

# Remittances and Human Capital Investment: Evidence from Albania

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# **REMITTANCES AND HUMAN CAPITAL INVESTMENT: EVIDENCE FROM ALBANIA**

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### Abstract

During the last two decades, South-East European countries have experienced a large increase in the number of people migrating to more developed countries. With a large portion of their population abroad, these countries are highly dependent on remittances, which in the case of Albania far exceed Foreign Direct Investments.

Using household survey data for Albania, this study compare decision-making about human capital investment in remittance-receiving households and non-remittance-receiving households. The Cox proportional hazard model is used to capture the effects of remittances. The crucial assumption in the proportional hazard model is that the effect of the covariates is proportional over the entire base line. The vector of covariates includes information such as; children's demographic characteristics, parental schooling, household income and the presence of remittances. In the model, household incomes are considered separately from remittances in order to identify whether income from remittances have the same effect as other types of household non-labour income in the decision to invest in more years of schooling for household members.

Key words: duration analysis, education, remittances

JEL classification; C41, I20, F24

#### 1. Introduction

As labour markets become internationalized and people increasingly migrate to find work, remittances have become essential for the survival of the low-income households in regions of outmigration. Remittance flows, funds received from migrants working abroad, have become enormously important as a source of income in many developing countries (Giuliano and Ruiz-Arranz, 2005; Mundaca, 2005).

Remittances have grown from \$3 billion in 1975 to close to \$370 billion in 2007 (World Bank, 2008). This dramatic growth has had important implications for poverty reduction (Adams and Page, 2003), economic growth (Solimano, 2003) and financial development (Aggarwal, Demirguc-Kunt and Peria, 2006). Several studies have suggested that remittances are the second largest source of external finance for developing countries after Foreign Direct Investments (FDI), both in absolute terms and as a proportion of GDP. Relative to capital flows, remittances tend to be stable and to increase during periods of economic downturns and natural disasters (Yang, 2006). While a surge of financial inflows, including foreign aid, can erode a country's competitiveness, remittances do not seem to have this adverse effect. Rajan and Subramanian (2005) argue that remittances may not lead to significant loss of competitiveness because they tend to dry up if exchange rates become overvalued.

Since the fall of the Berlin Wall in 1989, migration from Eastern Europe including the Balkans has increased sharply. According to World Bank estimates, in 2005 Albania was the fourth-ranked country in the world in terms of share of emigrants in relation to population, with 27.5 percent of Albanians living abroad, mostly in Greece and Italy. In 2006, remittances were 13 percent of Albania's GDP, exceeding by more than three times both the FDI and the total amount of development aid received by the country. There are reasons to believe that this extraordinary volume of migration and remittances is likely to have had extensive consequences for the Albanian economy. In their review of the existing literature, for example Rapoport and Docquier (2005) argue that remittances have short-run economic benefits, and may have long-run implications for households' labour supply decisions, education opportunities for offspring and investment in household businesses.

The development potential of remittances is increasingly being recognized by researchers and policymakers. This paper examines the contribution of migration and remittances on human capital investment using cross-sectional data for Albania.

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#### 2. Literature review

Remittances have been examined from both micro and macro perspectives. Treating remittances as a household issue the microeconomic literature examines the patterns of remittances, the motivatons for making them and the impact they have on the labour market and on family consumption. While the macroeconomic studies on the other hand concentrate on macro effects in recipient countries including economic growth, financial development, and poverty reduction.

#### 2.1. Remittances and education

Remittances can increase consumption or stimulate investments in economies with liquidity constraints (Reilly and Castaldo, 2007; Woodruff and Zenteno, 2001). In one of the first studies that examined the consequences of remittances on home countries of migrants Funkhouser (1992 found that remittances in Nicaragua increase self-employment for men and reduce the labour supply of women.

Most studies have focused on the impact of migration on the livelihood of migrants themselves, while less research has been done on those households who remain behind. The overall aim of this paper is to examine the impact of remittances on households' decisions in terms of education.

From a theoretical viewpoint, four micro motives have been suggested to explain migration transfers (Rapoport and Docquier, 2005). The first motive involves altruism, meaning that migrants care for those left behind. The second entails an exchange of services between migrants and the recipients of the remittances<sup>1</sup>. The third involves familial interactions, which may take the form of an insurance contract that protects the household members against shocks. The fourth entails remittances may also be a loan repayment for the costs of migrant's education and/or emigration.

