Pathways to work in the developing world:

An analysis of young persons' transition from school to the workplace

G. Dachille

M. Manacorda

M. Ranzani

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G. Dachille[*]
M. Manacorda[**]
M. Ranzani[***]
F. Rosati[****]

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The inter-agency research programme, Understanding Children's Work (UCW), was initiated by the International Labour Organisation (ILO), UNICEF and the World Bank to help inform efforts towards eliminating child labour. The Programme is guided by the Roadmap adopted at The Hague Global Child Labour Conference 2010, which lays out the priorities for the international community in the fight against child labour. The Roadmap calls for effective partnership across the UN system to address child labour and for improved knowledge sharing and for further research aimed at guiding policy responses to child labour. Research on the work and the vulnerability of children and youth constitutes the main component of the UCW Programme. Through close collaboration with stakeholders, the Programme produces research allowing a better understanding of child labour and youth employment in their various dimensions and the linkages between them. The results of this research support the development of intervention strategies designed to remove children from the world of work, prevent others from entering it and to promote decent work for youth. For further information, visit: www.ucw-project.org.

[*] Understanding Children's Work (UCW) Programme and the University of Rome 'Tor Vergata'

[**] Queen Mary University of London, CEP (LSE), CEPR and IZA

[***] Understanding Chidlren's Work (UCW) Programme and The World Bank

[****] Understanding Children's Work (UCW) Programme, University of Rome 'Tor Vergata', ICID, IZA

ABSTRACT

Moving from education into the world of work is a crucial phase in youth lives. There is ample evidence that initial difficulties in this process might have long lasting consequences. The scarcity of information about middle and low income countries has especially hampered research in this area. This paper contributes to fill this gap by analysing the School to Work Transition Surveys carried out by the ILO in 28 low and middle income countries in 2012 and 2013.

We use hazard models to estimate the duration, the determinants and the characteristics of the transition to the first job and to a stable job. We make use of the so-called split population model that allows to endogenously identify the share of the population expected to never transit to employment (or to stable employment) and to estimate the duration of the transition for the part of the population expected to eventually transit to employment (stable employment).

The results indicate that in many countries a substantial share of youth, especially female, is expected to never transit to a job and remain unemployed or out of the labour force. The number of youth that can be expected to eventually obtain a stable job is, not surprisingly substantially lower. In several countries, especially but not exclusively in SSA, far less than half of the youth can be expected to transit to a stable job. This reflects, of course, not only the difficulties of youth in accessing such jobs, but also the structural unavailability of this kind of job in the economy considered.

 The duration of transition (for those expected to transit) to a first job highlights a dichotomous situation: a large group of youth is able to obtain a job within three months since leaving school, while the group that does not succeed in securing a job quickly faces long waiting times. The substantially smaller part of youth who eventually succeed in obtaining a stable job, faces very long transition time in most of the countries considered in this study.

Differences between countries are large, albeit regional patterns emerge. They cannot be explained by the different characteristics of the youth in the countries considered. Structural factors linked to the economy and/or to the functioning of the labour market are relevant. The association of school to work transition characteristics and some indicators of the characteristics of the economy offers some suggestive correlations.

The analysis has also evidenced the still persisting gender gap in the transition to work. Female, independently of their level of education and other household circumstances, are less likely to ever transit to a job and, if they do transit, face longer transition times than males. However, this disadvantage does not fully carry over to the probability of finding a stable job.

The disadvantage of early school leavers appears to be substantial not only with respect to finding a stable job (as might been expected), but also in terms of finding any job. Children who left school by age 15, not a negligible numbers in the countries considered, have lower probability to transit to any job and, if they transit, they face longer transition times than their peers with higher level of education. This finding contradicts the somehow diffused opinion that the youth

with higher levels of education faces the most difficulties in transiting to the labour market.

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1. Introduction

Moving from education into the world of work is a crucial phase in youth lives and in their process of attaining gainful and satisfactory employment. There is ample evidence that initial difficulties in this process might have long lasting consequences. For example, unemployment in the early stages of labour market transition can generate poor work habits and give raise to vicious circles of low employability (Ellwood, 1982). Unemployment in the initial stages of school-to-work transition appears to generate hysteresis (Freeman and Wise, 1982) either due to productivity adverse effects of unemployment or to employer attitudes as employers may see unemployment as a signal of low productivity(Blanchard and Diamond, 1994), and difficulties of securing a job upon leaving school entails a wage penalty (see for example, Gregg and Tominey, 2005; Mroz and Savage, 2006; Gregg,2001).Finally, reintegration of youth into the labour market becomes more expensive and difficult the longer the spells in unemployment or outside of the labour force (Torres and Tobin, 2010).

Because individuals may enter and leave the labour force and experience various labour market statuses searching for a satisfactory job, no simple indicator is sufficient to describe and analyse the complexity of such a process. For this reason since the 1990s the idea to focus on the school to work transition has gained increasing attention.

A whole set of issues relative to education, employment and training, that have been part of the researchers and policy makers' agenda tends now to be viewed as part of a single process: "the school to work transition".

Measuring, understanding and assessing the consequences of the trajectories followed by youth to enter the world of work has important policy implications, especially at a time when youth unemployment is seen as one of the main challenges facing governments both in developing and developed economies[2].

In fact, youth employment that was for many years mainly a subject of relevance in developed economies, has now become central to the policy debate both in low and middle-income countries as well[3].

However, as illustrated in the review by Ryan (2001) and by the literature listed in the bibliography, the attention on the school to work transition process has been mainly focussed on developed countries, and with few exceptions, it has looked mainly at the individual components of the transition rather on the whole transition phase.

This is partly due to the lack of adequate data and a few more recent works move in the direction of looking at the whole school to work transition process exploiting new available information as, for example, in Quintini et al. (2007) and in Garrouste and Loi (2011).

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[2] Ryan (2001)
[3] See for example ILO (2013)

The scarcity of information has especially hampered the research on middle and low-income countries, impeding with a few exceptions to build solid evidence on the characteristics of the school to work transition process[4].

This paper aims at contributing to fill this gap by making use of the data on school to work transition generated by a large ILO statistical project that conducted ad hoc surveys in 28 countries and on which more details are given in the next section.

The analysis developed here can be broadly framed within the theoretical framework of the search model, that have been used to assess the determinants of the school to work transition as summarised in Ekstein and van der Berg (2003). However, recovering the structural parameters of the search process requires non-standard estimations approaches and information, especially on wages for each observed match, that are not available in the ILO data.

We use, therefore, hazard models to estimate the duration, the determinants and the characteristics of the transition to the first job and to a stable job. In particular we make use of the so-called split population model that allows to endogenously identify the share of the population expected to never transit to employment (or to stable employment) and to estimate the hazard function for the part of the population that is expected to eventually transition to employment (stable employment).

As Ekstein and van der Berg (2003) points out the use of reduced form hazard model has several limitations in terms of causal inference. We believe, however that the present paper offers an important contribution by presenting, for the first time, consistent estimates of the main characteristics and determinants of the school to work transition for a large number of low and middle income countries.

The rest of the paper is organized as follows. The next section presents the main characteristics of the survey utilized. Section 3 offers an overview of the labour market situation of the youth at the time of the survey. The work histories that can be reconstructed using the available data are discussed in section 4. The model used for the estimation, the duration analysis and the main results of the paper are presented in Section 5. Conclusions follow.

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[4]For some studies on developing countries see for example, Ranzani and Rosati (2013) and Cunningham, W., & Salvagno, J. B. (2011)

2. The ILO School to work transition surveys

Through the Work4Youth partnership with The MasterCard Foundation, the International Labour Organization has recently embarked on an unprecedented data collection effort on youths' labour market transitions in a sample of 28 low and middle income countries around the world, including Latin-America, Eastern Europe and Central Asia, Sub-Saharan Africa, Middle East and North Africa, South Asia and the Pacific region (Table 1).

The collection instrument is an household survey with very detailed questions on current and past labour market experiences for a nationally representative sample of individuals aged 15-29. The surveys were conducted between the third quarter of 2012 and the third quarter of 2013 and a second round is expected in 2014-15. The data are nationally representative with the exception of the Russian Federation, Colombia and Peru.

Table 1. **School-to-work transition surveys information**

Region	Country	Sample size (15-29 years age group)	Geographic coverage	Reference period
Asia and the Pacific	Bangladesh	9,197	National	January-March 2013
	Cambodia	3,552	National	July and August 2012
	Nepal	3,584	National	April and May 2013
	Samoa	2,914	National	November and December 2012
	Vietnam	2,722	National	December 2012 and January 2013
Eastern Europe and Central Asia	Armenia	3,216	National	October and November 2012
	Kyrgyz Republic	3,930	National	July-September 2013
	Macedonia, FYR	2,544	National	July-September 2012
	Moldova, Rep. of	1,158	National	January-March 2013
	Russian Federation	3,890	11 out of 83 regions	July 2012
	Ukraine	3,526	National	February 2013
Latin America and the Caribbean	Brazil	3,288	National	June 2013
	Colombia	6,014	Urban	September-November 2013
	El Salvador	3,451	National	November and December 2012
	Jamaica	2,584	National	February-April 2013
	Peru	2,464	Urban	December 2012-February 2013
Middle East and North Africa	Egypt	5,198	National	November and December 2012
	Jordan	5,405	National	December 2012 and January 2013
	Occupied Palestinian Territory	4,320	National	August and September 2013
	Tunisia	3,000	National	February and March 2013
Sub-Saharan Africa	Benin	6,917	National	December 2012
	Liberia	1,504*	National	July and August 2012
	Madagascar	3,295*	National	May and June 2013
	Malawi	3,102	National	August and September 2012
	Tanzania	1,988	National	February and March 2013
	Togo	2,033	National	July and August 2012
	Uganda	3,811	National	December 2012-January 2013
	Zambia	3,206	National	February-April 2013

Note: in the case of Liberia the survey covers youths aged between 15 and 35 years of age and total sample size is 1,876. In the case of Madagascar 5 individuals report an age out of range (below 15 and above 29), total sample size is 3,300. In the case of Samoa no information or are of residence (urban vs. rural) is available in the data. Source: ILO school-to-Work Transition Surveys.

The surveys collect a large set of information on current labour market status and labour market experiences since the time the individuals left school (or since the first labour

market experience for those who never attended school). This is integrated with information on current individual and household level characteristics, such as age, gender, highest education level completed, age left education, area of residence, relationship to the household head, marital status, existence of children, financial circumstances, health status, parents' highest educational attainment.

Information on the labour market status at the time of the survey includes details on the current job, such as occupation and industry, hours of work, wages and benefits (for employees), net profits (for self-employed), as well as job aspirations. For those currently unemployed information is collected on job search activities and/or attempts to start a (new) business. For those reporting to be inactive, the data provide information on aspirations and plans.

Retrospective labour market information covers all past spells of at least three months duration of employment, inactivity (allowing to separately identify household chores), unemployment and apprenticeship/training since the time the individual left school. For each spell the data report the start and end month and year. Note that the surveys only collect information on past employment spells among individuals currently not in education. Information on work during education is limited to a variable indicating whether an individual worked while attending school.

For each past employment spell, the data report the type of employment (whether an employee, unpaid family worker or self-employed), a measure of job satisfaction (on a 5-point scale, from very unsatisfied to very satisfied) and, for employees, the existence and characteristics of the work contract (whether written or oral and whether temporary or stable). No information is available on wages or earnings other than for the current employment spell.

Figure 1 helps visualizing the structure of the data: at the time of the survey, individuals might be still in education (or may have never entered education) or, having left education, they might have transited to a first job. Some of those who have not transited to a first job might have experienced spells of unemployment or training. We define these individuals as being "in transition". The residual group is constituted by those who have never been in the labour force or in training. ILO-STWT data are therefore right censored as individuals who have not completed a transition– whether in transition or continuously inactive since the time of leaving school - might still enter employment at a later stage. Right censoring is a common problem in duration data and there are well-developed methodologies for dealing with it, which we discuss below.

As mentioned the ILO-STWT surveys only collect information on labour market spells from the time the individual left school. This implies that we cannot identify employment spells that happened and concluded before leaving school (although, as said, we have information on whether individuals worked or not while attending school).

More importantly, for each employment spell, the survey reports as a start date whichever the larger between the actual start month and the month following the one of leaving school. In practice, this means that employment spells are left censored to the time the individual left school.[5] This also implies that one cannot tell *genuine* direct transitions from school to work apart from *apparent* transitions, i.e., employment spells that started before leaving school and continued after the individual left school. For this reason, one needs to

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[5] The only exception is Brazil for which employment spells prior to the time of leaving school are recorded. For consistency, we artificially left-censor the data for Brazil at the time of leaving school.

be very cautious in interpreting spells recorded as starting just after leaving school as direct transitions from school to work.

Figure 1. **Characterising labour market transitions using ILO-STWT data**
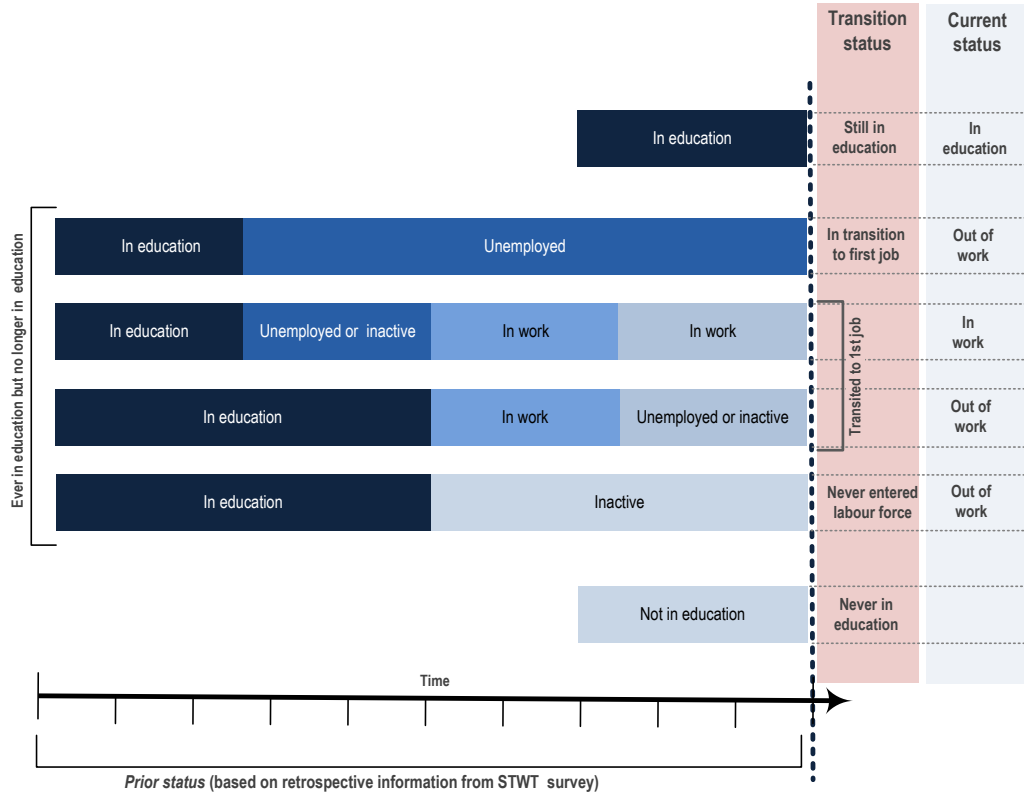
3. Labour market and education outcomes of young persons at the time of the survey

In this and in the following section we use of the information available in the data to describe the current labour market outcomes and the work histories of individuals <u>at the time of the STWT survey</u>. In section 5 we turn to the duration analysis. In the remaining of the analysis we weight observations by sampling weights. This allows us to obtain estimates of the population parameters in each of the countries analysed.

Labour market and education outcomes in each of the 28 countries are reported in Table 2 below and in the extended appendix (available upon request)[6]. These indicators point to wide variation in the activity status of youth across countries. Labour market participation is relatively high – two-thirds or more – in Cambodia, Vietnam, Madagascar, Togo and Uganda. At the other end of the spectrum one finds Bangladesh, Nepal, Samoa, Armenia, Macedonia, Moldova, Jordan, Occupied Palestinian Territories (OPT), Tunisia and Benin, where less than one-half of all youth in the 15-29 age group is in the labour force. The remaining countries – Kyrgyzstan, Russian Federation, Brazil El Salvador, Jamaica, Peru, Egypt, Liberia, Tanzania and Zambia – lie in the middle range in terms of youth labour force participation.

Table 2.   **Labour market and education outcomes, youth aged 15-29 years by country**

Region	Country	Labour force participation (% population)	Employment to population ratio	Unemployment rate (% active)	Education participation (% population)
Asia and the Pacific	Bangladesh	42.3	37.9	10.3	23.5
	Cambodia	75.7	74.1	2.1	33.3
	Nepal	47.7	38.5	19.2	59.6
	Samoa	26.1	21.7	16.7	36.7
	Vietnam	66.0	64.1	2.8	31.2
Eastern Europe and Central Asia	Armenia	43.9	30.7	30.2	45.3
	Kyrgyz Republic	60.7	58.3	4.0	41.1
	Macedonia, FYR	49.3	27.9	43.3	47.0
	Moldova, Rep. of	36.9	31.7	14.1	42.9
	Russian Federation	60.7	53.6	11.7	36.1
	Ukraine	53.8	44.7	16.8	41.6
Latin America and the Caribbean	Brazil	65.7	53.9	17.9	36.8
	Colombia	66.1	57.8	12.5	45.3
	El Salvador	52.2	41.8	19.9	36.2
	Jamaica	59.5	39.9	33.0	35.2
	Peru	60.4	54.0	10.6	44.7
Middle East and North Africa	Egypt	54.1	45.6	15.7	28.9
	Jordan	39.4	29.9	24.1	42.9
	Occupied Palestinian Territory	38.5	24.3	37.0	44.8
	Tunisia	45.7	31.2	31.8	38.1

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[6]Note that the figure presented here might be different, especially in SSA, if the new definition of work and employment adopted by the International Conference of Labour Statisticians in 2013 was applied. For more details see http://www.ilo.org/global/statistics-and-databases/meetings-and-events/international-conference-of-labour-statisticians/19/WCMS_230304/lang--en/index.htm

*Table 2.***Cont'd**

Region	Country	Labour force participation (% population)	Employment to population ratio	Unemployment rate (% active)	Education participation (% population)
Sub-Saharan Africa	Benin	30.4	27.6	9.1	49.3
	Liberia	61.4	49.3	19.8	60.5
	Madagascar	79.9	78.9	1.3	22.1
	Malawi	72.1	66.5	7.8	36.2
	Tanzania	55.3	43.6	21.1	29
	Togo	67.4	62.4	7.5	39.9
	Uganda	66.4	63.1	5.0	39.5
	Zambia	52.8	43.5	17.7	40.4

Note: The data refer to youth's labour market and schooling status at the time of the STWT survey. In the case of Liberia the survey covers youths aged between 15 and 35 years of age and total sample size is 1,876. In the case of Madagascar 5 individuals report an age out of Note: in the case of Liberia the survey covers youths aged between 15 and 35 years of age and total sample size is 1,876. In the case of Madagascar 5 individuals report an age out of range (below 15 and above 29), total sample size is 3,300. In the case of Samoa no geographical information (whether urban or rural) is available in the dataset.
Source: UCW calculations based on ILO School-to-Work Transition Surveys.

Youth unemployment rates also vary considerably across countries, from 4 percent or less in Cambodia, Vietnam, Kyrgyzstan and Madagascar to 30 percent or more in Armenia, Macedonia, Jamaica, OPT and Tunisia. Youth unemployment appears a "luxury" affordable by few, as illustrated in Figure 2, that shows the positive correlation between youth unemployment and per capita income. Youth unemployment rates are particularly low in the poorer countries of Sub-Saharan Africa and Asia.

Figure 2. **Youth unemployment rate versus GDP per capita**
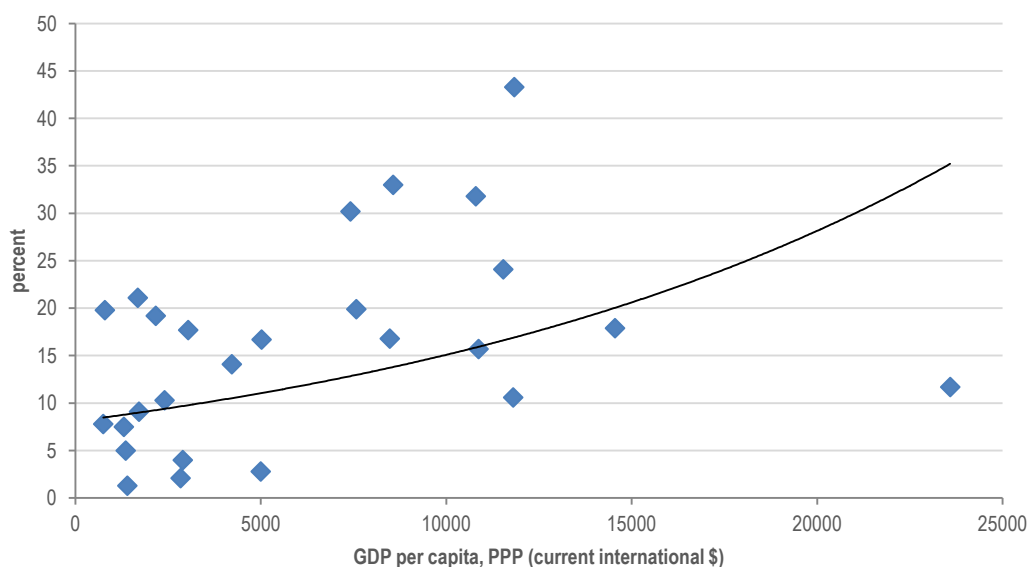
Source: UCW calculations based on ILO School-to-Work Transition Surveys and World Bank Development Indicators.

The share of youth still in education is significant, exceeding one-third in all countries but Bangladesh, Madagascar, Egypt, Tanzania and Vietnam. However, participation in education is only a very rough indicator of human capital accumulation, as a non-negligible share of youth in education in many of the countries attend a school grade below what is normal for their age because of delayed entrance or grade repetition. There are also significant shares of youth who have left school early or have never entered school,

particularly in Sub-Saharan Africa and Bangladesh. As discussed in section 5.4 of the paper, early school leavers are the group most likely to remain outside of the labour force and experience lengthy and difficult transition.

