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Working while studying:
Employment premium or penalty for youth in Benin?

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Abstract

Most youth in developing countries leave school with only a general academic education level, slowing down their transition to the labor market. We analyze whether work experience during school can help youth transition more easily to a first job in Benin. We used data from the 2014 School-to-Work Transition Survey (SWTS) and a multi-equation model to account for endogeneity and sample-selection bias in estimating the effect of work experience during school on the transition to first job. Our findings are that work during summer breaks or holidays makes the transition from school to first job easier, especially when combined with apprenticeships, but these results were significant only for men and youth who left school with at least a secondary education. The important impact of work experience during studies on the ability to pursue job opportunities after school is highlighted.

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I.   Introduction

In reporting its 2014 and 2015 surveys, Afrobarometer noted that unemployment was the problem mostly commonly cited by residents of thirty-six sub-Saharan countries, which together represent more than three-quarters of Africa's population. According to the International Labor Office (ILO, 2012), young people are almost three times more likely to be unemployed than are adults. For students, of particular concern is first entry into the labor market after leaving school. In fact, youth experience long periods of transition from school to first job, ranging from between less than a year to seven years (Garcia & Fares, 2008; ILO, 2015). The duration of youth unemployment is long in Benin: 42.7% of the unemployed have spent over a year without work (INSAE, 2012). Statistics from the School-to-Work Transition Survey (SWTS) show that only 11.2% of 15-29 year-olds have completed the transition to work (INSAE, 2016).

Most students in developing countries leave school with a general academic education level that is insufficient to provide the skills requested by the labor market, thus limiting their job opportunities (Garcia & Fares, 2008). This may explain why governments in many African countries, including Benin, attempt to increase employment opportunities for youth through programs and policies. The government of Benin has tried to reduce youth unemployment since 2007 through the National Agency for Promotion of Employment (ANPE) and the National Fund Enterprise Promotion and Youth Employment (FNPEEJ). Yet the majority of these limited interventions come post-schooling, and their impact is not yet clearly known. This study seeks to answer whether work experience (mostly at the secondary-education level) before leaving school can ease the transition of youth from school to work in Benin. The SWTS reveals, in fact, that impediments to youth employment in Benin include a scarcity of vocational and technical education, minimal professional experience, and a lack of job search assistance (INSAE-BIT, 2013).

The motivation for this study is twofold. First, from an empirical point of view, little is known about that impact that working while studying (hereafter: work/study) has on the school-to-work transition for youth in Africa generally—or in Benin in particular. We know of only two published studies, both using 2012-2013 SWTS data, that include Benin. Based on twenty-eight countries, Björn (2015) provided only descriptive evidence regarding the relationship between work/study and time to first job following formal schooling. Manacorda et al. (2017), who estimated a hazard model on data from twenty-three countries, provided empirical evidence of the effect of work/study on the probability of transition to first job and on the duration of the transition period. Yet neither study used suitable approaches to address the endogeneity of the variable "work/study." In order to understand more about the

work/study combination and transition to work, we examined the 2014-2015 Benin SWTS data set, adopting empirical methods to deal with endogeneity issues and to investigate the heterogeneous effects of work/study.

Second, from a policy perspective, understanding whether the work/study combination helps youth enter the labor market could be useful for policy implementation in Benin. As mentioned, public money is invested in dealing with barriers to youth employment, though these post-schooling interventions may be limited in their ability to reduce transition time from school to first job. In fact, that transition could be facilitated if youth acquired work experience before leaving school. Such experience would allow them to become familiar with the workplace environment, acquire work habits and attitudes, and receive information related to the labor market.

Using a multi-equation model that controlled for endogenous-treatment and sample-selection issues, we found that work experience while studying decreased the transition-to-work period by roughly forty months. Estimates remained robust with either external instruments alone or with a combination of external and constructed instruments as proposed in Lewbel (2012, 2018a). Job experiences limited to summer breaks or holidays had a statistically significant effect (-43 months); the effect was stronger, however, when such experiences were combined with apprenticeships (-62 months). Conversely, working during the academic year had no effect. We also found a number of significant heterogeneous impacts. Work/study eased the transition from school to first job for men and for youth who left school with at least a secondary education.

Most of the literature on the effects of work experience during schooling focuses on developed countries and looks mainly at long-term post-schooling effects such as wages later in life (Light, 2001). Little attention has been paid to immediate post-schooling effects on, for example, employment or the duration of unemployment. In general, the empirical evidence is mixed regarding the impact of in-school work experience on later labor-market outcomes, whether by education level (Molitor & Leigh, 2005) or by type of schooling (Parent, 2006).

Work experience was found to increase the probability of finding work after graduation for students at a Finnish university (Häkkinen, 2006), though the study's significant effects seemed to disappear when the author accounted for the endogeneity of the "work/study" decision. A 2016 randomized study of the effect of students' work experience on future employment in Belgium found no evidence that employers' initial recruitment decisions were affected by students' work/study experience (Baert et al, 2016).

Type of prior work experience has also received attention in the literature. Using data from a representative survey of Swiss university graduates, Geel and Backes-Gellner (2012) found that work experience during school led to shorter job searches after graduation if that prior work experience was related to the field of study. Robinson (1999) analyzed the effects of part-time student work in Australia and showed that students who held part-time jobs during secondary school experienced shorter periods of unemployment after leaving school; such part-time jobs may also have helped youth transition to later full-time employment. Robinson's conclusions were similar to those of Anlezark and Lim (2011), who found that working for five hours per week during studies had a positive impact on full-time post-schooling employment in Australia.

Studies on the nexus between in-school work experiences and transition to work are scarce in developing countries. Poor quality of labor data and underdeveloped labor-market information systems in many developing countries have impeded analyses of youth unemployment. Household surveys do not always contain information on working youth and, therefore, are not ideal for analyzing their transition to the labor market.

The SWTS, carried out in more than thirty developing countries since 2012, provides an opportunity to study youth unemployment, though little is known about the effect of work/study on transitions to first job. In addition to the works by Björn (2015) and Manacorda et al. (2017) cited earlier, other studies using the SWTS have found that longer post-schooling unemployment lowers the likelihood of getting a job for youth, suggesting that efforts to reduce this transition-to-work period could be helpful (Atanasovska, Angjelkovska & Davalos 2016; Petreski, Mojsoska-Blazevski & Bergolo, 2017).

II.   Conceptual framework

Studies that explain the mechanisms through which work/study experience may influence the post-schooling labor-market success of youth have largely relied upon the standard human capital theory, the social network or social capital theory, or the signaling or screening theory (Geel & Backes-Gellner, 2012). The overall effect is theoretically ambiguous, however, and may ultimately depend upon the type of work performed during studies as well as on local cultural or institutional barriers.

