

Final report

# Youth unemployment and transition from school to work in Benin

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# Youth unemployment and transition from school to work in Benin

## Abstract

*It is a fact that number of young people in developing countries leave school with a general academic background, limiting their chance to enter earlier the labour market. In this study we analyse whether an experience of work before leaving school can help youth make an easier transition from school to the first job in Benin. Most of the strategies intend to address youth unemployment in the country consist of post schooling programs. We analyse the relationship between the work experience while studying and the transition spell and the hazard of exiting that transition. We use data from the school to work transition surveys (SWTS) and econometric methods that account for endogeneity and sample selection. We find that working while studying make easier the transition from school to the first job for men and for youth who left school with at least a secondary education level. The results draw the attention on the importance of acquiring an experience of work during studies for a favourable job opportunity later after school.*

**JEL:** I21; J20; J64.

**Keywords:** Working while studying, Youth unemployment, Labor market transition, Benin.

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## List of abbreviations

ANPE :	Agence Nationale Pour l'Emploi
ATE :	Average Treatment Effect
ATET :	Average Treatment Effect on the Treated
BIT :	Bureau International du Travail
BPC :	Business Promotion Center
CDF :	Cumulative Distribution Function
EMICoV :	Enquête Modulaire Intégrée sur les Conditions de Vie des ménages
FNPEEJ :	Fonds National de Promotion de l'Entreprise et de l'Emploi des Jeunes
GDP :	Gross Domestic Product
ILO :	International Labour Office
INSAE :	Institut National de la Statistique et de l'Analyse Economique
OECD :	Organisation for Economic Cooperation and Development
POM :	Potential Outcome Model
SCRIP :	Stratégie de la Croissance et de Réduction de la Pauvreté
SWTS :	School-to-Work Transition Survey
UK :	United Kingdom
ZD	Zone de Dénombrement

## *Executive summary*

The first entry into the labour market after leaving school is of particular concern for young students. It has been reported that youth experience relatively long periods of transition from school to the first job. This is the case for youth in Benin. Since the last decade, the government has adopted a National Employment Policy and several labour market institutions have emerged to deal with barriers for youth employment. However, these programmes are still limited and may have produced mixed results. The multiplicity of actors that intervene without complementarities may compromise the effective impacts of these programmes. In addition, the majority of interventions derived from the programmes are post-schooling. They took place after the graduation and may not be as effective in smoothing the transition from school to work for young people.

In this study we seek to answer whether an experience of work before leaving school can serve as an useful mean for helping youth make an easier transition from school to work in Benin. We estimate the relationship between the work experience of youth while studying and the transition from school to their first job. Effort and large investments are spent to deal with important barriers of youth employment such as lack of vocational and technical education, low professional experience and lack of job search assistance. Yet these post schooling interventions may have limited scope in reducing the transition from school to a first job. An important advantage for the transition is to help youth to acquire an experience of work before exiting the school by allowing them to familiarize with and to acquire already habits, attitudes, and labour market related information. If for example the in-school work experience is proved to be as effective, there may be the need for policy interventions in Benin to reorient and/or to expand investments in that direction.

We use data from the school to work transition surveys (SWTS) for Benin, implemented in December 2014-January 2015. The SWTS is nationally representative of individuals 15-29 years old. We use the sample of 1162 youth who were no longer at school in the time of the survey. The duration of the transition is observed for these individuals. We account for the sample selection by considering additionally the 1771 youth who were still at school in the time of the survey. We use a duration model and a multiequation model to deal with endogeneity and sample selection issues.

We find that having an experience of work while studying increases the hazard of quitting the transition for a first job and decreases the transition spell. We also find significant heterogeneous impacts. Working while studying make easier the transition from school to the first job for men and for youth who left school with at least a secondary education level. The results draw attention to the importance of gaining work experience while studying for a favorable employment opportunity after school. As we find that youth seem worked more for financial reasons than reasons related to career aspirations, policy-makers may initiate and invest more on mentorship specific school-work programs in

various fields and in relation with private enterprises. These programs may take the form of entrepreneurship education that may integrate business skills training, counseling and career guidance to youth while studying. In addition, other programmes may also integrate a social protection component for youth students in order to alleviate the liquidity constraint they may face for their educational expenses. Policy-makers may also take into account the fact that these programmes may be more beneficial for youth who leave school with at least a secondary education level.

## 1 Introduction

The issue of unemployment is a concern in many African countries. In its sixth round of surveys (2014/2015), Afrobarometer asked citizens of 36 countries, which together represent more than three-quarters of the continent's population, the problems they consider most important and that their governments should address. The most frequently cited across the continent is unemployment (Afrobarometer, 2015). Young people are almost three times more likely to be unemployed than adults, according to the International Labour Office (ILO)<sup>1</sup>. For young students, of particular concern is the first entry into the labour market after leaving school. It has been reported that youth experience relatively long periods of transition from school to the first job. The duration of the transition ranges between less than one year and seven years (Garcia & Fares, 2008; ILO, 2015). The duration of youth unemployment is reported to be long in Benin: 42.7% of the unemployed have spent over a year unemployed (INSAE, 2012). Statistics from the School-to-work transition survey (SWTS) show that only 11.2% of 15-29 year olds have completed the school transition (INSAE, 2016).

In this study we seek to answer whether an experience of work before leaving school can serve as an useful mean for helping youth make an easier transition from school to work in Benin. Impediment for youth employment in Benin, as revealed by the SWTS, is the issue of lack of vocational and technical education or low professional experience and lack of job search assistance (INSAE-BIT, 2013). It is a fact that number of young people in developing countries leave school with a general academic background, limiting their chance to enter the labour market, well prepared. This may explain why governments, through the implementation of programs and policies, attempt to increase employment opportunities for youth in many African countries such as Benin.

Since the last decade, Benin has adopted a National Employment Policy and several labour market institutions have emerged to deal with barriers for youth employment. Since the meeting of the National Forum on Youth Employment in 2007, there is an institutional reform of the structures in charge of employment. For example, following the conclusions of the Forum, the Government of Benin was seeking to promote wage employment and self-employment through the activities of the National Agency for Promotion of Employment (ANPE) and the National Fund Enterprise promotion and Youth Employment (FNPEEJ). FNPEEJ is facilitating youth access to production inputs through, for example, credit access in collaboration with financial institutions. ANPE is also implementing the youth volunteer program that gives young people seeking their first jobs, the possibility of learning in public and private structures.

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<sup>1</sup>[http://www.ilo.org/ilc/ILCSessions/101stSession/texts-adopted/WCMS\\_187079/lang--fr/index.htm](http://www.ilo.org/ilc/ILCSessions/101stSession/texts-adopted/WCMS_187079/lang--fr/index.htm).

However, programmes dealing with youth unemployment in Benin are still limited and may have produced mixed results. The multiplicity of actors that intervene without complementarities may compromise the effective impacts of these programmes. In addition, the majority of interventions derived from the programmes are post-schooling. They took place after the graduation and may not be as effective in smoothing the transition from school to work for young people.

In this study, we aim at estimating the relationship between the work experience of youth while studying and the transition from school to their first job. Our motivation is twofold. First, from the empirical point of view, little is known about the impact of working while studying on the transition path of youth from school to work in Africa and particularly in Benin. We are aware only of the works of Björn (2015) and Manacorda, Rosati, Ranzani and Dachille (2017) who use the 2012-2013 SWTS for 23 to 28 developing countries including Benin. Björn (2015) provides only a descriptive evidence on the relationship between the work-study combination and the time to first job after school. Manacorda et al. (2017) provide empirical evidence of the effect of working while studying on the probability of transition to the first job and on its duration using the hazard model. Yet, both studies do not put much emphasis on the variable working while studying that may be endogenous. We add to the previous literature by making use of the recent data set of the 2014-2015 SWTS and using empirical methods that deal with endogeneity issues to understand more the work-study combination and school transition nexus in the specific context of Benin<sup>2</sup>.

Second, from the policy context perspective, the answer of whether providing incentives to combine study and work for youth is very informative for effective youth employment policy orientation in Benin. As highlighted above, effort and large investments are spent to deal with important barriers of youth employment such as lack of vocational and technical education, low professional experience and lack of job search assistance. Yet these post schooling interventions may have limited scope in reducing the transition from school to a first job. An important advantage for the transition is to help youth to acquire an experience of work before exiting the school by allowing them to familiarize with and to acquire already habits, attitudes, and labour market related information, a part of these youth employment impediments the post-schooling interventions policy in Benin are dealing with. If for example the in-school work experience is proved to be as effective, there may be the need for policy interventions in Benin to reorient and/or to expand investments in that direction.

