ACCESS TO SECONDARY EDUCATION IN ALBANIA:

INCENTIVES, OBSTACLES, AND POLICY SPILLOVERS

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Abstract

When judged either by educational attainment of adult population or by secondary and tertiary enrollment rates, Albania compares very unfavorably to most European countries, including its neighbors. This study analyzes the determinants of secondary enrollment using data from Albanian Living Standards Measurement Survey 2002-2003 and Population Census 2001. The focus of the paper is to investigate the importance of access to school for enrollment. We find that both absence of a secondary school in the community and the distance from the residence location to the closest school have strong negative effect on enrollment, controlling for family background. In rural areas, enrollment is impeded also by absence of a pre-school in the community, and by transportation cost from the community to its "main" secondary school. Proximity to a university city (as opposed to other urban centers) substantially increases likelihood of secondary enrollment in rural areas. In urban areas, a similar effect has emerged in 2003, plausibly as a response to opening the market for private universities. The above findings suggest that developing tertiary education and child-care system might be efficient policy alternatives to building new schools.

1. Introduction

When judged either by educational attainment of adult population or by secondary and tertiary enrollment rates, Albania compares very unfavorably to most European countries including its neighbors (see Figure 1, Tables 1 and 2). Moreover, between 1989 and 1995 secondary enrollment rates have dropped by 50 percent (Muca et al, 2004; such a trend was unique in the region, see Figure 2). This is a complete reversal of the trends observed before the transition: between 1970 and 1990 number of secondary school graduates increased tenfold, and number of university graduates – almost 2.5 times (Gjonça et al, 2004). Low secondary enrollment is considered to be one of the key constraints to Albania's economic growth in the long run (World Bank 2004).

Although there is a large body of theoretical and empirical research on educational attainment in many European countries, there is no comprehensive study (al least what the authors know of) that investigates reasons and obstacles that lead to so low demand for education in Albania. Some insights have been provided in World Bank (2003) which documents sizable differences in enrollment rates between non-poor and poor families, as well as between urban and rural households. For instance, it has been found that secondary enrollment rate among 14-17 year old teenagers from non-poor families is around 50 percent, whereas it is below 20 percent for their poor counterparts.

Albania differs from other transition countries in many respects which have implications for its labor market and educational system. Firstly, as mentioned above, Albania's population is significantly less educated. Secondly, Albania is on a lower stage of economic development: Albanian GDP per capita in 2002 was 3 to 4 times lower than that of, for example, the Baltic countries and Poland. Moreover, Albanian labor market is dominated by agriculture (see Figure 3). Demographic distribution of the population is quite different: Albanian aged 14 to19 has, on average, more than 3 siblings, while in the other Eastern and Central European countries this would be a very rare situation. Finally, one can expect that cultural differences (Albania is a Muslim country) and different pre-transition background (Albania has not experienced the kind of liberalization which was observed at the end of socialist era in Soviet Union and Central Europe) may affect incentives and prospects of investment in human capital. All of these reasons make Albania an interesting case for the analysis.

This study intends to investigate reasons for low enrollment rates in secondary education in Albania. With very good data (including households' geographical coordinates) at hand, we

hope to provide some insights of relative importance of residential location and access to schools, as well as interactions with gender, parental education, family structure, agricultural land ownership and other relevant factors in shaping the demand for secondary education. From a policy point of view it is also important to understand what the main obstacles for enrollment in secondary education are in order to design more targeted policies.

The empirical analysis is based on reduced-form probit models of a choice to enroll in secondary education. We use Albanian Living Standards Measurement Surveys 2002-2003 conducted by the World Bank. The results suggest that controlling for family background and household structure, poor access to schools (longer distance and higher commuting costs) appears to be very important obstacles to enrollment. We also find that potential obstacles to enrollment on higher steps of schooling ladder, such as large distance from the universities, decrease substantially the likelihood of secondary enrollment.

The rest of the paper is organized as follows. Section 2 provides a description of the relevant literature on determinants of educational attainment. Section 3 presents data used for the analysis and descriptive statistics. Section 4 describes methodology and choice of variables which, according to the theoretical literature and previous empirical work, may affect enrollment decision. Estimation results are given in Sections 5. Section 6 concludes and suggests some policy implications.

2. Literature Review

Substantial number of previous research work was devoted to the choice of education and investment in human capital. Most of the conceptual issues underlying the empirical studies can be illustrated by the simple model of Becker (1964), in which one chooses optimal level of education balancing the benefits of higher education over the life-cycle and costs of schooling borne while in school. The relevant studies for this paper are those that focus on the costs side and not on the returns to schooling. If some young people who are willing to continue education are disadvantaged in accessing university, or even earlier in accessing secondary school, due to family background characteristics, then the potential role of education for the movement up the social ladder is impeded. Most of existing research in this area examines two aspects of family background characteristics: namely, family income and parental education. Another stream of the literature focuses on the access to schools as a measure of direct costs of schooling. The results of the latter studies have important policy implications such as building new schools or subsidizing secondary education. This section

reviews the relevant literature on determinants of educational attainment.

Positive correlation between parental and children's educational attainment is well documented in the previous studies (see Card (1995), for survey). Recent literature (see for instance Black et al (2003)) has addressed the question whether the link between parental and children's education is causal, and the results so far support a positive answer, at least for natural parents. There are several channels of intergenerational link. More educated parents are likely to be more able, and children might inherit their ability. Educated parents are more likely to provide a learning-friendly environment, to enroll children in better schools, and to encourage post-secondary schooling. It is, however, less well documented in transition context where one can expect some adverse effects of restructuring on intergenerational correlations (see Fan et al (1999); Spagat (2002a, 2002b)). Despite it, Varga (2003) for Hungary, Beblo and Lauer (2002) for Poland, and Hazans et al (2005) for the Baltic countries have found strong positive effect of parental education on children's educational attainment.

