



Understanding youth employment outcomes in Senegal

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As part of broader efforts toward durable solutions to child labor, the International Labour Organization (ILO), the United Nations Children's Fund (UNICEF), and the World Bank initiated the interagency Understanding Children's Work (UCW) project in December 2000. The project is guided by the Oslo Agenda for Action, which laid out the priorities for the international community in the fight against child labor. Through a variety of data collection, research, and assessment activities, the UCW project is broadly directed toward improving understanding of child labor, its causes and effects, how it can be measured, and effective policies for addressing it. For further information, see the project website at www.ucw-project.org.

This paper is part of the research carried out within UCW (Understanding Children's Work), a joint ILO, World Bank and UNICEF project. The views expressed here are those of the authors' and should not be attributed to the ILO, the World Bank, UNICEF or any of these agencies' member countries.

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ABSTRACT

There is a limited empirical basis for formulating policies and programs promoting youth employment and successful school to work transitions. This study is aimed at beginning to fill this gap by analyzing a set of youth employment indicators drawn primarily from the 2001 Senegal QUID Survey. The study looks specifically at the labor market outcomes of young people and key factors influencing these outcomes, including early labor market entry and human capital accumulation. It also examines the process of labor market entry, and, for those who attended school, the duration of the transition from school to work.

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1. INTRODUCTION

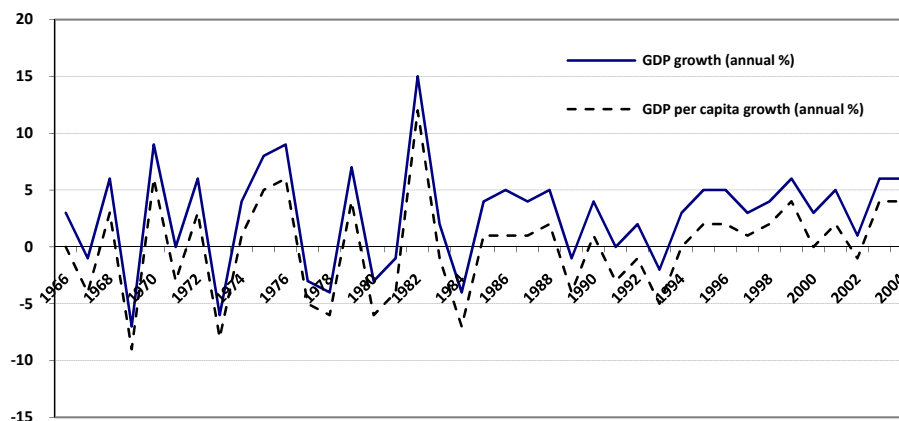
1. Youth unemployment and underemployment represent growing concerns worldwide. According to International Labour Organization (ILO) estimates, youth in 2002 made up 41% of the world's unemployed, 88 million people in absolute terms. Young workers everywhere invariably have much higher rates of joblessness and much lower earnings than older workers. In many contexts, young people are also concentrated in low-skill informal work or in hazardous forms of work that are ill-suited to their age and experience. Employment outcomes are typically worst for former child laborers and other early school-leavers, groups with least opportunity to accumulate the human capital needed for gainful employment.

2. The challenge of youth employment in Africa is especially large. In Sub-Saharan Africa, young people aged 15–24 account for 36% of the working-age population. Due to population pressure, the number of young people looking for work is expected to increase by 28% in the next 15 years, equivalent to about 30 million people. Failure to address youth employment issues will have serious consequences for the economy and society. Without opportunities for young people to earn a living, intergenerational cycles of poverty will persist, further affecting societies already made vulnerable by HIV/AIDS, food insecurity, and violence.

2. NATIONAL CONTEXT

3. After the devaluation of the CFA franc in 1994 and the following structural reforms, Senegal has registered an encouraging economic performance. Since 1994, with the exception of a negative period due to the occurrence of exogenous factors (the adverse climatic conditions in 2002 is an example), the country has recovered with particular strong economic performances in 2003 and 2004, showing an annual growth rate of about 6% (see Figure 1).

Figure 1. Annual GDP growth rate, Senegal



Source: World Development Indicators, The World Bank 2006

4. The Senegalese economy is dominated by the tertiary sector: it represented the 52.9% of the GDP in 2004, compared to the 19.1% for the secondary sector and

15.9% for the primary sector.² The tertiary sector is also the main contributor to growth.

5. The tertiary sector is mainly comprised of commerce (18%), followed by services (14.8%), administration (7.9%), and transport and telecommunication (7.6%).

6. The primary sector is mainly composed by agriculture (8%) and herding (4.6%); notwithstanding its limited weight in the country's value added, the primary sector remains nevertheless a determining factor in the Senegalese economy's health, employing about two-thirds of the active population

7. Poverty remains widespread in Senegal, despite the economic growth. In 1994, the proportion of households below the poverty line was estimated around 57.9%. On the basis of extrapolations from the CWIQ (Core Welfare Indicator Survey, 2001) the percentage of household living under the poverty line declined to 53.9%. The recent report prepared by the Ministry of Economy and Finance on the Evolution of Poverty in Senegal (2003) shows that levels of poverty are higher in rural areas compared to urban areas. Moreover, poverty reduction occurred mainly in urban areas; two out of three rural households are living under the poverty line.

8. In addition, regional disparities strongly contribute to the unequal distribution of the incomes at the national level. Certain areas of the country are more affected by poverty, in particular Ziguinchor, Kolda, Kaolack and Diourbel. The life expectancy at birth is 56 years, the under five mortality rate is 137 per 1000 births.

9. School enrolment has risen considerably in recent years. The net primary school enrolment rate was 66% in 2004 (68% for the boys and 65% for the girls). However considerable disparities exist between the various regions and between rural and urban areas. Gender disparities in enrolment are still high in certain areas (e.g., Tambacounda and Kolda). The secondary school enrolment rate is 19.4%, which reflects the difficulty in providing Senegalese children with higher education. In addition, the drop-out rate of 30% remains an important problem, especially for girls in rural areas. Girls' primary education completion rate is only 45%, compared with the national average of 51% in 2003/2004 (UNESCO, 2005).

10. Strong demographic growth is as an obstacle to improving living standards and levels of schooling and health in the country. The Senegalese population, estimated at approximately 12 million inhabitants in 2005, grows at an annual rate of almost 2.4%. The demographic structure of the country is very "young". In fact, people aged less than 15 years account for 42% of the population, and young people from 15 to 24 years account for 22% of the population. This means that more than 60% of the population are less than 25 years.

11. The labor market situation is related to the age structure and the evolution of the population. The high demographic growth rates mean a constant increase in the working-age population: the Senegalese working population passed from 2.6 million in 1984 to 4.5 million in 2004. Moreover, the total labor force is projected to double again in the next 25 years, which will place a huge strain on the labor market even under the most optimistic growth scenario. More than 80% of the labor force is employed in subsistence agriculture, with little difference in labor force composition between young people and adults (see the section 4 on the transition to working life). Most employed persons cannot read or write, and most are informal sector casual

² Situation Economique et Sociale du Senegal, Ministere de l'Economie et des Finances, Direction de la Prevision et de la Statistique, Edition 2004

workers (Central Statistical Authority, as cited in Denu, Tekeste, and van der Deijl 2005).

12. In all the cases, these indicators reflect very weak human development. The strong economic growth thus has not made it possible to improve the living conditions of the households.

3. LABOR MARKET STATUS OF SENEGALESE YOUNG PEOPLE

3.1 Youth time use

13. In Senegal young people aged 15–24 are primarily workers. Table 1, which breaks the youth population down into five unique activity categories (only in education, combining education and employment, only in employment, unemployed, and inactive³) indicates that almost 39% of all 15- to 24-year-olds are employed and less than one-fifth is involved in some form of education. An additional 10% of youth are actively seeking work but unable to find it. A large proportion of young people, 32%, are "inactive," that is, neither in the labor force nor in education, a category which also includes discouraged workers and disabled people. About 5% of youth are underemployed, meaning they are available to take an additional job during the four weeks prior the survey.

Table 1. Activity status of youth aged 15-24, by age group

Age Group	(1) Only in employment	(2) Only in education	(3) Combining education and employment	(4) Inactive	(5) Unemployed	Total	Employed (1)+(3)	In education (2)+(3)	Jobless (4)+(5)	Underemployed
15 - 17	32,9	25,2	3,6	31,3	7,0	100,0	36,5	28,8	38,3	3,0
18 - 19	37,9	18,6	2,2	32,5	8,8	100,0	40,1	20,8	41,3	4,8
20 - 24	44,2	10,1	0,9	31,8	13,1	100,0	45,1	11	44,9	5,9
15 - 24	38,9	17,2	2,1	31,8	10	100,0	41,0	19,3	41,8	4,7

Source: UCW calculations based on Senegal, *Questionnaire Unifié sur les Indicateurs de Développement (QUID), 2001*.

These aggregates mask large variations in young people's time use by age. This is not surprising, as the 15–24 age range is a period of transition from adolescence to adulthood and from education to working life. Comparing teenagers⁴ and young adults,⁵ there are large differences in involvement in education, with relatively few

³ An employed person is a one who fulfils any of the following: paid employment, at work, or with a job but not at work at present. This includes people waiting to rejoin employment and employers or people in self-employment. This category should include unpaid family laborers who hold a job in a market-oriented establishment irrespective of the number of hours worked during a reference period. However, some countries prefer for special reasons to set a minimum time criterion of the inclusion of unpaid family labor among the employed. An unemployed person is a person who fulfills any or all of the following criterion: without work, currently available for work, or seeking work by taking necessary steps to seek paid employment such as applying for jobs or registering with an agency. An inactive person is a person who is neither in the labor force (employed or unemployed) nor in education.

