Human Capital, Market Imperfections, Poverty, and Migration: Evidence from Albania

Etleva Germenji[a] and Johan F.M. Swinnen[a]

Research Group on Food Policy, Transition & Development (PRG-Leuven)

Katholieke Universiteit Leuven

Working paper 2005/5

http://www.prgleuven.be

Abstract: The most dramatic recent immigration in Europe is the influx of more than 700,000 Albanians, about a quarter of the total Albanian workforce, in the 1990s. The vast majority migrated illegally. This paper analyses the determinants of Albanian migration based on a unique representative survey of rural households. The study confirms that migrants are mostly young, male, and single. Regional variations in migration reflect a combination of cultural and economic factors, including migration costs. However, we find that migrants do not come from the poorest rural households. Moreover, education has a positive, albeit non-linear, effect on the likelihood of migration. Migration is negatively related with household access to alternative income sources and reduced financial constraints but positively related with the presence and household's access to migration networks. Policy implications are that aid programs and government initiatives to invest in rural infrastructure and rural education may have mixed effects on migration. A key policy target to reduce migration should be the creation of non-farm rural employment and rural households' access to finance.

Keywords: Albania, migration, rural household

JEL Classification: F22, O52, P20

[a] LICOS – Centre for Transition Economics & Department of Economics, K.U. Leuven, Belgium

The paper is also published as LICOS Discussion paper 157/2005.

Human Capital, Market Imperfections, Poverty, and Migration: Evidence from Albania

Etleva Germenji and Johan F.M. Swinnen

1. Introduction

Migration is an important and hotly debated issue in Europe today. Rich countries, in particular those in the EU, try to restrict the inflow of migrants from poor neighbouring countries. Popular sentiment sees migrants as a potential threat to domestic workers' jobs, a drain on government funds, and a source of criminal behaviour. At the same time, some see immigrants as needed to secure future financing of retirement benefits and to fill domestic labour shortages. For poor countries, international migration at the same time presents a potentially damaging drain of its most dynamic work force and much needed human capital. At the same time, migration, and the associated remittance payments can be an important source of income and investment finance for poor households, and therefore of growth.

The most dramatic recent example of illegal immigration in Europe is the rapid influx of hundreds of thousands of Albanians to its EU neighbours after the fall of the Berlin Wall. During several decades Albanian citizens were restricted in their foreign travel by a Communist system which, even by East European standards, was excessive in its controls of citizens' life and economic activities. It caused poverty and isolation of Albania. In 1991 the Albanian Parliament approved the law on fundamental human freedoms and rights which specified that "*everybody can go abroad and freely return*", giving Albanian citizens the right of free movement outside the country. A huge number of people seized this opportunity and left for prosperous neighbouring countries like Greece and Italy. The collapse of illegal financial schemes in 1997, and the resulting economic and political chaos, induced

further massive migration. In total, more than 700,000 people, about a quarter of the total Albanian workforce, emigrated to the EU in the 1990s. The vast majority migrated illegally, either by crossing the mountains into Greece, or via smuggler boats to the beaches of Italy (Barjaba, 2002; UNDP, 2000).

EU governments have tried to reduce immigration from poor countries by tightening immigration controls and laws, and by introducing programmes targeted at the home countries of the immigrants. Increased aid to the home countries assumes that aid-induced improvements of the economic situation in the home countries would reduce the incentives of people to migrate.

Obviously, in order to target these programmes efficiently it is important to understand the motives and characteristics of the (potential) migrants. Yet the policies are often based on weak understandings of the migration patterns and determinants, in particular because much of the migration is illegal, and therefore not registered in traditional statistics or easily accessible data sources. This is a major constraint on policy design.