The specific relationship between remittances and education achivement has been explored by focusing on the impact of remittances on the education of household members. Of particular concern for the process of economic development is how migration affects household investments in human capital. The empirical findings about this impact are ambiguous. The extra income from remittances may allow children to delay entering the workeforce in order to further their studies. However, the departure of wage earners from a household may disrupt family life. Migration may reduce the number of adult role models in the

<sup>&</sup>lt;sup>1</sup> Similar evidence ranging from pure altruism to self-interest are presented in the case of Botswana (Lucas and Stark, 1985). 4

home and may increase the demand on older children to assist in running and supporting the household. These effects may make it more difficult for children to remain in school. Thus, migration may increase or decrease household investment in children's schooling (Hanson and Woodruff, 2003).

A few studies have examined the potential forward linkage between remittances and education. These studies provide a starting point for analysing the potential growth effects of remittances through human capital formation<sup>2</sup>. Hanson and Woodruff (2003) employ a reduced-form approach to estimate the effect of remittances on children's schooling and health in Mexico. They find a positive relationship between child education and having a family member abroad and argue that remittances are the mechanism that links the two. They control for the potential endogeneity of having a migrant family member by using historical state migration rates and household characteristics.

Cox-Edwards and Ureta (2003) reach similar conclusions about the impact of remittances in El Salvador. They estimate *survival functions* to show that remittances significantly contribute to reduce the hazard of school leaving in El Salvador using cross-sectional data collected in 1997. Their findings report rural/urban differences in the impact magnitude effect. One problem with this study is that it does not address potential sample selectivity issues and endogeneity of remittances. Thus, the findings could be tested using alternative econometric techniques.

In a subsequent study, Acosta et al. (2006) examine the effects of remittances on age-based demographic sub-groups, using survey data for El Salvador. Their evidence in this study suggest that girls and boys between 11 and 14 years of age seem to benefit from remittances in terms of higher enrolment rates, but this positive impact does not apply to boys between 15 and 17 years of age. Acosta et al. (2006) conclude that remittances are used as a substitute for child labour, a practice usually associated with higher school dropout rates.

Yang (2005) finds that remittances in the Philippines cause only minor improvements in school attendance for children between 10 and 16 years of age. There is a much greater impact in the attendance for boys between 17 and 21 years of age, an increase of remittances amounting to 10 percent of household income leads to a 10 percent increase in these boys' attendance.

<sup>&</sup>lt;sup>2</sup> This is assuming that human capital formation is good for growth.

The conflicting findings on the impact of remittances on education suggest that this relationship may vary by context and age and need to be further investigated. The first issue is whether there is a consistent pattern across age-groups, the second is variation by gender, and the third is about rural/urban differences.

#### 2.2. Remittances in Albania

There is an ongoing debate on the role of migration in the development of countries with high rates of migration such as Albania. The literature focuses on how remittances are spent by remittance-receiving households and their implications in terms of costs and benefits for the local economy. Researchers disagree over the extent to which remittances-receiving households use these financial resources productively. Some findings suggest the use of remittances mainly for short-term consumption needs rather than for long-term investments. The extent to which remittances contribute to local development depends upon the household context, circumstances and the way decisions are made.

Since the beginning of the transition from a centralized to a market economy Albania has been characterized by rapid growth in the volume of migration with a particular peak in 1997-1998<sup>3</sup> following the Pyramid Scheme collapse (Azarri and Carletto, 2009), and in 2000. Figure 1 shows the flow of the first-time migrant in the period 1991-2004, with a peak in 2000. In conjunction with the migration, the volume of remittances directed to households in Albania has grown rapidly. Remittances represent the most direct and immediate benefit for the remittance-receiving households and the local community. The lack of a microeconomic restructuring, however, seems not to have stimulated local production but instead has generally been used for the consumption of goods (Reilly and Castaldo, 2007), thus deepening the extroversion of the economy<sup>4</sup>. While remittances are generally flows of small individual transactions and the way of transfers maybe sometimes informal or irregular, the total amount of remittances is substantial.