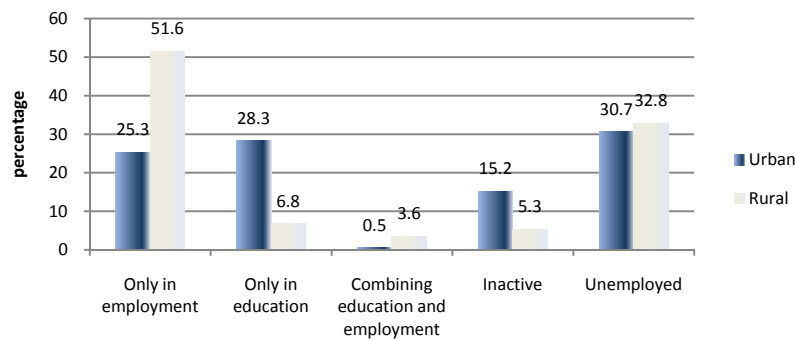
⁴ "Teenagers" refers to the 15–19 age group.

⁵ "Young adults" refers to the 20–24 age group.

people continuing education beyond their teens into young adulthood. Young adults are more represented in the labor force (both employed and unemployed), though the labor force participation rate of teenagers is also very high (over 45 %).

14. The time use profiles of young people aged 15–24 in Senegal are also strongly affected by underlying differences in the rural and urban labor markets. Compared with rural youth, urban young people benefit from greater education opportunities, staying in school longer and joining the labor force at a later age. Involvement in education is about four times higher for urban youth than for rural youth, while the employment rate of rural youth is almost twice that of their counterparts in cities and towns.

Figure 2. Activity status of youth aged 15-24, by area



Source: UCW calculations based on Senegal, *Questionnaire Unifié sur les Indicateurs de Développement (QUID)*, 2001

15. Inactive youth are much more common in the urban setting, accounting for 15% compared with only 5% of their rural counterpart. Measured unemployment is quite similar, while evidence suggests that underemployment may be more of a problem among rural youth (see the next section).

3.2 Youth unemployment

16. Unemployment is the most important measure of the labor market difficulties of young people. The effects of prolonged unemployment early in a person's working life are well documented: it may permanently impair his or her productive potential and therefore employment opportunities and can lead to serious social adjustment difficulties. In the context of Sub-Saharan Africa, whether a young person has a job can often determine which side of the poverty line a household lies.⁶

⁶ Youth unemployment is included as an indicator for monitoring Millennium Development Goal to "develop and implement strategies for decent and productive work for youth." See http://millenniumindicators.un.org/unsd/mi/mi_goals.asp.

Table 2. Activity status by age group, sex and residence

Age group	Sex and residence	Only in employment (1)	Only in education (2)	Combining education and employment (3)	Inactive (4)	Unemployment (5)	Total	Total Employment (1) + (3)	Total Education (2) + (3)	Jobless (4) + (5)	Under employment
15 - 17	Male	41,8	30,0	6,3	15,5	6,5	100,0	48,1	36,3	22,0	4,2
	Female	25,2	21,1	1,2	45,1	7,4	100,0	26,4	22,3	52,5	2,0
	Urban	18,7	40,6	0,5	29,9	10,2	100,0	19,2	41,1	40,1	1,2
	Rural	44,8	12,3	6,1	32,5	4,3	100,0	50,9	18,4	36,8	4,6
18 - 19	Male	50,5	23,5	3,9	14,2	8,0	100,0	54,4	27,4	22,2	6,7
	Female	27,3	14,5	0,7	48,0	9,5	100,0	28,0	15,2	57,5	3,2
	Urban	23,4	31,6	0,7	31,0	13,3	100,0	24,1	32,3	44,3	2,9
	Rural	52,0	6,0	3,6	33,9	4,5	100,0	55,6	9,6	38,4	6,7
20 - 24	Male	60,8	12,9	1,6	11,5	13,2	100,0	62,4	14,5	24,7	9,2
	Female	29,6	7,6	0,3	49,5	13,0	100,0	29,9	7,9	62,5	3,1
	Urban	31,1	17,8	0,3	31,1	19,7	100,0	31,4	18,1	50,8	4,2
	Rural	57,2	2,3	1,4	32,6	6,5	100,0	58,6	3,7	39,1	7,7
15 - 24	Male	52,0	21,1	3,7	13,5	9,8	100,0	55,7	24,8	23,3	7,0
	Female	27,6	13,8	0,7	47,7	10,3	100,0	28,3	14,5	58,0	2,7
	Urban	25,3	28,3	0,5	30,7	15,2	100,0	25,8	28,8	45,9	2,9
	Rural	51,6	6,8	3,6	32,8	5,3	100,0	55,2	10,4	38,1	6,3

Source: UCW calculations based on Senegal *Questionnaire Unifié sur les Indicateurs de Développement (QUID)*, 2001

17. Levels of measured unemployment are relatively low among Senegalese young people: 10% of the total population aged 15–24 and 19% of 15- to 24-year-olds in the labor force are unemployed (Table 3). Levels of joblessness (defined as the sum of unemployed and inactive), arguably a better measure of youth employment disadvantage because it also captures discouraged workers, are higher.⁷ Some 23% of 15- to 24-year-olds males and 50% of 15- to 24-year-old females are jobless. Observe that unemployment and joblessness are lower for the 10–17 age group than for the rest of youth: this might indicate that youth entering the labor market with higher levels of human capital, will likely face more difficulties in finding employment.

Table 3. Youth unemployment characteristics, by age and residence

Caractéristiques		Unemployment ratio ^(a)	Unemployment rate ^(b)	Inactivity ^(c)	Joblessness ^(d)
Age group	10 - 14	1,8	6,8	29,1	30,9
	15 - 17	7	16,1	31,3	38,3
	18 - 19	8,8	18,0	32,5	41,3
	20 - 24	13,1	22,5	31,8	44,9
	15 - 24	10,0	19,7	31,8	41,8
Sex	Male	6,3	12,2	17,2	23,5
	Female	7,2	22,7	43,2	50,4
Residence	Urban	10,7	36,6	28,8	39,5
	Rural	3,6	7,0	32,3	35,9

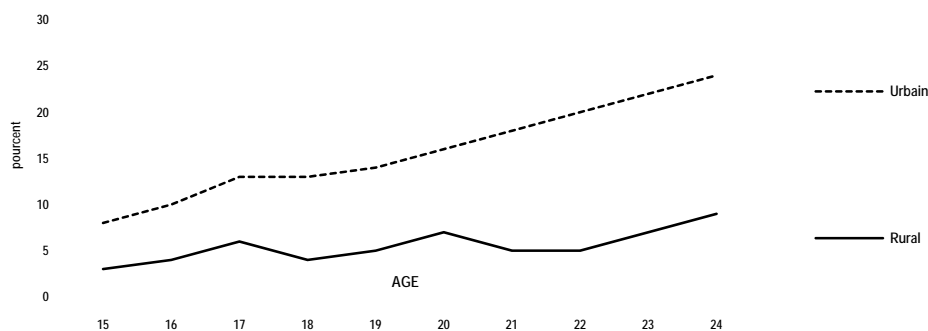
Notes: (a) Unemployment ratio refers to total unemployed expressed as a proportion of total population in same age range; (b) Unemployment rate refers to total unemployed as a proportion of total workforce in the same age range; (c) Inactivity refers to total inactive expressed as a proportion of total population in the same age range; (d) Joblessness refers to total jobless expressed as a proportion of total population in same age range.

Source: UCW calculations based on Senegal *Questionnaire Unifié sur les Indicateurs de Développement (QUID)*, 2001

⁷ Joblessness, unlike unemployment, has the advantage of reflecting both unemployed and discouraged workers who have left or not entered the workforce.

18. Young people living in cities and towns are much more likely to be unemployed than rural young people, again underscoring the different nature of the urban and rural economies, and in particular the important role that the agriculture sector plays in absorbing young rural workers (see Table 3 and Figure 2). High public sector wages are a possible cause of unemployment among urban young people. Differences in urban young unemployment levels begin to emerge already at the age of 15 and peak at age of 24, when more than 20% of urban youth are unable to find work compared with 5% of their rural counterparts (figure 3).

Figure 3. Unemployment ratio, by age and residence



Source: UCW calculations based on Senegal *Questionnaire Unifié sur les Indicateurs de Développement (QUID)*, 2001

3.3 Composition of youth employment

19. Non wage labor performed within the household is by far the most important form of youth work. Table 4, which breaks down the employed youth population by broad occupational category (that is wage employee,⁸ self-employed,⁹ and unpaid family worker) indicates that more than half of employed young people work without monetary wages for their families (52.4 %). Of the remaining working youth, 29% are self-employed while just 20% work for wages. Hence, the majority of youth seem to be engaged in non- (or low-) paying activities.

20. But these aggregates mask large differences between the rural and urban youth labor markets. Unpaid family work and self employment are preponderate in rural areas, while wage employment work is important in cities and towns.

21. The agriculture sector absorbs most of Senegalese labor force, including those members of the labor force in the 15–24 age group. About 57% of the employed youth population is engaged in agriculture, followed by 25% in services and 7% in manufacturing. Again, however, differences by residence are large. While agriculture not surprisingly predominates in rural areas, the services sector is the most important source of youth employment in cities and towns, accounting for one of every two

⁸ Wage employees are all people in paid employment and remunerated by wages and salaries. Another form of payment may be commission from sales, price-rates, bonuses, or in-kind payments. Basic remuneration is not directly dependent on revenue of the unit one works for but on the explicit (written or oral) or implicit employment contract. A wage employee may also be a regular employee with or without a fixed-term contract or a casual worker without a contract.

