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Is education the solution to decent work for youth in developing economies?

Identifying qualifications mismatch from 28 school-to-work transition surveys

Theo Sparreboom and Anita Staneva

December 2014

Youth Employment Programme
Employment Policy Department

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Preface

Youth is a crucial time of life when young people start realizing their aspirations, assuming their economic independence and finding their place in society. The global jobs crisis has exacerbated the vulnerability of young people in terms of: (i) higher unemployment, (ii) lower quality jobs for those who find work, (iii) greater labour market inequalities among different groups of young people, (iv) longer and more insecure school-to-work transitions, and (v) increased detachment from the labour market.

In June 2012, the International Labour Conference of the ILO resolved to take urgent action to tackle the unprecedented youth employment crisis through a multi-pronged approach geared towards pro-employment growth and decent job creation. The resolution "The youth employment crisis: A call for action" contains a set of conclusions that constitute a blueprint for shaping national strategies for youth employment.[1] It calls for increased coherence of policies and action on youth employment across the multilateral system. In parallel, the UN Secretary-General highlighted youth as one of the five generational imperatives to be addressed through the mobilization of all the human, financial and political resources available to the United Nations (UN). As part of this agenda, the UN has developed a System-wide Action Plan on Youth, with youth employment as one of the main priorities, to strengthen youth programmes across the UN system.

The ILO supports governments and social partners in designing and implementing integrated employment policy responses. As part of this work, the ILO seeks to enhance the capacity of national and local level institutions to undertake evidence-based analysis that feeds social dialogue and the policy-making process. To assist member States in building a knowledge base on youth employment, the ILO has designed the "school-to-work transition survey" (SWTS). The current report, which examines the relationship between education and employment outcomes among youth in developing countries, is a product of a partnership between the ILO and The MasterCard Foundation. The Work4Youth project entails collaboration with statistical partners and policy-makers of 28 low- and middle-income countries to undertake the SWTS and assist governments and the social partners in the use of the data for effective policy design and implementation. This report will contribute to the dialogue on how to address discrepancies between the supply and demand for youth labour more effectively in order to ensure that young people are better equipped to transition to quality employment.

It is not an easy time to be a young person in the labour market today. The hope is that, with leadership from the UN system, with the commitment of governments, trade unions and employers' organizations and through the active participation of donors such as The MasterCard Foundation, the international community can provide the effective assistance needed to help young women and men make a good start in the world of work. If we can get this right, it will positively affect young people's professional and personal success in all future stages of life.

Azita Berar Awad
Director
Employment Policy Department

[1] 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 [10 Oct. 2014].

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Acknowledgements

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1. Introduction

Across the world, young people face real and increasing difficulties in finding decent work (ILO, 2012a). As a consequence of the recent economic crisis, youth unemployment has risen dramatically and has become a particular cause for concern, posing a threat to the social, economic and political stability of many countries. Young women and men are also more likely to hold "non-standard" employment, notably informal employment, and such employment has, ironically, become "standard" among young workers in developing countries (Shehu and Nilsson, 2014). At the same time, particularly in developing countries, both the quantity and the quality of education continue to be a major cause for concern. The central role that education plays in development is widely recognized, and has been identified as a priority area in internationally agreed development goals, including the Millennium Development Goals[2] and the World Programme of Action for Youth.[3] Nevertheless, many young people are leaving formal education without even basic literacy and numeracy skills, or with qualifications that do not match labour market needs.

Against this background, and given the increasing attention paid to the issue of "skills mismatch" as a constraint to economic recovery in advanced economies, this report aims to provide up-to-date evidence on labour market outcomes and education for the population of youth aged 15 to 29[4] in developing economies, which still make up 90 per cent of the global youth population. In advanced economies, qualifications mismatch is presumed to mean primarily "overeducation", whereby stunted economic growth results in a scarcity of jobs to absorb the higher skilled youth who subsequently take up jobs for which they are overqualified.[5] In low-income economies, in contrast, the "undereducation" of young workers remains the principal concern, and an important hindrance to transformative growth. The lack of quality education in many areas of low-income countries perpetuates the cycle, whereby poverty results in low levels of education which results in vulnerable employment, undereducation and low wages of young workers and a subsequent lack of financial means to fund the education of the next generation of youth. In this regards, the report will confirm the role of education in shaping labour market outcomes for young people and the need for renewed concentration of efforts towards investment in quality education, from pre-primary through tertiary levels, in the development agenda.

The findings also underline the labour market segmentation in developing economies, in particular between workers in non-vulnerable employment (employers and employees) and those in vulnerable employment (own-account workers and contributing family workers). Workers in vulnerable employment are severely disadvantaged by both higher levels of qualifications mismatch and much lower levels of educational attainment. In low-income countries, underqualification resulting from low levels of education is also more prevalent. Returns to education differ widely between workers in paid employment, for whom an additional year of schooling generally results in a higher income, and those in own-account work, for whom significant returns are far less certain. Finally, the findings also point to the increasing importance of educational attainment beyond the primary level.

The title of this report asks the question "Is education the solution to decent work for youth in developing economies". Among the 27 low- to upper-middle income countries

[2] Available at http://unstats.un.org/unsd/mdg/Default.aspx.

[3] Available at http://social.un.org/index/Youth/WorldProgrammeofActionforYouth.aspx.

[4] Unless indicated otherwise, we will use the terms "youth" and "young workers" for the age group 15–29 in this report; however, the age group 15–24 is used in early sections when we draw on other reports, and not on SWTS data.

[5] See ILO (2014b) for a recent discussion on skills mismatch in Europe.

examined in this report,[6] attainment of the highest level of education (tertiary) serves as a fairly dependable guarantee towards securing a non-vulnerable job; on average, eight in ten (83 per cent) of youth with tertiary education were in non-vulnerable employment.[7] The "guarantee" is slightly less among the low-income countries, but even here, 75 per cent of tertiary graduates were working in non-vulnerable employment. Unfortunately, completion of education at the secondary level alone is not enough to push youth through towards better labour market outcomes in low-income countries. Only four in ten young secondary-school graduates were engaged in non-vulnerable employment in the low-income countries (compared to seven in ten (72 per cent) in lower middle-income countries).

Increasing the level of education of the emerging workforce in developing economies will not in itself ensure an easy absorption of the higher skilled labour into non-vulnerable jobs. Yet it is clear that continuing to push forth undereducated, underskilled youth into the labour market is a no-win situation, both for the young person who remains destined for a hand-to-mouth existence based on vulnerable employment and for the economy which gains little in terms of boosting its labour productivity potential.

The report builds on the school-to-work transition surveys (SWTS) that were conducted in 28 countries worldwide in 2012 and 2013 as part of the Work4Youth project. This project is a five-year partnership between the ILO and The MasterCard Foundation that aims to promote decent work opportunities for young men and women through knowledge and action (see Annex II for more details). The surveys were conducted in the following countries:

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

This report contains seven sections. Section 2 provides a general overview of the economic and labour market context in developing countries based on selected indicators, including education indicators, over time. This section helps to clarify the empirical results from the SWTS in a dynamic perspective. Section 3 reviews the literature on skills mismatch and rate of return analysis in developing countries. Sections 4 to 6 provide empirical evidence on education and the labour market based on the SWTSs conducted in 2012/13. Section 4 summarizes the education profile of youth, which is followed by an analysis of patterns of qualifications mismatch measured in over- and undereducation in section 5 and an examination of rates of return to education in section 6. The final section summarizes the report's findings and examines policy the policy implications.

[6] Excluding Russian Federation as the only high-income country in the countries covered.

[7] Numerous SWTS national reports point out that paid employment (or non-vulnerable employment) is not a perfect equivalent to "decent work" – wages paid can be sporadic and low; basic entitlements such as paid annual or sick leave may be ignored; hours can be long; etc. However, there is at least a greater likelihood of stability in a non-vulnerable position.

2. Economic and social development in developing countries

2.1 Macroeconomic indicators

The analysis in this report builds on the World Bank country classification by level of income per capita, which distinguishes between low-, lower middle-, upper middle- and high-income countries.[8] Developing countries do not comprise a homogenous group with respect to economic and social development, and a comparison of macroeconomic indicators demonstrates important differences across the income groups (table 2.1). Upper middle-income countries have relatively high gross capital formation and low inflation rates. Facing higher rates of inflation, low-income countries have also experienced relatively high levels of foreign direct investment (FDI). In addition, from 2011 to 2012 the inflation rate dropped from 9 to 6 per cent in low-income countries, while its rate of deceleration was much less dramatic in upper middle-income countries.

Table 2.1 Selected macroeconomic indicators in countries by level of income, 2011 and 2012

	2011	2012
Gross capital formation (% of GDP)		
Low-income countries	25.6	27.7
Lower middle-income countries	29.4	28.8
Upper middle-income countries	32.3	32.6
High-income countries	19.7	19.6
FDI, net inflows (% of GDP)		
Low-income countries	4.2	4.8
Lower middle-income countries	2.3	2.1
Upper middle-income countries	3.2	2.8
High-income countries	2.3	1.8
Inflation, consumer prices (annual %)		
Low-income countries	9.0	6.3
Lower middle-income countries	7.3	4.6
Upper middle-income countries	5.0	4.5
High-income countries	3.4	2.6

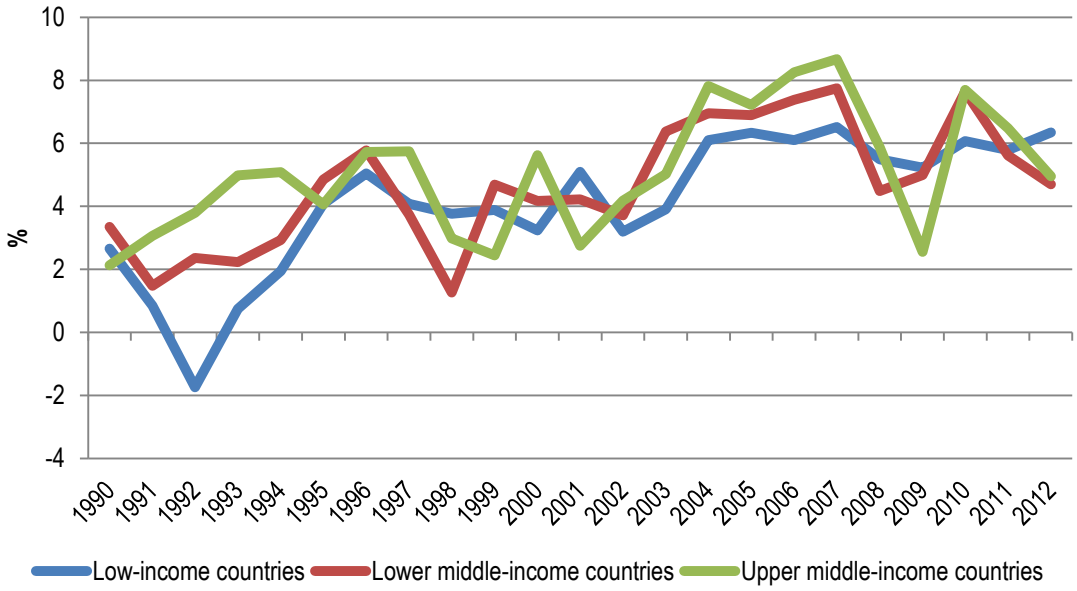
Source: World Bank, 2013a.

Developing countries have benefited from economic growth in developed economies, which contributed to unprecedented gross domestic product (GDP) growth and increased rates of international capital and development aid inflows. In more recent years, GDP growth rates in developing countries have been consistently higher than growth rates in developed countries. Low-income countries have achieved growth rates averaging around 5 per cent between 2000 and 2012, but there have been several episodes of economic downturn over the same period (figure 2.1). The patterns are broadly similar for lower middle-income countries, with economic growth rising to 7.6 per cent in 2010, but dipping to 4.7 per cent in 2012. The upper middle-income countries experienced a relatively sharp

[8] As of July 2013, this classification is based on the following ranges of gross national income (GNI) per capita per annum: low income is defined as US$1,035 or less; lower middle income as US$1,036 to US$4,085; upper middle income as US$4,086 to US$12,615; and high income as US$12,616 or more; low- and middle-income economies are referred to as developing economies.

growth drop during the global economic crisis in 2009, but recovered fairly quickly throughout 2010.

Figure 2.1 Annual growth of GDP in developing countries by level of income, 1990–2012



Source: World Bank, 2013a.

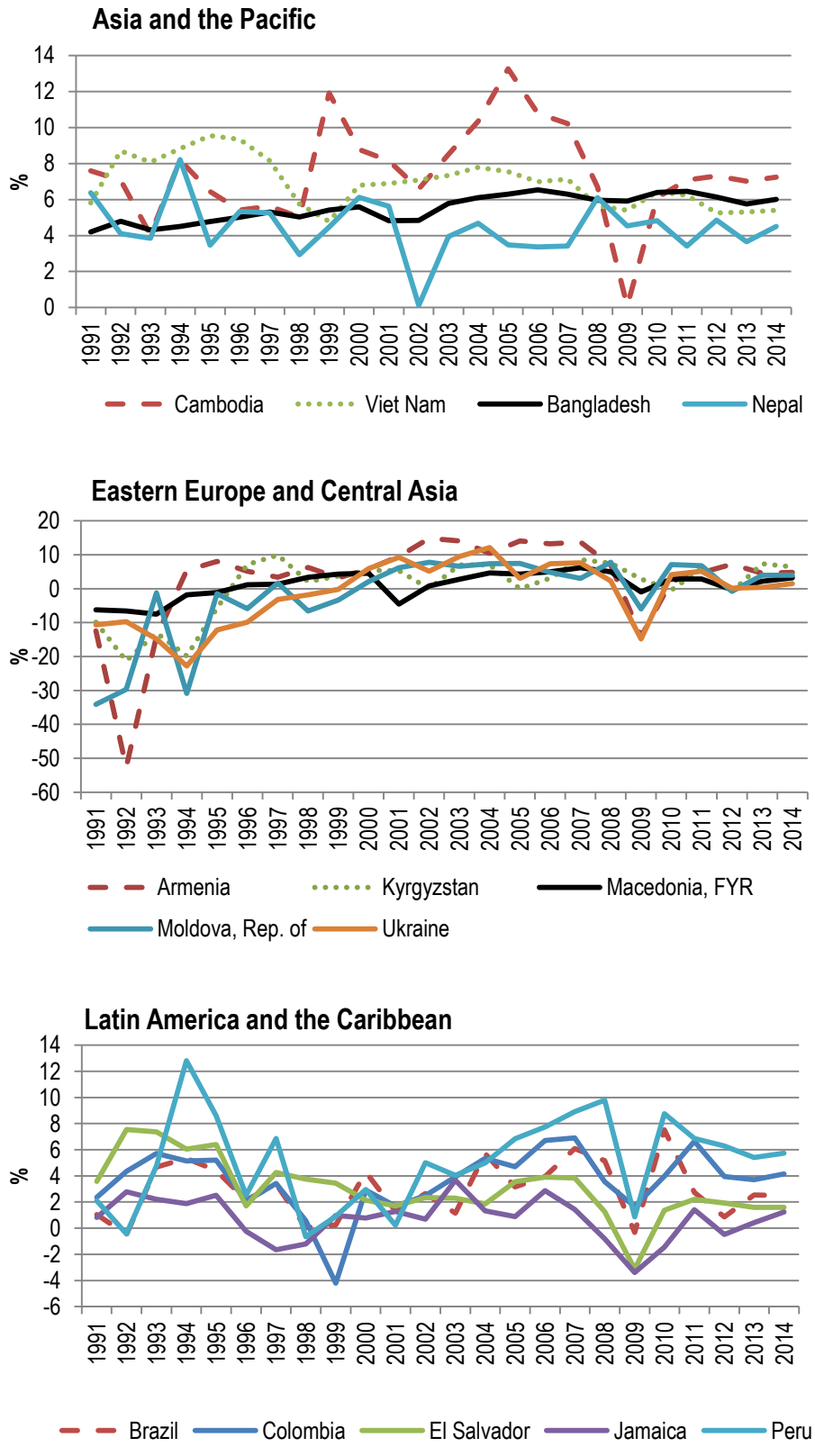
A more detailed look at the annual real growth rates in selected developing countries reveals some disparities within income groups (figure 2.2). For example, Cambodia's economic growth was much higher than Nepal's – another low-income country – during most of the past decade. However, GDP growth in Cambodia slowed more dramatically during the global economic downturn in 2008–09 and then picked up again to reach a four-year high of 7.3 per cent in 2012. The country's economy is projected to grow at around 7 per cent in the next few years, driven by strong exports, private investment and agriculture, and underpinned by a solid macroeconomic position (World Bank, 2013b). Nepal's growth rate has been relatively low in comparison to many other Asian countries, with GDP growth decelerating to 0.1 per cent in 2002, but picking up to an average of just over 4 per cent in the years thereafter.

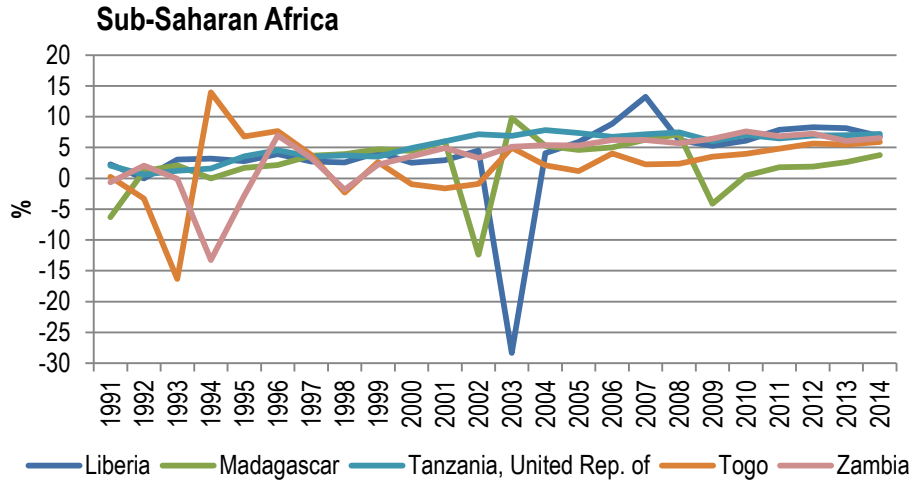
In Eastern Europe and Central Asia, the economic crisis caused by the transition from a planned to a market economy resulted in a large drop in growth in many countries in the early 1990s. During the recent economic crisis, much of the region was again hit hard, but rebounded in subsequent years. Economic growth in Armenia, for example, decreased from 13.8 per cent in 2007 to a negative -14.3 per cent in 2009, and thereafter increased to 7.2 per cent in 2012.

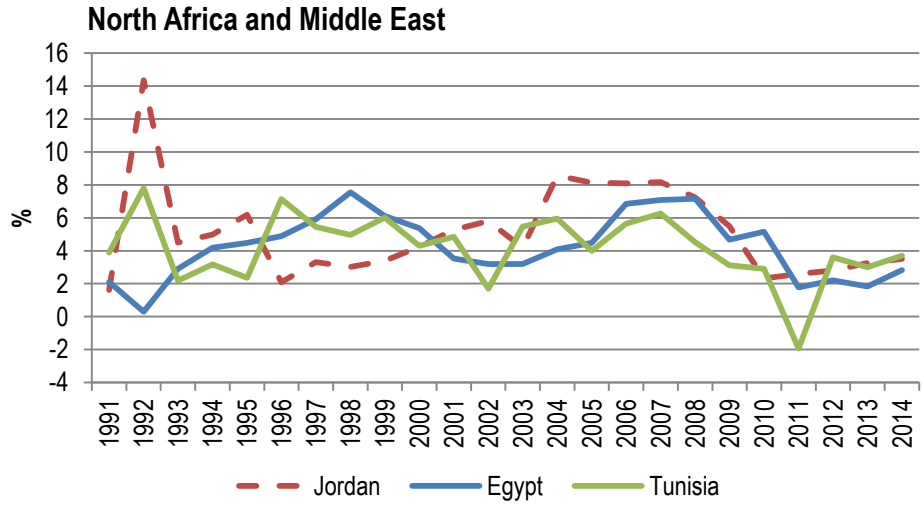
Many middle-income countries in Latin America were also badly hit by the economic crisis, while this shock was often less marked in predominantly low-income sub-Saharan Africa. Nevertheless, economic growth was volatile in some sub-Saharan African countries as a result of weather conditions, conflict or other causes. For example, Liberia's GDP declined by over 30 per cent in 2003, before recovering to double-digit growth rates in response to post-civil war construction, supported by large contributions from the donor community, including financing the reconstruction of basic infrastructure.

Middle-income countries Egypt, Jordan and Tunisia appear to have performed below their longer term trend in economic growth in recent years, in part due to the effects of the Arab Spring. Growth in Egypt, for example, has been close to 2 per cent since 2011.

Figure 2.2 Annual real GDP growth rates in selected developing countries, by region, 1991–2014







Source: IMF, 2013.

