneva).
- . 2011c. *Policy options to support young workers during recovery*, Policy brief, Youth Employment Programme (Geneva).
- . 2012a. *Global Employment Trends for Youth 2012* (Geneva).
- . 2012b. *Global Employment Trends for Women* (Geneva).
- . 2012c. *Decent Work Country Profile – Armenia* (Geneva).
- . 2012d. *Decent Work Country Profile – Azerbaijan* (Geneva).
- . 2012e. *Studies on growth with equity: EuroZone job crisis: trends and policy responses* (Geneva).
- . 2012f. *International Standard Classification of Occupations: ISCO-08* (Geneva).
- . 2012g. *The youth employment crisis: A call for action*, Resolution and conclusions of the 101st Session of the International Labour Conference (Geneva).
- . 2012h. *The youth employment crisis: Time for action*, Report of the Director-General, International Labour Conference, 101st Session (Geneva).
- . 2012i. *Overview of apprenticeship systems and issues: ILO contribution to the G20 Task Force on Employment* (Geneva). Available at: [http://www.ilo.org/global/about-the-ilo/how-the-ilo-works/multilateral-system/g20/WCMS\\_190188/lang-en/index.htm](http://www.ilo.org/global/about-the-ilo/how-the-ilo-works/multilateral-system/g20/WCMS_190188/lang-en/index.htm).
- . 2012j. *Panorama Laboral* (Lima).
- . 2013a. *Global Employment Trends 2013. Recovering from a second jobs dip* (Geneva).
- . 2013b. ILO Department of Statistics – Short term indicators of the labour market. Available at: [http://laborsta.ilo.org/sti/sti\\_E.html](http://laborsta.ilo.org/sti/sti_E.html) [accessed 22 Apr. 2013].
- . 2013c. “Statistics of work and of the labour force”, Report for discussion at the Meeting of Experts in Labour Statistics on the Advancement of Employment and Unemployment Statistics (Geneva, 28 January–1 February 2013), MESEU/2013.

- . 2013d. *Youth guarantees: A response to the youth employment crisis?* Employment Policy Brief (Geneva). Available at: [http://www.ilo.org/employment/Whatwedo/Publications/WCMS\\_209468/lang--en/index.htm](http://www.ilo.org/employment/Whatwedo/Publications/WCMS_209468/lang--en/index.htm) or [http://www.ilo.org/wcmsp5/groups/public/---ed\\_emp/documents/publication/wcms\\_209468.pdf](http://www.ilo.org/wcmsp5/groups/public/---ed_emp/documents/publication/wcms_209468.pdf) [accessed 22 Apr. 2013].
- ; Organisation for Economic Co-operation and Development (OECD). 2011. *Giving youth a better start. A policy note for the G20 Meeting of Labour and Employment Ministers* (Geneva and Paris).
- ; United Nations Development Programme (UNDP). 2012. *Rethinking economic growth: Towards productive and inclusive Arab societies* (Beirut).
- ILO Programme on Employment Services; European Commission. 2011. *The role of public employment services in youth reintegration: A review of European good practice*, Analytical Paper, DG Employment, Social Affairs and Inclusion (Brussels).
- Jauhiainen, S. 2011. "Overeducation in the Finnish regional labour markets", in *Papers in Regional Science*, Vol. 90, No. 3, pp. 573–588.
- Jensen, U.; Gartner, H.; Rässler, S. 2010. "Estimating German overqualification with stochastic earnings frontiers", in *AStA Advances in Statistical Analysis*, Vol. 94, No. 1, pp. 33–51.
- Johansen, J.; Gatelli, D. 2012. *Measuring mismatch in ETF partner countries: A methodological note*, European Training Foundation (Turin). Available at: [http://www.etf.europa.eu/web.nsf/pages/Measuring\\_mismatch\\_methodological\\_note](http://www.etf.europa.eu/web.nsf/pages/Measuring_mismatch_methodological_note) [accessed 22 Apr. 2013].
- Kahn, L.B. 2010. "The long-term labor market consequences of graduating from college in a bad economy", in *Labour Economics*, Vol. 17, No. 2, pp. 303–316.
- Karakaya, G.; Plasman, R.; Rycx, F. 2007. "Overeducation on the Belgian labour market: Evaluation and analysis of the explanatory factors through two types of approaches", in *Compare: A Journal of Comparative and International Education*, Vol. 37, No. 4, pp. 513–532.
- Korpi, T.; Tåhlin, M. 2009. "Educational mismatch, wages, and wage growth: Overeducation in Sweden, 1974–2000", in *Labour Economics*, Vol. 16, No. 2, pp. 183–193.
- McGuinness, S.; Bennett, J. 2007. "Overeducation in the graduate labour market: A quantile regression approach", in *Economics of Education Review*, Vol. 26, No. 5, pp. 521–531.
- Matsumoto, M.; Hengge, M.; Islam I. 2012. "Tackling the youth employment crisis: A macroeconomic perspective", Employment Sector Working Paper No. 124 (Geneva, ILO).
- Menezes Filho, N.A. 2013. "Education and human capital", in S. Cazes and S. Verick (eds): *Perspectives on labour economics for development* (Geneva, ILO).
- Morsy, H. 2012. "Scarred generation", in *Finance & Development*, Vol. 49, No. 1, Mar.
- Murillo, I.P.; Rahona-López, M.; Salinas-Jiménez, M. del Mar. 2012. "Effects of educational mismatch on private returns to education: An analysis of the Spanish case (1995–2006)", in *Journal of Policy Modeling*, Vol. 34, No. 5, pp. 646–659.
- Norwegian Social Science Data Services. 2002. *European Social Survey Round 1 Data. Data File Edition 6.3*.
- . 2004. *European Social Survey Round 2 Data. Data File Edition 3.3*.
- . 2006. *European Social Survey Round 3 Data. Data File Edition 3.4*.
- . 2008. *European Social Survey Round 4 Data. Data File Edition 4.1*.
- . 2010. *European Social Survey Round 5 Data. Data File Edition 3.0*.
- OECD (Organisation for Economic Co-operation and Development). 2010. How good is part-time work?, Chapter 4 in *OECD Employment Outlook 2010: Moving beyond the jobs crisis* (Paris).
- . 2012. *Education at a Glance 2012: OECD Indicators* (Paris, OECD Publishing).
- ; International Labour Organization (ILO). 2011. *Giving youth a better start. A policy note for the G20 Meeting of Labour and Employment Ministers* (Paris).
- Ortiz, L.; Kucel, A. 2008. "Do fields of study matter for over-education?: The cases of Spain and Germany", in *International Journal of Comparative Sociology*, Vol. 49, Nos 4–5, pp. 305–327.
- Quintini, G. 2011. "Over-qualified or under-skilled: A review of existing literature", *OECD Social, Employment and Migration Working Papers*, No. 121 (Paris).
- ; Martin, J.P.; Martin, S. 2007. *The changing nature of the school-to-work transition process in OECD countries* (Bonn, IZA).
- Rabe-Hesketh, S.; Skrondal, A. 2012. *Multilevel and longitudinal modeling using stata*, 3rd edition, Vol. II (Texas, College Station, Stata Press).
- Rubb, S. 2003. "Overeducation in the labor market: A comment and re-analysis of a meta-analysis", in *Economics of Education Review*, Vol. 22, No. 6, pp. 621–629.
- Sparreboom, T. 1999. "Unemployment and underemployment in southern Africa: Effects of concepts and methodologies on measurements", in *Inter-Stat*, No. 20, pp. 7–34.

- ; Albee, A. 2011. *Towards Decent Work in sub-Saharan Africa. Monitoring MDG Employment Indicators* (Geneva, ILO).
- ; Nübler, I. Forthcoming. *Productive transformation, employment and education in Tanzania*, paper prepared for the 2013 UNU-WIDER Development Conference on Learning to Compete: Industrial Development and Policy in Africa, 24–25 June, Helsinki, Finland.
- Sri Lanka Department of Census and Statistics. 2012. *Quarterly report of the Sri Lanka Labour Force Survey. Quarterly report – 2012, second quarter* (Colombo).
- StataCorp. 2011. *Stata longitudinal-data/panel-data reference manual. Release 12* (Texas, College Station, Stata Press).
- Støren, L.A.; Wiers-Jenssen, J. 2010. “Foreign diploma versus immigrant background: Determinants of labour market success or failure?”, in *Journal of Studies in International Education*, Vol. 14, No. 1, pp. 29–49.
- Sutherland, J. 2012. “Qualifications mismatch and skills mismatch”, in *Education + Training*, Vol. 54, No. 7, pp. 619–632.
- Tarvid, A. 2012. *Job satisfaction determinants of tertiary-educated employees in European countries*, ATINER’s Conference Paper Series, No. ECO2012-0257 (Athens Institute for Education and Research).
- UNESCO. 2012. *Youth and skills. Putting education to work*, 2012 Education for All Monitoring Report (Paris).
- Vansteenkiste, M.; de Mel, S.; Elder, S. Forthcoming. *Labour market transitions of young men and women in Liberia*, Work4Youth Publication Series No. 1 (Geneva, ILO).
- Verhaest, D.; Omey, E. 2010. “The determinants of overeducation: Different measures, different outcomes?”, in *International Journal of Manpower*, Vol. 31, No. 6, pp. 608–625.
- Wald, S. 2005. “The impact of overqualification on job search”, in *International Journal of Manpower*, Vol. 26, No. 2, pp. 140–156.
- Wirz, A.; Atukeren, E. 2005. “An analysis of perceived overqualification in the Swiss labor market”, in *Economics Bulletin*, Vol. 9, No. 2, pp. 1–10.

## Annexes

## Annex A. World and regional tables

- The source of all tables in Annex A is ILO, *Trends Econometric Models*, April 2013.
- 2012p are preliminary estimates.
- 2013p–2018p are projections; for details on methodology, see Annex E.

**Table A1. Global unemployment and unemployment rates, youth (15–24), adult (25+) and total (15+), 2007–13**

	2007	2008	2009	2010	2011	2012p	2013p
Youth unemployment (millions)	69.9	70.4	75.6	74.0	72.6	72.9	73.4
Adult unemployment (millions)	99.8	104.4	120.7	120.0	119.7	122.5	128.1
Total unemployment (millions)	169.7	174.8	196.4	194.0	192.3	195.4	201.5
Youth unemployment rate (%)	11.5	11.7	12.7	12.5	12.3	12.4	12.6
Adult unemployment rate (%)	4.0	4.1	4.6	4.5	4.5	4.5	4.6
Total unemployment rate (%)	5.4	5.5	6.1	6.0	5.9	5.9	6.0
Ratio of youth–to–adult unemployment rates	2.9	2.9	2.7	2.8	2.8	2.8	2.7

**Table A2. Youth unemployment rates 2008–18, by region and sex (%)**

	2008	2009	2010	2011	2012p	2013p	2014p	2015p	2016p	2017p	2018p
<b>WORLD</b>	11.7	12.7	12.5	12.3	12.4	12.6	12.7	12.7	12.7	12.7	12.8
Male	11.5	12.5	12.3	12.1	12.2	12.4	12.4	12.4	12.4	12.4	12.4
Female	11.9	12.8	12.7	12.6	12.7	12.9	13.0	13.1	13.2	13.2	13.3
<b>Developed Economies and European Union</b>	13.3	17.4	18.1	17.6	18.1	17.9	17.5	17.0	16.5	16.1	15.9
Male	14.0	19.1	19.6	18.6	19.2	18.9	18.4	17.8	17.3	16.8	16.5
Female	12.4	15.5	16.5	16.5	16.8	16.8	16.6	16.1	15.7	15.3	15.1
<b>Central and South-Eastern Europe (non-EU) and CIS</b>	17.0	20.4	19.3	17.9	17.9	18.0	18.0	18.0	18.0	18.0	18.0
Male	16.7	20.2	19.0	17.5	17.4	17.6	17.7	17.7	17.7	17.7	17.7
Female	17.5	20.7	19.7	18.6	18.6	18.6	18.5	18.5	18.4	18.3	18.3
<b>East Asia</b>	9.1	9.2	8.9	9.2	9.5	9.8	10.0	10.2	10.3	10.4	10.5
Male	10.7	10.8	10.4	10.8	11.2	11.5	11.7	11.9	12.1	12.2	12.4
Female	7.3	7.5	7.2	7.4	7.6	7.9	8.0	8.2	8.3	8.3	8.4
<b>South-East Asia and the Pacific</b>	14.4	14.3	13.8	13.1	13.1	13.3	13.5	13.7	13.9	14.1	14.3
Male	14.0	14.1	13.1	12.5	12.5	12.7	12.9	13.0	13.2	13.4	13.5
Female	15.1	14.5	14.6	13.9	13.9	14.2	14.4	14.6	14.8	15.0	15.3
<b>South Asia</b>	8.5	9.4	9.7	9.2	9.3	9.4	9.6	9.6	9.7	9.8	9.8
Male	8.3	9.0	9.3	8.9	9.0	9.2	9.3	9.4	9.4	9.5	9.6
Female	8.9	10.3	10.6	10.0	10.0	10.2	10.2	10.3	10.4	10.4	10.5
<b>Latin America and the Caribbean</b>	13.5	15.4	14.0	13.3	12.9	13.2	13.3	13.4	13.5	13.5	13.6
Male	10.9	12.9	11.8	11.2	10.9	11.1	11.1	11.2	11.2	11.2	11.2
Female	17.4	19.3	17.4	16.4	15.9	16.3	16.6	16.7	16.8	16.9	17.0
<b>Middle East</b>	25.3	25.5	27.4	27.7	28.3	29.1	29.6	29.9	29.9	30.0	30.0
Male	21.7	22.2	23.7	23.8	24.5	25.2	25.6	25.8	25.8	25.8	25.8
Female	39.3	38.2	41.7	42.1	42.6	43.5	44.1	44.5	44.6	44.7	44.7
<b>North Africa</b>	20.3	20.4	20.1	23.3	23.7	23.9	23.9	23.9	24.0	24.0	23.9
Male	16.8	16.0	15.7	17.8	18.3	18.6	18.7	18.8	18.9	18.8	18.8
Female	29.1	31.7	31.0	37.1	37.0	36.7	36.4	36.2	36.0	35.9	35.8
<b>Sub-Saharan Africa</b>	11.8	11.8	11.8	11.7	11.8	11.7	11.7	11.7	11.7	11.7	11.7
Male	11.1	11.1	11.1	11.1	11.1	11.0	11.0	10.9	10.9	10.9	10.9
Female	12.6	12.6	12.6	12.5	12.5	12.5	12.5	12.5	12.5	12.5	12.5

**Table A3. Change in youth unemployment and unemployment rates between 1998 and 2008 and between 2008 and 2012, by region**