The following section discusses the conceptual framework. The section 3 exposes previous studies on in-school work experience. The section 4 presents

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<sup>2</sup> We also are aware of the work of Mussida, Sciulli and Signorelli (2016) that use the SWTS data and assess the impact of early school leaving on work decisions of young individuals in ten developing countries, including Benin. While the work experience of youth while studying is controlled for in the econometric analysis, their objective is however completely different to that of our study. In addition, the work decision variable used by the authors is the labour status of the youth at the moment of the survey while we focus on the first job after leaving school.

the methodology. The section 5 introduces the data and variables. The section 6 presents and discusses the estimation results. The section 7 concludes with some policy implications.

## 2 Conceptual framework

Studies rely on the standard human capital theory, the social network theory or social capital theory and the signalling or screening theory, to explain the channels by which youth's experience of work while studying may influence their labour market success after school (Geel & Backes-Gellner, 2012).

Human capital in the Becker, Schultz and Gardener views is valued in the market as a set of experience, skills or knowledge acquired that may later increase worker's productivity. Firms would willingly hire educated youth that have acquired additional labour market experience while studying, because they would be more useful to the firms than their educated counterparts without any prior work experience. This is likely in Benin as evidenced by the School-to-work transition survey (SWTS) for 2012 that has collected information on entrepreneurs and factors that influence the choices of employers in their recruitment process). According to statistics from the SWTS, although employers value the training received by job seekers, it is the work experience that seems to be the main factor determining their hiring decision (INSAE-BIT, 2013).

From the social network theory or social capital theory perspective, investment in social networks and personal relationships may influence positively labour market outcomes. There is an usual practice that job vacancy or a recruitment is announced first to people working within companies. In certain cases, access to job information is limited for the general public for the benefit of trainees or employee's relatives. In such a case, previously established social or personal relationships during prior work experience while studying may thus increase the chance to find a job thereafter. This is because continuing related labour market information may be shared through the (social) network established within the company and maintained after that experience. The social network channel is also likely to be observed in Benin. Statistics from the SWTS reveal that 51.4 per cent of young employees got their job through a friend or a family member and, with regard to the recruitment process, positions are usually advertised first to parents or friends (INSAE-BIT, 2013).

The third channel used by previous studies to explain positive outcome labour market from prior work-in study is the student ability. Having an experience of work while studying may be a signal of unobserved ability for potential employers that seek to avoid unnecessary screening investment in the hiring process, under labour market uncertainty. This signalling theory (Spence, 1973) is also likely applicable for youth individuals in Benin who have had the opportunity to have a work experience while studying.

It must be noted that a negative effect on labour market outcomes from prior work experience while studying may occur as well. Considering the theory of

the allocation of Time, time-use trade-off between working and studying is likely during the academic year (Becker, 1965; Buscha, Maurel, Page & Speckesser, 2012). More allocated time for employment may thus compromise learning and academic performance, crowding out the positive effect of human capital acquired from working while studying, as highlighted above by the human capital theory.

Reservation wages can also be used to understand the channel by which in-school work experience may influence the labour market success after school. In-school work experience may help youth having genuine experience of the labour market and therefore accurate expectations. As such, it could affect negatively reservation wages and has a positive effect on later labour market outcomes after school. However, if youth gives more weight to in-school work experience as a real job experience, its reservation wage would increase. As such, in-school work experience will have a negative effect on later labour market outcomes after school through the increase in the reservation wage. Thus, the effect of in-school work experience through the reservation wage is unclear.

In Benin, salary expectations of young people are around three times higher than the amount of the Interprofessional Guaranteed Minimum Wage, according to statistics from the household national survey "Enquête Modulaire Intégrée sur les Conditions de Vie des ménages" (EMICoV) for 2014. This suggests that reservation wages of youth could increase with in-school work experience and thus may extend the duration of the transition. However, the absence of an Unemployment benefit in Benin and the difficulty of finding a job in the formal sector due to competition from the very dynamic informal sector, could also shorten the reservation wages.

### 3 Previous evidence

The often so called "work-in study" or "in-school work experience" or "working while studying" is reported in the literature to be "a common practice among OECD countries" (Baert, Rotsaert, Verhaest & Omey, 2015). It is not surprising to observe that a large part of the literature on this question is biased toward developed countries. Previous studies on the work experience during schooling vary according to the labour market outcomes considered in the studies. Most of the studies assess long term post schooling effects such as wages effect later in life (Light, 2001). Not so much emphasis is put on post schooling immediate effect such as employment effect or the duration of unemployment spell. The empirical evidence shows in general mixed and heterogeneous effect of in-school work experience on later labour market outcomes, by education level (Molitor & Leigh, 2005) and by type of schooling (Parent, 2006).

For example, labour market returns (earnings) of in-school work experience is found to be higher for college graduates than for high school graduates in the United States (Molitor & Leigh, 2005). In contrary, Hotz, Xu, Tienda and Ahituv (2002) find no clear evidence of wages effect from in-school work experience

for men students in secondary education and in tertiary education in the United States. A prior work experience is also found to increase the probability for quitting the transition one year after graduation for students in the Finnish university (Häkkinen, 2006). Yet the significant effects found seems disappear when the author accounted for the selection bias resulting from the work experience while studying. Parent (2006) find no evidence of the effect of working while schooling during high school on wages in Canada. A more recent randomized study of the effect of students' work experience on future employment opportunities in Belgium do not find any evidence on initial recruitment decisions (Baert & al., 2015).

The type of prior work experience has also received attention in the literature. Using data from a representative survey on Swiss graduates of tertiary education, Geel and Backes-Gellner (2012) find that in-school work experience generates shorter job-search duration after graduation if the prior work experience is related to the domain of the study. Alam, Carling and Nääs (2015) find that early experience with the labor market, through summer jobs increase substantially girls' post schooling incomes in Sweden. Robinson (1999) analysing the effects of part-time student work in Australia shows that students who have part-time jobs during secondary school experience a short unemployment spell after leaving. The author concludes that part-time employment during schooling is one of the ways that young people can later make the transition to full-time employment. This conclusion is confirmed later by Anlezark and Lim (2011) who find that working for relatively five hours per week has a positive impact on post-school full-time employment in Australia. Jewell (2014) also provides the evidence that term-time employment during schooling increase entry salaries after graduation in United Kingdom.

Studies on the nexus in-school work experience- school transition are scarce in developing countries. Poor quality of labour data and non-developed labour market information system in many developing countries has often impeded analysis of youth unemployment. Household surveys do not always contain information on youth conditions with regard to the labour market and therefore not ideal for the analysis of youth's transition towards the labour market. The school to work transition surveys (SWTS) carried out in more than 30 countries since 2012 gives the opportunity to study the issue of youth unemployment. Yet little is still known about the relationship between working while studying and the youth transition from school to the first job.

Using the SWTS, some studies find that longer unemployment spells after school lower youth's likelihood of getting a job, suggesting thus the usefulness of studying how to reduce the duration of transition for youth (Atanasovska, Angjelkovska & Davalos 2016; Petreski, Mojsoska-Blazevski & Bergolo, 2016). Björn (2015) analyses the correlation between transition path of youth and working while studying in developing countries and find that having worked during school imply a higher probability of having achieved transition to the first job. Manacorda and al. (2017) examine the effects of several factors including working while studying on the transition to the first job for a sample of 23 developing countries. The results from the duration model indicate that working

while attending school quicken the transition into the labour market. Yet more econometric analysis still needed to reinforce these evidences in the case of Benin.

## 4 Models and methods

There are two concerns that need to be addressed when estimating the effect of working while studying on the transition of youth from school to the first job. First, working while studying is likely to be endogenous. Unobserved individuals characteristics and/or family background might indeed influence both the likelihood that youth acquire early work experience while studying and the degree of labor market success after study (Hotz & al., 2002). For example, because of better ability or initial skills, more able or motivated youth students may be pushed to start working earlier during study. They may have as well, due to that ability, an easier transition to the first job, after leaving school (Geel & Backes-Gellner, 2012). In such a case, the estimated effect of working while studying may be biased upward in standard regressions in which the endogeneity of that variable is not account for.