Figure 3. **Share of employed youth by type of employment (at the time of the STWT survey)**
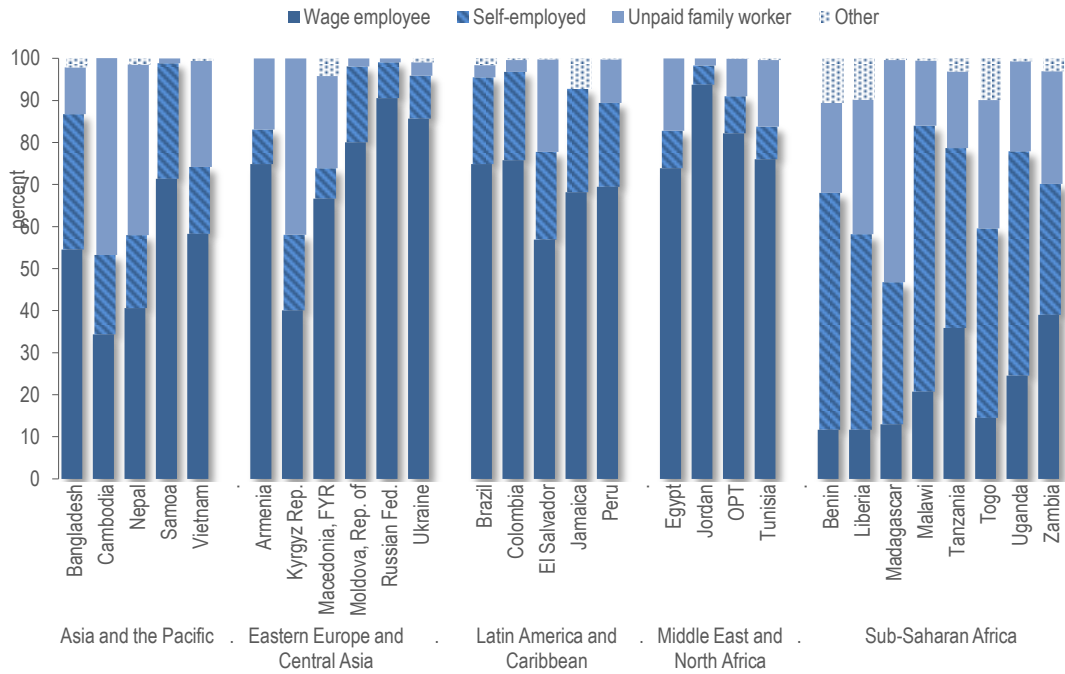
Note: OPT - Occupied Palestinian Territory
Source: UCW calculations based on ILO School-to-Work Transition Surveys.

Figure 3 shows the distribution of youth by status in employment and provides an initial indication of the types of jobs held by young persons in the 28 countries analysed. Some regional patterns are apparent. Young persons in Sub Saharan Africa (SSA) are disproportionately more likely to work in self-employment and less likely to be in wage employment relative to those in the other regions. Wage employment is the most frequent occupation among young workers in Latin America and the Caribbean (LAC), Middle East and North Africa (MENA) and Eastern Europe and Central Asia (EECA) while employed youth in Asia and the Pacific (AP) are mainly likely to be found in unpaid family work (with the exception of Samoa).

Information on the type of employment – whether an employee, a self-employed or an unpaid family worker - however, does not necessarily provide a complete picture of the *quality* of jobs held. Jobs might come with different attributes and their quality might vary, especially in low and middle-income countries, where work does not always guarantee livelihood. The ILO has identified a set of criteria for work to be "decent", it needs, *inter alia*, to be productive and to deliver a fair income, security in the workplace, social protection for families, and prospects for personal development and social integration (see Panel 1).

Panel 1. **ILO and Decent Work**

Decent work sums up the aspirations of people in their working lives. It involves opportunities for work that is productive and delivers a fair income, security in the workplace and social protection for families, better prospects for personal development and social integration, freedom for people to express their concerns, organize and participate in the decisions that affect their lives and equality of opportunity and treatment for all women and men.

The Decent Work concept was formulated by the ILO's constituents – governments and employers and workers – as a means to identify the Organization's major priorities. It is based on the understanding that work is a source of personal dignity, family stability, peace in the community, democracies that deliver for people, and economic growth that expands opportunities for productive jobs and enterprise development.

Source: ILO (http://ilo.org/global/about-the-ilo/decent-work-agenda/lang--en/index.htm).

It is difficult to translate this general notion of decent work in measurable indicators, especially because the data we utilize contain detailed information (including wages) only for the current job, while retrospective information is much scanter. In line with the approach also followed by the OECD and by Eurostat we use, therefore, a simple indicator of job quality based on stable employment, defined as wage work with an indefinite contract or with a contract of at least 12 months duration.

Figure 4 below presents the percentage of youth in stable employment as a fraction of employed youth. With the exception of Egypt, MENA countries show the highest rates of youth employment stability (within the employed), 89 per cent, followed by countries in EECA, LAC and AP and SSA at the other end of the spectrum. Overall and not surprisingly, the fraction of youth in stable employment tends to be higher in middle income countries.

Figure 4. **Fraction of youth employed at the time of the STWT survey with a wage contract of unlimited duration or at least 12 months duration**
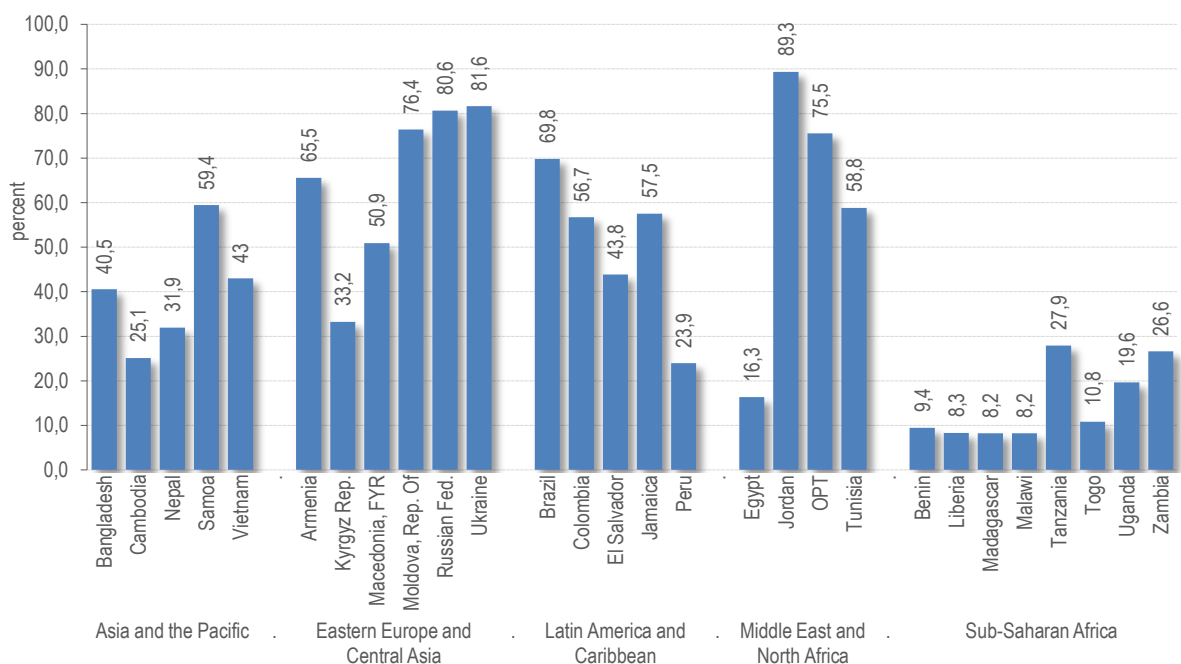
Note: OPT - Occupied Palestinian Territory
Source: UCW calculations based on ILO School-to-Work Transition Surveys.

The stable employment indicator should be considered with care in our case for two reasons. In low and middle income countries the share of waged employment tends to be lower than in high income countries (for which the concept of stable employment has been developed). Moreover, in our sample we have countries with very different level of development and economic structures: this reflects of course on the prevalence of stable employment among youth.

4. Work histories of young persons at the time of the survey

In this section we use the retrospective information collected at the time of the survey to present some of the characteristics of the transition from school to work. Here and in the remainder of the paper we focus on the transition to the *first* job and to a *first stable* job.

We focus in this section on <u>completed</u> non-employment spells, i.e. transitions among those who have already secured a job at the time of the survey. Clearly, among those who have not completed a transition, some will do at a later time. This is particularly true for those who only recently left education and for youth at the lower end of the 15-29 years age range.

The data presented in this section hence do not provide accurate estimates of the expected duration of transition from school to work and of its determinants, as they refer to a selected sample of individuals, i.e. those with shorter durations and those who left education longer before the survey. For this reason, in the next section we turn to a formal duration analysis, which is designed to overcome this concern. Still, a great deal is to be learnt by analysing retrospective data and this is what we turn next.

4.1 Youth status at the time of survey

Information regarding the status of youth aged 15-29 years at the time of the survey is reported in Table 3 and Table 5.

We first focus on those who have not begun their transition. Table 3 presents the information relative to those still in education (column c), who have not yet begun their transition, and on those never in education (column d). As already noted in the previous discussion, the share of youth still in education is significant, exceeding one-third in all but Madagascar, Egypt, Tanzania, Bangladesh and Vietnam.

Table 3.   **Transition status at the time of the survey, by country**

Region	Country	Youth who have left education		(c) Still in education	(d) Never in education	(e) Not defined/ missing	Total
		(a) In transition or transited	(b) Never in the labour force				
Asia and the Pacific	Bangladesh	33,8	28,2	23,5	13,9	0,6	100
	Cambodia	62,3	1,9	33,3	2,6	0	100
	Nepal	25,6	6,8	59,6	7,9	0,1	100
	Samoa	31,3	30,6	36,7	0,1	1,3	100
	Vietnam	62,3	3,7	31,2	2,2	0,6	100
Eastern Europe and Central Asia	Armenia	43,7	10,6	45,3	0,3	0,1	100
	Kyrgyz Republic	49	9	41,1	0,6	0,3	100
	Macedonia, FYR	44,4	6,8	47	0,9	0,9	100
	Moldova, Rep. of	48,7	5,3	42,9	0,5	2,6	100
	Russian Federation	54,6	5,7	36,1	0	3,6	100
	Ukraine	51,5	6,6	41,6	0	0,3	100

*Table 3.***Cont'd**

Region	Country	Youth who have left education		(c) Still in education	(d) Never in education	(e) Not defined/ missing	Total
		(a) In transition /transited	(b) Never in the labour force				
Latin America and the Caribbean	Brazil	53,4	0,2	36,8	0,1	9,5	100
	Colombia	38,7	2,3	45,3	n.a.	14,1	100
	El Salvador	43,9	16,8	36,2	1,7	1,4	100
	Jamaica	59,5	4,7	35,2	0	0,6	100
	Peru	46,5	8	44,7	0,5	0,3	100
Middle East and North Africa	Egypt	32,5	8,3	28,9	5,8	24,5	100
	Jordan	40	16,7	42,9	0,5	0	100
	Occupied Palestinian Territory	36,7	16,4	44,8	0,2	1,9	100
	Tunisia	43,4	9,9	38,1	2,2	6,4	100
Sub-Saharan Africa	Benin	20,4	1,5	49,3	28,8	0	100
	Liberia	17,7	3,3	60,5	10,5	8	100
	Madagascar	48,1	1,9	22,1	14,8	13,1	100
	Malawi	49	10,4	36,2	4,5	0	100
	Tanzania	48,5	15,7	29	2,5	4,3	100
	Togo	40,4	1,9	39,9	15,9	1,9	100
	Uganda	50	5	39,5	4,2	1,3	100
	Zambia	23,6	15,1	40,4	2,8	18,1	100

Note: Youth are classified as (a) transited if they have found a job since school departure, (b) in transition if they have not found a job since school departure but they have had at least one spell of unemployment/training, and (c) never in the labour force if they have always been inactive since leaving education (but may have been engaged in household chores in their own homes).
Source: UCW calculations based on School-to-Work Transition Surveys.

At the other end of the education spectrum, column (d) indicates there is also a relatively large number of youth in a subset of countries who have never attended school. The sub-Saharan African countries of Benin, Togo, Madagascar and Liberia and Bangladesh in Asia stand out as having the largest shares of youth with *no* education (29, 16, 11 and 14 percent, respectively). These youth have transited to the world of work or remained inactive without passing through the education system. For this group, of course, the concept of transition from school to work does not apply, and for this reason this group is not included in the rest of the analysis. We plan, however, to analyse in detail the pathways to work of this vulnerable group in future work.

Finally, it is worth noting that the share of youth that never entered the labour force is quite large in several countries, exceeding one-fifth in Nepal, Tanzania, El Salvador, Egypt, Jordan, OPT and Zambia (Column b, Table 3). As illustrated in the extended appendix (available upon request), this group is constituted overwhelmingly of female, mostly married, youths. It is noteworthy that those who never entered the labour force do not stand out as having lower levels of education than the rest.

4.2 Transition status of youth no longer in education

We now turn our attention to the youth who have left education. Among these, Table 4 and Figure 5 provide separate information on the transition status.

In particular, for the transition to a first job column (a)reports the percentage of the youth that upon leaving school have been in employment at least once, irrespective of whether or not they hold a job at the time of the survey, "*transited to a first job"*, while column (b) reports the share of those who have not found employment but who have experienced at least one spell of job-search or training, "*in transition to a first job"*. Column (c) and (d) reports similarly defined statistics in terms of transition to a stable job.

With a few exceptions, in the countries considered a substantial fraction of youth aged 15-29 who attended school and are no longer in education have already had a work experience by the time of the survey (Figure 5). In fact, the share of youth who have transited exceeds two-thirds in 14of the countries and is less than one-half only in Zambia (41 percent) and Samoa (48 percent). The share of youth in transition is much smaller in all countries, although in several of the countries (e.g., Macedonia, Benin, Liberia, Jamaica, Zambia and OPT) is nonetheless substantial.

The picture that emerges in terms of transition to a stable job is more nuanced (Table 4). In middle-income countries, most youth who have transited to employment have also secured a stable job. This is not the case in poorer countries, especially in SSA.

Table 4. **Transition to a first job and to a stable job for youth who have left education**

| Region | Country | Youth who have left education | | | |
| | | Transition to a 1st job | | Transition to a stable job | |
		(a) Transited to a 1stjob	(b) In transition to a 1st job	(c) Transited to a stable job	(d) In transition to a stable job
Asia and the Pacific	Bangladesh	31.4	2.5	13.8	20.0
	Cambodia	61.7	0.6	27.6	34.6
	Nepal	23.4	2.2	9.4	16.2
	Samoa	29.5	1.8	25.1	6.2
	Vietnam	61.4	0.9	40.2	22.1
Eastern Europe and Central Asia	Armenia	34.5	9.2	25.8	17.9
	Kyrgyz Republic	46.9	2.1	19.4	29.6
	Macedonia, FYR	27.0	17.4	20.4	24.0
	Moldova, Rep. of	46.7	2.0	8.1	40.6
	Russian Federation	50.0	4.6	44.6	10.0
	Ukraine	47.0	4.5	41.6	9.9

*Table 4.***Cont'd**

Region	Country	Youth who have left education			
		Transition to a 1st job		Transition to a stable job	
		(a) *Transited to a 1st job*	*(b)* *In transition to a 1st job*	*(c)* *Transited to a stable job*	*(d)* *In transition to a stable job*
Latin America and the Caribbean	Brazil	51.3	2.1	45.2	8.2
	Colombia	36,9	1,8	29,4	9,4
	El Salvador	41.2	2.8	29.6	14.3
	Jamaica	44.7	14.9	37.9	21.6
	Peru	44.1	2.4	37.4	9.1
Middle East and North Africa	Egypt	25.5	7.0	4.5	28.0
	Jordan	32.2	7.8	30.2	9.8
	Occupied Palestinian Territory	26.3	10.4	23.3	13.4
	Tunisia	33.4	10.0	26.0	17.3
Sub-Saharan Africa	Benin	13.0	7.3	2.2	18.2
	Liberia	12.3	5.4	1.2	16.5
	Madagascar	47.8	0.3	11.3	36.8
	Malawi	47.7	1.3	12.3	36.7
	Tanzania	44.5	4.0	17.3	31.2
	Togo	33.8	6.6	6.5	33.9
	Uganda	48.1	1.8	18.7	31.2
	Zambia	15.8	7.7	6.3	17.3

Source: UCW calculations based on ILO School-to-Work Transition Surveys.

Figure 5. **Distribution by transition status, youth ever in education but no longer in education, completed spells only**
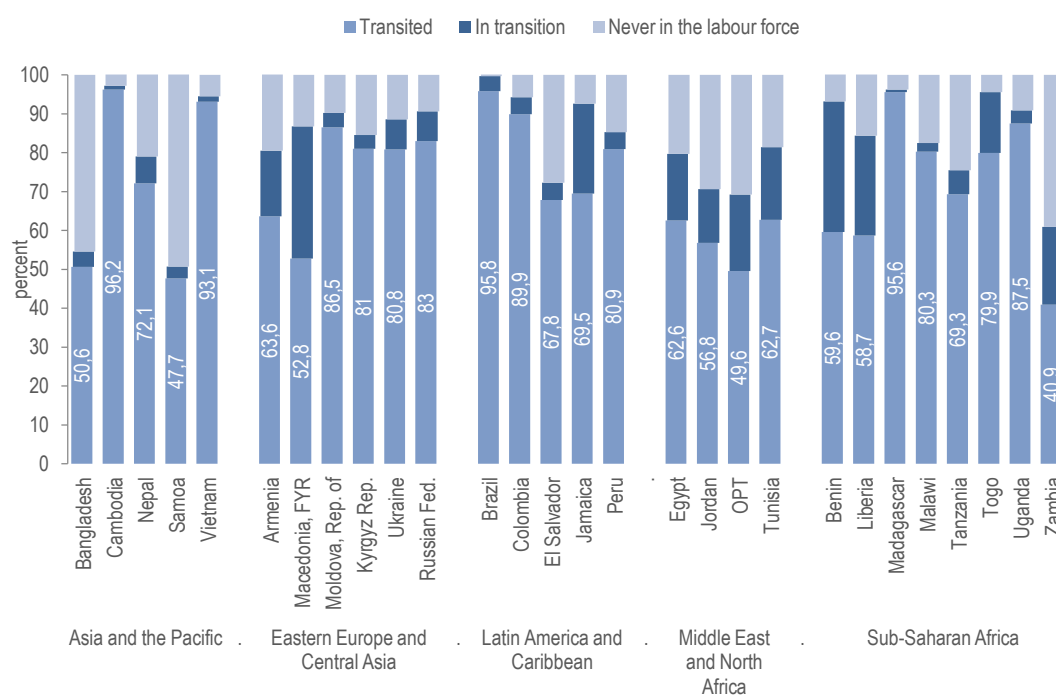
Note: OPT - Occupied Palestinian Territory
Source: UCW calculations based on ILO School-to-Work Transition Surveys.

As Figure 6 illustrates, among those who found a first job about half is still in that job by the time of the survey. Job mobility is the lowest in SSA and in ECA, with a fraction of youth still in their first job ranging from 38 percent in Malawi to 70 per cent in Liberia. Job mobility appears higher in LAC with a probability of retention of the first job ranging from 22 percent in Brazil to 55 percent in El Salvador.

Figure 6. **Fraction of transited youth who are still in their first job by the time of the STWT survey**
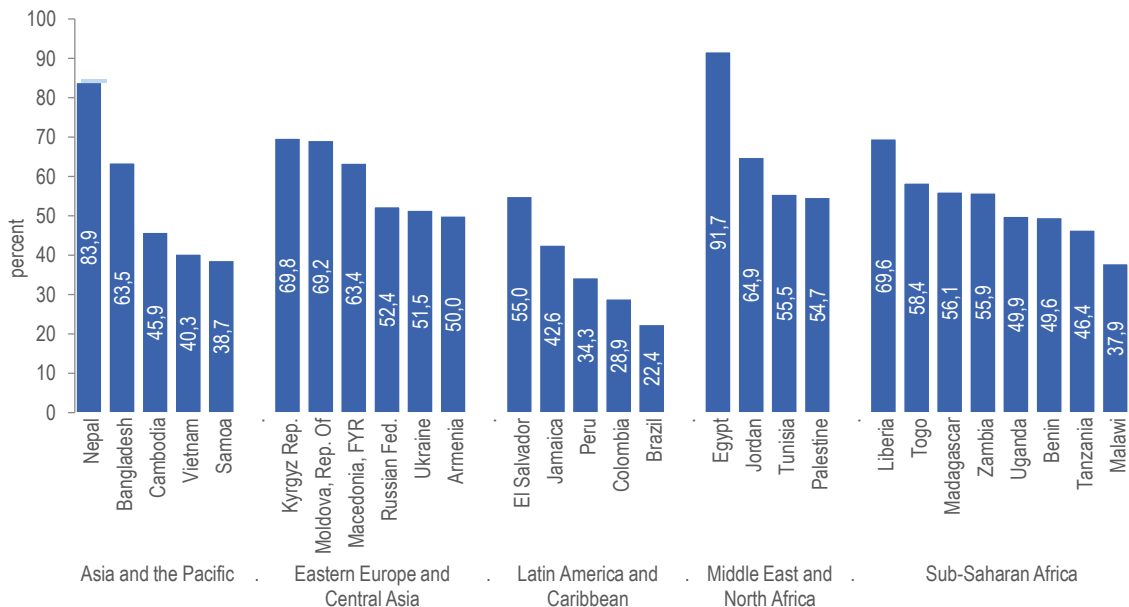
Note: (a) OPT - Occupied Palestinian Territory (b) This Figure does not include Bangladesh and Colombia for which no information is available on the exact dates of beginning and ending of spells
Source: UCW calculations based on School-to-Work Transition Surveys.

4.3 Youth working immediately after leaving school

A large fraction of those who have (or who have had) a first job declares having already been in work in the month just after leaving school. It is worth remembering that these individuals might have either found employment immediately *after* leaving education or they might have already been working while in education and simply continued in the same job after leaving school. Only the former case is technically a *transition* from school to work although we will use the term "direct transition" for both cases.

