

The
**Carl Beck
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Enrollment in Albania:**
What Drives Household
Decisions?



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Mieke Meurs is Professor of Economics at American University, Washington, DC. She received her PhD in Economics from the University of Massachusetts. Her current research interests include comparative economic development and institutionalist and behavioralist approaches to microeconomic analysis. She is currently researching the economic behavior of land holding households in Bulgaria and household decisions about maternal healthcare in Central Asia.

Juna Miluka received her PhD in Economics from American University in 2009 with a thesis titled: *Education, Migration, and Labor Markets In Albania: A Gender Perspective*. She is now Assist. Prof. of Economics, University of New York, Tirana Albania.

Tom Hertz is an empirical microeconomist with interests in 1st, 2nd, and 3rd world labor markets. He completed this work while on faculty at the International University College of Turin, whose generosity he gratefully acknowledges.

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Abstract

Many post-socialist countries have seen a decline in school enrollments, especially at the secondary level, and declines in average school attainment (Hertz, Meurs and Selcuk, 2009). The declines in enrollment rates may be temporary, but the effects may persist across generations, given the generally high correlation between parent and child educational outcomes.

In this paper, we examine secondary schooling dynamics in Albania, where enrollment declines have occurred. We examine both demand- and supply-side factors which might underlie household-level enrollment decisions. Using Living Standard Measurement Surveys from 2003 and 2003, we find that, as in other countries, parental education is a significant predictor of secondary school enrollment, but we also find that economic and social changes related to transition appear to play a role. Many of our findings are line with other recent work on this topic, although some differ, suggesting that enrollment dynamics may be changing over time.

The postsocialist transition in former Soviet bloc nations resulted in a well-known, radical decline in GDP. In 1998, only Poland, Slovakia, and Slovenia had regained their 1989 levels of economic output, and most countries remained 30 -40 percent below 1989 levels (UNICEF 1999). By 2000, most postsocialist economies had returned to growth (World Bank 2001, 2002). But in countries where downturns were deeper and longer, the associated dislocation had a negative impact on human development indicators (Meurs and Ranasinghe 2003). These changes may, in turn, have long-term effects on the development trajectories of the effected countries.

Education is one area of concern. Former socialist countries made significant progress in increasing educational access and attainment during the middle decades of the twentieth century. In most cases starting from high levels of illiteracy and low levels of school attainment (see, for example, Perrie and Davies 1990, 38; Turnock 1986, 127, 128), by 1989 most socialist countries could boast of universal literacy and reasonably high levels of secondary school enrollment and attainment (WDI 2000; UNDP 1990). But in recent years, former socialist countries have seen a decline in educational spending, accompanied by high unemployment rates and rising poverty. In some cases, this has been associated with a decline in school enrollments, especially at the secondary level, and declines in average school attainment (Hertz, Meurs, and Selcuk 2009).

The declines in enrollment rates may prove to be temporary, with improvements occurring as economic transition progresses. But the effects of even a temporary downturn may persist across generations and significantly impact the long-run growth trajectories of affected countries, for three distinct reasons. First, there is a documented causal connection between parental education and the educational attainment of children (Black, Devereux, and Salvanes 2005; Oreopoulos, Page, and Stevens 2006), although estimates of its magnitude vary (Holmlund, Lindahl, and Plug 2008). Second, lower parental education leads to lower parental income, which, in a world of imperfect credit markets, will lead to further reductions in educational attainment in the next generation (Haverman and Wolfe 1995; Lillard and Willis 1994), particularly in an environment in which the costs of schooling are increasingly being born by families rather than by the state. Third, there is macroeconomic evidence that lower average levels of education lead to lower levels of both domestic and foreign direct investment at the national level (Noorbakhsh and Paloni 2001) and hence lower rates of growth (Barro and Lee 1994).

In this essay, we examine the dynamics of secondary schooling in Albania, where enrollment declines have occurred. Output fell dramatically in Albania after 1989, but economic growth resumed fairly quickly. Despite the quick return to mac-

roeconomic growth, gross secondary school enrollments have fallen dramatically, from 78.8 percent in 1989 to a low of 38.6 percent in 1995, then climbing somewhat to 50.3 percent in 2002 and 58.7% in 2005 (Transmonee 2005, 2007).

Drawing on the existing literature on household investment in schooling, we analyze both demand- and supply-side factors that might underlie household-level enrollment decisions. We estimate a reduced form model of the relationship between enrollments and these demand- and supply-side factors, in order to better understand the relative roles of access, household characteristics, and economic context on enrollments. We use the 2002 and 2005 Albania Living Standards Measurement Surveys (World Bank 2002, 2005)¹ to estimate a cross-sectional probit regression, with secondary school enrollment status as the dependent variable. We find that, as in other counties, parental education is a significant predictor of secondary school enrollment, but we also find that economic and social changes related to transition appear to play a role. Household economic resources and local employment prospects (both of which worsened radically during the early transition years and remain very depressed in many areas, despite the return to economic growth), opportunity costs of children's time (which may have risen with transition, as informal employment opportunities, especially in agriculture, increased), and access to school (which has become more difficult because many schools have been closed, particularly in rural areas) are all significant predictors of schooling decisions in Albania over this period.

Our findings are line with some of the conclusions from other recent work on this topic, including Palomba and Vodopivec (2001) and Hazans and Trapeznikova (2006), who draw on data from 1999 and 2002 respectively. Our replication of their findings using later data and different proxies strengthens the conclusions that parental income and education, school access, and opportunity costs of children's' time are important factors in secondary schooling decisions in postsocialist Albania. Other findings differ, suggesting that perhaps determinants of enrollment are evolving over time. We embed our findings somewhat more deeply than other authors in our discussion of broader changes in schooling and the economic context of postsocialist Albania, in order to highlight areas where policy interventions may positively affect long-term outcomes, and we detail these policy issues in a concluding section.

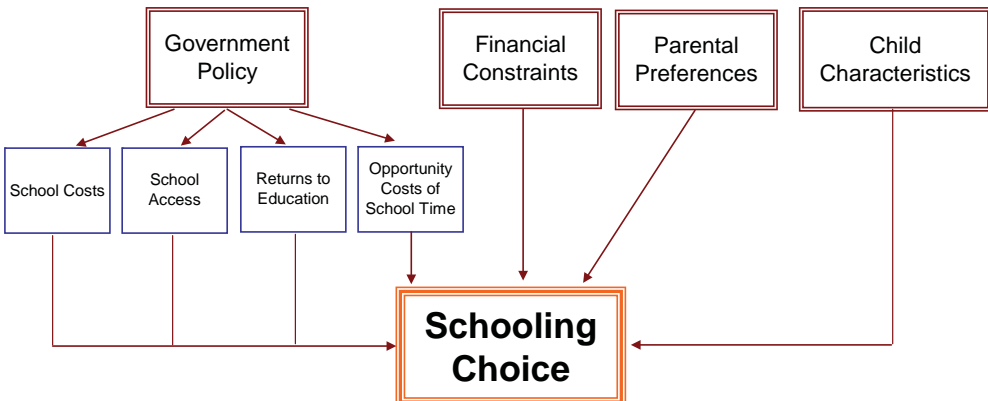
Explaining Household Choices about Schooling

Economics and sociology provide a well-developed theoretical framework for understanding investments in schooling. In the most comprehensive framework,

decisions to invest in further schooling are modeled as a set of sequential choices. First, government policy (and other extrahousehold factors, including firm investment decisions) determines the choice sets available to parents and children (Buchmann and Hannum 2001; Connelly and Zheng 2003). This includes determination of legal access to and costs of schooling, as well as school quality. Government policy also influences to some degree the returns to schooling and to other potential household investments, and the macroeconomic context of household choice.

Parents then make decisions regarding investments of time and money in children and their schooling, and children, in turn, make decisions about schooling investments (Buchmann and Hannum 2001). Parents and children weigh direct and opportunity costs of schooling against expected returns to their educational investments (Becker 1964). These costs and expected returns vary across households, due in part to variations in parental characteristics, such as their own education. Parental education should operate both as an indicator of parents’ preferences for education (which they may also instill in their children) and of their ability to educate their children directly, allowing them to do better, and so go farther in school. Parental education may also be a signal of higher latent intellectual ability, which may be shared by their children. In the inevitable absence of perfect capital markets, parental income also has an important impact on schooling choices, as already noted. Further, parental preferences may vary with the age and sex of the children. The resulting model of choice is summarized in figure 1.

Figure 1: Household Schooling Choice



Empirical studies typically focus on a reduced form of these relationships, modeling the parents' choice to invest in their children's education as function of parental characteristics such as their own education and income. Studies that also control for the economic and policy context typically demonstrate that the inclusion of policy variables reduces the apparent role of family background. One important way that government policy may influence educational outcomes is by affecting access to and costs of schooling. While primary and secondary schooling are often nominally free, or involve only minimal fees, the full cost of schooling is often quite large, and these costs are heavily influenced by government policy. These costs include direct fees, the costs of school supplies, transportation, and clothing (uniforms, shoes), as well as the opportunity costs of children's time.