The second issue that need to be addressed is the non-random selection of leaving school. The transition from school to the first job is observed only for youth who left the school. And school leaving decision may due to unobserved factors such as motivations and preferences that might also related to labour market outcomes (Mussida, Sciulli & Signorelli, 2016). For example, less able youth who would have a short transition from school to the first job, in a context of unskilled workers demand, may be likely to choose to leave school early. In such a case, the population of youth leaving school and having a short transition may be oversampled.

Previous studies have handled mostly the endogeneity of working while studying using the instrumental variable technique. In this study, we deal with the two above mentioned issues in two different ways. We first consider the transition from school to the first job as a survival outcome. As such, we estimate a hazard model with a “frailty” term that accounts for the unobserved sources of heterogeneity that may cause the two issues of endogeneity and sample selection<sup>3</sup>. Survival models are generally used to describe and explain the occurrence and the duration of an event (Cleves, Gould, & Gutierrez, 2016). In this study, the duration  $T$  of the transition from school to the first job is assumed to be a random variable whose the cumulative distribution function represents the probability that there is an exit from the transition before or at time  $t$ :

$$F(t, \theta) = P(T \leq t), \quad \forall t \geq 0 \quad (1)$$

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<sup>3</sup> The “frailty” term is commonly interpreted as the impact of (unobserved) omitted variables on the hazard rate.

The probability that the duration of the transition exceeds  $t$  is defined as the survival function:

$$S(t, \theta) = 1 - F(t, \theta) = P(T > t) \quad (2)$$

and the instantaneous probability of the transition exit at time  $t$ , conditional upon that exit has not yet occurred, is defined as the hazard or "risk" function:

$$h(t, \theta) = \lim_{\Delta \rightarrow \infty} \frac{P(t \leq T \leq t + \Delta | T \geq t)}{\Delta} = \frac{f(t, \theta)}{S(t, \theta)} \quad (3)$$

$f(t, \theta)$  being the density function and  $\theta$  a vector of parameters to be estimated. In this study,  $t$  is the number of months spent in transition after leaving school until the first job. We estimate the following discrete time proportional hazard model with the "frailty" term  $\theta_i$ :

$$h(t, X, \theta) = \theta_i \lambda_0(t) \text{Exp}(\alpha WS_i + \beta X1_i + \delta X2_{it}) \quad (4)$$

$\theta_i$  represents the individual-specific random effect that accounts for unobserved sources of heterogeneity and is assumed to take a multiplicative form.  $\lambda_0(t)$  is a baseline hazard that summarises the duration dependence in the hazard common to each  $i$ . It is the instantaneous risk of exiting the transition when all covariates are zero. It is expressed either as a logarithmic or a polynomial function of the survival time  $t$  per individual-month<sup>4</sup>.  $WS$  is working while studying, the variable of interest.  $X1$  and  $X2$  are respectively the vectors of fixed and time-varying explanatory variables,  $\alpha$ ,  $\beta$  and  $\delta$  are coefficient and vectors of coefficients to be estimated. The hazard model (4) is estimated by maximum likelihood using a gamma distribution for the unobserved individual heterogeneity (Meyer, 1990; Jenkins, 1995, 1997).

In a second strategy of accounting for the endogeneity of working while studying and the sample selection issue, we model the duration of the transition ( $T$ ) itself within the potential outcome framework. We estimate jointly the following multiequation model:

$$T_i = \alpha_1 WS_i + X_i \beta + u_{1i} > 0 \quad \text{outcome equation} \quad (5)$$

$$WS_i = \begin{cases} 1, & \text{if } Z1_i \gamma + u_{2i} > 0 \\ 0, & \text{otherwise} \end{cases} \quad \text{endogenous treatment equation} \quad (6)$$

$$\text{LEAVE SCHOOL} = 1(\alpha_2 WS_i + Z2_i \varphi + u_{3i} > 0) \quad \text{selection equation} \quad (7)$$

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<sup>4</sup> Note that the estimation of the discrete time duration model requires reorganizing the cross-section database into unbalanced panel data, using information on the month-year of leaving school (the starting point of the transition) and the duration of the transition. The panel data make it possible to exploit time varying variables corresponding to the different months-years in which the youth was "at risk" of exiting from the transition.

where WS is the endogenous (treatment) variable working while studying, X and Z are exogenous covariates and  $\alpha$ ,  $\beta$ ,  $\gamma$  and  $\phi$ , the parameters to be estimated. The unobserved errors terms are normal with mean zero and have the following correlation structure:  $\text{corr}(u_1, u_2) = \rho_{12}$ ,  $\text{corr}(u_1, u_3) = \rho_{13}$ ,  $\text{corr}(u_2, u_3) = \rho_{23}$ .

Equations (5) and (6) constitute the main part of the multiequation model<sup>5</sup>. The model allows for the correlation between unobserved factors affecting the treatment and the potential outcomes – the duration of the transition (Rubin, 1974; Heckman & Navarro-Lozano, 2004; Imbens & Wooldridge, 2009). The treatment variable working while studying is endogenous if the estimated correlation  $\rho_{12} \neq 0$ .

The equation (7) adjusts for the endogenous sample selection resulting from leaving school, given that the duration of the transition is not observed for the youth who were still in school at the time of the survey. The mean outcome T is observed if the selection variable LEAVE SCHOOL equal to one. Equations (5) and (7) form thus a block of the Heckman selection model (Lewis 1974; Heckman, 1976). Selection out of the school is endogenous if the estimated correlation  $\rho_{13} \neq 0$ .

The multiequation model (equations 5 to 7) is estimated using the “extended regression models” commands, discussed in the reference manual of StataCorp (2017), that accommodate multiple features. Given that the duration of the transition (T) is left censored at zeros, we estimate thus an interval regression model incorporating a combination of an endogenous treatment assignment and an endogenous sample selection. The estimated parameter  $\alpha_1$  is the effect of working while studying on the duration of the transition. In the framework of the counterfactual model (Rubin, 1974; Heckman & Navarro-Lozano, 2004; Imbens & Wooldridge, 2009), the estimated parameter  $\alpha_1$  is also interpreted as the average treatment effect (ATE) of the treatment variable working while studying (WS). The advantage of estimating the ATE as an effect measure over the hazard (ratio) lies on the fact that the effect is measured in months instead of in relative conditional probabilities, as it is the case for the duration model used in the first strategy.

We include in the endogenous treatment equation (6) two types of instrumental variables. These are variables related to parental education of the youth and labor market conditions that might prevail during their study. The parents' education is used as proxy for family background such as liquidity accessibility that might affect children's education (Geel & Backes-Gellner, 2012). For example, because parental education and income are related, students living in more needed households may be pushed to start working early while at school. In order to satisfy the orthogonality condition, we control for parental occupation both in the outcome equation (5) and in the endogenous treatment equation (6). We argue that parental education would more likely

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<sup>5</sup> Both equations form what is called in the impact evaluation literature the endogenous treatment-regression model or the endogenous dummy-variable model (Cameron & Trivedi, 2005; Wooldridge, 2010)

affect children education while still at school and not directly their prospect of employment after leaving school, once the parental occupation is controlled for in the outcome equation.

We use the local employment rate (and its square) as proxy for conditions prevailing in the labour market during the period of study of each youth. The local employment rate might determine the likelihood that the youth enters the labour market while studying (Parikh & Sadoulet, 2005; Häkkinen, 2006). We also control for, in the outcome equation, the unemployment rate (at the macroeconomic level) during the period of transition (after school) in order to satisfy the orthogonality condition. As such we do not expect that the employment rate during study to be directly related to the duration of the transition after leaving school.

We also include in the selection equation (7) three types of selection variables: parental education, the unemployment rate (at the macroeconomic level) that prevailed while the youth was still at school and a variable indicating whether the youth was married before leaving school.

## 5 Data and descriptive statistics

### 5.1 Data source

We use data from the recent school to work transition surveys (SWTS) for Benin, implemented in December 2014-January 2015 by the *Institut National de la Statistique et de l'Analyse Economique* (INSAE) in collaboration with the International Labor Organization (ILO) and the MasterCard Foundation, under the project «Work4Youth». The 2014-2015 SWTS is nationally representative of individuals 15-29 years old. The survey has used a questionnaire with six sections for collecting detailed and rich information concerning youth individuals. These are related to personal and household demographic characteristics, formal education/training, activity history and aspirations, young workers, non-working youth and youth not in the labour force. Note that the Work4Youth Project, under which the data collection has been undertaken, is a five-year tripartite partnership intending to promote decent work opportunities for youth. As such, all these aspects make the SWTS data set ideal for studying our research question.