As shown in Figure 7, in 14 out of 26 countries at least half of all transited youth at the time of the survey reports already working in the first month after leaving school, hence not experiencing any intervening period of unemployment or inactivity between leaving school and the first job. This figure exceeds 90 percent in Cambodia, 80 percent in Moldova, Benin and Madagascar and 70 percent in Nepal, Peru and El Salvador.

Figure 7. **Percentage of youth transiting within one month from education to work (as percentage of out of school youth)**
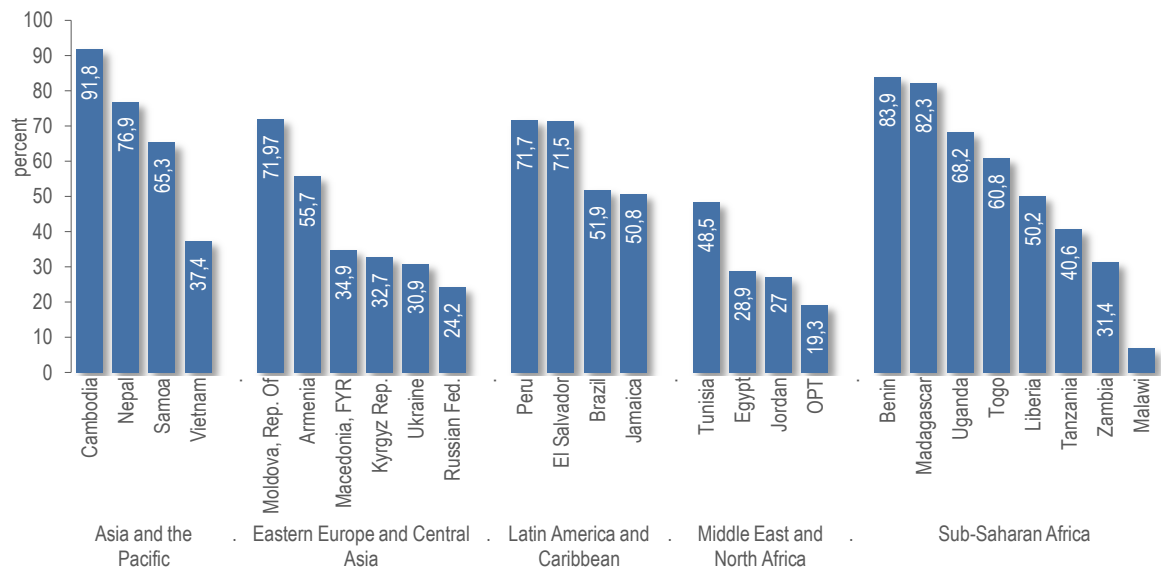
Note: OPT-Occupied Palestinian Territory
Source: UCW calculations based on ILO School-to-Work Transition Surveys.

4.4 Transition times: duration of completed spells

Average transition times to a first job for youth that have already transited to a first job at the time of the STWT survey (i.e., completed spells) are reported in Figure 8.

This figure, like the rest of the remaining analysis, excludes Bangladesh and Colombia for which no information is available in the data on the exact month of leaving school and the months in which each subsequent activity starts[7].

In the figure a distinction is drawn between "non-direct" transitions (i.e., those who did not find employment within a month after leaving education) and all transitions, which also include direct transitions (i.e. those who found employment within a month after leaving school).

As shown, many youths who are not in employment immediately after leaving school face a prolonged period of non-employment. In Benin, for instance, only a small minority (16 percent) do not transition directly upon leaving education, but the transition duration for this group is extremely long (56 months). Duration of completed non-employment spells among those not transiting directly also exceed three years in Cambodia, Macedonia and Togo, and exceed two years in a total of 13 of the 26 countries. Youth not transiting directly face a duration of at least one year in all countries with the exception of Ukraine.

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[7]See Section 5 for more details

Figure 8. **Duration of the transition in months from education to first job, all transitions and non-direct transitions, completed spells only**
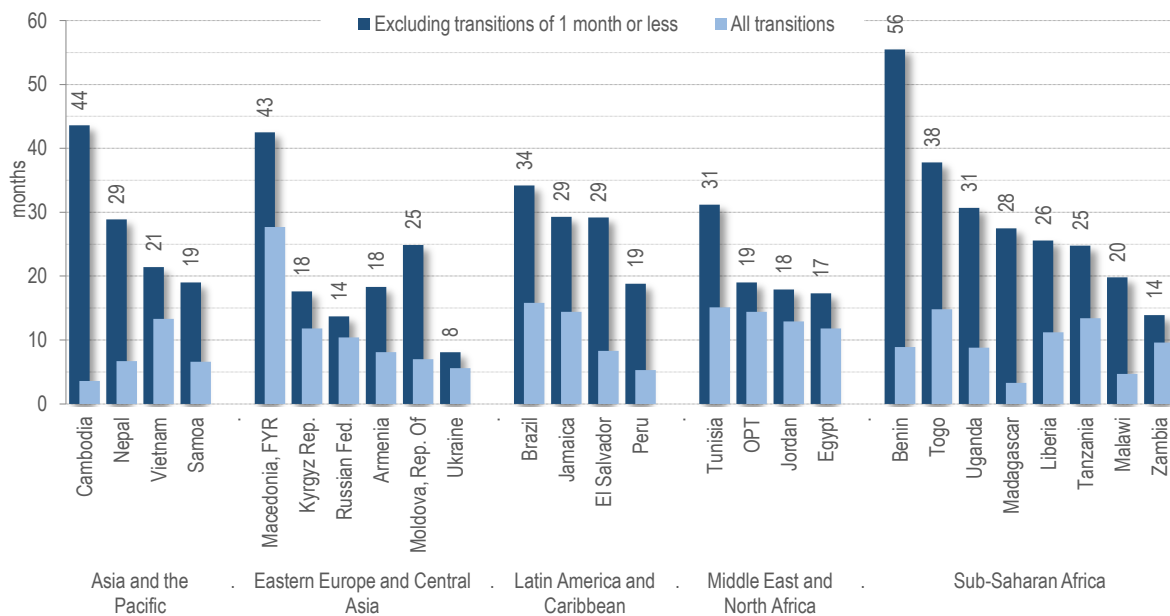
Note: OPT - Occupied Palestinian Territory
Source: UCW calculations based on ILO School-to-Work Transition Surveys.

5. Modelling transition to first job and stable employment via duration analysis

In this section we use an econometric model to estimate the duration and main determinants of the transition from school to work. By using duration models we explicitly account for the right-censored nature of the data.[8] We restrict our attention to out of school youth and we focus, in particular, on the transition from school to the first job and to the first stable job.

Before proceeding to the estimation of the model, we have applied a variety of sample selection criteria to the data (see Table A1 in the Appendix). The information provided by the surveys as well as sample sizes vary considerably across countries and sometimes the available information is not sufficient for our purposes or the remaining sample size so small that we prefer to exclude entire countries from the analysis.

In particular, the main reason for dropping observations is lack of information on the school leaving date, on the beginning of the different spells or about the labour market activities carried out during these spells. A small number of observations are also dropped because of inconsistencies between the date of leaving school and the beginning of subsequent spells.

This leads us to exclude Bangladesh from the analysis because there is no information about the month, but only about the year, of the beginning of each spell. Similarly, we exclude Colombia because there is no information on the date of leaving school. Missing information on the date of leaving school also reduces the sample for Malawi by almost 90 percent and, for this reason, we also exclude this country from the analysis. Moreover we exclude Zambia because of missing date of starting work for 1/3 of the sample. We also decided to exclude Liberia from the estimates because, once observations with missing variables are excluded, we are left with a very small sample (around 250 observations).

For Egypt we drop more than 40 percent of the sample while for Macedonia and Occupied Palestinian Territory we drop about 20 percent of the observations. We retain these countries in the analysis, but some care should be exerted in interpreting the estimates especially in the case of Egypt. An analysis of the data (not reported but available upon requests) illustrates that for this country the probability of missing information is significantly correlated with several individual characteristics, suggesting that information is not missing at random, in turn implying that the estimates for this country potentially suffer from selection bias.

5.1 Econometric approach

As illustrated in the preceding sections, a relatively large number of out of school youth had not experienced any employment spell by the time of the household survey. This is possibly an indication that some of these individuals will never transit to employment. Not taking into account this circumstance and treating these individuals as if they had extremely long transition durations might lead one to erroneously conclude that mean transition durations are very high. In order to account for this possibility we employ a split-population model (also sometimes referred to as spilt-cure model) briefly described in Panel 2.[9] This model provides a simultaneous estimate of the duration of the transition to

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[8] See Jenkins, Stephen P. (2005).and . Lancaster, Tony (1992)

[9]For a more detailed description of this class of models see, int. alia, Schmidt, Peter and Witte, Ann Dryden (1989).

employment among those who are expected to transit as well of the probability of never transiting (also sometimes referred to as the probability of being cured).

After some experimentation we have decided to parameterize the probability of never experiencing a failure (i.e., of never transiting to a job) as a log-log distribution and to constraint the hazard function to follow a proportional hazard Weibull distribution. The Weibull parameterization constraints the hazard function to be monotonically increasing or decreasing in duration while the proportional hazard specification restricts the hazard rate to be parallel across groups with different values of the covariates.[10]

Panel 2.   **Split population models**

Let $C \in \{0,1\}$ denote a variable taking the value one if an individual will eventually not work. C is unobservable for right-censored observations. Let denote the probability that a young person with a vector of characteristics X will never work by $Pr(C = 1|X) = \pi(X)$ which is an unknown function of X to be estimated.

We assume further that, conditional on X and $C=0$, the density of the duration to the first job, which we denote by t, is $f(t|C = 0, X)$, with $S(t|C = 0, X) = 1 - F(t|C = 0, X)$ denoting the associated survival function and $F(t|C = 0, X)$ the associated c.d.f. The hazard rate is consistently defined the ratio between the probability of leaving unemployment in a small interval of time between t and Δt, and the probability of "surviving" (i.e. being out of employment) up time t. In formulas:

$$h(t|C = 0, X) = \frac{f(t|C = 0, X)}{S(t|C = 0, X)}$$

The contribution to the likelihood for those who find a job by the end of the observation period (denoted by $k=1$) is $(1 - \pi(X))f(t|C = 0, X)$, meaning that these individuals are known to find a job at one point (hence the first term in round brackets) and that they happen to find it at duration t (hence the second term in round brackets).

For right-censored observations (denoted by $k=0$) the contribution to the likelihood is the probability of either never working or of working past the censoring point, denoted by T. In formulas:

$$\pi(X) + (1 - \pi(X))S(T|C = 0, X).$$

The likelihood function is then:

$$\prod_{i=1}^{N} [(1 - \pi(X_i))f(t_i|C_i = 0, X_i)]^{k_i} [\pi(X_i) + (1 - \pi(X_i))S(T_i|C_i = 0, X_i)]^{1-k_i}$$

Where N is the number of observations. We estimate the model by maximum likelihood using the strsmix routine in Stata.

In the empirical analysis we assume a proportional hazard Weibull model. In formulas we assume that the hazard takes the following form:

$$h(t|C = 0, X) = \gamma \, t^{\gamma - 1} \, \lambda(X)$$

where $\lambda(X) = e^{\mu X}$.

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[10] Although this parameterization is necessarily restrictive, as it does not allow the hazard function for example to first decrease and then increase in duration, its advantage is parsimony, as the hazard function only depends on two parameters. Given the small number of observations available for each country and the varying quality of the data, we have found that split-population models that account for more than one parameter in the hazard function fail to converge in most of the countries.

Panel 2.**Cont'd**

We also assume a "log-log" specification for the probability of failure, in formulas :

$$\pi(X) = e^{-e^{X\beta}}$$

where γ, μ and β are parameters to be estimated.

From the above one can derive estimates of average duration. In particular, following Klein and Moeschberger (1997)

$$E(t|C = 0, X) = \left(\frac{1}{\lambda(X)}\right)^{\frac{1}{\gamma}} \Gamma\left(1 + \frac{1}{\gamma}\right)$$

where Γ is the gamma function. Average duration unconditional on X can be obtained using the law of iterated expectations, i.e. simply averaging expected durations over the entire sample. From the above it is also possible to obtain the median of the predicted duration.

5.2 Main results

Model estimates for 23 countries (i.e. excluding Bangladesh, Colombia, Liberia, Malawi and Zambia) are reported in the Appendix. Table A2 reports the estimates for the transition to a first job: in particular Panel 1 contains the estimates of the probability of never transiting to a job and Panel 2 the estimates of the duration model for youth expected to eventually transit to a job.

We also note that, the split-population model fails to converge for Brazil due to a very small number of censored observations in the data. For this country we decided, therefore, to estimate a standard proportional hazard Weibull model.

The estimates for the transition to a stable job are reported in Table A3, which has the same structure as Table A2. Some caution is needed here, as stable employment is rare is many countries in our sample and the number of observations with stable employment in the data is often very limited implying that estimates of the model parameters might be imprecise.

In the model we include the following control variables: a dummy for gender, a dummy for urban/rural location, dummies for three school leaving age groups (less than 16, between 16 and 18 and greater than 18),[11] three dummies for the father's educational level (i.e., up to primary, up to secondary and higher) and a dummy for whether the individual ever worked while in school. To account for the possible impact of labour market conditions at the date of leaving school on the subsequent probability of finding employment we include the average (over three years) of per capita GDP growth centred at the time of leaving school. Finally, we include dummies for missing values of all included variables.

In section 5.2.1 we discuss country level estimates of the probability of never transiting and of the average transition duration among those predicted to transit. We discuss the effects of the covariates of these outcomes in the following subsections.

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[11] We prefer to age left education rather than highest education level achieved because the latter is defined only coarsely and the categories of completed education vary across countries. Some degree of caution is needed here though, as, due to late entry, intermittent attendance and widespread grade retention individuals with the same age left education might have different levels of completed education.

5.2.1 Share of youth never transiting to employment or to stable employment

Estimates of the split population model indicate that in several countries a substantial fraction of youth is expected to never transit to a job. As shown in Figure 9, this share ranges from less than 3 percent in Madagascar and Cambodia to over 57 percent in Uganda.

On average, across all our sample of countries, around 19 per cent of youth are expected to never transit to employment. The predicted fraction of youth never expected to transit is the highest in the MENA region, on the order of 25 percent, something that, as discussed below, is ascribable to a disproportionately low female labour force participation rates in this region. In contrast (and with the exception of), most youth in SSA countries are expected to find employment at one point in their life.

This is in contrast with the share of youth expected to never transit to a stable job that is remarkably high in SSA countries (varying between 55 per cent in Tanzania and Togo and 87 per cent in Benin). This should be no surprise given the low fraction of stable jobs available in these countries.

Figure 9. **Predicted share of youth never transiting to employment and to stable employment based on split population model, by country**
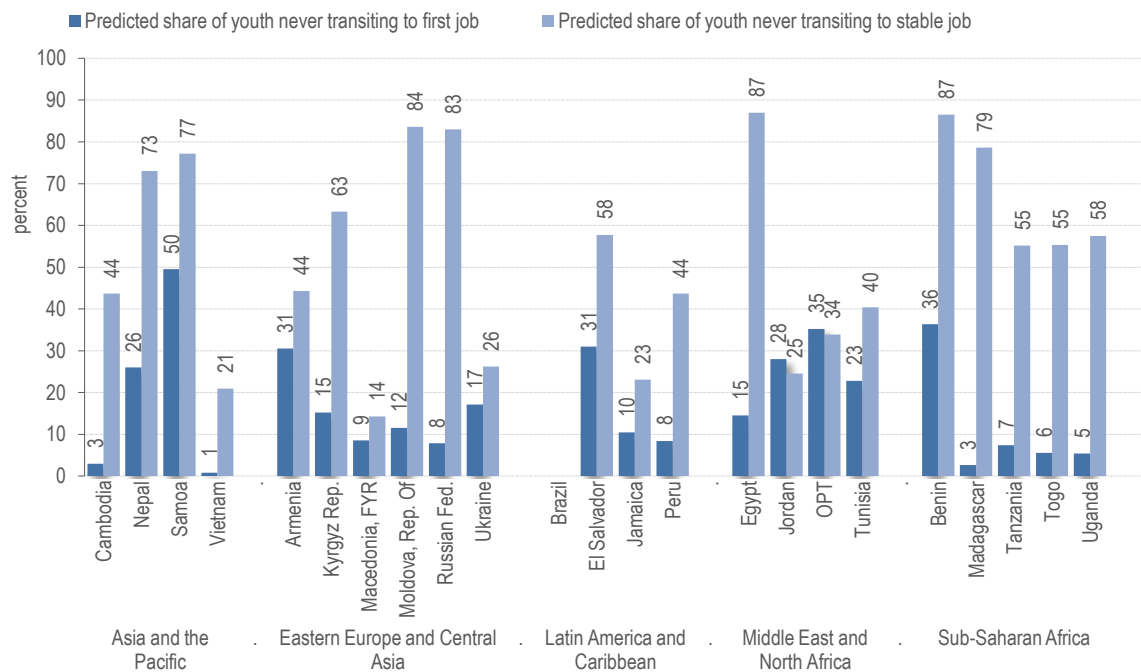
Note: OPT - Occupied Palestinian Territory
Source: UCW calculations based on ILO School-to-Work Transition Surveys.

The share of youth expected to never transit to employment based on the split population model is systematically below the fraction of youth who had not found employment by the time of the school transition survey. This is an indication that part of the youth observed never entering the labour force at the time of the survey, is expected to eventually transit to the labour market. This is illustrated in Figure 10,which highlights the limitation of using completed spells to make inference about labour market transitions.

Figure 10. **Share of youth predicted to never transit to a first job versus share of youth that never entered the labour force by the time of the survey, by country**
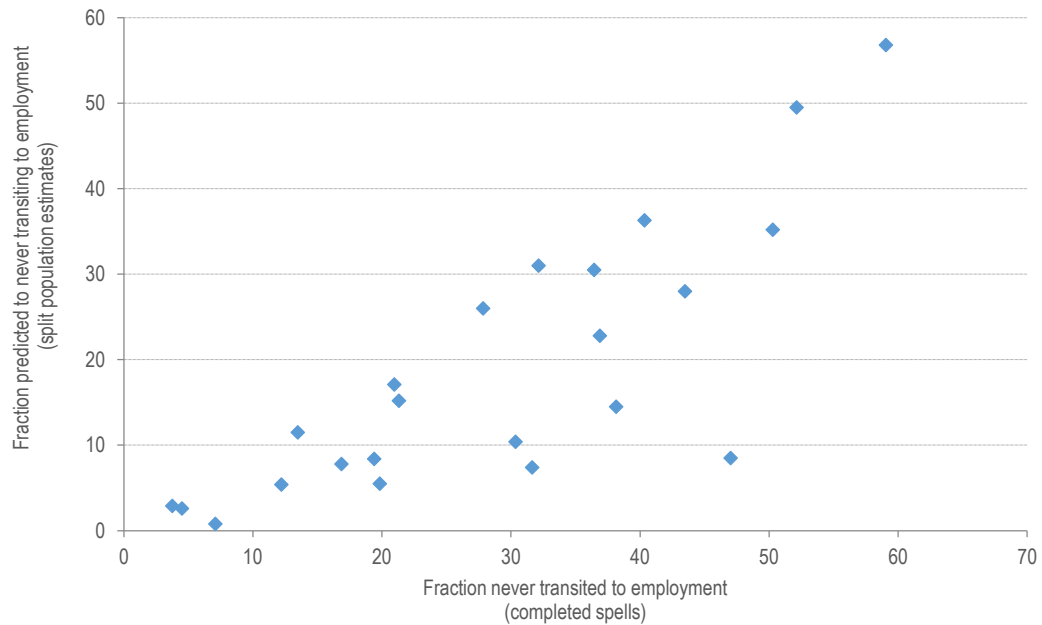
Source: UCW calculations based on ILO School-to-Work Transition Surveys

5.2.2 Predicted duration of transition to first job and stable job

Estimates of the baseline hazard function, i.e. of the probability of finding a job in the current period conditional on not yet having found one up to the previous period among those eventually expected to transit to employment are reported in Figure 11.

For all countries there is evidence of negative duration dependence in the transition to a first job: the probability of finding a job among the survivors - i.e. those who are still out of work at any given time - falls as duration increases. This implies that either individuals manage to transit very rapidly to employment, or if unsuccessful, they are bound to experience prolonged transitions.

Figure 11. **Estimates of the hazard function based on split population model with covariates, by country**
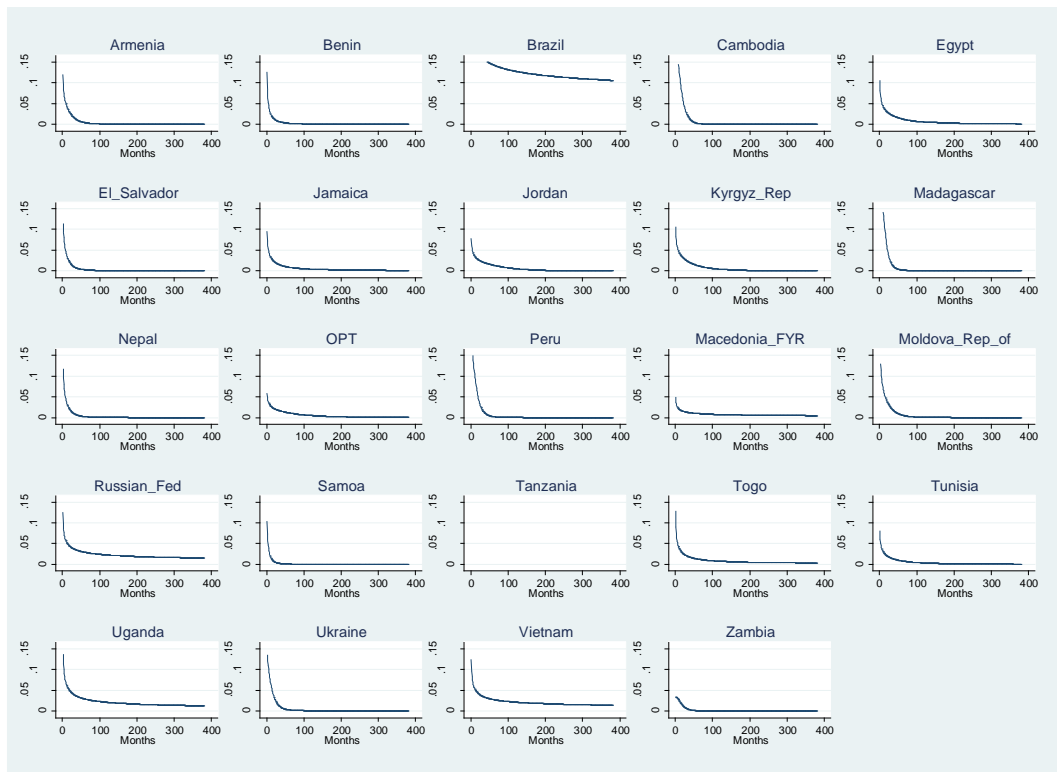
Source: UCW calculations based on ILO School-to-Work Transition Surveys

The hazard rate for the duration to stable employment (results available on request) also displays a high degree of negative duration dependence.