This paper presents the first study of the characteristics of Albanian migrants based on a unique representative survey of rural households in Albania. Most Albanian migrants come from rural areas. In 2000, 58% of people lived in rural areas and, more importantly, almost 90% of the poor live in rural areas (INSTAT 2002; Government of Albania, 2000). Rural Albania is characterised by high population density, unemployment, deep poverty and lack of infrastructure to attract investment. Virtually all rural households are active in agriculture, mostly small family farms working on small plots which were allocated to them in the land distribution process in the early 1990s. Small farms typically use household labour and are managed jointly by household members. Households are large by European standards and

often contain three generations. Credit, land, and insurance markets are characterised by major imperfections, negatively affecting investment incentives and opportunities.

It is typically argued that many rural residents, and especially the young generation, see no future in the countryside. However, moving to the city requires finding a place to live, which is as difficult as finding a job. Hence, many rural people, in search for better employment opportunities, migrate temporarily or permanently to more prosperous neighbouring countries. In this paper we will study whether these arguments are supported by empirical evidence, and/or whether they should be qualified – and what this implies for policies.

The literature on what determines migration goes back a long way. Early models of migration focused on migration driven by differences in economic opportunities and wages (Hicks, 1932), later adjusted for the probability of obtaining a job at the destination (Harris and Todaro, 1970) and costs of information (Maier, 1985). Other models analysed migration as an investment, explicitly integrating costs of migration and taking into account differences in returns due to, for example, human capital characteristics of potential migrants (Sjaastad, 1962; Hart, 1975). Recent studies emphasise the role of household decision-making on migration (Mincer, 1978; Stark, 1991) and explore the conditions under which households choose to send members to other regions (Hoddinott, 1994; Morrison, 1994; de la Briere, at al, 2002). Studies find that credit, capital, and insurance market imperfections play a key role in this decision. Migration of household members serves to reduce the overall risk to household income and shocks, or to accumulate capital for consumption and production (Stark, 1991; Taylor and Martin 1999). A final set of studies emphasizes the catalyst role of networks in migration. By providing information regarding the modes of migration and job opportunities as well as direct assistance in the form of

food or shelter in the destination regions, networks lower the entry costs and reduce uncertainties associated with migration (Davis et al, 2002; Massey and Garcia Espana 1987; Munshi, 2001; Winters et al, 2001). In summary, the literature suggests that migration is determined by a variety of factors, including household and individual characteristics, as well as the presence and accessibility of migration networks.

The objective of this paper is to study to what extent these factors have affected migration from Albania, and to draw implications for policies. The next section presents the data and, migrant and household characteristics. Section 3 presents the hypotheses, the empirical model and variables. Section 4 discusses the estimation results and section 5 concludes.

2. Data and Descriptive Analysis

The data used for our empirical analysis are drawn from a representative household survey in rural Albania in 2000. The survey covered 145 villages from all 36 districts of Albania while the data was collected at both household and individual levels[1]. The initial data set included 4566 individuals (older than 15years of age[2]), members of 1232 households. After correcting for missing observations etc., we were left with an overall sample of 3934 individuals, members of 1171 households, on whom usable data were available. 416 households of the sample (or 35.5%) were affected by migration abroad during the period 1995-1999, either because a household member migrated and/or because they received remittances from household members or relatives abroad.

[1] In most of the cases, it was the household head that was interviewed. However when the head was absent, another adult member of the household replaced him.
[2] Apart from their number in a household, no information was collected for members younger than 15 years of age.

In this paper, an individual household member is qualified as migrant if s/he spent at least one month abroad during the year 1999. A rural household that had at least one migrant member is then qualified as a household with migrant(s). By these criteria, 10.2% of individuals in the sample (or 402 out of the total of 3934) are qualified as migrants and 27.5% households (or 322 out of the total of 1171) are qualified as households with migrants.

Table 1 summarises the main characteristics of the households. Albanian rural households are headed predominately by males (95.7% on average). The average age of the household head is around 49 years and s/he has completed on average between 7 and 8 years of schooling (7.7 years). Household with migrants are headed by older heads and slightly better educated heads then households without migrants (51.1 versus 47.9 years on average and 7.9 versus 7.6 years of schooling on average respectively). In addition, households with migrants seem to have, on average, better educated adult members also (8.9 versus 8.3 years of schooling).