⁹ A self-employed person is one who performs some work for profit or family gain either in-cash or in-kind. The remuneration is dependent on profits derived from the goods and services produced (own consumption from enterprise is considered part of profits). The incumbent makes operational decisions affecting the enterprise or may delegate decisions while retaining the responsibility for the welfare of the enterprise. This is a one-person business and may include contributing family workers.

employed youth. The manufacturing sectors are also important in urban contexts, accounting for 17% of total employed youth

22. The modality and composition of employment vary somewhat by the age and sex of the worker. There is a shift away from family-based non wage work and toward wage work and self-employment outside the family as young people grow older (Table 4). Family work nonetheless still accounts for 40% of total employment for the 20–24 age group. The sectoral composition of work changes little moving across the

Table 4. Youth modality of employment and sector of activity, by age

Age group	Modality of employment				Sector of Activity				
	Wage employ	Family employ	Self Employ	Total	Agriculture	Manufacturing	Services	Other	Total
15 à 17 ans	14,2	67,8	18,0	100,0	64,7	6,3	18,9	10,1	100,0
18 à 19 ans	19,0	54,5	26,5	100,0	58,0	6,9	24,1	11,0	100,0
20 à 24 ans	21,9	41,7	36,4	100,0	52,1	8,0	29,6	10,3	100,0
15 à 24 ans	18,9	52,4	28,6	100,0	57,2	7,3	25,2	10,4	100,0

Source: UCW calculations based on Senegal *Questionnaire Unifié sur les Indicateurs de Développement (QUID)*, 2001

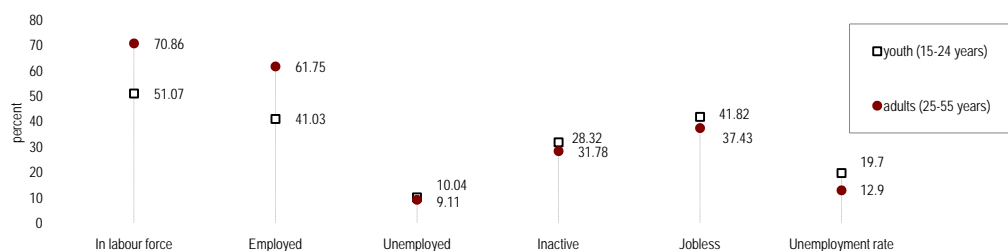
15–24 age spectrum. There appears to be a weak shift away from the agricultural sector to the services and manufacturing sectors.

23. What do these breakdowns by employment modality and composition say about employment quality? The generally low level of wage employment is significant given that wage employment is typically the most sought-after form of work among young people and is most likely to offer a measure of job stability and some form of benefits coverage. Informal farm work, by contrast, is typically low paid and seasonal, and studies indicate that this work does not constitute a reliable route out of poverty. In urban settings informal work frequently means insecure, nonfamily work in settings where labor and safety regulations do not apply, leaving workers susceptible to workplace exploitation.

3.4 Youth labor market disadvantage

24. Comparing youth and adult unemployment rates provides some indication of the extent to which young workers are disadvantaged in relation to their adult counterparts in securing jobs. As shown in Figure 4, young people are more likely than adults to be unemployed (expressed either as a percentage of the population or of the labor force), but the difference between youth and adult unemployment levels is not large in comparison to other countries in Sub-Saharan Africa (Table 5).

Figure 4. Differences in youth and adult labor market status



Source: UCW calculations based on Senegal *Questionnaire Unifié sur les Indicateurs de Développement (QUID)*, 2001

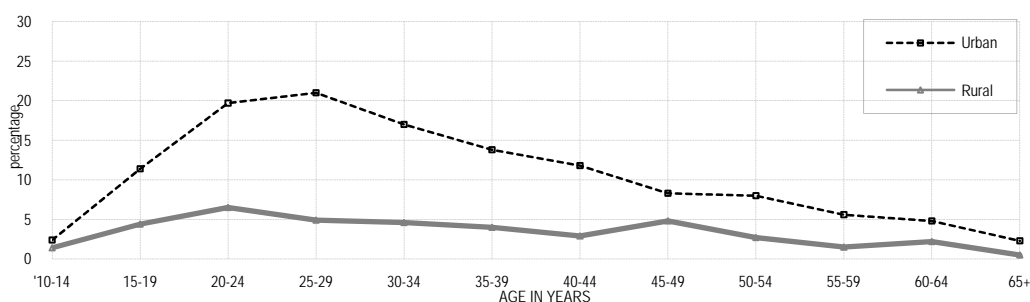
Table 5. Ratio of youth to adult unemployment rates, Senegal and other selected Sub-Saharan Africa countries

Country	Youth to adult unemployment rate
SENEGAL	1,5
Burkina Faso	2,5
Burundi	0,9
Cameroon	5,1
Cote d'Ivoire	1,9
ETHIOPIA	1,4
Gambia	0,4
Kenya	3,9
Madagascar	1,5
Malawi	2,3
Mozambique	3,0
STP	5,9
Uganda	1,1
Zambia	2,9

Source: UCW calculations based on Senegal, QUID 2001 and World Bank Standard Files and Standard Indicators (SFSI) datasets.

25. The picture changes somewhat, however, when the rural and urban labor markets are looked at separately (Figure 5). Rural youth appear to encounter little difficulty in securing employment; rural unemployment is very low and varies little across the whole 15–60 age spectrum. But this is not the case for youth living in cities and towns. The urban unemployment ratio peaks among 20-24 year-olds but remains very high among the next (aged 25–29) population cohort before falling thereafter. This illustrates that in many cases the period required to settle into work extends well into adulthood.

Figure 5. Unemployment ratio, by age and residence



Source: UCW calculations based on Senegal *Questionnaire Unifié sur les Indicateurs de Développement (QUID)*, 2001

26. Differences between youth and adults in terms of work characteristics also provide an indication of youth labor market disadvantage. As shown in Table 6, the sectoral composition of youth and adult employment differs in urban areas as well as in rural areas: compared with adult workers, employed urban youth are more likely to be in family farming and production and less likely to be in self employment and in services.

27. On the other hand, employed rural youth are more likely to be employed in agriculture (80%) and in unpaid family work, and less likely to be in production and services.

28. Both urban and rural young people are less likely to succeed in securing wage employment than adults. The proportion of working youth and adults in wage work in

urban and rural contexts, however, differs little, but the proportion of wage workers is much higher in urban settings.

Table 6. Youth and adult: modality of employment and sector of activity, by age and residence

Residence	Age group	Modality of employment				Sector of Activity				
		Wage employ	Family employ	Self Employ	Total	Agricultur e	Manufacturing	Service s	Other	Total
Urban	15 - 24	44,5	32,8	22,7	100,0	4,3	17,3	58,4	20,0	100,0
	25 - 55	47,2	3,1	49,7	100,0	3,7	13,9	70,9	11,5	100,0
Rural	15 - 24	7,9	60,9	31,2	100,0	80,2	2,9	10,7	6,2	100,0
	25 - 55	9,4	21,7	68,9	100,0	67,1	5,2	20,7	7,0	100,0

Source: UCW calculations based on Senegal *Questionnaire Unifié sur les Indicateurs de Développement (QUID)*, 2001

Notes. Wage employees include: wage employees and workers paid "per piece of job"; Services includes: commerce and service, transport, other services, education, administration

Other sector includes: mining, constructing & other

29. The analysis indicates that young people face a significant labor market disadvantage, particularly in urban contexts. Their unemployment and jobless rates are much higher than those of adults, and they are also less likely than adult workers to be in wage employment. The disadvantaged position of youth in the labor market can be associated with, or even due to, a difficult or inefficient transition from school to the labor market. The next section looks at this issue by constructing an indicator of the duration of the school to work transition. As will be apparent later, such a measure is not able to tell us where the problem lies per se, but it is a first and necessary step in order to understand the process by which young people transition to working life.

4. TRANSITION TO WORKING LIFE

30. The transition to work can take two routes, through the schooling system or from inactivity (or informal schooling) to the labor force. This section examines both routes, in order to identify vulnerable groups and targets for policies. It uses a synthetic indicator (see Appendix 2) in providing an overview of the routes young people take from education to the labor force. For the group transitioning directly to the labor force, the average entry in the labor market is examined. It is worth underlying that a non-negligible number of children drop out very early from school. While they are formally included in the youth transitioning through school, their condition and the problems they face are likely to be closer to those of the children that never attend school.

4.1 School to work transitions

31. Table 7 presents information on the beginning and end of the transition from school to work, as well as the transition duration, disaggregated by sex and residence. The last column gives the average age of entry in labor market for those never attending school.

Table 7. School to work transition points, by sex and residence

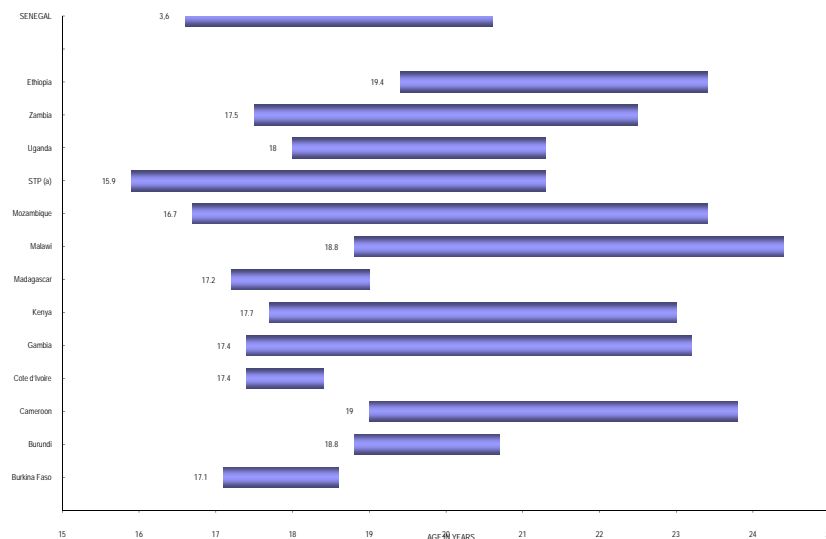
Background characteristic		Children ever in school			Children never in school
		Beginning point of transition	End point of transition	Transition duration	
		Average age of dropping out	Average age of entering into work for the first time		
Total		16.6	20.6	4.0	12.8
Sex	Male	17.4	20.7	3.3	13.4
	Female	16	20.3	4.3	12.4
Residence	Urban	17	22.3	5.3	14.2
	Rural	16	17	1	12.9
Residence, Sex	Male/Urban	17.6	22.1	4.5	14.7
	Female/Urban	16.4	22.1	5.7	13.7
	Male/Rural	17	17	0	13.1
	Female/Rural	15.1	16.1	1	12.6

Source: UCW calculations based on Senegal *Questionnaire Unifié sur les Indicateurs de Développement (QUID)*, 2001

32. The average school-leaving age (that is, the starting point of the transition) is one of the lowest compared with other countries in Sub-Saharan Africa (Figure 6). To the extent that schooling is an indicator of human capital levels and labor market preparedness, therefore, Senegalese young people do not appear to leave the schooling system well equipped for the transition to working life.¹⁰ Moreover, the same leaving age is likely to be associated with lower human capital accumulation in less developed countries. This happens because of frequent delayed entry, intermittent attendance, grade repetition, and school quality and relevance issues.