Figure 12 and Table 5 report the average estimated duration of the transition to the first job among those who are expected to transit. We exclude Macedonia from the analysis as model estimates give implausibly high value for such duration due to the poor fit of the model.

Average duration to first employment across all countries considered(excluding Macedonia) is 21.64 months, i.e., slightly below two years.

This number however masks substantial heterogeneity across regions and countries. Average duration is the lowest in the AP and ECA regions (with average transition durations across all countries in our sample of between 13 and 14 months). By the opposite token, transition into work is particularly slow in the MENA region, with an average duration of 44 months.[12]

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[12]As expected, mean transition durations estimated based on a hazard model that corrects for right censoring are larger than mean duration among those with complete spells presented in Section 3.4. Using only completed spells clearly leads to a substantial underestimate of the transition duration of the transition. Also note that transition duration estimates based on split population models are substantially lower than those obtained from a simple proportional hazard Weibull model (see Table A4). In practice, not taking into account the fact that a relatively large number of youth are expected to never complete a transition - and hence should not be included in the computation of mean duration in non-employment – leads to

Figure 12. **Predicted mean and median duration of the transition to a first job based on split population model, by country**
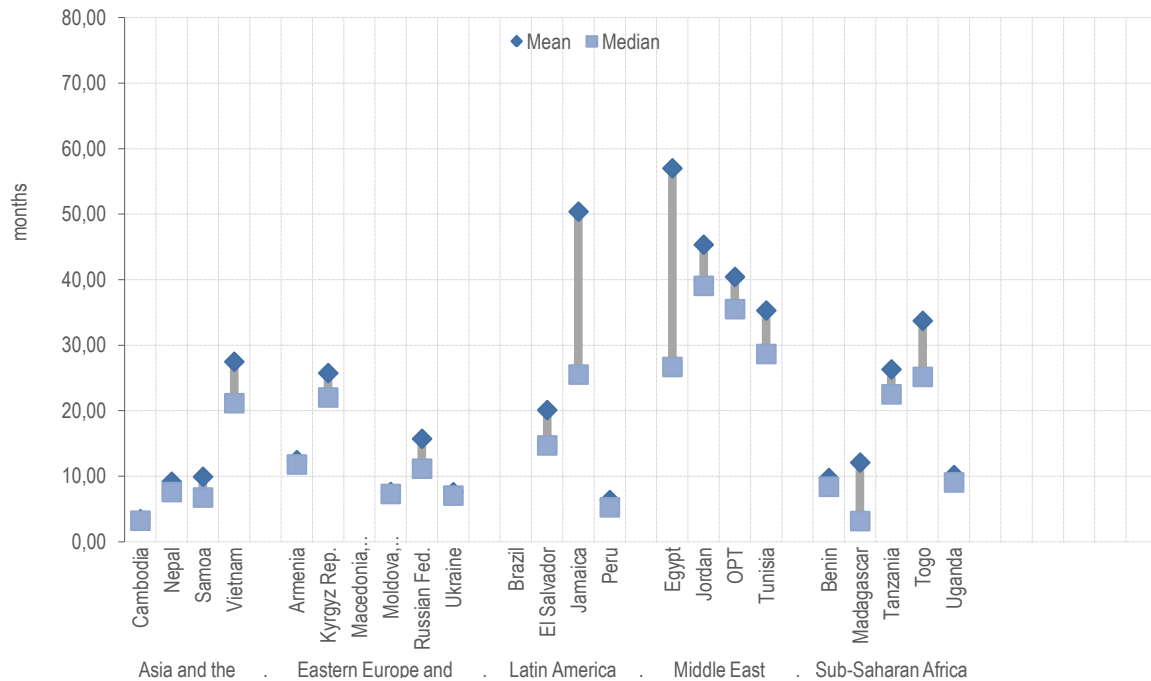
Note: (a) OPT - Occupied Palestinian Territory (b) Brazil Weibull estimates
.Source: UCW calculations based on ILO School-to-Work Transition Surveys.

How do these transition durations compare with that of the high income countries[13]? The bottom panel of Table 5 reports the estimated average transition duration in sample of European countries estimated by Quintini et al. (2007) based on the European Community Household Panel (waves 2 to 8). Despite differences in methodology and data collection instruments between our study and Quintini et al (2007), remarkably, average transition time to the first job across the EU countries in the sample is very close to the average in our sample of low and middle income countries (22 months). Again, there is variability across EU countries but this is not as pronounced as the one in our sample though.

In sum, mean transition durations in low and middle countries income appear not too dissimilar from average transition duration in high income countries. If anything, youth in AP and ECA appear to transit faster than their European counterparts. The MENA region displays remarkably higher transition durations, although not too dissimilar from Spain, the European country with the highest estimated transition duration.

The conclusion that the speed of transition is no substantially different in low and middle income countries compared to high income countries is tempered by the observation that a substantial fraction of youth in the former countries - around 20 percent - is expected to never transit to employment. Although this might be in part ascribable to cultural factors, pertaining in particular to the role of women in society, this might also signal discouragement among job seekers.

substantially overestimate the duration of the transition.

[13]Information on school to work transition durations is not readily available for high income countries, therefore we present below the few cross country statistics available

Table 5. **Average duration of the transition from school to work around the world (in months)**

Region	Country	Duration in months	
		(a) Time spent to find any job	(b) Time spent to find a stable job
Asia and the Pacific	Cambodia	3.46	>150
	Nepal	9.17	19.43
	Samoa	9.93	16.50
	Vietnam	27.49	>150
Eastern Europe and Central Asia	Armenia	12.46	49.73
	Kyrgyz Rep.	25.75	44.91
	Macedonia, FYR	>150	>150
	Moldova, Rep. of	7.61	3.84
	Russian Federation	15.72	40.28
	Ukraine	7.57	11.72
Latin America and Caribbean	Brazil	19.31	45.82
	El Salvador	20.11	17.85
	Jamaica	50.40	100.71
	Peru	6.38	26.29
Middle East and North Africa	Egypt	57.01	>150
	Jordan	45.34	>150
	Occupied Palestinian Territory	40.44	142.24
	Tunisia	35.30	90.84
Sub-Saharan Africa	Benin	9.74	31.26
	Madagascar	12.10	>150
	Tanzania	26.32	105.71
	Togo	33.73	>150
	Uganda	10.19	28.88
Europe	Austria	19.09	33.0
	Belgium	20.4	45.0
	Denmark	14.6	21.3
	Finland	27.6	44.3
	France	24.3	40.7
	Germany	18.0	33.8
	Greece	21.3	51.5
	Ireland	13.2	28.7
	Italy	25.5	44.8
	Portugal	22.6	51.5
	Spain	34.6	56.6
	United Kingdom	19.4	36.1

Sources: Data for Europe come from Quintini et al (2007). For other countries source UCW calculation based on ILO STWT surveys Symbol: - indicates an estimated mean duration greater than 150 months.

Figure 13 examines the correlation between predicted average duration among those who transit and the probability of eventually transiting. There is evidence of a mild positive correlation between these two variables. This signals that on average youth in countries with longer durations also display a lower probability of ever transiting to employment, which we take as evidence of both measures capturing the hurdles that young individuals face in the labour markets in these countries.

Figure 13. **Predicted share of youth transited (%) versus predicted mean transition duration (months) based on split population model, by country**
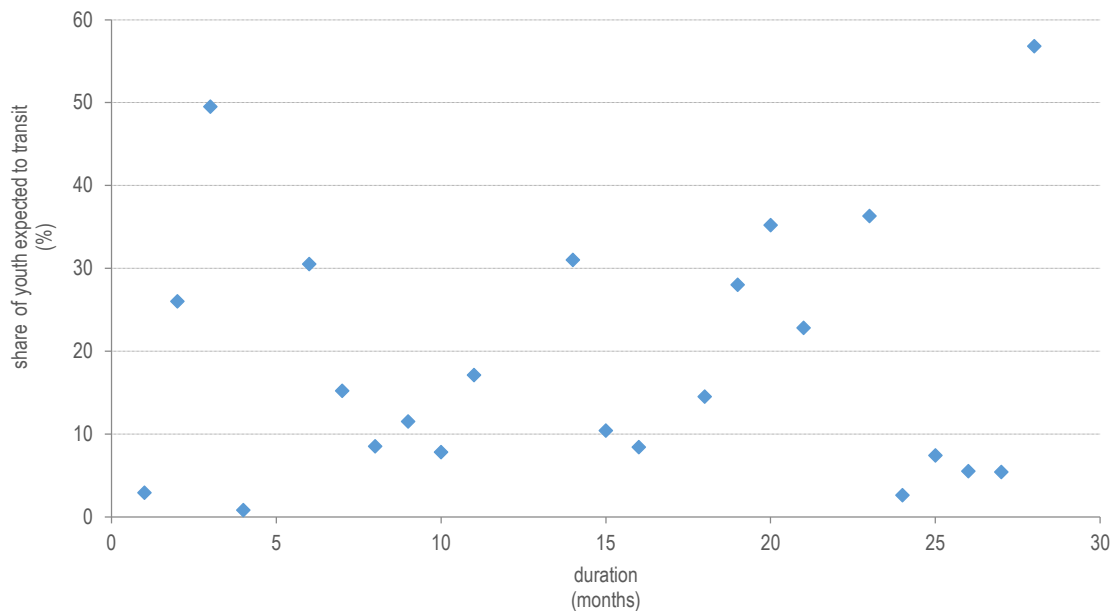
Source: UCW calculations based on ILO School-to-Work Transition Surveys

Median duration is possibly a better indication of central tendency. This is effectively the time since leaving school by which 50 per cent of individuals in each country are predicted to have transited to employment.

Table 5 shows that the median duration is substantially below mean, especially in countries with high durations (in particular MENA), consistent with the evidence in Figure 13, that the distribution of durations is highly skewed to the right, with a large mass of distribution at short durations and a few observations with very long school-to-work transitions. Median school to work transition duration is less than two years in all the countries (with the exception of Macedonia) and it is systematically higher in the MENA region and lower in AP countries.

An alternative way to characterise the distribution of durations is to compute, on the basis of the estimated model, the share of youth (among those expected to eventually transit to a job) expected to find their first job within 6, 12 or 36 months after leaving school (Table 6).

In most of the countries at least 50 percent or more of the youth (among those eventually expected to transit to a job) are expected to be in employment within six months after leaving school, the exception being the countries from the MENA region and a few others such as Armenia and Togo for example.

In some countries (Cambodia, Nepal, Moldova, Ukraine, Peru and Madagascar) this fraction is as high as 80 per cent. Again MENA countries stand out for the slow rate of transition. Finally, after three years 90 per cent of the youth has transited to a job in most countries. In countries from the MENA region and a few from SSA, however, there are between 20 percent and 25 percent of youth still in transition after 3 years since leaving school.

This underline the dichotomous process that youth face in their transition to work, with a group moving very smoothly from school to work and another taking much longer. Some of the characteristics associated with this dichotomy will be discussed later on.

Table 6. **Share of youth expected to have transited to first job or to stable job within six months, 12 months and 36 months after leaving education (among youth predicted to eventually transit to first job), by country**

| Region | Country | Share of youth expected to have transited after | | | | | |
| | | 6 months | | 12 months | | 36 months | |
		(a) First job	(b) Stable job	(c) First job	(d) Stable job	(e) First job	(f) Stable job
Asia and the Pacific	Cambodia	0.83	0.34	0.94	0.43	1.00	0.59
	Nepal	0.66	0.52	0.80	0.66	0.95	0.86
	Samoa	0.64	0.55	0.79	0.70	0.94	0.89
	Vietnam	0.44	0.22	0.58	0.32	0.80	0.50
Eastern Europe and Central Asia	Armenia	0.54	0.32	0.70	0.45	0.92	0.68
	Kyrgyz Rep.	0.42	0.31	0.57	0.44	0.80	0.68
	Macedonia, FYR	0.22	0.10	0.31	0.15	0.50	0.28
	Moldova, Rep. of	0.68	0.81	0.82	0.93	0.96	1.00
	Russian Federation	0.49	0.37	0.66	0.51	0.88	0.74
	Ukraine	0.62	0.52	0.81	0.70	0.97	0.93
Latin America and the Caribbean	Brazil	0.58	0.46	0.69	0.59	0.84	0.67
	El Salvador	0.59	0.56	0.73	0.69	0.89	0.87
	Jamaica	0.41	0.32	0.54	0.44	0.75	0.64
	Peru	0.71	0.44	0.85	0.58	0.98	0.81
Middle East and North Africa	Egypt	0.41	0.25	0.53	0.38	0.73	0.62
	Jordan	0.35	0.26	0.49	0.37	0.72	0.57
	Occupied Palestinian Territory	0.31	0.16	0.45	0.24	0.70	0.43
	Tunisia	0.39	0.26	0.52	0.36	0.75	0.56
Sub-Saharan Africa	Benin	0.67	0.53	0.80	0.65	0.94	0.82
	Madagascar	0.77	0.33	0.88	0.42	0.95	0.57
	Tanzania	0.43	0.28	0.57	0.39	0.80	0.58
	Togo	0.48	0.27	0.60	0.34	0.79	0.47
	Uganda	0.63	0.44	0.77	0.57	0.93	0.79

Source: UCW calculations based on ILO School-to-Work Transition Surveys.

Turning to stable employment, column b of Table 5reports average transition durations to the first stable employment. For presentational purposes, as mean duration to first job is remarkably high in many countries, the data in this table and in the following figures are top coded at a value of 150 months. Transition durations are much longer in low and middle income countries than in Europe, despite a much lower fraction of youth excepted to ever transit to stable employment. These facts are, of course, also a consequence of the fact stable jobs, defined here as <u>wage</u> jobs, are structurally available in very limited numbers in several of the countries considered in our sample. Duration to stable employment seems on average the lowest in Asia and Pacific and LAC regions, on the order of 4 years, and quite similar to what has been found for Europe. Transition durations to stable employment are around two to three times as much in the other regions, again with the MENA region showing extremely lengthy durations (on the order of around 8 years or more).In line with these findings,Table 6illustrates that with a few exceptions, after three months since leaving school less than one third of youth have transited to a stable job.

After three years in some countries less than one third of youth has transited and the gap with respect to overall transition to employment remains large.

5.3 Cross countries differences

One question that naturally arises is whether the large differences across countries in average duration and in the probability of ever transiting to employment reflect differences in the characteristics of the population or a different impact of these characteristics on the outcome variables. The latter would suggest that structural or cyclical differences across countries are responsible for differences in outcomes.

Figure 14. **Predicted share of youth never transiting to first job, in sample and composition free**
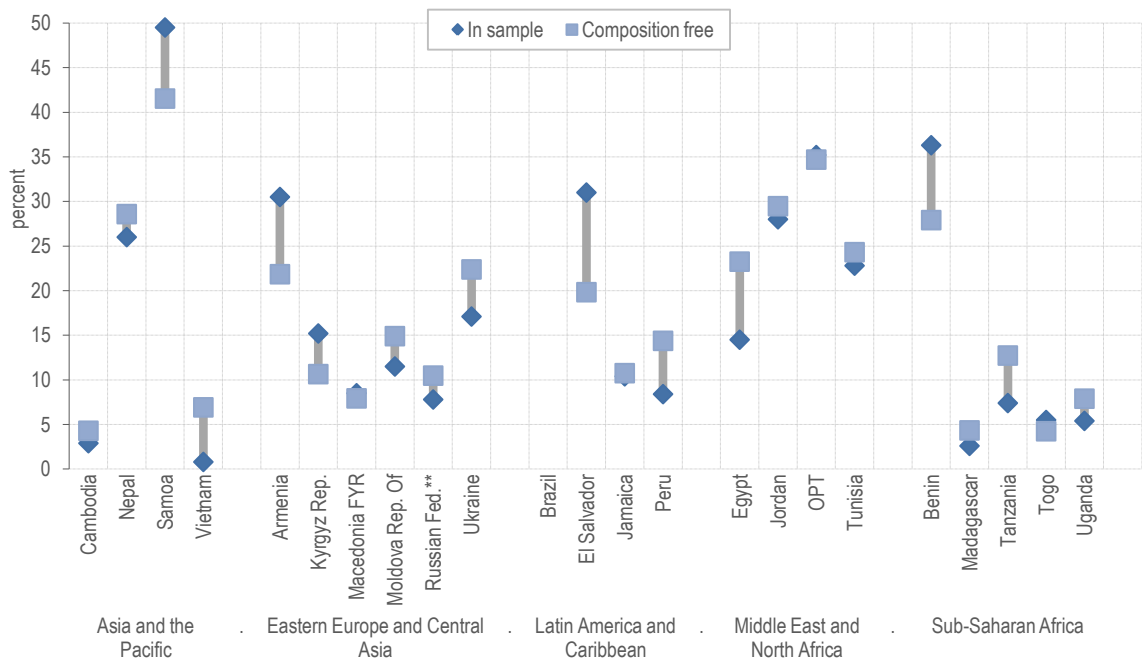
Note: OPT – Occupied Palestinian Territory

Source: UCW calculations based on ILO School-to-Work Transition Surveys. Only countries with an in-sample fraction of youth predicted not to transit lower than 50 percent reported.

As a way to obtain some evidence on this question, we have recomputed the probability of never transiting to a job keeping individual characteristics fixed across countries. In particular, we have computed predictions from each country-specific model over the entire sample of data (i.e. for all the individuals in all the countries in our data set). In practice, we use country level estimates of the duration model to predict the transition behaviour in each country of a representative youth with characteristics equal to the average characteristics of all individuals in our sample, irrespective of the country of residence. We contrast these predictions with those obtained using only the characteristics of the sample in each specific country considered (as in the previous subsection). The difference between these two predictions gives a measure of the role played by observable characteristics in accounting for differences across countries. Figure 14 shows that,

accounting for compositional differences dampens the variability in the share of youth predicted to never transit to employment across countries, meaning that indeed observable characteristics partially account for differences in the share of youth predicted to never transit across countries. Still, even allowing for differences in the composition of the youth population across countries, large differences across countries persist. As observable characteristics are unable to explain a large fraction of the differences in the probability of never transiting to employment across countries, these differences are most likely due to structural economic differences or differences in the state of the economic cycle across countries. However, given the limited number of explanatory variables available in our data, we cannot rule that unobserved individual characteristics, which we cannot account for, also contribute to explain these differences.

In order to gauge some suggestive evidence about the role of country level characteristics in explaining the cross-country dispersion in the fraction of individuals predicted to never transit to the labour market, we have considered a large number of indicators relative to the structure of the economy, to the characteristics of the firms and to the ease of doing business. Figure 15 reports the correlation (together with an estimated regression line) between the fraction of youth expected to never transit to a job (on the horizontal axis) and the subset of country specific variables for which we have found some evidence of correlation (on the vertical axis). Note that these indicator variables are only available for a subset of countries and that the precise sample of countries for which these are available differs from variable to variable.[14] For this reason some caution should be exerted in extrapolating these results to the entire set of countries in our analysis.

Figure 15. **Correlation between fraction of youth predicted to never transit to first job and macroeconomic indicators, by country**

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Sources: World Bank World Development Indicators (macro-level indicators of the economy and labour market), World Bank Enterprise Surveys; and UCW calculations based on split-population model.

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[14] The macro-level indicators of the economy and labour market are from the World Bank World Development Indicators (WDI) and from the World Bank Enterprise Surveys. The data for the share of cured comes from our estimates from the split-population model.

Perhaps unsurprisingly, the figure shows that the probability of never transiting to employment is negatively affected by the current state of the economy (as measured by average GDP growth in the three years preceding the survey) and similarly positively affected by the current unemployment rate (measured in the year of the survey). When disaggregating by gender ,it appears that the latter correlation only holds for female youth (results not reported).

It is also interesting to remark that higher income inequality, as measured by the Gini index, is associated with a lower probability of never transiting. Countries that employ relatively more skilled workers, a possible proxy for technological progress or relatively higher living standards, display a lower share of youth never transiting to the labour market. By the opposite token, those with stricter trade regulations (as proxied by the number of firms that perceive trade regulation as a major obstacle to their business) display a larger share of youth never transiting to the labour market. Note finally, that no significant correlation was found between the probability of ever transiting and indicators reflecting the business climate like the ease of doing business. Overall, these results are suggestive of both cyclical and structural elements affecting the probability of youth never transiting to the labour market.

As in the case of the probability of ever transiting, we have attempted to assess to what extent cross-countries differences in mean duration can be attributed to differences in the composition of the population. We have, therefore, recomputed average duration among those who ever transit keeping individual characteristics fixed using the same procedure described above. As shown in Figure 16, there is some evidence that accounting for compositional effects reduces the heterogeneity in average duration, although, as before, there are still large differences across countries that we unable to account for.