In Malaysia, government policies expanding access to education contributed significantly to children continuing longer in school over the period 1950–1980 (Lillard and Willis 1994, 1161). A rapid school construction program in Indonesia starting in 1973 also raised schooling attainment for men (Duflo 2001), while for women it appears that the elimination of school fees and the imposition of compulsory secondary schooling had a greater impact on schooling (Jayasundera 2008). Socialist countries likewise pursued large-scale expansion of access to education. Ganzeboom and Nieuwbeerta (1999, 352) find that these policies had a significant impact on household choice with respect to schooling, reducing by half the partial correlation between parental education and the education of their children between 1940 and 1985. Heyns and Bialecki (1993) also find a positive impact on expanded school access in Poland between 1920 and 1969.

Finally, government policy affects expected returns to education, by affecting the macroeconomic climate, firm investment patterns, and labor laws. Looking at Bulgaria during the postsocialist period, Hertz, Meurs, and Selcuk (2008) argue that changes in the availability and cost of schooling, and in the expected returns to education, reduced educational attainment.

Background

Schooling in Albania

Broad access to comprehensive schooling is a relatively recent development in Albania. Widespread access to education, especially secondary education, became possible only after the 1960s. Prior to the end of Ottoman control in 1912,

there was little schooling in the Albanian language. In 1934, a school reform law imposed compulsory schooling through the age of fourteen. Efforts to enforce this were only beginning, however. The total number of students enrolled in primary or secondary schools rose from almost twenty-seven thousand in 1934 to about sixty thousand by 1938. An estimated 30–40 percent of villagers and 60 percent of the urban population had achieved literacy by 1942 (Thomas 1969, 1–7).

When an expansion of secondary schooling was planned in 1938, emphasis was placed on technical education. Little progress was made on school expansion from 1938 to 1944, however, and by the end of World War II the majority of the population remained illiterate (Bassler 1995, 307). After 1944, the new communist government extended the age of compulsory schooling to fifteen, and called for establishing a five-year primary school in every village. As shown in table 1, by 1955 there were 2192 secondary schools, and there were 2249 primary schools by 1958. The number of students in primary and secondary school had risen to 218,143 by 1956, for an annual rate of increase of 7.4 percent since 1938. Nonattendance continued to be a problem, however (Thomas 1969, 34–39). In 1957, the first Albanian university opened.

By 1966, 43 percent of middle school students were girls, as were about 22 percent of 12,761 students attending the university in Tirana (Thomas 1969, 42–99). Throughout the expansion of schooling, the emphasis continued to be on practical training and developing links between education and work, especially at the secondary school level.

Figure 2 shows a clear increase in average schooling for those educated after the war. Those who were sixty-nine at the time of the 2005 survey (so born in 1936 and educated from 1943 on) completed about 5.5 years of schooling on average. Average years of schooling grew steadily to 10 years or slightly more for the cohorts born over the next fifteen years. Since that time (i.e., for those fifty or younger in 2005, born after 1955 and educated after 1962), average educational attainment has more or less held steady at between 10 and 11 years.² In 1990, (gross) primary school enrollment rates were around 100 percent and secondary school enrollment rates were around 80 percent (Palomba and Vodopivec 2001; Transmonee 2007). About 80 percent of the population was literate in 1991 (Bassler 1995, 307).

Children younger than about twenty-five in 2005 may not yet have completed their education, so average attainment cannot be measured accurately. Instead, for the more recent cohorts we can look at enrollment trends. With the transition from socialism, gross primary school enrollments, which had been near 100 percent, fell significantly to about 90 percent in 1999 and have hovered around that level since.

Table 1: Secondary School Dynamics in Albania, 1938–2000

Year	Gross Enrollment Ratio, Upper Secondary	Secondary Schools		Vocational Secondary Schools	
		Total	Rural	Total	Rural
1922*		2			
1938*		18			
1945*		175			
1955*		2192			
1990	82	827	568	575	438
1991	62	763	510	209	114
1992	50	650	428	95	17
1993	45	577	371	87	18
1994	41	472	288	69	8
1995	39	430	269	50	1
1996	39	408	259	51	2
1997	41	400	252	60	5
1998	42	394	243	54	1
1999	42	386	n.a.	51	n.a.
2000	45	375	n.a.	50	n.a.
2001	48	372	n.a.	51	n.a.
2002	50	n.a.	n.a.	n.a.	n.a.
2003	53	308	218	50	3
2004	58	n.a.	n.a.	n.a.	n.a.
2005	59	355	215	34	5

Sources: Transmonee 2005, 2007; INSTAT 2003; Palomba and Vodopivec 2001; Ministry of Education and Science 2007; Thomas 1969, 7, 46.

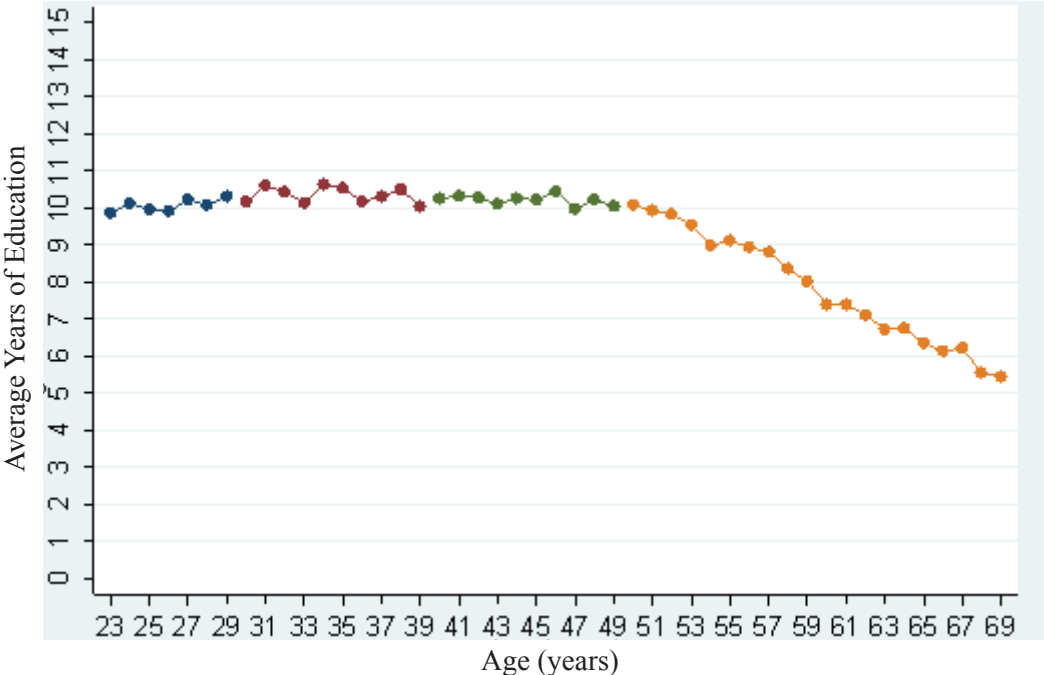
*Includes all schools beyond the seventh grade; for the later period, secondary school is from eighth grade.

Upper secondary gross enrollments, for children fifteen to eighteen, fell more dramatically, from 82 percent in 1990 to around 41 percent for the period 1996–1999 (Transmonee 2007). Secondary school enrollments fell even farther in rural areas (Palomba and Vodopivec 2001, 62).

Beginning in 1999, upper secondary school gross enrollments began to recover somewhat, to 59 percent in 2005. These levels are still well below those of 1990, however, and are the lowest among transition economies outside Central Asia (Transmonee 2007). Figure 3 shows the (net) enrollment of the secondary school-aged children (fourteen and older) who appear in this study, for the years 2002 to 2005.