The vast majority of the literature on determinants of schooling established a positive correlation between family income and schooling attainment (see Cameron and Heckman (1999) for instance). The most popular interpretation of this finding is educational financing constraints which teenagers face when making their schooling decision. Another possible explanation for positive correlation between parental income and educational attainment stresses long-term effects of family income. Several studies have found positive correlation between family income and other family background measures and achievement in the test performance in elementary and secondary school. This evidence is suggestive of parental income working in the same way as parental education as long as shaping children's cognitive ability and taste for education are concerned. Carneiro and Heckman (2002) point out that the importance of family income and other family factors has been confirmed in many different environments including those with free tuition and no restrictions on entry.

Several studies have found that geographical distance to school significantly decreases probability of attending university, controlling for family background (see for instance Frenette (2006)). This evidence is in line with the theoretical prediction that students who live closer to university have lower costs of schooling (by staying at home while attending the local school) and therefore are more likely to continue education. Cameron and Taber (2004) measure direct cost of schooling by the presence of a college in the county of residence. They found a large effect of the ease to college access, implying that individuals with a college in their county complete half a year more of schooling on average.

Similar results were found for primary and secondary schools (see among others Foster

and Rosenzweig (1996), Bommier and Lambert (2000), Duflo (2001)). On the other hand, Filmer (2004) uses data from 21 low-income countries (including some of the poorest countries in Sub-Saharan Africa) to show that there is a negative relationship between school participation of 6 to 14 year olds in rural areas and the distance to primary and secondary schools; however, the magnitudes of the associations are small. He finds that simulating big reductions in distance yields only small increases in school enrollment on average, and suggests focusing on policies aimed at increasing the demand for schooling or the quality of schooling.

Most of the above-mentioned empirical results, however, refer to primary schools or to post-secondary rather than secondary education. The purpose of this study is to explore how important for secondary enrollment is geographical distance to secondary schools, (measuring the direct costs of schooling), as well as distance from the universities (proxying for the future returns to schooling and access to information about continuing education).

3. Data and Descriptive Statistics

The study intends to analyze the determinants of secondary enrollment using data from Albanian Living Standards Measurement Survey (see World Bank and INSTAT 2003). The survey was conducted in 2002 and is now available at www.worldbank.org/lsms. Also, a sub-sample panel survey conducted in 2003 has recently become available. It provides very rich information on household level and on individual level, combining features of a Household Budget Survey, Labor Force Survey, Living Conditions Survey, and Agricultural Census; a separate community questionnaire provides useful additional information on school access and quality. Albanian population is one of the youngest in Europe, so the 3599 households, which were surveyed, ensure sufficient number of young respondents.

The data contains information on geographical coordinates of residence locations of all households. The common approach in the literature on developed countries is to derive geographic coordinates of institutions from the postal codes (see for instance Frenette (2006)). This approach was not feasible for Albania due to data limitations; moreover, in rural Albania distances between schools and post offices are sometimes quite big. Therefore, in order to calculate the distance between the individual's home and the nearest secondary school, we construct coordinates of the schools by taking the median longitude and latitude coordinates of those students who study in that particular school[1]. In the similar way we construct

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[1] We also tried different ways of calculating coordinates of secondary schools and the median-coordinate approach appeared to perform better. For instance, we used nonlinear least squares to find the coordinates of the

coordinates of cities, i.e. the coordinates of any city is set to be equal to its residents' median coordinates. Finally, the distances from household locations to the closest secondary school and to big cities are calculated as straight-line distances[2].

We start with pooled 2002 and 2003 LSMS data, where the relevant sample includes 1908 individuals 14-19 years old. Most of them live with parents; less than 5 percent live either with spouse's or brother's family and hence lack information on parents. Hereafter we exclude these respondents, as well as other 88 respondents with missing data. Due to small number of excluded observations, sample selection is not an issue.

Rural and urban areas differ dramatically in terms of access to education, stock of parental human capital and labor market situation (see Table 3 for details). Urban respondents always have preschool and primary school and nine times out of ten also secondary school in the community they live in. By contrast, only about one fifth of rural residents live in communities with a secondary school. Even more striking difference is between secondary education enrollment rates: 68 and 76 percent of the urban sample were enrolled in 2002 and 2003, respectively; whereas for the rural areas these numbers are only 27 and 36 percent.

The stock of parental education is much lower in rural areas. Around 55 percent of mothers and 60 percent of fathers living in urban areas have more than basic education, while in the countryside these figures are respectively 13 and 25 percent. Majority of urban parents either are wage earners or have been such in the past. In rural areas, however, this holds only for about one fourth of fathers and one eighth of mothers. Family structure is quite different, too: urban teenagers have on average 3.3 siblings while rural kids have 4.9 siblings. These sharp differences suggest that models of secondary enrollment should be estimated separately for urban and rural teenagers.

4. Methodology

In this paper we use the following simple probit model of secondary enrollment, estimated over the sample of teenagers with basic education:

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secondary schools, given the information on reported distance to schools (*d*) for students who are enrolled and their coordinates *(x,y)*. In particular, we choose schools' coordinates *(a,b)* to minimize the difference between squared estimated and reported distances, i.e. $(a^*,b^*)=\text{argmin}[d^2-(x-a)^2-(y-b)^2]^2$. However, this way of estimation is imprecise due to the two reasons. First, the reported distances are road distances while we estimate straight-line distances. Second, median-coordinate approach is robust to outliers, while NLS estimation is sensitive to instances of very long reported distances (when some students live in the other village than the one where the school is located). This is especially true for rural schools where the number of observations was very small. Therefore, we consider the median-coordinate approach estimates to be more plausible.