Growth across broad economic sectors provides insights into the key driving forces operating within developing countries. Economic growth is often accompanied by structural change, resulting in a reduction in the agricultural sector's share in the economy. Accordingly, value added generated by agriculture as a share of GDP declined from 37.6 per cent in 1990 to 28 per cent in 2012 in low-income countries; and from 26.4 per cent to 17.3 per cent in lower middle-income countries. In upper middle-income countries this share dropped below 10 per cent in the early 2000s. Within the industry sector, the share of manufacturing in low-income countries slightly increased during the 1990–2011 period, but remains much lower than in the two other country groups (table 2.2).

Turning to overall levels of employment, the employment-to-population ratio (EPR) exceeds 70 per cent in low-income countries, which is higher than the EPR for lower and upper middle-income countries (figure 2.3). The high ratio in low-income countries primarily reflects widespread low-quality employment rather than opportunities for decent work, a point which will be discussed in more detail in the next sub-section. Particularly in lower middle-income countries, the average EPR is relatively low due to the low female EPR in populous countries such as Egypt, India and Pakistan. The level of the female EPR may also hamper the identification of patterns of employment and development as it does not rise linearly with levels of income; typically, female participation rates follow a U-shaped pattern, with high participation rates at low levels of income per capita that decrease as countries develop before rising again at higher income levels (see, for example,

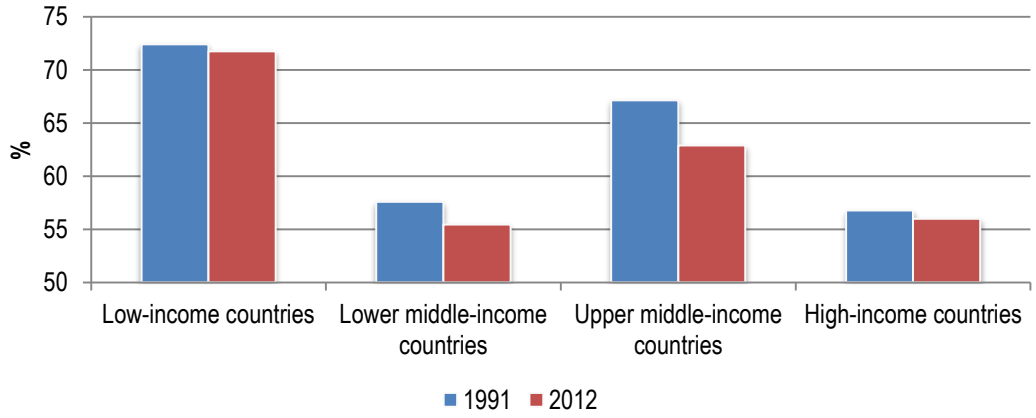
ILO, 2012b). Since the early 1990s, the EPR in all country groupings has shown a decline, which has been more pronounced in upper middle-income countries.

Table 2.2 Sectoral performance and economic structure in developing countries by level of income, selected years

Sector/income grouping	1990	2000	2004	2006	2008	2009	2010	2011	2012
(a) Value added growth by broad sector (% of GDP)									
Agriculture									
Low-income	37.6	33.8	29.9	29.2	28.7	28.7	28.3	28.1	28.0
Lower middle-income	26.4	21.1	18.6	17.5	17.4	17.7	17.5	17.6	17.3
Upper middle-income	17.3	10.1	9.5	8.1	7.9	7.8	7.8	7.9	7.8
Industry									
Low-income	19.4	20.7	22.7	22.9	23.0	22.8	23.3	23.5	23.6
Lower middle-income	30.6	32.0	32.5	33.0	32.8	31.7	32.1	32.1	31.6
Upper middle-income	37.9	38.5	39.3	40.2	39.8	37.8	38.5	38.4	37.7
- of which, manufacturing									
Low-income	11.2	11.5	12.1	12.1	12.4	12.2	12.2	12.3	12.2
Lower middle-income	17.1	17.3	17.7	17.6	17.1	16.5	16.1	16.0	15.5
Upper middle-income	26.0	24.2	24.2	23.8	23.6	23.3	23.5	..	..
Services									
Low-income	43.3	45.0	47.4	47.9	48.3	48.5	48.5	48.3	48.3
Lower middle-income	43.0	47.0	48.9	49.5	49.8	50.6	50.4	50.3	51.2
Upper middle-income	44.9	51.4	51.2	51.7	52.3	54.4	53.7	53.7	54.4
(b) Value added growth by broad sector (annual %)									
Agriculture									
Low-income	5.2	0.8	2.5	3.8	2.8	4.1	4.9	2.5	5.7
Lower middle-income	2.4	1.4	2.5	4.7	3.0	2.7	5.2	4.6	3.0
Upper middle-income	5.1	2.3	5.1	4.5	4.8	2.2	3.7	4.2	2.6
Industry									
Low-income	0.6	4.3	7.5	8.0	5.2	5.2	7.0	9.1	7.3
Lower middle-income	8.1	6.3	6.9	7.3	3.6	3.9	6.8	5.6	3.0
Upper middle-income	1.6	6.2	9.3	9.2	6.1	2.7	9.6	7.3	5.9
- of which, manufacturing									
Low-income	3.8	3.5	6.3	7.6	5.0	3.3	6.9	8.6	6.8
Lower middle-income	6.2	6.3	7.0	8.7	4.1	3.8	7.3	6.0	2.8
Upper middle-income	4.5	8.0	8.4	9.4	6.1	1.6	9.2	–	–
Services									
Low-income	3.0	4.3	5.9	7.4	7.3	6.3	6.7	6.2	6.3
Lower middle-income	5.1	4.5	8.0	8.4	8.1	6.4	8.1	6.3	6.0
Upper middle-income	3.6	6.1	7.3	7.9	6.3	3.1	6.8	6.5	5.4

Source: World Bank, 2013a.

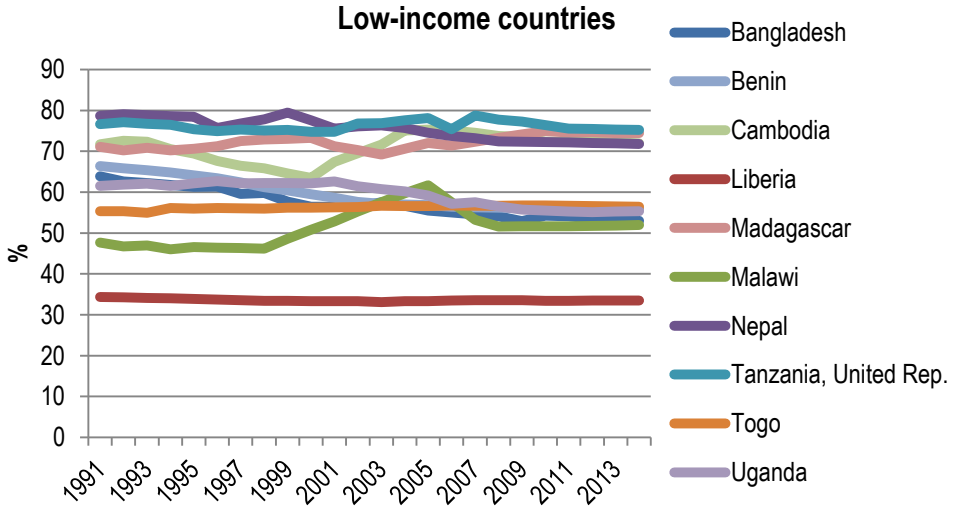
Figure 2.3 Employment-to-population ratio in countries by level of income, 1991 and 2012

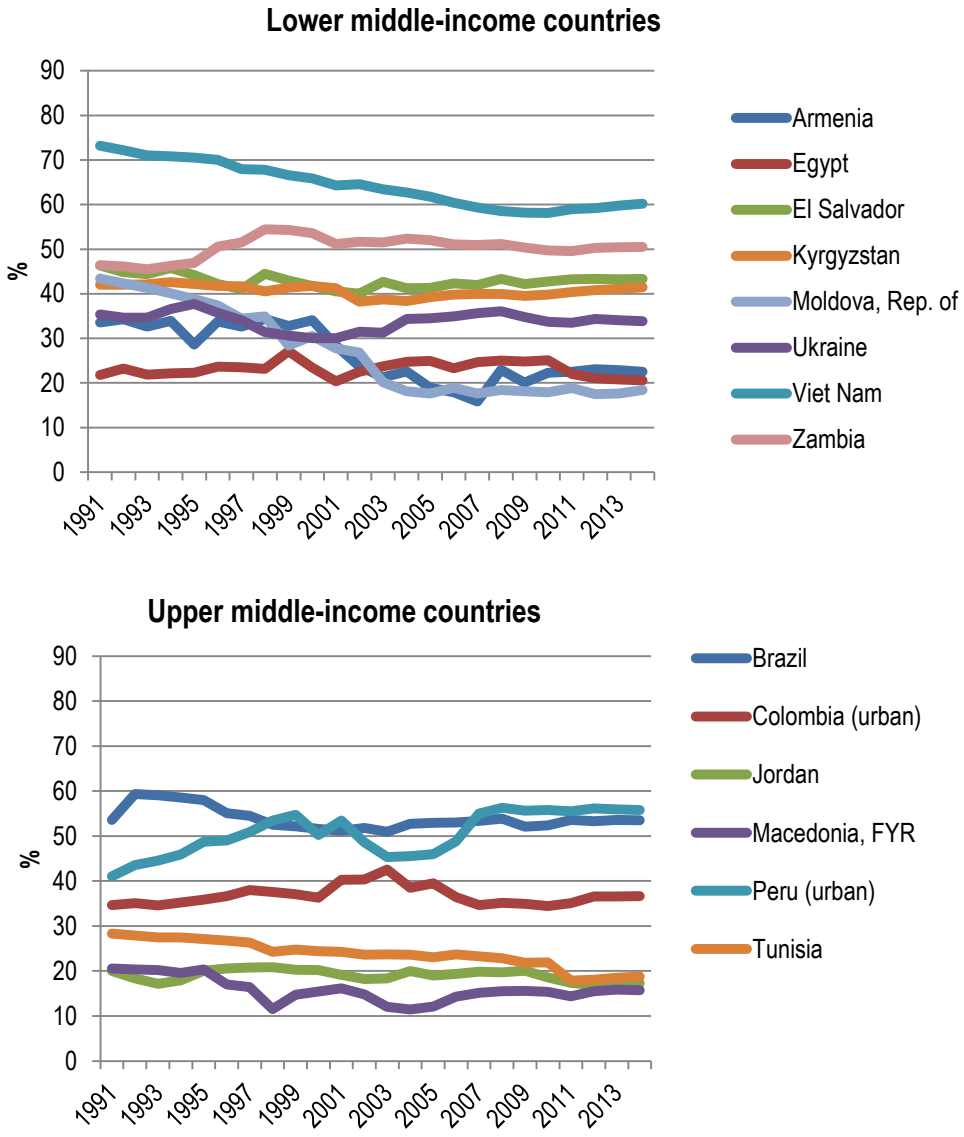


Source: World Bank, 2013a.

The employment-to-population ratio for youth is an important determinant of the overall EPR. Similar to the national EPR, the youth EPR is often lower in middle-income countries in comparison with low-income countries, but country patterns show important variations (figure 2.4). For example, within the group of low-income countries, the youth EPR for the age group 15–24 varies between 34 per cent in Liberia and 75 per cent in the United Republic of Tanzania. Although this trend is not universal, in many countries the youth EPR tends to decrease over time, which helps to explain the decline in the income-grouped EPRs in figure 2.3. The position of women is again important as, for example, relatively low youth EPRs in Egypt, Jordan and Tunisia are, to a significant extent, due to low female participation in labour markets.

Figure 2.4 Youth employment-to-population ratios in selected developing countries by level of income, 1991–2014





Note: The figure shows EPRs for youth aged 15–24.

Source: ILO, 2014a.

As mentioned above, economic growth is often accompanied by structural change, resulting in the agricultural sector having a smaller share in the economy. Structural change is also apparent in the movement of labour out of agriculture into non-agricultural sectors (table 2.3). In low- income countries, the percentage of employment in agriculture declined from 52.4 per cent in 1994 to 37.7 per cent in 2010; industry accounted for 24.9 per cent and the service sector for about 37.3 per cent of employment in 2010. Despite structural change, agriculture remains an important source of employment in developing economies. Even in upper middle-income countries, agriculture still accounted for almost one-third of jobs in 2010, compared with 3.5 per cent in high-income countries, although these countries have experienced faster shifts away from agricultural employment since the early 1990s.

Table 2.3 Employment in developing countries by broad sector and level of income, selected years (%)

Sector/income grouping	1994	2000	2005	2010
Agriculture				
Low-income countries	52.4	48.5	43.9	37.7
Lower middle-income countries	53.4	53.2	49.8	45.8
Upper middle-income countries	49.9	43.9	37.5	32.1
High-income countries	7.2	6.0	4.7	3.5
Industry				
Low-income countries	20.2	19.8	20.9	24.9
Lower middle-income countries	17.4	16.6	19.1	21.4
Upper middle-income countries	23.1	22.8	23.6	27.3
High-income countries	29.9	27.1	25.4	21.8
Services				
Low-income countries	26.8	31.0	35.1	37.3
Lower middle-income countries	27.7	28.7	31.1	32.8
Upper middle-income countries	26.9	33.3	38.8	40.4
High-income countries	62.7	66.7	69.6	74.1

Source: World Bank, 2013a.

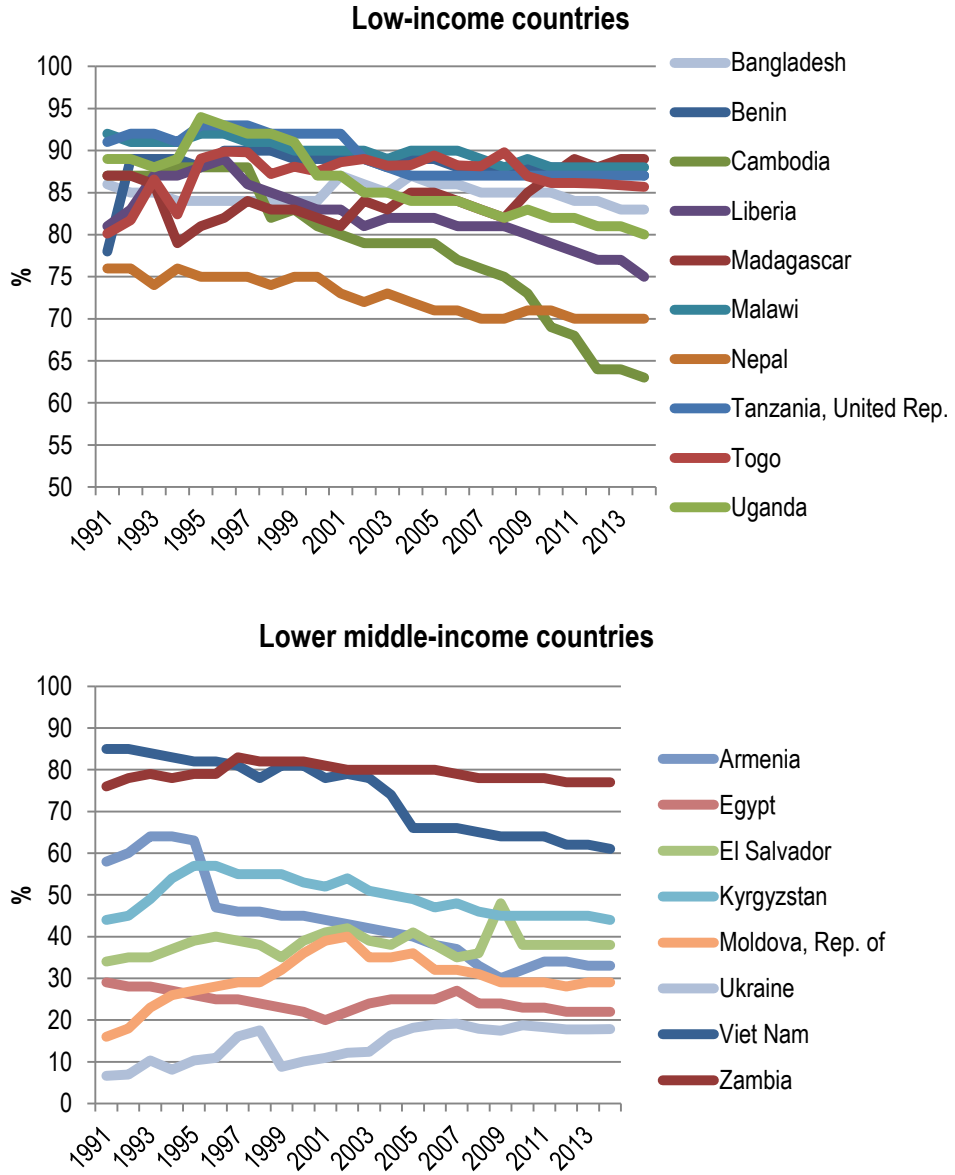
2.2 The labour market context in developing countries

Labour markets in developing countries differ from those in developed countries. High levels of EPRs in developing economies are at least partially due to the relatively large "traditional" segment of the economy in these countries. Dualism between traditional and modern segments characterizes the economic and labour market structure of developing economies, which is reflected in, for example, differences in productivity levels, social protection levels, educational attainment and other features (Campbell, 2013). In terms of employment, dualism can be captured by the distinction between "vulnerable" and "non-vulnerable" employment, which is based on the classification by status in employment. Vulnerable employment consists of the sum of the status groups of own-account workers and contributing family workers, while non-vulnerable employment comprises employers and employees. Own-account workers and contributing family workers are less likely to have formal work arrangements, and are therefore more likely to lack elements associated with decent work, such as adequate social security and recourse to effective social dialogue mechanisms. Vulnerable employment is often characterized by inadequate earnings, difficult conditions of work that undermine workers' fundamental rights, or other characteristics symptomatic of decent work deficits (Sparreboom and Albee, 2011).

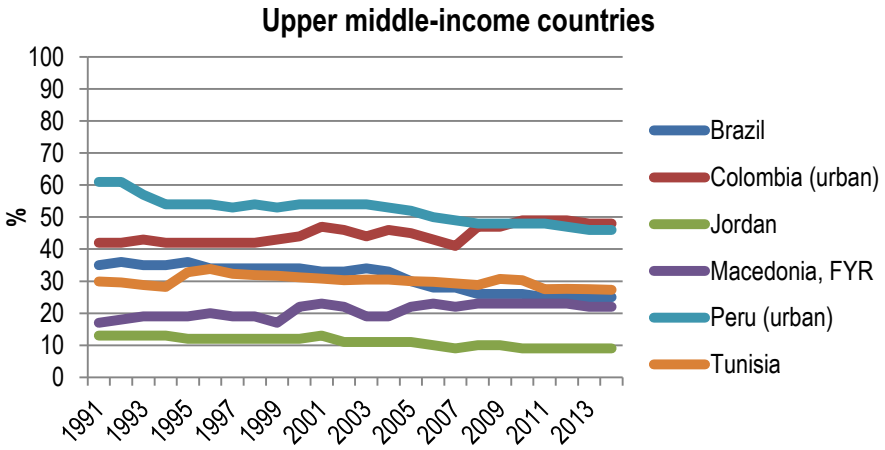
Regionally, the share of workers in vulnerable employment (the vulnerable employment rate) is highest in sub-Saharan Africa, which is dominated by low-income countries, and tends to decline with increasing levels of income (figure 2.5 and ILO, 2014a). In many countries, the vulnerable employment rate has shown at least some decline, indicating growth of wage employment, and in some countries considerable economic success is reflected in a dramatic decrease of the vulnerable employment rate. Viet Nam, for example, which has undergone a steady socio-economic transformation, is estimated to have experienced a decrease in the share of vulnerable employment by more than 20 percentage points between 1991 and 2012 (ILO, 2014a). At the same time, it should be noted that some workers in wage employment, and in particular those in casual/irregular wage work and/or in informal employment, face similar decent work deficits to many own-account workers. Conversely, not all own-account workers are

necessarily "vulnerable" (Sparreboom and De Gier, 2008; Sparreboom and Albee, 2011; Pieters, 2013).[9]

Figure 2.5 Vulnerable employment rate in selected developing countries, by level of income, 1991–2014



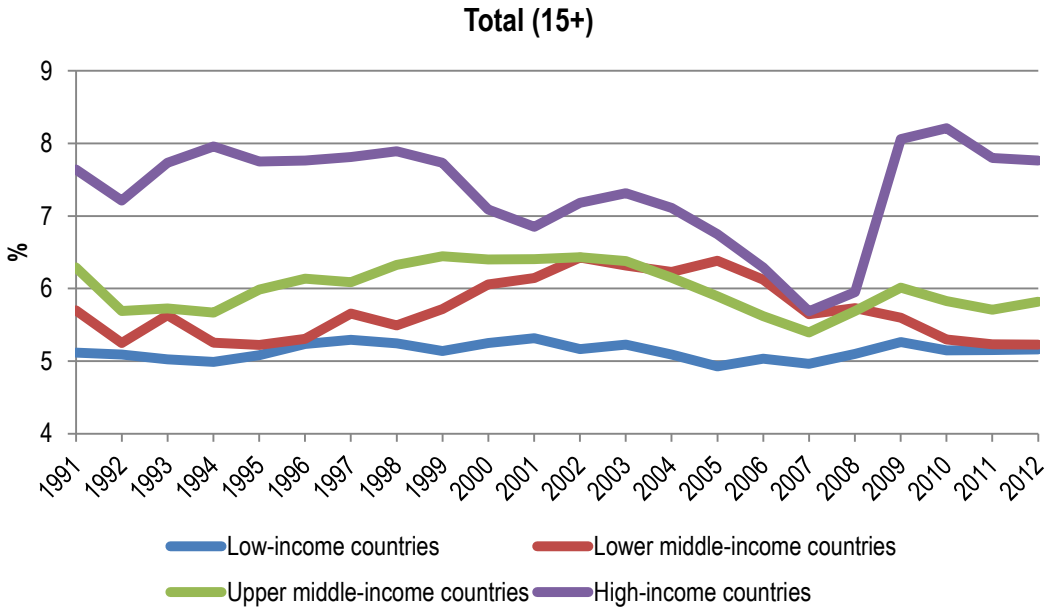
[9] For a discussion of informal (wage) employment based on SWTS data, see Shehu and Nilsson (2014).