<sup>&</sup>lt;sup>3</sup> Peaking in 2000 at about 50.000 new migrants per year and steadily decreasing after that.

<sup>&</sup>lt;sup>4</sup> Extroversion of the economy, that is when the local consumption is higher that the GDP, while the difference is compensated by remittances and foreign aid (Samson, 1996)  $\frac{1}{6}$ 

Figure 1: Flows of first-time migrants by year of migration, 1991-2004



Source: C. Azarri and C. Carletto (2009)

There have been few empirical studies of the impact of remittances on the labour market issues in Albania. Utilizing the Albanian Living Standards Measurement Survey (LSMS) for 1996, Konica and Filer (2009) suggest that remittances have a negative effect on female labour market participation due to higher incomes from household members working abroad (Rodriguez and Tiongso, 2001; Amuendo-Dorantes and Pozo, 2006). This finding is consistent with studies conducted in other countries. In the Albanian case, however, Konica and Filer (2009) find that neither the existence of emigrants in the household nor the amount of remittances received has an effect on male labour force participation.

Using data collected between 2002 and 2004 by the World Bank, Duval and Wolff (2009) provide evidence about the patterns of remittances in Albania. This study used random and fixed effects discrete choice models to examine both the determinants of remittances sent by family members and adult children living abroad and the impact of these remittances on the living standards of the recipient. According to this paper, transfers are negatively correlated with both the sender's and recipient's levels of education. Remittances have a positive impact on economic indicators like "satisfaction with current situation", adequateness of food consumption, and the amount of affordable expenditure (Duval and Wolff, 2009).

Using data from the 2005 Albanian LSMS, Kilic et al. (2007) measured the impact of the past migration experience of Albanian households on non-farm business ownership using instrumental variables regression techniques. These results indicate that households' past migration experiences exert a positive impact on the probability of owning a non-farm business. Using the same dataset, Dermendzhieva (2009) investigates the effect of migration and remittances on labour market participation. A linear probability model is estimated for the probability of a household member to be working on the subsamples of male and female household members separately. Dermendzhieva (2009) obtains large and negative coefficients for receiving remittances for young females and older males. These findings held when an instrumental variable was introduced.

Remittances are not only invested in physical capital, but also productively invested in human capital accumulation, such as education. The Becker (1974) model of investment in education states that families take into consideration their education rate of return and its cost in order to choose the optimal education level for their children; in this model a range of factors may influence the educational attainment. If families have financial constraints the level of schooling for their children will be lower than optimal. By relaxing the household's liquidity constraints, remittances from abroad may facilitate investments in education.

Studies of households on Albania have focused mainly on the decision to work and do not consider how remittances impact human capital investment. My study examines how remittances influence decisions to invest in schooling of the household members. Little is so far known about the extent that remittances effect socioeconomic outcomes such as school attainment. According to the literature on remittances, labour migration seems to have contradictory impact on the education of the household members left behind.

# 3. The empirical analysis

#### 3.1. Data sources

Multipurpose household survey is one of the main sources of information for assessing living conditions and measuring the level of the poverty. They are an indispensable tool to assist policy-makers in monitoring and targeting social programs. They also provide data that can be used to investigate patterns of household investment in human capital or labour market participation.

In order to investigate the impact of remittances on the educational attainment, this study draws on data from the 2005 Albanian Living Standard Measurement Survey (ALSMS). The survey was carried out annually by the Albanian National Institute of Statistics with the technical assistance of the World Bank, from 2002 to 2005.

This survey contains a wide range of information on several aspects related to the living conditions of the people of Albania and acquired data at the individual, household and community level. Four survey instruments were used to collect information for the ALSMS; a household questionnaire, a diary for recording household food consumption, a community questionnaire, and a price questionnaire. The household questionnaire includes all the core LSMS modules as defined in Grosh and Glewwe (2000)<sup>5</sup>, plus additional modules on migration, fertility, subjective poverty, agriculture, nonfarm enterprises and social capital. The survey was conducted between May and July, which is important because migrants are likely to be visiting and providing remittance inflows to their households.