### 5.2 Data summary and definition of variables

4306 individuals 15-29 years old have been interviewed from the school to work transition surveys (SWTS) for Benin. We remove, along with missing values, 1370 of these individuals who have never been at school. We use the sample of 1162 youth who were no longer at school in the time of the survey. The duration of the transition is observed for these individuals. We account for the sample selection by considering additionally the 1771 youth who were still at school in

the time of the survey. The variables used in this study are defined in Table A1 in the Annex.

The main outcome variable is the transition from school to the first job that is reflected either by the likelihood of exiting from the transition or the duration of the transition. We define the latter as the number of months during which the youth has been in transition after leaving the school until his first job. The first job is either a salaried work or a self-employment work<sup>6</sup>. Every individual is observed over a defined time interval  $T$ , the lower limit is the month-year of leaving school, and the upper limit, the month-year at which he started his first job or the month-year of the survey, in the case where the youth has not yet exited from the transition at the time of the survey.

Working while studying is the "treatment" variable of interest. For defining that variable, we use the following question asked to the youth: "Have you ever worked while studying (outside apprenticeship)?" The answers from this question are either (a) "no" or (b) "yes during the school season" or (c) "yes outside the school season (summer break, holiday)" or (d) "yes during and outside the school season". The variable working while studying is defined thus as a dummy variable taking the value 1 if the youth has ever worked while he was at school and 0 otherwise. 17.38% of the 1162 individual aged 15-29 have ever worked while studying.

Other variables included in the econometric analysis are defined in Table A1 in Annex. Although most of these variables are time-invariant, they may serve to different purposes. For example, the actual residence of the youth at the time of the survey may not be the same before entering in the transition. Yet, we additionally control for whether the youth has always lived in the commune (not moved). These two residence-related variables could reflect thus social mobility that may be link to the transition spell. Some of the time-invariant variables may also serve as proxy for unobserved fixed individual characteristics (Wenz & Yu, 2009, Geel & Backes-Gellner, 2012). This is the case of information concerning the goal of life of the youth. This variable may proxy unobserved individual motivation or aspiration that may influence both earlier decision to work while studying and latter labour market behaviour of the individual, after leaving school.

Three time series variables are included in the econometric analysis. The first macroeconomic time-variant variable is the gross domestic product (GDP) per

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<sup>6</sup> Studies mostly define the transition as the time elapsed after leaving school - either upon graduation or early exit without completion - until the first moment of employment in any job or the first regular job (Fares, Guarcello, Manacorda, Rosati, Lyon & Valdivia, 2005). The ILO SWTS applies the definition of the school-to-work transition as « the passage of a young person (aged 15 to 29 years) from the end of schooling to the first regular or satisfactory job » (Elder, 2009). We were not able to explicitly identify from the SWTS data base whether the salaried work or the self-employment work is a first regular or satisfactory job. Yet it is worth to note that all the youth who have exited from the transition in our sample, have not reported any other job until 2014, the time of the survey. And the time elapsed from the first job until 2014 is more than one year for about 91% of them and more than two years for 78% of them.

capita in constant prices. This variable takes into account the macroeconomic conditions prevailing in the country, and which may also influence changes in labour market behaviour or changes in financial constraints. The second macroeconomic time-variant variable is the youth unemployment rate that may reflect time variation in labour market conditions. The two macroeconomic time-variant variables stem from the World Development Indicators data base, the World Bank's annual series. The youth unemployment rate and the GDP are included in the hazard model at the national-aggregated level because of the panel structure of the model. For the duration of transition model, that uses a cross sectional data, the two time series variables are averaged for each individual over the period of its study and over the period of its transition.

The third time-variant variable is related to the local labour market conditions that may prevail during the study period of the individual. To allow in addition for more spatial variability, we calculate the local employment rate and its square, at the cluster level (161) - "Zone de dénombrement (ZD)", a more decentralized subdivision of the territory within the department (12) of Benin. We use data stemming from the household national survey "Enquête Modulaire Intégrée sur les Conditions de Vie des ménages" (EMICoV) for 2006, 2010 and 2011. Because the ZD in the EMICoV data bases were used to stratify the school to work transition surveys (SWTS) in Benin, it is possible to match these two sources of data by the identical ZD. The averaged values of the local employment rate and its square over the study period of the youth are included in the endogenous treatment equation (6) to serve as instrumental variables. Note however that some observations are consequently lost because 33 ZD in the SWTS data could not be matched with the available EMICoV data.

### 5.3 Descriptive statistics

Table 1 summarizes the transition profile of the 1162 youth who had already left the school at the time of the survey. The transition is observed between January 1993 and December 2014. The median age of entering in the transition is approximately 22 years for those exiting from the transition. It is 15 years for the youth who were still in the transition at the time of the survey. The median transition period for individuals who exited the transition from school to the first job is about 2 years. During that period, they have exited the transition at the median age of 25 years. The median transition period for individuals who have not yet left the transition from school to their first job is 4 years. These figures are close to those found in francophone Africa as the case of Côte d'Ivoire and Burkina Faso with respectively one year and one and half year of length of transition (Garcia & Fares, 2008).

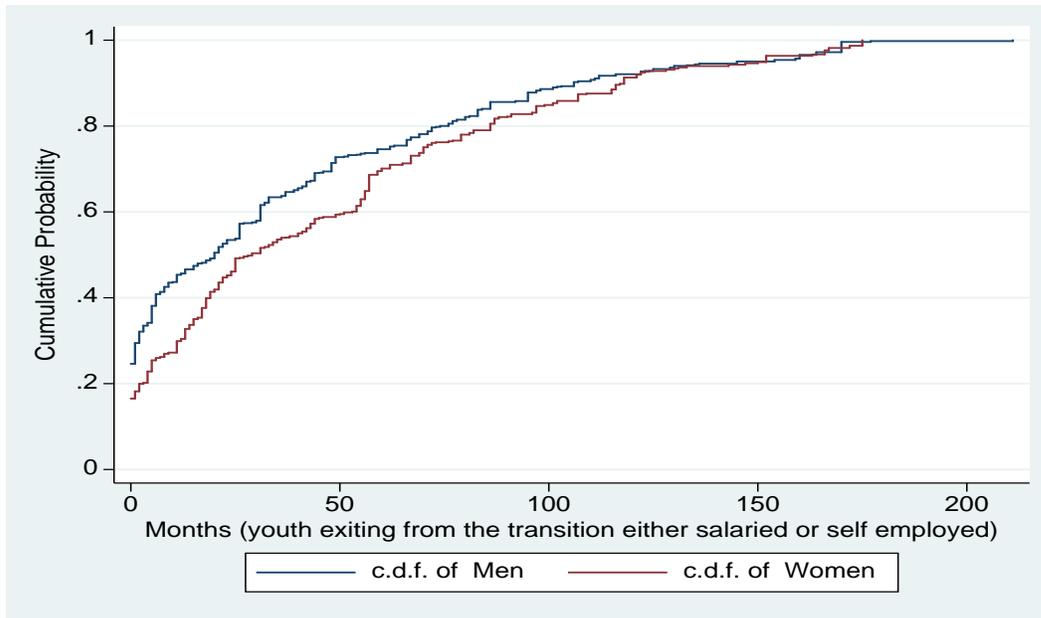
**Table 1: Transition from school to the first job: a summary**

	Sample of youth that already left the school (1162)	
	Those who exited from the Transition	Those still in the transition
% of youth	40.19	59.81
Median transition period (months)	21	53
Median Age of entering in the transition (months)	265	183
Median Age of exiting from the transition (months)	300	-
% that exited into a self-employment work	23.84	-
% that exited into a salary work	16.35	-

Source: Authors' calculations using data from SWTS (2014).

The exit from the transition is also gender-sensitive. Men are more likely (42.01%) to quit the transition than women (38.33%). The fact of being a man may offer more opportunities for work while studying, which makes it possible to exit early the transition, contrary to women. Women are often limited in their participation in the labour market by cultural and sociological constraints in Africa and particularly in Benin. The cumulative distribution function of the duration of the transition by gender shows that the probability that the duration of the transition for young men, who have exited from the transition, does not exceed four years is higher than that of women (Figure 1). This is even so until the 150th month after which there is an almost equal probability for both sexes.

**Figure 1: Cumulative distribution function of the duration of transition by gender**



Authors' calculations using data from SWTS (2014).