33. The low school-leaving age in Senegal is not surprising particularly against a backdrop of a declining school enrollment rate after the age of 14. At age 16.6 years, the average age of dropout, overall education involvement stands at 55% (Figure 7).

Figure 6. Length and timing of transition from school to work, Senegal and Selected other Sub-Saharan Africa countries

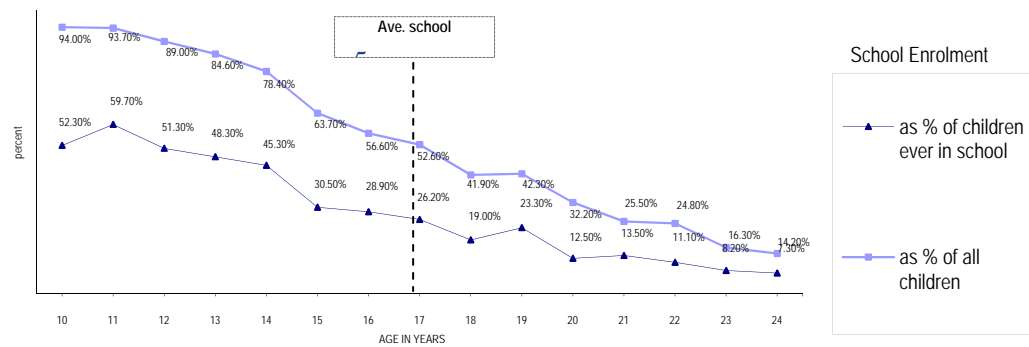


Notes: (a) STP Sao Tome and Principe

Source: UCW calculations based on Senegal *Questionnaire Unifié sur les Indicateurs de Développement (QUID)*, 2001; Ethiopia Labor Force Survey 2001 and World Bank Standard Files and Standard Indicators (SFSI) datasets

¹⁰ This, of course, is a strong assumption, as school quality, the relevance of schooling to labor market demands, student characteristics, among others, also affect labor market preparedness.

Figure 7. Age-specific school enrollment, expressed as a percentage of all children and of children ever in school

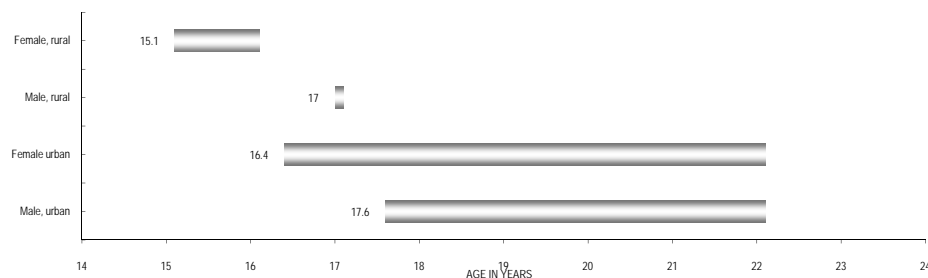


UCW calculations based on Senegal Questionnaire *Unifié sur les Indicateurs de Développement (QUID)*, 2001

34. The length of school to work transition disaggregated by area of residence and sex are presented in Figure 8. The characteristics of the transition appear to depend significantly on both residence and sex and on the interaction between the two. Specifically, an examination of Figure 8 reveals four overall patterns:

- Male youth stay longer in education (perhaps also reaching higher education attainment) than female youth. Hence, male youth start the transition to work at a later age than females in both urban and rural areas.
- The transition starts later in urban than in rural areas for both males and females, suggesting that urban youth are advantaged with respect to rural youth in terms of education attainment.
- Male and female youth in rural areas find employment more quickly than their counterparts in urban areas, suggesting labor entry problems are especially relevant in urban areas.
- Female youth find employment more quickly than male youth in rural areas. In urban areas female youth experience a longer transition than male youth.

Figure 8. Length and timing of transition from school to work in Senegal, by sex and residence



UCW calculations based on Senegal Questionnaire *Unifié sur les Indicateurs de Développement (QUID)*, 2001

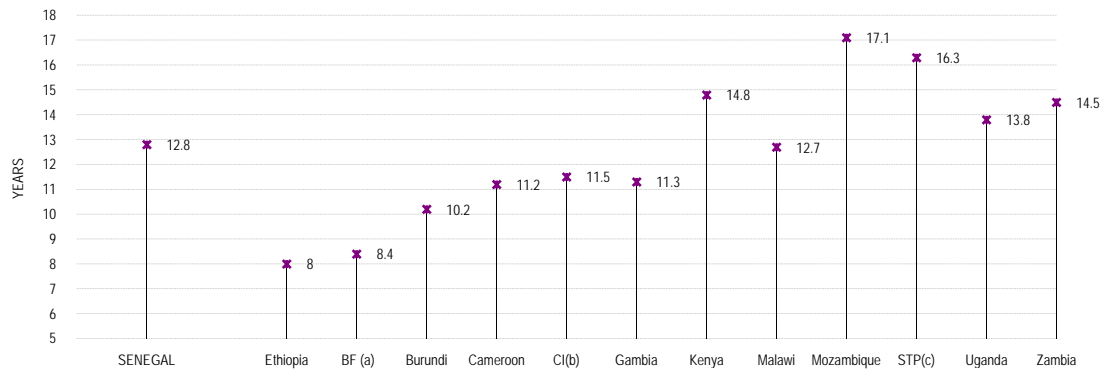
35. As noted at the outset, our synthetic indicator does not permit conclusions to be drawn regarding the “efficiency” or “success” of the transition in specific country contexts. A better understanding of the transition period would require integrating the analysis of optimal school-leaving age with that of employment search and labor force participation. Nonetheless, the synthetic indicator does reveal two important features of the transition in Senegal that fit within this more detailed analysis: the relatively early starting age of the transition and its typically long length (an average of four years).

36. An initial period of unemployment following schooling is not unusual as young people spend time looking for the best job match, but the length of this jobless period in the Senegalese context extends well beyond what could plausibly be considered “wait” unemployment, especially in urban areas. As noted above, long periods of initial joblessness can translate into permanently reduced productive potential and job prospects—and therefore constitute a particular policy concern.

4.2 Transitions directly to working life

37. We have considered up to this point only the group of children that has spent at least some time in formal education. However, youth entering the labor market do not necessarily transition through the schooling system. Indeed, the majority of Senegalese 15- 24-year-olds never enter school (see next section), transitioning instead directly from inactivity to the labor force.

Figure 9. Age at first job, children never attending school, by sex, residence, and country



Notes: (a) Burkina Faso; (b) Côte d'Ivoire; (c) Sao Tome and Principe

Source: UCW calculations based on Senegal Questionnaire Unifié sur les Indicateurs de Développement (QUID), 2001 and World Bank Standard Files and Standard Indicators (SFSI) datasets.

38. There is no obvious benchmark that allows us to establish from what age these children begin to look for any form of employment. However, by looking at Figure 9 we can see that the average age at first job for children never attending school, at 13 years, falls in the middle range with respect to other Sub-Saharan Africa countries. Rural school nonentrants secure employment at the earliest age, though differences by residence in starting age are not large (Table 7).

5. HUMAN CAPITAL AND YOUTH LABOR MARKET OUTCOMES

5.1 Education attainment levels of Senegalese young people

39. Most Senegalese young people have had very little opportunity to acquire human capital: only 28% of 15- to 24-year-olds possess a primary education or less and about 53% possess no formal education at all (Table 8). Limited formal education is much more common in rural areas than in urban areas, and is more common among young adults than among teenagers, which points to progress over time in expanding access to basic level schooling.

40. This group of school nonentrants and early-leavers is a particular policy concern, for with very little human capital they are especially vulnerable to undesirable transition outcomes. As children, school nonentrants and early leavers are among the

groups most vulnerable to child labor, underscoring the fact that the issue of finding satisfactory employment as adults cannot be separated from the issue of child labor.¹¹ Links between low levels of human capital accumulation, on one hand, and youth labor market outcomes, on the other, are discussed below.

Table 8. School attainment levels, by residence and age group

Age group	Highest education level attained	Urban		Rural		Total	
		No	%	No	%	No	%
10-14	no schooling	155628	30.5	484483	63.1	640111	50.1
	primary or less	335442	65.7	277338	36.1	612780	47.9
	not completed lower secondary	17164	3.4	4008	0.5	21172	1.7
	completed lower secondary	1305	0.3	1687	0.2	2992	0.2
	not completed higher secondary	904	0.2	0	0.0	904	0.1
	completed higher secondary	-	-	-	-	-	-
	technical & professional	-	-	-	-	-	-
	higher education	-	-	-	-	-	-
15-19	no schooling	161072	31.4	411250	71.1	572322	52.5
	primary or less	195753	38.2	127915	22.1	323669	29.7
	not completed lower secondary	74413	14.5	22813	3.9	97226	8.9
	completed lower secondary	40995	8.0	9464	1.6	50460	4.6
	not completed higher secondary	35671	7.0	6774	1.2	42445	3.9
	completed higher secondary	824	0.2	216	0.0	1041	0.1
	technical & professional	3356	0.7	-	-	3356	0.3
	higher education	255	0.1	-	-	255	0.0
20-24	no schooling	139582	32.6	331157	77.1	470739	54.9
	primary or less	153118	35.8	68210	15.9	221329	25.8
	not completed lower secondary	21870	5.1	8892	2.1	30762	3.6
	completed lower secondary	23241	5.4	8339	1.9	31580	3.7
	not completed higher secondary	57487	13.4	8686	2.0	66173	7.7
	completed higher secondary	14285	3.3	2907	0.7	17192	2.0
	technical & professional	8892	2.1	193	0.1	9086	1.1
	higher education	9524	2.2	888	0.2	10413	1.2
15-24	no schooling	300653	32.0	742408	73.7	1043061	53.5
	primary or less	348872	37.1	196126	19.5	544997	28.0
	not completed lower secondary	96283	10.2	31705	3.2	127988	6.6
	completed lower secondary	64236	6.8	17803	1.8	82040	4.2
	not completed higher secondary	93158	9.9	15461	1.5	108618	5.6
	completed higher secondary	15110	1.6	3123	0.3	18233	0.9
	technical & professional	12248	1.3	193	0.0	12441	0.6
	higher education	9779	1.0	888	0.1	10667	0.6