Human capital, in the view of Becker (1964), is valued in the market as a set of acquired experience, skills, attitudes, or knowledge that may later increase workers' productivity. Firms would willingly hire educated youth that had acquired labor

market experience during their studies because they would be more useful than would their counterparts without prior work experience.

The 2012 SWTS, which collected information on entrepreneurs and factors that influenced hiring, suggested that this could be true in Benin as well. According to SWTS data, although employers indicated that training received by job seekers was important in the recruitment process, work experience was the main factor in hiring decisions (INSAE-BIT, 2013).

From the perspective of social network or social capital theory, investment in social networks and personal relationships—such as those acquired through work/study experiences—may influence labor-market outcomes positively (Seibert, Kraimer & Liden, 2001; Mouw, 2003). In general practice, a job vacancy is announced first to people working within a company. In some cases, job openings may be kept from the general public in order to benefit trainees' or employees' relatives. In both scenarios, previously established social or personal relationships, such as those formed during work/study experiences, may increase the chances of finding a job because labor market information may be shared through those networks.

The social-network mechanism appears to function in Benin as well: SWTS statistics revealed that 51.4% of young employees got their jobs through a friend or a family member and, further, that open positions were usually advertised first to parents or friends (INSAE-BIT, 2013).

Previous studies have also explained the positive impact of prior work/study experience on labor-market outcomes as the result of student ability. Work/study may be a signal of unobserved ability for employers who, given the uncertainty in the labor market, may seek to avoid unnecessary investment in screening. This signaling theory (Spence, 1973) likely also applies to young individuals in Benin who have had the opportunity to gain work experience while studying. All three mechanisms are probably stronger in the case of individuals whose work/study experiences have included apprenticeships because apprenticeships strengthen human capital, social networks, and ability signaling, all of which are more directly related to the needs of the labor market.

It must be noted that prior work/study may have a negative effect on labor-market outcomes as well. Considering the theory of the allocation of time, a trade-off in the use of time for work vs. study is likely to occur (Becker, 1965; Buscha et al., 2012). Allocating more time for employment may thus compromise learning and academic performance and crowd out the positive effect of human capital acquired from work/study.

Reservation wages may also be a mechanism by which work/study experiences influence post-schooling labor-market success. Such experiences may make the wage expectations of young workers more accurate because they are based on the characteristics of the local labor market. As such, work/study experience could reduce reservation wages and have a positive effect on labor-market outcomes after school. If youth put too much weight on gaining work experience while studying, the reservation wage would increase. In that case, works/study experience would have a negative effect on later labor-market outcomes by increasing the reservation wage and likely delaying the school-to-work transition. Thus, the effect of in-school work experience on reservation wages is unclear.

In Benin, the 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. The reservation wages of youth with in-school work experience may, therefore, be even higher and that may extend the duration of the transition. The absence of an unemployment benefit in Benin and the difficulty of finding a job in the formal sector because of competition from the very dynamic informal sector could, however, decrease reservation wages.

III.   Empirical methodology

3.1. Threats to identification

Two threats to identification must be addressed when estimating the effect of work/study on the transition of youth from school to first job. First, work/study (our treatment) is likely to be endogenous. Unobserved individual characteristics and/or family background might influence both the likelihood that youth will acquire work/study experience and their degree of labor-market success after study (Hotz et al., 2002). For example, because of greater ability or initial skills, more able or motivated youth may be pushed to start working earlier during study. As a result of that ability, they may also have an easier transition to a first job after leaving school (Geel & Backes-Gellner, 2012). Individuals who work while studying may also develop different preferences over time or experience different money constraints, which implies different labor market behaviors later on. If such factors are not properly corrected for, the estimated effect of work/study may be biased upward.

Second, the transition from school to first job is observed only for youth who left school. A second threat to identification, then, is the non-random nature of the choice to leave school. The school-leaving decision may, indeed, have been the

result of unobserved motivations and preferences that may also have affected labor-market outcomes (Mussida, Sciulli & Signorelli, 2016) or of parents' investment in their children's schooling. Less-motivated students may have left school earlier, for example, but may also have performed less well in the labor market.

3.2. Econometric modeling

We measured the transition-to-work period from school to first job as the time span (in months) between the time respondents left school and when they got a job (i.e., when they left the transition period). Unlike previous studies, we dealt with both potential endogeneity in our treatment condition (work/study) and sample-selection bias (because we observed the transition-to-work period only for those who left school). To account for the endogeneity of work/study and sample selection, we modelled the duration of the transition (T) within the potential outcome framework and jointly estimated the following multi-equation model:

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

$$LS_i = \begin{cases} 1, & \text{if } \alpha_2 WS_i + \varphi Z2_i + u_{2i} > 0 \\ 0, & \text{otherwise} \end{cases} \qquad \text{selection equation} \qquad (2)$$

$$WS_i = \begin{cases} 1, & \text{if } \gamma Z1_i + u_{3i} > 0 \\ 0, & \text{otherwise} \end{cases} \qquad \text{endogenous treatment equation} \ (3)$$

where *WS* is the endogenous (treatment) variable "work/study", *X* is the vector of control variables, *Z1* and *Z2* are the instruments and the selection variables, respectively (which are discussed later in this section), and α_1, α_2, β, γ, and φ are the parameters to be estimated. The unobserved errors terms are normal with a mean of zero and had 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 1 and 3 constitute the main part of the multi-equation model.[1] The model allows for the correlation between the potential outcomes—the duration of the transition—and unobserved factors affecting the treatment. The treatment variable "work/study" is endogenous if the estimated correlation $\rho_{13} \neq 0$.

Equation 2 adjusts for the non-random sample selection resulting from school-

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[1] 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).

leaving, given that the duration of the transition is not observed for youth who were still in school at the time of the survey. Outcome *T* is observed if the selection variable *LS* is equal to one. Equations 1 and 2 thus form a block of the Heckman selection model (Lewis 1974; Heckman, 1976). The selection of being out of school is non-random if the estimated correlation $\rho_{12} \neq 0$.

Given that the duration of the transition (*T*) is left censored at zero, we estimated an interval-regression model incorporating endogenous treatment assignment and non-random sample selection, as presented earlier. The estimated parameter α_1 is the effect of work/study on the duration of the transition. In the counterfactual modelling framework (Rubin, 1974; Heckman & Navarro-Lozano, 2004; Imbens & Wooldridge, 2009), α_1 is also interpreted as the average treatment effect (ATE) of the treatment variable work/study (*WS*).