The sampling for the ALSMS was based on a stratified two-stage cluster design and includes 3,638 households and 17,302 individuals. The survey includes information about four regions: Tirana, the capital, and then Costal, Central, and Mountain, each disaggregated into urban and rural areas, and hence offer a comprehensive overview of national patterns. This is by far the best source of data to date for understanding the impact of migration in Albania.

Remittances are defined as money received by households in the past 12 months prior to the survey in cash or in-kind from someone who does not live in the household e.g. child, head of the household or other relatives abroad. The cash remittances are reported in Lek and one issue is related to the monetary measurement error. In-kind remittances are not used in the empirical analysis, because they are mainly consumption items.

As part of the education module, the survey collected data on the highest grade for all household members and current enrolment status for each member aged 6 to 24. My study is restricted to a sample of 4,511 household members aged 13 to 26, because in 2005 Albania's education system provide eight years of compulsory schooling.

<sup>&</sup>lt;sup>5</sup> The core LSMS modules are ; metadata, household roster, dwelling and utilities, education, health, employment, transfers and social assistance, other income sources and consumption.

#### 3.2. Methodology

The question is whether household members who live in households with external migrants complete more grades of school at a given age than do other children. Sending migrants abroad may generate remittances that raise household income and allow children to complete more schooling, but it may also disrupt family life in a manner that hinders children's scholastic progress. Remittances can increase not only physical investments but also can expand human capital accumulation, such as health and education. There is evidence that remittances reduce school dropout hazard rates in El Salvador (Cox-Edwards and Ureta, 2003).

To examine the impact of remittances upon human capital investment decisions, my question is whether girls and boys living in the remittance-receiving households complete more years of the schooling than those children living in non-remittance-receiving households. A significant fraction of the remittances are sent to low income families. An interesting question is whether this increasing source of income has an impact on human capital accumulation of those left behind.

The literature finds ambiguous relationship between remittances and schooling. In the case of Mexico (Hanson and Woodruff, 2003), data indicated a positive small effect of remittances on schooling only for children living in cities with fewer than 2,500 inhabitants and with mother with a very low level of education. Cox-Edwards and Ureta (2003) estimate a Cox proportional hazard model to examine the effect of remittances on schooling using El Salvador data. They find that remittances have a large and significant impact on school retention of individuals between 6 to 24 years old. Other studies that find similar results are Funkhouser (1992), Yang (2004). The marginal effect of receiving remittances suggests that recipient household are more likely than non-recipients to keep children at school.

In order to characterize the remittance-receiving households, it is important to determine their position in the income distribution. There are important costs associated to the act of migrating, so it is possible that migrants do not come from the lowest quintiles of the income distribution and therefore that remittances do not flow toward the poorest. It is possible that lowest income people cannot migrate and they receive fewer remittances. This situation is more likely to occur in rural areas where poverty rate is higher and in general the educational achievements are lower than those in the urban areas.

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The empirical framework that will be used to capture the effect of remittances in the human capital investment is the proportional hazard model, (Cox-Edwards and Ureta, 2003):

$$h(t) = h_0(t) * \exp\{x_i'\beta\}$$

Where:

 $h_0(t)$  is the baseline hazard of leaving school after grade *t*, which is left unspecified and is estimated  $x_i'$  is a vector of covariates such as; child's characteristics, location, parental schooling, household income and presence of remittances.

 $\beta$  is the vector of parameters which has been estimated.

The crucial assumption in the proportional hazard model is that the effect of the covariates is proportional over the entire base line.

The Cox (1972) model, which assumes that covariates multiplicatively shift the baseline hazard function, is one of the most popular because of its elegance and computational feasibility. The nice thing about this model is that  $h_0(t)$ , the baseline hazard, is given no particular parameterization and can be left unestimated. There is no assumption about the shape of the hazard over time- it could be constant, increasing, decreasing or anything else we can imagine. It is assumed that whatever the general shape, it is the same for everyone. One subject's hazard is a multiplicative replica of another's (Cleves et. al. 2008). Comparing subject *j* to subject *m*, the model states that:

$$\frac{h(t/x_j)}{h(t/x_m)} = \frac{\exp(x_j\beta_x)}{\exp(x_m\beta_x)}$$

This is constant, assuming that covariates  $x_i$  and  $x_m$  do not change over time.