UCW calculations based on Senegal Questionnaire *Unifié sur les Indicateurs de Développement (QUID)*, 2001

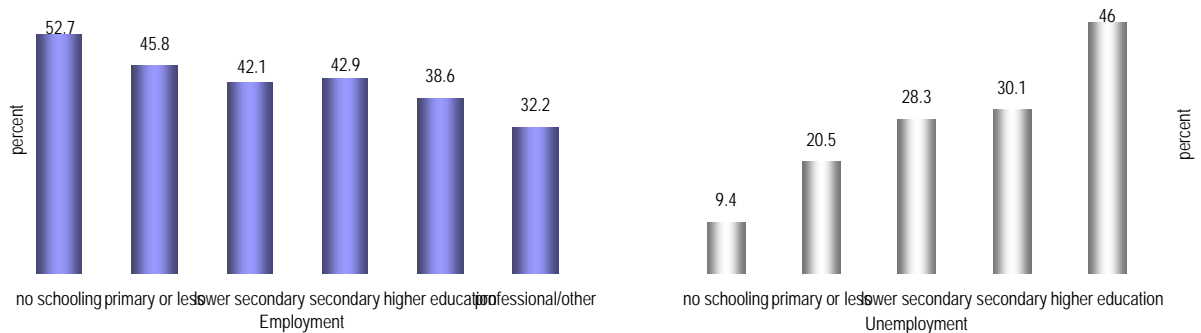
5.2 Human capital levels and labor force status: descriptive evidence

41. The rate of unemployment increases with education level, peaking among those with higher education (Figure 10). This partially depend on the fact that less-educated

¹¹ In the absence of retrospective information on work involvement, however, it is not possible to estimate the precise proportion of young people that were working as children.

young people begin their transition to work at an earlier age and therefore have had a greater length of exposure to the labor market and more time to secure employment. In addition, as the reservation wage is likely to rise with skill level, search time might increase with the level of human capital of the individual. This finding per se, therefore, says little about links between human capital levels and success in the labor market.

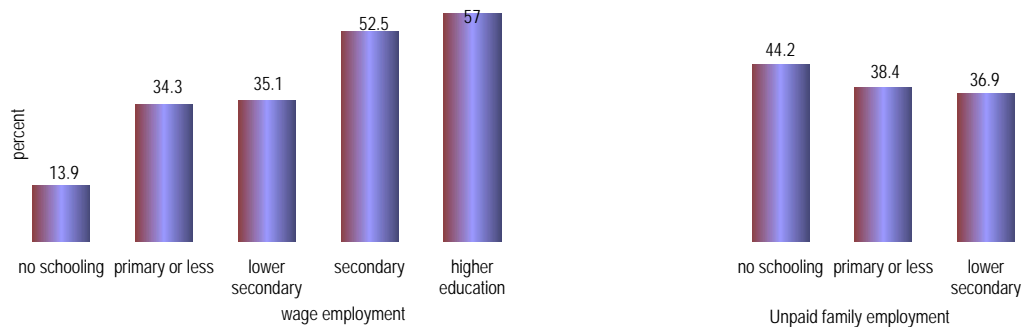
Figure 10. Employment and unemployment rate, 20–24 age group, by level of education attainment



UCW calculations based on Senegal Questionnaire *Unifié sur les Indicateurs de Développement (QUID)*, 2001

42. Education attainment appears to have a positive influence on occupational type. More-educated workers are much more likely to be in wage employment and much less likely to be in unpaid work than their less-educated counterparts (Figure 11).

Figure 11. Wage and unpaid family employment as a proportion of total employment, 20–24 age group, by level of education attainment



UCW calculations based on Senegal Questionnaire *Unifié sur les Indicateurs de Développement (QUID)*, 2001

5.3 Human capital levels and local labor market condition: econometric analysis

43. In this section we look at the determinants of youth employment, paying special attention to the role of the stock of human capital with which youth enter the labor market and to the conditions of the local labor market. The lack of information on the date at which a youth left school makes it impossible to distinguish directly between the effect of human capital accumulation on the employment probability per se and that due to the duration of exposure.

44. We have followed the approach already applied in Guarcello, Rosati, Lyon (2006),¹² which attempts to identify whether the effects of the explanatory variables considered are different according to the level of education reached by the individual. While this approach does not directly answer the question of the possible effect of human capital on employability, it might offer us some indirect evidence.

45. We have, hence, divided the sample of youth according to the level of education achieved. In particular, we have considered five groups: never attended school, primary or less, lower secondary, higher secondary, and at least some higher education (professional school). For each of these sub samples, we have run a separate regression on the employment probability using the explanatory variables described below.

46. There is an obvious problem of sample selection that in our case is made more complex by the fact that the choice subsuming the selection is not generated by a bivariate normal. One possibility to deal with this issue would be to estimate a selection model and follow a generalized procedure (for example, Heckman). However, there is growing evidence (consistent with the current empirical practice) that once major observable characteristics are taken into account, estimates of interest often do not change much when the selection model is estimated compared with the naive model. Moreover, there are two potential costs to estimating the selection model. Sometimes, the bias in the coefficients can be worse than in the naive model, and the coefficients in the selection model can be much less precisely estimated, especially if the instruments are weak.

47. For these reasons, we have estimated both simple probit equations and selections model (available upon request from the authors). The data sets do not offer a wide choice of instruments, we have therefore used the household structure (number of adults and of siblings) to identify the selection (school grade) equation. We use the method suggested in Bourguignon and others (2001), who generalize the approach originally proposed by Lee (1983). We focus the discussion on the probit estimates for reasons mentioned above and because the selection terms in the generalized Heckman are not significant.

48. The Senegal 2001 QUID survey does not contain large amount of information. In fact, only a few variables relevant to the analysis of employment are available. In particular, we have used (besides information on age and sex) the asset index as proxy of the level of expenditure (Filmer and Pritchett, 1998a-b, 1999) of the household, the household size, and the level of education of the household head. The information is obviously very scant, so our results are to be interpreted with caution.

49. To better reflect the differences between rural and urban settings, we have estimated all the equations separately for rural and urban areas. The effects of local labor market conditions on the employment probability have been proxied with two variables that should be related to the supply and demand side of the market. In particular, as an indicator of the condition of demand we have used the adult's (aged 25–55) employment-to-population ratio, while the supply side has been proxied by the share of youth to working-age population.

50. Defining the relevant local labor market is very difficult empirically, and we have followed different approaches. First, we have identified local labor market as defined at the administrative regional level, and we have computed the above-mentioned indicators for the 10 regions of Senegal. Anecdotal evidence of migration and labor market flows and discussion with labor market experts have, in fact, led to the conclusion that the smaller is the administrative unit, the more difficult it is to define

¹² See appendix 2 for details

as a local labor market. However, if it is reasonable to assume that flows of work can occur within the rural and urban areas of the same region, it is also true that the integration of rural and urban labor markets might be far from perfect, especially in the short-medium run (cost of migration, difficulties of commuting, lack of information, and the like). For this reason, we have also computed the indicators of local labor market stance separately for the rural and urban areas.

5.4 Estimation results

51. The following tables present the results for the probit estimates of the probability of employment by level of education with the standard errors corrected for clustering. 0-10 present the estimates for urban and rural areas using the regionwide definition of local labor market, while tables 11-12 refer to the results obtained with indicators of local labor market separated for rural and urban areas for each region.

52. As expected, the results show large differences by area of residence and across level of education. In urban areas, the probability of being employed increases with age but only for youth with no education or less than primary education. This seems to indicate that less-educated youth face more difficulties to find employment, but the result might be biased by the fact that we might not observe enough variation in exposure for youth with more than primary education.

53. Gender effects are large: the probability of a girl being in employment is 18%–3% lower than that of a boy according to the level of education. Again there are large differences between urban and rural areas as the level of education increases. In urban settings, the gender bias in the probability to be employed decrease as the level of education of both boys and girls increases, while in the rural areas the bias remains high with greater difficulties for a girl to secure a job at any level of education.

54. The level of income or wealth (as proxied by the wealth index dummy variables) is significant for the most-educated youth. If household resources are important for finding a job, credit rationing or social networking might be important elements in the determining youth employment. However, this result should also be interpreted with care.

55. The conditions of the local labor market appear to substantially influence the probability of finding employment, especially in the rural areas. An increase of the adult employment ratio generates an increase in the probability of finding employment: this effect is stronger for youth that never attended school and substantially smaller for youth with at least some higher education.