[2] The distance between two locations with coordinates (x,y) and (a,b) is computed according to the formula $[((x-a)*110.7)^2+((y-b)*84.1)^2]^{0.5}$ using the fact that 1° of geographical longitude is approximately equal to 84.1km and 1° of latitude is approximately equal to 110.7km..

$$y_i^* = \beta' \mathbf{x}_i + \varepsilon_i, \quad \varepsilon_i \sim N(0; 1); \qquad y_i = 1 \text{ if } y_i^* > 0, \, y_i = 0, \text{ if } y_i^* \leq 0, \qquad (1)$$

where y^* is unobserved latent variable, y is the enrollment indicator, $\mathbf{x}$ is a vector of different covariates described in details below, and ε is normally distributed error term.

a) *Family background*

As suggested by both theoretical literature (see for instance Ermisch and Francesconi (1999, 2001), Rey and Racionero (2002)) and substantial empirical evidence we include parental education as explanatory variables for educational choice of an individual. Recent empirical studies, which confirm that schooling decisions are affected by parental education, family income, gender, the presence, number and gender of siblings, rural-urban location, as well as county level socio-economic characteristics, include Dustmann et al (2002; UK), Al-Qudsi (2003; five Arab countries), Connelly and Zheng (2003; China), Bommier and Lambert (2004; Brazil), Chevalier (2004; UK), Corak et al (2004; Canada), Gündüz-Hoşgör and Smits (2005; Turkey).

Several empirical studies have found that number of siblings negatively affects propensity to enroll (see for instance Buchmann and Hannum (2001)). A common explanation is that the available resources (including parents' time) have to be divided among children. Bommier and Lambert (2004) test whether the impact of siblings is driven by competition for scarce resources or direct interactions between siblings. Their results show that although sibling rivalry exists, it does not exclusively arise from the competition for scarce resources and direct interactions are in place. Thus, number of siblings is included in the analysis; moreover, the model also differentiates between younger and older siblings and their gender.

b) *Costs of schooling*

We proxy forgone earnings by local labor market conditions. The commonly used measurement is local unemployment rate for individuals with low level of education. Rice (1999), for instance, shows that participation in further education in UK is higher in regions with higher unemployment. However, unemployment may not be so useful measure in the Albanian context given that many teenagers are working in family farms and nonagricultural business and thus would not be considered unemployed. Instead we use district level paid employment rates for the population aged 20-24 with basic education[3]. The easier is access to paid employment of individuals with just basic (8 years) education the higher are opportunity costs of secondary education. Also, proximity to big cities is considered to capture present

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[3] Gender-specific rates of paid employment for 20-24 years olds with basic education were computed for each of the 36 districts based on Population Census 2001.

employment opportunities and forgone earnings. On the other hand, living closer to cities may provide greater incentives for enrollment because employment opportunities for workers with higher level of education are presumably better in big cities. Therefore, *a priori* the effect of minimum distance to cities is not clear.

In order to measure direct costs of schooling we include variables to evaluate accessibility of secondary schools. First variable is whether a secondary school is present in the community. When it is not the case, the data provides information on cost of commuting to the main school serving the community.[4] Given that this data may be noisy, and in order to capture time costs as well, distance from the residence location to the main secondary school serving the community is added to the model. These variables turned out to be highly correlated in cities, but not in rural areas. Therefore, we exclude the commuting cost variable from the model for urban areas.

We hypothesize that prospects of enrollment in higher education after secondary education are important for the decision of completing secondary level of education itself. Here, we want to test how important are potential obstacles to enrollment in universities for completion of the secondary education. Given empirical findings of negative relationship between a distance from the universities and propensity to continue education (e.g. Frenette (2006)), distance to the closest university city is included in the model.

c) Other variables

As a proxy for school quality we use proportion of teachers with higher education. This variable is imputed from Population Census 2001 data in the following way: (i) the village (smallest territorial unit) where the main secondary school serving the community is located is identified from the LSMS 2002 community questionnaire; (ii) number of employed persons, whose workplace in April 2001 was this village and whose occupation code was "secondary school teacher," is found from Census individual records; (iii) proportion of persons with university education in this group is found from Census data. Typically there is one secondary school in the village with big cities being obvious exceptions.[5] In the latter case we rely on the assumption that proportion of teachers with university degree is homogeneous across schools in the city. This assumption seems to be plausible because overall variation of this indicator is not big: for 99% of the urban sample it ranges between 71 and 100 percent.

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[4] The main school is defined (according to the largest number of students from the given community) in the community questionnaire by the community leader). The cost is set to zero if there is a school in the community.
[5] Villages in the sense of the smallest territorial units include also big cities.

Additionally, the following variables were included in the model. Firstly, given that agriculture has the dominant role in the economy, those teenagers whose family owns land may be less likely to enroll in school and more likely to work in family's farm. Secondly, since 1989 Albania has experienced massive emigration (about 20 percent of population left the country – see for details Galanxhi et al (2003) and World Bank (2003)). To test whether education is perceived as a tool which facilitates emigration we examine whether individuals who have close relatives residing abroad are more likely to enroll in school.

Note that in this paper we focus on the obstacles to education and do not examine the payoff to secondary school graduates in the labor market in details. Simple indicators provide mixed evidence on returns to education in Albania. The following description draws from World Bank (2004) (based on Berryman, 2004; Hazans 2004a; Hazans 2004b; see Tables 4, 5 and Figure 4 for details). To start with, the highest unemployment rates are found for the labor force members with secondary education. On the other hand, completed secondary education (as opposed to basic) strongly reduces unemployment risk for urban men aged 25 to 34 and urban women of all ages. Earnings differentials between secondary and basic education are on average small but reach 20 percent for men in private sector and 40 percent for women in public sector. There are significant returns to a university education, both in terms of employability and in terms of earnings[6]. Yet unemployment rates among university graduates in 2002 were 7.4 percent for men and 9.6 percent for women – well below national average but high in absolute terms. The data indicate a 'low skills' equilibrium, with a small share of jobs that pay relatively well for those that have a university degree. Overall, the preliminary evidence from the data shows that the significant part of return to secondary education is linked to further returns to higher education.