Our instrument in endogenous treatment Equation 3 is parental education, expressed as three binary variables: whether parents had no education, had a primary education, or had completed secondary education or higher. As Haveman and Wolfe (1995) discussed, parents' education affects their investment in the schooling of their children; implicitly, it then has an impact on children's involvement in work or in formative activities during school.

According to the Haveman and Wolfe (1995) framework, parents' education does not directly affect their children's future income or employment prospects (which may be related to the duration of the transition to work); rather, the impact comes only through their children's school achievement and their own incomes, which we controlled for through parental occupation in both the outcome and treatment equations.

This is in line with the arguments provided in Fortin and Ragued (2017) who analyzed the effects of temporary school interruption on wages and used mothers' education as the instrument of such interruption (including the one related to work experiences). As they discussed, sociodemographic characteristics (proxied in their study by mothers' education) affected educational attainment and the continuity of schooling of their children. Previous studies in medium- and highly-developed countries used, as instruments of work/study experiences, local employment to proxy prevailing labor-market conditions (Parikh & Sadoulet, 2005; Häkkinen, 2006).

We did not have large time series data on local employment at our disposal. More fundamentally and in contrast to developed countries, however, the likelihood that youth in Benin would enter the labor market while still studying was driven more by family conditions than it was by conditions in the labor market. As explained in the

descriptive statistics section, the motivations of youth for work/study were chiefly the desire to earn money or help their families.

Following Lewbel's recommendations (2018b), we also instrumented WS through constructed instruments as a robustness check to test the validity of our external instrument. In particular, as proposed in Lewbel (2012 and 2018a), and relying on the heteroscedasticity of the error term of the endogenous variable, we added some instruments, constructed as the difference between a selection (Z) of the observed individual X and their sample average value, then multiplied by u_3, to our endogenous treatment equation. As shown in Lewbel (2012), the structural equation can be identified only under certain hypotheses. In particular, it requires that u_3 be heteroscedastic; that u_3 and u_1 not be correlated to Z; and that Z and the variance of u_3 be correlated and affect the degree of heteroscedasticity.

Finally, in selection Equation 2, we included two types of selection variables: one indicating whether the youth was married before leaving school and a macroeconomic-level variable indicating the percentage of primary-school-age children in Benin who were not enrolled in primary or secondary school by the time the youth was in school. Both variables do not directly affect the transition-to-work period (our main outcome).

IV.   Data and descriptive statistics

4.1.   Data source

We used data from the School-to-Work Transition Surveys (SWTS) for Benin, carried out between December 2014 and 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 in a project entitled "Work4Youth." The 2014-2015 SWTS is a nationally representative sample of individuals 15-29 years old. The survey used a six-section questionnaire to collect rich, detailed information about young individuals, including personal and household demographic characteristics, formal education/training, employment history, and aspirations.

4.2.   Data summary and definition of variables

Four thousand, three-hundred and six individuals aged 15-29 were interviewed for the Benin SWTS. We removed 1,370 of these individuals who had never been in school. Our main equation was run on a sample of 1,162 youth who were no longer in school at the time of the survey because the duration of the school-to-work transition was observed for these individuals only. We accounted for sample-selection

issues by additionally considering 1,771 youth who were still in school at the time of the survey.[2] The variables used in this study are defined in Table A1 in the Appendix.

The main outcome variable is the transition from school to first job, expressed as the transition period and defined as the number of months the youth spent in transition between leaving school and first job. The first job is either salaried work or self-employment (we excluded unpaid family work—that is, work for the benefit of the family).[3] Each individual was observed over a defined time interval T; the lower limit is the month and year of leaving school, and the upper limit corresponds to the month and year in which the respondent started her or his first job or the month and year of the survey, in cases in which the youth had not left the transition period at the time of the survey.

Work/study is the "treatment" variable of interest. To define this variable, we used the following survey question: "Have you ever worked while studying (outside apprenticeship)?" Answers were either (a) "no," (b) "yes, during the school year," (c) "yes, outside the school year (summer break, holiday)," or (d) "yes, during and outside the school year." The variable "work/study" was thus defined as a dummy variable with a value of 1 if the youth was involved in remunerated jobs while in school and 0 if not. Of the 1,162 individuals aged 15-29, 17.38% had worked while studying.

Other variables (mostly time-invariant) that were included in the econometric analysis are defined in Table A1 in the Appendix. A few remarks on the explanatory variables that may help strengthen the identification strategy are worth making here. For example, the actual residence of the youth (urban/rural and geopolitical department) at the time of the survey may have changed from her or his residence at the point at which the transition began. We thus additionally controlled for whether the youth had always lived in the same community (not moved) because residence-related variables could reflect social-mobility potentially linked to the transition-to-work period. Other variables were intended to serve as proxies for fixed, unobserved

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[2] Three observations were removed because of missing values and inconsistencies in the data.
[3] Studies mostly define the transition period as time elapsed after leaving school—either upon graduation or upon early exit without completion—until the first moment of employment in any job or the first regular job (Fares et al, 2005). The ILO SWTS applies the definition of the school-to-work transition as "the passage of a young person (aged 15 to 29) from the end of schooling to the first regular or satisfactory job" (Elder, 2009). We were not able to explicitly identify from the SWTS database whether salaried work or self-employment was a first regular or satisfactory job. Yet it is worth noting that all of the youth in our sample who had exited from the transition did not report any other job until 2014, the time of the survey. The time elapsed from the first job until 2014 was more than one year for about 91% of respondents and more than two years for 78% of them. Hence, we can assume that our definition of first job refers to a fairly stable job.

individual characteristics that might also have explained work/study behavior (Wenz & Yu, 2010; Geel & Backes-Gellner, 2012). One of these was information concerning life goals. This variable captured unobserved individual motivations or aspirations that may have influenced both the decision to choose work/study earlier and post-schooling labor-market behavior. Finally, we introduced a categorical variable to identify the reason why the individual stopped studying; this variable stood as a proxy for specific individual shocks that may have affected school-leaving decisions.

Three macroeconomic time-variant variables were included in the econometric analysis. The first was gross domestic product (GDP) per capita in constant prices. This variable took into account macroeconomic conditions in the country that may have influenced labor-market behavior or created financial constraints. The second was the youth unemployment rate, which was taken to reflect variations in labor-market conditions over time (changes in labor regulations, for example). Both variables were measured during the time of schooling and also during the transition, and they captured time-variant economic shocks that could have influenced both decisions. The third variable was the percentage of primary-school-age children who were not enrolled in primary or secondary school; this was used as a selection variable. These macroeconomic time-variant variables stemmed from the World Bank's annual World Development Indicators database. The three variables were averaged for each individual over the transition period (for the first two variables) and over the school-attendance period (for the third variable).