The low secondary school enrollment rates contribute to low rates of university enrollment. Despite recent increases in part-time students in Albanian universities and Albania’s efforts to reform the university curriculum in line with the Bologna

Figure 2: Average Educational Attainment by Age



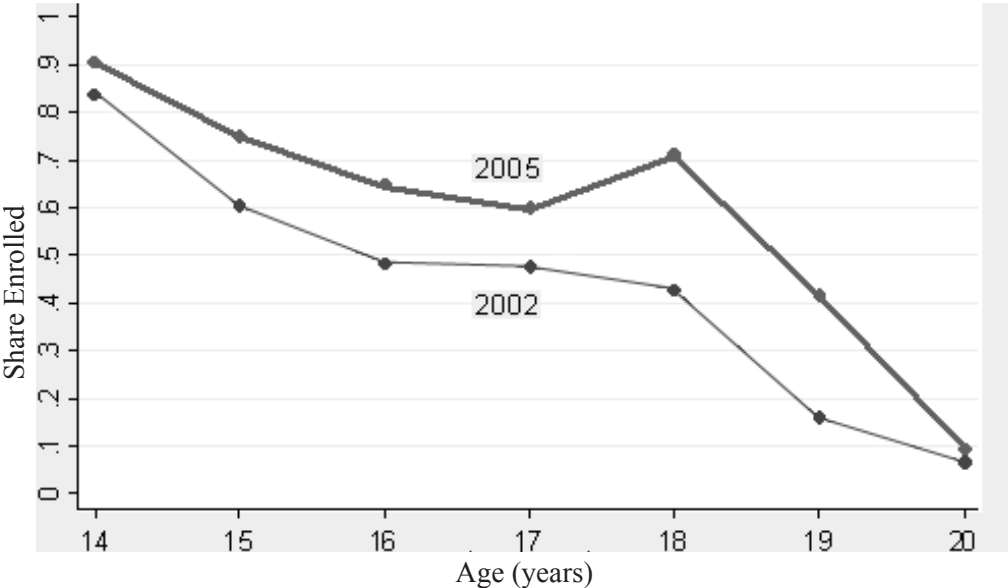
Source: ALSMS (World Bank 2005).

Declaration (Berryman, 2000; Ministry of Education 2003), Albania had a gross enrollment rate for university students of only about 15 percent, the lowest among OECD countries (OECD 2008).

Underlying Factors

In postsocialist economies, the radical changes since 1989 have significantly affected the context of parental and student schooling choice. Changes in government spending and policies have reduced access to, and the quality of, secondary schools, while also affecting the costs of schooling, as school fees have risen (see table 2). The well-known postsocialist economic downturn has affected employment opportunities, expected returns to education, and households' ability to pay schooling costs. Parents' and children's preferences may also have changed, as

Figure 3: Net Enrollment Rates by Age, 2002 and 2005



Sources: ALSMS (World Bank 2002, 2005).

Table 2: Average Monthly Costs of Secondary School, Albania 2002, 2005

Expenditure	Amount*			
	2002		2005	
	Mean	Std	Mean	Std
School fees	20.9	367.6	186.9	1260.6
Uniforms	23.6	97.8	26.9	85.5
Textbooks	133.9	107.1	112.5	153.7
Supplemental textbooks	n.a.	n.a.	40.6	73.2
Materials	55.6	66	66.2	65.2
Lodging	51.7	460	81.9	653.8
Excursions	n.a.	n.a.	72.6	176.3
Other educational expenditure	20.7	106.7	40.3	185.6
Transportation	227.5	1805	172.6	478.8
Tutor	306.1	1686.9	326.2	1689.7
Gifts to teachers	n.a.	n.a.	15.1	51.7
School service	10.3	18.8	0.2	5.8
Total educational expenditures	850.3	2555.5	1129.2	2508.7

Source: ALSMS (World Bank 2002, 2005).

* Measured in real 2002 lek

traditional cultural values, which place less value on education, have experienced a revival, at least in some areas (Silova and Magno 2004). The expected returns to education, household preferences, and ability to pay, may be thought of as affecting the demand for education, while costs and availability of secondary schooling reflect supply-side factors influencing schooling choice. In this section, we outline changes in these variables. In the following section, we evaluate their role in explaining the currently low levels of secondary school enrollment.

Postsocialist school reform in Albania concentrated on modernizing teaching methodologies and curricula and did not introduce significant changes in the overall structure of school, such as the age of compulsory schooling or the organization of primary and secondary schooling (Ministry of Education and Science 2003). However, changes in government spending, and other policy changes, have significantly affected access to schools over the period 1989–2005. Government spending on education as a share of GDP fell from 4 percent in 1989 to 2.7 percent in 1999, as real GDP fell and remained below previous levels (UNICEF 2003, 95). Real spending on education thus fell dramatically (see table 3). Despite the decline in

Table 3: GDP, Education Spending, and Employment: Albania 1990–2005

Year	Real GDP per capita (Index)	Education Spending as % of GDP	Real Education Spending per capita (Index)	Population Aged 5–17 (Index)	Employment as % of Population Aged 15–59
1990	100.0	4.2	100	1261	73.6
1991	72.4	5.0	86.1	99.7	74.4
1992	67.9	4.2	67.8	99.0	59.7
1993	75.3	3.3	59.1	98.6	57.1
1994	83.7	3.3	65.7	98.7	62.4
1995	92.2	3.8	83.4	98.9	60.2
1996	101.6	3.7	89.4	100	58.4
1997	91.8	3.3	72.1	101.2	57.2
1998	104.0	3.2	79.2	101.3	55.3
1999	114.7	3.3	90.0	101.4	53.6
2000	123.2	3.1	90.1	101.8	55.9
2001	131.5	3.1	97.0	86.4	50.3
2002	134.9	2.8	89.9	85.5	49.6
2003	141.8	3.0	101.2	84.2	49.2
2004	149.3	3.1	106.5	82.3	48.8
2005	156.6	3.1	115.5	81.0	47.9

Source: Authors' calculations from Transmonee 2007.

enrollments, real spending per student fell from 780 lek in 1990 to 614 lek in 1998 (Palomba and Vodopivec 2001, 71).

Government spending on education as a share of GDP hovered around 3 percent from 2000 to 2005, while real GDP increased, resulting in a 30 percent increase in real spending (WDI 2007). This leaves 2005 spending below the already low level of 1990, however.

The decline in funding resulted in both reduced access to schools and a decline in their quality. Schools were closed, especially in rural areas. While the number of primary schools actually increased after 1989, the number of secondary schools fell radically, from 827 in 1990 to 394 in 1998. The vocational technical schools which had historically serviced rural populations, offering agricultural training among other specializations, were particularly targeted for closure. Of the 575 vocational schools in 1990 only 54 remained in 1998, with only one serving a rural area. Resources

were shifted into general-track schools, and their number expanded, from 75 to 331 (Berryman 2000, 102). While there are some important arguments in support of such a shift of resources into general schooling (Strohl 2003), the shift left rural populations with little choice in schooling and without programs leading to a terminal degree or marketable skills. Access to even the general-track schools was limited, as the total number of rural schools fell by 57 percent (Berryman 2000).

In schools that remain available, school quality has fallen in many places. In the face of declining resources, maintenance and upgrades of schools were deferred. About 35 percent of schools were built before 1960, and maintenance was limited in the final years of socialism, so that many schools were in very poor condition in 1989. Since then, the country experienced two periods of civil unrest and vandalism in the 1990s. Although spending on buildings increased significantly after 1998, many secondary schools do not offer even basic facilities and infrastructure (Palomba and Vodopivec 2001; OECD 2002, 11).

Teacher quality has likely declined as teacher salaries have fallen, relative to other public sector salaries, and working conditions have deteriorated. Student-teacher ratios in secondary schools have fallen, on average, but urban schools have experienced serious crowding (Palomba and Vodopivec 2001, 35), as Albania has experienced massive rural-urban migration since 1989.³ Although few Albanian dropouts in our survey data (see below for a full discussion of the data) listed teaching quality as a factor in their decision not to continue schooling (fewer than 1 percent), Palomba and Vodopivec (2001, 66) find a small but significant impact of the percentage of unqualified teachers in a school district on a student's decision not to attend

Even as school quality has declined, costs of schooling have risen. On average, households with enrolled students spent about 850 new lek on monthly on educational expenses in 2002 and 1129.19 new lek (in constant 2002 lek, when 1 USD equaled about 140 lek) in 2005 but, as can be seen from table 2, expenditures varied widely.

School closures play a role in the increased costs of schooling to students and their families. For many students, daily commuting would not be feasible, given distances, reduced availability of public transport and rising transportation costs. For boarding students, schooling costs extend well beyond books and fees, to accommodations, food, and weekend travel. Families of boarding students also face additional opportunity costs, as the student is not available to help with farming and other household production during the week. Even for families whose children can commute daily, transportation costs to schools beyond the village can be significant.

Transportation was the second largest cost of schooling in both years, after tutoring. Among the approximately fourteen hundred high school dropouts in the Albanian survey data, 9 percent listed distance to school as their reason for not attending school, while another 7 percent listed costs more generally.

A final change in school policy lies in the enforcement of compulsory enrollment. While schooling through age fourteen was strictly enforced by the socialist government prior to 1989, enforcement appears weaker in the post-1989 period. An estimated 6.3 percent of compulsory-age students dropped out in 1991–1992 (OECD 2003), and Palomba and Vodopivec (2001, 5) estimate that there were about eighteen thousand nonenrolled primary-school-age students in 1997. Increased dropout rates may result from decreased resources expended on enforcement, but also from increased population mobility, which complicates enforcement (an issue discussed below). Children who drop out in primary school clearly will not attend secondary school.