Table 2 shows the distribution of youth who have ever worked while studying. We report statistics for those who have already left the school and those who were still at school in the time of the survey. A large proportion of youth in our sample is full time students. A small share of those who have an experience of work while studying have worked only during the school season. Part-time work has been reported to have negative effect on students' academic performance when it is done for longer hours (Anlezark & Lim, 2011; Jewell, 2014). Youth in our sample seem, in general, more likely to have a part-time work during summer breaks and holidays suggesting a lesser if not any detrimental effect on academic performance<sup>7</sup>.

**Table 2: Distribution (%) of youth who have ever worked while studying**

	Sample of youth that already left the school (1162)	Sample of youth Still at school in the time of survey (1711)
Worked during the school season	3.44	2.15
Worked outside the school season (summer break, holiday)	6.97	9.15
Worked during and outside the school season	6.97	6.38
Not worked	82.62	82.33

Source: Authors' calculations using data from SWTS (2014).

<sup>7</sup> There are cases where some students miss school sporadically to look for money to pay school or education fees. Those who do so organize themselves so that it does not affect their academic results because they aim also to succeed in their academic life.

The data from the school to work transition survey (SWTS) 2014 for Benin does not contain information on the characteristics of the work undertaken by the youth while studying. Yet those works are likely to be individual casual jobs or jobs undertaken in family or relatives' small businesses, as it is common to observe in the context of Benin. The motivations of youth for working while studying, as recorded in a previous SWTS 2012 for Benin, are based mostly on "earning money" or "helping family" and not so much on "acquiring work experience or consolidating a resume" or "establishing contacts for possible future employment". Youth seem worked more for financial reasons than reasons related to career aspirations, may be due to their living conditions during study. It is undoubtful nevertheless that they acquire non-negligible skills, they may unaware, such as for example management related abilities or other, beneficial for attracting any future employment opportunity<sup>8</sup>.

Further descriptive statistics on socio-demographic variables are presented in Table 3. Significant differences are only observed in some cases. Young people who have worked during study seem to have, on average, a low transition spell from school to the first job, compared to those who have focused only on their study. Table 3 also shows that, on average, individuals who have worked during schooling are those who left school graduated with at least a secondary education. This suggests that additional time spent for work while studying may not constitute an impediment for school performance, as discussed above.

Youth men and those having parents working in an agricultural professional sector seem more inclined to work while studying. They may engage in activities often reserved for men and likely to be performed at specific times of the year while women are often confined to household chores. This is more likely to be observed in agricultural households and especially in rural area where men workforce is more required.

Individuals who have not an experience of work during schooling are more likely to be found among those who received a general formal training program. They are also more likely to be among those who left school for economic reasons other than graduated and with the aspiration of having a good family life. This suggests that they may left school earlier in the intention to enter the labour market, instead of combining work and study. This is more likely to happen for those who faced more non-affordability of schooling or who lived in households that experienced poorer livelihood conditions. They are more likely to be among those with the need to earn money for helping their family, as shown the figures on life goal in Table 3.

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<sup>8</sup> Most of youth from the SWTS data base have the aspiration of succeeding professionally in their life.

**Table 3: Descriptive statistics**

Variables	Total sample (1162)		Sample of youth who worked while studying (202)		Sample of youth who did not Work while studying (960)		Mean  t-test
	Mean	SD	Mean	SD	Mean	SD	
Duration of the transition (months)	58.52	52.63	42.32	43.38	62.22	53.93	***
Head or spouse (of household)	0.44	0.49	0.41	0.49	0.45	0.49	
Gender: Male	0.48	0.50	0.59	0.49	0.45	0.50	***
Married before	0.13	0.33	0.09	0.31	0.14	0.33	
Have children	0.44	0.49	0.38	0.48	0.46	0.49	
Live always area	0.88	0.32	0.88	0.31	0.88	0.33	
Educ secondary	0.47	0.50	0.57	0.50	0.44	0.50	**
Domain study	0.85	0.36	0.74	0.43	0.87	0.34	**
Father has no schooling	0.49	0.49	0.54	0.49	0.48	0.49	
Father has primary education	0.26	0.43	0.15	0.38	0.28	0.44	***
Father has at least secondary education	0.24	0.41	0.29	0.43	0.23	0.40	
Mother has no schooling	0.78	0.39	0.77	0.37	0.78	0.40	
Mother has primary education	0.15	0.34	0.12	0.27	0.16	0.35	
Mother has at least secondary education	0.06	0.24	0.10	0.27	0.05	0.23	
Milieu: Urban	0.70	0.47	0.67	0.49	0.71	0.47	
Age leaveSchool	16.11	4.82	17.02	5.03	15.91	4.76	
Stop study (drop out)	0.29	0.44	0.33	0.45	0.28	0.44	
Stop study (Work/married/parents/distance/others)	0.20	0.41	0.18	0.41	0.21	0.41	
Stop study (Economic)	0.31	0.47	0.19	0.42	0.34	0.48	***
Stop study (graduated)	0.19	0.38	0.28	0.44	0.16	0.37	*
Life goal (Professional)	0.20	0.39	0.29	0.42	0.18	0.38	
Life goal (Social)	0.04	0.19	0.05	0.23	0.03	0.18	
Life goal (Money)	0.35	0.48	0.41	0.50	0.34	0.48	
Life goal (Family)	0.40	0.49	0.26	0.45	0.44	0.49	***
Agricultural profession of parents	0.25	0.44	0.38	0.48	0.22	0.42	**
Elementary profession of parents	0.23	0.42	0.17	0.40	0.24	0.42	
Other profession of parents	0.51	0.50	0.43	0.49	0.52	0.49	

Significant mean differences are indicated with \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.10$ .

Source: Authors' calculations using data from SWTS (2014).

## 6 Results and discussion

In the following subsections, we present and discuss regressions results for the different models.

### 6.1 The hazard of exiting the transition from school to the first job

We present in Table 4, estimation results of the discrete-time proportional hazards model that incorporate unobserved heterogeneity. We report as well estimations results of the hazard model without unobserved heterogeneity. Both specifications include a quadratic formulation of the baseline hazard function<sup>9</sup>. Table 4 also displays the estimated gamma variance, that is the proportion of the variance of the random term in the total variance from the estimation of the hazard model incorporating unobserved individual heterogeneity. The value of the gamma variance is 3.214 and the likelihood ratio test does not reject its significance at 5% level, suggesting indeed the presence of individual unobserved heterogeneity. This type of heterogeneity generally appears in non-experimental data. Nicoletti and Rondinelli (2010) show that ignoring that heterogeneity in the duration model could result in biased estimated coefficients of the explanatory variables.

**Table 4 : Estimates of hazard of exiting the transition from school to the first job**

	Model without unobserved heterogeneity		Model with unobserved heterogeneity	
	hazard coeff	hazard rate	hazard coeff	hazard rate
Working while studying	0.2875*	1.3331*	0.5907**	1.8053**
Age leave School in month (t)	0.0336***	1.0341***	0.0578***	1.0595***
t (spell month identifier, by subject)	-0.0289***	0.9715***	-0.0299***	0.9706***
t squared	0.0001***	1.0001***	0.0001*	1.0001*
Head or spouse (of household)	-0.2393	0.7872	0.0240	1.0243
Gender: Male	0.0907	1.0949	-0.0989	0.9059
Have children	-0.5575***	0.5727***	-1.5860***	0.2047***
Live always area	-0.1729	0.8412	0.1036	1.1091
Educ secondary	-0.3920***	0.6757***	-0.5278**	0.5899**
Domain study	0.2054	1.2280	-0.2368	0.7891
Life goal (Social)	0.4438	1.5586	-0.1419	0.8677
Life goal (Money)	0.2110	1.2349	0.1433	1.1540
Life goal (Family)	0.1734	1.1893	-0.0515	0.9498
Father has primary education	-0.3214*	0.7251*	-0.4753*	0.6217*
Father has at least secondary education	-0.2385	0.7878	-0.6044*	0.5464*
Mother has primary education	-0.0081	0.9919	-0.0416	0.9593

<sup>9</sup> We got similar estimation results for the specification without unobserved heterogeneity and including a logarithmic formulation for the duration dependence. Convergence issues arised when estimating the model with unobserved heterogeneity incorporating the logarithmic form of the baseline hazard.