The average size of the rural household is 5.0 members, 3 of whom are at working age (i.e. between 15 and 65 years old) while 1.5 are children younger than 15 years of age. Compared to households without migrants, households with migrants are somewhat larger (5.3 versus 4.9 members on average). They have more members at working age (3.6 versus 2.8 on average) and less young children (1.3 versus 1.6).

All households are active in agriculture. Most have small individual farms that combine crop and animal production to ensure adequate household consumption. 69.3% of the households work only in agriculture. The rest of households, are also involved in other activities than agriculture: 19.9% of the households are involved in wage labour while 14.3 % of the households are involved in non-farming businesses. Compared to households without migrants, households with migrants are more likely

to work only in agriculture (80.5% versus 65.4%), less likely to be involved in wage labour (11.9% versus 22.7%) and less likely to be involved in non-farming businesses (9.9% versus 15.8%).

The average household monthly income per capita, excluding transfers from abroad[3], is 5560.2LEK or US$39.5[4]. Compared to households without migrants, households with migrants, on average, are characterised by a lower level of income per capita (5046.8LEK or US$35.8 versus 5735.4LEK or US$40.7). However, it does not say that households without migrants are, on average, better off. Since the transfers from abroad are excluded, the income figures have to be interpreted carefully. According to the data, 261 households with migrants (out of 322 or 81.1%) received remittances while for 166 households (out of 322 or 51.6%) remittances were reported as the most important source of income.

The data suggest that migration is more likely among the households located along the coastal areas of Albania, followed by those households located in areas bordering areas with Greece (Table 2). While the share of households with migrants for the whole sample is 27.5%, households located along the coastal areas have the highest share, 34.8% (or 7.3% higher than the sample average), and households in the bordering areas with Greece have the second highest share, 31.5% (or 4% higher than the sample average). On the other hand, households in the Northern areas seem to be the least likely to migrate. The share for this group of households is 20.5% or 7% lower than the sample average.

[3] Households included in the survey reported if they received remittances from migrant members abroad or not. However, they did not report the amount received. Therefore, total income (including remittances could not be calculated and per capita household income reported in Table 1 excludes transfers from abroad.

[4] 100LEK = US $0.71 in 1999

Before turning to the characteristics of the individual household members, we note that the average number of migrants per household, in the survey is approximately 1.3 persons. The bulk of households with migrants (70.3%) have only one migrant member; 24.5% have two migrant members; and the rest (5.2%) have three or more migrant members. The maximum of migrant members in a household was 5.

The main characteristics of the individual household members (older than 15 years of age) are summarised in Table 3. Of all individuals, 10.2% are migrants. For the largest part, migrants are sons of the household heads (63.2%, 83.9 of which are single) followed by the heads of households (22.6%). Compared to non-migrants, migrants are predominantly male (90 versus 48.7%) and single (57.2 versus 25.5%). The differences in age are large. On average, migrants are about 10 years younger than non-migrants (29.2 versus 39.1 years old on average). Figure 1 shows that 67.3% of migrants are between 20 and 34 years of age[5].

As regards the education status, the data clearly indicate that migrants have more years of schooling than non-migrants. None of the migrants is illiterate and, on average, they have almost 2 years more of schooling (10.0 versus 8.3 years of schooling). More migrants than non-migrants have completed 8 years of compulsory schooling. Thus, more non-migrants with at most 8 years of education (68.2%) while more migrants have a high school diploma, 9-12 years, (47.7%). An education at post-secondary, including university, level is attained by 4.5% of migrants while the corresponding percentage for non-migrants is only 2.7%.

Finally, concerning location, the data on individuals confirm that migrants are more likely come from coastal areas and from areas bordering with Greece.

[5] These results are by and large consonant with what has been seen at the national level, where the census highlights a very substantial reduction of persons in the relevant age groups (INSTAT 2002).