A number of factors underlying household demand for education have also changed significantly since 1990. One important factor has been the decline in the incomes of many households. Real per capita GDP fell to 67 percent of its 1989 level in 1992, but then began to climb slowly. Despite the quick return to growth, it took until 1998 for per capita GDP to regain the 1989 level, but growth then continued through 2005. Between 2002 and 2005, the real per capita GDP increased 16 percent (table 3), to about US \$7376.

Real wages fell with the decline in output, reaching a low of 69 percent of 1989 levels in 1993. By 2000, real wages had reached 139 percent of 1989 levels, but they remained very low both by comparison to other postsocialist countries and in relation to household needs (UNICEF 2003). The UNDP estimates average wages per month in 2000 at 16,620 lek (about US \$119 in 2000), whereas Albanian households estimate that they need an average of 31,000 lek per month to live a decent life. Rural incomes are significantly lower (UNDP 2000, 15), although costs of living in rural areas are also likely to be lower.

Although wages have risen since 2000, household incomes have been depressed by the fact that many people lack formal, paid work. Only 50 percent of the population aged fifteen to fifty-nine years was employed in 2002, and 48 percent in 2005 (table 3).⁴ Overall, the UNDP reports that 25 percent of the (resident) population faced absolute poverty in 2002, with the share falling to 18.5 percent in 2005 (UNDP 2007, 3). Poverty declined somewhat even as unemployment continued to rise, due to the implementation of a significant social welfare program (Ndihma Ekonomike)

in 1993 (Kilic 2007). Overall, low wages and significant unemployment clearly left many households with limited resources to spend on education.

The structure of employment also changed. As employment in manufacturing, extractive industries, and construction declined, agriculture and trade have become more important sectors (INSTAT 2003). In these fields, self-employment is more common, and required skills have changed from those needed in the socialist economy. Existing educational programs may not offer high returns.

In fact, evidence suggests that even before the most recent economic restructuring, expected gains from secondary schooling were not high. Among employed Albanians, estimates based on 1996 data show high private returns to primary schooling (13–16 percent for an additional year) but low returns for both vocational and general secondary schooling (2.2–4.5 percent for an additional year, depending on the estimation method and type of schooling, compared to a global average of about 18 percent) (Palomba and Vodopivec 2001; Psacharopoulos and Patrinos 2002, 12–13). Among Albanian children who expect to be self-employed, especially in agriculture, the lack of an agricultural/vocational track in secondary education probably means that they can expect lower than average returns.

Secondary school graduates also face no better employment probabilities than those who have completed only primary education. Both groups experienced unemployment rates around 49 percent in 1997 (Berryman 2000, 84). Expected returns to secondary education are even lower than those outlined above if one considers this low probability of finding a job.

Payoffs to university education are also low, about 2.5 percent per year (Berryman 2000), but university graduates face much lower probability of unemployment and thus a higher expected wage than secondary school graduates. Completing high school does not offer a clear path to university education, however, which reduces its overall value. Albania has the lowest university enrollment rate in Europe (World Bank 2002), and recently fees for university education have been rising (Berryman 2000). Unless prospective students are among the small group likely to attend university after high school, the benefits of secondary education appear limited.

Expected returns to secondary schooling are even lower for girls, for a number of reasons. Girls are less likely to participate in the labor market after graduation (World Bank 2002), and those women who choose to participate face a higher probability of unemployment than their male counterparts (18 percent unemployment rate compared to 13 percent in 2004) (World Bank 2006); they also face labor market segregation and lower wages (Miluka and Grown 2008). In addition, if girls are

expected to leave the family home and join their spouse's household, as is traditional in many parts of Albania, parents may see little benefit to educating girls.

While expected returns to secondary education may be low, it is possible that opportunity costs of educational time are significant. High unemployment often leads families to mobilize as many workers as possible. Privatization of agricultural land and loss of formal (nonagricultural) employment have combined to radically increase the prevalence of small-scale family farming, which relies on household labor. With the closing of state-run child-care centers and preschools, older children may also be needed to take care of younger siblings. Early marriage, which became more common as the national economy deteriorated (Silova and Magno 2004), can particularly increase the opportunity costs of schooling for teenage girls, who may have full-time work at home.

In summary, transition has coincided with changes in many of the factors that previous research has suggested may influence secondary school enrollment. Availability of secondary schools has declined and costs have risen, while households' ability to pay and expected returns to education have both declined, and opportunity costs of children's time have likely risen.

Analysis and Data

Our argument is that the changes in many of the key determinants of the costs and benefits of education that we have just itemized play an important role in the deterioration in secondary school enrollments. Ideally, an empirical test of this claim would be based on micro survey data from 1989 to the present, but such are not available. Instead, we draw on the 2002 and 2005 Albania Living Standards Measurement Survey (ALSMS), as well as wage and unemployment data at the district level from the Albanian Institute of Statistics (INSTAT), to provide a cross-sectional analysis of factors underlying families' decisions to enroll their children in secondary school. If we can establish that income, local unemployment rates, distance to school, and other related factors are important determinants of secondary school enrollment probabilities in present day Albania, it is highly likely that historical changes in these variables can also help explain the observed decline in enrollment rates.

The 2002 ALSMS includes 450 Primary Sampling Units (PSU) with 8 households in each, for a total sample size of 3,600 households and 15,559 individuals. The survey covers general household characteristics, such as size and composition

of the household, educational levels of household members, ownership of both agricultural and nonagricultural land, labor market participation, farming, and income. The survey is representative at the national level and is stratified by four regions: Coastal, Central, Mountain, and Tirana. The 2005 ALSMS employs the same sampling frame and survey design. There are 455 PSU with 8 households per PSU, for a total of 3,640 households and 15,750 individuals. The surveys in both years are comparable both in terms of sampling frame and survey instrument.⁵

Albanian schools are organized into eight-year primary and “lower secondary” schools, typically for children aged seven to fourteen years, followed by three- to five-year “upper secondary” tracks. Eight years of education have remained compulsory, and children must pass an exit exam in order to continue beyond the initial eight years.⁶ Enrollment rates decline significantly, by 15 to 20 percentage points, after age fourteen, typically the end of the compulsory schooling period, as seen in figure 3. To explore the determinants of secondary school enrollment, while allowing for slight departures from the normal age-for-grade profile, we confine our analysis to individuals between the ages of fourteen to twenty, and we exclude individuals who are eighteen and older and report having completed a secondary degree or are attending university.⁷

Given these criteria, the final sample consists of 1,769 individuals in 2002, and 1,825 individuals in 2005, for a total of 3,594. In all analyses, the data are weighted using the sampling weights supplied by the World Bank. These weights are designed to ensure that the sample is nationally representative, taking account of both initial design effects as well as the problem of non-random non-response.

Enrollment is a binary outcome (with 1 indicating enrollment), and its determinants are analyzed using the standard probit model:

$$\Pr(Y=1|X) = \Phi(X\beta)$$

where Y is the binary outcome, X is a matrix of explanatory variables discussed below, Φ is the cumulative distribution function of the standard normal distribution, and β is a vector of parameters.

In analyzing the determinants of the enrollment decision, we include in X proxies for most of the factors summarized in figure 1 and described above. Demand-side factors include household characteristics (parental preferences, households’ ability to pay the costs of schooling), opportunity costs of schooling, and expected returns to schooling. The main supply-side factor we consider is ease of access to schools.

Household and Personal Characteristics

To measure parental education, we use the years of schooling of the head of household, which is an appropriate measure for parental education in Albania due to the Albanian family structure, where the head of the household is considered the main decision maker. The head's years of education varied from zero to twenty-one years. Seventeen percent of children had a household head with fewer than eight years of education.⁸

More educated parents are expected to positively influence their children's schooling in two ways (aside from their higher expected income, which is controlled for separately). First, more educated parents are presumed to have a higher preference for education, and they may also have better information on returns to education. Second, more educated parents are better able to educate their children at home, which may complement and facilitate their achievements in school. As can be seen from table 4, the heads of household of enrolled children had significantly more education than the heads of household of unenrolled children, as expected.

Age is obviously one of the most important determinants of enrollment; as seen in figure 3, enrollment declines nearly monotonically with age, but in a nonlinear fashion, with a particularly steep drop between ages fourteen and fifteen, which is when the exam-based transition to upper secondary school occurs. To capture these nonlinear age effects we use a set of age dummies, with age fourteen being the omitted reference category. To capture the potential impact of differing parental (and child) preferences by gender, we include an indicator for boys. As can be seen from table 4, enrolled children were more likely to be male (although this difference falls below the 10 percent threshold for statistical significance in 2005).

As a final measure of parental preferences, we include a dummy for female-headed households. There is now a significant literature suggesting that when women contribute to decisions about spending on children's health and education, spending levels are higher (Lundberg, Pollak, and Wales 1997). We therefore expect female-headedness to contribute to higher levels of schooling, all else being equal.