5. Results

In this section we analyze the determinants of secondary enrollment for 14 to 19 years old Albanians with completed basic (8 years) education. The model is estimated separately for rural (columns (1) and (2) in Table 6) and urban population (columns (3) and (4) in Table 6). Specifications (1) and (3) are baseline models which control for household structure, parental education, community characteristics, and the distance variables: the distance to the closest

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[6] According to Mincer-type estimates (adjusted for weights and clustering on primary sampling units), an employee with university degree earns 72 percent more than otherwise similar employee with basic education.

secondary school, and the distance the to the closest university city. Specifications (2) and (4) add distance to non-university cities; in addition, models (3) and (4) have interaction effects of distance variables with year 2003. The results are presented in two parts: those concerning family background and those related to cost and quality of schooling.

a) Family background

The effect of family structure variables and parental education on secondary school enrollment is fairly standard. Parental education has a strong positive impact on enrollment. However, unlike many transition countries (see for instance Hazans et al (2005)), in Albania the effect of father's education is stronger and more significant than that of mother's education (with this pattern being more prominent in urban areas). In cities, mother's higher education appears to be insignificant. One possible explanation for this is that with very few exceptions, urban children who have mothers with higher education also have fathers with completed higher education level.

The gender gap in secondary school enrollment is found only in urban areas: other things equal, urban girls are significantly more likely than boys to study in secondary school (marginal effect is about 10 percentage points). Behavior of urban families which, other things equal, tend to send girls rather than boys to secondary school, is consistent with the fact that secondary education reduces unemployment risk for young urban females a lot stronger than for their male counterparts (Figure 4), while in rural areas the effect of secondary education on unemployment risk is equally weak for both genders.

As long as siblings are concerned, our findings suggest that both in cities and in rural areas presence of younger siblings decreases the propensity to enroll in secondary school, more so for urban population. This result is in line with the idea that in developing countries the cost of high fertility may be borne by older siblings, rather than by the parents (Buchmann and Hannum (2001)). The older children might run the household chores, do the farm work, or contribute to the household income. This result suggests that lack of public child care seems to be an obstacle for secondary school participation. Indeed, other things equal, propensity to enroll in secondary school in rural areas is 7 percentage points higher if a pre-school is present in the community. In cities, a similar effect is produced by the presence of a grandmother in the household.

Gündüz-Hoşgör and Smits (2005) argue that under the influence of patriarchal culture and due to the fact that girls most often out-marry into the family of their husbands, parents may prefer to invest in the education of their sons. This would imply that girls' enrollment chances

are lower if they have a higher number of brothers, and this effect is stronger than similar effect for boys. We found that this is the case in rural Albania, but only as long as older brothers are concerned. Interestingly, Gündüz-Hoşgör and Smits (2005) do not find significantly different impact of number of brothers on secondary enrollment of boys and girls in Turkey.

Children from rural families have higher enrollment propensity when household members have worked abroad in the last five years or have relatives who live abroad. One possible reason for this result is a wealth effect; another explanation is that contacts with outside world enhance understanding of the value of education, as well as provide better information flows about future prospects. We find the latter explanation to be more plausible given that this effect is not significant in the cities where information about education opportunities and returns to schooling is presumably easier to obtain[7].

Contrary to the anticipated negative effect of land ownership in rural areas, the results show that children from families who own land are more likely to be enrolled in secondary school. Possible explanation for it may be implicit wealth effect.

b) Measures for direct and indirect costs of schooling and quality of schooling

Access to school is a very significant factor for enrollment in secondary education, especially in rural areas. The absence of secondary school in the community in rural areas reduces propensity to enroll by about 17 percentage points. Furthermore, a 10 leks increase in one-way commuting costs from the community of residence to a secondary school (which varies from 0 to 80 leks for 90% of the sample and from 100 to 300 leks for remaining 10%) reduces enrollment by 2 percentage points.

Distance to the main school serving the community has negative impact on participation in secondary education. These findings are in line with the previous research on the impact of the distance from schools on enrollment rates. However, we also show that the magnitude of the effect is substantial: doubling the distance would lead to a fall in secondary school enrollment by 17 percentage points in rural areas and by 20 percentage points in cities.

To assess opportunity costs of continuing education we look at the local labor market condition. Easier access to paid employment for young individuals with basic education has negative and significant effect on secondary enrollment in both rural and urban areas. In rural areas importance of social capital and information availability is highlighted by the fact that

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[7]Also, this result is robust to different specifications when we control for family income.

enrollment is higher in communities located in districts where share of population with at least secondary education is higher.

School quality appears to be important for enrollment decision: a 10 points increase in proportion of highly educated teachers raises enrollment by 2 and 8 percentage points in rural and urban areas, respectively. Even more importantly, proximity to a university city (as opposed to other urban centers) substantially increases likelihood of secondary enrollment in rural areas. In urban areas, a similar effect has emerged in 2003, plausibly as a response to opening the market for private universities.

The above findings suggest that developing child-care system and tertiary education might be efficient policy alternatives to building new schools.

6. Conclusion and policy implications

This paper analyzes the determinants of participation in secondary education and examines reasons for low enrollment rates in secondary schools in Albania in 2002-2003. Our results are consistent with the previous research on determinants of educational attainment in showing that parental education and household structure are important for the decision to continue education after basic schooling level. Moreover, easier access to both secondary schools and universities appear to have a significant positive impact on propensity to enroll in secondary education.

While low income and poor access to schools appear as important obstacles to enrollment, which justify school subsidies introduced in 2002, there seems to be some cost efficient alternative to building new schools. Potential obstacles to enrollment in higher education, such as large distance from universities on one hand, and lack of public child care on the other, decrease substantially the likelihood of secondary enrollment in rural areas. The above findings suggest that developing tertiary education (including private) might be efficient policy alternatives to building new schools. Additionally, there is some evidence of the need for better information about education opportunities and returns to schooling.

Increasing proportion of secondary school teachers with university education in urban schools where it is below 80 percent (perhaps even considering fast-track schemes of re-qualification of currently unemployed persons with higher education) is another possibility. Enhancing availability of public child-care system would increase enrollment of children with younger siblings.

To see the whole picture of participation in secondary education one needs to pay closer attention to incentives for enrollment. In particular, issues that require further research are how many graduates from secondary schools intend to enroll into higher education; what are the returns to schooling for secondary school graduates and university graduates in terms of wages and employment stability, adjusted for sample selectivity.