Mother has at least secondary education	-0.2188	0.8035	0.3939	1.4828
Elementary profession of parents	-0.3738*	0.6881*	-1.0481***	0.3506***
Other profession of parents	-0.0737	0.9290	-0.2061	0.8138
Milieu: Urban	-0.0094	0.9907	-0.4780**	0.6200**
Stop study (Work/married/parents/distance/others)	0.0923	1.0967	-0.0066	0.9934
Stop study (Economic)	-0.0764	0.9264	-0.3840	0.6811
Stop study (graduated)	0.4677**	1.5963**	-0.0544	0.9471
Youth unemployment rate	0.8327***	2.2995***	1.3606***	3.8986***
GDP percapita	-0.0000**	1.0000**	0.0000	1.0000
Constant	-10.4999***	0.0000***	-21.7325***	0.0000***
Variance Gamma	3.336		3.214	
LR test of Gamma var = 0 ( chibar2)	69.042		48.9434	
Prob >= chibar2	0.000		1.3e-12	
Number of ident	1,162	1,162	1,162	1,162
Observations	65,209	65,209	65,209	65,209

Significant mean differences are indicated with \*\*\* p<0.01, \*\* p<0.05, \* p<0.10.

Source: Authors' calculations using data from SWTS (2014).

The signs of the significant estimated coefficients of the explanatory variables are consistent throughout the estimations results. In Table 4, we report both the estimated hazard coefficients and the hazard rate<sup>10</sup>. Accounting for the unobserved individual heterogeneity increases the estimated hazard coefficients in absolute value. The comparison between the two specifications in Table 4 suggests that omitting unobserved heterogeneity would biased downward the estimated hazard coefficient of working while studying.

There is a significant and positive relationship between that variable and the hazard of exiting the transition from school to the first job. The instantaneous probability of quitting the transition situation after leaving school increases with having an experience of work while studying. The value of the hazard rate of working while studying indicates that the expected hazard rate is approximately 2 times higher for youth who have worked during study, compared to their counterpart.

## 6.2 Estimation results of the duration of transition model

Before discussing the estimation results, we present the diagnostic test related to the instruments used in the multiequation model. We perform a simple "falsification" test on the validity of the excluded instruments, following Di Falco, Veronesi and Yesuf (2011). The results of the validity test are reported in Table A2 in Annex. The excluded instruments are supposed to be valid if they affect the likelihood of working while studying, jointly and significantly, but do not affect the duration of the transition jointly and significantly, among the youth that did not work while studying. Table A2 in Annex shows that the excluded instruments

<sup>10</sup> Note that only the signs matter for the estimated hazard coefficients while the hazard rate is interpreted, with respect to the unity, as the percentage change in the hazard for a one-unit change in the covariates.

are jointly and significantly correlated in the probit regression while they are not jointly and significantly correlated in the linear regression. We further perform an overidentification test of all instruments using two-stage least squares (2SLS) regression method. The Hansen J statistic that is 4.851 (P-val = 0.43436) confirms the validity of the excluded instruments.

We report in Table 5, regression results of the duration of transition model for three different specifications. The specification A is the standard interval regression - without accounting for endogeneity and sample selection. The specification B is the interval regression with endogenous treatment assignment. The specification C is the interval regression with endogenous treatment assignment and with endogenous sample selection. Specification A and B are reported for comparison purposes. Considering estimation results for specifications B and C, Table 5 shows that the excluded instruments – local employment and its square – are significantly correlated with the likelihood of working while studying. The error correlation estimate between the error from the endogenous treatment equation and the error from the duration of transition equation is positive and significant at 5% level, suggesting indeed that the variable working while studying is endogenous. The error correlation estimate between the error from the selection equation and the error from the duration of transition equation is negative and significant at 5% level. This suggests that sample selection is likely in our data.

Accounting for the endogeneity of working while studying increases its coefficient in absolute values in the specification B (40.24) and in the specification C (33.33), compared to that obtained with the standard interval regression in the specification A (12.66). Ignoring that endogeneity would underestimate (in absolute terms) the estimated coefficient of working while studying leading to a downward bias as in the case of the estimated coefficients from the hazard model. Working while studying ease the transition from school to the first job – either by reducing the duration or increasing the hazard rate of exit. However, youth that work during schooling may have less (unobserved) ability in studies – less academic ability - relatively to the (unobserved) capacity they may possess in business related activities. Thus, youth without any experience of work while studying may as well experience an easier transition since they have relatively high ability in business related activities. As such, the direction of the bias may be explained by the relative (unobserved) academic/business ability that drive (negatively) employment during schooling and successful transition to the first work after schooling. Given that the estimated coefficient is significant and negative (positive in the case of the hazard model), we can at least confidently rely on the result that the transition spell always decreases (increase in the case of the hazard rate of exit) with having an experience of work while studying.

**Table 5 : Estimation results of the duration of the transition from school to the first job**

	Interval regression : Specification A	Interval regression with endogenous treatment: Specification B		Interval regression with endogenous treatment and sample selection: Specification C		
	Duration of transition: Eq1	Duration of transition: Eq1	Working While studying: Eq2	Duration of transition: Eq1	Working while studying: Eq2	Leave school: Eq3
Working while studying	-12.6691***	-40.2444***		-33.3354***		0.1269
Head or spouse (of household)	2.7353	-4.3582	0.0522	-2.8110	0.1026	
Gender: Male	2.6440	-2.1081	0.2557*	-4.1781	0.0742	-0.9996***
Have children	25.8694***	3.0571		2.6370		
Live always area	3.9479	2.7315	0.0481	0.7209	-0.1235	-0.3423
Age leave School in year	-6.6011***	-2.2633***		-2.4925***		-0.7156***
Educ secondary	-9.2094**	-7.2023**		-7.0128**		
Domain study	1.5163	-2.9832	-0.4556***	-4.9437	-0.7670***	0.5172*
Life goal (Social)	10.7397	-20.4772***	-0.8285***	-12.6271**	0.0341	-0.3053
Life goal (Money)	0.4249	-10.0798***	-0.2556	-7.3515**	0.0384	0.5704*
Life goal (Family)	-2.2712	-6.9921*	-0.4592**	-3.8680	-0.1633	0.2469
Elementary profession of parents	10.9488**	0.3881	-0.4692**	-0.4125	-0.6003***	0.0468
Other profession of parents	2.3087	-3.0968	-0.4223***	-0.7375	-0.3017***	0.3525
Millieu: Urban	9.2355***	6.5340**	-0.0125	5.1875*	-0.1251	-0.0487
Stop study (Work/married/parents/distance/others)	-1.3013	-7.1527**		-6.6873**		
Stop study (Economic)	3.2905	-7.9075**		-6.9624**		
Stop study (graduated)	-1.4890	-14.0448***		-15.3392***		
Youth unemployment rate (during transition/schooling)	28.9321***	27.8045		29.3800		5.7930
GDP percapita (during transition/schooling)	-0.0003	-0.0007***		-0.0006***		-0.0005***
Married before			0.2016		-0.2272**	-9.2155***

Father has primary education			-0.2427*		-0.1368	0.0933
Father has at least secondary education			0.0983		-0.1788*	0.1460
Mother has primary education			0.1029		-0.0356	-0.6243
Mother has at least secondary education			0.1787		-0.0287	-0.2286
Local employment rate (during study): IV1			15.4092***		17.1761***	
Local employment rate square (during study): IV2			-9.7685***		-11.1839***	
Constant	189.7408***	300.3509***	-5.8726***	268.7229***	-5.9553***	158.6959***
corr(e.Eq2, e.Eq1)			0.7908***	0.5198***		
corr(e.Eq3, e.Eq1)				-0.3513***		
corr(e.Eq2, e.Eq3)				0.0939		
Observation	1,162	672		2,181		
Uncensored	1,056	603		603		
Left-censored	106	69		69		
Right-censored	0	0		0		
Selected				672		
Nonselected				1,509		

Note: some observation are lost in the regressions that include the local employment rate as instruments. Significant level are indicated with \*\*\* p<0.01, \*\* p<0.05, \* p<0.10.

Source: Authors' calculations using data from SWTS (2014 ).

### 6.3 Sensitivity analysis on the duration of transition model

We conduct a sensitivity analysis to check whether the relationship between the variable working while study and the transition spell are robust to changes of specifications and samples. The estimation results are reported in Table 6. First, some individuals in our sample have a duration of transition null, because either they entered the labour market before leaving school or they left school at the time of the survey. As such, the transition spell may have decreased for these reasons and not so much because youth have an experience of work while studying. We remove from the sample, observations with zero duration of transition and we run (regression A) a linear regression with endogenous treatment assignment and endogenous sample selection. The regression A results in Table 6 show that the estimated coefficient of working while studying is still negative and significant. The estimated coefficient falls to 22.14 in absolute value.