The inclusion of household income captures the ability to pay the direct and opportunity costs of schooling. Higher income relaxes the liquidity constraints of the household, positively affecting children's education. We measure income on a per capita basis, to control for difference in family size, and then take its natural log to reduce the impact of large outliers. Households of enrolled children have significantly higher per capita incomes than those of children who are not enrolled (table 4).

Table 4: Descriptive Statistics by Year and Enrollment Status (Weighted)

2002	Enrolled		Non-Enrolled		Total	
	Mean	S.D.	Mean	S.D.	Mean	S.D.
Female-Headed Households	0.076*	0.27	0.05	0.22	0.062	0.24
Children Under 6 years	0.163*	0.43	0.262	0.55	0.219	0.5
Head's Education	9.797*	4.07	7.478	3.31	8.491	3.84
Land Owned (Sqm)	4937*	7394	6937	7506	6063	7520
Distance Index	-0.096*	0.89	0.375	1.18	0.169	1.09
PC Income	64235*	63460	46476	39705	54222	52168
Log PC Income	10.48*	1.98	10.335	1.6	10.4	1.77
District Unemployment Rate	16.08*	8.68	17.144	8.39	16.678	8.53
District Wage Rate	19037*	1035	18894	907	18956	968
Urban Household	0.51*	0.5	0.207	0.41	0.339	0.474
Internal Migrant Household	0.143*	0.35	0.196	0.4	0.173	0.38
Age	15.55*	1.471	17.1	1.821	16.43	1.84
Male	0.504*	0.5	0.436	0.5	0.466	0.5

2005	Enrolled		Non-Enrolled		Total	
	Mean	S.D.	Mean	S.D.	Mean	S.D.
Female Headed-Households	0.05*	0.218	0.076	0.265	0.06	0.24
Children Under 6 years	0.114*	0.381	0.209	0.482	0.15	0.42
Head's Education	9.924*	9.923	7.832	3.014	9.141	3.45
Land Owned (Sqm)	5920*	1570	8483	1280	6877	1470
Distance Index	-0.03*	0.898	0.565	1.559	0.193	1.22
PC Income	1070321*	1269938	696170	839548	93026	1142416
Log PC Income	13.45*	1.193	13.058	1.242	13.302	1.23
District Unemployment Rate	14.74*	8.32	15.749	7.835	15.12	8.16
District Wage Rate	24375*	3644	23481	3091	24040	3473.65
Urban Household	0.459*	0.499	0.233	0.423	0.374	0.484
Internal Migrant Household	0.045*	0.207	0.03	0.17	0.618	0.49
Age	15.78*	1.548	16.974	1.718	16.228	1.714
Male	0.512*	0.5	0.464	0.499	0.494	0.5

Table 4 (Continued)

Pooled	Enrolled		Non-Enrolled		Total	
	Mean	S.D.	Mean	S.D.	Mean	S.D.
Female-Headed Households	0.061*	0.239	0.061	0.238	0.061	0.239
Children Under 6 years	0.134*	0.401	0.241	0.521	0.184	0.464
Head's Education	9.871*	3.723	7.61	3.2	8.816	3.664
Land Owned (Sqm)	3480*	1240	3390	9100	3440	1100
Distance Index	-0.057*	0.894	0.451	1.35	0.181	1.158
PC Income	658734*	1095039	306792	620077	493758	920820
Log PC Income	12.323*	2.139	11.422	1.98	11.85	2.105
District Unemployment Rate	15.293*	8.493	16.59	8.2	15.9	8.38
District Wage Rate	22177*	3892.9	20725	3059	21496	3600
Urban Household	0.48*	0.5	0.218	0.413	0.357	0.479
Internal Migrant Household	0.085*	0.279	0.13	0.336	0.106	0.308
Age	15.69*	1.52	17.052	1.781	16.33	1.78
Male	0.509*	0.5	0.447	0.497	0.479	0.5

* Difference between enrolled and non-enrolled children in this attribute significant at 10% level.

Note: All money values are in real new 2002 Lek.

We use two variables to capture the impact of the opportunity cost of children's time on their enrollment. Informal labor market work for children is still uncommon in Albania (see below). Children not in school are more likely to provide unpaid household labor, including child care, or to work on the family farm. As a proxy for the demand for child-care services we include the number of children in the household under six years of age (i.e., not yet in school). The demand for farm labor is measured by the amount of land owned by the household (measured in square meters), although it is important to note that land owned may also reflect wealth of the household (which would have an off-setting positive impact on enrollment).

Enrolled children had significantly fewer siblings under the age of six years than their nonenrolled counterparts (about one fewer); and their households also owned significantly less land (table 4). Landholdings were small, about 6000

square meters, on average, in 2002 and almost 7000 in 2005, but they varied significantly, from 0 to 42,000 square meters.

Given the high prevalence of internal migration in Albania since 1990, we include a control (dummy variable) indicating whether anyone in the household has moved from a different municipality in Albania since 1990.⁹ In 2002, 17 percent of households were classified as internal migrants, while in 2005, a very high 61 percent were so classified.

Internal migration may affect enrollment in various ways. Since internal migration may be driven by a search for better education, children in migrant households might be expected to have higher enrollment rates. On the other hand, migrant households have often faced hardship and may have difficulty adapting to their new environment, which may have a negative effect on their children's schooling. Compulsory schooling laws are also harder to enforce when families migrate (see Kabakchieva and Iliev 2002 for a discussion of this dynamic in Bulgaria). In 2002, children from migrant households were significantly less likely to be enrolled in school, but by 2005, there was no longer a significant difference between the two groups (table 4). Because schooling considerations may be the cause of migration, however, estimates of the relationship between migration and schooling may be biased. Here we use this variable only as a control.

Finally, a small number of people in our sample of individuals fourteen to twenty years old are themselves heads of household. We expect that this important difference in the family structure may independently affect schooling decisions, and we control for this using a dummy variable.

Expected Returns to Schooling

Given the highly uneven economic development in Albania, expected returns to education are likely to vary greatly by region. To examine the impact of these variations on schooling decisions, we include 2002 and 2005 district-level unemployment and wage rates, taken from official sources (INSTAT).¹⁰ We expect higher wages and lower unemployment rates to have a positive impact on demand for schooling. However, higher average wages might also increase the opportunity cost of schooling, thus reducing enrollment, while high levels of unemployment could be expected to have the opposite effect. Average wages varied only moderately across districts in 2002, but the difference increased substantially by 2005. In 2002, the lowest

average wage was 83 percent of the highest, while in 2005 the lowest was only 65 percent of the highest. Unemployment rates varied significantly by district in both years, from just under 4 percent to just over 47 percent. The average rate fell slightly from 2002 to 2005, from 16.7 percent to 15.1 percent. Among the enrolled, average district-level wages are significantly higher, and average district-level unemployment is significantly lower than among the nonenrolled children (table 4).

Access

Given the recent radical decline in the number of secondary schools, especially in rural areas, the physical lack of access may have become a significant impediment to enrollment. Increasing distance to school raises transportation costs and may create security issues, especially for girls. Our survey measures the distance to secondary school only for enrolled children; moreover, this measure reflects some choice and is not a measure of distance to the nearest secondary school. To examine the impact of access on schooling choice, therefore, we use an index of distance to basic infrastructure created through principal components analysis including distance to primary schools, health services, and bus stops.¹¹ Bus stops can be an important equalizer, providing students with access to secondary schools located outside their community. As can be seen in table 4, enrolled children lived significantly closer to these community services than did their nonenrolled counterparts.

Regional Controls

Albania is characterized by strong historical and physical differences among regions. These differences include distinct cultural attitudes, particularly in the expectations of gender roles, and also significant differences in levels of economic development. To control for these differences, we use regional dummies, dividing Albania into four regions: Coastal, Central, Mountain, and Tirana. As can be seen in table 5, enrollment rates are significantly higher in the Tirana region, although the gap has been reduced since 2002. Tirana is set as the default category for the regional dummies in the regressions. Thirty percent of the children come from the Coastal region, 47 percent from Central, 14 percent from the Mountain region, and 9 percent from Tirana. We also include a dummy for urban households. Forty-five percent of households lived in urban areas in 2002. By 2005, 48 percent of sample households lived in urban areas.

Table 5: Enrollment Rates by Region, 2002, and 2005

	2002		2005	
	Mean	Std	Mean	Std
Coastal*	0.46	0.50	0.66	0.47
Central*	0.40	0.49	0.57	0.50
Mountain*	0.37	0.48	0.64	0.48
Tirana	0.75	0.43	0.76	0.43
Total	0.44	0.50	0.63	0.48

Source: ALSMS 2002, 2005.

* Percentage enrolled is significantly different from Tirana, $p < 0.10$.