	Change in youth unemployment (1998–2008)	Change in youth unemployment (1998–2008)	Change in number of youth unemployed, 1998–2008	Change in youth unemployment (percentage point), 1998–2008	Change in youth unemployment (2008–12)	Change in number of youth unemployed, 2008–12 ('000)	Change in youth unemployment (percentage point), 2008–12
WORLD	0.5	368.0	-0.6	3.6	2527.7	0.7	
Developed Economies and European Union	-12.3	-1193.4	-1.0	24.9	2127.7	4.8	
Central and South-Eastern Europe (non-EU) and CIS	-21.3	-1243.7	-5.2	-5.7	-261.7	0.8	
East Asia	-5.4	-759.9	-0.5	-1.7	-227.1	0.4	
South-East Asia and the Pacific	23.7	1630.5	2.0	-11.0	-932.9	-1.4	
South Asia	2.3	262.3	-0.4	5.6	656.7	0.8	
Latin America and the Caribbean	-7.4	-610.0	-1.5	-5.1	-387.5	-0.6	
Middle East	31.1	783.7	1.8	8.8	291.9	3.0	
North Africa	-7.2	-221.3	-3.8	13.8	395.1	3.4	
Sub-Saharan Africa	21.0	1719.8	-1.0	8.7	865.5	0.0	

**Table A4. Youth labour force participation rates 2008–18, by region and sex (%)**

	2008	2009	2010	2011	2012p	2013p	2014p	2015p	2016p	2017p	2018p
<b>WORLD</b>	50.1	49.4	48.8	48.6	48.5	48.3	48.2	48.0	47.8	47.7	47.5
Male	57.8	57.0	56.3	56.2	56.1	55.9	55.8	55.6	55.4	55.3	55.1
Female	41.9	41.3	40.8	40.7	40.5	40.3	40.1	39.9	39.7	39.5	39.4
<b>Developed Economies and European Union</b>	50.0	48.7	47.5	47.1	47.3	47.5	47.6	47.7	47.7	47.7	47.6
Male	52.3	50.8	49.5	49.0	49.2	49.4	49.6	49.8	49.8	49.7	49.7
Female	47.5	46.6	45.5	45.1	45.3	45.4	45.5	45.6	45.6	45.5	45.3
<b>Central and South-Eastern Europe (non-EU) and CIS</b>	41.9	42.1	42.0	41.9	42.0	42.0	42.0	41.9	41.7	41.5	41.2
Male	49.2	49.3	49.3	49.4	49.6	49.8	49.8	49.7	49.6	49.4	49.2
Female	34.3	34.6	34.3	34.1	34.1	34.0	33.8	33.6	33.4	33.2	32.9
<b>East Asia</b>	60.8	60.6	60.3	60.2	59.8	59.3	58.7	58.3	58.0	57.8	57.8
Male	59.6	59.4	59.0	59.0	58.8	58.3	57.9	57.5	57.3	57.2	57.2
Female	62.1	61.9	61.7	61.5	61.1	60.4	59.7	59.2	58.8	58.6	58.4
<b>South-East Asia and the Pacific</b>	53.0	52.7	52.5	52.3	52.3	52.2	52.1	51.9	51.6	51.3	51.0
Male	60.0	59.8	59.5	59.3	59.2	59.1	58.9	58.7	58.4	58.0	57.6
Female	45.8	45.4	45.2	45.1	45.1	45.0	45.0	44.8	44.6	44.4	44.1
<b>South Asia</b>	44.1	42.7	41.3	41.2	41.0	40.9	40.7	40.6	40.4	40.2	40.1
Male	61.0	59.4	57.8	57.6	57.3	57.1	56.9	56.7	56.4	56.2	55.9
Female	25.8	24.7	23.5	23.5	23.4	23.3	23.2	23.2	23.1	23.0	23.0
<b>Latin America and the Caribbean</b>	53.4	52.6	52.8	52.6	52.5	52.4	52.4	52.3	52.3	52.3	52.2
Male	63.7	62.8	62.9	62.4	62.1	61.9	61.7	61.4	61.2	61.0	60.8
Female	42.9	42.3	42.6	42.6	42.7	42.8	42.9	43.0	43.2	43.3	43.5
<b>Middle East</b>	30.5	30.3	30.3	30.3	30.3	30.2	30.1	30.0	29.9	29.8	29.7
Male	47.0	46.7	46.7	46.6	46.5	46.3	46.0	45.8	45.5	45.2	45.0
Female	12.9	12.8	12.9	13.1	13.2	13.2	13.3	13.4	13.4	13.5	13.5
<b>North Africa</b>	34.1	33.7	33.6	33.5	33.4	33.3	33.2	33.1	33.0	32.9	32.8
Male	48.3	47.7	47.2	47.0	46.8	46.5	46.2	45.9	45.6	45.4	45.1
Female	19.6	19.3	19.5	19.6	19.7	19.7	19.8	19.9	20.0	20.1	20.1
<b>Sub-Saharan Africa</b>	53.9	53.7	53.6	53.6	53.6	53.6	53.6	53.6	53.5	53.5	53.4
Male	56.1	55.9	55.8	55.9	55.9	56.0	56.0	56.0	56.0	55.9	55.9
Female	51.7	51.5	51.4	51.4	51.4	51.3	51.3	51.2	51.1	51.0	50.9

Table A5. Global and regional youth employment-to-population ratios, 2008–18 (%)

Region	2008	2009	2010	2011	2012p*	2013p	2014p	2015p	2016p	2017p	2018p
<b>WORLD</b>	44.2	43.1	42.7	42.7	42.5	42.3	42.1	41.9	41.7	41.6	41.4
Male	51.1	49.9	49.4	49.4	49.2	49.0	48.8	48.7	48.6	48.4	48.2
Female	36.9	36.0	35.6	35.5	35.3	35.1	34.8	34.6	34.5	34.3	34.2
<b>Developed Economies and European Union</b>	43.3	40.3	38.9	38.8	38.7	39.0	39.3	39.6	39.8	40.0	40.0
Male	45.0	41.1	39.8	39.9	39.8	40.1	40.5	40.9	41.2	41.4	41.5
Female	41.6	39.4	38.0	37.7	37.7	37.8	38.0	38.2	38.4	38.5	38.5
<b>Central and South-Eastern Europe (non-EU) and CIS</b>	34.7	33.5	33.9	34.4	34.5	34.5	34.4	34.3	34.2	34.0	33.8
Male	41.0	39.3	40.0	40.7	41.0	41.0	41.0	40.9	40.8	40.7	40.4
Female	28.3	27.4	27.6	27.7	27.8	27.7	27.6	27.4	27.3	27.1	26.9
<b>East Asia</b>	55.3	55.0	55.0	54.7	54.2	53.5	52.8	52.4	52.0	51.8	51.7
Male	53.2	53.0	52.9	52.7	52.2	51.6	51.1	50.7	50.4	50.2	50.1
Female	57.6	57.2	57.3	57.0	56.4	55.6	54.9	54.4	53.9	53.7	53.5
<b>South-East Asia and the Pacific</b>	45.4	45.2	45.2	45.5	45.4	45.2	45.0	44.8	44.5	44.1	43.7
Male	51.7	51.3	51.7	51.9	51.8	51.6	51.3	51.0	50.7	50.3	49.8
Female	38.9	38.8	38.6	38.9	38.8	38.7	38.5	38.3	38.0	37.7	37.3
<b>South Asia</b>	40.3	38.7	37.3	37.4	37.2	37.0	36.8	36.7	36.5	36.3	36.1
Male	55.9	54.1	52.4	52.4	52.2	51.9	51.6	51.3	51.1	50.8	50.6
Female	23.5	22.1	21.0	21.1	21.0	20.9	20.9	20.8	20.7	20.6	20.5
<b>Latin America and the Caribbean</b>	46.1	44.5	45.4	45.6	45.7	45.5	45.4	45.3	45.3	45.2	45.2
Male	56.7	54.7	55.5	55.4	55.4	55.1	54.8	54.6	54.4	54.2	54.0
Female	35.4	34.2	35.2	35.6	35.9	35.8	35.8	35.8	35.9	36.0	36.1
<b>Middle East</b>	22.8	22.6	22.0	21.9	21.7	21.4	21.2	21.0	20.9	20.9	20.8
Male	36.8	36.3	35.6	35.5	35.1	34.6	34.3	34.0	33.8	33.6	33.4
Female	7.9	7.9	7.5	7.6	7.5	7.5	7.4	7.4	7.4	7.4	7.5
<b>North Africa</b>	27.2	26.8	26.8	25.7	25.5	25.4	25.3	25.2	25.1	25.0	25.0
Male	40.2	40.1	39.8	38.7	38.2	37.9	37.5	37.3	37.0	36.8	36.6
Female	13.9	13.2	13.4	12.3	12.4	12.5	12.6	12.7	12.8	12.8	12.9
<b>Sub-Saharan Africa</b>	47.5	47.4	47.3	47.3	47.3	47.3	47.3	47.3	47.3	47.2	47.2
Male	49.9	49.7	49.6	49.7	49.7	49.8	49.8	49.8	49.9	49.8	49.8
Female	45.2	45.0	44.9	44.9	44.9	44.9	44.8	44.8	44.7	44.6	44.5

**Table A6. Global and regional ratios of youth-to-adult unemployment rates, 2008–18 (%)**

Region	2008	2009	2010	2011	2012p*	2013p	2014p	2015p	2016p	2017p	2018p
<b>WORLD</b>	2.9	2.7	2.8	2.8	2.8	2.7	2.7	2.7	2.7	2.7	2.7
Male	3.0	2.8	2.9	2.9	2.9	2.8	2.8	2.8	2.8	2.8	2.8
Female	2.7	2.6	2.6	2.6	2.7	2.6	2.6	2.6	2.6	2.6	2.6
<b>Developed Economies and European Union</b>	2.6	2.4	2.4	2.4	2.5	2.3	2.3	2.2	2.2	2.1	2.1
Male	2.9	2.6	2.5	2.5	2.6	2.4	2.4	2.3	2.3	2.3	2.2
Female	2.4	2.3	2.3	2.3	2.3	2.2	2.2	2.1	2.0	2.0	2.0
<b>Central and South-Eastern Europe (non-EU) and CIS</b>	2.6	2.5	2.5	2.5	2.6	2.6	2.6	2.6	2.6	2.6	2.6
Male	2.4	2.4	2.4	2.4	2.5	2.5	2.5	2.6	2.6	2.6	2.5
Female	2.7	2.7	2.6	2.7	2.8	2.8	2.7	2.7	2.8	2.8	2.8
<b>East Asia</b>	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7
Male	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8
Female	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7
<b>South-East Asia and the Pacific</b>	4.6	4.6	5.0	5.1	5.2	5.3	5.3	5.4	5.4	5.4	5.5
Male	4.5	4.5	5.3	5.4	5.4	5.5	5.5	5.5	5.5	5.6	5.6
Female	4.7	4.7	4.8	4.9	5.0	5.1	5.1	5.2	5.2	5.3	5.3
<b>South Asia</b>	3.5	3.9	4.1	4.0	4.0	3.9	3.9	3.9	3.8	3.8	3.8
Male	3.9	4.4	4.7	4.5	4.4	4.3	4.2	4.2	4.1	4.1	4.1
Female	2.9	3.1	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2	3.2
<b>Latin America and the Caribbean</b>	2.9	2.8	2.8	2.8	2.8	2.7	2.7	2.6	2.6	2.6	2.6
Male	3.0	2.8	2.8	2.8	2.8	2.7	2.6	2.6	2.6	2.5	2.5
Female	2.8	2.8	2.9	2.9	2.9	2.8	2.8	2.7	2.7	2.7	2.7
<b>Middle East</b>	3.9	3.6	3.7	3.8	3.8	3.8	3.8	3.8	3.8	3.8	3.7
Male	4.0	3.8	3.9	3.9	4.0	4.0	4.0	4.0	3.9	3.9	3.9
Female	3.3	3.1	3.1	3.1	3.2	3.2	3.2	3.2	3.2	3.2	3.2
<b>North Africa</b>	3.3	3.3	3.3	3.4	3.4	3.3	3.3	3.3	3.2	3.2	3.2
Male	3.3	3.1	3.1	3.3	3.3	3.3	3.2	3.2	3.2	3.2	3.2
Female	3.2	3.2	3.1	3.3	3.2	3.1	3.1	3.0	3.0	3.0	3.0
<b>Sub-Saharan Africa</b>	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Male	2.1	2.0	2.1	2.1	2.1	2.1	2.0	2.0	2.0	2.0	2.1
Female	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9

## Annex B. OECD country tables

Table B1. Youth unemployment rates, second quarter, 2000–12 (%)

Country	Sex	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Euro area (17 countries)	Total	-	-	-	-	-	17.9	16.5	15.1	15.3	19.8	20.77	20.3	22.6
	Male	-	-	-	-	-	17.4	15.6	14.2	14.7	20.7	21.26	20.4	23.0
	Female	-	-	-	-	-	18.6	17.7	16.2	15.9	18.9	20.19	20.2	22.1
European Union (27 countries)	Total	-	-	-	-	-	18.7	17.3	15.5	15.3	19.8	20.98	21.0	22.6
	Male	-	-	-	-	-	18.6	17.1	15.2	15.1	21.0	21.69	21.3	23.3
	Female	-	-	-	-	-	18.8	17.7	15.9	15.5	18.5	20.13	20.5	21.7
OECD – Total	Total	-	-	-	-	-	13.5	12.4	11.8	12.3	16.6	16.81	16.2	16.2
	Male	-	-	-	-	-	13.8	12.6	12.0	12.5	17.9	17.73	16.6	16.7
	Female	-	-	-	-	-	13.1	12.3	11.5	12.1	15.1	15.72	15.6	15.6
Australia	Total	12.2	13.8	12.8	12.3	11.3	10.7	10.2	8.9	9.0	11.9	11.54	11.1	11.5
	Male	12.8	14.9	13.9	13.3	11.8	10.8	10.7	9.0	9.1	13.0	12.25	11.6	12.0
	Female	11.5	12.5	11.6	11.1	10.6	10.5	9.6	8.9	8.9	10.7	10.8	10.5	11.0
Austria	Total	4.7	5.7	6.0	6.7	9.2	11.4	9.1	9.1	7.1	10.4	8.999	8.3	8.7
	Male	3.9	6.4	6.4	6.8	8.8	11.8	8.8	8.1	7.0	11.0	9.347	8.1	8.6
	Female	5.6	4.9	5.5	6.7	9.7	11.0	9.6	10.3	7.3	9.7	8.6	8.5	8.8
Belgium	Total	17.0	17.1	18.0	20.7	19.5	22.7	20.8	21.4	16.8	22.0	23.57	18.5	18.3
	Male	14.3	15.8	17.5	21.4	17.3	22.0	19.9	17.9	16.6	20.6	23.72	17.8	18.0
	Female	20.4	18.8	18.7	19.8	22.0	23.4	22.1	25.4	17.1	23.7	23.38	19.3	18.6
Canada	Total	12.5	12.6	13.8	13.6	13.4	12.7	11.2	11.2	11.7	15.1	14.93	14.1	14.4
	Male	13.7	14.2	15.6	15.2	14.8	14.7	12.2	12.1	13.6	18.0	17.17	15.7	16.0
	Female	11.2	10.8	11.8	11.8	11.9	10.6	10.1	10.3	9.7	12.1	12.63	12.4	12.7
Chile	Total	-	-	-	-	-	19.9	19.4	16.5	19.8	23.6	17.82	17.3	15.8
	Male	-	-	-	-	-	17.4	17.6	15.0	17.4	22.7	16.13	14.5	13.7
	Female	-	-	-	-	-	24.2	22.6	19.0	23.6	25.1	20.5	21.5	18.9
Czech Republic	Total	18.0	17.4	16.8	17.8	21.0	19.3	17.9	11.2	9.6	15.6	18.79	18.6	19.8
	Male	18.5	17.4	17.2	17.1	22.4	19.0	16.6	11.2	9.9	15.5	18.89	17.9	20.3
	Female	17.5	17.3	16.3	18.7	19.1	19.7	19.5	11.3	9.2	15.6	18.64	19.6	19.0
Denmark	Total	6.8	8.4	7.2	9.9	7.9	7.9	7.8	7.0	7.4	12.1	13.04	14.0	14.5
	Male	6.5	7.3	8.8	10.6	8.5	6.1	7.7	7.2	6.1	13.6	15.34	16.2	14.8
	Female	7.1	9.5	5.4	9.2	7.2	10.0	7.9	6.7	8.7	10.4	10.63	11.7	14.2