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Table 1. Net enrollment rates by age or level.
Albania (2002), selected transition countries, and OECD (2001)

Country	Net Enrollment rates for 5-14 year olds (Basic)	Enrollment rates for 15-19 year olds (Secondary)	Enrollment rates for 20-29 year olds (Tertiary)
Czech Republic	97.2	75.0	21.2
Hungary	99.4	79.0	20.0
Poland	94.3	85.5	25.8
Slovak Republic	97.9	74.6	12.0
Russian Federation	83.3	70.8	15.4
OECD mean	98.2	77.7	21.8
Albania	**93.3**	**38.7**	**8.7**

Source: Berryman, 2004 (based on OECD, 2003a, p.258, table C1.2 and Albanian LSMS 2002 data).

Table 2 Educational attainment of adult population
and enrollment into further education of the youth
in the EU and selected countries of Central and South-Eastern Europe, 2002

	EU-15	ACC-12	SI	BG	HU	RO	CY	EL	AL
Education	Percent distribution of population aged 25-64 by highest level of completed education								
Basic or less	35.4	19.3	23.2	28.5	28.6	28.9	33.5	47.3	65.3
Upper secondary	42.9	66.2	62.1	50.4	57.3	61.1	37.4	35.1	28.5
Tertiary	21.8	14.5	14.8	21.1	14.1	10.0	29.1	17.6	6.3
	Enrollment in further education of population aged 18-24 with basic education or less								
	81.2	91.3	95.2	79.0	87.7	76.8	86.0	83.9	9.1

Notes: ACC-12 refers to average indicators for the ten new EU members, Bulgaria, and Romania. Country abbreviations: CZ – Czech R., SI – Slovenia, SK – Slovak R., RO – Romania, HU – Hungary, BG – Bulgaria, EL – Greece, AL – Albania. Albanian data refer to the 2001 (distribution) and 2002 (enrollment). *Source*: Calculation based on LFS data presented in Franco-Blondal (2003) and Franco-Jouhette (2003); for Albania – Census 2001 data, and LSMS 2002 data.

Table 3. Mean characteristics of urban and rural 14-19 year olds with basic education

	Urban	Rural		Urban	Rural
Enrolled in secondary school: 2002	0.678	0.273	Age	16.589	16.454
2003	0.763	0.360	Female	0.501	0.558
Mother's education			**Father's education**		
Secondary	0.217	0.036	Secondary	0.182	0.072
Vocational	0.230	0.082	Vocational	0.256	0.150
Higher	0.092	0.007	Higher	0.154	0.032
Unknown	0.020	0.009	Unknown	0.048	0.071
Household characteristics			**Community characteristics**		
Number of siblings (excl. respondent)	3.318	4.881	District urban/rural population with upper secondary or higher education, %	42.25	14.41
Number of younger siblings	1.249	1.834	District level paid employment rate in 2001 among those aged 20-24 with just basic education, %	5.811	3.506
Number of sisters	1.142	1.916	Preschool is present in the community	1.000	0.548
A grandmother lives in the household	0.151	0.174	Secondary school is present in the community	0.893	0.207
A grandfather lives in the household	0.068	0.062	Number of secondary school teachers	37.782	16.580
HH members worked abroad in the last 5 years or have children living abroad	0.402	0.501	Percentage of secondary school teachers with higher education	93.478	84.138
HH owns agricultural land	0.141	0.927	Students-teachers ratio	20.026	18.496
Main source of household income in the next 12 months[a]			Secondary school is more than 20 km away from the community	0.000	0.057
Work in the civil service	0.229	0.096	Closest secondary school has less than 10 teachers	0.057	0.338
Work in the private sector	0.612	0.436	One way cost of commuting to the main secondary school (leks) [b]	0.000	26.091

Table 3 continued. Mean characteristics of urban and rural 14-19 year olds with basic education

	Urban	Rural		Urban	Rural
Own business or farm	0.065	0.346	Distance[b] to the main secondary school serving the community	0.209	6.702
Transfers or charity	0.073	0.057	**Distances (from the household)**		
Other	0.022	0.066	To the secondary school attended [c]	2.412	5.874
Regions			Distance[d] to the main secondary school serving the community	1.681	3.081
Tirana	0.265	---	Minimum distance[d] to a university city	18.262	30.213
Central Albania	0.314	0.531	Minimum distance[d] to a city with > 2000 paid jobs	7.828	20.441
Coastal Albania	0.354	0.271	Minimum distance[d] to a district center or a city with > 2000 paid jobs	1.903	9.829
Mountain Albania	0.067	0.198			

Notes: [a] 2002 year only. Current or last occupation. [b] Community level data reported by the community leader. Mean actual self-reported transportation costs for urban areas are 1836 leks per month. [c] Students only; self-reported road distance. [d] Calculated straight line distance.

Table 4. Labor market status by gender and education (population aged 15-64). *Percent*

Employment Status	Men, by education			Women, by education		
	Basic or less	Secondary	University	Basic or less	Secondary	University
Employed	67.7	74.3	82.9	50.0	49.5	76.3
Paid employment, percent of total	27.6	51.6	83.9	8.7	45.2	89.9
Worked < 40 weeks in the past 12 months[a]	38.3	25.9	11.5	44.8	28.9	18.9
Unemployed 1 [c]	8.0	10.5	4.4	4.0	10.8	3.9
Unemployed 2 [d]	5.2	4.4	2.3	5.0	5.6	4.1
Labor force participation rate 1 [e]	75.7	84.8	87.3	54.0	60.2	80.2
Labor force participation rate 2 [f]	81.0	89.2	89.6	59.0	65.9	84.4
Unemployment rate 1: Unemployed 1/Labor force 1	10.6	12.4	5.0	7.5	17.9	4.9
Unemployment rate 2: Unemployed (1+2)/Labor force 2	16.3	16.8	7.4	15.3	24.9	9.6

Source: Calculation based on LSMS 2002 data. *Notes*: [a] Percent of employed who keep current job for at least one year. [b] <35 hrs per week. [c] Standard ILO definition. [d] Relaxed definition: includes persons not looking for a job in the past 4 weeks but ready to start in two weeks once a job is available (e. g. discouraged workers, seasonal workers etc.). [e] Employed + Unemployed 1. [f] Employed + Unemployed 2.