4.3. Descriptive statistics

Table 1 summarizes the transition profile of the 1,162 youth who had left school at the time of the survey. The transition was observed between January 1993 and December 2014. For those who had exited the transition period, the median age upon entering the transition period was approximately 22; it was 15 for youth who were still in the transition at the time of the survey. The median transition-to-work period for individuals who had left the transition was about two years, and the median age for leaving the transition was 25. The median (unfinished) transition-to-work period for individuals who had not yet left the transition from school to first job was more than four years. These figures are close to those found in francophone Africa: one year in Côte d'Ivoire and one-and-a-half years in Burkina Faso (Garcia & Fares, 2008).

Table 1: Transition from School to First Job: A Summary

	Sample of youth that already left school (1,162)	
	Those who exited from the transition	Those still in the transition
% of youth	40.19	59.81
Median transition-to-work period (years/months)	1.75/21	4.42/53
Median Age of entering in the transition (years)	22.08	15.25
Median Age of exiting from the transition (years)	25	-
% that exited into self-employment	23.84	-
% that exited into salaried work	16.35	-

Source: Calculations based on 2014 SWTS data.

The exit from the transition was also gender-sensitive. Men were more likely (42.01%) to exit the transition period than were women (38.33%). The fact of being a man may offer more opportunities for work/study, which allowed men to exit the transition earlier. Cultural and sociological constraints often limit African women's participation in the labor market, and this is especially true in Benin. The cumulative distribution function of the duration of the transition period by gender shows that men had a higher probability of exiting earlier (Figure 1). This remained true through the 150th month, at which point the probability for both sexes was about equal.

Figure 1: Cumulative Distribution Function of the Duration of the Transition Period by Gender

Source: Calculations based on 2014 SWTS data.

Table 2 shows the distribution of youth who worked while studying. We report statistics for those who had already left school and those who were still in school at the time of the survey. A large proportion of youth in our sample were full-time students. A small percentage of those with work/study experience worked only during the school year. Part-time work has been reported to have a negative effect on students' academic performance when it is done for long hours during schooling days (Anlezark & Lim, 2011; Jewell, 2014). Youth in our sample seemed, in general, more likely to work part-time during summer breaks and holidays, suggesting a reduced or nonexistent impact on academic performance.[4]

The data in Table 2 also indicate no clear differences in whether or not respondents were still in transition or in the type of work performed by those with work/study experience. Those who performed some work during summer or holiday breaks alone were relatively better represented among those who had left the transition period and especially among those who had transitioned to salaried work. Those with combined work experience during and outside of school were more prevalent among those who had transitioned to self-employment.

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[4] There are cases in which students miss school sporadically to look for money to pay school or education fees. Those who do so organize themselves so that work does not affect their school performance because they aim to succeed in academic life.

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

	Sample of youth that already left school					Sample of youth still in school at the time of survey
	Total (1,162)	Those still in transition (695)	Those not in transition (467)	Those exited into salary work (190)	Those exited into self-employment (277)	Total (1771)
a) Worked during the school year	3.44	3.31	3.64	3.68	3.61	2.15
b) Worked outside the school year (summer break, holiday)	6.97	6.04	8.35	11.05	6.50	9.15
c) Worked during and outside the school year	6.97	5.61	8.99	7.37	10.11	6.38
d) Worked in any of the categories above (a+b+c)	17.38	14,96	20,99	22,11	20,22	17,68
e) Among (d), had additionally an experience of internships or apprenticeships during study	16.34	14.42	18.37	26.19	12.50	13.38
f) Not worked	82.62	85.04	79.01	77.89	79.78	82.33

Source: Calculations based on 2014 SWTS data.

Data from the 2014 SWTS for Benin do not report the characteristics of the work performed by youth while studying. As is common in Benin, however, that work was likely to be casual or undertaken in small businesses owned by their families. The motivations of youth to undertake work/study experiences, as recorded in the 2012 SWTS for Benin, were mostly to "earn money" or "help family" and less to "acquire work experience or consolidate a resume" or "establish contacts for possible future employment"—in other words, for financial reasons more than out of career aspirations, probably due to their living conditions during the study. There can be no doubt, nonetheless, that they still acquired worthwhile skills, of which they may have been unaware, such as management or other abilities beneficial for attracting future employment.[5]

Further descriptive statistics on sociodemographic variables are presented in Table 3. Significant differences were observed only in some cases. Young people who worked during their studies seemed to have, on average, a briefer transition period from school to first job compared to those who focused only on their studies.

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[5] Most of the youth from the SWTS database aspire to succeed professionally.

Table 3 also shows that, on average, individuals who worked during schooling were those who left school with at least a secondary education, suggesting that time spent on work while studying may not impede school performance, as discussed above.

Table 3: Descriptive statistics

Variables	Total sample (1,162) Mean	Sample of youth who worked while studying (202) Mean	Sample of youth who did not work while studying (960) Mean	Mean t-test
Time-invariant variables				
Duration of the transition (months)	58.52 (52.63)	42.32 (43.38)	62.22 (53.93)	***
Head (of household) or spouse	0.44	0.41	0.45	
Gender: Male	0.48	0.59	0.45	***
Married before	0.13	0.09	0.14	
Have children	0.44	0.38	0.46	
Live always area	0.88	0.88	0.88	
Secondary educ	0.47	0.57	0.44	**
Domain study	0.85	0.74	0.87	**
Parental education:				
No schooling	0.46	0.52	0.44	
Primary education	0 .27	0.17	0.30	***
At least secondary education	0.26	0.30	0 .25	
Milieu: Urban	0.70	0.67	0.71	
Age at school-leaving	16.11 (4.82)	17.02 (5.03)	15.91 (4.76)	
Reasons to stop study:				
Drop out	0.29	0.33	0.28	
Work/married/parents/distance/others	0.20	0.18	0 .21	
Economic	0.31	0.19	0.34	***
Graduated	0.19	0.28	0.16	*
Life goal:				
Professional	0.20	0.29	0.18	
Social	0.04	0.05	0.03	
Money	0.35	0.41	0.34	
Family	0.40	0.26	0.44	***
Profession of parents:				
Agricultural	0 .25	0 .38	0.22	**
Elementary	0.23	0.17	0.24	
Other	0.51	0.43	0.52	
Time-variant variables				
Youth unemployment rate	1.95 (0.24)	1.95 (0.27)	1.95 (0.24)	
GDP per capita	350580 (16378)	351514 (17669)	350367 (16098)	

| Children out of school | 29.73 | 28.76 | 29.95 |
| | (11.93) | (11.19) | (12.07) |

Significant mean differences are indicated with *** p<0.01, ** p<0.05, * p<0.10.
Standard Deviation in brackets for continuous variables.