Country	Sex	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Estonia	Total	22.9	24.0	17.0	23.9	23.4	17.7	11.9	12.2	9.1	26.6	38.57	23.4	24.3
	Male	24.2	17.1	14.0	20.2	23.2	21.5	9.3	14.1	11.1	33.5	39.58	25.3	29.5
	Female	21.2	33.0	21.4	29.9	23.8	12.6	15.4	9.4	6.3	17.0	37.31	21.2	18.0
Finland	Total	21.4	19.9	21.3	21.0	20.8	20.3	19.6	16.2	16.6	21.8	21.36	19.9	18.3
	Male	20.7	19.4	21.8	21.1	21.2	21.2	20.3	15.8	17.6	24.2	23.13	21.2	18.9
	Female	22.0	20.5	20.7	20.9	20.3	19.5	18.9	16.6	15.7	19.5	19.6	18.5	17.6
France	Total	-	-	-	18.3	19.7	19.8	21.7	19.4	18.1	23.6	23.13	22.1	22.9
	Male	-	-	-	17.4	18.7	18.9	20.5	18.7	18.0	24.6	22.01	21.4	23.5
	Female	-	-	-	19.4	20.8	20.9	23.3	20.3	18.2	22.5	24.5	22.9	22.2
Germany	Total	-	-	-	-	-	15.7	13.5	12.2	10.8	11.5	9.665	8.6	8.2
	Male	-	-	-	-	-	17.0	14.3	12.7	11.3	12.7	10.37	9.4	9.0
	Female	-	-	-	-	-	14.1	12.5	11.5	10.3	10.1	8.858	7.8	7.2
Greece	Total	29.4	28.3	26.6	26.2	27.0	25.8	25.1	22.7	21.2	25.0	31.77	43.3	54.2
	Male	22.3	21.5	19.8	18.9	19.6	18.4	18.4	15.3	16.2	18.9	25.54	37.3	47.3
	Female	38.0	36.3	34.7	35.2	35.6	34.8	33.9	32.1	27.7	32.9	39.69	50.7	62.1
Hungary	Total	12.8	11.4	12.1	13.6	15.2	20.0	18.2	17.0	19.7	25.7	27.39	25.1	28.6
	Male	14.1	12.1	13.0	14.1	15.3	20.9	17.3	16.6	18.1	27.5	29.34	26.2	30.0
	Female	11.1	10.4	11.1	12.9	15.1	18.8	19.2	17.5	21.9	23.3	24.92	23.7	27.0
Iceland	Total	-	-	-	8.1	7.9	6.0	8.8	5.9	6.9	17.5	17.38	14.0	14.1
	Male	-	-	-	7.3	11.4	4.8	9.2	7.7	6.9	22.7	20.13	18.2	13.4
	Female	-	-	-	9.0	4.1	7.2	8.5	4.0	6.9	12.1	14.85	10.1	14.8
Ireland	Total	7.0	6.8	8.5	8.9	8.9	8.7	8.7	8.9	10.5	24.9	27.22	28.8	31.4
	Male	6.7	7.0	9.3	9.5	9.3	9.4	9.1	9.6	13.1	32.0	33.44	34.8	37.7
	Female	7.3	6.4	7.6	8.1	8.5	7.9	8.2	8.0	7.6	17.5	20.52	22.6	24.6
Israel	Total	15.8	18.8	20.5	21.2	20.3	16.7	18.9	16.1	14.0	15.3	12.45	12.3	12.2
	Male	16.4	18.4	22.5	21.4	19.5	14.9	18.6	14.7	13.1	16.1	14.33	12.6	11.3
	Female	15.3	19.1	18.5	21.0	21.1	18.2	19.2	17.3	14.7	14.5	10.76	12.0	13.1
Italy	Total	31.5	28.1	27.5	27.1	24.5	23.4	21.7	19.4	21.6	24.8	28.51	27.8	34.4
	Male	28.3	25.0	24.2	24.0	20.7	21.4	19.1	17.9	18.8	22.6	28.21	24.2	33.5
	Female	35.5	31.8	31.8	31.1	29.3	26.3	25.5	21.6	25.6	28.0	28.97	32.9	35.8
Japan	Total	8.8	9.5	9.9	10.6	9.5	8.7	8.4	7.2	7.0	8.9	9.933	8.3	8.2
	Male	9.8	10.5	10.9	12.0	11.0	10.1	9.2	8.0	7.7	9.3	11.2	9.6	8.8
	Female	7.8	8.3	9.0	9.2	7.9	7.4	7.6	6.3	6.2	8.4	8.8	7.0	7.6

Country	Sex	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Korea, Republic of	Total	10.7	10.0	8.3	9.7	10.9	10.1	9.5	9.1	9.5	9.8	9.894	9.3	9.6
	Male	13.8	11.8	9.9	11.5	12.4	11.7	10.9	11.8	10.9	12.4	12.01	11.9	10.1
	Female	8.7	8.9	7.2	8.5	9.9	9.1	8.7	7.4	8.6	8.2	8.622	7.6	9.2
Luxembourg	Total	-	-	-	-	-	-	-	11.6	13.5	13.3	17.37	19.6	15.4
	Male	-	-	-	-	-	-	-	17.3	14.5	10.6	20.91	19.2	17.2
	Female	-	-	-	-	-	-	-	0.0	12.3	16.6	13.37	20.2	12.8
Mexico	Total	-	-	-	-	-	7.1	6.7	7.3	7.5	10.4	9.845	10.2	9.7
	Male	-	-	-	-	-	6.6	5.9	6.8	6.6	10.0	9.351	9.6	9.1
	Female	-	-	-	-	-	8.1	8.1	8.1	9.1	11.3	10.74	11.2	10.6
Netherlands	Total	5.3	4.4	4.7	6.6	8.1	8.6	6.1	6.1	5.6	6.4	8.915	7.0	9.3
	Male	4.9	4.4	4.5	6.9	8.1	8.6	5.7	5.7	5.3	6.9	9.159	7.0	8.5
	Female	5.8	4.5	4.8	6.4	8.0	8.6	6.5	6.6	6.0	5.8	8.668	7.0	10.0
New Zealand	Total	13.7	11.8	11.7	10.2	10.8	9.6	9.5	9.5	10.8	16.4	18.29	17.5	16.4
	Male	14.3	12.7	12.1	10.1	9.5	9.3	8.8	8.2	11.0	14.2	18.68	18.3	15.7
	Female	13.1	10.8	11.2	10.2	12.4	10.1	10.3	10.9	10.6	19.0	17.86	16.7	17.2
Norway	Total	9.9	10.9	11.7	10.5	11.4	11.8	9.9	7.6	7.2	9.2	10.17	8.2	8.0
	Male	9.8	11.3	12.8	11.2	12.8	12.3	10.1	8.9	8.1	10.5	12.39	9.3	9.6
	Female	9.9	10.5	10.7	9.8	10.1	11.2	9.8	6.3	6.4	7.9	7.871	7.1	6.3
Poland	Total	35.8	39.3	41.8	41.6	40.4	38.9	30.4	22.0	17.4	19.5	23.51	25.1	25.8
	Male	34.3	38.0	41.0	40.3	38.9	37.9	29.7	20.7	15.1	18.7	21.78	23.4	23.2
	Female	37.6	40.9	42.9	43.4	42.2	40.2	31.2	23.6	20.2	20.6	25.86	27.6	29.4
Portugal	Total	8.5	9.1	10.6	13.8	14.9	16.5	16.0	16.4	15.7	20.5	22.2	29.5	38.7
	Male	5.7	6.8	9.5	11.1	13.1	14.2	14.9	12.6	12.2	19.7	21.65	28.0	36.0
	Female	11.9	12.0	12.0	17.1	17.3	19.5	17.5	21.0	19.8	21.4	22.82	31.2	41.7
Slovakia	Total	37.5	39.4	38.3	33.6	33.5	29.2	27.2	20.2	20.2	26.3	33.13	33.0	33.2
	Male	40.5	42.9	39.2	35.2	35.2	30.3	26.6	21.1	20.4	27.0	33.6	32.6	33.9
	Female	34.1	35.3	37.1	31.7	31.5	27.8	28.0	19.0	19.9	25.1	32.43	33.8	32.2
Slovenia	Total	17.6	17.0	16.3	16.8	15.5	14.3	15.8	9.1	10.6	13.5	16.77	14.5	18.8
	Male	16.0	16.3	14.9	14.7	12.6	12.5	14.9	8.8	9.4	12.0	17.52	13.9	18.7
	Female	19.8	18.0	18.0	19.8	19.1	16.8	16.9	9.6	12.3	15.6	15.71	15.3	19.1
Spain	Total	25.9	21.2	21.8	22.6	22.5	20.1	18.0	17.9	23.1	37.3	41.11	45.3	52.4
	Male	20.3	17.0	17.4	19.5	19.4	17.3	15.0	14.8	21.7	39.0	42.58	47.3	53.5
	Female	32.8	26.8	27.7	26.7	26.7	23.7	21.8	21.8	24.9	35.3	39.34	43.1	51.2

Country	Sex	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Sweden	Total	-	11.3	12.3	13.4	16.9	24.9	22.5	19.2	20.5	24.2	24.82	22.8	23.2
	Male	-	12.2	12.8	14.4	17.9	24.9	22.5	18.7	20.5	25.3	26.19	22.9	24.7
	Female	-	10.4	11.8	12.4	15.8	24.9	22.5	19.8	20.5	23.1	23.37	22.6	21.7
Switzerland	Total	5.0	5.6	5.6	8.5	7.7	8.8	7.7	7.1	7.0	8.5	7.183	5.8	6.1
	Male	5.8	5.7	7.1	8.3	8.0	8.5	7.9	6.9	6.7	8.0	6.831	6.3	6.0
	Female	4.1	5.5	3.9	8.7	7.4	9.1	7.5	7.4	7.4	9.0	7.571	5.4	6.2
Turkey	Total	-	-	-	-	-	-	15.9	17.1	16.6	24.7	19.5	17.7	15.7
	Male	-	-	-	-	-	-	15.9	16.7	15.9	24.9	19.31	16.2	14.9
	Female	-	-	-	-	-	-	16.1	17.8	17.9	24.5	19.85	20.4	17.4
United Kingdom	Total	13.0	11.2	11.9	12.3	11.5	12.3	14.3	14.7	14.4	19.4	19.5	20.6	21.3
	Male	14.2	12.5	13.6	13.9	12.4	13.8	16.1	16.2	16.3	22.2	21.71	22.6	24.2
	Female	11.7	9.8	9.9	10.5	10.6	10.6	12.3	12.9	12.3	16.1	17.03	18.4	18.0
United States	Total	9.4	10.2	11.9	12.9	11.9	11.5	10.2	10.3	12.3	17.5	18.63	17.3	16.3
	Male	9.7	11.1	12.6	13.9	12.8	12.5	11.1	11.4	13.4	20.1	21	18.9	17.9
	Female	9.1	9.2	11.1	11.8	10.9	10.5	9.2	9.0	11.1	14.7	16.1	15.7	14.6
Brazil	Total	-	-	22.6	25.3	24.7	22.2	22.2	21.8	18.0	18.8	16.22	14.4	13.7
	Male	-	-	-	-	-	-	-	-	-	-	-	-	-
	Female	-	-	-	-	-	-	-	-	-	-	-	-	-
South Africa	Total	-	-	-	-	-	-	-	-	44.5	48.1	51.18	49.7	51.2
	Male	-	-	-	-	-	-	-	-	-	-	-	-	-
	Female	-	-	-	-	-	-	-	-	-	-	-	-	-

- = not available.

Source: OECD online database.