Results

Our probit regression results, using the above-listed variables to predict enrollment, appear in table 6. All estimates incorporate survey weights, and their standard errors are calculated to be robust to heteroskedasticity and to take account of possible correlations among error terms within each primary sampling unit.¹² Note that this latter provision is required, as close geographic neighbors often face similar unobservable shocks or environmental conditions. It has the effect of increasing our estimated standard errors and so reducing the likelihood of finding statistically significant effects; thus it is a statistically conservative approach.¹³

Finally, note that the coefficients have been transformed to represent the marginal effect on the probability of enrollment of a one-unit change in any given independent variable for a representative individual, namely, someone who is found at the mean of all independent variables. Because no such person actually exists (half male? 46 percent urban?), we also present results based on two contrasting individuals, who have been selected to have very different predicted probabilities of enrollment.

In the regression, we find that all parameters have the expected sign and most are statistically significant at the 10 percent level or better. Looking first at age, we see a sharp drop in the probability of enrollment, of nearly 31 percentage points, between age fourteen (the reference category) and age fifteen. This decline, which adjusts for the influence of all other factors, is larger than the raw, unadjusted, numbers plotted in figure 3. The probability of enrollment falls by another 15 percentage points by age sixteen, then holds steady until age eighteen, whereupon it falls by

another nine points (at age nineteen) and another five points (at age twenty). Clearly, the transition between lower and upper secondary school, and the related exit exam, affect the decision to discontinue secondary schooling.

We also find strong evidence for the impact of our parent/child/social preference-related variables, among which we include gender. Males are 6 percentage points more likely to be enrolled at any given age than females. Children of more educated parents were also more likely to be enrolled in secondary school: each extra year of parental education was associated with a 3.7 percentage point increase in the probability of enrollment. Being a member of a female-headed household had a positive but insignificant impact on enrollment.

Our remaining demand-side variable was the log of per capita household income, and this had the expected positive effect on enrollment. To get a sense of the magnitude of this coefficient, consider the household at the twenty-fifth percentile of the per capita income distribution as compared to a household at the seventy-fifth percentile. This income advantage translates into a 5.26 percentage point difference in the likelihood of that household's children being enrolled in secondary school.

Two of the variables that we use to measure the opportunity costs of students' time also seemed to play a role in schooling decisions. Each extra sibling under the age of six reduces the predicted probability of enrollment by 7.7 percentage points, all else equal, and children who were running their own households were nearly 35 percentage points less likely to be enrolled.¹⁴ The amount of land owned by the household did not appear to have a significant net impact, however, perhaps because land measures both the demand for farm labor (an opportunity cost) as well as wealth (which should have an offsetting positive effect on the decision to continue in school).¹⁵

We found some evidence that labor-market conditions, which determine both the expected returns to education as well its opportunity costs, play a role in schooling decisions. Local area wages had no significant effect, but the local unemployment rate did appear to matter. The coefficients on the linear and squared unemployment rate terms indicate that higher unemployment rates are associated with lower school enrollment rates for the majority of the sample and that the effect is strongest at the lower range of reported levels of unemployment (but note that these are rather high levels of unemployment by standard measures). For example, starting at 10 percent unemployment, each additional point of unemployment reduces the enrollment probability by 2.3 percentage points. The relationship remains negative until the unemployment rate reaches 22 percent which is to say, for 81 percent of the sample. Thereafter the relationship between local unemployment rates and enrollment prob-

Table 6: Determinants of Secondary School Enrollment, Children 14 – 20 Years, Pooling 2002 and 2005 (N=3594)

Enrolled	dPr(Y=1) /dx	Robust Std. Err.	z	P
Male*	0.064	0.024	2.63	0.009
age=15*	-0.309	0.037	-7.55	0
age=16*	-0.456	0.029	-12.39	0
age=17*	-0.455	0.032	-11.04	0
age=18*	-0.459	0.028	-12.02	0
age=19*	-0.548	0.021	-12.83	0
age=20*	-0.604	0.014	-15.82	0
Female-Headed Household*	0.052	0.052	0.99	0.322
Child-Headed Household	-0.347	0.096	-2.75	0.006
Children Under 6 Years	-0.077	0.031	-2.50	0.012
Land Owned (Sqm)	-0.611	1.000	-0.61	0.542
Coastal Region*	0.025	0.071	0.36	0.721
Central Region*	0.076	0.072	1.05	0.294
Mountain Region*	0.089	0.070	1.24	0.215
Internal Migrant Household*	-0.094	0.054	-1.73	0.084
Head's Education	0.037	0.005	8.15	0
Log Real PC Income	0.019	0.008	2.45	0.014
Log Real District Wage	0.135	0.211	0.64	0.524
District Unemployment Rate	-0.017	0.006	-2.86	0.004
District Unemployment Rate ²	0	0	3.11	0.002
Distance Index	-0.082	0.014	-5.79	0
Year=2002*	-0.079	0.055	-1.43	0.154
Urban Household*	0.233	0.032	7.08	0
Observed Enrollment Rate	0.531			
Predicted Enrollment Rate	0.535			
Pseudo-R ²	0.292			

* dPr(Y=1)/dx is for discrete change of dummy variable from 0 to 1.

abilities becomes positive. This falling-then-rising effect of unemployment may reflect its dual role as a measure both of opportunity cost as well as of the expected benefits of schooling.

Our composite measure of the distance to public facilities, including bus stops and schools, also proved significant. Although units of this index have no natural interpretation, we can again get a sense of the importance of the distance measure by comparing communities that scored at the twenty-fifth percentile with those at the seventy-fifth percentile (the more distant communities). This interquartile comparison amounts to a change in the distance measure of slightly more than one unit, which would then reduce the enrollment probability by 8.7 percentage points.

Of the various geographic variables, the urban indicator proved very important, whereas regional differences did not (once the urban control was in place). Children in urban areas were 23 percentage points more likely to be enrolled, all else equal, which likely captures a mixture of unobserved supply- and demand-side differences between urban and rural households and locales. Interestingly, the growth in the enrollment rate from 2002 to 2005, which is large in unadjusted terms, as illustrated in figure 3, is rendered small and statistically insignificant once the urban dummy variable is included, as indicated by the coefficient on the 2002 year dummy.¹⁶ This suggests that some of the increase in enrollment observed between 2002 and 2005 may have been the result of internal migration toward the cities, allowing for better access to schools.

To examine this possibility further, we ran regressions on the urban and rural households separately, with results presented in tables 7 and 8. Contrasting the results in these tables suggests that migration does not fully explain the increase in enrollment. While enrollment is much higher in urban areas, enrollment increased significantly in both urban and rural areas, as seen by the negative coefficient on the dummy variable for Year = 2002.

However, the separate regressions do highlight some important differences in dynamics between urban and rural enrollments. In the rural (and the pooled) sample, girls are much less likely than boys to attend secondary school, while in the urban sample girls have an enrollment advantage. This difference may be linked to differences in the opportunity costs of girl's and boy's time in urban and rural areas. Because of the traditional sexual division of labor, girls' opportunity costs are more likely related to childcare and housework, while boys' opportunity costs are more closely linked to agricultural and wage labor. In urban areas, the negative impact of children under six on enrollment disappears. Perhaps girls enroll more in schools in urban areas because households are better able to arrange childcare in

Table 7: Determinants of Secondary School Enrollment, Children 14–20 Years, Urban Households, Pooling 2002 and 2005 (N=1664)

Enrolled	dPr(Y=1) /dx	Robust Std. Err.	z	P
Male*	-0.061	0.029	-2.08	0.038
age=15*	-0.209	0.054	-4.15	0
age=16*	-0.364	0.051	-7.38	0
age=17*	-0.404	0.063	-6.54	0
age=18*	-0.474	0.050	-9.29	0
age=19*	-0.700	0.045	-9.80	0
age=20*	-0.785	0.025	-10.51	0
Female-Headed Household*	0.031	0.051	0.59	0.556
Child-Headed Household	-0.394	0.186	-2.18	0.029
Children Under 6 Years	-0.051	0.037	-1.38	0.167
Land Owned (Sqm)	0	0	0.81	0.417
Coastal Region*	-0.127	0.076	-1.74	0.082
Central Region*	-0.085	0.087	-1.01	0.313
Mountain Region*	-0.063	0.093	-0.72	0.474
Internal Migrant Household*	-0.149	0.061	-2.70	0.007
Head's Education	0.040	0.005	7.82	0
Log Real PC Income	0.015	0.006	2.61	0.009
Log Real District Wage	-0.417	0.236	-1.77	0.076
District Unemployment Rate	-0.008	0.008	-1.03	0.302
District Unemployment Rate ²	0	0	1.40	0.161
Distance Index	-0.114	0.029	-3.98	0
Year=2002*	-0.122	0.072	-1.68	0.093
Observed Enrollment Rate	0.71			
Predicted Enrollment Rate	0.78			
Pseudo-R ²	0.30			

* dPr(Y=1)/dx is for discrete change of dummy variable from 0 to 1.