Source: Calculations based on 2014 SWTS data.

Young men and those whose parents worked in agricultural-related activities seemed more inclined to work while studying. They engaged in activities often reserved for men and which were likely to be performed at specific times of the year. Women, in contrast, were often confined to housework, a phenomenon more common in agricultural households and especially in rural areas where a male workforce was more often required.

Individuals with no work/study experience were more likely to receive general academic training. They were also more likely to leave school for economic reasons or with the aspiration of having a good family life, suggesting that they may have left school early in order to work full time rather than combine work and study. This was more likely for those for whom school was unaffordable or who lived in poorer households; these respondents were also more likely to need money to help their families, as shown by the figures on life goals in Table 3.

5. Results and discussion

5.1. Testing the validity of the external and constructed instruments

Before moving to the estimation results, we discuss various tests we performed to validate the external and constructed instruments we used in the multi-equation model (Equations 1 to 3). First, we performed a simple "falsification" test on the validity of the external instruments (Equation 3), following Di Falco, Veronesi, and Yesuf (2011). The external instrument, parental education (no education, primary education, or secondary or higher education), is valid if it affects the likelihood of work/study (jointly and significantly) but does not affect the duration of the transition (jointly and significantly) among youth who did not work while studying. Table A2 in the Appendix shows that this double condition was fulfilled. Second, as shown in Table A3 in the Appendix, we performed additional tests on the external instruments using a two-stage least square (2SLS) regression method with a continuously updated GMM estimator (Baum, Schaffer & Stillman, 2007).[6]

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[6] To the best of our knowledge, however, there are no suitable tests for IV validity that control for possible selection bias.

The Hansen J over-identification test did not reject the null of the validity of the external instruments. The GMM distance test rejected the null hypothesis that the variable work/study was exogenous. Note, however, that the null hypothesis that the external instruments were weak was not rejected at conventional thresholds. Third, with regard to external and constructed instruments (as proposed by Lewbel, 2012 and 2018a), we can conclude that there was heteroscedasticity in our model, a key assumption for identification, as measured by the Breusch-Pagan test for homoscedasticity. In addition, our set of instruments strongly passed all the standard tests of weakness of instruments and over-identification (Table A3 in Appendix). Hence, we concluded that our instruments were appropriate.

5.2. Main estimation results

Table 4 reports results related to the duration of the transition from school-to-work period (full results are available in Table A4 in the Appendix). Specification A is the standard interval regression—without accounting for sample-selection bias and endogeneity. Specification B corrects for potential non-random selection bias. Specification C (our main specification) adds the correction of potential endogeneity in the treatment variable to A and B through external IV. Finally, specification D uses both external and constructed IVs and can be seen as a robustness check of specification C. In the multi-equation modelling framework (specifications B, C and D), pairwise correlations between the error term of the endogenous treatment equation (Equation 3), of the selection equation (Equation 2), and of the duration of transition equation (Equation 1) are all strongly significant and take the expected sign, indicating the potential existence of treatment endogeneity and sample-selection biases.

The various estimation results shown in Table 4 all indicate that work/study reduces the length of the school-to-first-job transition period. When potential selection and endogeneity biases are *not* taken into account (A), work/study experiences reduce the transition period by twelve months. Accounting for selection bias (B), the impact is slightly stronger (-13 months). When we corrected for treatment endogeneity, the effect was much larger (roughly -40 months, with respect to the average unemployment period of about fifty-nine months in the overall sample). Ignoring sample-selection and, in particular, endogeneity issues would underestimate (in absolute terms) the estimated coefficient of work/study, creating a downward bias. This may mean that people with unobserved academic skills were less likely to work while studying, but those same skills would have helped them in reducing the duration of the transition period.

There was practically no difference when we included constructed instruments in the endogenous treatment equation. As Lewbel (2018b) discussed, when constructed and external IVs are used together, estimations are more efficient. Because our identification came from different sources (exclusion and constructed IVs) and specifications C and D yield very close estimates, we had sufficient confidence that our estimated effects were reliable. Finally, the coefficients of the other explanatory variables took the expected sign or were not statistically significant.

Table 4: Estimation results of the duration of the school-to-first-job transition period

Outcome: Duration of transition	Interval regression: Eq1	Interval regression with sample selection: Eq1	Interval regression with endogenous treatment and sample selection (with external IV): Eq1	Interval regression with endogenous treatment, sample selection (with external and constructed IV): Eq1
Work/study	-12.008**	-13.028***	-40.982***	-40.699***
corr(e.Eq2, e.Eq1)		-0.488***	-0.541***	-0.541***
corr(e.Eq3, e.Eq1)			0.384***	0.383**
corr(e.Eq2, e.Eq3)			-0.477**	-0.448**
Observation	1,162	2,910	2,910	2,910
Uncensored	1,056	1,056	1,056	1,056
Left-censored	106	106	106	106
Right-censored	0	0	0	0
Selected		1,162	1,162	1,162
Nonselected		1,748	1,748	1,748

Significant level are indicated with *** $p<0.01$, ** $p<0.05$, * $p<0.10$. All regressions also control for urban/rural and department residency. Eq1 identifies equation 1 presented in section 3.2. Full results, including parameters of equations 2 and 3, are shown in Table A4.

Source: Calculations based on 2014 SWTS data.

5.3. Understanding the effect

What drove the effect described above? Were there differences in the type and the timing of the work respondents performed during their studies? Was the effect driven uniquely by experiences associated with apprenticeships or did work/study reduce the transition-to-work period on its own? Finally, did the effect depend upon the age at which the respondent left school, or was it driven by respondents whose transition-to-work period was very long? The results of the tests we ran to respond to these questions appear in Table 5 (full results are available in Table A5 in the Appendix).

a) *Were the results driven or affected by those whose unemployment duration was zero*? Some individuals in our sample made an immediate transition to work (i.e., a zero-month transition period), either because they entered the labor market before leaving school or because they left school exactly at the time of the survey (so their transition period had not started yet by that time). Such heterogeneous cases may have driven the results but, while the coefficient is smaller, work/study experiences still reduced the length of the job search. In fact, the effect was roughly -30 months.