**Table B2. Share of unemployed youth who have been unemployed for at least six months, both sexes, 2000–11 (%)**

Country	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Australia	32.2	29.8	27.3	25.6	24.8	22.4	23.6	21.3	20.0	23.4	26.4	26.2
Austria	26.7	27.5	17.5	28.1	36.2	30.9	33.2	32.3	29.2	30.8	35.0	31.6
Belgium	54.2	55.0	47.4	46.8	45.3	46.3	45.9	48.2	42.9	45.3	52.7	48.3
Canada	8.5	7.1	7.2	7.4	7.0	7.0	5.7	5.0	5.2	8.1	9.8	10.2
Czech Republic	60.8	60.4	56.6	56.4	59.7	60.4	61.7	53.7	52.1	43.7	53.0	53.2
Denmark	6.1	12.8	14.4	20.2	15.2	12.3	13.2	11.0	8.2	12.6	18.4	24.6
Estonia	41.6	48.2	46.5	48.8	51.9	43.6	34.2	38.8	37.1	47.5	60.5	54.2
Finland	19.1	16.0	16.5	15.7	16.2	15.8	13.8	15.8	9.6	13.7	16.8	12.9
France	42.3	42.1	39.2	43.5	41.9	43.5	45.0	43.0	41.2	46.7	48.2	47.1
Germany	48.0	45.0	47.6	50.8	50.2	52.4	52.3	51.0	47.0	46.2	45.1	41.7
Greece	71.0	64.8	67.3	68.0	68.5	64.7	69.0	62.2	57.5	50.7	55.1	60.6
Hungary	61.0	56.2	57.1	55.5	57.6	59.2	59.8	59.8	55.6	57.4	65.9	59.1
Iceland	–	9.6	20.2	7.5	6.9	3.4	3.9	–	3.2	14.2	27.8	20.6
Ireland	–	38.4	37.5	40.0	42.0	38.4	39.2	36.3	36.6	48.7	60.6	63.8
Israel	18.6	17.4	20.3	25.1	26.9	25.7	26.7	24.3	21.9	23.2	22.9	18.1
Italy	78.7	78.5	73.2	72.9	56.8	59.7	58.3	54.7	52.9	58.1	61.1	63.2
Japan	40.0	34.9	40.3	40.9	44.8	41.8	38.8	37.8	35.7	39.2	49.0	50.0
Korea, Republic of	8.9	8.8	9.2	5.9	8.3	8.7	9.0	8.8	8.1	5.1	–	3.4
Luxembourg	24.2	29.1	33.8	23.7	38.6	32.1	47.9	39.2	46.3	36.3	39.1	42.7
Mexico	3.9	3.0	3.8	3.3	3.0	5.7	4.2	3.4	2.9	4.1	4.2	3.3
Netherlands	–	–	20.7	30.2	34.5	38.5	37.1	31.3	25.3	26.3	28.8	28.7
New Zealand	24.7	20.2	16.2	18.0	15.6	11.8	14.0	11.2	10.0	16.4	20.1	21.1
Norway	6.7	4.5	7.8	9.1	7.7	8.6	13.9	12.7	7.2	11.7	17.0	17.8
Poland	53.7	58.3	62.8	61.2	58.6	59.9	56.2	49.1	34.4	33.5	36.3	42.7
Portugal	41.9	42.2	40.7	43.7	49.3	52.2	48.7	46.3	43.3	48.2	50.8	46.0
Slovakia	66.9	67.6	70.5	68.1	68.5	73.9	72.5	68.2	65.8	57.8	70.0	70.7
Slovenia	–	–	63.4	60.6	59.7	55.2	56.1	46.7	37.0	40.5	50.7	52.6
Spain	53.9	49.3	43.4	45.2	42.8	28.2	24.2	23.7	25.5	41.2	49.8	53.2
Sweden	18.2	16.1	18.6	17.8	20.0	–	–	12.2	11.2	15.0	19.0	15.8
Turkey	35.0	34.8	43.0	38.5	56.2	53.4	49.3	44.2	40.1	41.6	40.9	37.3
United Kingdom	30.2	30.0	24.4	24.3	26.7	27.9	30.5	31.1	31.5	38.9	43.5	43.9
United States	7.3	8.2	11.3	13.6	14.2	12.9	11.9	12.0	13.9	23.3	29.7	30.1
Russian Federation	53.2	45.4	45.9	44.4	45.9	45.1	47.5	47.6	38.3	36.9	36.0	40.4
OECD countries	34.6	32.6	32.9	32.9	33.3	32.9	31.5	28.5	26.0	31.1	35.2	35.3
OECD Europe	50.4	49.3	48.3	47.6	48.1	47.3	45.7	41.4	37.5	41.8	45.2	45.6

– = not available.

Source: OECD online database.

**Table B3. NEET rates in OECD economies, age group 15–29, 2000–10 (%)**

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Australia	13.2	13.0	12.7	12.6	12.3	11.4	11.4	10.5	10.4	12.3	11.8
Austria	–	–	10.2	9.5	11.7	11.0	11.6	10.7	10.4	11.1	11.1
Belgium	12.9	11.7	14.0	14.4	14.0	14.2	13.9	12.7	12.1	12.7	14.2
Brazil	–	–	–	–	–	–	–	19.9	19.0	19.6	–
Canada	13.7	13.1	13.6	12.9	13.0	12.4	12.0	12.1	11.7	13.3	13.5
Czech Republic	18.5	17.4	16.9	16.9	17.2	15.9	14.1	11.7	10.9	12.8	13.2
Denmark	5.8	6.2	5.6	8.9	8.6	8.2	6.2	7.1	6.9	9.0	10.5
Estonia	–	–	–	15.1	15.3	14.8	11.4	13.0	11.3	19.0	19.1
Finland	–	–	–	11.6	12.4	10.9	10.4	10.1	9.9	12.0	12.6
France	15.0	14.5	14.7	14.1	14.6	14.5	15.2	14.5	14.0	15.6	16.7
Germany	13.3	13.1	12.6	12.9	13.5	14.7	13.6	12.6	11.6	11.6	12.0
Greece	21.5	19.9	20.3	19.6	20.7	19.7	16.9	16.8	16.2	16.8	18.3
Hungary	20.2	18.9	19.5	18.8	17.1	17.2	17.0	15.6	16.3	17.7	18.9
Iceland	4.1	3.4	5.1	7.6	5.0	6.8	3.9	5.3	4.3	9.6	10.3
Ireland	9.0	9.0	10.3	10.8	10.7	10.5	10.4	10.7	12.8	18.6	21.0
Israel	–	–	31.5	32.3	30.5	29.6	29.4	29.7	27.5	28.7	27.4
Italy	23.3	22.2	20.7	18.6	20.5	21.1	20.1	20.0	19.2	21.2	23.0
Japan	8.8	8.4	9.5	9.8	9.2	8.8	9.1	7.6	7.4	8.5	9.9
Korea, Republic of	–	–	–	–	–	–	–	–	18.5	19.0	19.2
Luxembourg	8.1	8.2	7.5	7.0	8.7	7.3	8.6	8.9	8.5	7.9	7.1
Mexico	24.6	24.6	24.2	24.8	24.2	24.9	24.2	24.2	23.9	24.8	24.4
Netherlands	8.3	7.7	7.9	8.7	8.2	8.2	7.1	6.7	5.1	7.0	7.2
New Zealand	–	–	–	–	13.5	12.6	12.7	13.2	13.2	16.1	16.3
Norway	7.0	7.5	8.0	8.7	8.6	8.1	7.9	7.5	6.8	8.0	8.5
Poland	22.1	20.7	21.0	20.5	20.3	18.4	17.4	15.5	13.7	14.2	15.2
Portugal	10.5	9.9	10.7	12.1	12.7	12.9	12.4	13.4	12.2	12.8	13.5
Slovakia	30.4	31.4	26.8	23.9	21.8	20.5	19.1	17.2	16.2	16.1	18.8
Slovenia	–	–	–	10.0	9.2	10.1	10.8	10.1	8.5	9.0	8.8
Spain	15.3	14.2	14.6	14.6	14.6	17.2	15.9	15.7	16.8	22.7	23.7
Sweden	7.9	7.3	7.9	8.4	9.5	9.2	10.5	9.6	8.7	11.0	10.3
Switzerland	8.3	8.9	9.5	11.4	10.2	10.4	10.0	10.2	9.6	10.5	9.7
Turkey	37.8	38.9	39.6	41.1	41.9	43.6	42.6	41.3	42.0	39.6	36.6
United Kingdom	13.3	13.1	13.3	13.6	13.5	14.2	15.1	14.9	14.8	15.7	15.9
United States	12.2	13.3	13.4	–	13.9	13.1	12.8	13.1	14.6	16.9	16.1
OECD average	15.1	14.7	15.3	15.2	15.1	15.0	14.3	14.0	13.7	15.4	15.8

– = not available.

Note: Age group 15–24 for Japan.

Source: OECD: *Education at a Glance 2012: OECD Indicators*.

**Table B4. Incidence of part-time work, youth, 2000–11 (%)**

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Australia	–	41.3	41.9	42.3	41.8	41.4	40.6	40.5	40.3	43.0	43.2	43.4
Austria	6.1	6.8	6.3	7.0	10.2	12.8	11.7	14.4	15.2	14.6	15.9	16.4
Belgium	18.0	15.1	15.3	16.0	18.0	18.9	17.2	16.8	17.6	20.3	18.0	20.8
Canada	43.7	43.6	45.0	45.4	44.8	44.8	44.3	44.8	45.0	47.0	48.1	48.1
Chile	5.5	6.8	6.3	7.3	8.9	9.7	10.7	11.3	13.4	16.3	26.0	24.2
Czech Republic	2.2	2.3	1.9	2.5	2.1	2.3	3.0	4.1	4.5	6.8	7.6	6.2
Denmark	44.5	42.9	46.1	49.0	52.7	53.1	55.0	51.5	55.2	58.2	59.5	59.7
Estonia	8.7	8.2	9.6	10.3	9.2	12.5	10.6	10.0	10.7	13.9	18.1	13.6
Finland	29.3	29.5	29.6	30.6	31.2	33.2	31.8	31.4	32.3	34.5	34.0	34.2
France	18.7	17.1	16.2	14.8	15.6	16.6	17.3	17.2	17.4	17.4	17.6	17.6
Germany	11.3	12.2	12.6	13.2	13.7	15.9	17.2	18.2	18.7	18.4	17.6	19.3
Greece	6.7	5.8	5.7	5.7	7.3	9.0	11.5	10.6	11.6	12.4	14.5	15.5
Hungary	2.1	2.2	2.6	2.1	2.8	3.1	2.8	3.5	3.4	4.5	4.8	7.4
Iceland	39.4	42.3	47.7	32.3	33.8	35.6	35.6	36.3	35.4	43.5	45.5	44.3
Ireland	22.4	21.0	20.3	21.9	21.2	21.7	21.3	22.5	24.5	33.2	39.6	44.5
Israel	21.8	23.0	23.7	24.3	24.8	25.1	25.0	24.4	24.2	25.1	22.6	23.1
Italy	10.6	10.6	8.9	9.3	15.6	14.5	15.5	16.7	18.3	18.8	21.5	21.1
Japan	–	–	23.5	24.1	24.6	25.4	24.7	25.5	25.8	27.4	29.0	29.5
Korea, Republic of	8.0	9.4	9.7	11.9	12.2	13.8	14.9	16.9	18.4	21.0	22.9	26.3
Luxembourg	10.4	7.1	5.1	4.4	5.4	4.4	4.9	3.9	4.0	17.7	14.4	16.6
Mexico	14.9	15.8	16.1	16.2	17.6	20.1	20.2	21.0	21.5	22.0	23.1	22.6
Netherlands	53.2	53.6	54.5	56.0	57.0	59.2	59.5	61.4	61.7	63.9	65.2	65.8
New Zealand	38.5	37.3	38.3	37.0	36.9	37.1	35.7	39.3	39.4	41.1	41.3	39.6
Norway	41.3	43.2	43.8	47.0	47.8	47.6	48.8	46.0	47.4	48.7	48.9	49.3
Poland	15.6	17.5	18.1	17.9	19.8	19.5	16.3	14.2	11.9	11.3	12.4	12.6
Portugal	5.6	5.6	5.9	7.2	7.1	7.3	7.1	8.2	8.8	9.8	11.2	15.0
Slovakia	1.2	1.1	1.3	2.1	2.7	2.7	3.2	3.0	3.6	4.5	7.7	6.6
Slovenia	–	–	14.9	17.1	23.2	25.9	25.8	26.6	28.2	31.7	36.7	35.6
Spain	13.2	12.7	12.5	13.0	14.1	18.7	19.1	19.5	21.7	23.8	28.3	31.1
Sweden	31.8	32.7	33.6	35.6	38.3	36.1	36.2	34.7	35.8	38.4	37.9	36.6
Switzerland	18.6	19.6	17.3	17.6	17.4	17.4	18.7	18.9	19.9	20.7	17.8	17.8
Turkey	10.6	6.5	6.1	5.7	6.4	5.5	7.4	7.2	8.0	11.4	11.9	12.4
United Kingdom	31.8	32.5	31.7	33.0	32.9	32.7	33.0	32.3	32.9	35.7	37.4	37.0
United States	33.1	33.3	34.1	34.6	34.9	34.2	33.8	34.0	35.1	38.3	38.1	34.6
Brazil	–	19.2	20.3	20.7	21.1	21.6	22.2	21.0	20.2	21.0	–	–
Russian Federation	10.9	6.7	4.5	7.6	7.5	8.2	7.7	7.1	6.5	6.2	5.9	5.5
South Africa	–	14.6	14.8	14.6	9.4	10.9	13.9	10.0	9.0	8.5	8.9	8.7
Europe	18.0	17.7	17.7	18.4	19.7	20.6	21.3	21.5	22.3	23.8	24.5	25.0
G7 countries	24.2	24.5	28.7	29.2	29.9	29.8	29.8	30.1	30.8	32.8	33.0	31.8
North America	28.4	29.0	29.7	30.2	30.7	31.1	30.9	31.2	32.0	34.3	33.9	32.0
OECD countries	20.8	21.4	24.1	24.7	25.6	26.3	26.4	26.8	27.5	29.4	29.8	29.3

– = not available.

Source: OECD online database.

**Table B5. Incidence of temporary employment, youth, 2000–11 (%)**

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Australia	–	4.6	–	–	3.7	–	4.5	–	–	–	–	–
Austria	33.0	33.2	34.8	31.8	33.2	34.7	35.2	34.9	34.9	35.6	37.0	37.2
Belgium	30.9	26.4	27.9	30.2	31.0	32.1	30.0	31.6	29.5	33.2	30.4	34.3
Canada	29.1	30.1	29.7	28.3	29.4	29.9	29.3	28.8	27.2	27.8	30.0	30.5
Chile	–	–	–	–	–	–	–	–	–	–	47.5	45.8
Czech Republic	19.6	19.7	19.7	22.3	21.0	18.3	18.9	17.4	15.6	18.8	22.5	22.3
Denmark	29.8	26.9	27.0	26.4	25.7	26.9	22.4	22.5	23.6	22.8	21.1	22.1
Estonia	–	–	7.9	8.1	8.1	9.2	7.3	6.6	6.0	8.3	11.6	13.8
Finland	45.6	45.1	44.3	45.9	44.7	44.2	44.2	42.4	39.7	39.0	43.1	43.4
France	55.0	52.2	48.5	48.1	48.8	49.4	51.6	53.5	52.5	52.4	54.9	55.0
Germany	52.4	52.1	51.4	53.0	55.5	58.2	57.5	57.4	56.8	57.3	57.2	56.0
Greece	28.8	28.2	26.6	24.9	26.6	26.5	25.0	27.0	29.2	28.4	30.4	30.1
Hungary	13.9	14.9	14.7	16.4	15.2	17.2	16.9	19.1	20.0	21.4	24.9	22.9
Iceland	28.9	21.8	21.5	29.1	28.5	28.9	30.4	32.0	27.8	26.9	31.3	32.8
Ireland	12.3	–	15.2	15.5	13.7	11.6	15.1	20.5	22.0	25.0	30.4	34.2
Italy	26.2	23.3	27.1	27.4	34.6	37.0	40.9	42.3	43.3	44.4	46.7	49.9
Japan	24.9	25.5	26.8	27.2	27.8	27.9	26.8	26.4	26.0	25.5	26.6	26.4
Korea, Republic of	–	–	–	–	30.3	34.6	31.7	30.0	29.4	32.5	30.1	27.3
Luxembourg	14.5	19.5	16.6	12.4	24.1	29.3	33.2	34.1	39.3	39.4	36.5	34.5
Mexico	25.7	24.2	25.5	25.8	26.4	–	–	–	–	–	–	–
Netherlands	35.4	36.5	36.3	37.4	38.8	41.7	43.6	45.1	45.2	46.5	48.3	47.8
Norway	28.5	27.9	28.4	22.1	30.0	27.8	28.7	27.3	25.5	25.0	26.5	23.7
Poland	–	35.5	46.5	55.8	63.1	66.5	67.3	65.7	62.8	62.0	64.6	65.6
Portugal	41.5	42.6	46.2	45.7	46.5	45.6	49.3	52.6	54.2	53.5	55.6	57.2
Slovakia	10.5	12.0	12.4	11.5	11.9	12.8	14.3	13.7	12.6	12.5	17.1	18.6
Slovenia	–	–	54.3	55.1	65.0	62.5	64.2	68.3	69.8	66.6	69.6	74.5
Spain	68.6	66.5	65.0	64.5	65.7	66.5	66.1	62.8	59.4	55.9	58.6	61.4
Sweden	49.5	47.8	49.9	50.9	52.5	55.3	58.4	57.3	53.8	53.4	57.1	57.5
Switzerland	47.0	48.8	48.9	47.7	46.9	49.6	51.4	50.3	50.6	53.1	51.7	51.6
Turkey	23.7	22.5	17.9	17.7	9.3	12.4	13.4	12.4	12.5	15.0	17.2	18.4
United Kingdom	13.2	13.5	12.9	12.5	11.0	12.3	12.8	13.3	12.0	11.9	13.7	13.5
United States	–	8.1	–	–	–	8.1	–	–	–	–	–	–
Russian Federation	14.5	17.8	17.4	23.2	23.8	25.1	24.8	23.4	24.5	21.7	19.1	17.6
Europe	36.2	35.8	35.6	36.2	36.6	38.3	39.3	39.6	38.7	39.2	40.6	40.5
G7 countries	21.1	20.1	20.0	20.1	20.5	21.6	21.8	22.1	21.7	21.5	22.1	22.1
North America	15.2	13.7	13.9	13.8	14.1	14.5	14.5	14.5	14.3	14.3	14.5	14.5
OECD countries	24.3	23.3	23.5	23.7	23.9	25.1	25.5	25.6	25.1	24.9	25.4	25.3