Figure 16. **Predicted mean duration of transition to first job, in sample and composition free, based on split population model, by country**
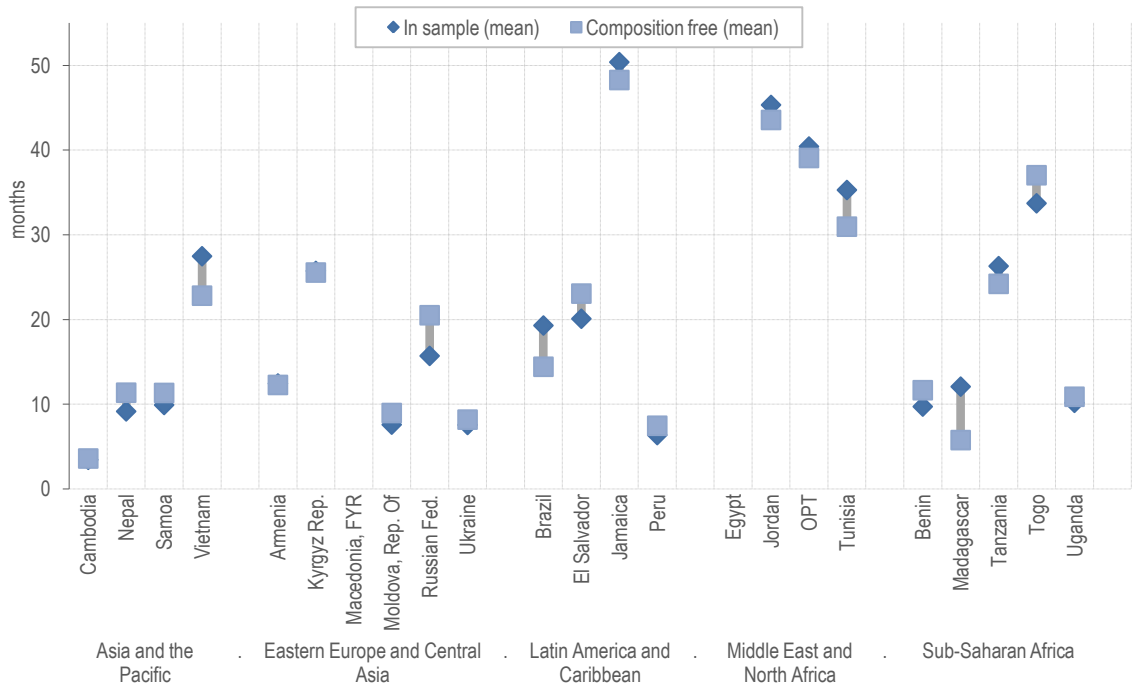
Source: UCW calculations based on ILO School-to-Work Transition Surveys. Only countries with an average estimated (in-sample) duration lower than 50 months reported.

Again we have attempted to assess if there is any suggestive evidence of correlation between the average duration of transition and country level characteristics (Figure 17).

Broadly speaking, it appears that variables that positively (negatively) affect the probability of never transiting also positively (negatively) affect mean duration. This is in line with findings in Figure 17 that there exists a positive correlation between the probability of never being in employment and average transition duration among the ones who eventually find a job.

We find evidence of mean transition duration being negatively correlated with per capita GDP growth and positively correlated with the unemployment rate. Similarly, the higher the share of skilled to unskilled workers, the shorter the transition duration. Interestingly, the higher the share of firms that offer training to their employees the shorter the time necessary on average to find a first job.

Figure 17. **Correlation between predicted mean duration and macroeconomic indicators, by country**
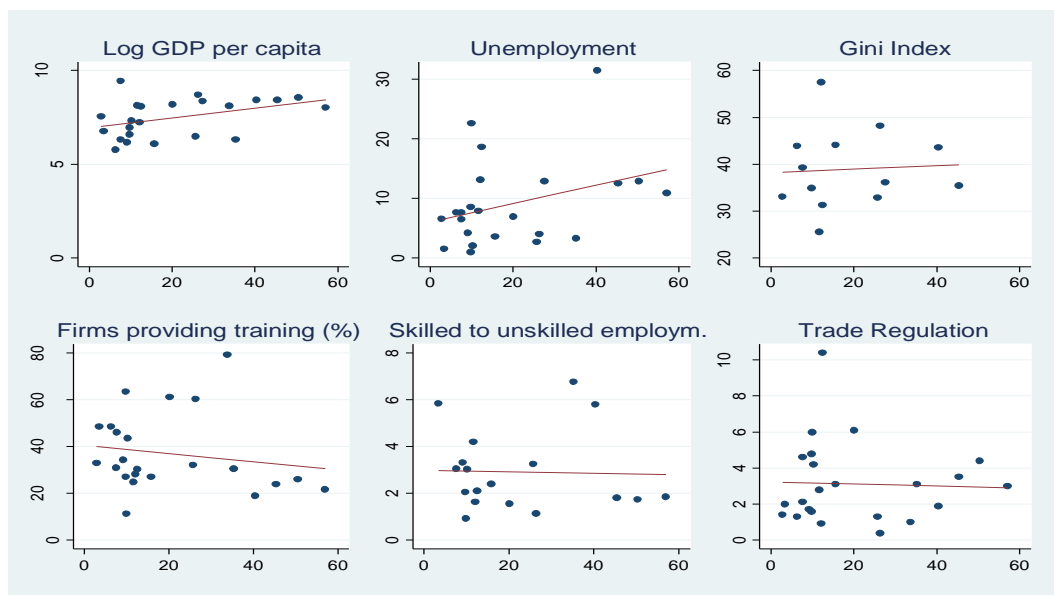
Sources: World Bank World Development Indicators (macro-level indicators of the economy and labour market), World Bank Enterprise Surveys; and UCW calculations based on split-population model..

5.4 Key correlates

In this section we discuss the effects of the explanatory variables included in the model on the probability of ever transiting and on the duration of the transition to a first job or to a stable job.

To examine these effects we compare mean predicted values obtained by varying the values of the variable of interest, while keeping constant the values of all other variables. For example, in the case of gender, for each country we compute predicted durations assuming that all individuals in that country's sample are either all females or all males. A comparison between these two predictions provides an estimate of the effect of being female relative to being male, keeping all other characterises fixed.

5.4.1 Gender

Gender appears to be a very strong predictor of young persons' transition status after leaving education. Figure 18 shows the probability of never transiting to employment is disproportionately higher for female. Therefore, differences across countries in the overall fraction of youth expected to eventually transit are largely explained by differences in gender differential. In some countries in the MENA region (e.g. the Occupied Palestinian Territory and Jordan), females are more than 60 percentage points more likely to never transition to employment compared to men. At the opposite side of the spectrum, this is difference close to zero in SSA countries (e.g., Madagascar, Tanzania, Togo and Uganda).

Girls are also typically at disadvantage in the probability of finding stable employment relative to men (Figure A1). However, the disadvantage of girls in transiting to a stable job appear to be smaller than that of transiting to any job.

Figure 18. **Predicted fraction never transiting to first job based on split population model by sex and country**
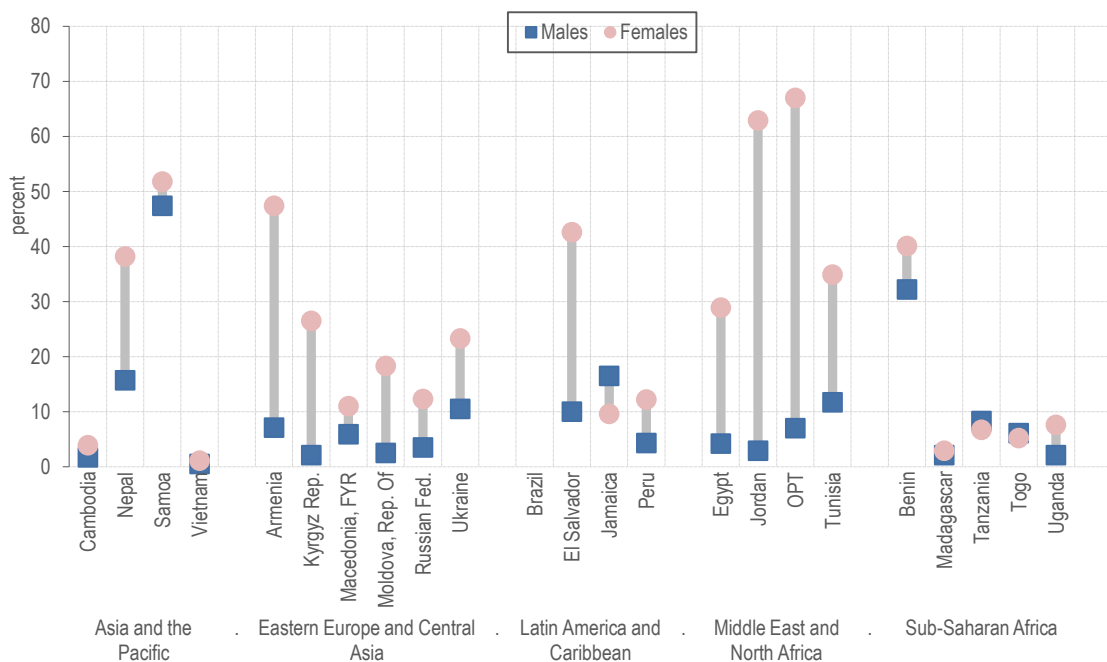
Note: OPT - Occupied Palestinian Territory
Source: UCW calculations based on ILO School-to-Work Transition Surveys.

Not only are females less likely to transit to employment than males, but those who eventually transit are expected to experience substantially longer transition durations than men in several countries, with these differences being particularly pronounced in the MENA region and in a few SSA countries (Figure 19 – note that data are top coded at a value of 70 months). We report median as opposed to mean predicted durations by group as the former measure is less sensitive to the presence of outliers.

This finding is also illustrated in Table 7, which reports, separately by gender, the fraction of individuals predicted to have transited to a first job within, respectively, 6, 12 and 36 months since leaving school. In most of the countries, this share is larger for males than for females although one can note some convergence by year 3.

The disadvantage in terms of transition duration disappears in the case of transition to a stable job. In almost all countries considered transitions to stable job are much longer than transition to any job but differences between men and women in this respect are small(Table A5). This may be an indication that the disadvantage of female is larger for girls who have no chances of ever getting a stable job.

Figure 19. **Median predicted duration of transition, by sex and country**
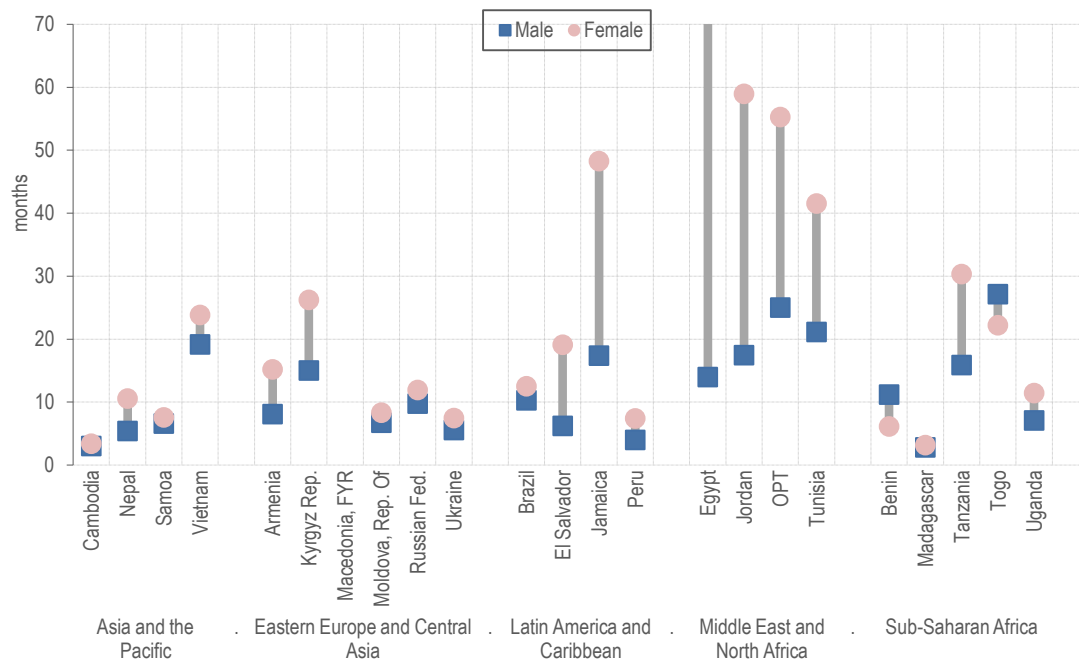
Note: OPT - Occupied Palestinian Territory
Source: UCW calculations based on ILO School-to-Work Transition Surveys.

Table 7. **Share of youth expected to have transited to first job or to stable job within six months, 12 months and 36 months after leaving education (among youth predicted to eventually transit to first job), by sex and country**

Region	Country	Share of youth expected to have transited after					
		6 months		12 months		36 months	
		Male	Female	Male	Female	Male	Female
Asia and the Pacific	Cambodia	0.84	0.82	0.94	0.93	1.00	1.00
	Nepal	0.72	0.58	0.85	0.73	0.97	0.91
	Samoa	0.66	0.63	0.80	0.78	0.95	0.93
	Vietnam	0.46	0.42	0.60	0.56	0.82	0.78
Eastern Europe and Central Asia	Armenia	0.63	0.47	0.79	0.64	0.96	0.88
	Kyrgyz Rep.	0.48	0.37	0.63	0.51	0.86	0.75
	Macedonia, FYR	0.22	0.22	0.31	0.31	0.50	0.50
	Moldova, Rep. of	0.71	0.66	0.84	0.80	0.97	0.95
	Russian Federation	0.51	0.47	0.68	0.63	0.90	0.87
	Ukraine	0.67	0.58	0.84	0.77	0.98	0.96

*Table 7.***Cont'd**

Region	Country	Share of youth expected to have transited after					
		6 months		12 months		36 months	
Latin America and Caribbean	Brazil	0.60	0.56	0.70	0.67	0.86	0.83
	El Salvador	0.74	0.51	0.86	0.65	0.97	0.86
	Jamaica	0.51	0.32	0.65	0.43	0.84	0.65
	Peru	0.78	0.63	0.91	0.80	0.99	0.96
Middle East and North Africa	Egypt	0.51	0.22	0.66	0.32	0.86	0.52
	Jordan	0.45	0.23	0.60	0.34	0.84	0.57
	Occupied Palestinian Territory	0.37	0.24	0.53	0.35	0.79	0.60
	Tunisia	0.44	0.32	0.59	0.45	0.82	0.68
Sub-Saharan Africa	Benin	0.61	0.73	0.74	0.84	0.91	0.96
	Madagascar	0.78	0.76	0.88	0.87	0.95	0.95
	Tanzania	0.50	0.37	0.65	0.51	0.87	0.75
	Togo	0.46	0.50	0.58	0.62	0.77	0.80
	Uganda	0.69	0.59	0.78*	0.64*	0.93*	0.83*

Notes: Standard Weibull survival model.*
Source: UCW calculations based on ILO School-to-Work Transition Surveys.

5.4.2 School leaving age

Many young people leave school early and begin to work as children, hence equipped with very low levels of human capital. Figure 20, which reports the percentage of youth leaving education by age 15 (i.e. before their 16th birthday), illustrates this point. In many countries in our sample, especially from SSA and Asia, one third or more of the youth have left school by age 15.

Figure 20. **Fraction of youth leaving education by age 15, by country**
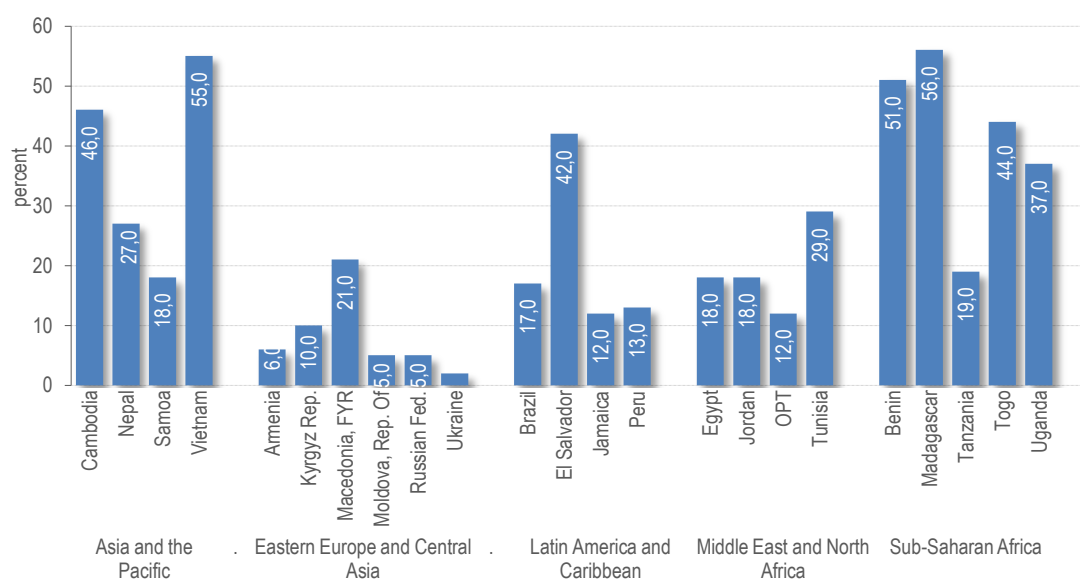
Note: OPT - Occupied Palestinian Territory
Source: UCW calculations based on ILO School-to-Work Transition Surveys.

Figure 21 shows that early school leavers are typically at disadvantage in terms of the probability of ever transiting to a first job with respect to those who stay in school longer. The probability of never transiting among youth leaving school by the age of 15 is substantial in most of the countries, and higher than the probability of never transiting among youth leaving school after the age of 18. Note that the overwhelming majority of the early school leaver youth with an high probability of never transiting to employment is made up of females.

Figure 21. **Predicted share of youth never transiting to job based on split population model, by age left education**

Note: OPT - Occupied Palestinian Territory
Source: UCW calculations based on ILO School-to-Work Transition Surveys.

Median transition durations are also longer for youth who left school early with respect to those staying in school longer. The difference is remarkable in several countries where early school leavers are expected to take more than twice as long as their counterparts to transit to their first job. There are, however, a few notable exceptions: Egypt, and Togo where youth leaving school after age 18 appear to face grater obstacles in transiting to the first job.

Figure 22. **Median predicted duration of transition to first job based on split population model, by age left education and country**
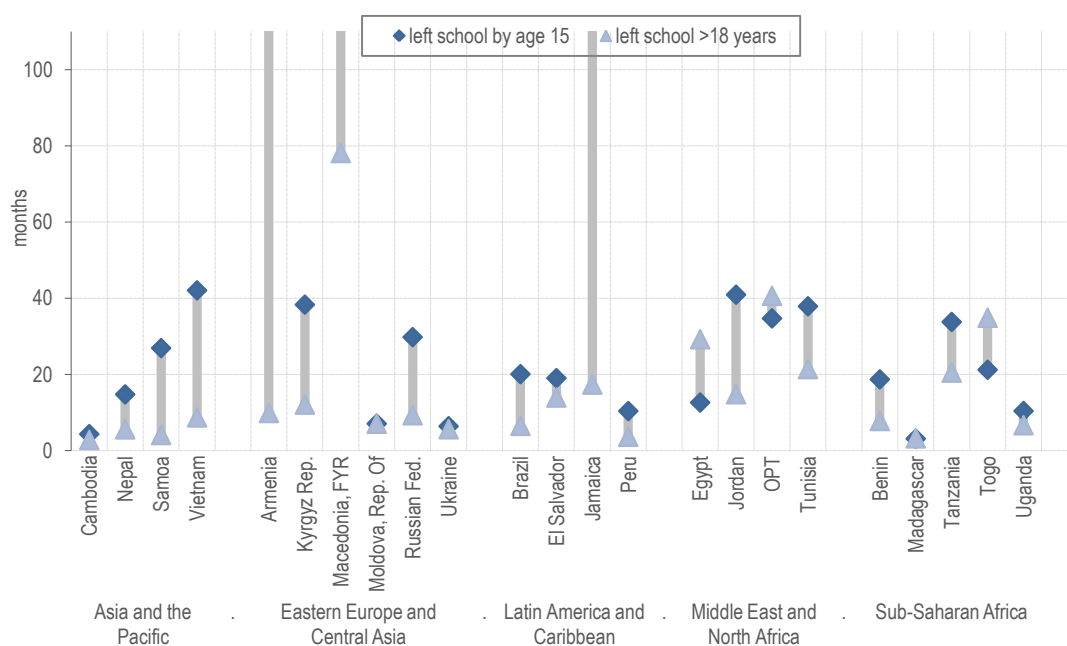
Note: OPT - Occupied Palestinian Territory
Source: UCW calculations based on ILO School-to-Work Transition Surveys.

As shown in Table 8, the disadvantage of youth who left school early is still evident one year after leaving school and, in some countries 20 percent of early school leavers still have to complete their transition after three years since leaving school. This disadvantage also applies to the duration of the transition to a stable job (see Table A6).

Contrary to what seems to be a widespread perception, the evidence presented here shows that in most of the countries in the analysis it is the less educated youth who face the greatest difficulties in transiting to work.

Table 8. **Share of youth expected to have transited to first job at six months, 12 months and 36 months after leaving education (among youth transit to first job), by age left school and country**

Region	Country	Share of youth expected to have transited after								
		6 months			12 months			36 months		
		Left school <16 yrs	Left school 16-18 yrs	Left schoo >18 yrs	Left school <16 yrs	Left school 16-18 yrs	Left schoo >18 yrs	Left school <16 yrs	Left school 16-18 yrs	Left school >18 yrs
Asia and the Pacific	Cambodia	0.79	0.87	0.87	0.91	0.96	0.96	0.99	1.00	1.00
	Nepal	0.52	0.67	0.73	0.67	0.81	0.86	0.88	0.95	0.97
	Samoa	0.35	0.67	0.79	0.50	0.83	0.92	0.78	0.98	1.00
	Vietnam	0.30	0.49	0.62	0.43	0.65	0.77	0.67	0.87	0.94
Eastern Europe and Central Asia	Armenia	0.41	0.52	0.57	0.58	0.69	0.74	0.83	0.91	0.93
	Kyrgyz Rep.	0.31	0.39	0.54	0.44	0.53	0.70	0.69	0.78	0.90
	Macedonia, FYR	0.15	0.21	0.27	0.22	0.30	0.37	0.38	0.49	0.59
	Moldova, Rep. of	0.69	0.67	0.69	0.83	0.81	0.83	0.96	0.96	0.96
	Russian Fed.	0.32	0.37	0.58	0.46	0.53	0.75	0.74	0.80	0.95
	Ukraine	0.64	0.52	0.68	0.83	0.71	0.86	0.98	0.94	0.99

*Table 8.***Cont'd**

Region	Country	Share of youth expected to have transited after								
		6 months			12 months			36 months		
		Left school <16 yrs	Left school 16-18 yrs	Left schoo >18 yrs	Left school <16 yrs	Left school 16-18 yrs	Left schoo >18 yrs	Left school <16 yrs	Left school 16-18 yrs	Left school >18 yrs
Latin America and Caribbean	Brazil	0.43	0.55	0.64	0.57	0.68	0.75	0.75	0.84	0.91
	El Salvador	0.58	0.58	0.64	0.72	0.71	0.77	0.89	0.89	0.92
	Jamaica	0.19	0.44	0.49	0.28	0.57	0.63	0.46	0.79	0.84
	Peru	0.53	0.70	0.79	0.70	0.85	0.91	0.92	0.98	0.99
Middle East and North Africa	Egypt	0.46	0.45	0.32	0.59	0.58	0.44	0.78	0.78	0.64
	Jordan	0.25	0.35	0.42	0.36	0.49	0.57	0.59	0.73	0.80
	Occupied Palestinian Territory	0.32	0.32	0.30	0.46	0.46	0.43	0.71	0.71	0.68
	Tunisia	0.33	0.38	0.44	0.46	0.52	0.58	0.69	0.75	0.80
Sub-Saharan Africa	Benin	0.68	0.64	0.68	0.80	0.76	0.80	0.94	0.92	0.94
	Madagascar	0.36	0.39	0.39	0.47	0.50	0.50	0.67	0.70	0.70
	Tanzania	0.78	0.74	0.77	0.88	0.85	0.88	0.95	0.94	0.95
	Togo	0.71	*	0.73	0.86	.	0.87	0.98	.	0.98
	Uganda	0.37	0.46	0.46	0.50	0.60	0.61	0.74	0.83	0.83

Notes: (*) Missing information about age of leaving school.
Source: UCW calculations based on ILO School-to-Work Transition Surveys.