Table 5. Wage ratio by education, ownership sector, and gender. Albania, 2002.

Education	Wage ratio by education					
	Men			Women		
	Private Sector	Public sector	National average	Private sector	Public Sector	National average
Secondary/Basic	1.21	1.13	1.09	1.07	1.41	1.16
University/secondary vocational	1.60	1.54	1.36	2.57	1.44	1.62
University/secondary general	1.73	1.50	1.42	2.95	1.50	1.73

Source: Berryman, 2004 (based on LSMS 2002 data)

Table 6. Determinants of secondary education enrolment of 14-19 years old Albanians, 2002-2003.
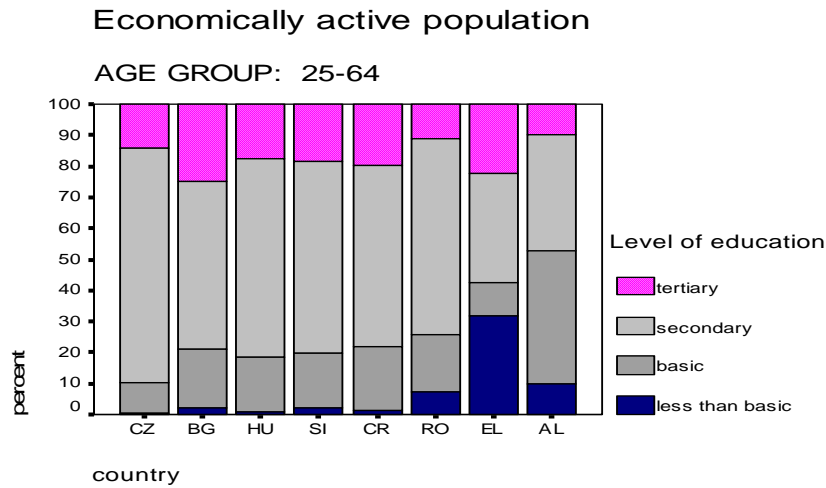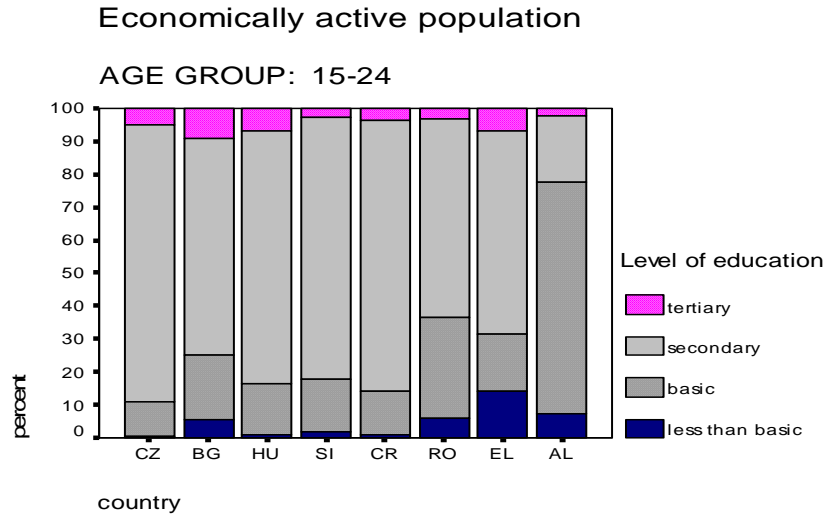
	(1)			(2)			(3)			(4)		
	Rural (mean Y= 0.282)						Urban (mean Y= 0.691)					
	dY/dX	z-value		dY/dX	z-value		dY/dX	z-value		DY/dX	z-value	
Age	-0.050	-4.57	***	-0.050	-4.56	***	-0.057	-4.75	***	-0.055	-4.72	***
Female	-0.055	-1.44		-0.055	-1.44		0.118	3.28	***	0.120	3.34	***
Parental education (vs. basic or less)												
Mother: secondary	0.115	1.37		0.105	1.23		0.182	3.85	***	0.174	3.77	***
Mother: vocational (Rural: vocational or higher)	0.154	2.86	***	0.155	2.82	***	0.120	2.19	**	0.109	2.04	**
Mother: higher	---	---		---	---		0.093	1.05		0.103	1.06	
Father: secondary	0.221	2.82	***	0.220	2.81	***	0.180	3.14	***	0.177	3.09	***
Father: vocational	0.210	4.06	***	0.214	4.14	***	0.209	3.78	***	0.208	3.75	***
Father: higher	0.230	2.17	**	0.222	2.14	**	0.371	5.39	***	0.362	5.46	***
Household characteristics												
Number of younger brothers	-0.012	-0.60		-0.014	-0.67		-0.066	-2.78	***	-0.069	-2.91	***
Number of older brothers	-0.027	-1.59		-0.027	-1.59		0.003	0.14		0.001	0.07	
Number of younger sisters	-0.033	-1.98	**	-0.033	-1.96	**	-0.101	-4.14	***	-0.098	-4.18	***
Number of older sisters	0.016	1.06		0.016	1.06		-0.024	-1.52		-0.027	-1.76	*
A grandmother lives in the HH	0.019	0.45		0.015	0.36		0.087	1.89	*	0.086	1.84	*
A grandfather lives in the HH	-0.087	-1.05		-0.084	-1.01		-0.217	-2.59	***	-0.214	-2.51	**
HH members have children living abroad or worked abroad in the last 5 years	0.081	2.28	**	0.081	2.30	**	0.007	0.13		0.001	0.03	
Household owns land	0.174	2.70	***	0.164	2.53	**	-0.036	-0.85		-0.031	-0.71	

Table 6 continued. Determinants of secondary enrolment of 14-19 years old Albanians, 2002-2003.