Second, some individuals in the sample have left the school at an early age under 10. While we have controlled for the reasons of leaving school in the duration of transition equation, there might exist potential outliers in the data. In addition, 14.56% of the 515 individuals who are (or not) still at school at the time of the survey and having an experience of work while studying also indicated having one or more internships or apprenticeships with an employer during study. In such a case, the transition spell may decrease because of the combined effect of working while studying and of having internships or apprenticeships experience while studying. We run thus (regression B) an interval regression with endogenous treatment assignment and endogenous sample selection, on the subsample of individuals who have left the school at least at the age 12 and have never an experience of internships or apprenticeships during study. It has been reported that youth experience several transitions between the ages of 12 and 24 (Garcia & Fares, 2008). We believe that, in a policy perspective or a work-study programme development, at least 12 years old individuals are aged enough to benefit from a work experience while they are already at least at a secondary education level<sup>11</sup>. The regression B results in Table 6 show that the estimated coefficient of working while studying is still negative and significant and falls to 30.47 in absolute value. The regression C results, that combined the two previous cases (A and B), show a significant estimated coefficient of working while studying of -22.63.

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<sup>11</sup> Removing individuals who left school with less than 18 years old reduces drastically the sample.

**Table 6 : Estimation results of the duration of the transition from school to the first job: sensitivity analysis**

	Linear regression with endogenous treatment and sample selection:			Interval regression with endogenous treatment and sample selection:			Linear regression with endogenous treatment and sample selection:		
	Regression A			Regression B			Regression C		
	Duration of transition: Eq1	Working while studying: Eq2	Leave school: Eq3	Duration of transition: Eq1	Working while studying: Eq2	Leave school: Eq3	Duration of transition: Eq1	Working while studying: Eq2	Leave school: Eq3
Working while studying	-22.1482***		-0.2781	-30.4714***		0.3053	-22.6393***		-0.0488
Head or spouse (of household)	-1.4473	0.0566		-3.3670	0.1659		-0.9237	0.0850	
Gender: Male	-2.9190	-0.0285	-0.9995***	-7.1336**	0.0223	-0.9654***	-6.5305**	-0.0637	-0.9322*
Have children	0.5848			1.5540			-0.6240		
Live always area	-1.2627	-0.1797	-0.2095	2.7706	-0.1687	-0.3106	0.0782	-0.2244	-0.2238
Age leave School in year	-2.0049***		-0.6636***	-2.0830***		-0.7328***	-1.6304***		-0.6808*
Educ secondary	-7.3384***			-6.3709**			-6.4761**		
Domain study	-3.0990	-0.7464***	0.3099	-3.8547	-0.6589***	0.5862**	-1.9260	-0.6638***	0.3739
Life goal (Social)	-14.3374**	0.0183	-0.4200	-12.0358**	0.2057	-0.3290	-13.7031**	0.1894	-0.4714
Life goal (Money)	-5.3321*	-0.0075	0.5999**	-5.9133*	0.2051*	0.5013*	-4.0672	0.1587	0.5342*
Life goal (Family)	-3.3588	-0.1470	0.2275	-2.7463	-0.0558	0.2020	-2.3472	-0.0370	0.1778
Elementary profession of parents	3.3043	-0.6353***	0.0762	3.8833	-0.4891***	0.0760	6.4711*	-0.5132***	0.1273
Other profession of parents	1.7638	-0.2789***	0.3875	3.5598	-0.1517	0.3573	5.7721*	-0.1245	0.4065
Milieu: Urban	3.5249	-0.1411*	-0.0515	4.2824	-0.2280***	-0.0108	2.1753	-0.2447***	-0.0331
Stop study (Work/married/parents/distance/others)	-4.2988			-5.3352			-2.5899		
Stop study (Economic)	-5.3844*			-4.2300			-2.4229		
Stop study (graduated)	-13.9128***			-14.6309***			-14.3126***		
Youth unemployment rate (during transition/schooling)	30.7560*		3.0461	47.8555***		6.3124	35.9097**		4.1086

GDP percapita (during transition/schooling)	-0.0008***		-0.0004***	-0.0006***		-0.0005***	-0.0008***		-0.0004***	
Married before		-0.1307		-9.0118***		-0.0011	-9.3146***		0.0691	-9.0456***
Father has primary education		-0.1227		-0.0321		-0.0761	0.0494		-0.0590	-0.0749
Father has at least secondary education		-0.2531**		0.0823		-0.2374**	0.0757		-0.3162***	0.0322
Mother has primary education		-0.1611		-0.6316		-0.0941	-0.5800		-0.2339*	-0.5884
Mother has at least secondary education		-0.1089		-0.2786		-0.2491	-0.1600		-0.2378	-0.2340
Local employment rate (during study): IV1		17.7634***				22.4419***			22.2789***	
Local employment rate square (during study): IV2		-11.6334***				-14.7030***			-14.7165***	
Constant	309.7228***	-6.0487***	148.6254***	219.6518**	-8.2500***	161.9620***	289.9260***	-8.0053***	151.5204**	
corr(e.Eq2, e.Eq1)	0.6190***			0.5198***			0.6051***			
corr(e.Eq3, e.Eq1)	-0.3397**			-0.3513***			-0.3671**			
corr(e.Eq2, e.Eq3)	0.2210			0.0235			0.1878			
Observation	2,112			2,063			2,006			
Uncensored				537						
Left-censored				57						
Right-censored				0						
Selected	603			594			537			
Nonselected	1,509			1,469			1,469			

Note: some observation are lost in the regressions that include the local employment rate as instruments. Regression A: regression with sample of non-zero transition spell. Regression B: regression with sample of individuals who have left the school at least at the age 12 and have never an experience of internships or apprenticeships during study. Regression C: regression that combines the two previous cases.

Significant level are indicated with \*\*\* p<0.01, \*\* p<0.05, \* p<0.10.

Source: Authors' calculations using data from SWTS (2014 ).

Overall, the results in Tables 5 and 6 show that the estimated coefficients of the variable working while studying remain significantly and negatively related to the duration of the transition, taking into account endogeneity bias and non-random selection. The magnitude of the estimated coefficients in absolute value varies between 22 months and 33 months throughout the estimation results. The magnitude of the estimated coefficients is still higher than the value (about 13 months) obtained from the specification A in Table 5 or than the value (about 20 months) obtained from the observed data in Table 3. Because the bias resulting from the standard estimation is downward, the values of 13 months or 20 months may be approximate as lower bounds of the reduction effect of working while studying. Having an experience of work while studying would reduce the duration of the transition from school to the first job by at least about one year or one year and half.

#### **6.4 Heterogeneous effects in the hazard of quitting the transition**

We estimate additional regressions to explore whether the estimated impact of working while studying may differ between different groups of youth. We have shown in Table 3 that youth who have worked while studying may differ to their counterpart with respect to some individual characteristics. Regressions results of the hazard model with unobserved heterogeneity, presented in Table 7, show indeed significant heterogeneous impacts of working while studying by gender and the education level.

There is a significant and positive relationship between working while studying and the hazard of exiting the transition from school to the first job for men. The estimated coefficient of working while studying is not significant for women. The hazard rate of exiting the transition is approximately 3 times higher for youth men who have worked during study, compared to their men counterpart. Youth women who have worked during study have a hazard rate as equal as their women counterpart. The results suggest that men are better able to value the skills acquired in working while studying than women. This may be explained by the fact that the life perspective of women may differ from that of men after schooling and that women are more likely to look after maternity and other household chores than men.

Regarding the level of education, Table 7 shows that the hazard of quitting the transition increases with working while studying as youth left school with at least a secondary education level. The hazard rate is approximately 3 times higher than that of youth who did not worked while studying. Previous estimations results above (Table 4 to Table 6) show that leaving school with at least a secondary education level reduces itself the transition spell but those with that education level have the "risk" to exit the transition at a rate 0.59 time less than that of youth who have left the school with an elementary education level. This suggests that having an experience of work while studying coupled with at least a certain level of education is likely to be beneficial for entering earlier the labour market, after leaving school.