– = not available.

Source: OECD online database.

## Annex C. Skills mismatch tables

**Table C1. Skills mismatch between labour supply and demand, youth, 2000–11 (%)**

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	Change 2010–11
Austria	12.0	14.7	6.8	13.2	21.6	17.2	19.0	18.6	20.6	17.2	13.5	17.3	3.8
Belgium	18.0	31.6	22.5	19.1	14.0	12.8	14.5	15.8	16.9	11.6	19.4	20.6	1.2
Bulgaria	13.8	21.3	17.9	17.5	17.8	22.9	23.2	19.9	23.3	18.3	13.1	15.0	1.9
Cyprus	10.1	3.8	11.9	18.9	18.2	0.3	11.2	7.3	3.6	8.2	5.9	9.2	3.3
Czech Republic	18.8	19.4	18.0	18.8	20.0	16.5	16.6	19.9	27.7	18.9	16.3	18.7	2.4
Denmark	5.8	5.5	15.4	15.4	4.4	4.7	8.0	10.7	10.4	7.1	7.8	9.0	1.2
Estonia	25.6	9.2	34.0	14.9	16.1	11.4	15.7	26.2	15.3	21.2	14.3	10.7	-3.6
Finland	26.7	24.1	29.9	26.7	27.3	17.9	20.9	22.8	25.9	20.3	19.7	23.3	3.6
France	19.4	22.8	18.7	15.6	17.7	15.6	17.8	19.3	18.5	19.4	19.1	18.7	-0.4
Germany	8.3	6.2	4.0	4.3	2.2	8.2	12.3	16.7	14.7	12.9	16.5	18.5	2.0
Greece	8.0	6.8	8.3	8.5	5.1	9.1	5.9	9.1	5.7	5.5	6.2	2.6	-3.6
Hungary	13.6	14.9	14.8	20.3	17.4	14.4	16.7	15.9	16.3	18.7	14.2	15.1	0.9
Ireland	30.3	22.5	19.4	18.9	25.8	20.5	18.1	20.6	18.2	14.0	15.1	16.0	0.9
Italy	0.7	2.0	3.5	4.7	10.1	6.2	6.1	5.0	5.0	4.4	5.2	5.8	0.6
Latvia	19.4	19.3	19.1	14.2	11.0	25.9	26.1	16.7	17.3	18.7	12.2	12.2	0.0
Lithuania	12.6	12.2	9.6	11.6	5.9	11.0	4.9	5.7	16.3	13.5	11.5	10.6	-0.9
Luxembourg	14.8	14.6	29.7	11.8	15.5	19.3	22.7	20.9	14.6	15.8	23.3	22.7	-0.6
Netherlands	22.6	18.2	17.4	17.3	18.3	18.5	22.2	20.7	18.9	16.8	17.2	19.3	2.1
Norway	23.4	22.6	26.4	20.6	9.4	20.9	16.6	21.0	21.4	14.8	14.9	15.3	0.4
Poland	1.0	2.5	2.8	5.2	2.5	2.9	4.0	0.9	2.7	2.7	4.3	3.9	-0.4
Portugal	0.7	2.6	1.9	0.9	5.3	4.2	5.7	5.2	7.0	3.6	2.2	5.8	3.6
Romania	17.2	14.2	9.3	11.7	5.7	8.7	3.7	3.4	4.5	2.7	12.0	8.5	-3.5
Slovakia	8.7	10.2	10.2	11.3	18.2	23.0	25.5	26.9	25.7	14.7	13.3	12.4	-0.9
Slovenia	13.1	14.0	14.9	10.8	6.3	6.9	6.2	6.5	3.5	9.1	10.0	13.9	3.9
Spain	2.0	1.3	0.3	3.2	2.5	7.3	6.9	8.2	15.3	16.2	17.7	14.3	-3.4
Sweden	7.8	24.2	20.9	20.4	18.1	21.3	23.8	25.2	27.2	23.2	24.1	23.1	-1.0
Switzerland	4.2	21.2	0.7	1.3	7.7	5.9	4.2	4.6	1.7	3.7	1.4	1.6	0.2
United Kingdom	25.5	26.7	26.0	26.1	27.7	23.3	22.4	24.4	24.7	20.1	19.3	18.3	-1.0
<b>Average</b>	<b>13.7</b>	<b>14.6</b>	<b>14.8</b>	<b>13.7</b>	<b>13.3</b>	<b>13.5</b>	<b>14.3</b>	<b>14.9</b>	<b>15.1</b>	<b>13.3</b>	<b>13.2</b>	<b>13.7</b>	<b>0.5</b>

Source: ILO calculations based on Eurostat.

**Table C2a. Unemployment rate of youth with primary education, both sexes, 2000–11 (%)**

Country	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	Change 2010–11
Austria	8.3	8.4	8.5	10.1	17.8	15.2	13.4	12.4	12.1	14.3	11.8	12.0	0.2
Belgium	24.2	30.3	27.0	30.5	25.8	30.0	30.1	29.1	28.4	30.2	35.9	31.0	-4.9
Bulgaria	44.6	59.5	51.9	41.4	37.5	39.9	37.8	29.5	28.3	31.8	39.5	49.2	9.7
Cyprus	11.5	9.1	10.3	10.7	13.1	13.9	7.8	12.7	8.5	8.5	13.2	13.9	0.7
Czech Republic	44.2	41.1	40.5	48.7	53.8	47.9	43.4	31.3	35.0	41.2	43.1	45.4	2.3
Denmark	6.2	9.3	9.4	12.2	7.2	9.3	8.5	8.8	9.3	13.1	15.5	16.3	0.8
Estonia	41.4	30.3	37.1	34.0	32.5	22.0	18.4	18.3	18.4	44.3	46.9	30.8	-16.1
Finland	43.4	38.8	43.5	42.0	41.7	28.4	27.9	25.8	26.6	31.7	31.3	31.5	0.2
France	31.2	29.7	29.2	26.1	30.8	30.4	33.1	30.2	29.9	37.0	36.2	35.2	-1.0
Germany	9.7	8.7	10.1	11.9	13.1	17.8	16.9	15.7	13.7	14.2	13.4	12.0	-1.4
Greece	24.1	23.8	21.6	20.3	22.8	19.3	21.7	17.8	19.0	22.3	31.3	43.3	12.0
Hungary	21.3	19.4	21.0	26.5	25.7	31.0	31.7	30.4	33.4	45.9	41.5	42.0	0.5
Ireland	13.0	11.1	13.5	14.3	17.0	15.9	15.6	17.5	23.8	39.4	44.6	49.0	4.4
Italy	31.7	28.6	28.4	28.9	28.6	26.2	24.1	22.5	23.4	27.3	30.9	32.8	1.9
Latvia	32.1	32.0	36.3	23.7	24.5	23.6	22.1	16.7	20.7	49.7	45.7	40.4	-5.3
Lithuania	37.3	42.6	26.6	36.0	19.6	18.1	12.6	10.9	26.7	46.9	54.1	47.0	-7.1
Luxembourg	8.9	8.7	12.1	15.2	20.8	18.2	23.3	21.0	22.6	24.6	22.4	25.9	3.5
Netherlands	7.4	5.7	5.9	8.8	10.7	11.2	9.4	8.4	7.2	8.8	11.8	10.7	-1.1
Norway	18.7	21.2	22.3	19.4	16.8	19.2	11.2	10.1	10.2	11.2	11.4	10.8	-0.6
Poland	37.0	38.2	43.1	38.6	41.6	41.2	36.2	22.8	20.6	24.5	30.1	31.7	1.6
Portugal	8.2	8.6	10.4	13.4	14.9	15.5	15.2	16.2	15.8	20.3	22.3	32.6	10.3
Romania	11.6	12.1	18.2	15.3	20.9	16.3	19.6	18.6	20.3	19.4	15.8	18.7	2.9
Slovakia	77.0	80.3	75.3	69.6	73.7	76.7	74.1	66.1	62.3	64.5	67.4	63.6	-3.8
Slovenia	26.4	25.4	26.0	25.6	18.1	20.7	17.1	13.3	10.8	18.9	19.7	25.0	5.3
Spain	24.6	20.5	21.7	23.3	23.2	21.8	19.8	20.4	29.7	44.7	49.6	53.2	3.6
Sweden	11.3	17.9	18.7	20.9	25.9	33.2	32.5	29.5	31.2	38.0	38.9	38.6	-0.3
Switzerland	4.6	7.4	5.6	8.3	8.8	9.5	7.1	7.8	6.8	8.1	7.7	7.8	0.1
United Kingdom	21.5	19.5	20.1	21.5	19.9	22.6	25.1	26.4	28.0	32.7	34.1	36.2	2.1

Source: Eurostat online database.

**Table C2b. Unemployment rate of youth with secondary education, both sexes, 2000–11 (%)**

Country	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	Change 2010–11
Austria	5.4	4.9	6.6	6.3	8.1	8.0	6.5	6.2	5.7	7.5	7.0	6.2	-0.8
Belgium	14.4	9.7	13.3	18.3	17.2	19.7	18.0	17.5	16.2	20.5	19.9	15.5	-4.4
Bulgaria	30.4	33.3	31.0	23.1	19.7	17.5	15.3	12.3	9.6	14.1	21.2	23.6	2.4
Cyprus	11.3	7.6	5.9	5.4	6.0	13.9	8.9	9.0	8.3	13.7	17.4	23.0	5.6
Czech Republic	14.1	13.2	13.0	13.9	16.7	16.4	14.9	8.6	7.1	13.7	15.7	15.2	-0.5
Denmark	7.5	7.6	5.4	6.6	7.7	8.0	6.3	5.7	6.2	10.3	11.5	11.5	0.0
Estonia	17.4	21.8	12.4	23.4	18.5	16.2	10.7	7.2	10.3	24.9	31.3	21.0	-10.3
Finland	20.5	19.4	18.9	19.7	18.9	16.1	14.1	11.8	11.2	16.8	16.9	14.9	-2.0
France	17.7	15.1	16.1	14.7	17.7	17.9	18.6	16.1	16.8	21.0	20.1	19.4	-0.7
Germany	7.0	7.1	8.9	10.5	13.4	13.6	11.1	8.8	8.1	9.2	7.4	6.0	-1.4
Greece	31.8	30.1	28.7	28.0	27.4	27.6	26.1	23.7	23.2	26.6	31.4	43.8	12.4
Hungary	11.0	9.4	10.0	10.5	12.0	17.1	15.7	15.6	16.9	22.5	23.3	23.0	-0.3
Ireland	4.2	4.9	6.4	6.9	6.3	6.5	7.3	7.3	11.2	23.0	26.3	27.9	1.6
Italy	31.7	27.1	25.8	25.5	21.3	22.0	19.9	19.0	19.9	24.1	26.5	27.3	0.8
Latvia	17.8	19.1	21.1	14.6	18.4	10.1	8.8	9.4	11.1	29.1	33.2	32.0	-1.2
Lithuania	26.1	30.5	18.3	26.8	23.0	17.4	9.8	8.2	11.1	29.0	33.9	33.3	-0.6
Luxembourg	4.8	4.8	4.2	9.4	12.7	9.1	11.1	9.0	15.0	13.2	9.7	12.3	2.6
Netherlands	2.8	2.3	2.8	4.5	5.6	5.7	4.2	3.9	3.5	4.6	6.4	5.3	-1.1
Norway	7.0	7.8	7.6	8.9	11.3	8.8	6.1	4.6	4.2	6.2	6.3	5.9	-0.4
Poland	35.7	39.9	42.2	42.9	40.6	37.0	29.5	21.7	16.9	20.2	23.1	25.4	2.3
Portugal	8.4	9.8	9.6	12.9	11.2	15.3	16.0	14.8	14.4	18.2	21.3	27.3	6.0
Romania	22.0	21.0	25.0	22.8	24.0	22.5	22.0	21.0	17.5	20.9	24.6	25.4	0.8
Slovakia	35.0	36.7	35.6	30.6	28.6	25.1	21.4	15.3	14.6	24.3	30.6	30.7	0.1
Slovenia	14.5	13.5	12.4	13.8	13.1	14.8	12.9	9.4	10.1	12.3	12.9	13.4	0.5
Spain	25.7	21.5	21.5	22.0	21.0	17.2	16.1	16.6	19.6	31.1	34.3	41.5	7.2
Sweden	9.4	7.1	8.4	10.1	13.6	16.0	14.5	12.1	11.8	18.4	18.7	18.0	-0.7
Switzerland	5.4	3.3	5.5	8.5	7.0	7.7	7.9	6.5	7.1	9.1	8.1	7.5	-0.6
United Kingdom	8.6	7.2	7.5	8.2	7.7	9.5	10.7	11.0	11.2	15.6	16.8	18.9	2.1

Source: Eurostat online database.