3. Hypotheses, Variables, and Model Specification

Although much of recent research on migration has modelled it as a household decision (Stark, 1991), the literature on intra-household decision-making suggests that assuming a unitary household decision structure would be inappropriate (Haddad et al., 1997). The findings from migration studies indicate that migrants are selected on key characteristics, including their expected earning potential as migrants and non-migrants (Adams, 1993; Davis et al, 2002; Emerson, 1989; Lucas, 1985). Individual human capital and household variables, in turn, affect individuals and households' income with and without migration. Therefore, there is a "derived" selectivity on migration on specific individual and household characteristics, through the differential effects of these characteristics in migrant and non-migrants labour markets (Taylor and Martin, 1999). Following this approach, our paper assumes that individuals make the migration decision in accordance with income differentials, household characteristics, regional conditions and, the presence and accessibility of migration networks. We use a logit regression to determine the impact these have factors on the decision to migrate. More specifically, the model is specified as:

$$\ln\left(\frac{\Pr(M_i=1)}{1-\Pr(M_i=1)}\right)=\alpha+P_i^{'}\beta+H_i^{'}\gamma+R_i^{'}\delta+N_i^{'}\theta+\varepsilon_i, \qquad (1)$$

for $i=1,...,3934$, where $\Pr(M_i=1)$ represents the migration probability of individual *i,* P_i denotes a vector of personal characteristics of individual *i,* H_i denotes a vector of individual *i*'s household characteristics, R_i denotes a vector of regional characteristics for individual *i*, N_j denotes the migration network characteristics for individual *i*, α is the intercept, β, γ, δ and θ are regression coefficients to be estimated and ε_i the disturbance.

The dependent indicator variable for the probability of migration of an individual household member is EMIG. It is measured as weather or not an individual went abroad for part or all of 1999. EMIG takes a value zero if the household member did not emigrate while a value one means that s/he emigrated.

Four groups of explanatory variables are considered. The first group consists of personal characteristics of household members (see table 4 for summary statistics). The literature on migration has amply noted the importance of the individual human capital. It influences both an individual's employment opportunities and the wages once s/he migrates in such a way that migration in response to economic incentives is generally more profitable for the younger and better educated individuals (Sjaastad, 1962; Chiswick, 1994).

To capture the effect of age, we include the variables AGE (measured as age in years of the household member) and AGESQ (age squared). Migration at younger ages increases the time horizon for expected income calculations (Harris and Todaro, 1970). A young person has more years over which to recover the cost and receive the gains of migration than an old person. Moreover, younger people are generally less risk averse and more adventurous, characteristics which are needed to cross the border illegally, like the vast majority of rural Albanians do. However, for a variety of reasons, very young (and very old) people may not emigrate, which may result in a non-linear effect of age in the regression.

Education matters as well. Relative to the depressed labour market in rural Albania, returns to education are likely to be higher abroad. Human capital theory suggests that a minimum level of education is required in order to access jobs in high-income countries while higher levels of education increase the employment and expected income-earning opportunities (Schultz, 1982). These would lead to

expectation that rural Albanians with higher levels of education would be more likely to migrate abroad. However, often not all human capital is transferable abroad. First, a certain degree or diploma obtained in Albania may not be recognised in the host country. Second, when lacking legal status, migrants may take jobs which are lower skilled (Djajic, 1995; Markle and Zimmermann, 1992). National statistics reveal that Albanians in general enter the host countries illegally and reside mainly as illegals over there. Therefore, the impact of education may well be non-linear since higher levels of education may not necessarily allow Albanians to access higher paying jobs in the host countries.

The indicator variables for education are the continuous variables EDUCATION (measured as individual household member's years of schooling) and EDUCATIONSQ (years of schooling squared). We also make use of two dummy variables: SECOND, which is equal to one if the individual has obtained a secondary school diploma and zero otherwise, and UNIV, equal to one if the individual has obtained a university degree and zero otherwise.