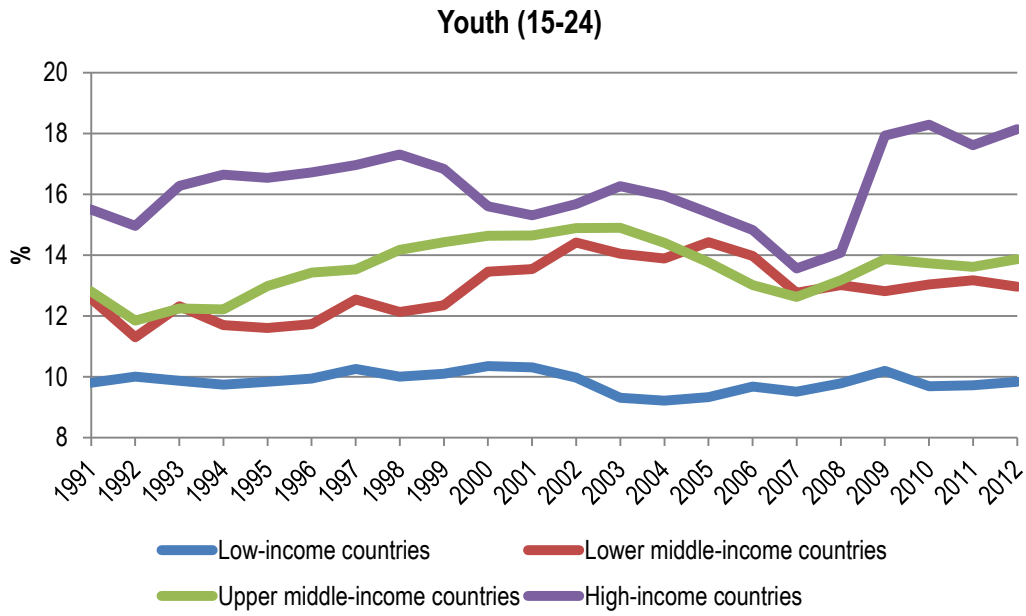


Source: ILO, 2014a.

Another disadvantaged group in the labour market consists of those without work altogether – the unemployed. Unemployment rates tend to be higher in high-income countries, and less responsive to economic conditions in low-income countries, reflecting the need to work to make a living in the absence of adequate social security, particularly in low-income countries. Many developing countries escaped the severe recession that hit high-income countries in 2008–2009, while in the latter the unemployment rate reacted strongly to the economic downturn. For all groups of countries, there are similarities between the development of youth unemployment and unemployment across all age groups (including youth), but unemployment rates for youth are significantly higher (figure 2.6).

Figure 2.6 Unemployment rates in developing countries by level of income, total (15+) and youth (15-24), 1991–2012





Source: World Bank, 2013a.

The high unemployment rate among youth reveals the severity of the challenge in many developing countries, but especially among the upper middle-income countries. In the latter group, the youth unemployment rate stood at almost 14 per cent in 2012, while the youth unemployment rate in the low-income countries was close to 10 per cent in that year.

These patterns are reflected in the SWTS countries, which also demonstrate variations within groups of countries (figure 2.7).[10] Many of the youth unemployment rates in the low-income countries are relatively low (below 10 per cent in Benin, Cambodia, Madagascar, Togo and Uganda), but in others, such as Nepal, Liberia and United Republic of Tanzania youth unemployment rates are very high (at 19, 20 and 21 per cent, respectively).[11] In only one of the lower middle-income countries was the youth unemployment rate below 10 per cent (Viet Nam) in 2012/13, and in all upper middle-income countries the youth unemployment rate exceeded 10 per cent. In Jamaica and the former Yugoslav Republic of Macedonia, more than one in three economically active youth was unemployed.

In most SWTS countries, the unemployment rate for better educated youth exceeds the rate for youth with, at most, primary level education (see Annex I, table A.1).[12] This contrasts with the pattern usually found in high-income economies (in which better educated youth have lower rates of unemployment), and primarily reflects the greater propensity of well-educated youth to wait until an appropriate job opportunity arises (ILO, 2012b). As will be demonstrated in subsequent sections, the fact that unemployment rates among better educated youth are relatively high (in comparison with youth with lower

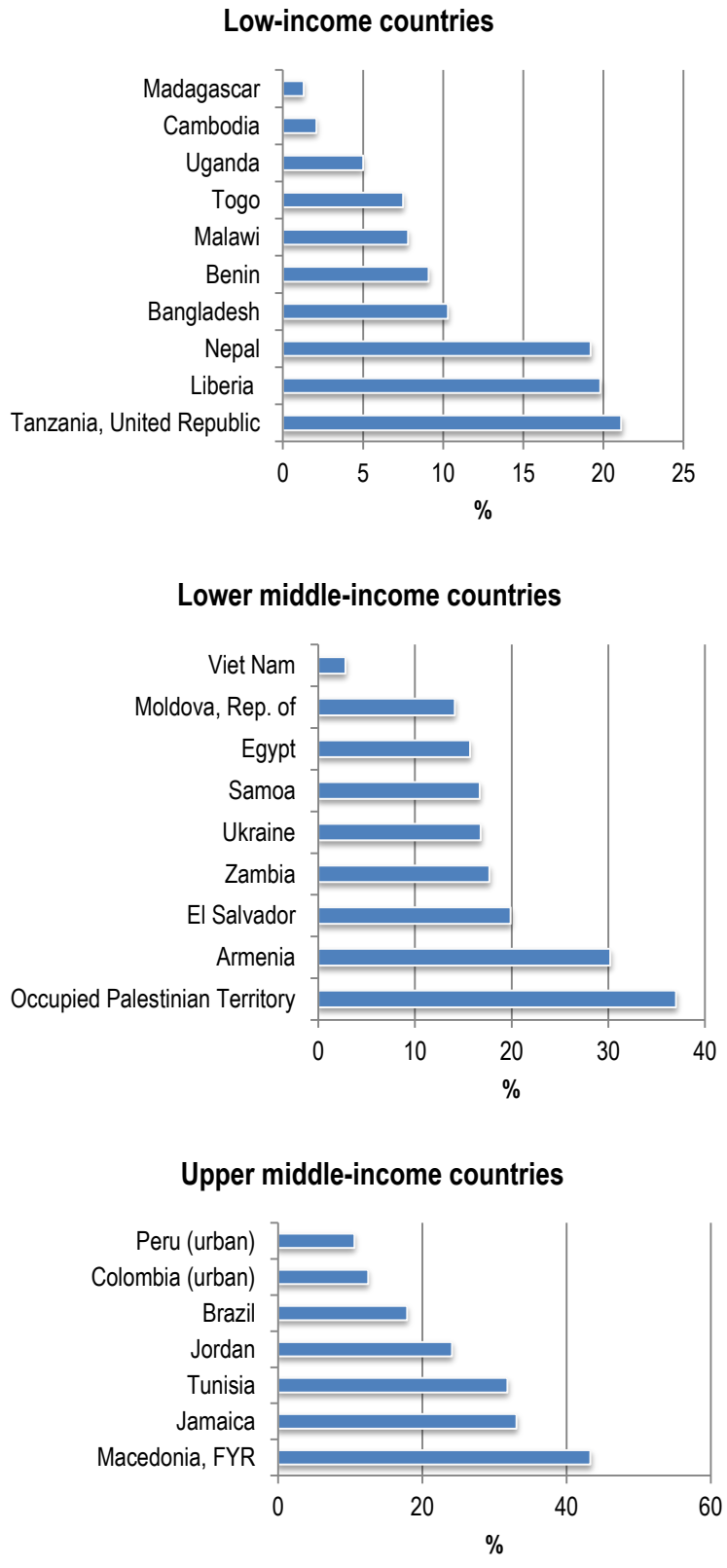
[10] Note that figure 2.7 shows unemployment rates for the age group 15–29, based on SWTS data.

[11] Elder and Koné (2014), analysing the SWTSs in sub-Saharan African countries, argue that the measure of relaxed unemployment provides a more realistic picture of joblessness in low-income countries. Including youth that are not actively looking for work, but are without work and available to work, results in unemployment rates that are double the rate based on the strict definition of unemployment in most of the low-income countries.

[12] Exceptions were Brazil, Cambodia, the former Yugoslav Republic of Macedonia, Jamaica, Republic of Moldova, Russian Federation and Ukraine.

levels of educational attainment) is not an indication of the presence of a widely available educated labour force.

Figure 2.7 Youth unemployment rates in developing countries, by level of income, 2012/13



Notes: Kyrgyzstan is not included (among lower middle-income countries) due to discrepancies in the SWTS-generated youth unemployment rate and the official rate from the national labour force survey.

Source: Authors' calculations based on 2012—2013 SWTS. See Annex II for more information on the SWTS (sample sizes, reference period, etc.).

2.3 Overview of education policies and enrolment in developing countries

Education has been a central part of development strategies in most countries. Accordingly, school enrolment rates have increased dramatically in almost all developing countries since the 1960s but, despite significant progress towards universal primary education and rapid increases in secondary school enrolment, there are still numerous challenges to be met.

The most widely available indicator regarding the quantity of education is the gross enrolment rate, which is defined as the total number of students enrolled at a particular level of education, regardless of their age, as a percentage of the population in the age group associated with that level. The age range for primary school is usually 6 to 11 years (Glewwe and Kremer, 2006). In 1990, gross primary school enrolment rates were 71 per cent in low-income countries, 91 per cent in middle-income countries, and 122 per cent in upper middle-income countries (table 2.4). By 2011, gross primary school enrolment rates exceeded 100 per cent in all groups of developing countries.[13] At the secondary level, the gross enrolment rate increased from 21 per cent in 1990 to 43 per cent in 2011 in low-income countries, and from 48 per cent to 85 per cent in upper middle-income countries. Tertiary rates also increased significantly, but particularly in low-income countries, from very low levels. By 2011, gross enrolment in tertiary education was 9 per cent in low-income countries, rising to 33 per cent in upper middle-income countries.

Table 2.4 Evolution of gross enrolment rates (primary, secondary and tertiary levels) in developing countries by level of income, selected years (%)

Income grouping	1990	1996	2002	2004	2006	2008	2009	2010	2011
Primary									
Low-income countries	70.6	74.9	87.1	93.5	98.3	103.3	104.6	105.4	108.4
Lower middle-income countries	90.8	92.3	95.0	103.6	104.7	105.3	105.2	105.7	105.5
Upper middle-income countries	121.5	112.6	113.4	112.5	110.5	110.6	110.3	110.0	110.7
Secondary									
Low-income countries	21.4	26.9	33.1	34.2	36.4	39.2	40.9	42.3	43.4
Lower middle-income countries	40.7	45.7	49.1	52.6	54.3	58.0	58.4	61.0	61.4
Upper middle-income countries	47.9	63.7	72.9	75.4	78.6	82.0	83.2	84.2	84.5
Tertiary									
Low-income countries	3.5	3.7	5.1	5.3	5.9	7.0	7.8	8.7	9.3
Lower middle-income countries	8.0	8.9	12.4	13.3	14.1	16.5	17.4	18.4	18.5
Upper middle-income countries	7.8	10.8	19.1	23.0	26.0	28.9	30.4	32.2	33.4

Source: World Bank, 2013a.

An alternative measure of progress is net enrolment rates,[14] which are much lower than gross enrolment rates but show a similar trend (table 2.5). By 2011, net primary enrolment rates averaged 81 per cent in low-income countries, rising to 95 per cent in

[13] Note that gross enrolment rates exceeding 100 per cent do not imply that all school-age children are in school.

[14] The net enrolment rate is defined as the total number of children enrolled at a particular level of schooling who are of the age associated with that level of schooling, divided by all children of the age associated with that level of schooling. The net enrolment rate therefore cannot exceed 100 per cent and removes the upward bias in gross enrolment caused by the enrolment of "overage" children in a given level (due to repetition of an academic year or delayed enrolment).

upper middle-income countries. Net secondary enrolment stood at 36 per cent in low-income countries, and at 76 per cent in upper middle-income countries in 2011.

Table 2.5 Evolution of net enrolment rates (primary and secondary levels) in developing countries by level of income, selected years (%)

Income grouping	1990	1996	2002	2004	2006	2008	2009	2010	2011
Primary									
Low-income countries	55.5	57.2	65.3	70.7	75.4	79.7	80.1	79.8	80.8
Lower middle-income countries	74.5	76.4	77.9	84.1	85.5	86.2	86.3	86.9	86.9
Upper middle-income countries	93.2	92.9	95.2	95.2	93.9	94.4	94.4	94.6	95.2
Secondary									
Low-income countries	18.2	23.1	28.4	29.2	30.9	32.9	34.2	35.2	35.7
Lower middle-income countries	–	–	43.3	46.6	48.4	51.7	–	–	–
Upper middle-income countries	–	–	64.5	67.1	70.1	73.4	74.6	75.5	75.8

Source: World Bank, 2013a.

In terms of literacy, there are also still large differences between developing countries grouped by level of income. The literacy rate in upper middle-income countries exceeds 90 per cent across all age groups, and is nearly 100 per cent for youth (table 2.6). Although the literacy rate for youth in low-income countries increased from 60 per cent in 1990 to 73 per cent in 2011, expanding educational opportunities at the primary level continues to be a priority for these countries. Furthermore, it is important for children not only to be enrolled in schools but also to complete their schooling, as drop-out rates continue to be significant in many countries (Krishnaratne et al., 2013). Assessments of education quality have also shown disappointing results, particularly in low-income countries (Robalino et al., 2010; World Bank, 2008).

Table 2.6 Literacy rates in developing countries by level of income, total and youth

Income grouping	1990	2000	2011
Total (% of persons aged 15 and above)			
Low-income countries	50.7	57.5	61.2
Lower middle-income countries	58.4	67.7	70.6
Upper middle-income countries	80.4	90.8	93.6
Youth (% of persons aged 15–24)			
Low-income countries	60.1	67.6	72.8
Lower middle-income countries	70.4	79.5	83.6
Upper middle-income countries	93.8	97.7	98.4

Source: World Bank, 2013a.

3. Review of skills mismatch and returns to education in developing countries

3.1 Skills mismatch

The disparity in terms of human capital between developing and developed countries has its roots in the quality as well as the quantity of education. Less-developed nations are characterized by lower levels of educational attainment as well as poor quality of education and limited skills accumulation, with the lack of adequate schooling being one of the reasons for the problems of underqualification, skills shortages and skills gaps. Many

developing countries also have an expanding and youthful population, which puts increasing pressure on education systems and the labour market. At the same time, the dualism between traditional and modern segments of the economy and the labour market in developing economies is also reflected in the fields of education and skills acquisition. Each segment has its own dynamics in terms of the supply of and demand for skilled labour (Bartlett, 2013; ETF, 2012), where the traditional or non-formal economy is often associated with lower levels of education and skills. Furthermore, education and skills demand are shaped by structural and technological changes that are experienced in the developing world, usually increasing the demand for skilled workers. Finally, migration plays an important role, as structural change is often accompanied by rural–urban migration, while international migration flows may also interact with skills and influence skills mismatch (Masson, 2001; David and Nordman, 2014).

In this context, it is not surprising that overeducation and overskilling coexist with underqualification and underskilling (ILO, 2013).[15] This is confirmed by studies on developing economies, although the number of such studies is limited in contrast to the large body of literature available covering developed economies. El-Hamidi (2009) analyses the presence of overeducation and undereducation in the private sector of the Egyptian labour market, and finds a declining incidence of mismatch from 1998 to 2006. This was due to the declining proportion of overeducated workers, while the opposite trend was found for undereducated workers. Abbas (2008), using data on the Pakistan labour market, argues that overeducation is a temporary phenomenon while the incidence of undereducation has increased over time. He also shows that less experienced workers are more likely to be overeducated and more experienced workers are more likely to be undereducated, suggesting that experience can substitute for educational attainment.

Overeducation may particularly occur in the context of a developing economy if the formal economy does not keep up with the expansion of the education system at higher levels. For example, expansion in levels of higher education in Taiwan in the late 1980s subsequently led to an increase in the incidence of overeducated workers (Lin and Yang, 2009). Similarly, an expansion of higher education in Hong Kong resulted in an increase in the number of overeducated graduates (Chung, 1990).

Herrera-Idárraga et al. (2013) examine the relationship between informality and overeducation in the Colombian labour market, and find that while male formal workers are less likely to be overeducated, the same result does not hold for women. Furthermore, they argue that overeducation may be caused by the desire of male workers to obtain a formal, protected job.

At the macro level, a study by De Ferranti et al. (2003) notes that a number of Latin American countries appear to have been promoting unbalanced development in the educational system – increasing the coverage of tertiary education without ensuring the creation of a large pool of high school graduates. Several possible explanations are discussed, including the need for workers educated at tertiary level in important natural resource industries in Latin America. Nevertheless, according to the authors, this pattern is not only unlikely to be sustainable, but it also results in inefficiencies within the education system vis-à-vis technological change. With regard to sub-Saharan Africa, Al-Samarrai and Bennell (2007) argue that critical thinking and problem-solving skills are major factors

[15] In general, "overeducation" means that workers have more years of education than the job requires, and "overskilling" means that workers possess a higher level of skills than would be needed. Overeducation, overskilling and overqualification are used interchangeably here. There is clear agreement on the empirical method of assessing the incidence of various types of skills mismatch, and several approaches and definitions can be found in the literature. See section 5 and ILO (2014b) for further discussion on definitions and methodologies.

that post-secondary education school leavers in several countries are lacking, and highlight the challenges involved in educating, and subsequently utilizing, secondary school leavers and university graduates in an efficient and effective manner in low-income countries. According to this study, given the paucity of employment opportunities in the formal sector, much more needs to be done to ensure that the better educated are prepared for productive self-employment, especially in high growth areas and highly skilled activities.

3.2 Returns to education

Returns to investment in education have been estimated for decades, and available evidence suggests that these returns are much higher in developing countries than in developed countries. In a sample of high-income countries, Psacharopoulos (1994) found a private return of 7 per cent for each additional year of schooling, compared to 11 per cent in low-income countries. Returns were particularly high in sub-Saharan Africa (13 per cent), in part reflecting the scarcity of education in the region. Psacharopoulos and Patrinos (2004a) confirm the pattern of falling returns to education by level of economic development and estimate the global average rate of return for each additional year of schooling to be 10 per cent. Regionally, they found that returns were highest in Latin America and the Caribbean as well as in sub-Saharan Africa, while returns to schooling for Asia stood at about the world average. In addition, Psacharopoulos and Patrinos (2004a) show that the returns to education in Egypt and Tunisia tend to be substantially lower than in other countries with similar income levels, which might be due to an oversupply of highly educated workers in the context of a stagnant formal sector.

Psacharopoulos and Patrinos (2004a) also estimate that average returns to schooling declined over time, reflecting the gradual increase in the supply of educated workers. This observation is consistent with other research. For example, Azevedo et al. (2013) argue that falling returns to skills acquisition are driving the decline in labour income inequality in Latin America. Lustig et al. (2013) advance a similar argument, but they also argue that the causes underlying the decline in returns to schooling have not been unambiguously established. Apart from an increase in the supply of workers with higher levels of educational attainment, a shift away from demand for skilled labour may have been significant.

Another typical pattern that was found in rate of return estimates is a lower return to higher levels of education, which explains why primary education was considered as the investment priority in developing countries over the past decades (Psacharopoulos, 1994). However, more recent evidence suggests that this pattern has changed, and primary education has become associated with lower returns than higher levels of education (Colclough et al., 2010). Colclough et al. argue that the relative decline in the wage returns to primary education over time may be due to both supply-side and demand-side factors, working separately or in combination, but place emphasis on the strong increase in supply of workers educated to at least primary level.

A major line of research is concerned with the effect of skills mismatch on wages, while the consequences for individual job satisfaction, firm productivity, unemployment levels and GDP growth have also been explored. Some of the main results contained in the literature on developed economies show that wages of overeducated workers are higher than wages for well-matched workers doing the same job, but returns to the years of schooling beyond the required level are lower (though still positive). The overeducated also earn less than those who have the same level of education but have a job that matches their education. Undereducated workers earn less than the well-matched employees in the same job, but more than workers with the same educational level and a job that matches their education (Groeneveld and Hartog, 2004; Hartog, 2000; Rubb, 2003). In addition,

overqualified employees are found to be less satisfied with their job and more likely to engage in job-search (Wald, 2005).