**Table C2c. Unemployment rate of youth with tertiary education, both sexes, 2000–11 (%)**

Country	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	Change 2010–11
Austria	2.4	1.8	5.4	2.4	4.8	7.6	9.8	10.3	2.9	9.6	9.7	7.6	-2.1
Belgium	6.5	9.7	8.2	6.2	10.0	16.0	16.1	11.5	11.3	16.6	13.1	12.1	-1.0
Bulgaria	17.1	26.9	22.1	17.8	22.9	14.6	11.0	9.2	9.9	4.8	11.7	19.6	7.9
Cyprus	5.6	8.3	8.1	12.9	8.0	13.7	13.2	10.8	9.6	16.7	18.3	26.4	8.1
Czech Republic	13.7	15.1	8.8	13.5	9.5	16.1	14.1	9.2	8.1	13.3	15.0	12.3	-2.7
Denmark	1.0	10.0	11.8	7.3	17.6	5.4	10.8	5.7	4.8	7.1	15.6	14.6	-1.0
Estonia	16.7	26.2	2.8	3.7	25.8	7.6	5.8	4.5	8.1	8.7	17.8	15.2	-2.6
Finland	14.8	14.1	7.8	10.7	15.9	6.2	7.7	9.9	5.5	7.9	7.3	7.4	0.1
France	11.4	8.2	11.6	13.9	12.4	15.3	15.0	12.5	10.3	12.6	13.8	13.4	-0.4
Germany	6.8	3.8	4.9	5.4	7.1	12.0	9.0	6.5	7.0	6.0	6.6	4.5	-2.1
Greece	29.6	29.4	23.1	28.4	30.5	33.1	30.1	32.0	24.6	31.0	43.0	48.6	5.6
Hungary	4.8	4.3	6.2	6.0	10.3	12.9	16.7	12.1	15.0	18.5	22.2	19.7	-2.5
Ireland	2.7	2.7	4.9	4.7	4.3	6.4	5.4	5.6	7.5	17.0	18.8	17.8	-1.0
Italy	25.8	28.7	35.8	15.3	32.9	31.3	24.7	19.4	23.8	29.5	23.1	27.1	4.0
Latvia	6.5	7.2	13.6	13.4	7.6	5.3	6.0	4.2	7.9	22.2	20.4	14.6	-5.8
Lithuania	21.2	21.2	18.4	14.3	18.4	9.4	7.8	6.3	11.4	15.8	26.1	21.4	-4.7
Luxembourg	5.6	6.7	0.0	11.1	23.5	17.6	7.7	15.4	7.1	18.8	18.8	10.5	-8.3
Netherlands	2.4	4.9	1.8	4.8	3.5	4.8	2.6	2.6	2.9	4.5	5.2	4.4	-0.8
Norway	8.2	9.5	8.6	8.6	11.7	7.2	5.1	2.9	3.6	4.8	5.5	5.4	-0.1
Poland	26.1	29.0	27.5	27.7	31.0	29.3	23.2	20.0	16.8	19.6	20.7	22.0	1.3
Portugal	6.9	9.7	13.4	14.6	13.2	24.3	28.8	26.1	27.2	24.4	26.2	29.0	2.8
Romania	9.2	17.2	19.7	15.7	13.1	22.0	27.6	21.1	20.4	24.8	28.9	29.3	0.4
Slovakia	26.9	24.1	21.4	23.4	24.4	17.2	16.3	18.9	15.5	22.4	27.3	24.0	-3.3
Slovenia	6.3	7.1	25.0	8.0	12.1	18.4	17.1	8.8	17.8	12.5	16.7	18.2	1.5
Spain	26.6	20.0	21.6	19.6	22.1	17.1	15.1	13.6	15.9	26.0	28.9	35.0	6.1
Sweden	2.4	3.4	7.4	5.2	11.7	16.0	12.8	12.2	11.5	12.8	14.7	12.4	-2.3
Switzerland	4.4	19.2	7.3	11.6	2.3	11.2	13.5	6.7	8.1	6.3	7.2	8.5	1.3
United Kingdom	5.6	5.1	5.9	5.3	4.1	7.9	9.1	7.5	9.2	13.0	12.1	12.0	-0.1

Source: Eurostat online database.

**Table C3. Country-level trends in youth: skills mismatch incidence and macro-level variables, age group 15–29**

	Overeducation trend		Undereducation trend		Trends in macro-variables		
	Increasing	Decreasing	Increasing	Decreasing	Tertiary attainment share	Unemployment rate	Share in ISCO 1–3
Austria				<sup>a</sup>	↑ <sup>a</sup>	↓ <sup>a</sup>	↑ <sup>a</sup>
Belgium							↓ <sup>b</sup>
Bulgaria	<sup>b</sup>			<sup>b</sup>	↑ <sup>b</sup>	↑ <sup>b</sup>	
Croatia							
Cyprus							
Czech Republic						↑ <sup>c</sup>	↓ <sup>c</sup>
Denmark	<sup>b</sup>					↑ <sup>b</sup>	
Estonia						↑ <sup>b</sup>	
Finland						↑ <sup>b</sup>	↑
France						↑	
Germany						↓	
Greece		<sup>c</sup>					↑ <sup>c</sup>
Hungary							
Iceland							
Ireland						↑	
Israel							
Italy							
Latvia							
Lithuania							
Luxembourg							
Netherlands					↑ <sup>b</sup>		
Norway			<sup>b</sup>		↓ <sup>b</sup>	↑ <sup>b</sup>	
Poland					↑		↑
Portugal						↑ <sup>b</sup>	
Romania							
Russian Federation						↑ <sup>b</sup>	
Slovakia			<sup>b</sup>			↓	↑ <sup>b</sup>
Slovenia	<sup>b</sup>				↑		
Spain				<sup>b</sup>	↑ <sup>b</sup>	↑ <sup>b</sup>	↑ <sup>b</sup>
Sweden					↓		↓
Switzerland					↑ <sup>b</sup>		↑ <sup>b</sup>
Turkey							
Ukraine						↑	
United Kingdom				<sup>b</sup>		↓	

<sup>a</sup> Data available only in rounds 1–4. <sup>b</sup> Based on rounds 3–5. <sup>c</sup> Data available only in rounds 1–2 and 4–5.

Note: ‘|’ shows the existence of a trend in skills mismatch measured using the ISCO-based measure. Trends are shown only if found in all five rounds, or in the last four observable rounds, or in rounds 3–5. Greyed rows correspond to countries where there are insufficient rounds to assess trends. “Tertiary attainment share” is the share of tertiary graduates among the employed. “Share in ISCO 1–3” is the share of workers in the first three major ISCO groups.

Source: ILO calculations based on the European Social Survey (Norwegian Social Science Data Services, 2002; 2004; 2006; 2008; 2010).

**Table C4. Summary of overeducation model results**

	Young			Mature			Total		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
<b>Demographics</b>									
Age									
Age <sup>2</sup> /100									
Young									
Female									
<b>Number of children (relative to no children)</b>									
1									
2									
3+									
<b>Partner employment status (relative to no partner)</b>									
Unemployed									
Employed									
Supervising others									
<b>Domicile (relative to rural)</b>									
Big city									
Small city									
<b>Firm size (relative to &lt;10 employees)</b>									
10–24									
25–99									
100–499									
500+									
<b>Immigrant background (relative to non-immigrant)</b>									
Minority									
One parent-immigrant									
Both parents immigrants									
CEE <sup>a</sup> immigrant									
FSU <sup>b</sup> immigrant									
LAA <sup>c</sup> immigrant									
Other European immigrant									
Other <sup>d</sup> immigrant									

	Young			Mature			Total		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
<b>Potentially negative factors</b>									
Student									
Person with disability									
Was unemployed for 3 months									
Was unemployed for 1 year									
Informal employment									
<b>Personality traits</b>									
Creativity very important									
Success very important									
<b>Education (relative to secondary education)</b>									
Primary									
Tertiary									
<b>Parental and partner effects</b>									
Higher education, mother									
Higher education, father									
Higher education, partner									
Parent supervises others									
<b>Macro-level factors</b>									
Tertiary graduates, share									
Unemployment rate									
ISCO 1–3, share									

<sup>a</sup> Central and Eastern Europe. <sup>b</sup> Former Soviet Union. <sup>c</sup> Africa, Asia and Latin America. <sup>d</sup> Immigrants from Australia, Canada, Japan, Republic of Korea, New Zealand or the United States.

Note: Red cells show significant negative effects (odds ratios < 1), green cells show significant positive effects (odds ratios > 1), white cells show insignificant effects, and grey cells show variables not included in a given model.

Source: ILO calculations based on the European Social Survey (Norwegian Social Science Data Services, 2002; 2004; 2006; 2008; 2010).

**Table C5. Summary of undereducation model results**

	Young			Mature			Total		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
<b>Demographics</b>									
Age									
Age <sup>2</sup> /100									
Young									
Female									
<b>Number of children (relative to no children)</b>									
1									
2									
3+									
<b>Partner employment status (relative to no partner)</b>									
Unemployed									
Employed									
Supervising others									
<b>Domicile (relative to rural)</b>									
Big city									
Small city									
<b>Firm size (relative to &lt;10 employees)</b>									
10–24									
25–99									
100–499									
500+									
<b>Immigrant background (relative to non-immigrant)</b>									
Minority									
One parent-immigrant									
Both parents immigrants									
CEE <sup>a</sup> immigrant									
FSU <sup>b</sup> immigrant									
LAA <sup>c</sup> immigrant									
Other European immigrant									
Other <sup>d</sup> immigrant									

	Young			Mature			Total		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
<b>Potentially negative factors</b>									
Student									
Person with disability									
Was unemployed for 3 months									
Was unemployed for 1 year									
Informal employment									
<b>Personality traits</b>									
Creativity very important									
Success very important									
<b>Education (relative to secondary education)</b>									
Primary									
Tertiary									
<b>Parental and partner effects</b>									
Higher education, mother									
Higher education, father									
Higher education, partner									
Parent supervises others									
<b>Macro-level factors</b>									
Tertiary graduates, share									
Unemployment rate									
ISCO 1–3, share									

<sup>a</sup> Central and Eastern Europe. <sup>b</sup> Former Soviet Union. <sup>c</sup> Africa, Asia and Latin America. <sup>d</sup> Immigrants from Australia, Canada, Japan, Republic of Korea, New Zealand or the United States.

Note: Red cells show significant negative effects (odds ratios < 1), green cells show significant positive effects (odds ratios > 1), white cells show insignificant effects, and grey cells show variables not included in a given model.

Source: ILO calculations based on the European Social Survey (Norwegian Social Science Data Services, 2002; 2004; 2006; 2008; 2010).

## Annex D. Selected tables from the SWTS, ten countries

Table D1. Source information

	Armenia	Cambodia	Egypt	FYR Macedonia	Jordan	Liberia	Malawi	Peru	Russian Federation	Togo
Implementation partner	National Statistical Service	National Institute of Statistics	Central Agency for Public Mobilization and Statistics	State Statistical Office	Department of Statistics	Liberian Institute of Statistics and Geo-Information Services	National Statistics Office	Instituto Nacional de Estadística e Informática	Russian Federal State Statistics Service	Direction Générale de la Statistique et de la Comptabilité Nationale
Sample size	3216	3552	5198	2994	5405	1876	3102	2464	3890	2033
Geographic coverage	National	National	National	National	National	National	National	Urban	11 regions	National
Reference period	October and November 2012	July and August 2012	December 2012	Third quarter (July-September) 2012	December 2012 to February 2013	July and August 2012	August and September 2012	December 2012 and January 2013	July 2012	July and August 2012

Table D2. Youth labour market indicators, ten SWTS countries, both sexes, age group 15–29, 2012 (%)

	Armenia	Cambodia	Egypt	FYR Macedonia	Jordan	Liberia	Malawi	Peru	Russian Federation	Togo
Employment-to-population ratio	30.7	74.1	50.5	27.9	29.9	49.3	66.5	54.0	53.6	62.4
Labour force participation rate	43.9	75.7	58.4	49.3	39.4	61.4	72.1	60.4	60.7	67.4
Inactivity rate	56.1	24.3	41.6	50.7	60.6	38.6	27.9	39.6	39.3	32.6
Unemployment rate (strict definition)	30.2	2.1	13.5	43.3	24.1	19.8	7.8	10.6	11.7	7.5
Unemployment rate (relaxed definition)	35.4	3.8	19.5	46.7	30.0	37.0	18.9	18.8	15.9	16.8
Vulnerable employment rate	11.7	52.2	15.1	16.7	3.3	68.5	72.2	23.2	8.4	71.9
Share neither in employment nor in education or training (NEET)	27.4	8.7	25.2	30.0	29.0	16.8	17.6	17.9	15.7	10.9
Share neither in the labour force nor in education or training (NLFET)	15.4	6.7	17.7	8.3	20.0	5.2	5.5	14.4	10.1	7.9
Labour underutilization rate	42.3	64.2	67.4	46.2	32.9	77.5	79.1	63.4	25.0	71.8

Note: Vulnerable employment is the sum of own-account workers and contributing family workers. The labour underutilization rate is the share of youth in irregular employment, unemployed (relaxed definition) and youth neither in the labour force nor in education/training (inactive non-students).

**Table D3. Youth labour market indicators, ten SWTS countries, males, age group 15–29, 2012 (%)**

	Armenia	Cambodia	Egypt	FYR Macedonia	Jordan	Liberia	Malawi	Peru	Russian Federation	Togo
Employment-to-population ratio	39.9	76.1	70.9	30.7	47.2	54.9	73.2	61.0	58.7	59.5
Labour force participation rate	53.0	77.8	76.1	55.2	58.0	64.7	77.5	67.0	66.4	65.2
Inactivity rate	47.0	22.2	23.9	44.8	42.0	35.3	22.5	33.0	33.6	34.8
Unemployment rate (strict definition)	24.6	2.1	6.8	44.4	18.7	15.1	5.6	9.0	11.7	8.8
Unemployment rate (relaxed definition)	27.6	3.3	8.6	48.0	22.1	30.2	12.5	14.6	14.8	16.8
Vulnerable employment rate	14.8	49.9	17.7	20.3	4.1	65.4	68.1	25.2	9.8	66.0
Share neither in employment nor in education or training (NEET)	15.9	4.8	9.2	28.0	14.9	12.4	8.9	9.4	10.6	6.6
Share neither in the labour force nor in education or training (NLFET)	5.5	3.2	4.4	2.5	4.9	3.3	2.2	6.5	4.5	3.8
Labour underutilization rate	34.9	60.6	69.7	47.2	20.6	72.9	74.5	60.9	22.6	64.2

Note: See table D2.