Table 8: Determinants of Secondary School Enrollment, Children 14–20 Years, Rural Households, Pooling 2002 and 2005 (N=1930)

Enrolled	dPr(Y=1) /dx	Robust Std. Err.	z	P
Male*	.120	.029	4.07	0
age=15*	-.289	.037	-6.55	0
age=16*	-.409	.028	-10.67	0
age=17*	-.395	.030	-9.38	0
age=18*	-.375	.028	-9.14	0
age=19*	-.422	.022	-9.58	0
age=20*	-.477	.018	-11.56	0
Female-Headed Household*	.048	.069	.70	.484
Child-Headed Household	-.308	.093	-1.82	.068
Children Under 6 Years	-.083	.037	-2.21	.027
Land Owned (Sqm)	0	0	-2.30	.021
Coastal Region*	-.013	.043	-.29	.770
Central Region*	-.020	.038	-.51	.608
Mountain Region**	n.a. **	n.a.	n.a.	n.a.
Internal Migrant Household*	-.003	.070	-.04	.967
Head's Education	.028	.006	4.95	0
Log Real PC Income	.015	.017	.91	.362
Log Real District Wage	.166	.243	.68	.494
District Unemployment Rate	-.017	.006	-2.58	.010
District Unemployment Rate ²	0	0	2.59	.010
Distance Index	-.068	.013	-5.32	0
Year=2002*	-.168	.070	-2.38	.017
Observed Enrollment Rate	.43			
Predicted Enrollment Rate	.39			
Pseudo-R ²	.26			

* dPr(Y=1)/dx is for discrete change of dummy variable from 0 to 1.

** Because almost all households from the Mountain Region are rural, this variable is collinear and is dropped.

cities. Since boys are more likely than girls to work (see below), and more work is found in urban areas, perhaps boys are less likely to enroll in school in urban areas because of the increased opportunities for work. We note that the unemployment rate loses its significant negative impact on enrollment in urban areas. Perhaps more important, although in the pooled sample average wages did not impact enrollment, in the urban regression higher wages have a negative impact on secondary school enrollment. Finally, we note that while in the pooled sample household income had a positive impact on enrollment, this relationship is measured with far less precision in rural areas, and is thus statistically insignificant.

To get a better sense of the magnitude of the impact of demand and supply factors on enrollment decisions, we use the parameters from table 6 to calculate the probability of enrollment for two very different individuals. The first individual has a high enrollment probability: he is a fifteen-year-old male with a relatively highly educated father (twelve years of education), living in an urban area, in a district with log real wages that fall at the seventy-fifth percentile, and in a household whose real per capita household income is also at the seventy-fifth percentile. The district unemployment rate is at the twenty-fifth percentile, which likewise tends to increase the probability of enrollment. The individual lives relatively close to basic infrastructure (the distance index is at its twenty-fifth percentile value) and has no younger siblings.¹⁷ The predicted probability of enrollment for an individual with these characteristics is 91 percent.

For comparison, we consider a seventeen-year-old female, with a less-educated father (seven years of schooling). She lives in a rural area, where the log of real average wages is at the twenty-fifth percentile, as is her real per capita household income. District unemployment is set to the seventy-fifth percentile. She lives relatively far from basic infrastructure (at the seventy-fifth percentile of the distance index) and has two younger siblings. These factors combine to yield a predicted probability of enrollment of only 10 percent.

These two individuals clearly represent relatively extreme cases—one in which everything works in the individual's favor, and another where all variables work against her. Still, more extreme cases are possible: we have estimated values at the twenty-fifth and seventy-fifth percentiles, not maxima and minima, and have also not assigned the most extreme values to parental education or number of siblings. Clearly, the variables we have identified as significant in our regression are strong predictors of enrollment outcomes.

Discussion

Our analysis confirms numerous other studies which find a significant impact of parental education on children's schooling decisions.¹⁸ The results also highlight the impact of factors related to Albania's conditions of economic transition. Low household incomes reduce the likelihood of enrollment in secondary school, as do high unemployment rates. On the supply side, poor access to schools, buses, and other infrastructure also negatively affects enrollment.

Girls are more likely to discontinue secondary schooling than are boys in rural areas, while the reverse is true in urban areas. Girls have traditionally had lower secondary school enrollment rates than boys in Albania, and lower enrollment rates for girls may reflect a continuation of parental preferences and social norms regarding girls' schooling. Moreover a number of factors related to postsocialist transition present barriers to girls' enrollment. Household responsibilities, as measured by the potential need for child care, have a negative impact, and child-care responsibilities have risen as state-run, subsidized preschools have closed. In addition, children who are household heads are much less likely to be enrolled in secondary school, which means that the re-emergence of early marriage for girls will negatively impact on enrollment. Finally, women face a significantly higher unemployment rate than men, which may reduce expected returns to education for girls.¹⁹

Demands of agricultural labor (as measured by the amount of land owned by the household) do not seem to exert a negative impact on enrollment, controlling for other factors. Still, the majority of nonenrolled rural children work on a family farm, although the share of nonenrolled rural children engaged in farm work fell from 63 percent in 2002 to 45 percent in 2005 (table 9), with only a small share of nonenrolled children shifting to paid work. Boys and girls were equally likely to report farm work. Among enrolled rural children, farm work is much rarer.

Regression evidence suggests that opportunity costs of other, paid, labor activities (as measured by district wage levels) do play a role in pulling urban children from school. However, about half of nonenrolled urban children were working or looking for work: about 21 percent reported that they had worked in the past seven days in 2002, and 25 percent reported so in 2005, while an additional 37 percent reported looking for work in 2002 (31 percent in 2005, table 9). Nonenrolled urban children, like their rural counterparts, are much more likely to work than enrolled children (of whom under 1 percent reported working), and among urban children the share working increased from 2002 to 2005. Opportunities for paid work may

play a bigger role in boys' decisions, as twice as many boys as girls searched for a job or engaged in paid work.

Our findings support those of an earlier study by Geremia Palomba and Milan Vodopivec (2001) in finding that distance to school negatively affects enrollment, and a study by Michael Hazans and Ija Trapeznikova (2006) in finding that higher

Table 9: Reported Work by Enrolled and Non-enrolled Children, Percent

	Urban		Rural	
	Enrolled	Nonenrolled	Enrolled	Nonenrolled
2002				
Work on Own Farm	0	2	15	63
Work for Others	1	15	0	3
Work for Self/Family	1	4	0	2
Look for Work	0	37	1	9
2005				
Work on Own Farm	0	2	3	45
Work for Others	0	19	1	6
Work for Self/Family	0	4	0	2
Look for Work	0	31	1	8

Sources: ALSMS 2002, 2005.

opportunity costs of children's time, measured by earning opportunities, also has a negative effect.

However, our results also differ somewhat from earlier findings. After controlling for the size and demographic characteristics of the family, Palomba and Vodopivec (2001) found that opportunity costs had a significant negative impact on school attendance at the secondary level. These opportunity costs were measured only by an urban dummy (as a proxy for access to job opportunities). In our pooled urban-rural sample, we find that urban residence is *positively* associated with secondary school attendance, and consider this variable as a possible measure of access to schools. For urban children, we do find some evidence that employment opportunities impact on schooling choice, as reflected in the negative effect of district-level wages on enrollment. For rural children, in contrast, we find that only child-care responsibilities, and not other work opportunities, are significantly

related to enrollment. Significant changes also took place between 1999, when Palomba and Vodopivec's data were collected, and 2005, including school closures, especially in rural areas, and massive rural-urban migration, and this demographic change may partially explain the changing impact of urban residence on schooling choice, as may the difference in regression specifications. For example, Palomba and Vodopivec were able to include a measure of school quality in their regression: the percentage of unqualified teachers in a district. They find that school quality does significantly affect secondary school attendance. Our data do not allow us to control for this important variable, which has clearly been affected by the collapse in educational spending reflected in table 3.

Our results conform more closely to those of Hazans and Trapeznikova (2006), which were also based on 2002 data. Although we use different proxies and different controls, and we are not able to control for school quality, we confirm their findings that access to schools, parental education, and employment opportunities affect enrollment. Our findings on the impact of other opportunity costs of children's time differ somewhat, however. We find no impact of land size on enrollment, while Hazans and Trapeznikova found that landownership had a significant positive effect on enrollment in rural areas (suggesting that the wealth or income effect of landownership may outweigh its impact on the opportunity costs of children's time). The difference in our findings may result from the fact that we controlled for household income in our regression, while Hazans and Trapeznikova did not, and that we included size of holdings, while the other study measured landholding by a dummy variable only. Looking at the impact of household income, we found that this had a positive effect on enrollment in urban areas only.

Hazans and Trapeznikova found that the presence of younger sisters reduced the likelihood of enrollment in rural areas, while the presence of younger brothers played this role in urban areas. We found that the presence of siblings under school age had a negative impact on enrollment only in rural areas. Hazans and Trapeznikova did not control for the age of the younger siblings, however, so their measure seems less likely to capture opportunity costs of lost child-care labor or more likely to capture a general competition for resources.