5.4.3 *Work prior to leaving education*

Another question that naturally arises in analysing the transition from school to work is the impact of involvement in work prior to leaving education. The effect on working while in school on labour market outcomes, especially wage, has been the object of several studies mainly in the 90's and focussing on the United States. The results mainly indicate that working while in (high) school tend to improve labour market outcomes, albeit some researchers have pointed out that such findings might reflect spurious correlations due to the role of unobserved heterogeneity[15]. As illustrated in Figure 23, the share of youth that worked while school is far from negligible. Unfortunately we do not have information of the characteristics of work performed: whether it was a continuous or seasonal experience, its duration, the sector of employment etc.

With this caveat in mind, one can see that in Nepal, for instance, 46 percent of youth where in employment at some point prior to leaving education. In Peru, 43 percent combined school and work, in Madagascar 42 percent and in Uganda 40 percent. It is worth noting that in many cases those combining school and work began doing so prior to the minimum working age, and therefore were child labourers according to national laws and international standards.

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[15] See Hotz (2002) and the literature cited therein for a more detailed discussion

Figure 23. **Fraction of youth who worked prior to leaving education, by country**
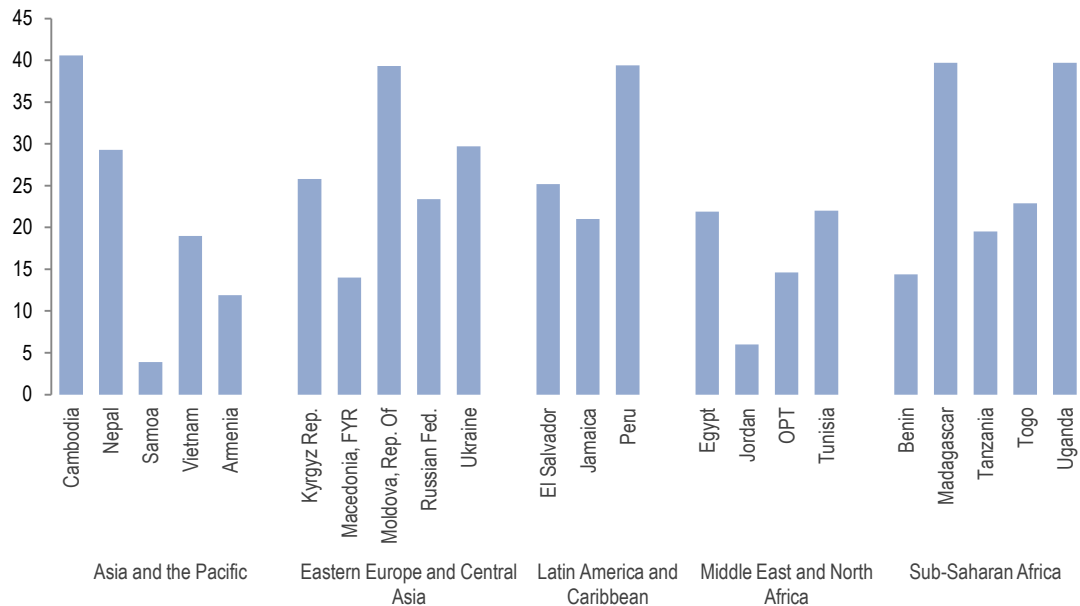
Note: OPT - Occupied Palestinian Territory
Source: UCW calculations based on ILO School-to-Work Transition Surveys.

As we control for the age of leaving school, the estimates should to a certain extent, offer a measure of the effect of working during school for individuals with similar level of education. This, however, should be taken with care for several reasons. First, as said, having a similar age of leaving school does not imply having completed the same years of education nor having attended the same type of school. Second, learning (as well as completed years of education) might be negatively affected by working while attending school.

Figure 24 illustrates that having worked prior to leaving school substantially reduces the probability of permanently remaining out of employment after leaving school in all countries considered. Unfortunately though the data do not allow us assess whether children in work while in school continue with that job or transit to a new job upon leaving school.

Note that in most of the countries, youth who left school late are more likely to have been working while in school, suggesting that working experience while in school is not disproportionately relevant for the most vulnerable youth.   This is, of course, also the result of a mechanical effect as potential exposure to work while in school is greater among late school leavers, although it might also suggest that work experience while in school does not have large detrimental effects on subsequent educational attainment.

Figure 24. **Predicted share of youth never transiting to a job based on split population model by whether youth worked or not while in the country**
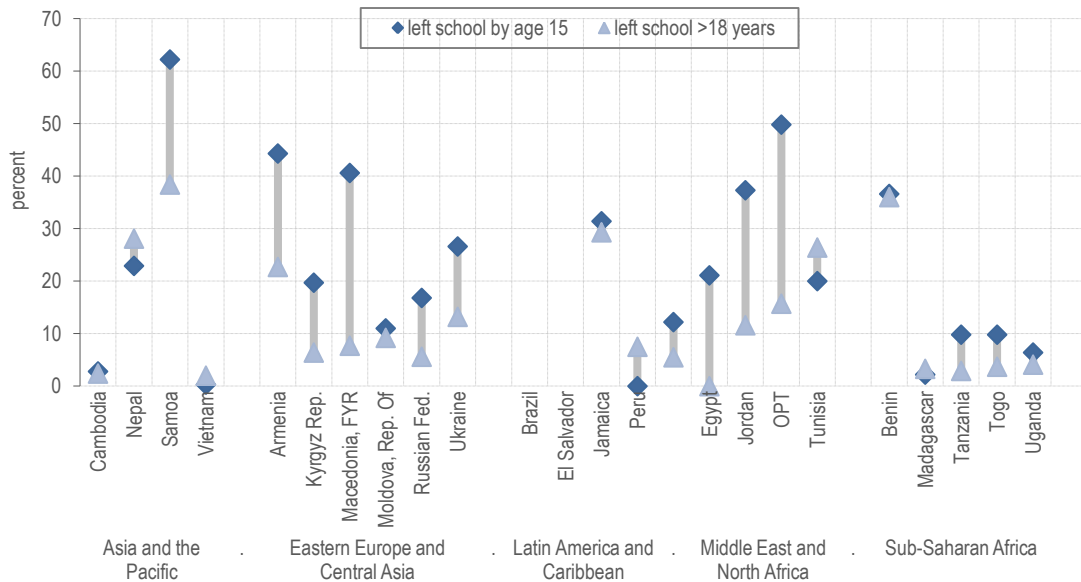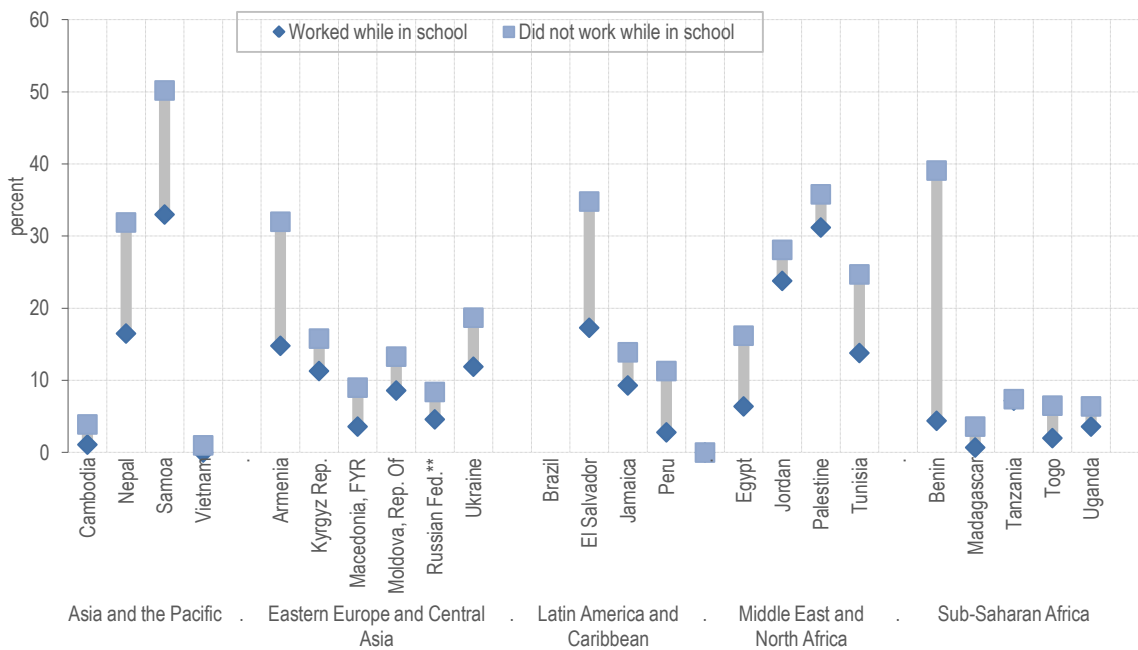

Note: OPT - Occupied Palestinian Territory
Source: UCW calculations based on ILO School-to-Work Transition Surveys.

Similarly, youth with work experience prior to leaving education have a substantially lower expected transition duration to a first job (Figure 25 and Table 9). Especially in countries from the MENA region and in a few SSA countries like Benin and Togo, the difference with respect to those who did not work while in school is particularly pronounced: the mean duration of transition for youth who worked while in school is less than half of that of the rest of the youth.

Figure 25. **Median predicted duration of transition to a first job, by whether or not worked while in school and by country**
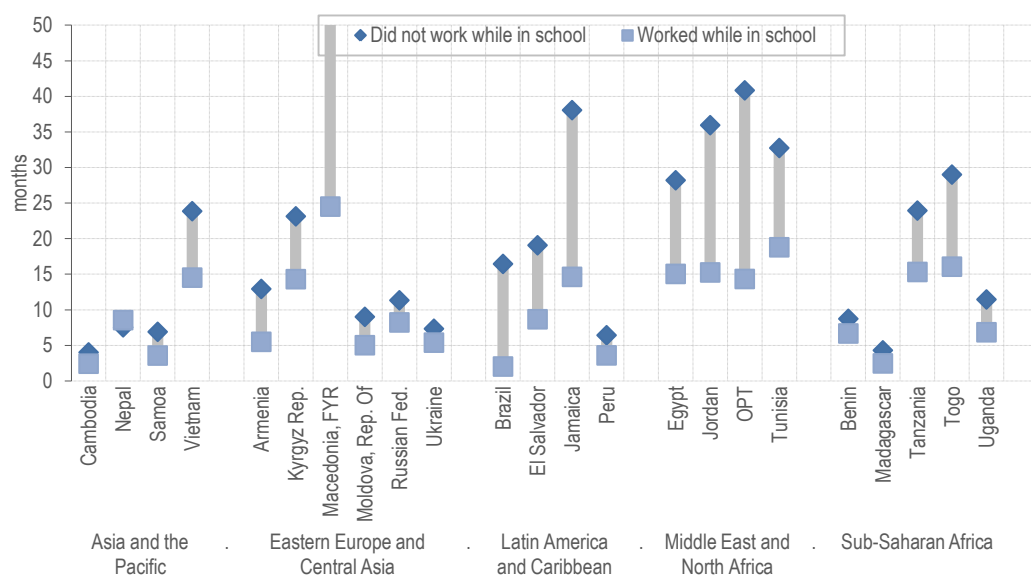
Note: OPT - Occupied Palestinian Territory, Brazil Weibull estimates
Source: UCW calculations based on ILO School-to-Work Transition Surveys.

Table 9. **Probability of transiting to first job within six months, 12 months and 36 months after leaving education (among youth predicted to eventually transit to first job), by whether or not worked while in school and country**

| Region | Country | Share of youth expected to have transited after | | | | | |
| | | 6 months | | 12 months | | 36 months | |
		Worked while in school	Did not work while in school	Worked while in school	Did not work while in school	Worked while in school	Did not work while in school
Asia and the Pacific	Cambodia	0.89	0.79	0.97	0.92	1.00	0.99
	Nepal	0.64	0.67	0.78	0.81	0.94	0.95
	Samoa	0.78	0.64	0.89	0.79	0.98	0.94
	Vietnam	0.52	0.42	0.67	0.57	0.87	0.79
Eastern Europe and Central Asia	Armenia	0.72	0.51	0.87	0.68	0.98	0.91
	Kyrgyz Republic	0.50	0.41	0.66	0.55	0.87	0.79
	Macedonia, FYR	0.43	0.19	0.57	0.27	0.80	0.46
	Moldova, Rep. Of	0.76	0.63	0.88	0.78	0.98	0.95
	Russian Federation	0.55	0.48	0.72	0.64	0.92	0.88
	Ukraine	0.69	0.60	0.86	0.79	0.99	0.97
Latin America and Caribbean	Brazil	0.84	0.30	0.95	0.46	0.99	0.76
	El Salvador	0.71	0.55	0.84	0.69	0.96	0.88
	Jamaica	0.54	0.38	0.68	0.51	0.86	0.72
	Peru	0.80	0.66	0.92	0.82	0.99	0.97
Middle East and North Africa	Egypt	0.49	0.37	0.62	0.50	0.81	0.71
	Jordan	0.51	0.34	0.67	0.48	0.87	0.72
	Occupied Palestinian Territory	0.49	0.28	0.66	0.41	0.89	0.67
	Tunisia	0.47	0.36	0.61	0.50	0.83	0.73
Sub-Saharan Africa	Benin	0.72	0.67	0.84	0.79	0.96	0.94
	Madagascar	0.83	0.73	0.91	0.85	0.96	0.95
	Tanzania	0.51	0.42	0.66	0.56	0.87	0.79
	Togo	0.56	0.46	0.69	0.58	0.86	0.77
	Uganda	0.70	0.59	0.83	0.74	0.96	0.92

Source: UCW calculations based on ILO School-to-Work Transition Surveys.

The advantage of youth with some work experience before leaving school in acquiring a first job does carry over to the probability of finding a stable job. As Table A7shows, the duration of the transition to a stable job tends to be relatively shorter for youth who worked while in school.

5.4.4 Other covariates

For the other covariates included in the model, we could identify less clear cut effects. The cycle at the time of leaving school (as proxied by the three years average of the GDP growth) increases, in the subset of countries where it is significant, the probability of ever transiting to a job. It has, on the other hand, no systematic effects on the duration of the transition to a first job, nor on the characteristics of the transition to a stable job[16].

The coefficient of the area of residence is significant only is a subset of countries. Where it is significant residing in an urban area has contradictory effects on the probability of ever transiting to a first job and appear to be associated with longer transition times. Also urban residents are, in a few countries at least, more likely to eventually transit to a stable job, while the duration of the transition to a stable job is affected in a way that changes substantially by country. While these effects are not surprising given the different nature of the rural and urban labour markets, it is unclear why the effects of the area of residence are well defined only in a subset of countries.

Finally, and to a certain extent more puzzling, we could not identify a clear effect of the education of the parents, as proxied by the education of the father. It could be the case that the impact of this variable is subsumed by the effect of the education of the youth themselves that is strongly and coherently significant in most of the country estimates.

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[16]The coefficient of the variable is almost never significant and, in the few countries where it is significant, the coefficient has opposite sign.

6. Conclusions

School to work transition has increasingly become the focus of policy attention following the recognition of its complexity and relevance for explaining future labour market outcomes.

A single indicator, like for example unemployment, is not sufficient to offer a metric of this complex process.

Measuring, understanding and assessing the consequences of the trajectories followed by youth to enter the world of work represents an important policy issue, especially at a time when youth unemployment is seen as one of the main challenges facing governments both in developing and developed economies.

The evidence on the transition from school to work and on its characteristics and determinants hardly exists for low and middle income countries. We begin to fill this gap by analyzing the data from 27 School to Work Transition Surveys carried out by the ILO in 28 countries in 2012 and 2013. The data contains detailed retrospective information that allows us to reconstruct the different spells of labour force and non labour force activities of youth upon leaving school.

We estimate the main characteristics and determinants of the transition making use of a model that allow simultaneously to determine the share of youth expected to never transit and the expected duration of the transition for that part that is expected to transit. In particular, we model transitions to a first job of any kind and transitions to a stable job.

In many countries a substantial share of youth, especially female, is expected to never transit to a job and to remain unemployed or out of the labour force. The number of youth that can be expected to never obtain a stable job is, not surprisingly, substantially higher. In several countries, especially but not exclusively in SSA, far less than half of the youth can be expected to transit to a stable job. This reflects, of course, not only the difficulties of youth in accessing such jobs, but also the structural unavailability of this kind of job in the economy considered. A fact that might lead to a reconsideration of the relevance of a stable job outcome as an indicator of a successful transition, at least in a subset of countries.

The analysis of the duration of transition (for those expected to transit) to a first job highlights a dichotomous situation: a large group of youth is able to obtain a job within three months since leaving school, while the group that does not succeed in securing a job quickly faces long waiting times. The substantially smaller part of you who eventually succeed in obtaining a stable job, faces very long transition time in most of the countries considered in this study. From the analysis carried out is not clear whether obtaining a job of any kind is a stepping stone towards obtaining a stable job and this aspect deserves further research.

While these stylized facts offer a good representation of the school to work transition, differences between countries are very large. They cannot be explained away by the different characteristics of the youth in the different countries considered, indicating that structural factors linked to the economy and/or to the functioning of the labour market are relevant. The association of school to work transition characteristics and some indicators of the characteristics of the economy offers some suggestive correlations, but further research is needed also in this area.

The analysis has also evidenced the persisting gender gap in the transition towards working life. Female, independently of their level of education and other household circumstances, are less likely to ever transit to a job and, if they do transit, face longer transition times than males. However, this disadvantage is reduced when we consider the probability of finding a stable job. The small share of female that transit to a job face not very dissimilar probabilities of finding a stable job and duration times. This seems to suggest that the main disadvantage for girls is linked to successfully enter the labour market, rather than securing a "good" job.

The disadvantage of early school leavers appears to be substantial not only with respect to finding a stable job (as might been expected), but also in terms of finding any job. Children who left school by age 15, not a negligible numbers in the countries considered, have lower probability to transit to any job and, if they transit, they face longer transition times than their peers with higher level of education. This finding contradicts the somehow diffused opinion that is the youth with higher levels of education that faces the most difficulties in transiting to the labour market.

On the other hand, it appears that having a work experience while attending school improves the probability of transiting to employment and the speed of transition to a first job. This advantage, however, does not carry over to the transition to a stable job. Even if we control for the level of education and other factors, this result has to been taken with care as we have no information on the characteristics of the work carried out while attending school.

The other characteristics considered in the analysis like area of residence, the level of education of the parents and the moment of the cycle in which the individual left school do not have effects that carry over homogeneously across the countries considered.

The results presented here highlight the different pathways and potential vulnerabilities of youth in transition to working life upon leaving school. Targeting, therefore, appears an essential element of policy design. We have seen that youth can roughly divided in to several broad groups: youth that are expected to never enter the labour market, youth that is expected to never find a stable job, youth transiting smoothly from school to work and other that faces difficulties in securing a job. None of these groups appears of negligible size and this implies that a range of different policies must be put in place to address youth vulnerabilities. We have also seen that gender, early school leaving helps to identify the most vulnerable youth. They clearly emerge as priority area of intervention in order to secure progress in youth employment prospects. On the other hand, the data also illustrate that it is not straightforward, on the basis of the most common observable characteristics to fully characterize different forms of vulnerabilities and hence to identify the most appropriate policy interventions. More information might be extracted from the current data, for example by looking closely at path dependence (hysteresis), but it also emerges the need to identify new sources of information that help us to better understand the determinants of the different school to work transition paths. For example, better information on youth preferences and social attitudes to work might be useful to identify some of the causes of the difficulties of youth in finding (satisfactory) employment.

Finally, while It is beyond the scope of this paper to discuss the most suited interventions to address the various vulnerabilities identified in the school to work transition of youth, reliable quantitative information on the size of the different target groups is very important in designing the appropriate policy mix.