3.3 Returns to education for youth

Relatively few studies explicitly take into account the fact that different age groups receive different rewards, and assess the rates of returns separately for youth in developing countries. Söderbom et al. (2006) find significant differences in the earnings profiles across age cohorts in Kenyan and Tanzanian manufacturing, typically with stronger convexity in the young cohort. For both countries, the earnings profile of youth is virtually flat for those with less than 12 years of education, indicating small or no marginal returns on education before the tertiary level. In Mongolia, returns to education were found to be low for youth, with again a highly non-linear earnings distribution by level of educational qualifications. Those with post-compulsory vocational education were no better off than those with compulsory education only (Pastore, 2010).

3.4 Differing returns to education across segments of employment

Many studies referring to returns to education ignore the fact that employment segments can have major implications for the role of education in the labour market (Cling et al., 2007). The impact of schooling may be very different between sectors, and evidence on the effects of human capital in self-employment is scarce in comparison with evidence relating to wage employment (Vijverberg, 1995). Bennell (1996) notes that many studies on developing countries are based on data for formal-sector employees, and do not take into account income in rural and informal segments where both incomes and returns to education are much lower. Furthermore, the use of educated labour may reveal different dynamics in various labour market segments (Sparreboom and Nübler, 2013).

4. Educational attainment and employment of youth

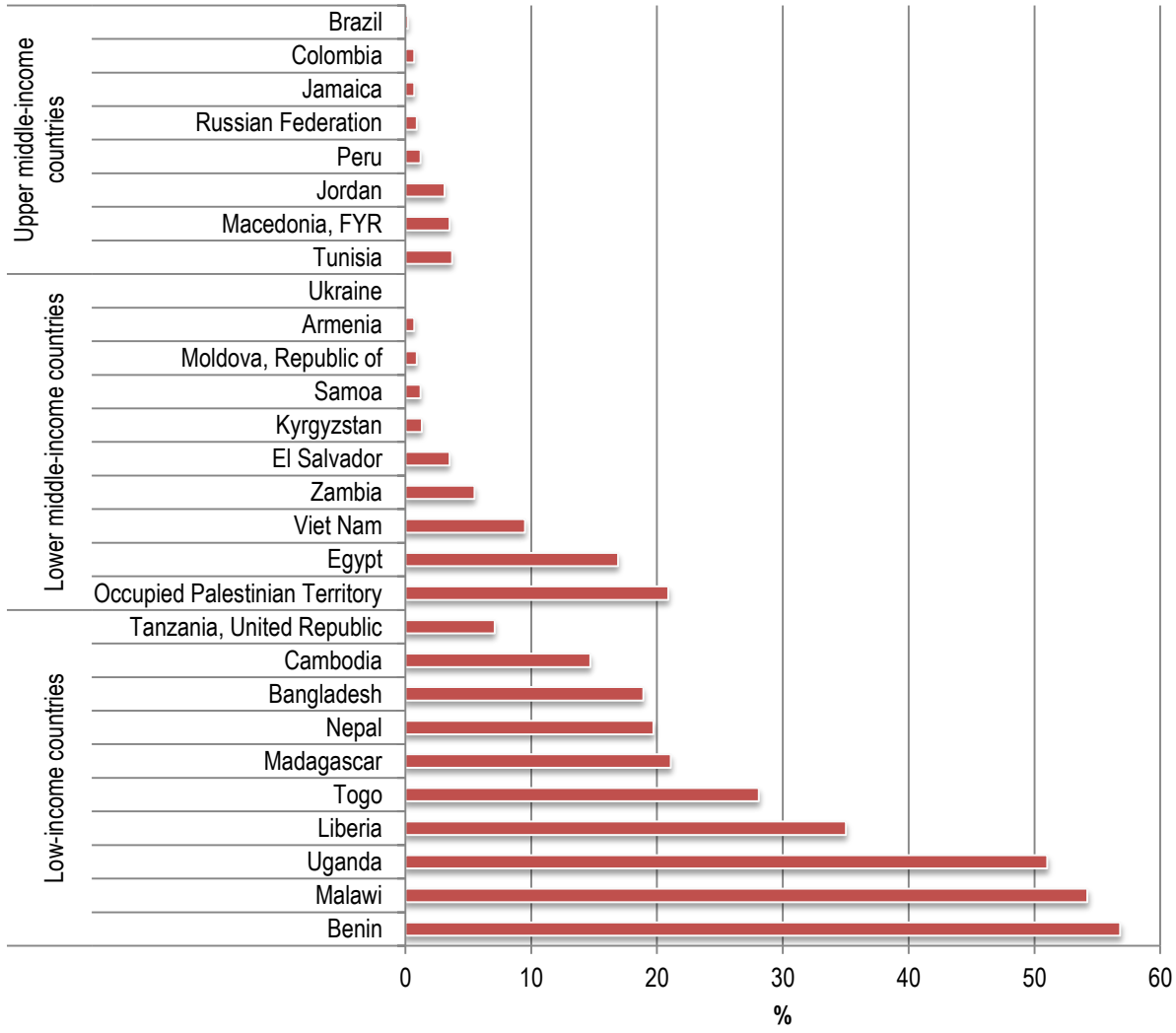
This section describes educational profiles of youth based on the 2012-2013 SWTS data.[16] For this purpose, we use tabulations of educational levels attained by youth according to four broad groups (no formal education; primary education; secondary education; and tertiary education; see Annex I, tables A.2–A.4). Variations in educational attainment among youth reflect a number of factors, including economic and institutional differences at the national level. At the individual level, the option and choice to pursue education is related to the cost of education, particularly after completion of compulsory education, and such costs also include the consequences of delaying entry into the labour market.

According to the SWTS data, the countries with the highest proportions of youth without education are low-income countries, namely Benin, Liberia, Malawi, Togo and Uganda. In these countries more than one in four youth have no schooling, and in Benin, Malawi and Uganda this is true for more than half of youth. The proportion of youth without any educational qualification is very low (at less than 1 per cent) in Armenia, Brazil, Colombia (urban), Jamaica, Republic of Moldova, Russian Federation and Ukraine (figure 4.1). In terms of higher education, the differences across countries are equally

[16] See Annex II for more information on the SWTS (sample sizes, reference period, etc.).

prominent. In low-income countries, such as Bangladesh, Madagascar, Malawi, United Republic of Tanzania and Zambia, less than 2 per cent of the youth population has achieved a tertiary level of education, while this proportion exceeds 30 per cent in Armenia and the Russian Federation. The latter countries are still far behind Ukraine, however, where 43.9 per cent of the youth population has a tertiary education (figure 4.2).

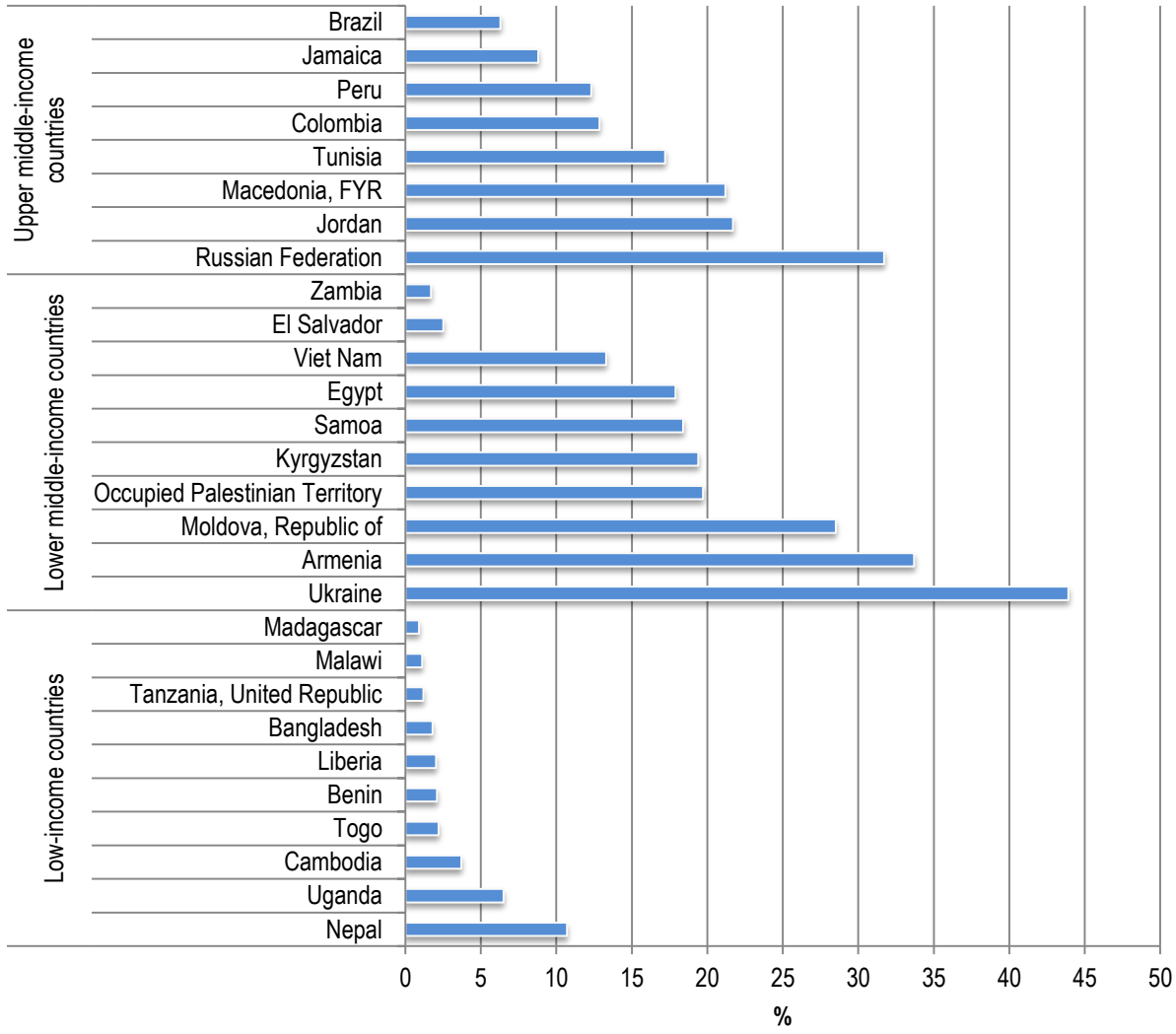
Figure 4.1 Proportion of youth with less than primary education, by country



Notes: Less than primary education refers to those with no schooling and with some school but non-completion of the primary level. Current students are excluded. Russian Federation is a high-income country.

Source: Authors' calculations based on 2012–2013 SWTS. See Annex II for more information on the SWTS (sample sizes, reference period, etc.).

Figure 4.2 Proportion of youth with tertiary education, by country



Notes: Tertiary refers to university or postgraduate levels. Current students are excluded. Russian Federation is a high-income country.

Source: Authors' calculations based on 2012–2013 SWTS. See Annex II for more information on the SWTS (sample sizes, reference period, etc.).

The data also reveal gender differences in educational attainment. In most countries, the proportion of young women with less than primary exceeds the proportion of men, while in the remaining countries the differences are small (see Annex I, tables A.2–A.4). Only in Bangladesh, Occupied Palestinian Territory and Viet Nam is the difference more than 3 percentage points (showing higher levels of attainment among young women than men). Gender differences are also important at the tertiary level of education, but in this case women are in a more favourable position in the majority of countries. Nevertheless, gender differences in tertiary education remain important and to the disadvantage of women in countries such as Benin, Cambodia, Liberia, Malawi, Nepal Togo, Uganda and Zambia.

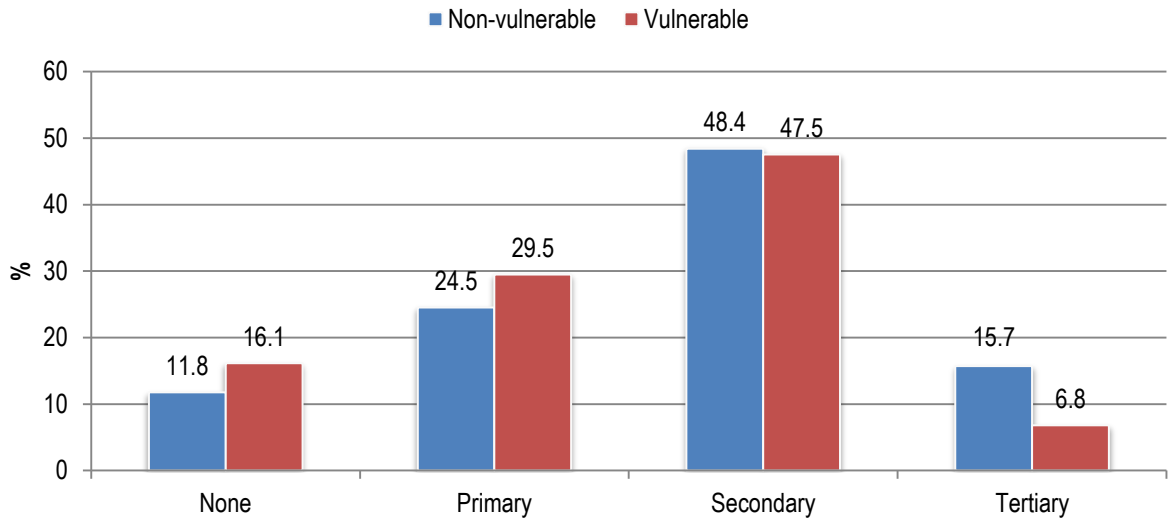
Overall, the educational profiles of youth show a strong relationship with levels of income in the set of countries for which we have survey data, in particular with regard to the proportion of youth without educational qualifications. In low-income countries, this proportion is 31 per cent, declining to 6 per cent in lower middle-income countries and to less than 2 per cent in upper middle-income countries. At higher levels of attainment, the picture is somewhat more complex. The proportion of youth with tertiary qualification is 3 per cent in the low-income countries, rising to 20 per cent in lower middle-income countries but dropping to 17 per cent in upper middle-income countries. This is partly due

to the high proportion of youth with tertiary qualification in lower middle-income countries, such as Armenia and Ukraine (34 and 44 per cent, respectively), and the relatively low proportion in upper middle-income countries, such as Brazil (6 per cent) and Jamaica (9 per cent).

4.1 Employed youth

The importance of the dual structure of the economy and the labour market in developing countries was highlighted in section 2. In our sample of 28 countries, the vulnerable employment rate for young workers ranges from 70 per cent in low-income countries to 31 per cent in lower middle-income countries and 23 per cent in upper middle-income countries (Annex I, table A.5 shows youth vulnerable employment rates by country and sex). Across all countries, the proportion of youth with less than primary or only primary education is greater for youth in vulnerable employment, while those in non-vulnerable employment are more likely to have a secondary or tertiary level of qualification (figure 4.3). Among youth in vulnerable employment, 16 per cent have less than primary and 7 per cent have a tertiary level of education. For those in non-vulnerable employment, these proportions are 12 per cent and 16 per cent, respectively.

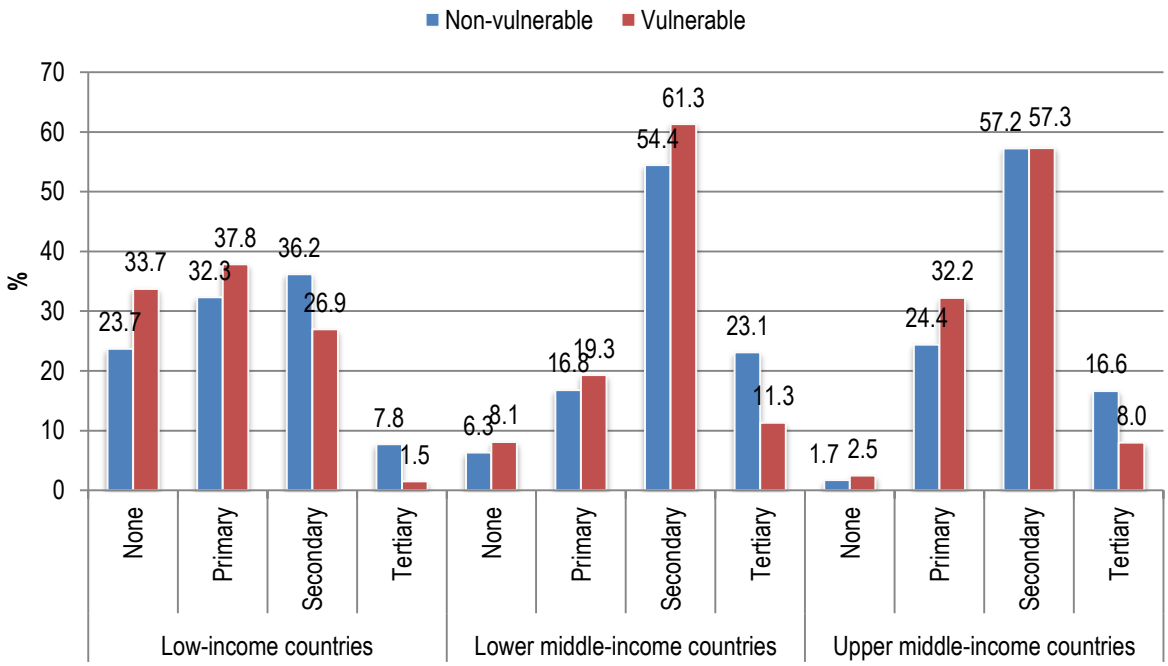
Figure 4.3 Distribution of educational attainment of youth, vulnerable and non-vulnerable employment



Notes: Current students are excluded. Secondary includes secondary general, secondary vocational and post-secondary vocational. Tertiary includes university and postgraduate studies.
Source: Authors' calculations based on 2012–2013 SWTS. See Annex II for more information on the SWTS (sample sizes, reference period, etc.).

If countries are grouped by level of income, the proportion of youth in vulnerable employment with less than primary or only primary level of education is greater in all income groups compared to those in non-vulnerable employment, and the proportion of youth with tertiary education is greater in non-vulnerable employment in all income groups (figure 4.4; country data are provided in Annex I, tables A.6–A.11). In both low-income and upper middle-income countries, the proportion of youth with secondary education is also relatively large in non-vulnerable employment. However, in the lower middle-income countries, the proportion of youth with a secondary level of education is relatively large in vulnerable employment compared to those in non-vulnerable employment. This is partially due to the relatively high proportion of youth with a tertiary education in non-vulnerable employment in lower middle-income countries, which is larger than the commensurate proportion in the other two groups.

Figure 4.4 Distribution of educational attainment of youth in vulnerable and non-vulnerable employment, developing countries by level of income



Notes: Current students are excluded. Secondary includes secondary general, secondary vocational and post-secondary vocational. Tertiary includes university and postgraduate studies. Russian Federation is included in upper middle-income countries.

Source: Authors' calculations based on 2012–2013 SWTS. See Annex II for more information on the SWTS (sample sizes, reference period, etc.).

In addition to the relationship with levels of income and vulnerable employment, levels of education are also related to the sector of employment of youth. Poorly educated youth are more likely to work in agriculture and higher educational attainment is evident in industry and services, where productivity levels are generally also higher. This pattern is demonstrated in table 4.1, which shows the share of youth with at least secondary education by broad economic sector (Annex I, table A.12 shows the shares separately for those in non-vulnerable and vulnerable employment). On average, this share is much higher in the industrial sector and, in particular, in the services sector. However, the share of workers with at least secondary education employed in agriculture is high in Eastern European and Central Asian countries (Armenia, Kyrgyzstan, Republic of Moldova, Russian Federation and Ukraine), as well as in Peru and Samoa. Furthermore, a disproportionally large share of better educated young workers enters the manufacturing sector in Brazil, Colombia (urban) and Peru (urban). The degree of education intensity in manufacturing is relatively low in several low-income countries such as Benin, Liberia, Malawi and Uganda.

Table 4.1 Share of employed youth with at least secondary education by broad economic sector (%)

Country	Agriculture	Manufacturing	Non-manufacturing industry	Services
Armenia	99.8	97.4	100.0	100.0
Bangladesh	28.0	38.9	24.9	41.4
Benin	5.4	16.0	24.4	20.8
Brazil	49.9	72.0	54.8	75.7
Cambodia	24.8	41.8	20.9	57.2
Colombia (urban areas)	73.4	94.9	90.7	94.5
Egypt	41.2	60.7	52.9	75.3
El Salvador	17.9	45.2	27.8	52.5
Jamaica	74.0	88.1	83.0	88.5
Jordan	23.3	41.6	39.0	55.6
Kyrgyzstan	80.9	86.1	78.5	91.9
Liberia	19.6	22.8	65.3	52.4
Macedonia, FYR	56.3	83.3	74.8	94.1
Madagascar	20.9	41.9	40.6	61.7
Malawi	9.2	17.8	13.7	22.7
Moldova, Republic of	96.4	100.0	100.0	99.3
Nepal	35.9	40.1	22.6	66.4
Occupied Palestinian Territory	33.6	31.9	39.7	57.9
Peru (urban areas)	84.8	93.9	92.1	95.6
Russian Federation	82.1	95.3	87.6	95.7
Samoa	96.9	88.8	89.7	94.0
Tanzania, United Republic of	30.1	61.2	50.4	49.5
Togo	19.8	35.8	37.8	47.5
Tunisia	35.8	56.2	40.3	66.7
Uganda	6.8	16.2	23.8	30.1
Ukraine	98.0	96.5	98.1	98.1
Viet Nam	54.7	74.6	58.9	81.4
Zambia	54.2	66.8	82.5	77.7
Average	48.3	60.9	57.7	69.4

Source: Authors' calculations based on 2012–2013 SWTS. See Annex II for more information on the SWTS (sample sizes, reference period, etc.).