The advantage of the semiparametric Cox model is that we do not need to make assumption about  $h_0(t)$ . If wrong, such assumptions could produce misleading results about  $\beta$  (Cleves et. al. 2008). The cost is loss in efficiency, knowing the functional form of  $h_0(t)$  we could estimate better  $\beta$ .

The choice of the hazard model is to some extent unusual in modelling school attainment levels. The Cox proportional hazard model is made for the analysis of survival-time data and the number of "grades completed" does not correspond one to one with the calendar year because the household members can be retained in grade. The framework allows me to choose one of the two possible outcomes for each individual: enrolled in school (right censored) or is not enrolled (failed).

In the model household incomes are divided from remittances in order to identify if income from remittances have the same effect as household income from work in the decision for more years of child's schooling. An advantageous feature of this model is that it yields an estimate of the underlying baseline hazard function; enable us to identify the grade levels where dropout rates concentrated are concentrated.

Previous evidence has suggested that the positive effects of remittances on schooling vary with the educational attainment of the children's parents, being generally larger when the later are low. Differential effects of this sort could be due to the fact that among poorer households with lower levels of schooling, remittances could have a more sizable effect in terms of relaxing budget constraint. However one can also expect an opposite effect, remittances having a smaller impact on education when schooling of parents is low, if less educated parents exhibit lower preferences for educational over other alternative expenditures.

The answer to the relationship between remittances and schooling has fundamental policy implications. If remittances have an impact on schooling, we can conclude that there is support for Government fund to be transferred to poor households in order to enhance children education. Another policy implication derived from a positive effect of remittances on education levels is the reduction in the remittances transaction costs.

#### 3.3. Regression results

These results are based on 2005 cross-sectional data; household member participates in the survey for a time and, thereafter is no longer observed (right censoring). The *analysis time* in the dataset is the highest grade completed by the subjects and the *failure time* is recorder by the enrolment status; if enrolled the individual is considered "right censored", if not is considered "failed". Table 1 describes the set of the independent variables used to explain the enrolment status of the household members.

Age	Age in years of the household members
Area	=1 if Coastal =2 if Central =3 if Mountain =4 if Tirana
Female	=1 if the member is a female, 0 otherwise
Income_amount	Other incomes in amount
Moth_edu	Mothers education =0 if none or some primary =1 if completed primary 4 years =2 if completed 7/8 years =3 if completed secondary/vocational school =4 if completed university
Other income	=1 if household receives income, 0 otherwise
Remitt	=1 if the household receive remittances, 0 otherwise
Remitt_amount	Remittances in amount
Urban	=1 if urban, 0 otherwise

## **Table 1: Independent Variable Description**

Figure 2 shows the Nelson-Aalen estimator<sup>6</sup> for the cumulative hazard. Contrary to what expected the cumulative hazard is greater for the non-remittance receiving households if compared with the remittance-receiving households. This is more evident beyond the twelfth grade of schooling which is the end of the secondary education. The presence of remittances has no impact in the decision of schooling for household members attending grades preceding the twelfth grade of schooling.

## Figure 2: Estimation of Nelson-Aalen cumulative hazard



<sup>&</sup>lt;sup>6</sup> This is a nonparametric method for estimating the cumulative hazard function which has batter small-sample properties. The estimator is from Nelson (1972) and Aalen (1978).

Table 2, shows the estimates of the determinants of the hazard of leaving school. In contrast to findings from other countries comparable to Albania, mothers' education is not statistically significant in this dataset. The regression results does not provide support for the effect of mother's education in the school attainment of household members, because according to the p-value 0.21 we fail to reject the null hypothesis that the mother's education has no effect on the hazard of leaving school.

Table 2: Estimates of the determinants of the hazard of leaving school

Covariates	Hazard Ratio	St. Error	z-stat
Age	.496	.008	-40.56
Mothers education	1.199	.216	1.01
Receives remittances	1.196	.102	2.10
Income (net of remittances)	.859	.039	-3.31
Urban/Rural	.887	.042	-2.49
Female	.892	.040	-2.50
Log-likelihood	-14403.935		
Number of observations		4462	

For the case of remittance-receiving household, the hazard ratio is 1.196, which means that the presence of remittances increases the hazard of leaving school if compared to non-remittance receiving household by 19.6 percent. In other words remittances positively affect the probability of dropping out of school. In Figure 3 notice that the difference in survival estimates is higher in magnitude for the rural areas and more evident after the secondary school or the twelve grade of schooling.