In addition to human capital, gender and marital status are likely to affect the decision to migrate. Reports indicate that Albanian migrants are mainly males: three quarters of Albanian migrants are men and fully half the male population between the ages of 20 and 35 lives outside the country - at least for a time (INSTAT, 2002). The belief in natural differences between the sexes and male domination is strong in Albania (Reinicke, 2002). Patriarchially designed activities and relations between men and women prevail even more in the rural areas. Men are educated to be responsible for the economic and social affairs outside the household circle while women are mostly told to be responsible for domestic affairs. Consequently, women are tied more to the household than men. It is difficult for them to take part in activities that involve

physical separation from the household, including migration. It is also more acceptable for the social environment in rural Albania for men to travel and live alone abroad than for women.[6] To capture this effect, we include the variable MALE, which is equal to one if the individual is a male and zero otherwise.

In addition we include the dummy variable SINGLE, equal to one if the individual household member is single and zero otherwise. Family ties deter migration (Mincer, 1978). Therefore married persons are less likely to emigrate. They have responsibility to take care of their spouse and children while taking them along would significantly increase migration costs.

Migration abroad may be especially difficult for persons that are married and have dependent children (i.e. children younger than 15 years of age), because of the duty to care for them. Previous research on migration out of Albania indicates that concerning married people, if the husband decides to migrate, somebody must be available to look after his wife and children. When he fails to entrust his family to the custody of someone else, he is less likely to migrate (Gedeshi, 2001). To capture this possible deterrent effect of having young children on migration of married individual household members the variable CHILDREN is included in the analysis, which equals one if the individual is married and has children younger than 15, and zero otherwise.

A second group of variables captures individual's household characteristics. An important factor is the income situation of the household. On average, wages are much higher in neighbouring countries (Greece and Italy) than in rural Albania. Moreover, the correlation between these wages and incomes in rural Albania is weak. Hence, migration can be a strategy for increasing household incomes and minimising income risks.

[6] Albania represents a significant source country of women trafficking (IOM, 2002).

If differences in (potential) income are an important motive for migration, one would expect that members of poor households are more likely to participate in migration (Guest, 1989). However, migration abroad involves costs, such as costs of transport, documents, bribes, etc. and members of the poorest households may not be able to afford these costs. Hence, these two income-related effects have opposite impacts on migration. As a consequence, we may find a non-linear relationship between income and migration.

The variable INCOME measures income per capita in the household. INCOME is measured as the sum of household earned income (income from self-employment and wages) and household non-earned income (income from pensions, state assistance, rents and interest on bank deposits). To allow for non-linearities, we also include the square of income per capita, INCOMESQ. The natural logarithms of these variables are represented by LINCOME and LINCOMESQ.

We also make use of the variable LIVESTOCK, which is a proxy for the wealth of the rural household. LIVESTOCK is measured as an index (with the following weights: dairy cows = 1, calves = 0.7, pigs = 0.5, horses = 1 and sheep or goats = 0.3). To correct for possible changes in 1999 that would be directly correlated to migration (remittances) in this year, we measure the size of LIVESTOCK as it was at the beginning of 1999.

Apart from the wealth, the estimated coefficient of LIVESTOCK may also reflect credit and insurance market imperfections. Given imperfections in rural factor markets, in particular capital markets, livestock may provide a feasible wealth storage instrument for Albanian rural households. At any moment a rural household can sell livestock to secure cash needed to overcome liquidity constraints. Migration is an alternative way of overcoming liquidity constraints – as well as a means to diversify

income sources (Stark, 1991). If these constraints play an important role in the decision to migrate, we would expect members of households that have more wealth or that have managed to diversify income sources, e.g. by getting involved in non-farming businesses or wage labour, to be less likely to migrate, as their households face relatively less liquidity and risk constraints without migration.

We make use of two other variables (in addition to LIVESTOCK) to capture these effects. NONFARM and WAGE are two indicators of household's access to off-farm income, which reduces liquidity constraints and implies household income diversification. NONFARM is a dummy variable which is equal to one if individual's household was involved in any non-farming business during 1999 and zero otherwise. WAGE is also a dummy variable. It equals one if at least one of the (adult) members in the individual's household had a wage job during 1999 and zero otherwise.