5. Are education levels of young workers matching job requirements?

5.1 Qualifications mismatch[17]

As discussed earlier, low levels of educational attainment coupled with poor quality education may result in undereducation of workers; a situation which often coexists alongside overeducation. In the context of a dynamic developing country, which is moving from relative dependence on agricultural production to manufacturing and service sector employment, workers also need to learn new technical, entrepreneurial and social skills. Inability to meet new demands due to inadequate education therefore slows the transfer of production factors from lower to higher value added activities. Equally, overeducation and underuse of skills can present a problem as it leads to skills loss and tends to generate greater employee turnover, which is likely to affect firms' productivity levels.

In this report, we measure overeducation and undereducation following ILO (2013 and 2014b), which is a normative approach based on the International Classification of Occupations (ISCO). This normative measure starts from the division of major occupational groups (first-digit ISCO levels) into three groups and assigns a level of education to each group in accordance with the International Standard Classification of Education (ISCED-97). In particular, the first three major groups are assigned ISCED levels 5 and 6; major groups 4 to 8 are assigned ISCED levels 3 and 4; and major group 9 ISCED levels 1 and 2 (see also ILO, 1990; ILO, 2012c). The classification is clarified in table 5.1. 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.

Table 5.1 ISCO major groups and education levels

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

Source: ILO, 2013, p. 29.

According to this normative approach, all major groups except elementary occupations are thus linked to levels of education above the primary level. The rationale is that, for most occupations, the ability to read information, such as instructions, to make written records of work completed and to accurately perform simple arithmetical

[17] In this section and the remainder of the report, qualifications mismatch is measured in terms of overeducation and undereducation. See ILO (2014b) and Quintini (2011) for a discussion of alternative methods of measurement of skills mismatch.

calculations, is essential, and workers are therefore required to possess relatively advanced literacy and numeracy skills and good interpersonal communication skills. Particularly in those low-income countries which experienced a rapid expansion of education systems (cf. section 2), this rationale is reinforced by concerns over the quality of primary education, to the extent that additional years of secondary education are sometimes required to achieve the objectives of primary schooling. Furthermore, lower secondary education is considered vital in the development of foundation and core employability skills (UNESCO, 2012).

A disadvantage of this approach is that it may not take the diverse educational requirements of the broad range of occupations in major groups 4 to 8 fully into account. These five groups include not only occupations that require completion of extensive vocational education and training, but also those that require a short period of training plus basic literacy and numeracy (ILO, 2014c). Similarly, the approach does not differentiate at the high-skill level in major groups 1 to 3. The main advantage of the normative measure is that workers in a given occupation and with a given level of education are consistently categorized across our set of countries, which allows for the identification of broad patterns of mismatch. Other methods may lead to different results in terms of the extent of skills mismatch.

Table 5.2 Qualifications mismatch of youth, percentage of employment, by country

Country	Overeducated	Undereducated	Well-matched
Armenia	22.0	10.4	67.6
Bangladesh	2.5	61.5	36.0
Benin	1.8	83.8	14.4
Brazil	16.9	24.1	59.0
Cambodia	4.1	57.9	38.0
Colombia (urban areas)	35.0	10.8	54.2
Egypt	8.2	43.1	48.7
El Salvador	10.1	37.5	52.4
Jamaica	17.5	18.3	64.1
Jordan	9.4	43.4	47.3
Kyrgyzstan	15.6	15.4	69.0
Liberia	6.5	62.0	31.5
Macedonia, FYR	18.8	15.1	66.1
Madagascar	5.3	63.2	31.5
Malawi	1.6	82.9	15.5
Moldova, Republic of	27.9	6.0	66.1
Nepal	7.4	51.2	41.4
Occupied Palestinian Territory	13.5	46.4	40.1
Peru (urban areas)	29.9	18.4	51.7
Russian Federation	15.8	15.3	68.8
Samoa	62.8	3.0	34.2
Tanzania, United Republic of	13.7	39.7	46.6
Togo	2.6	67.3	30.0
Tunisia	16.1	33.4	50.6
Uganda	3.4	74.1	22.4
Ukraine	23.2	8.9	67.9
Viet Nam	24.3	22.0	53.7
Zambia	24.7	21.9	53.4
Average	15.7	37.0	47.2

Source: Authors' calculations based on 2012–2013 SWTS. See Annex II for more information on the SWTS (sample sizes, reference period, etc.).

On average in the 28 countries, almost half of employed youth are well-matched (47 per cent), while more than one-third of youth are undereducated (37 per cent) and the remainder overeducated (16 per cent). Qualifications mismatch shows a remarkably wide range across countries (table 5.2). For example, overeducation affects less than 5 per cent of young workers in Bangladesh, Benin, Cambodia, Malawi, Togo and Uganda, but more than 30 per cent of workers in Colombia (urban) and Samoa. The rate of undereducation is also very low (less than 10 per cent) in countries such as Republic of Moldova, Samoa and Ukraine, but affects at least two-thirds of workers in Benin, Malawi, Togo and Uganda. The incidence of well-matched young workers is particularly high, covering at least two-thirds of young workers in Armenia, FYR Macedonia, Kyrgyzstan, Republic of Moldova, Russian Federation and Ukraine.

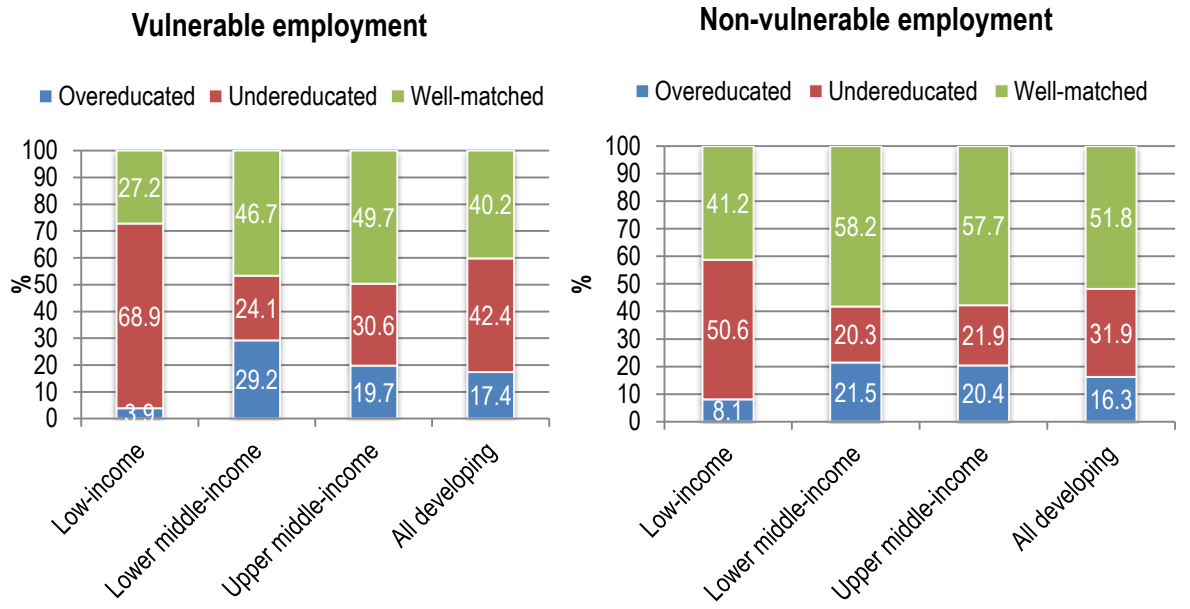
Some countries with substantial shares of employed youth holding a tertiary qualification also show significant shares of overeducated youth (Colombia (urban), 35 per cent; Republic of Moldova, 28 per cent; Ukraine, 23 per cent). Egypt, Jordan and the Occupied Palestinian Territory appear to reflect a different pattern: youth in these countries have relatively high levels of educational attainment (18 per cent, 22 per cent and 20 per cent of youth with tertiary education in Egypt, Jordan and Occupied Palestinian Territory, respectively) but still comparatively low levels of overeducation (8 per cent, 9 per cent and 14 per cent, respectively) and high levels of undereducation (43 per cent, 43 per cent and 46 per cent, respectively). The tradition role of the public sector in absorbing educated youth may be relevant in this context, although this role has become less important in more recent years.

Overall, undereducation is a cause for concern, particularly in low-income countries where, on average, 51 per cent of youth in non-vulnerable employment are undereducated, rising to 69 per cent of youth in vulnerable employment in these countries (figure 5.1 and Annex I, table A.13). On the other hand, the large majority of young workers in non-vulnerable employment in lower and upper middle-income countries are well-matched. Furthermore, the level of undereducation of youth in non-vulnerable employment in lower and upper middle-income countries (at 20 and 22 per cent, respectively) is fairly close to the level that was measured in a sample of high-income countries in 2012 (23 per cent according to ILO, 2014b).[18] The incidence of undereducation of youth in vulnerable employment in lower and upper middle-income countries is much higher (24 and 31 per cent, respectively).

The proportion of overeducated youth in vulnerable and non-vulnerable employment is very similar in upper middle-income countries (20 per cent in both cases). In low-income countries, in contrast, overeducation is more prevalent in non-vulnerable employment, and in lower middle-income countries the same is true for vulnerable employment. Despite these differences in incidence of over- and undereducation, the overall level of mismatch (adding undereducated and overeducated workers) in vulnerable employment exceeds the level in non-vulnerable employment in all groups of countries.

[18] The incidence of qualifications mismatch was not measured separately for youth in vulnerable and non-vulnerable employment in high-income countries in ILO (2014b); however, the large majority of (young) workers in high-income countries are in wage employment and therefore more comparable with (young) workers in non-vulnerable employment in developing economies.

Figure 5.1 Qualifications mismatch of youth, percentage of non-vulnerable and vulnerable employment, developing countries by level of income

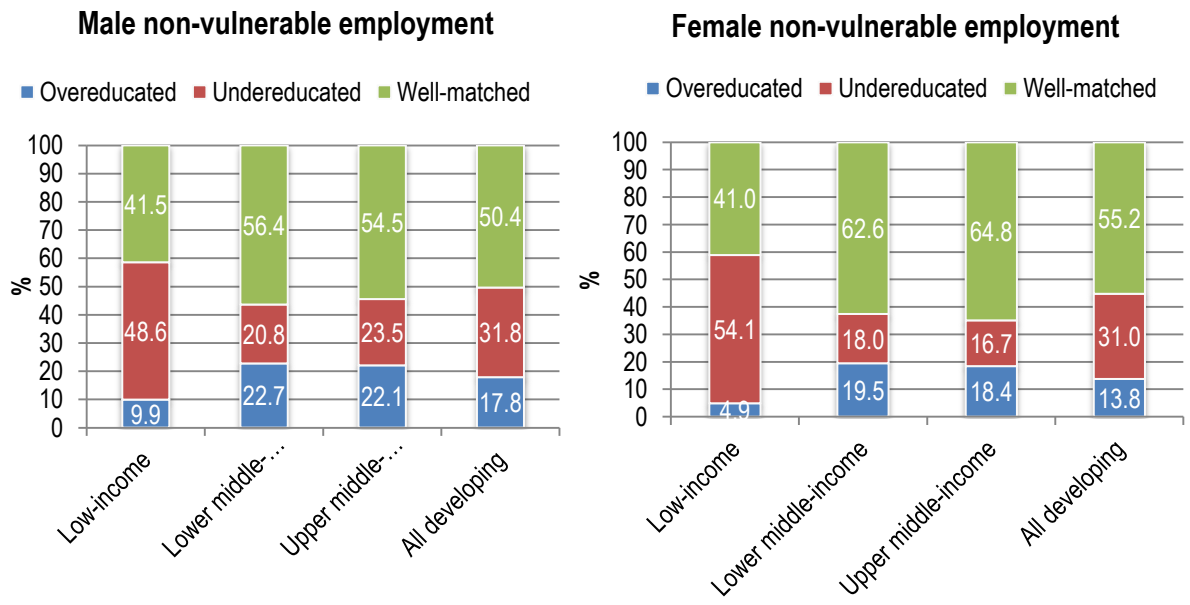


Source: Authors' calculations based on 2012—2013 SWTS. See Annex II for more information on the SWTS (sample sizes, reference period, etc.).

5.2 Gender differences in qualifications mismatch

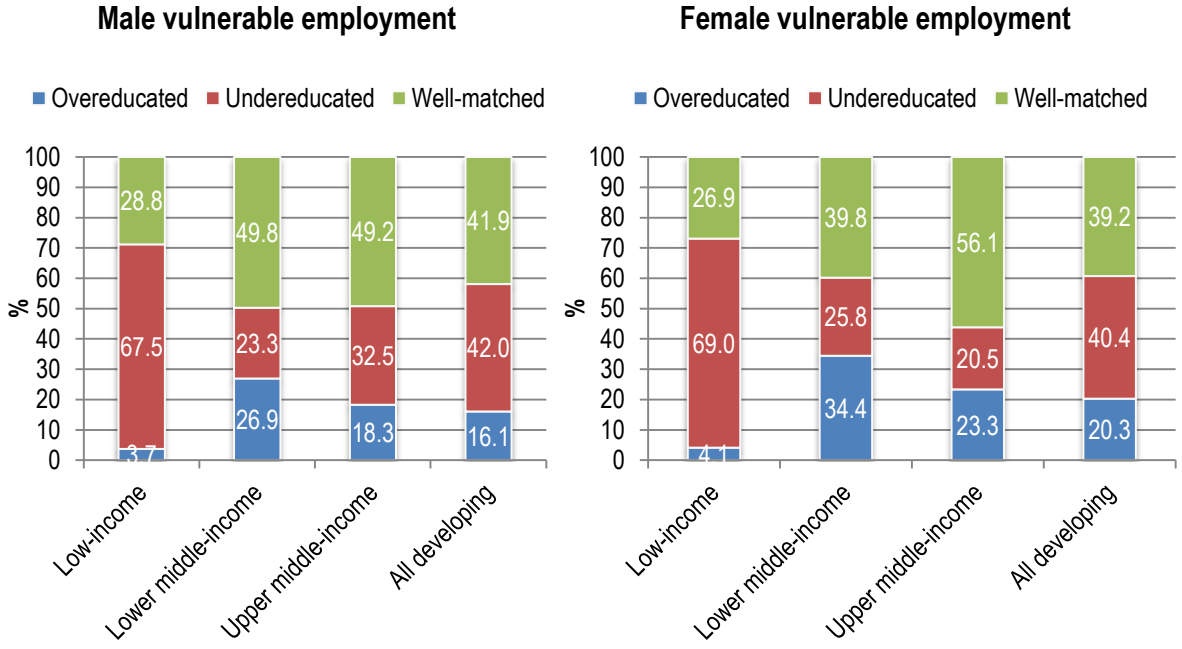
Considering gender differentials in qualifications mismatch across developing countries grouped by level of income, we find that young men are less likely to be correctly matched than young women in non-vulnerable employment (50 per cent for young men as opposed to 55 per cent for young women), and are also more likely to be overeducated (18 per cent versus 14 per cent, see figure 5.2). Women are more likely to be overeducated than men in vulnerable employment in all income groupings; and also more likely to be undereducated than men in all income groupings but the upper middle-income countries (figure 5.3).

Figure 5.2 Qualifications mismatch of youth, percentage of non-vulnerable employment, by sex, developing countries by level of income



Source: Authors' calculations based on 2012—2013 SWTS. See Annex II for more information on the SWTS (sample sizes, reference period, etc.).

Figure 5.3 Qualifications mismatch of youth, percentage of vulnerable employment, by sex, developing countries by level of income



Source: Authors' calculations based on 2012–2013 SWTS. See Annex II for more information on the SWTS (sample sizes, reference period, etc.).

5.3 Qualifications mismatch by sector

In terms of broad sectors, the agricultural sector tends to show a higher proportion of both overeducated and undereducated workers in non-vulnerable employment than the industry and service sectors (table 5.3).[19] Country patterns are again markedly different; the proportion of correctly matched workers in agriculture ranges from 4 per cent in Malawi to 66 per cent in Armenia and Ukraine. The range of proportions of correctly matched workers is smaller for industry (from 25 per cent in Malawi to 80 per cent in Republic of Moldova) and smallest for services (from 33 per cent in Malawi to 76 per cent in Republic of Moldova).

[19] The results are similar when reviewing mismatch across sectors for youth in vulnerable employment.

Table 5.3 Qualifications mismatch of youth by broad industry sector, share of non-vulnerable employment (%)

Country	Agriculture			Industry			Services		
	Over-educated	Under-educated	Well-matched	Over-educated	Under-educated	Well-matched	Over-educated	Under-educated	Well-matched
Armenia	34.2	–	65.8	19.6	8.4	72.0	19.1	12.5	68.5
Bangladesh	2.7	67.0	30.3	2.6	61.7	35.7	3.6	58.2	38.3
Benin	–	96.1	3.9	3.9	60.0	36.0	5.6	55.0	39.4
Brazil	37.9	5.9	56.2	12.0	31.8	56.2	19.9	17.4	62.8
Cambodia	11.2	39.0	49.8	5.0	52.3	42.7	7.4	46.8	45.9
Colombia (urban areas)	45.4	9.4	45.3	41.3	8.9	49.8	29.1	11.0	59.9
Egypt	2.4	60.8	36.8	5.9	46.8	47.3	12.7	31.0	56.3
El Salvador	12.1	23.6	64.2	12.9	52.9	34.3	8.9	27.5	63.6
Jamaica	22.8	15.5	61.7	27.4	9.2	63.3	17.1	16.5	66.5
Jordan	11.3	54.5	34.1	8.8	50.9	40.3	9.6	40.6	49.8
Kyrgyzstan	4.9	42.6	52.5	14.8	49.8	35.4	10.3	38.0	51.7
Liberia	42.3	52.7	5.0	5.4	49.4	45.3	7.2	49.8	43.0
Macedonia, FYR	57.9	29.0	13.1	14.8	19.9	65.3	12.4	14.2	73.3
Madagascar	8.4	59.9	31.7	3.1	46.2	50.7	22.0	36.0	42.0
Malawi	–	96.3	3.7	6.8	68.2	24.9	5.3	61.7	33.1
Moldova, Rep.	66.9	3.7	29.4	20.4	–	79.6	16.5	7.9	75.6
Nepal	20.6	49.2	30.1	6.2	59.6	34.3	4.8	42.3	52.9
Occupied Palestinian Territory	15.7	28.1	56.2	14.8	50.6	34.6	12.5	41.1	46.3
Peru (urban areas)	41.5	15.6	42.9	23.0	22.9	54.1	31.0	13.6	55.3
Russian Federation	30.1	13.1	56.8	15.0	9.5	75.5	15.3	17.5	67.1
Samoa	72.5	3.4	24.1	69.2	2.8	27.9	56.2	3.8	40.0
Tanzania, United Rep.	2.3	48.4	49.3	33.4	23.7	42.9	5.1	36.9	58.0
Togo	19.8	43.8	36.5	–	48.5	51.5	12.5	40.4	47.1
Tunisia	16.3	49.8	33.9	18.6	28.3	53.0	15.2	33.1	51.7
Uganda	2.5	35.8	61.7	14.0	52.7	33.3	8.3	43.8	47.8
Ukraine	5.4	28.3	66.3	2.6	20.7	76.7	2.6	26.7	70.7
Viet Nam	36.6	33.7	29.7	12.1	23.5	64.3	17.5	20.1	62.5
Zambia	13.1	14.1	72.7	29.8	27.4	42.8	25.8	17.5	56.7

Note: – = Insignificant.

Source: Authors' calculations based on 2012—2013 SWTS. See Annex II for more information on the SWTS (sample sizes, reference period, etc.).