b) *Were the results driven or affected by the age at which individuals left school and entered the transition period*? Respondents who leave school at a younger age are generally more likely to work in family-run businesses or in casual jobs. Our data confirmed this phenomenon for our sample: the average age of school leaving for the self-employed was three years lower than for those in salaried work (15.3 versus 18.3 years old). Also, early leavers may represent outliers, and the mechanism explaining the impact of the treatment on their outcomes may be different than it is for older individuals. When early leavers were excluded from the regression, the work/study coefficient was reduced to roughly -32 months. The effect was still negative and strongly significant, however, meaning that the causal effect was not influenced when we included those who may eventually have had a "facilitated" transition to work (family workers, for example).

c) *Does the effect hold for those who worked while studying during summer breaks or holidays only*? In order to target specific policies and activities in the future, it is important to know whether the effect of work/study depends upon the timing of such experiences. As shown by the results, work performed during summer breaks or holidays only had a strong effect on reducing the transition-to-work period. This may mean that, while this work did not undermine academic performance, it may have helped respondents gain experience and build contacts in the labor market that facilitated the transition to work later on.

d) *As a related matter, did the effect hold for those who worked while studying (only during study or also in summer/holiday jobs)?* According to our results, such work/study experiences did not help respondents ease their transitions. At the same time, as Emerson, Ponczek, and Souza (2017) and others suggest, it may have had a negative impact on learning.

e) *Was the effect driven by apprenticeships?* Apprenticeships should normally combine on-the-job training, work experience, and technical training. In addition, they may help to build contacts with employers. Apprenticeships should then facilitate the transition to work. According to our results, the effect on the transition-to-work period was even stronger than in the base specification (roughly -63 months) when work/study experiences were combined with apprenticeships. We thus concluded that job experiences during studies, if combined with apprenticeships, were the most effective work/study experiences.

f) *Did the effect of working during summer breaks/holidays hold when not combined with internships?* As shown by the results, although the coefficient was somewhat lower than when apprenticeships were included, this type of work experience still had a significant positive effect.

g) *Was the effect influenced by those whose transition-to-work period was very long?* While, in the context of Benin, it is quite common for people to search quite a long time for a job, those showing an excessively high job-search period may actually also have fewer incentives to look for work or may stop their searches temporarily or permanently. When we restricted our analyses to those whose work-search period was less than the median (53 months, as reported in Table 2), the effect, though smaller, was still strongly significant (as expected because we excluded those with extremely long search periods).

Table 5: Estimation results of the duration of the school to first job transition period by different sample definitions

	Interval regression with correction of sample selection and endogenous treatment (external IV): Duration of transition: Eq1						
	(A)	(B)	(C)	(D)	(E)	(F)	(G)
Work/study	-29.715**	-32.387***	-44.546***	-25.142	-62.707***	-43.758***	-28.448***
corr(e.Eq2, e.Eq1)	-0.540***	-0.815***	-0.386***	-0.584***	-0.515***	-0.382***	-0.816***
corr(e.Eq3, e.Eq1)	0.333**	0.417***	0.357**	0.211	0.651***	0.339**	0.668***
corr(e.Eq2, e.Eq3)	-0.396	-0.465*	-0.277	-0.804***	-0.480**	-0.044	-0.288
Observation	2,804	2,456	2,638	2,669	2,471	2,608	2,421
Uncensored		622	959	987	912	948	567
Left-censored		86	82	94	81	77	106
Right-censored		0	0	0	0	0	0
Selected	1,056	708	1,041	1,081	993	1,025	673
Nonselected	1,748	1,748	1,597	1,588	1,478	1,583	1,748

Note:

Regression A—regression with sample of non-zero transition-to-work period.

Regression B—regression *excluding* subsample of individuals who left school by 14 or earlier.

Regression C—regression *excluding* subsample of individuals who worked during the school year and individuals who worked during and outside the school year.

Regression D—regression *excluding* subsample of individuals who worked outside the school year (summer break, holiday) only. Regression E—regression *excluding* subsample of individuals who worked while studying but had no experience in internships or apprenticeships during study.

Regression F—regression C without subsample of individuals who worked while studying and had experience in internships or apprenticeships during study.

Regression G—regression *excluding* those whose duration is above the median of those still in transition (53 months). All regressions control for urban/rural and department residency. Full results are shown in Table A5.

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

Source: Calculations based on 2014 SWTS data.

5.4. Heterogeneous effects in the hazard of quitting the transition

We estimated additional regressions to explore whether the estimated impact of work/study differed among groups of youth. The results in Table 6 show significant heterogeneous effects of work/study by gender and level of education.

For men, work/study had a significant and negative effect (-51 months) on the transition-to-work period, but the estimated coefficient of work/study was not significant for women. The results suggest either that the types of economic activities performed by men may have been more favorable to later transition to work or that the local environment viewed men who had acquired skills in work/study experiences more positively than it did women who did so. Relatedly, the post-schooling life goals of women in Benin may differ from those of men; women, for example, are more likely to look for maternity and household chores than are men, and local market conditions are more discriminatory against women such that any acquired skill is less valuable in the labor market.

Table 6 shows that work/study experiences significantly decreased the transition-to-work period (-38 months) for youth who left school with at least a secondary education. For those with a lower education level, the impact was not statistically significant, suggesting that work/study experience, coupled with at least some education, was likely to be more beneficial for early entry into the labor market. Also, work/study experiences undertaken at a higher education level may be more qualifying (as in the case of apprenticeships) and may more closely match labor demands.

Table 6: Estimation results of the duration of the school-to-first-job transition period: Heterogeneous impacts

	Interval regression with endogenous treatment and sample selection: Duration of transition: Eq1 By Sex		Interval regression with endogenous treatment and sample selection: Duration of transition: Eq1 By Level of education	
	Men	Women	At least secondary	Elementary
Work/study	-51.330***	-33.209	-38.774***	4.564
Head (of household) or spouse	-3.731	7.916	-3.387	10.442
Gender: Male			-7.462*	13.410**
Have children	10.169	34.792***	6.691	39.191***
Always lived in area	-1.837	5.571	2.133	2.462
School-leaving age in years	-5.597***	-7.465***	-4.084***	-9.132***
Secondary educ	-11.633**	-6.669		