|	(1)			(2)			(3)			(4)		
	Rural (mean Y= 0.282)						**Urban (mean Y= 0.691)**					
	dY/dX	z-value		dY/dX	z-value		dY/dX	z-value		DY/dX	z-value	
Community characteristics												
Secondary school is present in the community	0.167	3.20	***	0.173	3.22	***	0.075	1.96	**	0.086	2.25	**
Percentage of teachers with higher education among secondary school teachers serving the community	0.002	1.74	*	0.002	1.65	*	0.008	2.26	**	0.008	2.60	***
One way cost of commuting from the community to school	-0.002	-3.62	***	-0.002	-3.68	***	---	---		---	---	
Pre-school is present in the community	0.071	1.89	*	0.071	1.83	*	---	---		---	---	
District population with upper secondary or higher education, %	0.034	3.93	***	0.034	4.04	***	0.008	1.28		0.011	1.61	
Gender-specific paid employment rate among those aged 20-24 with just basic (8 years) education: log(district rate/national average)	-0.058	-2.44	**	-0.055	-2.23	**	-0.075	-2.68	***	-0.079	-2.95	***
Distances												
Log of distance to the main secondary school serving the community	-0.024	-2.75	***	-0.023	-2.63	***	-0.029	-2.01	**	-0.023	-1.61	
Log of min distance to a university city	-0.064	-2.00	**	-0.051	-1.51		0.010	0.85		-0.012	-0.74	
Log of min distance to a non-university city	---	---		---	---		---	---		-0.029	-2.41	**
with more than 2000 employees	---	---		0.017	0.81		---	---		---	---	
with less than 2000 employees	---	---		0.010	0.55		---	---		---	---	
Year 2003	0.043	1.18		0.044	1.23		0.145	2.90	***	0.141	2.91	***
Log of minimum distance to a university city*year 2003	---	---		---	---		-0.032	-2.73	***	-0.030	-2.55	**
Log of min distance to a non-university city* year2003	---	---		---	---		---	---		0.010	0.86	
# obs.	953			953			770			770		
Pseudo R-squared	0.3085			0.3095			0.4092			0.4165		

Notes: not reported controls: regions (Tirana city, Coast, Mountains and Central Albania); dummies for missing parents. ***, **, * indicate that underlying coefficients are significantly different from zero at 0.01, 0.05, 0.10 level respectively, based on robust standard errors adjusted for clustering on communities.

Figure 1. Educational attainment of labor force in selected countries of Central and South-Eastern Europe, 2001

Economically active population

AGE GROUP: 15-24


Economically active population

AGE GROUP: 25-64

Notes: Country abbreviations: CZ – Czech R., BG – Bulgaria, HU – Hungary, SI – Slovenia, CR – Croatia, , RO – Romania, EL – Greece, AL – Albania. *Source*: Calculation based on LABORSTA data (www.ilo.org).

**Figure 2. Secondary school enrollment rates in selected CEE and SEE countries, 1989-2001**
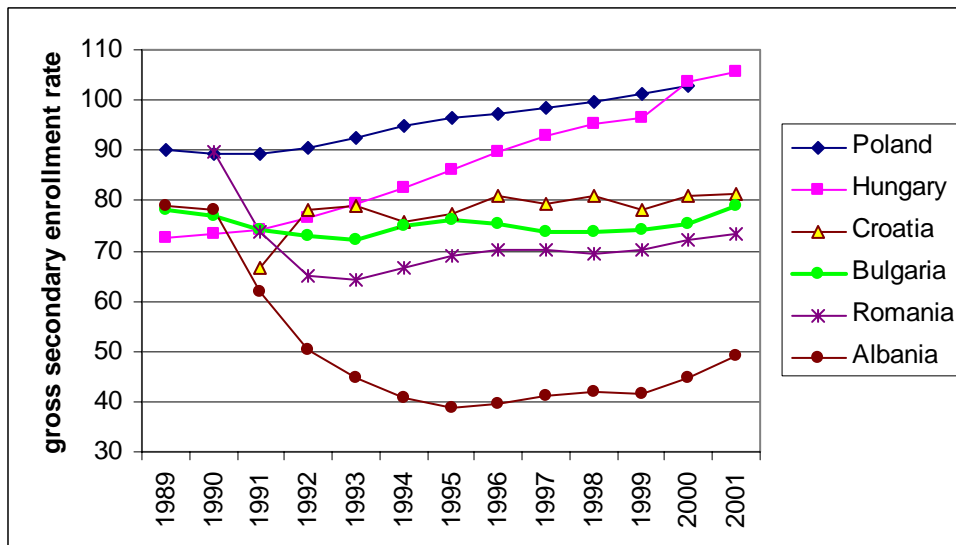
Source: UNICEF.

Figure 3. Employment by sector in selected CEE and SEE countries, 2002.
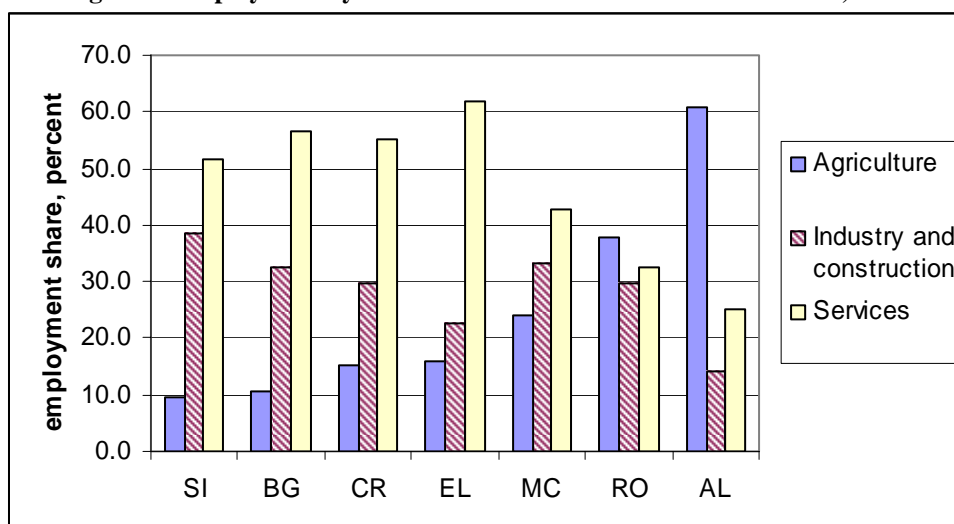
Notes: SI – Slovenia, BG – Bulgaria, CR – Croatia, EL – Greece, MC – Former Yugoslav Republic of Macedonia, RO – Romania, AL – Albania. *Sources:* Calculation based on LFS data presented in Franco-Blondal, 2003, LABORSTA database, and Albanian LSMS 2002 data.