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Appendix 1. Additional statistics and estimations

Table A1. **Details of the sample selection procedures**

Region	Country	Original sample (a)	Out of school sample (b)	Missing information				Inconsistencies			Final sample (d)	Share of dropped observations
				Missing date of beginning work	Missing activity	Missing date of leaving education	Sample with no missing info (c)	Date left education exceeds date of the survey interview	Date left education is a negative date	Date left education is greater that date starting work except for Brazil		
Asia and the Pacific	Bangladesh	**9,197**	**5,664**	Missing dates of beginning work								
	Cambodia	**3,552**	**2,269**	0	0	0	**2,269**	5	0	0	**2,264**	0.2
	Nepal	**3,584**	**1,120**	0	0	0	**1,120**	0	0	5	**1,115**	0.4
	Samoa	**2,914**	**1,845**	37	1	1	**1,806**	15	0	37	**1,754**	4.9
	Vietnam	**2,722**	**1,752**	4	22	14	**1,712**	0	0	56	**1,656**	5.5
Eastern Europe and Central Asia	Armenia	**3,216**	**1,850**	0	1	0	**1,849**	0	0	0	**1,849**	0.1
	Kyrgyszstan	**3,930**	**2,222**	0	12	4	**2,206**	1	0	179	**2,026**	8.8
	Macedonia	**2,544**	**1,263**	6	20	0	**1,237**	8	0	0	**1,229**	2.7
	Moldova	**1,158**	**578**	0	34	0	**544**	0	0	0	**544**	5.9
	Russian Federation	**3,890**	**2,472**	18	124	26	**2,304**	29	1	163	**2,111**	14.6
	Ukraine	**3,526**	**1,969**	0	9	0	**1,960**	2	0	140	**1,818**	7.7
Latin America and the Caribbean	Brazil	**3,288**	**1,976**	23	283	32	**1,638**	4	0	0	**1,634**	17.3
	Colombia	**6,014**	**3,205**	Missing dates of leaving school								
	El Salvador	**3,451**	**2,287**	35	4	1	**2,247**	4	0	20	**2,223**	2.8
	Jamaica	**2,584**	**1,582**	6	68	0	**1,508**	4	0	0	**1,504**	4.9
	Peru	**2,464**	**1,386**	0	6	0	**1,380**	4	0	12	**1,364**	1.6
Middle East and North Africa	Egypt	**5,198**	**3,439**	1,293	0	51	**2,095**	0	0	53	**2,042**	40.6
	Jordan	**5,405**	**3,089**	0	0	76	**3,013**	8	0	94	**2,911**	5.8
	Occupied Palesinian Territory	**4,320**	**2,236**	22	62	449	**1,703**	7	0	38	**1,658**	25.8
	Tunisia	**3,000**	**1,714**	208	0	12	**1,494**	1	0	15	**1,478**	13.8
Sub-Saharan Africa	Benin	**6,917**	**1,446**	0	1	0	**1,445**	2	0	13	**1,430**	1.1
	Liberia	**1,504**	**433**	7	114	31	**281**	4	0	30	**247**	43.0
	Madagascar	**3,295**	**2,025**	436	9	1	**1,579**	3	0	15	**1,561**	22.9
	Malawi	**3,102**	**1,793**	0	0	1,596	**197**	1	0	2	**194**	89.2
	Tanzania	**1,988**	**1,241**	18	69	36	**1,118**	11	0	69	**1,038**	16.4
	Togo	**2,033**	**890**	17	22	0	**851**	4	0	1	**846**	4.9
	Uganda	**3,811**	**2,137**	0	50	9	**2,078**	2	0	72	**2,004**	6.2
	Zambia	**3,206**	**1,806**	587	15	0	**1,204**	0	0	50	**1,154**	36.1
	Total	**101,813**	**55,689**	2,717	983	2,339	**46,445**	135	1	1,064	**45,245**	

Source: *UCW calculations based on ILO School-to-Work Transition Surveys*

Table A2. **Estimates for Split-cure model – First job**
Panel 1. Probability of never transiting

	Armenia	Benin	Brazil	Cambodia	Egypt	El Salvador	Jamaica	Jordan	Liberia	Macedonia, FYR	Malawi	Occupied Palestinian Territory	Peru	Samoa	Tanzania
	coef/se	coef/se		coef/se	coef/se	coef/se	coef/se	coef/se		coef/se		coef/se	coef/se	coef/se	coef/se
Age lefteducation															
Between 16 and 18 years	0.273*	0.021		-0.064	-0.290**	-0.002	-2.737	-0.115		3.928***		0.147	0.143	0.342***	0.012
	(0.152)	(0.108)		(0.090)	(0.130)	(0.086)	(31.047)	(0.199)		(1.237)		(0.190)	(0.142)	(0.120)	(0.243)
After 18 years	0.827***	0.020		0.044	3.204	0.080	-2.374	1.821***		2.114***		2.227***	0.375**	0.710***	0.637**
	(0.174)	(0.102)		(0.111)	(28.437)	(0.101)	(31.048)	(0.220)		(0.654)		(0.323)	(0.157)	(0.125)	(0.300)
Work while in school	0.706***	1.275***		0.351***	0.860***	0.644***	0.147	0.300		0.759*		0.251	0.551***	0.493***	0.022
	(0.144)	(0.176)		(0.096)	(0.169)	(0.087)	(0.156)	(0.269)		(0.399)		(0.170)	(0.121)	(0.162)	(0.322)
FatherEducation															
PrimaryEducation	-0.328**	-0.054		0.280**	-0.036	0.846**	0.112	0.086		-2.557***		-0.112		0.092	-0.052
	(0.166)	(0.120)		(0.141)	(0.165)	(0.330)	(0.185)	(0.145)		(0.707)		(0.170)		(0.083)	(0.236)
SecondaryEducation	-0.407**				0.010		-0.510**	0.279		-1.713*		-0.096	0.139		
	(0.173)				(0.357)		(0.258)	(0.239)		(0.957)		(0.187)	(0.174)		
EducationMissing	1.096**	-0.001		0.324**		-0.033	0.304			-0.090		0.251	0.100	0.132	3.203
	(0.494)	(0.212)		(0.162)		(0.083)	(0.190)			(127.647)		(0.903)	(0.111)	(0.100)	(543.937)
Urban	-0.101	-0.115		-0.110	-0.225*	0.437***	0.068	-0.287*		1.806***		0.038			-1.137***
	(0.089)	(0.081)		(0.099)	(0.121)	(0.079)	(0.145)	(0.172)		(0.488)		(0.204)			(0.315)
Female	-1.407***	-0.232***		-0.251***	-1.501***	-1.108***	0.362**	-2.776***		-0.597**		-2.767***	-0.453***	-0.128*	0.128
	(0.100)	(0.079)		(0.086)	(0.136)	(0.079)	(0.173)	(0.153)		(0.303)		(0.231)	(0.107)	(0.074)	(0.217)
GDP growth at time of leaving education	0.014***	0.190***		0.033***	-0.016	0.018		0.007		0.066		-0.025	-0.028*	0.051***	-0.641***
	(0.005)	(0.036)		(0.011)	(0.036)	(0.018)		(0.034)		(0.058)		(0.016)	(0.017)	(0.013)	(0.226)
Constant	0.806***	-0.650***		1.060***	1.225***	0.506***	3.016	1.401***		0.383		0.954***	0.932***	-0.885***	5.878***
	(0.208)	(0.175)		(0.113)	(0.209)	(0.093)	(31.048)	(0.300)		(0.348)		(0.285)	(0.179)	(0.125)	(1.741)
ln gamma	-0.339***	-0.615***		-0.406***	-0.485***	-0.507***	-0.481***	-0.412***		-0.484***		-0.341***	-0.316***	-0.364***	-0.475***
	(0.025)	(0.025)		(0.014)	(0.021)	(0.020)	(0.028)	(0.022)		(0.033)		(0.032)	(0.022)	(0.026)	(0.031)
Log-Likelihood	-4,284.16	-3,072		-4,754	-5,126	-4,710	-4,014.23	-6,687		-3,296		-3,434	-3,022	-3,290	-2,757
Number of observations	1,849	1,402		2,246	2,011	2,213	1,499	2,873		1,228		1,546	1,341	1,736	1,001

Table A2. **Panel 1.Cont'd.**

	Togo	Tunisia	Ukraine	Vietnam	Zambia	Uganda	Madagascar	Nepal	Russian Federation	Kyrgyz Rep.	Moldova, Rep. of
	coef/se	coef/se	coef/se	coef/se	coef/se	coef/se	coef/se	coef/se	coef/se	coef/se	coef/se
Age lefteducation											
Between 16 and 18 years	2.301	-0.049	0.100	-0.603		0.101	-0.116	-0.099	0.272	0.055	-0.125
	(46.108)	(0.160)	(0.173)	(0.379)		(0.108)	(0.127)	(0.119)	(0.192)	(0.173)	(0.191)
After 18 years	0.456	-0.244*	0.460***	-0.665*		0.163	-0.134	-0.172	0.540***	0.709***	0.093
	(0.324)	(0.148)	(0.171)	(0.395)		(0.131)	(0.168)	(0.112)	(0.189)	(0.204)	(0.226)
Work while in school	0.503**	0.430***	0.262***	2.254		0.211**	0.423***	0.504***	0.251*	0.236	0.233
	(0.228)	(0.152)	(0.090)	(105.230)		(0.098)	(0.141)	(0.094)	(0.137)	(0.152)	(0.149)
FatherEducation											
PrimaryEducation	2.490	0.186		2.299		-0.314**	-0.194	-0.273**	-0.026	-0.341*	
	(50.149)	(0.187)		(65.505)		(0.133)	(0.130)	(0.128)	(0.115)	(0.191)	
SecondaryEducation		3.032	0.068	13.443		-0.141		0.203	-0.120	-0.113	0.185
		(34.958)	(0.079)			(0.171)		(0.212)	(0.129)	(0.310)	(0.317)
EducationMissing	0.864	-0.795*	0.089	0.164		-0.271**	-0.111	-0.041		0.220	
	(0.997)	(0.423)	(0.114)	(0.562)		(0.115)	(0.146)	(0.167)		(0.294)	
Urban	-0.514***	0.374***	0.310***	1.146		0.118	-0.257**	0.020	0.320***	0.033	0.086
	(0.188)	(0.128)	(0.078)	(1.999)		(0.123)	(0.114)	(0.102)	(0.096)	(0.117)	(0.179)
Female	0.081	-0.798***	-0.473***	-0.267		-0.427***	-0.097	-0.689***	-0.515***	-1.205***	-0.804***
	(0.196)	(0.130)	(0.073)	(0.281)		(0.109)	(0.107)	(0.089)	(0.108)	(0.143)	(0.165)
GDP growth at time of leaving education	0.002	0.000	0.010**	0.288		-0.023	0.001	0.058	0.011	0.015	-0.010
	(0.017)	(0.031)	(0.005)	(0.178)		(0.023)	(0.010)	(0.040)	(0.011)	(0.016)	(0.015)
Constant	0.723***	0.557***	0.175	-0.120		1.544***	1.432***	0.342*	0.619***	1.385***	1.263***
	(0.176)	(0.188)	(0.177)	(1.046)		(0.216)	(0.107)	(0.199)	(0.214)	(0.263)	(0.209)
In gamma	-0.680***	-0.484***	-0.233***	-0.447***		-0.521***	-0.365***	-0.474***	-0.344***	-0.426***	-0.478***
	(0.031)	(0.031)	(0.020)	(0.020)		(0.018)	(0.017)	(0.027)	(0.020)	(0.024)	(0.035)
Log-Likelihood	-2,451	-3,984	-4,507	-5,767		-5,178	-3,580	-2,657	-6,031	-5,412	-1,304
Number of observations	832	1,463	1,725	1,620		1,903	1,511	1,110	1,984	1,780	507

Table A2. **Estimates for Split-cure model – First job**
Panel 2. Proportional Weibull hazard function

	Armenia	Benin	Brazil	Cambodia	Egypt	El Salvador	Jamaica	Jordan	Liberia	Macedonia, FYR	Malawi	Occupied Palestinian Territory	Peru	Samoa	Tanzania
	coef/se	coef/se		coef/se	coef/se	coef/se	coef/se	coef/se		coef/se		coef/se	coef/se	coef/se	coef/se
Age lefteducation															
Between 16 and 18 years	0.343**	-0.127		0.254***	-0.031	-0.017	0.968***	0.434***		0.351*		-0.015	0.479***	0.933***	0.297***
	(0.146)	(0.113)		(0.052)	(0.090)	(0.081)	(0.112)	(0.096)		(0.188)		(0.155)	(0.115)	(0.150)	(0.110)
After 18 years	0.471***	0.001		0.287***	-0.516***	0.186**	1.165***	0.672***		0.649***		-0.112	0.755***	1.302***	0.310***
	(0.160)	(0.110)		(0.063)	(0.092)	(0.090)	(0.130)	(0.097)		(0.194)		(0.175)	(0.119)	(0.155)	(0.117)
Work while in school	0.610***	0.146		0.337***	0.387***	0.475***	0.591***	0.568***		1.004***		0.745***	0.425***	0.460***	0.278**
	(0.091)	(0.116)		(0.047)	(0.066)	(0.071)	(0.099)	(0.110)		(0.106)		(0.100)	(0.069)	(0.157)	(0.116)
FatherEducation															
PrimaryEducation	-0.132	-0.306**		0.046	-0.044	-0.718***	-0.198	0.082		0.328***		0.146		0.201**	0.057
	(0.130)	(0.130)		(0.068)	(0.085)	(0.149)	(0.131)	(0.075)		(0.101)		(0.114)		(0.093)	(0.113)
SecondaryEducation	-0.024				0.013		0.412*	0.150		0.270		0.070	-0.186*		
	(0.134)				(0.105)		(0.234)	(0.104)		(0.210)		(0.117)	(0.105)		
EducationMissing	-0.294	-0.466**		0.089		0.001	-0.345***			0.881		0.439	-0.094	0.032	-0.138
	(0.255)	(0.231)		(0.062)		(0.075)	(0.113)			(0.586)		(0.395)	(0.079)	(0.112)	(0.118)
Urban	-0.261***	-0.228***		-0.144**	0.004	-0.029	0.100	0.068		-0.285***		-0.027			-0.222**
	(0.076)	(0.083)		(0.058)	(0.063)	(0.069)	(0.088)	(0.078)		(0.099)		(0.129)			(0.096)
Female	-0.449***	0.325***		-0.076*	-1.094***	-0.676***	-0.631***	-0.806***		-0.007		-0.564**	-0.450***	-0.096	-0.402***
	(0.082)	(0.083)		(0.045)	(0.090)	(0.076)	(0.087)	(0.125)		(0.094)		(0.260)	(0.069)	(0.082)	(0.088)
GDP growth at time of leaving education	-0.011**	-0.083**		-0.014**	-0.052***	0.001		0.023		-0.008		0.014	0.012	-0.012	0.097**
	(0.005)	(0.037)		(0.007)	(0.018)	(0.016)		(0.014)		(0.017)		(0.011)	(0.012)	(0.014)	(0.049)
Constant	-1.405***	-0.464***		-0.697***	-1.020***	-0.862***	-2.356***	-2.387***		-3.109***		-2.429***	-1.528***	-2.102***	-2.285***
	(0.186)	(0.180)		(0.075)	(0.120)	(0.085)	(0.136)	(0.133)		(0.205)		(0.209)	(0.138)	(0.158)	(0.329)
In gamma															
Log-Likelihood	-4,284.16	-3,072		-4,754	-5,126	-4,710	-4,014.23	-6,687		-3,296		-3,434	-3,022	-3,290	-2,757
Number of observations	1,849	1,402		2,246	2,011	2,213	1,499	2,873		1,228		1,546	1,341	1,736	1,001

*Table A2.***Panel 2. Cont'd**

	Togo	Tunisia	Ukraine	Vietnam	Zambia	Uganda	Madagascar	Nepal	Russian Federation	Kyrgyz Rep.	Moldova, Rep. of
	coef/se	coef/se	coef/se	coef/se	coef/se	coef/se	coef/se	coef/se	coef/se	coef/se	coef/se
Age lefteducation											
Between 16 and 18 years	-0.146	0.173	-0.353**	0.630***		0.107	-0.151**	0.421***	0.196	0.271**	-0.046
	(0.099)	(0.142)	(0.162)	(0.072)		(0.066)	(0.074)	(0.116)	(0.167)	(0.126)	(0.144)
After 18 years	-0.252**	0.351***	0.100	1.004***		0.263***	-0.024	0.601***	0.823***	0.751***	-0.000
	(0.119)	(0.129)	(0.158)	(0.074)		(0.075)	(0.101)	(0.108)	(0.163)	(0.130)	(0.160)
Work while in school	0.300***	0.343***	0.246***	0.318***		0.306***	0.388***	-0.079	0.228***	0.314***	0.363***
	(0.103)	(0.100)	(0.068)	(0.072)		(0.057)	(0.058)	(0.090)	(0.074)	(0.087)	(0.108)
FatherEducation											
PrimaryEducation	-0.432***	0.018		-0.015		0.160*	-0.324***	-0.187	-0.059	0.067	
	(0.104)	(0.136)		(0.061)		(0.083)	(0.078)	(0.144)	(0.074)	(0.097)	
SecondaryEducation		-0.251	0.023	-0.206*		-0.087		-0.326*	0.062	-0.182	0.146
		(0.200)	(0.068)	(0.112)		(0.092)		(0.175)	(0.084)	(0.139)	(0.192)
EducationMissing	-0.230	0.689*	-0.111	0.055		0.019	-0.211***	0.144		-0.191	
	(0.247)	(0.402)	(0.098)	(0.143)		(0.066)	(0.078)	(0.172)		(0.126)	
Urban	-0.181*	-0.221**	-0.053	-0.327***		-0.249***	-0.353***	-0.380***	0.124*	-0.368***	-0.312**
	(0.095)	(0.098)	(0.070)	(0.055)		(0.068)	(0.066)	(0.102)	(0.066)	(0.071)	(0.126)
Female	0.102	-0.416***	-0.232***	-0.140***		-0.284***	-0.084	-0.416***	-0.141**	-0.364***	-0.132
	(0.094)	(0.111)	(0.062)	(0.054)		(0.057)	(0.055)	(0.092)	(0.064)	(0.076)	(0.106)
GDP growth at time of leaving education	0.002	-0.016	-0.007*	-0.102***		-0.005	0.000	0.045	-0.009	-0.015	-0.018
	(0.011)	(0.023)	(0.004)	(0.025)		(0.013)	(0.005)	(0.032)	(0.008)	(0.010)	(0.011)
Constant	-1.149***	-1.708***	-1.274***	-1.327***		-1.042***	-0.547***	-1.253***	-2.236***	-1.777***	-0.871***
	(0.116)	(0.147)	(0.169)	(0.186)		(0.116)	(0.061)	(0.187)	(0.183)	(0.159)	(0.149)
ln gamma											
Log-Likelihood	-2,451	-3,984	-4,507	-5,767		-5,178	-3,580	-2,657	-6,031	-5,412	-1,304
Number of observations	832	1,463	1,725	1,620		1,903	1,511	1,110	1,984	1,780	507

Table A3. **Estimates of Split cure model- Stable job**
Panel 1. Probability of never transiting

	Armenia	Benin	Brazil	Cambodia	Egypt	El Salvador	Jamaica	Jordan	Liberia	Macedonia, FYR	Malawi	OccupiedPalestinianTerritory	Peru	Samoa	Tanzania
	coef/se	coef/se		coef/se	coef/se	coef/se	coef/se	coef/se		coef/se		coef/se	coef/se	coef/se	coef/se
Age lefteducation															
Between 16 and 18 years	0.269	0.482		-0.594***	0.614	0.220**	-0.858*	-0.132		16.693		-0.469	-0.049	0.467***	0.103
	(0.240)	(0.323)		(0.158)	(0.482)	(0.097)	(0.475)	(0.229)		(750.850)		(0.521)	(0.176)	(0.178)	(0.418)
After 18 years	0.975***	0.812***		-0.246	1.339***	0.231**	-0.571	5.031		16.239		1.375**	-0.003	0.248	-0.320
	(0.247)	(0.200)		(0.168)	(0.399)	(0.104)	(0.483)	(51.854)		(750.850)		(0.537)	(0.193)	(0.195)	(0.396)
Work while in school	-0.163	0.890***		0.224	0.162	0.043	-0.209	-0.244		-0.703		0.920*	0.015	0.132	0.501
	(0.166)	(0.266)		(0.180)	(0.333)	(0.090)	(0.157)	(0.227)		(0.661)		(0.538)	(0.119)	(0.263)	(0.429)
FatherEducation															
PrimaryEducation	-0.053	0.415*		0.167	0.417	0.608**	0.137	-0.163		-14.541		0.441		-0.050	-0.225
	(0.196)	(0.230)		(0.139)	(0.339)	(0.253)	(0.186)	(0.173)		(750.850)		(0.326)		(0.129)	(0.320)
SecondaryEducation	0.191				0.850**		-0.030	-0.701***		-10.950		0.919***	0.657**		
	(0.223)				(0.396)		(0.294)	(0.244)		(744.011)		(0.346)	(0.325)		
EducationMissing	0.806**	0.407		1.194		0.174*	0.192			-40.944		0.835	0.162	0.317**	0.063
	(0.392)	(0.315)		(0.901)		(0.091)	(0.181)			(65,453.115)		(1.129)	(0.122)	(0.140)	(0.361)
Urban	0.648***	0.471**		0.659***	0.437	0.745***	0.339**	-0.102		0.772*		0.387			0.044
	(0.150)	(0.192)		(0.142)	(0.298)	(0.081)	(0.143)	(0.209)		(0.452)		(0.344)			(0.271)
Female	-1.262***	-0.811***		-0.265**	-0.470	-0.423***	0.182	-2.416***		-15.745		-3.883***	-0.315***	0.143	0.725
	(0.180)	(0.183)		(0.119)	(0.343)	(0.086)	(0.151)	(0.175)		(750.851)		(0.557)	(0.119)	(0.111)	(0.465)
GDP growth at time of leaving education	-0.010	0.085		-0.010	0.040	0.018	-0.056	0.116***		-0.103		-0.036	-0.019	0.097***	0.061
	(0.008)	(0.080)		(0.018)	(0.092)	(0.022)	(0.051)	(0.043)		(0.114)		(0.048)	(0.019)	(0.022)	(0.177)
Constant	-0.509*	-2.843***		-0.147	-3.610***	-0.923***	0.496	0.590*		14.216		0.744	-0.112	-2.050***	-1.357
	(0.274)	(0.414)		(0.217)	(0.613)	(0.110)	(0.501)	(0.355)		(750.851)		(0.605)	(0.201)	(0.205)	(1.053)
ln gamma	-0.394***	-0.617***		-0.686***	-0.328***	-0.537***	-0.454***	-0.443***		-0.367***		-0.422***	-0.454***	-0.442***	-0.461***
	(0.037)	(0.067)		(0.036)	(0.092)	(0.028)	(0.038)	(0.023)		(0.046)		(0.040)	(0.038)	(0.043)	(0.070)
Log-Likelihood	-3616.0074	-948.10741		-3963.7054	-1011.5105	-3616.0913	-3448.4567	-6536.11		-2099.8616		-2754.999	-2450.7389	-1879.8808	-1337.9247
Number of observations	1849	1401		2246	2010	2211	1486	2879		1228		1544	1342	1728	999