Regional characteristics may also have an important effect, due to a combination of geographical, cultural, and income factors. First, there is an important north-south divide in Albania. In the south, especially along the coast, agriculture land is in much larger supply and of better quality, and income are higher than in the north. Furthermore, Albanians living in the south and along the coast have been more subject to outside influences. In contrast, northern Albania is a mountainous region. Agricultural land is in very short supply and of low quality. The natural conditions constrained the penetration of outside influences and the northern "highlanders" have kept a more tribal, traditional culture than in the south or along the coast.

Although poverty is deeply rooted in the north, historically the area lacked migration. This may be due to both social and cultural factors as they are a more closed society. To capture these factors, we included a regional dummy, NORTH,

which is equal to one if the household, to which the individual belongs, is located in the north and zero otherwise.

Another regional factor is how the location of the household affects the cost of migration. The most important destinations of Albanian migrants are Greece and Italy. Migration to Greece mainly happens by walking across the mountains that form the southern frontier between Greece and Albania. Migration to Italy occurs mostly by crossing the Adriatic Sea with smuggling boats departed mainly from Durres and Vlora, the largest ports of Albania (Figure 2). Hence, closeness to the border with Greece or to the sea reduces transport costs and may also affect other migration costs since the members of households located in these areas are more likely to be familiar with the mountains or the sea, or have local relatives which can be relied upon for migration services. To capture this effect, we included two dummy variables: BORDER which equals one if the individual's household is located in the areas close to the border with Greece and zero otherwise and, COAST which equals one if the individual's household is located along the coastal line and zero otherwise.

In addition, the inequality in the household income distribution within regions is likely to affect the decision to migrate. According to the relative deprivation approach, household behaviour towards migration may be driven more by the household's income position vis-à-vis its reference group (e.g. the village) than by its absolute income level (Stark, 1991). In other words, a household may be more likely to send members abroad if it is poor among rich than if it is poor among poor. To account for this effect, we include the variable GINI which equals the district level Gini coefficient. It measures the degree of inequality in the household income distribution at district level[7]. If relative deprivation plays an important role in the

[7] The smallest administrative unit included in our survey is the village. However, because of having only a few observations per village, we computed the Gini coefficient at district level.

decision to migrate, we would expect that members of households which are located in the districts with a higher Gini coefficient, i.e. with a higher value of GINI variable, to be more likely to migrate. Note that the Gini coefficient is calculated based on household income excluding transfers from abroad.

The forth group of variables are migration network variables. Defined as a "set of impersonal ties that link migrants, former migrants and non-migrants in origin and destination areas through the bonds of kinship, friendship and shared community origin" (Massey, 1988), migration networks may affect migration decisions by providing information regarding the modes of migration and living conditions in the destination, by providing food, shelter, assistance in finding work at the destination, or by providing finance for migration, thus increasing the expected returns and reducing the risk and costs associated with migration. As migration networks form and thicken, they may serve as a catalyst for the migration of household members that have access to such migration network. Two migration network variables are included in our model. First, the variable PREVIOUS, which measures the number of current members in the individual's household with temporary migration experience prior to 1999. Second, the variable CURRENT, which measures the number of current household members living abroad but left the household prior to 1999.

Following the hypotheses and using the indicator variables, the empirical model we estimate is the following:

$$\begin{aligned}\ln\left(\frac{\Pr(EMIG_i=1)}{1-\Pr(EMIG_i=1)}\right) &= \alpha+\beta_1 AGE_i+\beta_2 AGESQ_i+\beta_3 EDUCATION_i+\\ &+\beta_4 EDUCATIONSQ_i+\beta_5 MALE_i+\beta_6 SINGLE_i+\\ &+\beta_7 \mathrm{CHILDREN_i}+\gamma_1 LXPINCOME_j+\gamma_2 LXPINCOMESQ_j+\\ &+\gamma_3 LIVESTOCK_i+\gamma_4 NONFARM_i+\gamma_5 WAGE_i+\delta_1 NORTH_i+\\ &+\delta_2 BORDER_i+\delta_3 COAST_i+\delta_4 GINI_i+\theta_1 PREVIOUS_i+\\ &+\theta_2 CURRENT_i+\varepsilon_i\end{aligned} \qquad (2)$$

where the $\alpha, \beta, \gamma, \delta, \eta$'s represent coefficients to be estimated and ε_i is the error term. In alternative model specifications (see further) we replaced EDUCATION and EDUCATIONSQ by SECOND and UNIV (Model 2) and we dropped SINGLE and CHILDREN to check for multicollinearity problems with other variables, especially AGE (Model 3).