**Table 7 : Hazards estimations of exiting from the transition from school to the first job: heterogenous impacts**

	By Sex (hazard rate)		By Level of education (hazard rate)	
	Female	Male	At least secondary	Elementary
Working while studying	0.7600	2.9600**	3.0013**	1.0345
Age leave School in month (t)	1.0582***	1.0598***	1.0590***	1.0613***
t (spell month identifier, by subject)	0.9847**	0.9592***	0.9637***	0.9735***
t squared	1.0000	1.0001***	1.0002*	1.0000
Head or spouse (of household)	1.1167	1.1097	1.1809	1.0484
Have children	0.0919***	0.4243**	0.2704***	0.1646***
Live always area	1.2658	0.9534	1.6726	0.7349
Educ secondary	0.5906	0.6371		
Domain study	0.7329	0.7826	0.5014	0.8672
Life goal (Social)	0.8104	1.1044	1.0121	0.4509
Life goal (Money)	0.7743	1.3919	1.3906	0.9070
Life goal (Family)	0.8739	0.7992	1.0307	0.7150
Father has primary education	0.8463	0.4394**	0.5820	0.8766
Father has at least secondary education	0.4308*	0.6707	0.6291	0.5804
Mother has primary education	0.9782	1.0316	1.1593	0.7176
Mother has at least secondary education	2.0630	1.3410	1.5760	0.4306
Elementary profession of parents	0.4947	0.2444***	0.3503*	0.3576**
Other profession of parents	1.2122	0.6016	1.1575	0.5603
Milieu: Urban	0.9982	0.4134**	0.4682*	0.8613
Stop study (Work/married/parents/distance/others)	1.2751	0.8085	3.1781**	0.4806*
Stop study (Economic)	1.2092	0.3421**	2.8308**	0.2504***
Stop study (graduated)	0.9816	0.8964	1.5979	0.7121
unemployment_youth	3.9102***	4.0078***	4.0478***	4.1533***
GDP percapita	1.0000	1.0000	1.0000	1.0000
Gender: Male			1.1127	0.8356
Constant	0.0000***	0.0000***	0.0000***	0.0000***
Variance Gamma	2.969	3.149	3.929	2.652
LR test of Gamma var = 0 ( chibar2)	4.417	46.775	28.1647	17.8749
Prob >= chibar2	0.01779	4.0e-12	5.6e-08	0.000012
Number of ident	586	576	554	608
Observations	35,911	29,298	19,46	45,749

Significant mean differences are indicated with \*\*\* p<0.01, \*\* p<0.05, \* p<0.10.

Source: Authors' calculations using data from SWTS (2014).

## 7 Conclusions and policy implications

Several structures and programmes or strategies have emerged in Benin to deal with youth unemployment. This represents enough efforts and large investments from different policy actors involved in the programmes. One example of strategies from the government is the youth volunteer program that gives young people seeking their first jobs, the possibility of learning in public and private structures, after graduation. We have explored in this study the potentiality of an alternative possibility which may smooth the transition of youth to labour market.

We have analysed the relationship between the work experience of youth while studying and their transition from school to the first job. An important advantage for the transition is to help youth to acquire an experience of work before exiting the school by allowing them to familiarize with youth employment barriers, impediments that most of post-graduation interventions policy are dealing with. We add to the scarce literature on the effect of "working while studying" on the transition spell and the hazard of exiting from the transition, using rigorous empirical methods. Results have revealed that working while studying increases the hazard of quitting the transition for a first job and decreases the transition spell. Significant heterogeneous impacts are also found. Working while studying make easier the transition from school to the first job for men and for youth who left school with at least a secondary education level.

We provide useful information for the implementation of effective employment policies aimed at accelerating the transition of young people to their first job at the end of their studies. The results draw the attention on the importance of acquiring an experience of work during studies for a favourable job opportunity later after school. The findings have some policy implications in terms of the change or the reorientation of the existing strategy of intervention to deal with youth unemployment in Benin. The existing strategy to address youth unemployment consists of several post schooling programs/projects. It is after graduation that youth people are given specific training and skills to acquire specific known how that are valued by potential recruiters. Job policy interventions need to be reoriented or extend towards strategies that promote or encourage youth people to be engaged in well designed in-school work experience activities.

We have shown in the descriptive section that youth seem worked more for financial reasons than reasons related to career aspirations. Policy-makers may thus initiate and invest more on mentorship specific school-work programs in various fields and in relation with private enterprises. These programs may take the form of entrepreneurship education that may integrate business skills training, counseling and career guidance to youth while studying (Vilcova & Dimitrescu, 2015; Premand, Brodmann, Almeida, Grun & Barouni, 2016). In addition, other programmes may also integrate a social protection component for youth students in order to alleviate the liquidity constraint they may face for their educational expenses.

There is quite a controversy on whether child labour may be detrimental in terms of school attendance, school performance or child exhaustion, due the time devoted to in-school work activities (Dumas, 2012; Emerson, Ponczek & Portela, 2014). As we have argued above, the in-school work experience activities analysed in this study were part-time activities. They took place during summer breaks and holidays, suggesting a lesser if not any detrimental effect on academic performance<sup>12</sup>. Policy-makers may take these features into account while designing such in-school work programmes. They may also take into account the fact that these programmes may be more beneficial for youth who leave school with at least a secondary education level. As suggested by the results, at least 12 years old individuals are aged enough to benefit from a work experience while they are already at least at a secondary education level.

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<sup>12</sup> It is worth to note that in the tables 5 and 6, the variable "working while studying" has no effect on the dependent variable "Leave school" in the selection equation 3.

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## Annex

**Table A1 : Description of variables**

Variables	Definition of variables
Workind while studying	Has worked while studying =1; 0 otherwise
Head or spouse (of household)	Is the head of the household or the spouse of the head =1; 0 otherwise
Gender: Male	Is a male =1; 0 otherwise
Maried before	Is married for the first time before leaving school =1; 0 otherwise
Have children	Have one or more living children =1; 0 otherwise
Live always area	Has always lived in that commune (not moved) =1; 0 otherwise
Educ secondary	Has attained at least the secondary education level =1; 0 otherwise
Age leave School	Age (in years) when left school
Domain study	Has being student in a general program =1; 0 otherwise
Father has no schooling	Father has no schooling education level =1; 0 otherwise
Father has primary education	Father had attained the primary education level =1; 0 otherwise
Father has at least secondary education	Father had attained at least the secondary education level =1; 0 otherwise
Mother has no schooling	Mother has no schooling education level =1; 0 otherwise
Mother has primary education	Mother had attained the primary education level =1; 0 otherwise
Mother has at least secondary education	Mother had attained at least the secondary education level =1; 0 otherwise
Agricultural profession of parents	Agriculture and qualified agricultural workers =1; 0 otherwise
Elementary profession of parents	Elementary profession =1; 0 otherwise
Other profession of parents	Others professions =1; 0 otherwise
Millieu: Urban	Resides in an urban area =1; 0 otherwise
Stop study (drop out)	Has interrupted study because of : not pass exam/no interest for school=1; 0 otherwise
Stop study (Work/maried/parents/distance/others)	Has interrupted study because of : work/maried/parents/distance/others=1; 0 otherwise
Stop study (Economic)	Has interrupted study for economic reason=1; 0 otherwise
Stop study (graduated)	Has interrupted study because for graduation=1; 0 otherwise
Life_goal	His most important objective in life
Life goal (Professional)	Succeeding professionally=1; 0 otherwise
Life goal (Social)	Contributing to society=1; 0 otherwise

Life goal (Money)	Earn lots of money=1; 0 otherwise
Life goal (Family)	Have a good family life =1; 0 otherwise
unemployment_youth	Youth unemployment rate at the national level (from World Development Indicators data base)
GDP percapita	Gross domestic product (GDP) per capita in constant prices at the national level (from World Development Indicators data base)
Local employment rate	The local employment rate and its square, at the cluster level (161), a more decentralized subdivision of the territory (from the household national survey "Enquête Modulaire Intégrée sur les Conditions de Vie des ménages" (EMICoV) for 2006, 2010 and 2011)

**Table A2: Test on the validity of the instruments**

Instruments	Probit	Linear
	regression	regression
	Working while studying	Duration of transition for youth that did not worked while studying
Father has primary education	-0.0548	4.0239
Father has at least secondary education	-0.1882*	0.7207
Mother has primary education	-0.0739	4.3038
Mother has at least secondary education	-0.0208	0.6543
Local employment rate (during study): IV1	17.4560***	-143.8016**
Local employment rate square (during study): IV2	-11.4953***	97.5391**
Constant	-5.9545***	217.6377**
Pseudo R2/R2	0.1089	0.400
Test of excluded instruments	$\chi^2 = 29.17***$	F-stat. =1.68
Prob > F/ $\chi^2$	0.000	0.1234
Observations	2,181	529

Notes: Survey weights included. Parameters for all the other variables are not reported. Significant level are indicated with \*\*\* p<0.01, \*\* p<0.05, \* p<0.10.