56. The supply of youth labor as proxied by the share of young population, is marginally significant in the urban area and for youth that never attended school (see 0). Again the effect is large for youth residing in rural areas (see 0)

Table 9. Probability of employment by level of education, youth aged 10–24, marginal effects using the regionwide definition of local labor market. Urban areas

Probit estimates								
Robust standard errors								
(a) URBAN area								
Variable	Never attended school		Primary or less		lower secondary school		secondary or higher education	
	dy/dx	z	dy/dx	z	dy/dx	z	dy/dx	z
Age	0.1054	4.08	0.1226	13.20	0.0347	0.78	0.0824	-2.15
Age ²	-	-	-	-	-	-	-	-
	0.0028	3.75	0.0027	10.05	0.0002	0.21	0.0023	2.19
Male	0.0593	2.35	0.1447	16.21	0.0259	2.32	0.0053	0.40
Household size	-	-	-	-	-	-	-	-
	0.0053	1.33	0.0024	-1.81	0.0008	0.43	0.0034	-1.11
Number of children aged 0-5 in the household	0.0297	2.41	0.0058	1.61	0.0058	1.09	0.0158	1.58
Number of adults aged 25-55 in the household	-	-	-	-	-	-	-	-
	0.0106	1.10	0.0060	-1.97	0.0088	1.76	0.0015	-0.28
Asset index (quintile 1)	0.0540	1.07	-	-	-	-	-	-
			0.0079	-0.54	0.0543	2.07	0.5194	0.50
Asset index (quintile 2)	-	-	-	-	-	-	-	-
	0.0126	0.45	0.0038	-0.26	0.0401	2.26	0.9748	3.01
Asset index (quintile 3)	0.0918	1.48	0.0032	0.19	-	-	-	-
			0.0081	0.35	0.0081	0.35	0.9826	25.64
Asset index (quintile 4)	0.0613	1.05	0.0265	1.32	-	-	-	-
			0.0365	2.39	0.0365	2.39	0.9769	21.52
Male sex of the hh head	0.0007	0.03	0.0010	0.10	0.0185	1.49	-	-
							0.0025	-0.16
Household head is literate	-	-	-	-	-	-	-	-
	0.0064	0.27	0.0141	1.67	0.0185	1.44	0.0012	-0.07
Region adult employment ratio	0.2362	1.14	0.0867	0.93	-	-	-	-
					0.2175	1.45	0.1421	0.61
Region share of population	2.2702	1.73	0.4154	0.76	-	-	-	-
					1.4591	1.65	0.1589	-0.16

(b) Local labor market indicators (by regions):

(c) Adult employment ratio =(number of employed aged 25-55)/(population aged 25-55)

(d) Share of population=(number of youth aged 15-24)/(working-age population aged 15-60)

Table 10. Probability of employment by level of education, youth aged 10–24, marginal effects using the regionwide definition of local labor market. Rural areas

Probit estimates

Robust standard errors

(a) Rural

Variable	Never attended school		Primary or less		lower school		secondary		secondary or higher education	
	dy/dx	z	dy/dx	z	dy/dx	z	dy/dx	z	dy/dx	z
Age	0.0638	0.93	0.0760	3.39	0.0587	0.60	1.8286	2.32		
Age ²	-0.0003	-0.14	-0.0012	-1.77	-0.0006	-0.23	-0.0424	-2.27		
Male	0.2331	4.88	0.2683	14.22	0.2481	4.55	0.2546	1.22		
Household size	-0.0080	-0.92	-0.0010	-0.32	-0.0165	-1.78	0.0445	2.09		
Number of children aged 0-5 in the household	-0.0008	-0.04	0.0130	1.62	0.0360	1.42	-0.0056	-0.12		
Number of adults aged 25-55 in the household	0.0478	2.02	-0.0015	-0.16	0.0335	1.37	-0.0984	-1.68		
Asset index (quintile 1)	-0.0325	-0.26	-0.0438	-1.08	-0.0825	-0.76	0.1564	0.59		
Asset index (quintile 2)	-0.0732	-0.87	0.0763	2.21	0.0041	0.04	0.1192	0.51		
Asset index (quintile 3)	-0.0521	-0.82	0.1129	3.88	-0.0605	-0.73	0.1699	0.81		
Asset index (quintile 4)	-0.0232	-0.30	0.0140	0.42	-0.1661	-1.99	0.1998	0.91		
Male sex of the hh head	-0.0126	-0.15	0.1095	3.73	0.1003	1.34	0.1721	0.84		
Household head is literate	0.0054	0.10	-0.0421	-1.93	-0.1206	-2.03	-0.1224	-0.96		
Region adult employment ratio	1.5051	2.50	1.1294	4.98	3.1007	4.82	-0.2350	-0.14		
Region share of population	1.6109	0.55	-2.2889	-2.05	8.1930	2.48	-24.275	-2.62		

Local labor market indicators (by regions):

Adult employment ratio =(number of employed aged 25-55)/(population aged 25-55)

Share of population=(number of youth aged 15-24)/(working-age population aged 15-60)

Table 11. Probability of employment by level of education, youth aged 10–24, marginal effects using indicators of local labor market separated for rural and urban areas for each region.

Probit estimates
Robust standard errors
(a) Urban

Variable	Never attended school		Primary or less		lower secondary school		secondary or higher education	
	dy/dx	z	dy/dx	z	dy/dx	z	dy/dx	z
Age	0.108	4.01	0.122	13.18	0.034	0.79	-0.078	-3.51
Age ²	-0.003	-3.67	-0.003	-10.03	0.000	-0.20	0.002	3.69
Male	0.058	2.34	0.144	16.22	0.025	2.31	0.007	0.60
Household size	-0.006	-1.41	-0.002	-1.62	0.000	-0.26	-0.002	-0.90
Number of children aged 0-5 in the household	0.033	2.66	0.006	1.70	0.006	1.15	0.015	1.93
Number of adults aged 25-55 in the household	-0.007	-0.75	-0.007	-2.19	-0.009	-1.90	-0.004	-0.72
Asset index (quintile 1)	0.037	0.82	-0.012	-0.84	-0.062	-2.33	0.521	0.71
Asset index (quintile 2)	-0.008	-0.26	-0.006	-0.45	-0.043	-2.54	0.978	4.71
Asset index (quintile 3)	0.097	1.47	0.003	0.16	-0.011	-0.49	0.984	40.13
Asset index (quintile 4)	0.079	1.24	0.024	1.22	-0.035	-2.29	0.979	35.86
Male sex of the hh head	-0.003	-0.1	0.000	0.01	0.018	1.46	-0.004	-0.28
Household head is literate	-0.012	-0.51	0.014	1.67	0.017	1.32	-0.005	-0.31
Region adult employment ratio	0.830	1.93	0.165	1.26	0.308	1.30	0.443	1.12
Region share of population	-0.361	-0.56	-0.386	-1.59	-1.183	-2.95	-0.587	-1.45

Local labor market indicators (by regions):
 Adult employment ratio =(number of employed aged 25-55)/(population aged 25-55)
 Share of population=(number of youth aged 15-24)/(working-age population aged 15-60)

Table 12. Probability of employment by level of education, youth aged 10–24, marginal effects using indicators of local labor market separated for rural and urban areas for each region.

Probit estimates
Robust standard errors
(a) Rural

Variable	Never attended school		Primary or less		lower secondary school		secondary or higher education	
	dy/dx	z	dy/dx	z	dy/dx	z	dy/dx	z
Age	0.0619	0.91	0.0750	3.36	0.0755	0.79	1.6880	2.10
Age ²	-0.0003	-0.15	-0.0012	-1.76	-0.0010	-0.39	-0.0390	-2.04
Male	0.2279	4.74	0.2736	14.57	0.2786	5.24	0.2543	1.28
Household size	-0.0079	-0.92	-0.0025	-0.79	-0.0174	-1.83	0.0203	0.95
Number of children aged 0-5 in the household	-0.0035	-0.18	0.0131	1.63	0.0250	0.96	0.0295	0.64
Number of adults aged 25-55 in the household	0.0497	2.10	-0.0007	-0.07	0.0214	0.86	-0.0808	-1.45
Asset index (quintile 1)	-0.0589	-0.49	-0.0690	-1.75	-0.2096	-2.24	0.1411	0.47
Asset index (quintile 2)	-0.0966	-1.18	0.0629	1.85	-0.1035	-1.12	0.0712	0.28
Asset index (quintile 3)	-0.0833	-1.31	0.0803	2.75	-0.1685	-2.02	-0.0772	-0.33
Asset index (quintile 4)	-0.0235	-0.31	0.0048	0.15	-0.2345	-3.01	0.1850	0.78
Male sex of the hh head	-0.0161	-0.19	0.1130	3.88	0.1414	1.90	0.1238	0.58
Household head is literate	0.0056	0.10	-0.0447	-2.06	-0.1135	-1.87	-0.1958	-1.52
Region adult employment ratio	1.4877	4.34	1.4416	11.66	2.4286	6.89	2.2438	2.55
Region share of population	4.0386	2.26	2.1236	3.49	11.2019	5.95	3.8181	0.89

Local labor market indicators (by regions):
 Adult employment ratio =(number of employed aged 25-55)/(population aged 25-55)
 Share of population=(number of youth aged 15-24)/(working-age population aged 15-60)

6. CONCLUSIONS

57. The descriptive evidence indicates that Senegalese young people aged 15–24 are primarily workers. Almost 39% of all 15- to 24-year-olds is employed while less than one-fifth is involved in some form of education. An additional 10% of youth is actively seeking work but unable to find it. A large proportion of young people, 32%, is "inactive," that is, neither in the labor force nor in education, a category which also includes discouraged workers and disabled people. About 5% of youth is underemployed, that is, available to take an additional job during the four weeks prior the survey.

58. This is particularly true in rural areas, where more than 50% of young people is at work and only 10% is attending some form of education.

59. Moreover, about 70% of the 15- to 24-year-olds has attended or completed only primary education, and only 6% has completed lower secondary education.

60. In urban areas the situation is less dramatic, but still about 50% of youth has at most completed primary, while another 10% has completed lower secondary.

61. Associated with low levels of education attainment is the large number of youth that enter the labor market at an early age. By the age of 17 years, about 55% of youth is working in rural areas compared with 24% young workers in urban areas.

62. Strong rural/urban duality also characterizes the status of young people in the labor market. In rural areas, youth unemployment is low (about 5%), transition from school to work for the few who attend school is about one year, and youth workers are not disadvantaged with respect to adult workers in terms of unemployment. Large differences emerge when looking at the employment rate (54% young, 67% adult). However, the employment of young workers is concentrated in the agriculture sector (largely subsistence), where labor income is low, and there is evidence of large underemployment.

63. In urban areas youth face a high rate of unemployment (almost 36%), and the transition from school to work is four times longer than that in rural areas. Urban youth are at a disadvantage with respect to the adult population in terms of employment.

64. The descriptive evidence suggests that education helps to secure better jobs, but that difficulties in finding a job increase with the level of human capital. The data available do not allow us to assess whether adults are in a better position than youth in this respect; unemployment rates are also higher for the better-educated among the prime- age adults. These findings need to be interpreted with caution, however, as we do not have enough information to assess how much of the higher unemployment rate of the more educated might be due to wait unemployment.