note: *** p<0.01, ** p<0.05, * p<0.1

Table A3. **Panel 1. Cont'd**

	Togo	Tunisia	Ukraine	Vietnam	Zambia	Uganda	Madagascar	Nepal	Russian Federation	Kyrgyz Rep.	Moldova, Rep. of
	coef/se	coef/se	coef/se	coef/se	coef/se	coef/se	coef/se	coef/se	coef/se	coef/se	coef/se
Age lefteducation											
Between 16 and 18 years	3.570	-0.036	0.052	-0.495		-0.030	-0.401	0.218	0.037	0.331	0.396
	(2.875)	(0.214)	(0.187)	(0.342)		(0.115)	(0.333)	(0.188)	(0.525)	(0.346)	(0.359)
After 18 years	-0.052	0.055	0.264	-0.543*		0.297**	-0.260	0.181	-0.480	1.343***	0.335
	(0.369)	(0.347)	(0.182)	(0.325)		(0.125)	(0.428)	(0.169)	(0.537)	(0.341)	(0.378)
Work while in school	0.820**	0.579**	0.160*	0.044		-0.411***	-0.351	0.258*	0.027	-0.180	-0.157
	(0.412)	(0.225)	(0.083)	(0.213)		(0.102)	(0.280)	(0.136)	(0.200)	(0.145)	(0.231)
FatherEducation											
PrimaryEducation	0.724**	0.120		0.091		0.079	0.545*	-0.253	0.126	-0.236*	
	(0.317)	(0.302)		(0.148)		(0.148)	(0.298)	(0.196)	(0.188)	(0.142)	
SecondaryEducation		1.160	0.031	0.166		0.313*		0.136	0.099	0.052	-0.700
		(1.204)	(0.078)	(0.199)		(0.178)		(0.239)	(0.218)	(0.168)	(0.482)
EducationMissing	-0.545	-1.520**	0.068	1.000*		0.126	0.526	-0.137		0.274	
	(0.798)	(0.712)	(0.117)	(0.545)		(0.114)	(0.325)	(0.274)		(0.235)	
Urban	0.132	0.537**	0.369***	0.350**		0.820***	0.732**	0.392**	-0.490***	0.228**	0.480**
	(0.361)	(0.257)	(0.079)	(0.137)		(0.129)	(0.343)	(0.157)	(0.187)	(0.107)	(0.244)
Female	-0.677**	-0.481**	-0.221***	-0.082		-0.600***	-0.062	-0.937***	-0.629***	-0.182*	-0.346
	(0.281)	(0.235)	(0.071)	(0.121)		(0.100)	(0.251)	(0.158)	(0.179)	(0.104)	(0.224)
GDP growth at time of leaving education	-0.060	-0.034	0.003	0.262***		-0.041	0.047**	0.082	0.035*	0.019	0.015
	(0.045)	(0.053)	(0.005)	(0.084)		(0.025)	(0.023)	(0.060)	(0.018)	(0.015)	(0.025)
Constant	-1.308***	-0.273	-0.107	-1.141*		-0.217	-1.966***	-1.492***	-1.165*	-1.403***	-1.967***
	(0.499)	(0.317)	(0.191)	(0.588)		(0.212)	(0.292)	(0.308)	(0.620)	(0.360)	(0.361)
ln gamma	-0.736***	-0.520***	-0.276***	-0.293***		-0.534***	-0.653***	-0.471***	-0.365***	-0.303***	-0.119
	(0.092)	(0.049)	(0.023)	(0.034)		(0.036)	(0.085)	(0.052)	(0.060)	(0.039)	(0.079)
Log-Likelihood	-812.98396	-2924.2132	-4604.1555	-4282.1636		-3380.6987	-1097.6591	-1396.0888	-1680.227	-2870.8741	-394.87847
Number of observations	832	1458	1727	1620		1894	1508	1109	1975	1776	507

note: *** p<0.01, ** p<0.05, * p<0.1

Table A3. **Estimates of split cure model - Stable job**
Panel 2. Proportional Weibull hazard function

	Armenia	Benin	Brazil	Cambodia	Egypt	El Salvador	Jamaica	Jordan	Liberia	Macedonia, FYR	Malawi	OccupiedPalestinianTerritory	Peru	Samoa	Tanzania
	coef/se	coef/se		coef/se	coef/se	coef/se	coef/se	coef/se		coef/se	coef/se	coef/se	coef/se	coef/se	coef/se
Age left education															
Between 16 and 18 years	-0.186	-0.554		0.809***	-0.904	-0.033	1.305***	0.604***		0.932***		0.501***	0.312	0.868***	0.260
	(0.265)	(0.459)		(0.169)	(0.724)	(0.127)	(0.182)	(0.112)		(0.308)		(0.169)	(0.205)	(0.242)	(0.472)
After 18 years	0.427	0.740***		1.075***	-0.279	0.424***	1.646***	0.729***		1.289***		0.811***	0.447**	1.114***	0.956**
	(0.268)	(0.263)		(0.173)	(0.608)	(0.127)	(0.204)	(0.113)		(0.312)		(0.172)	(0.225)	(0.257)	(0.482)
					-3.898	-1.173									
					(5.783)	(0.829)									
Work while in school	1.132***	-0.350		-0.663***	0.224	0.482***	0.854***	0.428***		0.542***		0.148	0.389***	0.551*	-0.408
	(0.138)	(0.382)		(0.173)	(0.516)	(0.100)	(0.136)	(0.137)		(0.148)		(0.115)	(0.133)	(0.296)	(0.458)
FatherEducation															
PrimaryEducation	-0.433**	-0.155		0.327**	0.337	-0.561**	-0.250	0.205***		0.665***		0.211		0.228	0.117
	(0.218)	(0.336)		(0.160)	(0.514)	(0.230)	(0.173)	(0.079)		(0.155)		(0.130)		(0.162)	(0.373)
SecondaryEducation	-0.523**				0.203		0.037	0.299***		0.593***		-0.047	-0.960***		
	(0.224)				(0.599)		(0.306)	(0.098)		(0.219)		(0.123)	(0.276)		
EducationMissing	-0.218	0.647*		-1.322***		-0.165	-0.463***			-8.494		-0.192	-0.308**	-0.030	0.296
	(0.346)	(0.388)		(0.369)		(0.108)	(0.158)			(65,157.101)		(0.404)	(0.144)	(0.172)	(0.408)
Urban	0.118	-0.652**		-0.117	-0.252	-0.141	0.060	-0.016		0.436***		-0.256*			0.067
	(0.152)	(0.261)		(0.143)	(0.440)	(0.095)	(0.124)	(0.085)		(0.127)		(0.135)			(0.306)
Female	0.520***	0.153		0.115	0.251	-0.400***	-0.358***	-1.185***		0.412***		-0.200	-0.182	0.178	-1.088**
	(0.129)	(0.257)		(0.127)	(0.479)	(0.099)	(0.120)	(0.086)		(0.157)		(0.262)	(0.138)	(0.136)	(0.441)
GDP growth at time of leaving education	0.001	0.024		-0.003	-0.063	0.058**	0.051	-0.020		0.011		0.007	0.003	0.036	0.043
	(0.007)	(0.103)		(0.020)	(0.126)	(0.027)	(0.044)	(0.015)		(0.022)		(0.016)	(0.023)	(0.029)	(0.206)
Constant	-2.440***	-1.154*		-2.033***	-1.858**	-1.203***	-3.114***	-2.460***		-5.521***		-3.348***	-1.776***	-2.426***	-2.523**
	(0.313)	(0.592)		(0.219)	(0.898)	(0.138)	(0.247)	(0.160)		(0.329)		(0.234)	(0.248)	(0.274)	(1.164)

Table A3. Panel 2. **Cont'd**

	Togo	Tunisia	Ukraine	Vietnam	Zambia	Uganda	Madagascar	Nepal	Russian Federation	Kyrgyz Rep.	Moldova, Rep. of
	coef/se	coef/se	coef/se	coef/se	coef/se	coef/se	coef/se	coef/se	coef/se	coef/se	coef/se
Age lefteducation											
Between 16 and 18 years	-1.607***	0.319	0.014	1.082***		0.255*	1.286***	0.029	0.560	0.528	-0.971**
	(0.474)	(0.252)	(0.199)	(0.200)		(0.143)	(0.399)	(0.257)	(0.731)	(0.491)	(0.395)
After 18 years	0.702	0.164	0.543***	2.256***		0.484***	1.418**	0.512**	1.244*	1.649***	-0.662
	(0.464)	(0.335)	(0.193)	(0.158)		(0.147)	(0.587)	(0.225)	(0.746)	(0.481)	(0.415)
Work while in school	-0.591	0.048	0.117	-0.260		0.197	-0.085	-0.115	-0.223	0.151	0.390
	(0.379)	(0.177)	(0.078)	(0.161)		(0.125)	(0.401)	(0.179)	(0.281)	(0.185)	(0.259)
FatherEducation											
PrimaryEducation	-0.451	0.115		0.061		-0.053	-0.090	0.282	0.090	-0.100	
	(0.302)	(0.275)		(0.119)		(0.186)	(0.404)	(0.245)	(0.292)	(0.182)	
SecondaryEducation		0.033	0.075	-0.009		-0.315		0.401	-0.172	-0.052	-0.215
		(0.437)	(0.078)	(0.182)		(0.209)		(0.330)	(0.308)	(0.204)	(0.529)
EducationMissing	0.249	0.783	-0.158	0.152		0.078	0.171	0.314		-0.521*	
	(0.705)	(0.980)	(0.117)	(0.200)		(0.141)	(0.494)	(0.357)		(0.268)	
Urban	0.650**	-0.273	-0.079	0.243**		-0.415***	-0.708*	-0.523**	0.644**	0.048	-0.829***
	(0.314)	(0.239)	(0.082)	(0.115)		(0.144)	(0.399)	(0.241)	(0.274)	(0.131)	(0.271)
Female	0.250	-0.493**	-0.167**	0.130		0.149	0.203	-0.586***	-0.612**	0.005	-0.455*
	(0.283)	(0.236)	(0.071)	(0.096)		(0.118)	(0.343)	(0.224)	(0.263)	(0.135)	(0.244)
GDP growth at time of leaving education	0.060	0.037	-0.004	-0.211***		-0.012	-0.051	0.044	-0.026	-0.045**	-0.023
	(0.051)	(0.045)	(0.005)	(0.055)		(0.031)	(0.033)	(0.064)	(0.023)	(0.021)	(0.029)
Constant	-2.416***	-2.233***	-1.921***	-2.834***		-1.774***	-2.087***	-1.528***	-2.986***	-2.962***	0.244
	(0.531)	(0.334)	(0.209)	(0.445)		(0.247)	(0.392)	(0.372)	(0.919)	(0.490)	(0.347)

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Table A4. **Average expected duration of transition in months**

Region	Country	Split cure	Weibull
Asia and the Pacific	Cambodia	3.46	4.765
	Nepal	9.17	95.843
	Samoa	9.93	706.717
	Vietnam	27.49	30.354
Eastern Europe and Central Asia	Armenia	12.46	113.403
	Kyrgyz Rep.	25.75	49.988
	Macedonia, FYR	610.23	255.835
	Moldova, Rep. of	7.61	23.913
	Russian Federation	15.72	27.459
	Ukraine	7.57	29.946
Latin America and Caribbean	Brazil	.	19.306
	El Salvador	20.11	180.882
	Jamaica	50.40	70.715
	Peru	6.38	16.554
Middle East and North Africa	Egypt	57.01	175.906
	Jordan	45.34	313.233
	OPT	40.44	374.821
	Tunisia	35.30	155.103
Sub-Saharan Africa	Benin	9.74	317.073
	Madagascar	12.10	16.528
	Tanzania	26.32	68.130
	Togo	33.73	50.506
	Uganda	10.19	17.889

Source: UCW calculations based on ILO School-to-Work Transition Surveys

Table A5. **Probability of transiting to a stable job at six months, 12 months and 36 months after leaving (among youth predicted to eventually transit to a stable job), by sex and country**

Region	Country	Share of youth expected to have transited after					
		6 months		12 months		36 months	
		Male	Female	Male	Female	Male	Female
Asia and the Pacific	Cambodia	0.32	0.35	0.41	0.44	0.57	0.60
	Nepal	0.61	0.41	0.75	0.55	0.93	0.78
	Samoa	0.52	0.58	0.67	0.73	0.87	0.91
	Vietnam	0.21	0.23	0.31	0.33	0.48	0.51
Eastern Europe and Central Asia	Armenia	0.25	0.37	0.36	0.51	0.58	0.75
	Kyrgyz Rep.	0.31	0.31	0.44	0.44	0.68	0.68
	Macedonia, FYR	0.08	0.12	0.13	0.18	0.24	0.33
	Moldova, Rep. of	0.88	0.77	0.96	0.91	1.00	0.99
	Russian Federation	0.45	0.29	0.61	0.41	0.83	0.65
	Ukraine	0.55	0.49	0.73	0.68	0.94	0.91
Latin America and Caribbean	Brazil	0.48	0.45	0.60	0.57	0.78	0.76
	El Salvador	0.64	0.50	0.78	0.64	0.93	0.84
	Jamaica	0.36	0.28	0.49	0.39	0.70	0.59
	Peru	0.46	0.41	0.61	0.55	0.83	0.78
Middle East and North Africa	Egypt	0.23	0.29	0.35	0.42	0.59	0.67
	Jordan	0.37	0.13	0.51	0.20	0.75	0.36
	OPT	0.18	0.15	0.26	0.22	0.46	0.40
	Tunisia	0.30	0.20	0.42	0.28	0.64	0.47
Sub-Saharan Africa	Benin	0.50	0.55	0.62	0.67	0.80	0.84
	Madagascar	0.30	0.35	0.39	0.44	0.54	0.59
	Tanzania	0.41	0.17	0.55	0.25	0.77	0.42
	Togo	0.24	0.29	0.31	0.37	0.44	0.50
	Uganda	0.41	0.46	0.54	0.59	0.76	0.81

Source: UCW calculations based on ILO School-to-Work Transition Surveys.

Table A6. **Probability of transiting to a stable job at six months, 12 months and 36 months after leaving (among youth predicted to eventually transit to a stable job), by age left education and country**

| Region | Country | Share of youth expected to have transited after | | | | | | | | |
		6 months			12 months			36 months		
		Left school <16 yrs	Left school16-18 yrs	Left schoo >18 yrs	Left school <16 yrs	Left school16-18 yrs	Left schoo >18 yrs	Left school <16 yrs	Left school16-18 yrs	Left school >18 yrs
Asia and the Pacific	Cambodia	0.22	0.41	0.49	0.29	0.52	0.61	0.44	0.69	0.77
	Nepal	0.44	0.45	0.61	0.58	0.59	0.75	0.80	0.81	0.92
	Samoa	0.31	0.58	0.67	0.44	0.74	0.82	0.68	0.93	0.97
	Vietnam	0.07	0.18	0.47	0.11	0.28	0.65	0.23	0.52	0.90
Eastern Europe and Central Asia	Armenia	0.29	0.25	0.40	0.41	0.36	0.54	0.65	0.58	0.78
	Kyrgyz Rep.	0.14	0.23	0.54	0.22	0.35	0.73	0.43	0.62	0.94
	Macedonia, FYR	0.04	0.09	0.12	0.06	0.14	0.19	0.12	0.27	0.35
	Moldova, Rep. of	0.95	0.75	0.83	0.99	0.90	0.94	1.00	0.99	1.00
	Russian Federation	0.16	0.26	0.45	0.25	0.39	0.60	0.45	0.63	0.84
	Ukraine	0.40	0.41	0.59	0.58	0.59	0.77	0.86	0.87	0.97
Latin America and Caribbean	Brazil	0.31	0.46	0.51	0.42	0.58	0.64	0.62	0.78	0.82
	El Salvador	0.53	0.52	0.68	0.67	0.66	0.80	0.86	0.85	0.94
	Jamaica	0.11	0.33	0.43	0.16	0.46	0.57	0.29	0.69	0.79
	Peru	0.34	0.43	0.47	0.47	0.58	0.62	0.71	0.81	0.84
Middle East and North Africa	Egypt	0.37	0.17	0.29	0.52	0.26	0.43	0.78	0.48	0.69
	Jordan	0.17	0.28	0.31	0.24	0.39	0.42	0.42	0.60	0.64
	OPT	0.09	0.15	0.20	0.15	0.23	0.30	0.27	0.41	0.51
	Tunisia	0.23	0.30	0.26	0.32	0.41	0.37	0.52	0.63	0.58
Sub-Saharan Africa	Benin	0.49	0.32	0.74	0.61	0.43	0.85	0.81	0.63	0.96
	Madagascar	0.22	0.55	0.60	0.29	0.67	0.71	0.44	0.82	0.85
	Tanzania	0.20	0.24	0.42	0.28	0.34	0.55	0.47	0.55	0.76
	Togo	0.28	0.07	0.47	0.36	0.09	0.57	0.52	0.15	0.74
	Uganda	0.38	0.45	0.53	0.50	0.59	0.67	0.73	0.81	0.87

Source: UCW calculations based on ILO School-to-Work Transition Surveys.

Table A7. **Probability of transiting to a stable job within six months, 12 months and 36 months after leaving education (among youth predicted to eventually transit to a stable job), by whether or not worked while in school and country**

Region	Country	Share of youth expected to have transited after					
		6 months		12 months		36 months	
		Worked while in school	Did not work while in school	Worked while in school	Did not work while in school	Worked while in school	Did not work while in school
Asia and the Pacific	Cambodia	0.24	0.39	0.31	0.49	0.46	0.66
	Nepal	0.50	0.53	0.64	0.68	0.84	0.87
	Samoa	0.73	0.55	0.85	0.70	0.96	0.89
	Vietnam	0.19	0.23	0.27	0.33	0.45	0.51
Eastern Europe and Central Asia	Armenia	0.62	0.28	0.77	0.40	0.94	0.64
	Kyrgyz Rep.	0.34	0.30	0.48	0.43	0.72	0.68
	Macedonia, FYR	0.14	0.09	0.22	0.14	0.39	0.26
	Moldova, Rep. of	0.87	0.78	0.96	0.91	1.00	0.99
	Russian Federation	0.32	0.38	0.45	0.52	0.69	0.75
	Ukraine	0.55	0.51	0.73	0.69	0.94	0.92
Latin America and Caribbean	Brazil	0.63	0.28	0.77	0.40	0.93	0.61
	El Salvador	0.68	0.51	0.81	0.65	0.95	0.85
	Jamaica	0.51	0.27	0.65	0.39	0.84	0.60
	Peru	0.51	0.39	0.66	0.53	0.87	0.77
Middle East and North Africa	Egypt	0.29	0.24	0.42	0.36	0.67	0.60
	Jordan	0.36	0.26	0.48	0.36	0.70	0.57
	OPT	0.18	0.16	0.27	0.24	0.47	0.42
	Tunisia	0.26	0.25	0.37	0.35	0.58	0.56
Sub-Saharan Africa	Benin	0.43	0.54	0.54	0.66	0.73	0.83
	Madagascar	0.32	0.34	0.40	0.43	0.56	0.58
	Tanzania	0.21	0.29	0.30	0.40	0.48	0.60
	Togo	0.18	0.29	0.24	0.37	0.35	0.51
	Uganda	0.47	0.41	0.61	0.54	0.83	0.77

Source: UCW calculations based on ILO School-to-Work Transition Surveys.

Figure A1. **Predicted share of youth never transiting to a stable job, by sex and country**
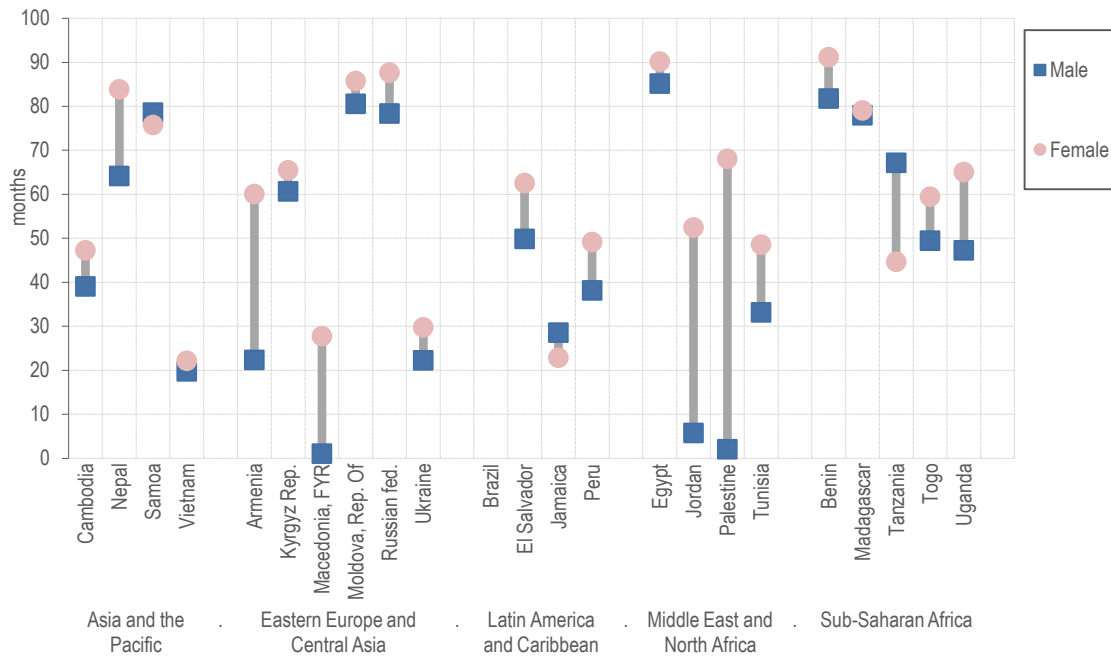
Source: UCW calculations based on ILO School-to-Work Transition Surveys.

Appendix 2. Macroeconomic indicators

Variable	Source	Website
GDP	World Development Indicators, World Bank	http://data.worldbank.org/data-catalog/world-development-indicators
Unemployment	World Development Indicators, World Bank	http://data.worldbank.org/data-catalog/world-development-indicators
Gini Index	World Development Indicators, World Bank	http://data.worldbank.org/data-catalog/world-development-indicators
Percentage of firms offering formal training	Enterprise Surveys, World Bank	http://www.enterprisesurveys.org/data
Skilled to Unskilled Employment Ratio	Enterprise Surveys, World Bank	http://www.enterprisesurveys.org/data
Strictness of Trade Regulation	Doing Business Data, World Bank	http://www.doingbusiness.org/data