6. Returns to education for young workers

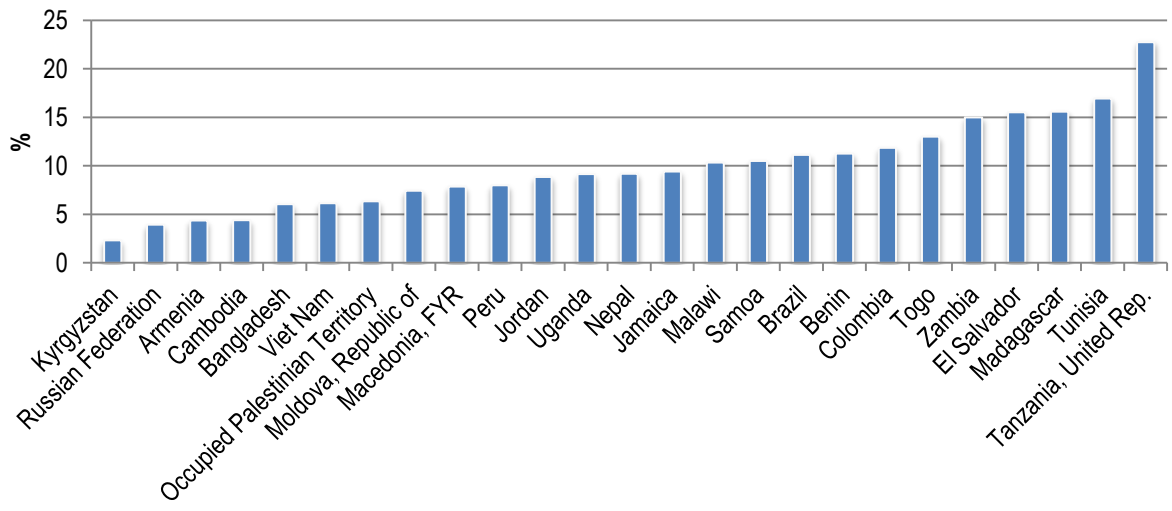
As was discussed in section 3, the returns to investment in education have been a major topic of research for many years. In general, it is evident that earnings tend to rise in accordance with workers' levels of educational attainment and those with higher qualifications and/or more work experience can expect to earn more. Some broad patterns of returns were also highlighted, including the relatively high returns in countries with low incomes per capita, and the tendency of returns in many countries to decrease over time. In both cases, the returns reflect supply of and demand for educated workers.

This section provides an analysis of returns to education in a set of 26 countries with relevant SWTS data.[20] Returns to education are estimated based on years of schooling and self-reported income of workers captured in the surveys. We adopt a conventional Mincerian earnings function approach for the calculation of returns to education, which is detailed in Annex III. We also distinguish between workers in paid employment (wage and salaried workers) and own-account workers. The first group is the subject of most estimates in the literature, and also constitutes the large majority of workers in non-vulnerable employment. Own-account workers constitute an important sub-group of those in vulnerable employment.[21]

Returns to years of schooling for young workers in wage employment are positive and significant in virtually all countries (figure 6.1 and Annex I, table A.14). The highest returns are found in El Salvador, Madagascar, United Republic of Tanzania, Tunisia and Zambia, where each year of schooling is associated with at least a 15 per cent increase in income. Returns of less than 5 per cent were calculated for Armenia, Cambodia, Kyrgyzstan and Russian Federation.

On average, the rate of return to years of schooling in our set of countries is 9.9 per cent, which is very close to the global average of 10 per cent across all workers reported in Psacharopoulos and Patrinos (2004a).[22] The relationship between levels of income per capita and returns to years of schooling does not appear to be very strong in the set of SWTS countries. Average returns in the ten low-income countries are 10.4 per cent, which is higher than the average of the seven lower middle-income countries (9.3 per cent), but lower than the average of the seven upper middle-income countries (10.6 per cent). The African countries in the set do appear to have relatively high returns to schooling. The average return to years of schooling in sub-Saharan Africa equals 13.9 per cent and, including Tunisia, this average would rise to 14.3 per cent.

Figure 6.1 Returns to education for youth in wage employment, years of schooling



Note: Egypt and Liberia are not included due to inconsistencies with the data.

Source: Authors' calculations based on 2012–2013 SWTS. See Annex II for more information on the SWTS (sample sizes, reference period, etc.).

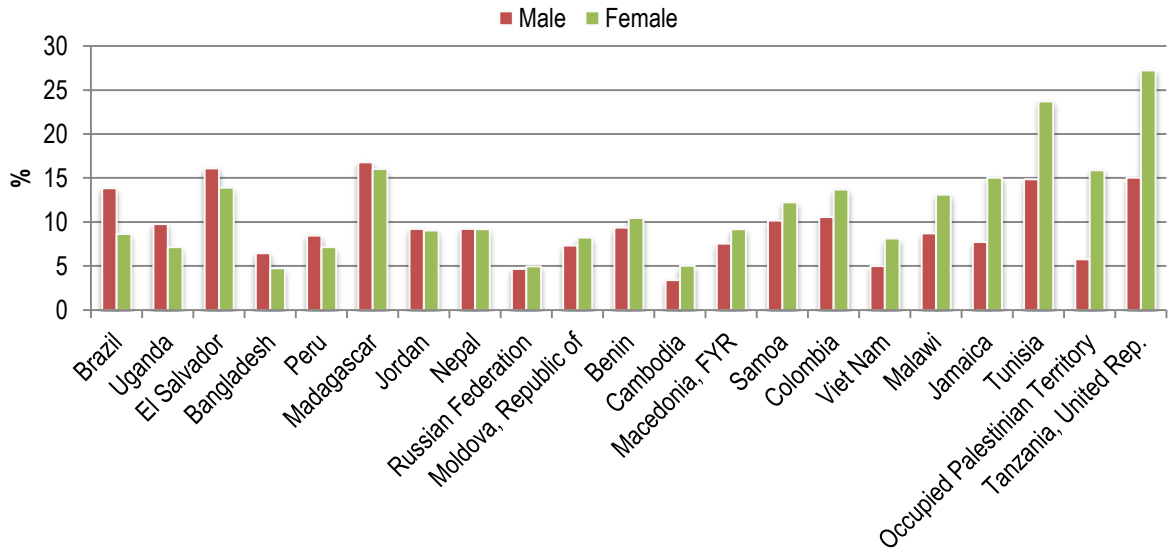
[20] Egypt and Liberia could not be included in the analysis due to data constraints.

[21] Both employers (a very small group) and contributing family workers (who are unlikely to report any income) are therefore excluded from the analysis.

[22] Given that Psacharopoulos and Patrinos (2004a) also observe a declining trend in returns to years of schooling, this would suggest that our estimates for youth are relatively high; however, our data do not allow for comparisons with the age group 30 and above.

Estimated returns to years of education also differ between the sexes. For example, in Brazil, El Salvador and Uganda the returns to years of schooling for men are between 2 and 5 percentage points higher than for women. On the other hand, returns for women exceed those for men by more than 5 percentage points in Jamaica, Occupied Palestinian Territory, United Republic of Tanzania and Tunisia (figure 6.2). For the majority of countries for which the returns to years of schooling are significant for both men and women (as shown in the figure), the latter exceed the former, and this is a common finding (Psacharopoulos and Patrinos, 2004a). Relatively high returns for women in paid employment appear consistent with the lower level of qualifications mismatch for women in non-vulnerable employment, and lower returns for men for years of schooling beyond the required level (cf. figure 5.2 above).

Figure 6.2 Returns to education for youth in wage employment, years of schooling, by sex



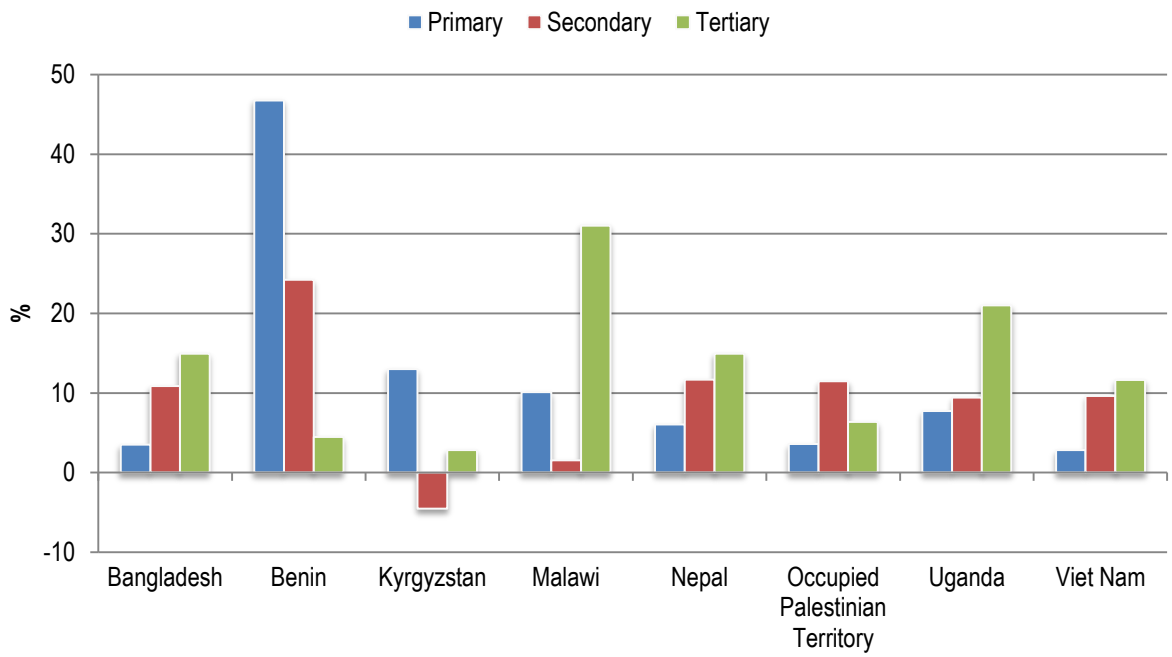
Note: Egypt and Liberia are not included due to inconsistencies with the data.

Source: Authors' calculations based on 2012–2013 SWTS. See Annex II for more information on the SWTS (sample sizes, reference period, etc.).

The SWTS data only allowed for the calculation of returns to levels of education (according to the four broad groups used in previous sections) for a limited number of countries (see Annex III for details on the methodology).[23] Across these eight countries, returns to tertiary education are highest (13.4 per cent on average), followed by returns to primary education (11.7 per cent) and to secondary education (9.3 per cent) (figure 6.3). In Bangladesh, Nepal, Uganda and Viet Nam the returns to secondary education exceed the returns to primary education, and returns to tertiary education are again higher than returns to secondary education.

[23] In the remaining countries, the number of observations was too low to produce estimates for the sub-groups of young workers at all four levels of education. The fourth group – less than primary – is not shown in the figure.

Figure 6.3 Returns to education for youth in wage employment, by level of education, selected countries



Source: Authors' calculations based on 2012–2013 SWTS. See Annex II for more information on the SWTS (sample sizes, reference period, etc.).

6.1 Returns to education for own-account workers

The returns to years of schooling for workers in wage employment cover a large share of young workers, but in more than half of the set of SWTS countries at least 30 per cent of young workers are not in paid employment, and in at least ten countries this is true for more than half of young workers. The returns to education for youth in own-account work are different from those for youth in paid employment and, in particular, the relationship to years of education is much weaker. While, for virtually all countries, a significant relationship between years of schooling and income was found for youth in paid employment, this is true for only ten countries with regard to youth in own-account work (Annex I, table A.15).

The low number of countries for which a significant relationship is found seems consistent with a view of own-account work as an option of last resort, which is less driven by economic opportunities, and also with the relatively high levels of qualifications mismatch in vulnerable employment (see section 5).[24] It also helps to explain why rates of return for paid employment are not necessarily higher for countries with low levels of income per capita (and generally a more limited supply of educated workers – see previous sections). Educated workers may become self-employed at times when the demand for wage employment is stagnating, and return to wage employment if and when economic conditions improve. In other words, the exchange of workers between paid employment and own-account work may serve as an alternative mechanism to balance the supply and demand for educated workers, which operates alongside changes in rates of return. However, the estimates also suggest that own-account work is not in all cases an option of

[24] It should also be borne in mind that all the estimates in this section are based on self-reported income, which is likely to include at least some "noise". It is also likely that income reported by wage workers is more accurate, to the extent that this income is derived from a more regular source.

last resort.[25] Out of the ten countries where we do find a significant return to years of schooling, the returns for own-account workers actually exceed those for workers in wage employment in five countries (Colombia (urban), Peru (urban), Russian Federation, Uganda and Viet Nam).

6.2 Returns to education in relation to income per capita

Building on the microeconomic findings in previous sub-sections, in particular with regard to paid employment, one can imagine a link between educational attainment, labour market outcomes and economic growth at the national level. Empirical investigations are, however, difficult in the context of youth employment, as growth is generated by workers of all ages and appropriate breakdowns of economic data are not available.

Nevertheless, the role of schooling of youth at the macroeconomic level can be illustrated following Patrinos and Psacharopoulos (2011). These authors suggest an approach to link education and income per capita, which can be viewed as the macroeconomic counterpart of the Mincerian earnings function used to estimate returns to education (cf. Annex III). Instead of examining the relationship between years of schooling and wages or income at the level of individual workers, the variation between income per capita and average years of schooling across countries is investigated.

Following this approach, we use data on years of schooling for youth from the SWTS countries, based on the rationale that years of schooling for youth are not independent of years of schooling for the population across age groups. Regression results show a significant relationship between income per capita and years of schooling for youth across all countries, which explains around two-thirds of the variation in income per capita. This simple model also shows significant results for low-income countries and upper middle-income countries as a group. However, in lower middle-income countries the relationship is not significant.[26]

These results suggest that education helps to explain patterns of income per capita across countries but, of course, other factors are important as well. Given the analysis in the previous sub-section, one such factor is likely to be the way in which education is used across different segments of the employed population, and the extent to which the utilization of education reflects economic opportunities or the lack of opportunities. A further factor that is not taken into account in the regressions is differences in the utilization of female labour, which, as noted earlier in the report, is often lower and more volatile over time than male labour.

[25] The SWTSs allow for testing of the hypothesis in the question on reason for undertaking self-employment asked of own-account workers and employers. Results are mixed between "positive" motivations (e.g. higher income potential and greater independence) and "negative" reasons (e.g. unable to find paid employment). For regional assessments of the question, see Elder (2014) and Elder and Koné (2014).

[26] Detailed results are as follows (*Y* is income per capita; *S* stands for average years of schooling):

(1) all countries (excluding Occupied Palestinian Territory due to lack of data): $Ln\ Y= 4.82+0.28\ S$ (R-squared = 0.67);

(2) Low income countries: $Ln\ Y= 5.12+0.21\ S$ (R-squared = 0.70);

(3) Lower middle income countries: $Ln\ Y= 5.49+0.21\ S$ (R-squared = 0.26);

(4) Upper middle income countries: $Ln\ Y= 4.65+0.35\ S$ (R-squared = 0.82);

The coefficient on schooling is significant in regressions (1), (3) and (4).

7. Conclusions and policy implications

7.1 Main findings

This report has examined labour market and education outcomes of the youth population in 28 countries worldwide. It is important to note that these countries operate in different economic and social contexts and are in different phases of their development trajectories, and the current report only provides a snapshot based on a limited set of indicators. Nevertheless, we find several patterns across groups of countries which confirm the role of education in shaping labour market outcomes for young people.

Finding work is more difficult for younger workers virtually everywhere, as reflected in the relatively high youth unemployment rates. But youth unemployment rates tell only part of the story of youth labour markets in developing economies, and may provide misleading information if broken down by levels of education. In most low-income economies for which SWTS data are available (Bangladesh, Benin, Cambodia, Liberia, Madagascar, Malawi, Nepal, United Republic of Tanzania, Togo and Uganda), unemployment rates tend to be relatively low (in comparison with middle-income countries), but the majority of youth aged 15–29 are in vulnerable employment (own-account work and contributing family work). In other words, employment of these young workers often falls short of decent work, and is driven to a significant extent by the need to make a living in the absence of an adequate social safety net.

Furthermore, unemployment rates in low-income countries tend to rise by level of education, which may be wrongly perceived as an indication of an abundant supply of educated workers. In fact, the opposite is true, as the SWTS data reveal the low educational profiles of youth in low-income countries. Relatively high unemployment rates for better educated youth in developing economies are more likely to reveal that youth are not preparing themselves for the careers that are in demand in the labour market, and also that these youth are prepared to wait for the opportunity of a quality job (in the formal sector) than reflect the availability of a large pool of educated labour at the national level.[27]

In countries with SWTS data in the lower middle-income group (Armenia, Egypt, El Salvador, Kyrgyzstan, Republic of Moldova, Occupied Palestinian Territory, Samoa, Ukraine, Viet Nam and Zambia) and in the upper middle-income group (Brazil, Colombia, Jamaica, Jordan, FYR Macedonia, Peru and Tunisia), vulnerable employment rates are lower but still represent, on average, a large share of employed youth. Only in Jordan and in Russian Federation (the only high-income country for which we have SWTS data) is the vulnerable employment rate less than 10 per cent.

Similar to the situation in the low-income countries, the educational profile of workers in vulnerable employment in other income groups is less favourable in middle-income countries in comparison with those workers in non-vulnerable employment. This is partly due to the fact that poorly educated youth are more likely to work in agriculture, while higher educational attainment is evident in industry and service sectors (where productivity levels are usually higher as well). Given the marked differences between workers in vulnerable employment and those in non-vulnerable employment, which reflect strong segmentation of the economic and labour market structure, it is difficult to make

[27] This report does not focus on the issue of mismatch in the chosen area of specialization of educated youth and their occupational expectations compared to the occupations demanded in the labour market, but several of the Work4Youth national publications pick up on this point. All national reports also include data on the occupations of young workers by qualifications mismatch.

economy-wide assessments of the supply and demand of educated labour in a developing country context.

Low educational profiles of workers may result in underqualification of workers in relation to the jobs they perform. Not surprisingly, given the educational profiles discussed earlier, underqualification is particularly prevalent in low-income countries, where, on average, more than half of workers are undereducated. Country-level results differ widely, but average levels of qualifications mismatch (taking undereducation and overeducation together) are higher in vulnerable employment than in non-vulnerable employment in all groups of countries. The level of undereducation of youth in non-vulnerable employment in lower and upper middle-income countries is comparable to the level in high-income countries.

Returns to years of education for workers based on self-reported income and measured according to conventional methodologies average around 10 per cent for young workers in the SWTS countries who are in paid employment, and are higher for young women than for young men. The estimates also suggest that returns to tertiary education are high in comparison with other levels of education, but this could only be ascertained for a sub-set of countries. Returns to years of schooling for youth in own-account work show a significant relationship with education only in a minority of countries, which appears consistent with the role of own-account work as an option of last resort in many countries.

7.2 Youth employment and education policy implications

Access to education remains a matter of serious concern in many of the countries studied. In Uganda, for example, 47 per cent of youth were found to have left school before completion (Byamugisha, Shamchiyeva and Kizu, 2014). Two-thirds of early school leavers cited financial reasons as the cause. Too many youth are still not fully benefiting from the education system. These findings point at a missed opportunity to break the poverty trap, since educational outcomes have shown to be clearly linked to a wage premium and to higher probability to complete the labour market transition to stable employment.[28] The need for more and better education is reflected in the discussion on the post-2015 Sustainable Development Goals.[29] The Outcome Document of the Open Working Group on Sustainable Development Goals proposes to include a target on the completion of (primary and) secondary education by 2030.[30]

Many developing countries have been slowly progressing towards universal access to primary education for all, yet significant work remains to be done to ensure participation of the more disadvantaged youth and also to increase enrolment in secondary education. An important policy initiative in some developing countries has been the abolition of school fees, aiming to remove the critical financial barrier which discouraged parents from sending their children to school. The school fees abolition initiative was launched by the United Nations Children's Fund (UNICEF) and the World Bank in 2005 as an instrument

[28] The finding is supported in all national reports of the SWTS (available at: www.ilo.org/w4y).

[29] The current Millennium Development Goals include the achievement of universal primary education. See the report, available at: http://www.un.org/millenniumgoals/2014%20MDG%20report/MDG%202014%20English%20web.pdf.

[30] See Goal 4.1 of the document, available at: http://sustainabledevelopment.un.org/focussdgs.html.

to ensure that existing Education for All (EFA) commitments were met (World Bank, 2009). Evidence suggests that the intervention has had a positive impact on schooling outcomes. For example, in Uganda, gross enrolment rose by 73 per cent in one year – from 3.1 million to 5.3 million – following the abolition of school fees, compared to an increase of just 39 per cent over the whole of the preceding decade (Bategeka and Okurut, 2005), although based on results above, clearly more work remains to be done. The availability of free education in Uganda has also reduced the likelihood of late enrolment and increased the school completion rate (Grogan, 2009).

Second-chance education programmes for youth who did not have previous access to basic education are also a worthy investment. Basic literacy and numeracy skills are the foundation to any technical skills required in the world of work, and are best acquired through education up to lower-secondary level. Whenever young people have not completed education to that stage, a gap of "foundation skills" is likely to exist (UNESCO, 2012). Ad-hoc programmes can fill that gap, by offering a mix of literacy and numeracy teaching, combined with technical training courses.

The provision of "quality" education requires the attention of respective governments and social partners as well. In the countries doing better on the education front, for example those in the Eastern Europe and Central Asian region, the homogeneity of quality across regions remains an area requiring further intervention. Teaching standards tend to be higher, and teacher-students ratios lower, in urban areas or wealthier regions than in remote and rural ones. To monitor against potential quality gaps, countries can undertake specific assessments and use the results to inform national policy. Armenia for instance has been flagged by UNESCO for participating in quality assessments and using the results to track the impact of reforms on student performance and teacher training, as well as to design classroom tests (UNESCO, 2014). Maintaining high quality standards also requires continuous teacher assessment and training. The World Bank has piloted teacher assessment and rewarding options in Kyrgyzstan (Lockheed, 2014), and found positive impacts on teacher motivation and willingness to improve their performance. However, improving the quality of education requires reliable funding, a luxury that few low-income economies have.