65. The econometric analysis confirms most of the descriptive findings: the estimates by areas of residence show that urban employment is less influenced than rural employment by the status of the local labor market, confirming the dichotomy previously discussed.

66. The local labor market characteristics appear to substantially influence the probability of employment in rural area, especially for youth entering the labor market with low level of human capital.

67. Gender effects are large, and the impact differs by area of residence. Boys living in urban areas experience a higher probability of employment compared with girls,

but this bias becomes smaller as the overall level of education increase. In rural settings, the gender bias is always high at any level of education.

68. Household background characteristics, and in particular the level of income proxied by the wealth index, seem to affect the probability of employment, especially of the youth entering the labor market with low levels of human capital. Even if this result should be taken with care, it seems to indicate that credit rationing and parental support are important determinants of employment probability.

69. Some policies therefore could be suggested as a consequence of the findings of the study: the low levels of school attainment associated with an early drop out from school and an early entry in the labor market, both influencing patterns of employment (unemployment), job quality, and remuneration later in life. Education sector development efforts have resulted in some progress in raising attendance, but addressing the access and quality issues influencing parents' decisions to enroll their children in school remains a major challenge in rural areas. Developing and expanding policies designed to offset or minimize the opportunity costs of rural children's time in school, for example, flexible school scheduling designed around the agricultural seasons or school attendance incentive schemes, might hold promise in this context.

70. Even if the general enrollment situation improves, the current generation of young people will have few chances to see a real change in their circumstances. Further investment in special training and skill formation activities is therefore needed in parallel with broader education expansion efforts, to improve the employment prospects of this stock of low or uneducated youth.

71. The minority of (primarily urban) youth relatively well equipped with human capital that face specific problems in terms of unemployment. There is not at present enough information to identify the causes of this phenomenon and especially to distinguish voluntary from involuntary unemployment. The issue of differentiating between wait unemployment and employability problems is very important in terms of policy formulation, especially in view of the fact that successful education policies will in the near future substantially increase the relative number of educated youth in the labor market. An assessment of the determinants of the excess unemployment and of the education-specific unemployment of youth will be essential to designing the appropriate policies to favor school to work transition and reduce youth disadvantage.

72. Different household surveys have been carried out in Senegal. Nonetheless, information gaps persist, preventing a complete picture of the youth labor market situation from being drawn. It would be useful to introduce minor changes in the current survey instruments to fill these gaps. For example, a few retrospective questions could go a long way in helping the analysis in absence of panel data.

73. The role that labor market stance plays in determining the probability of employment indicates that macroeconomic growth is crucial to youth employment and that the youth situation hinges to a large extent on the success of general national development policies. The fact that labor market effects are particularly strong for the less-educated labor force points to the special vulnerability of these groups and to the need to introduce risk reduction policies.

APPENDIX 1. ADDITIONAL DESCRIPTIVE TABLES

Table 1 Nonstudent Employment Status and Employment Modality, by Education Attainment Level and age group, Urban area

Urban area								
Age group	Highest education level attained	Employment status			Employment modality			
		Employed	Unemployed	Inactive	Wage employee	Unpaid family worker	Own account worker	Total
20-24	no schooling	36.2	19.2	44.6	44.2	23.3	32.6	100
	primary or less	40.4	24.9	34.7	44.6	31.8	23.6	100
	not completed lower secondary	32.9	29.8	37.3	48.1	29.7	22.2	100
	completed lower secondary	44.1	30	25.9	52.9	14.1	33	100
	not completed higher secondary	31.2	35.7	33.1	64.8	13.2	22	100
	completed higher secondary	43	29	28	78.6	14	7.4	100
	technical professional & higher education	33.9	42.8	23.2	100	0	0	100
	higher education	36.2	54	9.8	85.1	0	14.9	100
25-55	no schooling	54.6	10.9	34.5	29.8	3.0	67.2	100
	primary or less	52.2	18.4	29.4	46.2	4.8	49	100
	not completed lower secondary	52.6	21.5	25.9	49.3	2.8	47.9	100
	completed lower secondary	52.7	22	25.3	63.4	2.7	33.9	100
	not completed higher secondary	59.6	19.6	20.8	76.8	1	22.2	100
	completed higher secondary	67.4	22.7	9.9	77.9	1.7	20.4	100
	technical professional & higher education	66.9	19	14.1	84.6	2.5	12.9	100
	higher education	78.5	12	9.5	85.6	1.7	12.8	100

Table 2 Non Student Employment Status and Employment Modality, by Education Attainment Level and Age Group

Rural area								
Age group	Highest education level attained	Employment status			Employment modality			
		Employed	Unemployed	Inactive	Wage employee	Unpaid family worker	Own account worker	Total
20-24	no schooling	59.6	5.3	35.0	6.2	49.4	44.4	100
	primary or less	58.2	10.4	31.4	18.3	48.5	33.1	100
	not completed lower secondary	55.7	19.5	24.8	15.2	53.4	31.3	100
	completed lower secondary	69.4	19.1	11.5	20.1	33.7	46.1	100
	not completed higher secondary	48.4	24.6	27	22.2	55.8	22	100
	completed higher secondary	-	0	0	62.5	0	37.5	100
	technical & professional	0	-	0	-	-	-	-
	higher education	52.8	0	47.2	-	-	0	100
25-55	no schooling	67.0	3.6	29.4	7.0	21.9	71.2	100
	primary or less	69.6	7.4	23.1	19.9	19.8	60.3	100
	not completed lower secondary	77.6	5.4	17	21.3	28.3	50.4	100
	completed lower secondary	77.5	6	16.5	38.5	21	40.6	100
	not completed higher secondary	74	16.8	9.2	34.9	17.6	47.5	100
	completed higher secondary	78.8	4.8	16.4	55.4	33.4	11.2	100
	technical & professional	88.5	11.5	0	79.8	12.9	7.3	100
	higher education	88.2	7.5	4.3	95.2	4.8	0	100

Table 3 Probability of Employment by Level of Education, Youth Aged 10–24, Probit estimates using the Regionwide Definition of Local Labor Market

Probit estimates								
Robust standard errors								
Total								
Variable	Never attended school		Primary or less		lower secondary school		secondary or higher education	
	dy/dx	z	dy/dx	z	dy/dx	z	dy/dx	z
Age	0.1395	3.66	0.0909	8.44	0.0062	0.19	-0.0833	-1.02
Age ²	-0.0032	-2.62	-0.0016	-4.96	0.0007	0.77	0.0025	1.28
Male	0.1815	5.57	0.2093	22.31	0.0661	4.72	0.0194	0.87
urban	-0.2461	-7.11	-0.1789	-13.33	-0.2326	-7.24	-0.3167	-3.86
Household size	-0.0085	-1.50	-0.0024	-1.54	-0.0028	-1.12	-0.0025	-0.66
Number of children aged 0-5 in the household	0.0173	1.31	0.0105	2.56	0.0141	2.09	0.0204	2.00
Number of adults aged 25-55 in the household	0.0193	1.33	-0.0050	-1.28	-0.0059	-0.96	-0.0042	-0.48
Asset index (quintile 1)	-0.0384	-0.64	-0.0065	-0.37	-0.0383	-1.35	0.0803	1.75
Asset index (quintile 2)	-0.0656	-1.38	0.0263	1.52	-0.0255	-0.97	0.1112	1.51
Asset index (quintile 3)	-0.0196	-0.45	0.0618	3.35	-0.0066	-0.23	0.2125	1.89
Asset index (quintile 4)	-0.0047	-0.09	0.0240	1.24	-0.0502	-2.20	0.2628	1.98
Male sex of the hh head	0.0158	0.33	0.0367	3.09	0.0458	2.90	0.0078	0.30
Household head is literate	0.0022	0.06	-0.0063	-0.60	-0.0017	-0.10	-0.0121	-0.45
Region adult employment ratio	1.2155	3.38	0.6285	5.85	0.3801	2.35	0.2228	0.74
Region share of population	1.8291	1.03	-1.6394	-2.94	-0.5517	-0.62	-2.3687	-1.44

Local labor market indicators (by regions):

Adult employment ratio =(number of employed aged 25-55)/(population aged 25-55)

Share of population=(number of youth aged 15-24)/(working-age population aged 15-60)

Table 4 Probability of Employment by Level of Education, Youth Aged 10-24 Years, Probit Estimates
Obtained with Indicators of Local Labor Market Separated for Rural and Urban Areas

Probit estimates								
Robust standard errors								
Total								
Variable	Never attended school		Primary or less		lower secondary school		secondary or higher education	
	dy/dx	z	dy/dx	z	dy/dx	z	dy/dx	z
Age	0.1434	3.74	0.0925	8.59	0.0108	0.33	-0.0905	-1.15
Age^2	-0.0033	-2.73	-0.0016	-5.13	0.0006	0.64	0.0027	1.45
Male	0.1827	5.59	0.2096	22.36	0.0648	4.64	0.0268	1.24
urban	-0.2218	-5.62	-0.1184	-7.59	-0.1872	-4.79	-0.1682	-1.97
Household size	-0.0088	-1.56	-0.0023	-1.45	-0.0031	-1.23	-0.0015	-0.41
Number of children aged 0-5 in the household	0.0149	1.13	0.0101	2.49	0.0130	1.92	0.0219	2.2
Number of adults aged 25-55 in the household	0.0229	1.58	-0.0053	-1.36	-0.0062	-0.99	-0.0088	-0.99
Asset index (quintile 1)	-0.0433	-0.74	-0.0119	-0.69	-0.0474	-1.72	0.0878	1.78
Asset index (quintile 2)	-0.0662	-1.39	0.0232	1.34	-0.0313	-1.23	0.1248	1.49
Asset index (quintile 3)	-0.0315	-0.74	0.0558	3.04	-0.0131	-0.48	0.2078	1.69
Asset index (quintile 4)	0.0009	0.02	0.0174	0.9	-0.0563	-2.64	0.2765	1.88
Male sex of the hh head	0.0179	0.38	0.0311	2.59	0.0451	2.87	0.0003	0.01
Household head is literate	0.0060	0.17	-0.0056	-0.53	-0.0045	-0.26	-0.0257	-0.92
Region adult employment ratio	1.1049	4.97	0.8852	11.7	0.6621	4.58	0.6716	2.79
Region share of population	2.3873	2.33	0.0304	0.11	0.8202	1.98	-0.5425	-0.77
Local labor market indicators (by regions):								
Adult employment ratio =(number of employed aged 25-55)/(population aged 25-55)								
Share of population=(number of youth aged 15-24)/(working-age population aged 15-60)								

APPENDIX 2. THE TRANSITION FROM SCHOOL TO WORK

Based on the discussion in the section on national context, it should be clear that the transition from school to work is by no means a linear, well defined process, with individuals leaving school once and for all, possibly searching over a certain period of time before landing in their first job, the latter being a definite port of entry into employment for life. Perhaps the start point of this transition is well defined if individuals never re-enter school and if school attendance is universal. The greatest difficulty arises if one tries to define the end point of this transition. Individuals might alternate periods of employment to periods of unemployment, change jobs or possibly even stay out of work for the rest of their life.