**Table D4. Youth labour market indicators, ten SWTS countries, females, age group 15–29, 2012 (%)**

	Armenia	Cambodia	Egypt	FYR Macedonia	Jordan	Liberia	Malawi	Peru	Russian Federation	Togo
Employment-to-population ratio	23.3	72.3	19.5	25.0	11.2	44.4	60.3	47.2	48.7	64.8
Labour force participation rate	36.8	73.9	31.5	42.9	19.3	58.5	67.1	54.0	55.1	69.3
Inactivity rate	63.2	26.1	68.5	57.1	80.7	41.5	32.9	46.0	44.9	30.7
Unemployment rate (strict definition)	36.6	2.1	38.1	41.8	41.8	24.2	10.1	12.6	11.6	6.4
Unemployment rate (relaxed definition)	43.7	4.1	51.4	44.7	52.1	42.9	25.0	23.5	17.2	16.8
Vulnerable employment rate	8.3	54.2	7.6	12.2	1.3	71.9	76.8	20.5	6.8	76.7
Share neither in employment nor in education or training (NEET)	36.5	11.9	49.4	32.2	44.2	20.5	25.5	26.2	20.6	14.6
Share neither in the labour force nor in education or training (NLFET)	23.3	9.7	37.7	14.5	36.5	6.8	8.5	22.0	15.7	11.4
Labour underutilization rate	48.1	67.1	64.0	45.1	46.2	81.6	83.3	65.9	27.4	78.3

Note: See table D2.

**Table D5. Indicators on quality of employment, ten SWTS countries, both sexes, age group 15–29, 2012 (%)**

	Armenia	Cambodia	Egypt	FYR Macedonia	Jordan	Liberia	Malawi	Peru	Russian Federation	Togo
Regular employment rate	67.2	26.4	17.9	51.8	90.9	11.8	12.2	26.4	87.9	12.9
Irregular employment rate	32.8	73.6	82.1	48.2	9.1	88.2	87.4	73.6	12.1	87.1
Share in satisfactory employment	77.9	90.0	73.3	72.7	84.5	68.2	68.9	89.0	86.2	69.6
Share in non-satisfactory employment	22.1	10.0	20.9	27.3	15.5	31.7	31.2	11.0	8.1	30.4
Informal employment rate	64.2	98.3	91.3	48.4	46.8	82.5	96.4	83.5	50.9	89.1
Involuntary part-time employment rate	9.5	9.6	2.0	6.4	2.1	14.2	13.8	14.2	2.0	13.8
Share of overeducated workers	21.6	4.2	11.1	19.0	9.4	9.3	1.7	30.3	13.8	3.6
Share of undereducated workers	11.4	56.4	33.9	14.4	43.0	45.7	81.8	17.4	31.0	54.7
Temporary employment rate	9.5	9.3	54.2	15.8	4.6	3.5	8.1	45.6	2.4	3.7
Share earning below-average wages	58.3	76.6	–	52.9	60.6	73.7	74.8	63.4	30.9	62.5
Share earning average wages or higher	41.7	23.4	–	47.1	39.4	26.3	25.2	36.6	69.1	37.5

– = not available.

Note: Figures are shares in total youth employment (aged 15–29), except for (a) the shares of workers earning below and above average wages, which are presented as the share of employees and own-account workers only, and (b) overeducated and undereducated workers, which are percentages of employed youth with completed education (i.e. excluding currently working students). Involuntary part-time employment is defined as persons working less than 30 hours per week who state they would like to work more hours (regardless of whether or not they sought additional hours of work).

**Table D6. Stages of labour market transition, ten SWTS countries, both sexes, age group 15–29, 2012 (% share in total youth population)**

	Armenia	Cambodia	Egypt	FYR Macedonia	Jordan	Liberia	Malawi	Peru	Russian Federation	Togo
Total transitioned	26.6	68.6	37.9	21.5	28.8	35.0	49.3	49.6	50.0	45.5
Stable employment	20.1	18.6	7.6	14.2	26.7	4.1	8.1	12.9	47.0	6.7
Satisfactory self-employment or temporary employment	6.5	50.0	30.3	7.3	2.0	30.9	41.2	36.7	3.0	38.8
Total in transition	33.8	13.9	26.3	35.2	19.0	47.1	37.1	24.7	14.5	34.0
Unemployed (relaxed definition)	16.8	2.9	12.2	24.5	12.8	28.9	15.5	12.5	10.2	12.6
Non-satisfactory self-employment or temporary employment	4.1	5.5	9.7	6.5	1.2	14.3	17.2	4.5	0.5	16.8
Inactive non-students with future plans to work	12.9	5.5	4.3	4.3	5.0	3.9	4.4	7.8	3.8	4.5
Transition not yet started	39.1	17.1	32.9	43.3	52.2	17.8	13.6	23.1	29.6	20.5

**Table D7. Stages of labour market transition, ten SWTS countries, males, age group 15–29, 2012 (% share in male youth population)**

	Armenia	Cambodia	Egypt	FYR Macedonia	Jordan	Liberia	Malawi	Peru	Russian Federation	Togo
Total transitioned	33.9	70.6	52.3	22.7	45.5	39.2	54.7	56.4	54.3	43.7
Stable employment	24.7	20.5	9.1	14.1	42.1	6.7	12.0	14.2	49.6	8.4
Satisfactory self-employment or temporary employment	9.3	50.1	43.1	8.6	3.4	32.5	42.7	42.2	4.6	35.3
Total in transition	24.9	10.5	24.0	38.1	17.3	41.9	30.9	17.6	12.9	30.3
Unemployed (relaxed definition)	15.2	2.6	6.7	28.4	13.4	23.7	10.5	10.4	10.2	12.0
Non-satisfactory self-employment or temporary employment	6.0	5.6	14.5	8.0	1.7	15.7	18.6	4.6	0.7	15.8
Inactive non-students with future plans to work	3.8	2.4	2.8	1.7	2.2	2.5	1.8	2.6	2.0	2.5
Transition not yet started	40.9	18.1	19.6	39.2	37.2	18.6	14.3	23.7	28.4	25.9

**Table D8. Stages of labour market transition, ten SWTS countries, females, age group 15–29, 2012 (% share in female youth population)**

	Armenia	Cambodia	Egypt	FYR Macedonia	Jordan	Liberia	Malawi	Peru	Russian Federation	Togo
Total transitioned	20.7	66.9	37.9	20.2	10.7	31.3	44.5	42.9	45.9	47.0
Stable employment	16.4	17.0	7.6	14.4	10.1	1.8	5.1	11.7	44.4	5.3
Satisfactory self-employment or temporary employment	4.3	49.9	30.3	5.8	0.6	29.5	39.4	31.3	1.5	41.8
Total in transition	40.9	16.7	26.3	32.2	20.8	51.6	42.7	31.7	16.0	37.0
Unemployed (relaxed definition)	18.1	3.1	12.2	20.2	12.2	33.4	20.1	14.5	10.1	13.1
Non-satisfactory self-employment or temporary employment	2.6	5.4	9.7	4.8	0.5	13.1	15.9	4.3	0.3	17.7
Inactive non-students with future plans to work	20.2	8.2	4.3	7.2	8.0	5.2	6.7	12.9	5.5	6.2
Transition not yet started	37.6	16.2	32.9	47.7	68.5	17.0	12.8	22.5	30.7	15.9

**Table D9. Flows to completed labour market transition, nine SWTS countries, both sexes, age group 15–29, 2012 (% share in total transited youth)**

	Armenia	Cambodia	Egypt	FYR Macedonia	Jordan	Liberia	Malawi	Russian Federation	Togo
Direct transition	38.3	45.3	56.8	24.5	33.5	63.2	41.5	44.9	45.8
From unemployment	35.8	0.1	10.7	58.8	38.6	1.4	3.1	8.1	3.4
From own-account work	1.0	1.4	0.2	0.3	0.4	3.7	10.0	1.9	4.3
From unpaid family work	1.2	19.8	0.5	1.3	1.6	7.1	15.5	1.1	19.3
From other employment	5.6	26.5	21.4	9.5	20.5	3.0	14.2	32.2	17.2
From inactivity	8.2	6.9	10.2	5.6	5.4	3.5	15.7	6.9	9.5
From army	9.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Note: Information on flows are not yet ready for Peru. "Other employment" includes non-satisfactory temporary employment for those who transited to stable employment or satisfactory self-employment or temporary employment, and self-employment as employer or wage and salaried worker for those who transited to satisfactory self-employment or temporary employment. In the case of Armenia only, "other employment" also includes persons who have transited directly from engagement in the army. Armenia maintains mandatory military service (two years) for young men.

**Table D10. Indicators on the path of transition for youth who have completed their labour market transition, nine SWTS countries, both sexes, age group 15–29, 2012**

	Armenia	Cambodia	Egypt	FYR Macedonia	Jordan	Liberia	Malawi	Russian Federation	Togo
Average duration of transition, excluding direct transits (months)	24.9 months	63.7 months	50.6 months	50.3 months	32.8 months	28.3 months	22.6 months	45.2 months	34.8 months
Average duration of transition, including direct transits (months)	14.9 months	9.8 months	15.3 months	36.3 months	17.0 months	6.2 months	13.2 months	23.6 months	18.4 months
Average duration of transition to stable employment (months)	14.3 months	10.1 months	18.8 months	35.3 months	17.0 months	1.1 months	11.7 months	23.4 months	17.6 months
Average duration of transition to satisfactory self-employment or temporary employment (months)	16.7 months	9.7 months	14 months	38.6 months	17.9 months	7.1 months	13.4 months	28.0 months	18.6 months
Average number of intermediary activities	1.8	1.4	1.5	1.6	1.4	1.2	1.6	1.6	1.4
Average number of unemployment spells	1.1	-	1.0	1.1	1.1	1.1	1.0	1.0	-
Average duration of unemployment spells (months)	15.5 months	-	26.8 months	37.1 months	22.3 months	17.3 months	27.1 months	16.5 months	-
Average number of temporary employment spells	1.1	1.0	-	1.3	1.3	1.1	1.3	1.0	-
Average duration of temporary employment spells (months)	12.1 months	30.4 months	-	12.9 months	20.2 months	4.1 months	22.1 months	15.4 months	-
Average number of spells of self-employment	1.1	1.0	-	-	1.0	1.1	1.2	1.1	1.1
Average duration of spells of self-employment (months)	16.8 months	54.7 months	-	-	46.1 months	9.1 months	38.6 months	35.4 months	33.4 months
Share of direct transitions (%)	38.3	45.3	56.8	24.5	33.5	63.2	41.5	44.9	45.8
Share of direct transitions going to stable employment (%)	72.3	32.2	14.7	63.6	93.2	15.9	18.0	95.8	13.5
Share of direct transitions going to satisfactory self-employment or temporary employment (%)	27.7	67.8	85.3	36.4	6.8	84.1	82.0	4.2	86.5

- = not reliable due to small sample.

Note: Information on paths of transition are not yet ready for Peru. Calculations exclude young people who transited directly to stable and/or satisfactory employment, unless otherwise indicated.

## Annex E. Note on global and regional projections

Unemployment rate projections were obtained using the historical relationship between unemployment rates and GDP growth during the worst crisis/downturn period for each country between 1991 and 2005 and during the corresponding recovery period.<sup>1</sup> This was done through the inclusion of interaction terms of crisis and recovery dummy variables with GDP growth in fixed effects panel regressions.<sup>2</sup> Specifically, the logistically transformed unemployment rate was regressed on a set of covariates, including the lagged unemployment rate, the GDP growth rate, the lagged GDP growth rate and a set of covariates consisting of the interaction of the crisis dummy, and of the interaction of the recovery dummy with each of the other variables.

Separate panel regressions were run across three different groupings of countries, based on:

- (1) geographic proximity and economic/institutional similarities;
- (2) income levels;<sup>3</sup>
- (3) level of export dependence (measured as exports as a percentage of GDP).<sup>4</sup>

The rationale behind these groupings is as follows. Countries within the same geographic area or with similar economic/institutional characteristics are likely to be similarly affected by the crisis and have similar mechanisms to attenuate the crisis impact on their labour markets. Furthermore, because countries within geographic areas often have strong trade and financial linkages, the crisis is likely to spill over from one economy to its neighbour (e.g. Canada's economy and labour market developments are intricately linked to developments in the United States). Countries with similar income levels are also likely to have more similar labour market institutions (e.g. social protection measures) and similar capacities to implement fiscal stimulus and other policies to counter the crisis impact. Finally, as the decline in exports was the primary crisis transmission channel from developed to developing economies, countries were grouped according to their level of exposure to this channel, as measured by their exports as a percentage of GDP. The impact of the crisis on labour markets through the export channel also depends on the type of exports (the affected sectors of the economy), the share of domestic value added in exports and the relative importance of domestic consumption (for instance, countries such as India or Indonesia, with a large domestic market, were less vulnerable than countries such as Singapore and Thailand). These characteristics are controlled for by using fixed effects in the regressions.

<sup>1</sup> The crisis period comprises the span between the year in which a country experienced the largest drop in GDP growth, and the "turning point year", when growth reached its lowest level following the crisis, before starting to climb back to its pre-crisis level. The recovery period comprises the years between the "turning point year" and the year when growth returned to its pre-crisis level.

<sup>2</sup> In order to project unemployment during the current recovery period, the crisis-year and recovery-year dummies were adjusted based on the following definition: a country was considered "currently in crisis" if the drop in GDP growth after 2007 was larger than 75 per cent of the absolute value of the standard deviation of GDP growth over the 1991–2008 period and/or larger than 3 percentage points.

<sup>3</sup> The income groups correspond to the World Bank income group classification of four income categories, based on countries' 2008 GNI per capita (calculated using the Atlas method): low-income countries, US\$975 or less; lower middle-income countries, US\$976–3,855; upper middle-income countries, US\$3,856–11,905; and high-income countries, US\$11,906 or more.

<sup>4</sup> The export dependence-based groups are: highest exports (exports  $\geq 70$  per cent of GDP); high exports (exports  $< 70$  per cent but  $\geq 50$  per cent of GDP); medium exports (exports  $< 50$  per cent but  $\geq 20$  per cent of GDP); and low exports (exports  $< 20$  per cent of GDP).

In addition to these three group panel regressions, country-level regressions were run for countries with sufficient data. The ordinary least squares country-level regressions included the same variables as the panel regressions.

Moreover, taking into account the uncertainty around GDP prospects as well as the complexity of capturing the relationship between the GDP and unemployment rate for all the countries, a variety of about ten multilevel mixed-effects linear regressions (varying-intercept and varying-coefficient models) are utilized. The main component that changes across these versions is the lag structure of the independent variables. The potential superiority of these models lies in the fact that not only the panel structure is fully exploited (e.g. increased degrees of freedom) but also the opportunity to estimate the coefficients specifically for each unit (country), taking into account cluster-level unobserved heterogeneity correcting for the random effects approach caveat that the independent variables are not correlated with the random effects term.