Figure 4. Unemployment risk[a] for economically active Albanians (students and pensioners excluded) by years of schooling and residence. April 2001

a) men, aged 25-34 [b]

b) women, aged 15-64 [c]
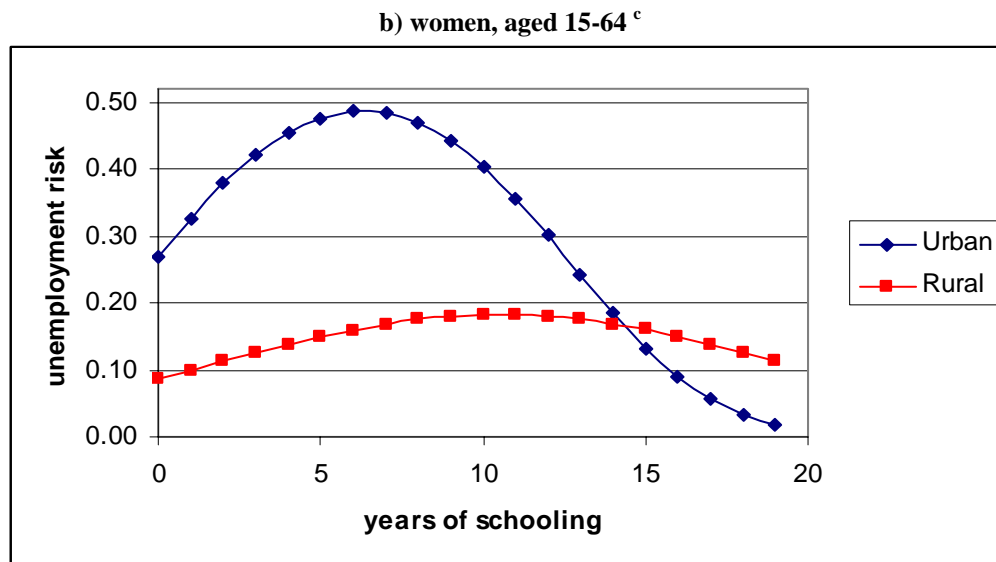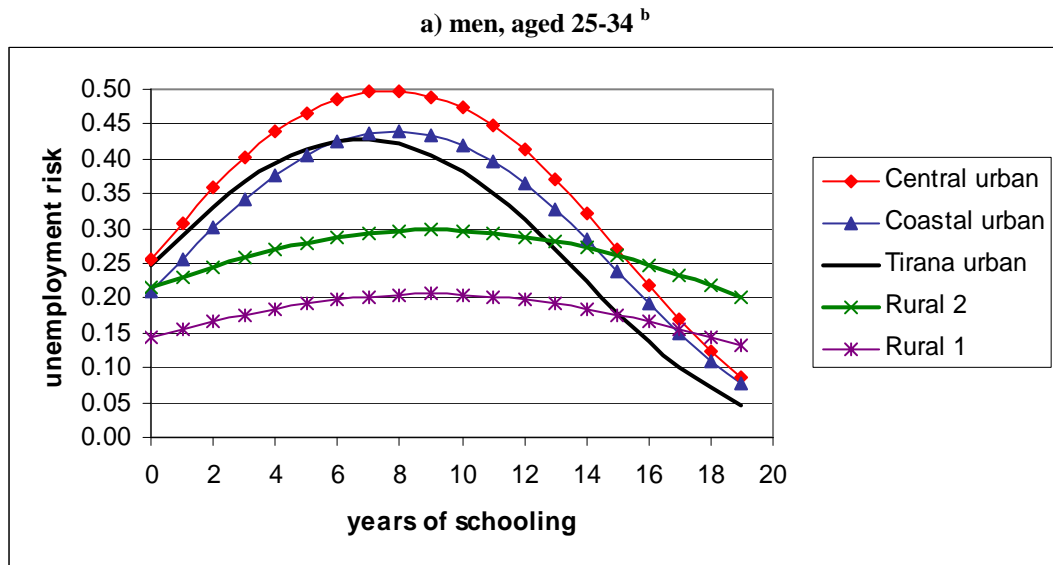
Notes: [a] Profiles are based on a logit model with the following controls: six age groups; marital status (for women also number of children and number of adult women in the household); [number of years of] schooling and schooling squared; dummies for residence in urban area, Coastal Albania, Mountain Albania and Tirana city, as well as their interactions with schooling and schooling squared; dummies for post-1989 immigrants from abroad and from other districts; dummy for having agricultural land located in the district of residence and belonging to a household member.

[b]*Coastal urban, Central urban, Tirana urban, and Rural 2* – marital status, migration history and agricultural land ownership fixed at average level for *urban* men aged 25-34, hence comparing these four curves allows to find net effect of residence on unemployment risk.

Rural 1 – marital status, migration history and agricultural land ownership fixed at average level for *rural* men aged 25-34. Hence difference between *Rural 2* and *Rural 1* is due to the difference in average characteristics (except schooling) of urban and rural men, main factor being agricultural land ownership.

[c] Both in *Urban* and *Rural* profiles characteristics other than residence and schooling are fixed at their mean values for the whole sample, hence comparing these two profiles allows to find net effect of urban residence on unemployment risk.

Source: Calculation based on 2001 Population Census data (796378 observations for men, 546257 observations for women; only respondents aged 15 to 64 included).