In the surveyed countries there is a compelling need to make education systems more demand-driven. The middle-income countries are found to have well-educated youth populations yet high rates of youth unemployment. Such mismatch between supply and demand of skills both comes from and contributes to a lack of trust between employers, TVET providers and trade unions. This situation represents a great challenge to the countries affected, but it also offers an important opportunity. The countries surveyed have in common a necessity to increase substantially their levels of productivity and competitiveness. There should be therefore strong incentives to institutionalize regular communications among employers, workers and the education institutions to make education relevant and, very importantly, flexible. The tools identified in section 7.3 are intended to facilitate such communication in the area of skills needs anticipation so that the mismatch can be minimized.

Although the scope for supply-side policies is clear, the findings in this report also demonstrate the need for education and training policies as components of comprehensive employment policies. Young workers can expect significant returns to their education, but are far more likely to realize these returns if they can secure a paid job in formal employment. In other words, education and training policies should be considered in a broader context improving the links between education, training and the world of work through social dialogue on labour market needs, and beyond the labour market in terms of

macroeconomic and development policies that focus on job creation.[31] Particularly in low-income countries, poor education systems, inadequate opportunities for decent employment and qualification mismatch reinforce each other. Consequently, focusing on either the labour market or the education and training system is likely to be ineffective in the absence of a more holistic approach.

Levels of qualifications mismatch are higher and returns to education for young workers are less certain outside paid employment, and education policies should take into consideration the fact that self-employment may be the only option available for youth with or without an educational qualification. Attention should therefore be paid to promoting youth entrepreneurship as well as providing opportunities for continued education and training for workers; such opportunities are still limited in many countries.

7.3 Tools for skills need anticipation and matching

Individuals, firms and education and training providers, who have to make decisions about the kinds of education and training for the future workforce, need to assess future prospects carefully, looking to fill information deficits and avoid future imbalances and mismatches. Skills anticipation is defined as a strategic and systematic process through which labour market actors identify and prepare for future skill needs, thus helping to avoid the potential gaps between skills demand and supply (ILO, 2015). Anticipating the future is not straightforward and a lack of relevant labour market information is a big part of the problem.

To help advise constituents on various means of forecasting skills needs, the ILO, the European Training Foundation (ETF) and the European Centre for the Development of Vocational Training (CEDEFOP) have developed a series of practical guides. One forthcoming guide on anticipating and matching skills and jobs through employment services makes the relevant point that skills anticipation should not be assumed to mean interventions by governments and public institutions on the supply side alone. Rather national strategies for development, employment, industry, innovation, etc. can have significant impact on the demand side when accompanied by financial incentives. An example given is the development of a national strategy to promote sustainable energy, which will have an important impact on skill demand. In this example, the public employment services might need to step in to support employers to increase their human resource management capacities and better anticipate skills needs.

The guide points to good practices in employment services-driven efforts towards job matching. One good practice is identified from a SWTS country, Benin. In Benin, the National Employment Agency [l'Agence Nationale Pour l'Emploi (ANPE)] runs the "Jobs Saturday" [Le Samedi des Métiers] since 2012. The initiative aims to provide youth with career guidance and information on how to obtain a job that matches their interest. Unfortunately, the capacity of public employment services remains weak in many developing countries. This report, thereby, serves as a reminder of the urgency to strengthen investment in employment agencies to build their capacity to make connection between young people and enterprises more efficient and systematically.

Another means of improving the potential for employers and education/training institutions to "speak to each other" is through the development of sectoral strategies that

[31] See, for example, *The youth employment crisis: A call for action*, International Labour Conference, 101st Session, 2012. Available at: http://www.ilo.org/wcmsp5/groups/public/@ed_norm/@relconf/documents/meetingdocument/wcms_185950.pdf.

include establishment of skills councils. The rationale for taking a sectoral approach towards skills planning is that different sectors have very different skills needs. The information on what is required in understanding technologies and markets at the detailed sector level requires the involvement of representatives of employers and workers at that level. The second forthcoming guide addresses sectoral approaches toward skills anticipation and matching.[32] The document notes that the emphasis in (sectoral mechanisms for) skills anticipation and matching in most developed economies has changed recently. From a top down approach of intervening directly to influence the pattern of skills produced, countries have moved to a bottom up approach aimed on improving the information available for the various actors to make the best possibly informed decisions and choices.

Numerous initiatives undertaken in Bangladesh, another SWTS country, are included as a case study in the guide, including the TVET Reform Project (2008-2012), funded by the ILO and the European Commission. The Project primarily focused on skills development in the manufacturing and information technology sectors. Initial stages of the project included a mapping of relevant sub-sectors, with analysis of growth and employment potentials in the sub-sector and identification of future skills needs through a small scale enterprise survey, all of which fed into the development of sectoral strategic plans.[33] Through the establishment and operation of five Industry Skill Councils (ISCs), made up of the key enterprises in the sector as well as the government and worker representatives, the information developed on skills demand is translated into skills development in the identified fields at TVET institutions and improved placement of TVET graduates, including through apprenticeship programmes. Work experience components are included in TVET programmes, so that increases can practice their skills in a real work setting. In short, the ISCs offer the important asset of linking industry and TVET institutions together in order to improve the matching of skills demand and supply.

Improving the capacity of informal apprenticeship systems, which are prevalent in many low-income countries, offers another mechanism for putting youth directly into posts where their skills can be developed directly in the enterprises that can absorb them (ILO, 2011a). Finally, all the elements mentioned in this section are brought together best when framed in a National Skills Development Strategy (or Policy or Plan). According to ILO (2011b), an analyses of current practices has shown that countries that have succeeded in linking skills development to improved employability, productivity and employment growth have directed their skills development policies towards meeting three objectives: (i) matching demand and supply of skills; (ii) maintaining the employability of workers and the sustainability of enterprises; (iii) and sustaining a dynamic process of development.

[32] Additional guides being generating in the ILO-ETF-CEDEFOP will cover the following topics of relevance to skills need anticipation and matching: enterprise surveys, tracer studies, methods of forecasting and foresight, and the use of labour market information for skills matching. In addition, ILO has prepared a number of tools for the inclusion of skills assessment and anticipation in national and sectoral strategies: guidelines for anticipating skills needs for green jobs, skills for trade and economic diversification (STED) and the inclusion of skill needs analysis into national and sectoral employment policies (ILO, 2015).

[33] The mapping exercise was presented in Rahman, et al. (2012).

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Annex I. Additional statistical tables

The source for all tables in this Annex is the school-to-work transition survey carried out in all 28 countries 2012–2013.

Table A.1 Unemployment rates of youth by level of education (%)

	Primary education or less	Secondary education or higher
Armenia	–	28.4
Bangladesh	5.3	13.3
Benin	4.7	25.4
Brazil	15.2	14.1
Cambodia	2.0	1.6
Colombia (urban areas)	9.6	12.6
Egypt	3.6	22.5
El Salvador	13.4	25.3
Jamaica	34.9	32.7
Jordan	22.8	25.3
Kyrgyzstan	1.1	4.7
Liberia	13.1	26.0
Macedonia, FYR	52.9	44.5
Madagascar	0.9	2.0
Malawi	8.0	11.3
Moldova, Republic of	39.7	15.1
Nepal	9.8	13.2
Occupied Palestinian Territory	35.4	39.1
Peru (urban areas)	4.2	8.8
Russian Federation	17.1	9.8
Samoa	9.1	17.5
Tanzania, United Republic of	10.8	28.6
Togo	4.0	9.3
Tunisia	25.9	37.3
Uganda	4.9	7.7
Ukraine	67.7	13.9
Viet Nam	1.4	3.5
Zambia	11.6	23.0

Note: – = insignificant. Primary or less includes those with no schooling.

Table A.2 Educational attainment of youth in low-income countries, by sex (%)

Country	Level attained	Total	Male	Female
Bangladesh	Less than primary	18.9	21.4	16.9
	Primary	38.6	43.7	34.6
	Secondary	40.7	33.0	46.7
	Tertiary	1.8	1.9	1.7
Benin	Less than primary	56.8	46.6	63.7
	Primary	25.8	28.9	23.8
	Secondary	15.2	20.3	11.8
	Tertiary	2.1	4.2	0.7
Cambodia	Less than primary	14.7	14.6	14.8

	Primary	49.1	47.3	50.4
	Secondary	32.6	33.2	32.1
	Tertiary	3.7	5.0	2.7
Liberia	Less than primary	35.0	21.7	44.3
	Primary	26.1	24.6	27.1
	Secondary	36.9	50.9	27.1
	Tertiary	2.0	2.8	1.5
Madagascar	Less than primary	21.1	19.9	22.1
	Primary	48.0	50.0	46.3
	Secondary	30.1	29.5	30.7
	Tertiary	0.9	0.7	1.0
Malawi	Less than primary	54.2	50.4	56.8
	Primary	30.2	29.4	30.7
	Secondary	14.6	18.8	11.7
	Tertiary	1.1	1.4	0.9
Nepal	Less than primary	19.7	17.4	22.4
	Primary	33.0	35.0	30.7
	Secondary	36.6	33.3	40.5
	Tertiary	10.7	14.4	6.4
Tanzania, United Republic of	Less than primary	7.1	8.6	5.6
	Primary	38.2	42.5	34.2
	Secondary	53.6	47.9	58.9
	Tertiary	1.2	1.0	1.3
Togo	Less than primary	28.1	19.2	33.1
	Primary	36.5	34.7	37.5
	Secondary	33.3	42.0	28.3
	Tertiary	2.2	4.1	1.1
Uganda	Less than primary	51.3	48.0	53.8
	Primary	32.3	33.1	31.7
	Secondary	10.5	11.9	9.4
	Tertiary	6.0	7.0	5.2

Notes: – = insignificant. Current students are excluded. Less than primary includes youth with no schooling. Secondary includes secondary general, secondary vocational and post-secondary vocational. Tertiary includes university and postgraduate studies.

Table A.3 Educational attainment of youth in lower middle-income countries, by sex (%)

Country	Level attained	Total	Male	Female
Armenia	Less than primary	0.7	0.9	0.5
	Primary	0.2	0.2	0.2
	Secondary	65.4	70.6	61.7
	Tertiary	33.7	28.3	37.7
Egypt	Less than primary	16.9	16.3	17.6
	Primary	20.4	20.7	20.0
	Secondary	44.8	46.7	42.6
	Tertiary	17.9	16.3	19.8
El Salvador	Less than primary	3.5	3.2	3.7
	Primary	61.5	58.3	64.3
	Secondary	32.5	36.5	29.2
	Tertiary	2.5	2.0	2.9
Kyrgyzstan	Less than primary	1.3	1.4	1.2

	Primary	14.9	14.0	15.8
	Secondary	64.4	65.5	63.4
	Tertiary	19.4	19.1	19.6
Moldova, Republic of	Less than primary	0.9	1.7	0.2
	Primary	1.7	3.1	0.6
	Secondary	69.0	72.8	66.1
	Tertiary	28.5	22.4	33.1
Occupied Palestinian Territory	Less than primary	20.9	25.2	16.2
	Primary	31.7	34.4	28.8
	Secondary	27.7	24.7	30.9
	Tertiary	19.7	15.7	24.1
Samoa	Less than primary	1.2	1.6	0.6
	Primary	0.7	0.9	0.5
	Secondary	79.7	81.0	78.3
	Tertiary	18.4	16.5	20.7
Ukraine	Less than primary	–	–	–
	Primary	1.7	1.6	1.7
	Secondary	54.4	59.8	49.0
	Tertiary	43.9	38.7	49.3
Viet Nam	Less than primary	9.5	11.0	7.9
	Primary	22.4	23.7	21.1
	Secondary	59.6	57.9	61.3
	Tertiary	8.5	7.4	9.7
Zambia	Less than primary	5.5	3.9	6.8
	Primary	22.4	19.2	25.1
	Secondary	70.5	74.9	66.6
	Tertiary	1.7	2.0	1.5

Notes: – = insignificant. Current students are excluded. Less than primary includes youth with no schooling. Secondary includes secondary general, secondary vocational and post-secondary vocational. Tertiary includes university and postgraduate studies.

Table A.4 Educational attainment of youth in upper middle-income countries, by sex (%)

Country	Level attained	Total	Male	Female
Brazil	Less than primary	0.2	0.3	–
	Primary	34.5	35.3	33.6
	Secondary	59.1	58.5	59.7
	Tertiary	6.3	5.9	6.7
Colombia (urban areas)	Less than primary	0.7	0.7	0.6
	Primary	6.8	8.0	5.5
	Secondary	79.6	80.6	78.7
	Tertiary	12.9	10.6	15.3
Jamaica	Less than primary	0.7	0.9	0.6
	Primary	14.1	15.1	13.1
	Secondary	76.3	77.9	74.8
	Tertiary	8.8	6.2	11.6
Jordan	Less than primary	3.1	3.5	2.5
	Primary	50.2	53.6	46.3
	Secondary	25.1	24.9	25.3
	Tertiary	21.7	18.0	25.9

Macedonia, FYR	Less than primary	3.5	3.5	3.6
	Primary	22.2	19.1	25.7
	Secondary	53.1	61.8	43.2
	Tertiary	21.2	15.6	27.5
Peru (urban areas)	Less than primary	1.2	0.8	1.5
	Primary	5.7	4.5	6.7
	Secondary	80.8	82.3	79.5
	Tertiary	12.3	12.4	12.3
Tunisia	Less than primary	3.7	2.0	5.6
	Primary	44.7	46.0	43.2
	Secondary	34.5	37.0	31.7
	Tertiary	17.2	15.0	19.5

Notes: – = insignificant. Current students are excluded. Less than primary includes youth with no schooling. Secondary includes secondary general, secondary vocational and post-secondary vocational. Tertiary includes university and postgraduate studies.

Table A.5 Youth vulnerable employment rates by country and sex (%)

Country	Total	Male	Female
Armenia	23.4	25.2	20.8
Bangladesh	46.3	45.7	48.5
Benin	83.6	76.7	89.1
Brazil	23.3	21.7	26.0
Cambodia	64.3	60.6	67.6
Colombia (urban areas)	22.8	21.9	23.9
Egypt	23.5	21.5	31.1
El Salvador	40.7	37.8	46.3
Jamaica	30.0	29.0	31.5
Jordan	4.5	5.2	1.3
Kyrgyzstan	55.6	50.1	62.4
Liberia	84.0	77.4	91.3
Macedonia, FYR	32.4	36.5	27.1
Madagascar	83.1	80.0	85.9
Malawi	77.0	71.8	82.7
Moldova, Republic of	18.0	24.6	11.4
Nepal	52.5	43.4	66.4
Occupied Palestinian Territory	15.9	16.2	14.5
Peru (urban areas)	28.0	28.4	27.4
Russian Federation	8.9	10.4	7.0
Samoa	27.2	29.4	23.4
Tanzania, United Republic of	57.1	48.9	68.8
Togo	82.2	75.0	87.7
Tunisia	21.3	21.8	20.2
Uganda	72.6	63.5	81.4
Ukraine	11.0	12.6	9.0
Viet Nam	40.2	36.8	44.1
Zambia	54.5	50.0	60.1

Table A.6 Educational attainment of youth in non-vulnerable employment in low-income countries, by sex (%)

Country	Level attained	Total	Male	Female
Bangladesh	Less than primary	23.0	21.6	16.5
	Primary	44.3	44.6	34.4
	Secondary	29.6	31.4	47.3
	Tertiary	3.1	2.4	1.9
Benin	Less than primary	27.2	38.9	58.9
	Primary	29.6	30.4	25.5
	Secondary	33.4	24.9	14.5
	Tertiary	9.8	5.8	1.2
Cambodia	Less than primary	12.5	12.4	15.2
	Primary	47.6	46.2	49.7
	Secondary	32.1	33.0	30.4
	Tertiary	7.9	8.5	4.7
Liberia	Less than primary	30.9	22.7	40.6
	Primary	8.1	16.9	31.0
	Secondary	52.8	57.5	24.9
	Tertiary	8.2	2.9	3.5
Madagascar	Less than primary	16.6	17.9	15.8
	Primary	34.3	32.5	34.8
	Secondary	45.3	46.8	45.5
	Tertiary	3.8	2.8	3.9
Malawi	Less than primary	52.3	47.2	56.5
	Primary	24.1	26.3	29.6
	Secondary	19.7	23.7	12.6
	Tertiary	3.9	2.8	1.3
Nepal	Less than primary	20.9	18.1	20.6
	Primary	29.0	31.6	29.9
	Secondary	34.6	33.5	40.9
	Tertiary	15.4	16.7	8.6
Tanzania, United Republic of	Less than primary	5.6	4.7	4.3
	Primary	47.5	41.6	31.8
	Secondary	45.4	52.8	62.3
	Tertiary	1.5	0.8	1.6
Togo	Less than primary	8.1	4.9	22.7
	Primary	31.2	32.3	31.1
	Secondary	53.0	51.9	43.5
	Tertiary	7.7	11.0	2.7
Uganda	Less than primary	39.9	42.6	48.2
	Primary	27.4	28.6	28.7
	Secondary	16.2	16.7	13.0
	Tertiary	16.2	12.1	10.1

Notes: Current students are excluded. Less than primary includes youth with no schooling. Secondary includes secondary general, secondary vocational and post-secondary vocational. Tertiary includes university and postgraduate studies.

Table A.7 Educational attainment of youth in non-vulnerable employment in lower middle-income countries, by sex (%)

Country	Level attained	Total	Male	Female
Armenia	Less than primary	–	1.1	0.5
	Primary	–	–	–
	Secondary	50.5	66.4	59.4
	Tertiary	49.1	32.2	39.9
Egypt	Less than primary	15.1	15.0	15.8
	Primary	20.2	20.8	19.5
	Secondary	45.4	45.9	43.9
	Tertiary	19.3	18.2	20.9
El Salvador	Less than primary	3.4	3.0	3.4
	Primary	50.6	53.4	64.7
	Secondary	40.9	41.1	28.7
	Tertiary	5.1	2.5	3.2
Kyrgyzstan	Less than primary	0.6	–	1.0
	Primary	13.2	15.6	9.0
	Secondary	53.7	58.6	45.2
	Tertiary	32.5	25.5	44.8
Moldova, Republic of	Less than primary	–	2.0	–
	Primary	0.9	3.2	0.7
	Secondary	53.3	70.4	65.0
	Tertiary	45.8	24.4	34.1
Occupied Palestinian Territory	Less than primary	19.3	24.5	16.0
	Primary	29.2	35.0	28.7
	Secondary	27.7	24.7	31.1
	Tertiary	23.8	15.8	24.2
Samoa	Less than primary	1.3	1.7	0.7
	Primary	0.7	1.0	0.5
	Secondary	63.4	80.3	77.7
	Tertiary	34.6	17.0	21.1
Ukraine	Less than primary	–	–	–
	Primary	0.5	–	0.6
	Secondary	49.7	56.6	40.6
	Tertiary	49.8	43.0	58.8
Viet Nam	Less than primary	7.8	12.1	6.0
	Primary	18.0	20.9	18.5
	Secondary	60.7	52.9	52.4
	Tertiary	13.4	14.1	23.1
Zambia	Less than primary	2.7	3.8	6.4
	Primary	16.7	18.3	20.9
	Secondary	77.3	75.6	71.1
	Tertiary	3.3	2.3	1.6

Notes: – = insignificant. Current students are excluded. Less than primary includes youth with no schooling. Secondary includes secondary general, secondary vocational and post-secondary vocational. Tertiary includes university and postgraduate studies.

Table A.8 Educational attainment of youth in non-vulnerable employment in upper middle-income countries, by sex (%)

Country	Level attained	Total	Male	Female
Brazil	Less than primary	–	–	–
	Primary	25.8	33.4	32.8
	Secondary	65.2	60.2	60.3
	Tertiary	9.0	6.2	6.9
Colombia (urban areas)	Less than primary	–	–	–
	Primary	4.8	4.9	3.2
	Secondary	78.8	72.8	69.2
	Tertiary	16.0	21.9	27.2
Jamaica	Less than primary	0.6	1.1	0.5
	Primary	9.0	13.2	12.6
	Secondary	75.9	79.2	74.5
	Tertiary	14.6	6.5	12.4
Jordan	Less than primary	2.8	3.5	2.5
	Primary	43.8	53.0	46.4
	Secondary	26.1	25.1	25.3
	Tertiary	27.4	18.4	25.8
Macedonia, FYR	Less than primary	0.5	3.1	3.6
	Primary	8.1	18.3	24.2
	Secondary	60.5	62.0	44.3
	Tertiary	31.0	16.7	28.0
Peru (urban areas)	Less than primary	0.6	0.7	1.0
	Primary	4.3	4.4	6.7
	Secondary	77.8	81.0	79.6
	Tertiary	17.3	13.9	12.8
Tunisia	Less than primary	2.0	2.0	5.3
	Primary	42.0	45.3	43.1
	Secondary	37.0	36.6	31.0
	Tertiary	19.0	16.2	20.7
High-income group country				
Russian Federation	Less than primary	–	0.7	0.8
	Primary	5.1	8.1	5.8
	Secondary	59.9	65.7	54.5
	Tertiary	34.8	25.5	38.9

Notes: – = insignificant. Current students are excluded. Less than primary includes youth with no schooling. Secondary includes secondary general, secondary vocational and post-secondary vocational. Tertiary includes university and postgraduate studies.