Overall, the final projection was generated as a simple average of the estimates obtained from the three group panel regressions and, for countries with sufficient data, the country-level regressions as well. For a selection of countries (35 out of 178), an average of another set of forecast combination was made according to judgemental examination in order to represent more realistically the recent trends observed in the country's economic forecast.

## Refinement of the global and regional projections

In the beginning of Q1 2013, at the time of production of this *Global Employment Trends for Youth* report, 60 out of a total sample of 178 countries had released monthly or quarterly unemployment estimates for the full (29 countries) or a portion of (remaining 31 countries) 2012. For the 29 countries with a reported rate for all the months/quarters in 2012, the simple average over all the months/quarters was used as the point estimate for this year. For the remaining 31 countries, in six countries, estimates were available through November; in four countries, estimates were available through October; in nine countries, estimates were available through September (Q3); in eight countries, estimates were available through June (Q2); and in four countries, estimates were available through March (Q1). These monthly/quarterly data were utilized in order to generate an estimate of the 2012 annual unemployment rate. The 2012 projection for the rest of the sample (countries without any data for 2012), as well as projections for 2013 onwards, were produced by the extension of the GET Model using the relationship between economic growth and unemployment during countries' previous recovery periods, as described above.

In generating the 2012 point estimate for the 31 countries for which partial 2012 data were available, the first step was to take an unweighted average of the (seasonally adjusted) unemployment rate over the available months or quarters of 2012, which is defined as the point estimate. Around this point estimate a confidence interval was generated, based on the standard deviation of the monthly or quarterly unemployment rate since the beginning of 2008, multiplied by the ratio of the remaining months or quarters to 12 (for monthly estimates) or four (for quarterly estimates).<sup>5</sup> Thus, all else being equal, the more months of data that are available for a country, the more certain is the estimate of the annual unemployment rate, with uncertainty declining in proportion to the months of available data.

<sup>5</sup> In cases where the ratio of the point estimate and the standard deviation was less than or equal to 5, the standard deviation was instead constructed since the beginning of 2009. The rationale is that the exceptionally high volatility of unemployment rates during the early period of the global financial crisis is unlikely to persist over the short-to-medium term. Rather, the most recent level of volatility can be expected to persist.

In order to integrate the short term and medium-term trends in the movement of unemployment rates, the above point estimate was adjusted according to whether the two trends are in agreement.<sup>6</sup> Specifically:

- if both trends are positive (negative), then the above point estimate was recalculated as a weighted average of 60 (40) per cent of the upper bound and 40 (60) per cent of the lower bound;
- if the two trends are in opposite directions, the unemployment rate of the latest month or quarter available was assigned to the remaining months or quarters of 2012, and the above point estimate was recalculated as an unweighted average over the 12 months or four quarters of 2012.

The underlying assumption is that in cases where there is a clear upward (downward) trend over two consecutive periods, the tendency for the 2012 point estimate will be for somewhat higher (lower) unemployment rates than in the latest month of available data. In cases in which there is no discernible trend over the past two periods, unemployment is expected to remain at the most recent rate, and therefore more weight is given to the latest information available. The final 2012 unemployment rate estimate for these countries is equal to the adjusted point estimate.

The same procedure was followed for the unemployment rate of the youth sub-components for the countries with at least two quarters available in 2012 (42 out of 60 countries).<sup>7</sup> The projections for the unemployment rate of the rest of the sub-components for 2012 onwards were produced with the extension of the GET Model, using separately for each sub-component the same model specifications as for the total unemployment rate. The nominal unemployment for the various sub-components estimated with the extension of the GET Model was aggregated to produce a nominal unadjusted total unemployment level, which may differ from what the above procedure yields for total nominal unemployment. The difference between the total nominal unemployment produced as the sum of the sub-components and the total nominal unemployment estimated separately was distributed among the sub-components in proportion to each sub-component's share of total unemployment.<sup>8</sup> These adjusted point estimates are the final point estimates for the sub-components.

## Confidence interval for the global and regional projections

For the 60 countries for which partial 2012 data were available, the confidence interval remained as described above. For the rest of the countries and for the projections for 2013 onwards, the confidence intervals around the projections were generated with one standard deviation across the projections of the various models' projections, as described above. In order to construct the confidence interval for each sub-component, the ratio of the sub-component unemployment rate to total unemployment rate was applied to the upper- and lower-bound estimates of the total unemployment rate.

Therefore, in order to encourage the reader to concentrate on the wide degree of uncertainty surrounding the central projection instead of the precise central point, the unemployment rate projections are presented along with the confidence intervals. The confidence

<sup>6</sup> The short-term and the longer-term trend are defined, respectively, as the percentage point differences between the unemployment rate of the latest month M (or quarter Q) available and the unemployment rate of the month M-3 (or quarter Q-1), and of the month M-6 (or quarter Q-2), respectively.

<sup>7</sup> For 25 countries out of these 42, all the months/quarters of 2012 were available, and hence the simple average over all those months/quarters was used as the point estimate for this year. For the remaining 17, the same procedure was used as described in the main text.

<sup>8</sup> The underlying assumption is that the relationship between the total unemployment rate and GDP growth is better understood than the relationship between unemployment rates of sub-groups of workers and GDP growth.

intervals are by default constructed symmetrically around the central projection and for the figures presented in the main text the confidence interval is divided into three bands. That is, within the confidence intervals, it can be judged that there is a higher or lower chance that the unemployment rate will be within each band. The choice of three bands in the figures is arbitrary. The central band, coloured with darkest shade, includes the central projection within one-third of the confidence interval, the middle band represents the next one-third of the confidence interval and the outside band with the lightest shade represents the whole confidence interval.

For more information on the methodology of producing world and regional estimates, see [www.ilo.org/trends](http://www.ilo.org/trends).

## Annex F. Skills mismatch

### Skills mismatch between labour supply and demand

Skills mismatch between supply of labour and demand for labour can be quantified using an index of dissimilarity based on the differences in the shares of educational attainment of the employed in comparison with the unemployed. It should be emphasized that this index captures one dimension of mismatch, namely mismatch between skills demand (defined by the skills of the employed) and skills supply (defined by the skills of the unemployed), both proxied by level of educational attainment. The index does not capture mismatch at more detailed levels of skills or mismatch between the skills of the employed and their job requirements. The index is defined as follows:

$$ID^{Mismatch} = \frac{1}{2} \sum_{i=1}^3 ABS \left( \frac{E_i}{E} - \frac{U_i}{U} \right)$$

where:  $i$ : an indicator for the level of education (primary or less; secondary; tertiary);  $ABS$ : the operator for the absolute difference;  $E_i/E$ : the proportion of the employed with education level  $i$ ;  $U_i/U$ : the proportion of unemployed with education level  $i$ .

Apart from being a measure of mismatch between skills supply and demand, the index can be interpreted as a summary measure of the relative position of labour market groups with different levels of education. If primary, secondary and tertiary graduates all have the same unemployment rate, the index will have a value of zero (no dissimilarity between groups), while the index would reach a value of 1 (complete dissimilarity) if, for example, all those with primary and tertiary education are employed and all those with secondary education are unemployed.

### Skills mismatch between job requirements and qualifications

Data from the European Social Survey have been used in this report (Norwegian Social Science Data Services, 2002; 2004; 2006; 2008; 2010). These data are in the form of repeated cross-sections: in every round, a cross-section of individuals is surveyed in the participating countries. It can be argued that, because, among other reasons, labour market policies and education systems affect inhabitants of a country in a similar way, one cannot assume that intra-country observations – in the same round or in different rounds – are uncorrelated. Observations representing different countries, on the other hand, can be assumed to have zero correlation.

In this data structure, the ordinary logistic regression model would fit *population-averaged* probabilities. Consider, for example, a model explaining overeducation and a binary explanatory variable indicating disability of the respondent and assume that its estimated population-averaged odds ratio is 1.20. This would mean that the odds of being overeducated *among all individuals in all countries* is 20 per cent higher for persons with disabilities. (See the end of this section for more on how to interpret odds ratios.)

Another option might be to fit *subject-specific* – in the current case, *country-specific* – probabilities. This might be done using panel data methods, such as a mixed effects logistic

regression model with random intercepts at the level of countries. In particular, this would allow for taking intra-country correlation into account. Continuing the example, if in a mixed effects logistic model the estimated country-specific odds ratio for disability is 1.20, this would mean that the odds of being overeducated *for individuals in a given country* is 20 per cent higher for persons with disabilities.

As compared to the conditional, or fixed-effects, logistic regression model,<sup>1</sup> the mixed-effects model additionally allows for hierarchical clustering (for instance, a hierarchy individual-region-country, allowing for intra-cluster correlations at each level) and random coefficients (so that the coefficient on the variable depends on the country to which the observation belongs). In this report, we used the two-level model, where individuals comprise the first level and countries the second. Countries, thus, form clusters of observations. As will be noted below, random coefficients at the country-level will be added to the model, as needed.

Generally, the model looks as:

$$\Pr(y_{ik} = 1 | \mathbf{u}_k) = \Lambda(\mathbf{x}_{ik}\boldsymbol{\beta} + \mathbf{z}_{ik}\mathbf{u}_k)$$

In this equation, we assume  $M$  clusters (i.e., countries), indexed by  $k$ . The dependent binary variable  $y_{ik}$  represents the state of overeducation or undereducation (depending on the model),  $\mathbf{x}_{ik}$  are the covariates for the fixed effects (corresponding to the results of the ordinary logistic regression) with coefficients (fixed-effects)  $\boldsymbol{\beta}$ . The  $1 \times q$  vector  $\mathbf{z}_{ik}$  stores the covariates for the random effects, representing both random intercepts and random coefficients, as needed. The random effects  $\mathbf{u}_k$  are  $M$  realizations from a multivariate normal distribution with mean  $\mathbf{0}$  and  $q \times q$  variance matrix  $\boldsymbol{\Sigma}$ . The random effects are not estimated directly, but instead are summarized from the unique elements of the matrix  $\boldsymbol{\Sigma}$ . Finally,  $\Lambda(\cdot)$  denotes the logistic cumulative distribution function.

The estimation of mixed effects logistic regression involves estimating an integral, for which no closed-form solution exists. There is thus a need for numeric approximations. Adaptive Gaussian quadrature (AGQ) is usually used for this purpose (see Rabe-Hesketh and Skondral, 2012, pp. 537–40; StataCorp, 2011, pp. 260–63, for details). The accuracy of this method depends on the number of integration points: more integration points lead to results that are more accurate. The trade-off for higher accuracy is exponentially longer computation time. We estimate all mixed effects logistic models with AGQ with seven integration points.

As logit-type regressions are non-linear models, it is most appropriate to report their results using odds ratios.<sup>2</sup> The odds is the expected number of successes (cases where the binary dependent variable is 1) per failure (cases where it is 0). Technically, an odds ratio of independent variable  $x_j$  is (Rabe-Hesketh and Skondral, 2012, p. 503):

$$\frac{\Pr(y = 1 | x_1, \dots, x_j + 1, \dots, x_p) / \Pr(y = 0 | x_1, \dots, x_j + 1, \dots, x_p)}{\Pr(y = 1 | x_1, \dots, x_j, \dots, x_p) / \Pr(y = 0 | x_1, \dots, x_j, \dots, x_p)}$$

The odds ratio thus shows how many times the odds of increases for a one-unit change in the corresponding independent variable. Returning to our example, where reflects that the respondent is overeducated and is the disability dummy, assume that the odds ratio is 1.20. The interpretation is as follows. The ratio of the chances of being overeducated to the chances of being non-overeducated is 20 per cent higher among persons with disabilities than among those with no serious health problems. An odds ratio of exactly 1.0 means that there is no effect from the independent variable.

<sup>1</sup> Fixed-effects logistic model should not be confused with standard logistic model with (in this case, country) fixed effects. The terms “conditional logit” and “fixed-effects logit” are synonymous.

<sup>2</sup> Rabe-Hesketh and Skondral (2012, p. 504) note that reporting the results of logit-type models using odds ratios is “natural because the log odds is a linear function of covariates.” This is contrasted with marginal effects or partial effects, which are nonlinear functions of covariates.

## Annex G. Global Employment Trends – Regional groupings

### Developed Economies and European Union

#### *European Union*

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  
United Kingdom

#### *North America*

Canada

United States

#### *Other developed economies*

Australia

Israel

Japan

New Zealand

#### *Western Europe (non-EU)*

Iceland

Norway

Switzerland

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

#### *Central and South-Eastern Europe (non-EU)*

Albania  
Bosnia and Herzegovina  
Croatia  
Georgia  
Montenegro  
Serbia  
The former Yugoslav Republic of Macedonia  
Turkey

#### *Commonwealth of Independent States*

Armenia  
Azerbaijan  
Belarus  
Kazakhstan  
Kyrgyzstan  
Republic of Moldova  
Russian Federation  
Tajikistan  
Turkmenistan  
Ukraine  
Uzbekistan

### South Asia

Afghanistan  
Bangladesh  
Bhutan  
India  
Maldives  
Nepal  
Pakistan  
Sri Lanka

### South-East Asia and the Pacific

#### *South-East Asia*

Brunei Darussalam  
Cambodia  
Indonesia  
Lao People's Democratic Republic  
Malaysia  
Myanmar  
Philippines  
Singapore  
Thailand  
Timor-Leste  
Viet Nam

#### *Pacific Islands*

Fiji  
Papua New Guinea  
Solomon Islands

### East Asia

China  
Hong Kong, China  
Korea, Democratic People's Republic of  
Korea, Republic of  
Macau, China  
Mongolia  
Taiwan, China

### Latin America and the Caribbean

#### *Caribbean*

Bahamas  
Barbados  
Cuba  
Dominican Republic  
Guadeloupe  
Guyana  
Haiti  
Jamaica  
Martinique  
Netherlands Antilles  
Puerto Rico  
Suriname  
Trinidad and Tobago

#### *Central America*

Belize  
Costa Rica  
El Salvador  
Guatemala  
Honduras  
Mexico  
Nicaragua  
Panama

#### *South America*

Argentina  
Bolivia  
Brazil  
Chile  
Colombia  
Ecuador  
Paraguay  
Peru  
Uruguay  
Venezuela, Bolivarian Republic of

### Middle East

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

### North Africa

Algeria  
Egypt  
Libya  
Morocco  
Sudan  
Tunisia

### Sub-Saharan Africa

#### *Eastern Africa*

Burundi  
Comoros  
Eritrea  
Ethiopia  
Kenya  
Madagascar  
Malawi  
Mauritius  
Mozambique  
Réunion  
Rwanda  
Somalia  
Tanzania, United Republic of

#### *Uganda*

Zambia  
Zimbabwe

#### *Middle Africa*

Angola  
Cameroon  
Central African Republic  
Chad  
Congo, Republic of the  
Congo, Democratic Republic of the  
Equatorial Guinea  
Gabon

#### *Southern Africa*

Botswana  
Lesotho  
Namibia  
South Africa  
Swaziland

#### *Western Africa*

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