#### Figure 3: Estimated survival functions in urban and rural areas, with and without remittances

There is an important difference in school leaving behaviour between male and female. The coefficient  $\exp(\beta)$ =.892 for the indicator variable Female is statistically significant and means that being a female decreases the hazard of leaving school by 10.8 percent. This is more apparent in Figure 4 both for the rural and urban areas. One possible explanation for this finding is that male students have better labour market opportunities than do female students, and thus face higher opportunity costs of attending school. When estimating the survival function only for household members living in remittance- receiving households shown in Figure 5, the hazard of leaving school is higher for males than females. This finding suggests that if there is a positive effect of remittances on education, it holds only for females.



Figure 4: Estimated survival functions, by gender, in urban and rural areas



#### Figure 5: Estimated survival functions, by gender only for those households receiving remittances

Incomes net from remittances have a positive effect in lowering the hazard of dropping school by around 14.1 percent for every unit increase in income level. This result is consistent with the previous literature on education and provides evidence on the fact that income matters for the choice of schooling levels of household members.

For those household members living in urban areas the hazard of leaving school after a given grade is 11.3 percent lower than for those living in rural areas. However, my next step is to examine whether the region or area of residence<sup>7</sup> is reflected into differences in the hazard of leaving school.

# 4. Discussion and conclusions

Albania is an interesting case for discussing the impact of both migration and remittances. The international migration was legally forbidden and tightly controlled until a time when migration became a demographic and social process with about one-half of households reporting family members with migration experience (Carletto, Davis et. al., 2006).

This paper examines school attainment with cross-sectional data using Cox proportional hazard model. The preliminary results suggest a surprising finding about the impact of remittances on school attainment. The estimation of the survival function indicates that receiving remittances from household

 $<sup>^{7}</sup>$  The sampling frame for the survey was stratified into four regions: coastal, central, mountain, and the capital Tirana 16

members working abroad increases the hazard of leaving school after the end of secondary education. This is most evident for males living in rural areas. One explanation of this result is that remittances fuel further migration rather than further education at home. It is possible that remittance-receiving household members will later migrate not valuing the local education enrolment. On the other hand, the absence of a household head may lead to less parental control in the household, thus negatively affecting children's school enrolment. This absence may result in the need for children to undertake household work in substitution of members living abroad. The reason for higher drop rates can be related to the way remittances are used. Households with migrants may invest remittances in higher return activities that provide alternative avenues for skill formation and higher returns than staying in school.

Another group of determinants of school retention includes income, gender, and the urban residence. Increases in incomes have a positive effect on lowering the hazard of leaving school after a given grade. This suggests that relaxing the budget constraint of poor households does have an effect on children's educational attainment.

Females have a higher probability of staying longer in school than do males, both in urban and rural areas. This result holds even when the survival function is estimated for remittance receiving households only. Another explanation is that, in patriarchal contexts, men are generally the frontrunners of international migration (Stecklov et. al., 2008)

Surprisingly mother's education does not affect the hazard of leaving school. What I need to do next is to check for father's education effect as well in order to capture a better picture of parental schooling. Consistent with similar findings in other countries is the differential result in rural and urban areas. Schools are more available in urban areas, living conditions and the organization of the economy in the way it affects the cost of attending school is more favourable in urban rather than in rural.

The data used in the study are cross-sectional and in absence of longitudinal information there may be problems when attempting to isolate the household budget constraint. Current income is a weak measure of budget constraint especially when there is lack of information about permanent income, which has a stronger impact on improving opportunities for children schooling.

Cameron and Heckman (1998) argue that the standard model used in the sociology of education literature is a Logit specification. A Logit model with an ordered discrete-choice may be estimated in order to better identify the impact of remittances in the education of household members left behind. 17 Since the migration trends from this country are unlikely to reverse in the future, the study is a tool for understanding some of the long-term implications of migration for the Albanian economy.

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