Domain study	-10.385	-3.459	-2.076	2.982
Life goal (Social) (reference is: Professional)	7.075	20.842**	2.593	37.719**
Life goal (Money)	-9.911	7.571	-3.586	4.133
Life goal (Family)	-10.404	5.386	-8.029*	13.808**
Elementary profession of parents	3.606	5.321	1.390	14.989**
Other profession of parents (reference is: Agricultural)	5.116	-4.377	2.164	4.221
Stop study (Work/married/parents/distance/others)	-1.311	-10.348*	-3.657	-2.240
Stop study (Economic)	6.206	-8.266	-6.919	4.674
Stop study (graduated) (reference is: drop out)	-8.434	-7.189	-9.209*	-5.333
Youth unemployment rate	-27.272	37.316***	-6.632	47.190***
GDP per capita (in 000's)	0.358	0.001	-0.292	0.094
Parents have primary education: IV	-0.250*	-0.250	-0.233*	-0.283
Parents have at least secondary education: IV	-0.117	-0.438***	-0.213*	-0.740**
Married before	371.315	13.450***	11.284***	3.806***
Children out of school	0.507**	0.598***	0.629***	0.543***
Constant	94.004	87.479	198.785***	51.905
corr(e.Eq2, e.Eq1)	0.591***	0.311	0.548***	-0.276
corr(e.Eq3, e.Eq1)	-0.854***	-0.293	-0.641***	-0.177
corr(e.Eq2, e.Eq3)	-0.566***	-0.595	-0.346	-0.896
Observation	1,623	1,287	2,205	705
Uncensored	509	547	489	567
Left-censored	67	39	65	41
Right-censored	0	0	0	0
Selected	576	586	554	608
Nonselected	1,047	701	1,651	97

Note: All regressions control for urban/rural and department residency.

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

Source: Calculations based on 2014 SWTS data.

VI.   Conclusions and policy implications

Several programs or strategies have been implemented in Benin over the last decade to deal with youth unemployment. One government strategy is the youth volunteer program that provides young people seeking first jobs the chance to learn in public and private businesses *after* graduation. In this study we explored the potential of an alternative, complementary, approach that may smooth the transition of youth to the labor market.

We analyzed the effect of (paid) work experience *while* studying on the ability of youth to transition from school to first job. Our analyses focused on adolescents, and most of the in-school work experiences we examined were jobs performed during summer breaks or holidays. Among various possible (a priori) undetermined effects on employment, work/study may help youth acquire work experience before they leave school, allowing them to become familiar with the barriers or impediments to employment that most post-graduation interventions and policies are already addressing.

Our multi-equation modelling, which corrected for treatment endogeneity and sample-selection bias, adds to the scarce literature on the effects of "work/study" on the transition-to-work period. Our results show that work/study decreased the transition-to-work period, though this effect was significant only for job experiences during summer breaks or holidays and was stronger when combined with apprenticeships. Significant heterogeneous impacts were also found: work/study eased the transition from school to first job for men and for youth who left school with at least a secondary education level. Unfortunately, however, our data did not allow us to determine the kind of work youth performed during their studies and, therefore, possible sources of differences between boys and girls.

The results here provide useful information for the implementation of effective employment policies that can accelerate the transition of young people to their first job at the end of their studies. The results draw attention to the importance of temporary job experiences for youth during summer breaks or holidays and of expanded school programs that include apprenticeships.

The policy implications regarding change or reorientation in existing strategies for dealing with youth unemployment in Benin are clear. Existing programs/projects address youth unemployment post-schooling, giving youth training and skills that are valued by potential employers only after graduation. Job

policy interventions need to be reoriented or extended in order to promote or encourage the engagement of young people in well designed in-school work experiences. In order to extend the benefits of such programs to women, additional research is needed into the type of in-school work boys and girls perform, and interventions must be designed to reduce labor-market constraints against women (during and after school). Otherwise, interventions may serve only to increase the gender employment gap.

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Appendix

Table A1: Description of variables

Variables	Definition of variables
Working 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
Married 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
Parents have no schooling (reference)	Parents have no schooling education level =1; 0 otherwise
Parents have primary education	Parents have attained the primary education level =1; 0 otherwise
Parents have at least secondary education	Parents have attained at least the secondary education level =1; 0 otherwise
Agricultural profession of parents (reference)	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

Milieu: Urban	Resides in an urban area =1; 0 otherwise
Stop study (drop out) (reference)	Has interrupted study because of: not pass exam/no interest for school=1; 0 otherwise
Stop study (Work/married/parents/distance/others)	Has interrupted study because of: work/married/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) (reference)	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
Youth unemployment rate (during transition)	Youth unemployment rate at the national level (from World Development Indicators database). Averaged on the transition period.
GDP per capita (during transition)	Gross domestic product (GDP) per capita in constant prices at the national level (from World Development Indicators database). Averaged on the transition period.
Children out of school (during schooling)	The percentage of primary-school-age children who are not enrolled in primary or secondary school (from World Development Indicators database). Averaged on the schooling period.

Table A2: Falsification Test on the Validity of the Instruments

Instruments (reference is: Parents have no schooling)	Probit regression	Linear regression
	Work/study	Duration of transition for youth that did not worked while
Parents have primary education	-0.196*	5.386
Parents have at least secondary education	-0.255**	5.433
Constant	0.341	305.033***
Pseudo R2/R2	0.228	0.504
Test of excluded instruments	$\chi 2 = 6.79$**	F-stat. =0.98
Prob > F/$\chi 2$	0.033	0.375
Observations	2,910	960

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.

Source: Calculations based on 2014 SWTS data.

Table A3: Weak Identification and Over-Identification Tests

	External instruments	External and constructed instruments
Weak identification test (Cragg-Donald Wald F statistic)	1.451	19.306
Hansen J statistic (over-identification test of all instruments)	0.302	9.625
p =	0.582	0.141
GMM distance test of Ho: work/study is exogenous (Chi-sq)	2.521	0.464
p =	0.112	0.495
Breusch-Pagan / Cook-Weisberg test for Ho: Constant variance (chi2)		119.42
p =		0.000
Observations	1,162	1,162

Notes: Survey weights included. Parameters for all the other variables are not reported.

Source: Calculations based on 2014 SWTS data.