Table A.9 Educational attainment of youth in vulnerable employment in low-income countries, by sex (%)

Country	Level attained	Total	Male	Female
Bangladesh	Less than primary	21.4	21.2	21.8
	Primary	41.2	42.1	37.7
	Secondary	36.6	35.7	40.1
	Tertiary	0.9	1.0	–
Benin	Less than primary	65.1	57.6	69.9
	Primary	23.6	26.8	–

	Secondary	10.5	13.7	21.6
	Tertiary	0.8	2.0	8.5
Cambodia	Less than primary	15.4	16.7	14.4
	Primary	49.9	48.3	51.0
	Secondary	33.5	33.3	33.6
	Tertiary	1.2	1.7	0.8
Liberia	Less than primary	35.2	15.5	48.2
	Primary	27.0	29.7	25.2
	Secondary	36.7	52.1	26.5
	Tertiary	1.1	2.7	–
Madagascar	Less than primary	22.3	20.5	23.9
	Primary	52.3	55.4	49.6
	Secondary	25.3	24.0	26.4
	Tertiary	–	–	–
Malawi	Less than primary	55.1	52.6	57.0
	Primary	31.5	31.5	31.5
	Secondary	12.9	15.4	11.0
	Tertiary	0.5	0.5	0.5
Nepal	Less than primary	20.6	15.7	25.1
	Primary	37.0	42.3	32.0
	Secondary	36.3	32.6	39.9
	Tertiary	6.1	9.4	3.0
Tanzania, United Republic of	Less than primary	12.8	16.9	8.6
	Primary	42.2	44.2	40.1
	Secondary	43.9	37.6	50.6
	Tertiary	1.0	1.3	0.7
Togo	Less than primary	34.0	27.3	37.5
	Primary	38.8	36.1	40.2
	Secondary	26.8	36.4	21.8
	Tertiary	–	–	–
Uganda	Less than primary	55.4	52.5	57.2
	Primary	34.9	36.9	33.5
	Secondary	6.9	7.1	6.8
	Tertiary	2.8	3.4	2.4

Notes: – = insignificant. Current students are excluded. Less than primary includes youth with no schooling. Secondary includes secondary general, secondary vocational and post-secondary vocational. Tertiary includes university and postgraduate studies.

Table A.10 Educational attainment of youth in vulnerable employment in lower middle-income countries, by sex (%)

		Total	Male	Female
Armenia	Less than primary	–	–	–
	Primary	–	–	–
	Secondary	89.7	90.1	88.9
	Tertiary	10.4	9.9	11.1
Egypt	Less than primary	26.8	22.2	38.8
	Primary	21.8	20.1	26.5
	Secondary	44.1	50.5	27.3
	Tertiary	7.3	7.2	7.4
El Salvador	Less than primary	4.4	4.0	4.9

	Primary	67.7	71.6	61.9
	Secondary	27.0	23.9	31.6
	Tertiary	1.0	0.6	1.5
Kyrgyzstan	Less than primary	–	–	–
	Primary	15.8	11.1	20.4
	Secondary	77.8	79.0	76.7
	Tertiary	6.0	9.5	2.7
Moldova, Republic of	Less than primary	–	–	–
	Primary	1.7	2.5	–
	Secondary	85.5	85.7	85.1
	Tertiary	12.8	11.8	14.9
Occupied Palestinian Territory	Less than primary	32.7	33.5	27.1
	Primary	28.8	27.4	38.3
	Secondary	23.9	24.7	18.7
	Tertiary	14.6	14.4	15.8
Samoa	Less than primary	0.9	1.3	–
	Primary	–	–	–
	Secondary	88.2	87.9	88.8
	Tertiary	10.9	10.8	11.2
Ukraine	Less than primary	–	–	–
	Primary	–	–	–
	Secondary	53.5	54.9	51.0
	Tertiary	46.5	45.1	49.0
Viet Nam	Less than primary	10.0	8.4	11.5
	Primary	28.1	30.3	26.1
	Secondary	59.5	59.9	59.1
	Tertiary	2.4	1.4	3.4
Zambia	Less than primary	6.1	4.2	8.0
	Primary	28.9	21.3	36.6
	Secondary	63.8	73.3	54.4
	Tertiary	1.1	1.2	1.0

Notes: – = insignificant. Current students are excluded. Less than primary includes youth with no schooling. Secondary includes secondary general, secondary vocational and post-secondary vocational. Tertiary includes university and postgraduate studies.

Table A.11 Educational attainment of youth in vulnerable employment in upper middle-income countries, by sex (%)

Country	Level attained	Total	Male	Female
Brazil	Less than primary	–	–	–
	Primary	42.4	44.8	39.2
	Secondary	52.4	50.1	55.5
	Tertiary	4.8	4.5	5.3
Colombia (urban areas)	Less than primary	0.8	1.4	—
	Primary	11.8	14.4	8.7
	Secondary	79.1	77.7	80.7
	Tertiary	8.3	6.4	10.6
Jamaica	Less than primary	0.4	–	0.9
	Primary	20.8	23.6	16.7
	Secondary	73.6	71.5	76.6
	Tertiary	5.2	4.9	5.7

Jordan	Less than primary	3.8	4.1	–
	Primary	65.8	70.2	–
	Secondary	20.2	19.9	25.0
	Tertiary	10.2	5.9	75.0
Macedonia, FYR	Less than primary	4.8	5.7	3.2
	Primary	29.7	23.8	40.2
	Secondary	51.2	60.8	33.7
	Tertiary	14.3	9.7	22.9
Peru (urban areas)	Less than primary	2.8	1.4	4.5
	Primary	5.7	4.7	7.0
	Secondary	83.6	87.2	79.0
	Tertiary	7.9	6.7	9.5
Tunisia	Less than primary	4.4	1.8	10.6
	Primary	49.2	50.6	45.7
	Secondary	41.1	40.1	43.7
	Tertiary	5.3	7.5	–

Notes: – = insignificant. Current students are excluded. Less than primary includes youth with no schooling. Secondary includes secondary general, secondary vocational and post-secondary vocational. Tertiary includes university and postgraduate studies.

Table A.12 Share of workers in non-vulnerable and vulnerable employment with at least secondary education, by broad economic sector (%)

Country	Non-vulnerable employment				Vulnerable employment			
	Agricult-ure	Manufact-uring	Non-manufact-uring industry	Services	Agricult-ure	Manufac-turing	Non-manufact-uring industry	Services
Armenia	98.0	97.2	100.0	100.0	100.0	100.0	100.0	100.0
Bangladesh	14.1	39.0	23.6	44.7	35.8	38.2	33.6	39.0
Benin	3.9	26.4	38.5	51.9	5.5	14.1	20.3	13.7
Brazil	58.5	73.3	57.4	79.4	34.8	54.9	48.1	63.5
Cambodia	16.2	44.0	19.8	65.6	27.3	36.8	46.0	50.4
Colombia (urban areas)	90.6	95.1	93.1	96.0	27.6	93.7	82.5	89.7
Egypt	39.2	59.7	52.9	78.1	42.7	79.3	53.3	61.7
El Salvador	17.3	43.1	31.5	61.2	18.4	50.5	0.0	34.3
Jamaica	66.8	93.1	82.1	92.1	76.3	26.7	100.0	78.9
Jordan	28.3	41.3	37.8	56.7	0.0	100.0	50.0	27.2
Kyrgyzstan	81.1	69.9	91.0	93.1	78.9	89.2	77.3	91.3
Liberia	54.0	44.4	50.3	60.9	17.5	20.4	77.4	49.8
Macedonia, FYR	100.0	85.1	75.9	94.9	54.3	48.2	72.9	89.8
Madagascar	21.2	45.0	53.7	75.5	20.9	39.8	30.7	50.8
Malawi	0.7	15.5	22.0	43.0	10.7	19.5	8.3	16.0
Moldova, Rep. of	96.3	100.0	100.0	99.2	96.5	100.0	100.0	100.0
Nepal	37.9	36.6	24.1	66.6	35.1	46.0	18.7	65.8
Occupied Palestinian Territory	27.8	31.2	41.2	60.9	41.2	38.1	11.5	40.8
Peru (urban areas)	89.8	93.2	91.4	97.0	77.1	97.4	100.0	92.4
Russian Federation	88.6	95.9	87.7	95.7	75.8	47.5	84.4	96.1
Samoa	96.3	88.0	89.6	92.3	100.0	100.0	100.0	99.0
Tanzania, United Rep. of	11.1	52.6	58.9	50.4	36.6	69.9	37.9	48.8

Togo	38.8	55.0	19.8	67.0	18.8	32.9	40.9	37.3
Tunisia	30.2	55.0	41.0	67.9	39.1	75.4	0.0	59.2
Uganda	6.0	21.6	27.9	51.8	6.9	12.2	0.0	13.0
Ukraine	96.8	96.4	97.9	98.1	100.0	100.0	100.0	98.7
Viet Nam	38.6	76.0	58.6	86.0	58.6	62.2	66.7	69.5
Zambia	72.7	69.2	86.8	82.3	47.0	62.8	77.6	73.0

Table A.13 Qualifications mismatch of youth, percentage of non-vulnerable and vulnerable employment, by country

	Non-vulnerable			Vulnerable		
Country	**Overeducated**	**Undereducated**	**Well-matched**	**Overeducated**	**Undereducated**	**Well-matched**
Armenia	19.6	11.2	69.2	29.4	7.8	62.8
Bangladesh	2.9	62.1	35.0	2.0	60.8	37.2
Benin	4.8	60.2	35.0	1.3	87.8	10.9
Brazil	18.7	20.9	60.4	10.7	34.8	54.5
Cambodia	7.6	46.6	45.8	1.8	65.4	32.9
Colombia (urban areas)	35.5	9.9	54.7	33.2	14.1	52.7
Egypt	8.8	40.9	50.4	6.1	51.1	42.8
El Salvador	10.5	31.9	57.6	9.4	46.4	44.3
Jamaica	19.5	14.9	65.6	12.7	27.0	60.3
Jordan	9.5	42.5	48.0	5.9	64.0	30.1
Kyrgyzstan	18.5	14.3	67.2	12.6	16.5	70.9
Liberia	10.3	47.5	42.3	5.6	65.4	29.0
Macedonia, FYR	13.7	16.1	70.2	30.6	13.0	56.4
Madagascar	12.4	47.4	40.1	3.8	66.6	29.6
Malawi	4.0	74.0	22.0	0.9	85.5	13.6
Moldova, Republic of	20.6	6.6	72.8	56.6	3.5	39.9
Nepal	9.4	48.4	42.3	5.4	54.2	40.4
Occupied Palestinian Territory	13.5	44.1	42.4	13.8	60.4	25.7
Peru (urban areas)	29.1	16.6	54.2	32.1	23.2	44.8
Russian Federation	15.8	14.9	69.3	16.3	20.7	63.0
Samoa	60.2	3.6	36.2	72.1	0.9	27.0
Tanzania, United Republic of	11.1	35.4	53.5	15.8	43.2	40.9
Togo	11.4	42.1	46.4	0.9	72.4	26.8
Tunisia	16.9	32.1	51.0	12.8	38.2	49.0
Uganda	7.4	42.7	49.9	1.7	88.1	10.3
Ukraine	22.4	8.9	68.7	30.4	9.1	60.5
Viet Nam	16.6	23.1	60.3	37.0	20.2	42.8
Zambia	24.5	18.3	57.2	24.9	24.8	50.2
Average	16.3	31.3	52.4	17.4	41.6	41.0

Table A.14 Returns to education for youth in wage employment, years of schooling (%)

Country	Total		Male		Female	
Armenia	4.4	***	2.8		8.5	***
Bangladesh	6.1	***	6.5	***	4.8	***
Benin	11.3	***	9.4	**	10.5	***
Brazil	11.1	***	13.9	***	8.6	***
Cambodia	4.4	***	3.4	***	5.0	***
Colombia (urban areas)	11.9	***	10.6	***	13.7	***
El Salvador	15.5	***	16.1	***	13.9	***
Jamaica	9.4	***	7.7	***	15.1	***
Jordan	8.9	***	9.2	***	9.1	***
Kyrgyzstan	2.3	*	1.6		3.9	
Macedonia, FYR	7.9	***	7.6	***	9.2	***
Madagascar	15.6	***	16.8	***	16.1	***
Malawi	10.3	***	8.7	***	13.1	***
Moldova, Republic of	7.5	***	7.3	***	8.2	***
Nepal	9.2	***	9.2	***	9.2	***
Occupied Palestinian Territory	6.3	***	5.8	***	15.9	**
Peru (urban areas)	8.0	***	8.5	***	7.1	***
Russian Federation	3.9	***	4.7	***	5.0	***
Samoa	10.5	***	10.2	***	12.3	***
Tanzania, United Republic of	22.8	***	15.1	**	27.2	***
Togo	13.0	**	15.2	**	5.7	
Tunisia	16.9	***	14.9	***	23.7	***
Uganda	9.1	***	9.8	***	7.2	**
Ukraine	1.5		1.7		2.7	**
Viet Nam	6.2	***	5.0	***	8.1	***
Zambia	15.0	***	22.5	***	0.5	

Notes: * p < 0.10, ** p < 0.05, *** p < 0.01, empty cells are due to insufficient observations.

Table A.15 Returns to education for youth in own-account work, years of schooling (%)

Country	Total		Male		Female	
Armenia	0.0		3.6		-5.3	
Bangladesh	1.4		1.2		4.0	
Benin	-1.0		0.8		-2.5	
Brazil	11.8		8.8		8.0	
Cambodia	3.2		0.1		6.2	*
Colombia (urban areas)	12.2	***	11.5	***	18.3	***
El Salvador	-13.8		-0.9		-25.4	
Jamaica	8.9		9.0		12.1	
Jordan	-0.5		0.9		–	
Kyrgyzstan	1.5		-0.3		5.8	
Macedonia, FYR	-3.1		-5.6		8.3	
Madagascar	5.7	**	6.7	**	4.4	
Malawi	7.3	***	9.6	***	5.3	
Moldova, Republic of	–		–		–	
Nepal	6.2	**	5.4	*	6.1	
Occupied Palestinian Territory	7.0		7.0		26.8	***

Peru (urban areas)	8.9	**	13.7	***	9.7	
Russian Federation	18.2	**	16.1	**	22.4	
Samoa	4.4		-1.5		13.5	
Tanzania, United Republic of	16.4	***	14.1	**	18.2	**
Togo	1.1		4.6		-1.0	
Tunisia	23.0		2.5		93.4	**
Uganda	10.2	***	10.5	***	9.0	***
Ukraine	7.8		10.3		0.8	
Viet Nam	13.4	***	9.3	*	21.1	***
Zambia	10.5	**	10.7		8.2	

Notes: * p < 0.10, ** p < 0.05, *** p < 0.01; empty cells are due to insufficient observations.

Annex II. Meta-information on the ILO school-to-work transition surveys

A total of 28 school-to-work transition surveys (SWTS) were run between 2012 and 2013 within the framework of the Work4Youth (W4Y) partnership between the ILO Youth Employment Programme and The MasterCard Foundation. The W4Y project has a budget of US$14.6 million and runs for five years to mid-2016. Its aim is to "promote 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: (i) what young people expect in terms of transition paths and quality of work; (ii) what employers expect in terms of young applicants; (iii) what issues prevent the two sides – supply and demand – from matching; and (iv) what policies and programmes can have a real impact. Information on the survey implementation partners, sample size, geographic coverage and reference periods is provided in the following table. Micro datasets are available at www.ilo.org/w4y.

Table A.17 ILO school-to-work transition surveys: Meta-information

Country	Implementation partner	Sample size	Geographic coverage	Reference period
Armenia	National Statistical Service	3 216	National	October–November 2012
Bangladesh	Bureau of Statistics	9 125	National	January–March 2013
Benin	Institut National de la Statistique et de l'Analyse Economique	6 917	National	December 2012
Brazil	ECO Assessoria em Pesquisas	3 288	National	June 2013
Cambodia	National Institute of Statistics	3 552	10 provinces	July and August 2012
Colombia	Departamento Administrativo Nacional de Estadística	6 416	Urban	September–November 2013
Egypt	Central Agency for Public Mobilization and Statistics	5 198	National	November–December 2012
El Salvador	Dirección General de Estadística y Censos	3 451	National	November–December 2012
Jamaica	Statistical Institute of Jamaica	2 584	National	February–April 2013
Jordan	Department of Statistics	5 405	National	December 2012–January 2013
Kyrgyzstan	National Statistical Commission	3 930	National	July–September 2013
Liberia	Liberian Institute of Statistics and Geo-Information Services	1 876*	National	July and August 2012
Macedonia, FYR	State Statistical Office	2 544	National	July–September 2012
Madagascar	Institut National de la Statistique	3 300	National	May–June 2013
Malawi	National Statistics Office	3 102	National	August and September 2012
Moldova, Republic of	National Bureau of Statistics	1 158	National	January–March 2013
Nepal	Center for Economic Development and Administration	3 584	National	April–May 2013
Occupied Palestinian Territory	Central Bureau of Statistics	4 320	National	August–September 2013
Peru	Instituto Nacional de Estadistica e Informática	2 464	Urban	December 2012–February 2013
Russian Federation	Russian Federal State Statistics Service	3 890	11 regions	July 2012
Samoa	Bureau of Statistics	2 914	National	November–December 2012

Tanzania, United Rep. of	University of Dar-es-Salaam, Department of Statistics	1 988	National	February–March 2013
Togo	Direction Générale de la Statistique et de la Comptabilité Nationale	2 033	National	July and August 2012
Tunisia	Institut National de la Statistique	3 000	National	February–March 2013
Uganda	Bureau of Statistics	3 811	National	February–April 2013
Ukraine	Ukrainian Center for Social Reforms	3 526	National	February 2013
Viet Nam	General Statistics Office	2 722	National	December 2012–January 2013
Zambia	IPSOS Synovate Zambia	3 206	National	December 2012

Annex III. Methodology for measuring returns to education

Returns to education are estimated based on conventional Mincerian earnings specifications. Following Psacharopoulos and Patrinos (2004b) and Walker and Zhu (2001), the log of hourly wages (ln*W*) is regressed on years of schooling (*S*), years of experience in the labour market (*EX*) as well as its square (EX^2), using ordinary least squares.

The basic Mincerian earnings function takes the form:[34]

$$\ln W_i = \alpha + \beta S_i + \gamma_1 EX_i + \gamma_2 EX^2_i + \varepsilon_i$$

In this equation, β can be interpreted as the average private rate of return to one additional year of schooling, regardless of the educational level to which this year of schooling refers. This method assumes that forgone earnings represent the only cost of education, and so measures only the private rate of return, and further assumes that individuals have an infinite time horizon.

As the function does not distinguish between levels of schooling, a series of dummy variables are substituted for *S* which correspond to discrete educational levels (primary, secondary and tertiary) to obtain the following equation (the baseline category consists of workers with no schooling):

$$\ln W_i = \alpha + \beta_p D_p + \beta_s D_s + \beta_t D_t + \gamma_1 EX_i + \gamma_2 EX^2_i + \varepsilon_i$$

Years of experience in the labour market have been proxied by age minus 6 years minus years of schooling. Estimated rates of return to different levels of education are related to annualized rates and calculated by dividing the difference of regression coefficients estimating the return to given and preceding levels of education by the average duration of each level of schooling.

[34] We do not examine the possible effects of unobserved ability which affects both earnings and education. For a discussion see Walker and Zhu (2001).

This report provides up-to-date evidence on the link between labour market outcomes and educational attainment for the population of youth in low- and middle-income countries. Based on the school-to-work transitions surveys (SWTSs) run in 2012-2013, the report summarizes the education profile of youth, identifies patterns of qualifications mismatch measured in over- and undereducation and examines rates of return to education. It concludes that low levels of education, high shares of vulnerable employment and low unemployment rates remain intertwined in a cause-and-effect relationship in the low-income economies for which SWTS data are available, and also raises the issue of undereducation of young workers as a principal hindrance to transformative growth in developing economies.

The SWTSs are made available through the ILO "Work4Youth" (W4Y) Project. This Project is a five-year partnership between the ILO and The MasterCard Foundation that aims to promote decent work opportunities for young men and women through knowledge and action. The SWTS is a unique survey instrument that generates relevant labour market information on young people aged 15 to 29 years. The survey captures longitudinal information on transitions within the labour market, thus providing evidence of the increasingly tentative and indirect paths to decent and productive employment that today's young men and women face.

The W4Y Publication Series is designed to disseminate data and analyses from the SWTS administered by the ILO in 28 countries covering five regions of the world. The series covers national reports, with main survey findings and details on current national policy interventions in the area of youth employment, regional synthesis reports that highlight regional patterns in youth labour market transitions and thematic explorations of the datasets.

Work4Youth

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