Conclusions

Most of the supply- and demand-side factors we considered here had the expected impact on enrollment. Increased age; having a less educated head of household; having lower per capita household income; and living a rural area far from infrastructure, or in a high unemployment district all negatively affected the likelihood of being enrolled in secondary school. In rural areas, being female and having young children in the household also decreased the likelihood of enrollment, whereas in urban areas, low household income and higher district wages appeared to draw children out of school. The cumulative impact of these variables was large. An older girl, from a poor, rural family with several younger siblings would have a very low likelihood of enrollment, for example. Many families are poor, rural, have limited access to infrastructure, and face poor employment opportunities, suggesting that these factors contribute significantly to the low overall secondary school enrollment rates.

In some ways, Albania may appear to be a special case. Albania is the poorest and least developed of the non-Soviet postsocialist cases. Further, the country had less than thirty years of experience with broad access to secondary schooling. Norms and preferences supporting completion of secondary school may be weakly developed and easily eroded.

But we believe that the lessons are quite general, and also apply to other postsocialist cases. The factors underlying low secondary school enrollments in Albania are similar to factors at work in other countries. Further, many of the economic and social dynamics which we have shown to be important in enrollment outcomes in Albania are common to other postsocialist, and especially post-Soviet cases, where the economic downturn has been prolonged. Many households find themselves with increasingly limited access to schools, public transport, and other public infrastructure. In many areas, employment prospects are poor and existing schools (especially in rural areas) do not prepare students for the types of employment dominant in the emerging economy (for example, in agriculture and services). School quality has declined in the face of fiscal crisis, shifting government priorities, and civil conflict. The reemergence of traditional norms regarding schooling of girls and their role in the household is also not unique to Albania (Kuehnast 2003) and, as seen here, may play a role in declining enrollments.

The Albanian case shows some signs of improvement in secondary school enrollments, which rose from 44 percent in 2002 to 63 percent in 2005 in our sample, and from 50 percent in 2002 to 59 percent in 2005 according to official government

data (Transmonee 2007). The regression results suggest that recent changes in the Albanian context, including improving macroeconomic conditions, a reasonably effective income transfer program (the Ndihma Ekonomike), and general recovery from the shock of transition probably all played a role in the improvement in enrollments. But enrollments remain well below pretransition levels and the levels seen in other European postsocialist cases, and other factors underlying the decision not to enroll have not improved, including access to public infrastructure, the specific forms and quality of schooling available, and the social position of girls and women, especially in rural areas.

Further, there is reason for concern about a potentially persisting impact of the initial decline. As the children who dropped out of secondary school in the 1990s become parents, with lower earnings, their children are likely to obtain less schooling as well.

Evidence presented here thus supports other findings in suggesting some specific directions that policy makers might take to improve enrollments. Expanding access to schools is one important factor. Our evidence suggests that, at the secondary school level, improving access to transportation and other infrastructure may significantly improve enrollment, without necessarily building more schools. Although school fees and other expenses are quite low in real terms, the important role of household income in determining enrollment in urban areas suggests that some children would benefit from an educational subsidy, subsidized boarding arrangements, free public transport, or other such policies. Finally, the strong negative impact of the number of siblings under the age of six years in rural areas suggests that expanding rural preschool programs could have an important impact on secondary school enrollments, especially for girls. Preschool programs offer other benefits in terms of the long-run educational outcomes of those attending (Garces, Thomas, and Currie 2000; Spiess, Buchel, and Wagner 2003) and may be a particularly effective response.

One additional recommendation, supported by our overall discussion more than by the regression evidence, is to rethink the massive shift of educational resources from technical to general education at the secondary level. In the context of high unemployment and growing informal and small-scale agricultural sectors, technical education may offer higher expected returns than a general secondary course, especially for those students who do not expect to attend college. Additional resources for rebuilding the human and physical capital in education are also essential. Recent rural-urban migration has resulted in crowded classrooms and falling quality of instruction, but the concentration of population may facilitate efficient use of additional educational resources.

The past fifteen years have shown that the postsocialist economic downturn has had a negative effect on human development and on the long-term development trajectories of the affected countries. In Albania, education is one area of particular concern. The declining enrollment rates can affect educational outcomes of future generations of students, as well as patterns of investment and economic growth. Results presented here suggest that improved macroeconomic conditions alone are unlikely to restore high levels of secondary school completion. The issue of decreasing secondary school enrollments thus deserves real attention from policy makers, and we have shown that there is real potential for effective policy. Some of this will involve increasing and re-targeting resources to schools. But policies must also focus on expanding infrastructure, including public transportation, and supporting families, including through the expansion of preschools and targeted support for schooling.

International comparative research suggests that increased enrollments and attainment will have positive spillover effects, however, helping to promote local economic development and poverty reduction (Noorbakhsh and Paloni 2001; Barro and Lee 1994). Costs of these programs should be considered in this context of positive spillover effects and long-run benefits.

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Notes

1. These are the most recent publically available surveys. Although later surveys have been implemented, they have not yet been released to the public.
2. During the socialist period, terminal secondary vocational degrees requiring fewer than twelve years of schooling provided qualifications for sought-after industrial jobs.
3. Urban populations increased 30 percent from 1990 to 1998 (UNDP 2000,46) and have continued to increase (see below for a discussion of dynamics between 2002 and 2005).
4. Registered unemployment was lower: 15.8 percent in 2002, 14.1 percent in 2005 (Transmonee 2007), and some of the nonemployed labor force maybe out of the country (de Coulon and Piracha 2005).
5. The surveys were also implemented during approximately the same months (April–September in 2002 and April–November in 2005), making the schooling responses comparable.
6. After 2005, the exit exam was moved to the end of ninth grade.
7. Note that we have chosen to include in those “not attending” children who have opted for, and completed, a short secondary track of three years. We include them in the non-attending group because we cannot know if the choice to take a short course was made freely or chosen as a result of the factors we consider here. We assume the latter.
8. In a small percentage of cases, the child him- or herself was the head.
9. Albania has also experienced very significant international migration. We expect that this migration may impact enrollment mainly through remittances which raise household income, and its impact may be partly captured by the household income variable. Because of endogeneity issues, we do not attempt to directly estimate the impact of such migration here. However, Miluka and Debalen (2008) use an instrumental variables approach to estimate the impact of international migration on school enrollment. They find that the overall impact is negative, perhaps because those expecting to migrate do not pursue educational opportunities.
10. Albania’s four regions are divided into thirty-six districts, which are administrative units containing a major city and the villages around it.
11. Principal components analysis is a technique for condensing the information contained in a large number of variables to a smaller number by creating a set of mutually uncorrelated components of the data. Intuitively, the first principal component is the linear index of

underlying variables that captures the most variation among them (see Theil 1983 for a fuller discussion).

12. The use of survey weights has been the subject of much debate, the problem being that if the parameter one seeks to estimate is in fact heterogenous across people, then neither the weighted nor the unweighted results will yield a consistent estimate of the population mean of that parameter. On the other hand, if the parameter is in fact the same for all people, then the unweighted results are to be preferred, as they are more efficient. Still, Deaton (1997) argues that the weighted results do serve a valid descriptive function, and we present them as our primary findings. In our case, differences in the results of the weighted and unweighted regressions were minor. Any differences between them are mentioned in additional notes.

13. Some slight efficiency gains are possible by taking account of the stratified nature of the sample, but these had no substantive effect whatsoever and are not reported.

14. This latter effect was half as large, and not statistically significant at customary levels, in the unweighted regression equation.

15. To further examine the impact of land as a measure of wealth, we tried running the regression without including the income variable (as income may be correlated with wealth). This did not result in a significant coefficient on land, but this may be explained by the possibility that wealth holdings in land and income are not highly correlated. Land was distributed in the postsocialist decollectivization and was not purchased by households with income.

16. It remains significant in the unweighted model.

17. The enrollment probabilities reported are calculated using Stata's "adjust" command, which calculates the predicted values for a person with the specified characteristics, derived from a probit regression equation. Our predictions are based on the regression on the pooled urban and rural sample for years 2002 and 2005 reported in table 7. Because the three regional dummies, internal migration variables, and land ownership were not set to specific values, our predicted enrollment probabilities are for an individual who is nationally representative in terms of these variables.

18. Hazans, Rastringina, and Trapeznikova (2007) find a similar strong impact of parental education and income in their study of the relationship between family background, particularly ethnicity, and schooling outcomes in postsocialist Baltic states.

19. Estimates suggest that Albanian women earn 36 percent less than Albanian men, resulting in even lower expected returns to secondary schooling for girls (Miluka and Grown, 2008).

Center for Russian & East European Studies
University Center for International Studies
University of Pittsburgh
4400 W. W. Posvar Hall
230 South Boquet Street
Pittsburgh, Pennsylvania 15260
(412) 648-8716
www.ucis.pitt.edu/crees/cbpaper.html.

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