Table A4: Estimation results of the duration of the school to first job transition period (showing full results of Table 4)

Outcomes	Interval regression (without corrections) (A)	Interval regression with correction of sample selection (B)		Interval regression with correction of sample selection and endogenous treatment (with external IV): (C)			Interval regression with correction of sample selection and endogenous treatment (with external and constructed IVs): (D)
	Duration of transition: Eq1	Duration of transition: Eq1	Leave school: Eq2	Duration of transition: Eq1	Leave school: Eq2	Work/study: Eq3	Duration of transition: Eq1
Work/study	-12.008**	-13.028***	0.202	-40.982***	1.036***		-40.700***
Head or spouse (of household)	3.894	3.182		3.046		-0.002	3.092
Gender: Male	3.854	3.675	0.112	4.116	0.097	0.133*	4.198
Have children	26.226***	22.908***		23.434***			23.590***
Live always area	5.150	5.600	-0.331*	3.626	-0.252	-0.415***	3.745
Age leave School in year	-6.724***	-6.553***	-0.921***	-6.544***	-0.874***		-6.559***
Educ secondary	-9.394***	-9.050***		-9.424***			-9.146***
Domain study	-1.383	-3.108	0.373**	-6.521	0.475***	-0.647***	-6.433
Life goal (Social) (reference is: Professional)	13.919	14.544*	0.186	14.727*	0.142	0.080	14.458*
Life goal (Money)	1.551	-0.177	0.801***	-0.062	0.744***	0.083	0.005
Life goal (Family)	2.980	1.129	0.475***	-0.769	0.497***	-0.238**	-0.669
Elementary profession of parents	11.009**	9.514**	-0.011	5.351	0.093	-0.627***	5.410
Other profession of parents (reference is: Agricultural)	3.883	3.484	-0.020	1.419	0.024	-0.243**	1.487
Stop study (Work/married/parents/distance/others)	-4.877	-4.356		-4.225			-4.373
Stop study (Economic)	-0.327	-0.371		-0.572			-0.692
Stop study (graduated) (reference is: drop out)	-5.984	-5.435		-5.340			-5.392
Youth unemployment rate	33.278***	13.728		12.738			12.055
GDP per capita (in 000's)	-0.319*	0.093		0.132			0.000
Parents have primary education: IV			-0.282*		-0.238*	-0.230**	
Parents have at least secondary education: IV			-0.151		-0.096	-0.249**	
Married before			10.107***		9.560***	0.479**	
Children out of school			0.637***		0.607***		
Constant	217.285***	115.310*	3.065***	115.004*	2.437***	0.347	111.595
corr(e.Eq2, e.Eq1)		-0.488***		-0.541***			-0.541***
corr(e.Eq3, e.Eq1)				0.384***			0.383**
corr(e.Eq2, e.Eq3)				-0.477**			-0.448**
Observation	1,162	2,910		2,910			2,910
Uncensored	1,056	1,056		1,056			1,056
Left-censored	106	106		106			106

Right-censored	0	0	0	0
Selected		1,162	1,162	1,162
Nonselected		1,748	1,748	1,748

Note: In all regressions, we control for urban/rural and department residency.
Significant level are indicated with *** p<0.01, ** p<0.05, * p<0.10.

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

Table A5: Estimation results of the duration of the school to first job transition period: Sensitivity analysis (showing full results of Table 5)

	Interval regression with endogenous treatment and sample selection: Duration of transition: Eq1						
	(A)	(B)	(C)	(D)	(E)	(F)	(G)
Work/study	-29.715**	-32.387***	-44.546***	-25.142	-62.707***	-43.758***	-28.448***
Head or spouse (of household)	2.007	-1.724	6.264	2.126	4.825	6.512	0.990
Gender: Male	2.873	-3.072	4.167	4.288	5.412	3.645	1.046
Have children	17.829***	6.585	23.608***	22.746***	24.020***	22.570***	5.071*
Live always area	3.597	5.709	5.325	0.616	1.094	4.971	1.034
Age leave School in year	-5.549***	-3.477***	-6.521***	-6.569***	-6.387***	-6.573***	-1.366***
Educ secondary	-9.327***	-12.016***	-9.558***	-8.496**	-10.254***	-8.905**	-2.709
Domain study	-5.529	-5.755	-5.896	-5.436	-7.714*	-6.422	-5.703**
Life goal (Social) (reference is: Professional)	13.980	-3.159	7.655	12.399	2.630	8.471	-6.845*
Life goal (Money)	2.558	-9.194	0.160	-2.216	-3.007	0.464	-7.327***
Life goal (Family)	0.193	-3.592	-0.104	-1.012	-2.543	-0.001	-4.419*
Elementary profession of parents	6.425	-0.268	13.342***	7.114	11.194**	13.117**	-4.131*
Other profession of parents (reference is: Agricultural)	2.519	1.926	3.829	3.292	2.384	4.391	-0.723
Stop study (Work/married/parents/distance/others)	-2.608	-1.102	-2.286	-3.547	-1.502	-2.347	-5.381**
Stop study (Economic)	-0.741	-0.431	0.882	0.665	1.669	0.918	-1.248
Stop study (graduated) (reference is: drop out)	-2.445	-7.513*	-2.424	-6.906	-2.782	-3.407	-7.521***
Youth unemployment rate	10.587	-5.806	23.072*	0.920	7.862	23.770*	9.523**
GDP per capita (in 000's)	-0.236	0.035	-0.144	0.160	-0.012	-0.194	0.375***
Parents have primary education: IV	-0.214**	-0.259**	-0.245*	-0.128	-0.037	-0.164	-0.263**
Parents have at least secondary education: IV	-0.331***	-0.237**	-0.009	-0.423***	0.380*	-0.124	-0.252**
Married before	12.174***	159.415	8.027***	8.683***	8.611***	8.475***	9.360
Children out of school	0.621***	0.488***	0.642***	0.605***	0.624***	0.671***	0.570***
Constant	241.774***	70.943	185.662***	125.323*	175.328***	203.420***	-121.166***
corr(e.Eq2, e.Eq1)	-0.540***	-0.815***	-0.386***	-0.584***	-0.515***	-0.382***	-0.816***
corr(e.Eq3, e.Eq1)	0.333**	0.417***	0.357**	0.211	0.651***	0.339**	0.668***
corr(e.Eq2, e.Eq3)	-0.396	-0.465*	-0.277	-0.804***	-0.480**	-0.044	-0.288
Observation	2,804	2,456	2,638	2,669	2,471	2,608	2,421
Uncensored		622	959	987	912	948	567
Left-censored		86	82	94	81	77	106
Right-censored		0	0	0	0	0	0

Selected	1,056	708	1,041	1,081	993	1,025	673
Nonselected	1,748	1,748	1,597	1,588	1,478	1,583	1,748

Note:

Regression A—regression with sample of non-zero transition-to-work period.

Regression B—regression *excluding* subsample of individuals who left school at 14 or less.

Regression C—regression *excluding* subsample of individuals who worked during the school year and individuals who worked during and outside the school year.

Regression D— regression *excluding* subsample of individuals who worked outside the school year (summer break, holiday).

Regression E—regression *excluding* subsample of individuals who worked while studying but had no experience in internships or apprenticeships during study.

Regression F—regression C without subsample of individuals who worked while studying and had experience in internships or apprenticeships during study.

Regression G—regression *excluding* those whose duration is above the median of those still in transition: 53 months).

All regressions control for urban/rural and department residency.

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

Source: Calculations based on 2014 SWTS data.