Young individuals might take up temporary jobs, work in the household farm or enterprise, or devote themselves to household chores for lack of better work opportunities or for the potential return these initial work experience have in terms of future employment and income prospects. These problems are particularly relevant in developing countries, where women's labor force participation (at least in the market) is low, individuals often associate work with schooling, and, most important, underemployment, self-employment, home production, and casual employment are widespread. The process is made even more complex by the fact that school-leaving time is endogenous and most likely influenced by the expectation about the transition to work and the kind of job that will be obtained at the end of the transition. A better understanding to this transition period would require integrating the analysis of optimal school-leaving age with that of employment search and labor force participation.¹³

Although in principle very important, the issues highlighted above make relatively little sense when one is confronted with the data, especially the ones from developing countries. In most cases the data provide only information on whether an individual in school or in employment (perhaps distinguishing between market and nonmarket work). In the next section, hence, we develop a simple indicator that in view of data limitations does not make justice of the issues raised above.

Building a Simple Indicator of the School to Work Transition

Hereafter we develop a simple indicator of transition from school to work that should be comparable across countries. In order to describe the transition process from school to work, we derive the distribution of school leaving age and the distribution of age of entry into the first job. As a synthetic indicator of this transition we compute the difference between the average school-leaving age and the average age of first entry into work.

We are not the first ones to attempt to describe the school to work transition process. For example OECD (1998a, 1999, 2000) uses the age at which 50% of individuals are in employment to determine the end point of the transition. Measures of transition based on such definition implicitly assume that the overall portion of individuals getting into employment is above 50% (otherwise no transition would be ever completed) and that the overall proportion of individuals who enter in employment in any given country is roughly comparable (otherwise this indicator is biased by the overall differences in participation across countries). None of these assumptions is

¹³ In a companion paper we try to approach these issues using a real option approach.

likely to be true, especially in developing countries. Similar problems occur when estimating the starting point of the transition. For example, Organisation for Economic Co-operation and Development (OECD) indicators implicitly assume that all children do transition through the school system and that the vast majority of them stays in school at least until the end of compulsory school—an assumption that can be hardly maintained in most developing countries.

While the assumptions at the base of the OECD indicator arguably represent not much of a problem in developed countries, they might be a serious source of bias, as just mentioned, in comparing data from developing countries with very different levels of overall labor market participation in adulthood, especially among women, and of school attendance.

Below we try to circumvent these problems by standardizing our measures of school to work transition to the population at risk, that is, those who indeed eventually transition through school and participate in the labor force.

Ideally, to model the transition process from school to work, one would need longitudinal data with detailed job history information that follows individuals from childhood into adulthood or alternatively cross-sectional data with retrospective information that allows work histories to be reconstructed. In the absence of these data—generally the case in developing countries—one can use cross-sectional data to measure the length of the transition. Under appropriate assumptions, the available cross-sectional data allow us to consistently identify the parameters of interest.

Indicators and their interpretation depend on the underlying assumptions. We find it necessary then to spend some time describing such assumptions in order to favor comparability with other indicators.

Suppose there exists an age a_{\min} , such that for $a > a_{\min}$ individuals never transition into school and such that for $a \leq a_{\min}$ individuals never transition out of school.

In this case at age a_{\min} those who ever transition through school all happen to be in school. In this case it is easy to show that if by S we denote the event of being in school, the probability of leaving school at age a , denoted by SL_a is nothing but:

$$SL_a = -[P(S_{a+1}) - P(S_a)] \quad a > a_{\min} \quad (1)$$

that is, the change in enrollment across two consecutive ages. Equation 1 simply states that if, say, 90% of children are in school at age 10 and 80% are in school at age 11, 10% of children must have dropped out between age 10 and age 11.

Assume in addition that for any age $a < a_{\max}$, individuals never transition out of work and for $a \geq a_{\max}$ individuals never transition into work. Again this implies that at a_{\max} all who ever work are simultaneously in work. This assumption—that is admittedly more unrealistic than the previous one—rules out exit from employment before a_{\max} and exit from inactivity above a_{\max} . In this case, if by W we denote work and by EW_a the probability of entry into work at age a this is

$$EW_a = P(W_{a+1}) - P(W_a) \quad a < a_{\max} \quad (2)$$

that is, the increase in participation from one year to the other. As in equation 1, equation 2 simply states that if, say, 10% of children are working at age 14 and 15% are working at age 15, then 5% of children must have started to work between age 14 and age 15.

One major difficulty with these indicators is that not all individuals make a transition through school (a relevant problem in developing countries) and, most important, that not all individuals transition into work. This is particularly true for women, especially if work is defined as participation in a market-oriented economic activity. Hence, we derive these indexes conditional on individuals ever transitioning into the relevant state, as for the others there is no transition to be defined.

Under the assumptions above, the average school-leaving age conditional on ever having been in school is:

$$E(SL)=\sum_{a>a_{min}} a [SL_a/P(S_{amin})] \quad (3)$$

and the distribution of age of entry into work is

$$E(EW)=\sum_{a<a_{max}} a [EW_a/P(W_{amax})] \quad (4)$$

Notice that $P(W_{amax})= \sum_{a<a_{max}} EW_a$ and hence $\sum_{a<a_{max}} [EW_a/P(W_{amax})]=1$. A similar reasoning applies to the weights in equation 3.

We compute our synthetic index as:

$$I= E(SL)-E(EW) \quad (5)$$

This index is the average gap between age of entry into work (conditional on ever entering into work) and age of exit from school (conditional on ever being in school).

Notice that to the extent that the distribution of drop out rates (entry rates) is symmetrical, the indexes in equations 4 and 5 are also the median of the conditional distributions. In this case our index is similar to the one used by OECD (2000) except for the adjustment factor—which seems necessary in the countries under study—for the population at risk

Empirical Implementation

In this section we describe the empirical implementation of our indicator when, as in our case, only one cross-section is available. As a first step, we fit a probit model on the probability of being in school across all individuals in the sample separately for males and females in each country. We regress this on a polynomial in age. Fitting a probit model is useful to smooth the age participation profiles in the presence of measurement error and small sample sizes and allows, if required, to make out of sample predictions. We identify a_{min} as the turning point in the estimated age participation profile. We do the same for the probability of work. We use these estimated probabilities to compute the indicators in equations 3, 4, and ultimately 5.

There are several drawbacks to this procedure. First, although there is generally a way with our data to ascertain whether individuals in work ever transitioned through school, which allows us to base all these calculations on individuals who acquired some education, it is generally impossible to know whether those who attend school ever get a job. So, in computing the average age of exit from school we are unable to condition on those eventually transitioning to the labor market. The index in equation

5 then is the average age gap for those who after school ever enter into work (hence the true school to work transition age gap) only under the assumption that age of exit from school is uncorrelated with the probability of entering into work later in the life cycle, an assumption that perhaps some would find not very compelling. If early school-leavers are less (more) likely to eventually find a job, the gap will be over-(under)-estimated.

A second drawback of this procedure when applied to a single cross-section is that our index is derived from a comparison of individuals of different ages at a given time, and hence from different birth cohorts. The bias is difficult to determine. If there is a secular increase in school-leaving age without relevant changes in the age of first employment across cohorts one might end up underestimating the length of the transition period from school to work in each single country. If also the age of first employment shows a secular increase, the bias could go in either direction.

However, if one is ready to assume that these biases are similar across countries, one can still make a sensible inference on differences across countries. This is what we assume in the rest.

REFERENCES

- Bourguignon, Francois, Martin Fournier, and Marc Gurgand, (2001). "Selection Bias Correction based on the Multinomial Logit Model", CREST, *working paper*
- Filmer D. and Pritchett L.(1998a). "Estimating wealth effects without expenditure data -- or tears: An application to educational enrolments in States of India", *World Bank Policy Research Working Paper* No. 1994, Washington.
- Filmer D. and Pritchett L.(1998b). "The effect of household wealth on educational attainment around the world: Demographic and Health Survey evidence", *World Bank Policy Research Working Paper* No. 1980, Washington,.
- Filmer D. and Pritchett L.(1999) "The effect of household wealth on educational attainment: Evidence from 35 countries", *Population and Development Review*, vol.25, no.1, March, pages 85-120.
- Guarcello L., Lyon S., Rosati F.C. (2006). "The twin challenges of child labor and youth employment in Ethiopia" . *UCW working paper* at www.ucw-project.org
- OECD 2000, "From Initial Education to working Life. Making Transition Work". Paris: Organization for Economic Co-Operation and Development
- OECD (1999), "Employment Outlook 1999 - Giving Youth a Better Start". Paris: Organization for Economic Co-Operation and Development
- OECD (1998a) "Education at a Glance: OECD Indicators 1998". Paris: Organization for Economic Co-Operation and Development
- Senegal data. Enquete Senegalaise Aupres des Menages (ESAM) 2001, chapter "Questionnaire Unifié sur les Indicateurs de Développement (QUID)". Senegal Statistical Office.
- Tolbert, C.M., and M.S. Killian. 1987. "Labor Market areas for the United States." U.S. Department of Agriculture, Washington, D.C.
- UNESCO 2005. "EFA Global Monitoring Report – The quality imperative." UNESCO, Paris