Notice that equation (2) includes LXPINCOME instead of LINCOME. LXPINCOME is the predicted value of income per capita excluding remittance payments in logarithms. The reason for this is that household income is importantly affected by remittances from migration. For 174 households (14.2 percent of all households of the sample or 54% of households with migrants) remittances from family members living abroad was even the most important source of income. To overcome the associated endogeneity problems we follow the two-step estimation procedure as used by Adams (1993). First, we regress household income per capita excluding remittances on a set of independent variables with data from the sub-sample of 795 households that did not receive any income from abroad for the period 1995-1999. In a second step, the estimated parameters from this equation are used to predict household income per capita without remittances for all 1171 rural household of the sample.

The model to predict household income per capita excluding remittances is based on the following regression model:

$$\begin{aligned} LXINCOME_j = {} & \eta_0 + \eta_1 AGEHH_j + \eta_2 MALEHH_j + \eta_3 EDUCATION_j + \\ & + \eta_4 FAMSIZE_j + \eta_5 ADULTS_j + \eta_6 LLAND_j + \eta_7 LIVESTOCKM_j + \\ & + \eta_8 MACHINERY_j + \eta_9 BUILDING_j + \eta_{10} NONFARM_j + \\ & + \eta_{11} WAGE_j + \eta_{12} STATE_j + v_j, \qquad j = 1,2,...795 \end{aligned} \tag{3}$$

where AGEHH is the age of the household head, MALEHH a dummy variable of the gender of the household head, EDUCATION the mean education of the household members older then 15 years of age, FAMSIZE the household size, ADULTS labour size as proportion of household size, LLAND the amount of land cultivated (owned or rented) by the household in logarithm, LIVESTOCK the mean of total equivalent number of livestock in household, measured as total equivalent number of livestock in household at the beginning of 1999 plus total equivalent number of livestock in household by the end of 1999 divided by 2, MACHINERY the size of owned farm machinery measured as a weighted index of the presence of eight machinery and equipment items (tractors, trucks, ploughs, sowing machines, mower, harrow, cultivator, irrigation equipment), BUILDING the size of owned farm buildings measured as a weighted index of availability of seven building items (cattle stables, storage facilities, sheep shelter, poultry houses, multipurpose sheds, greenhouses and plastic covers), NONFARM and WAGE as defined above, and STATE a dummy variable of whether the household receives income from state pensions or state assistance. Table 5 has details on the variables and basic statistics.

Estimation results of equation (3) based on the 795 households which did not receive remittance payments for the period 1995-1999 are shown in table 6. Except MALEHH, ADULTS, MACHINERY and STATE, all the other variables have a significant impact. The estimated coefficients are then used to predict LXPINCOME for all 1171 households in the sample, and the predicted values are used in estimating equation (2). The results of the final estimations based on a sample of 3934 household members are shown in table 7.

4. Estimation Results

To make the results easy to interpret, the coefficient estimates in columns 2, 4 and 6 are transformed into changes of the probability of migration that is associated with a unit change in each independent variable. For continuous variables, the marginal effect is the probability change in response to a unit increase in the value of the independent variable evaluated at the mean value[8]. For dummy variables the marginal effect is computed as the difference in probabilities of migration between the group with value 1 and the reference group.

The estimation results confirm first the importance of several individual characteristics as determinants of migration.

The impact of AGE is highly significant, and non-linear: age has an inverted-U shaped relationship with migration. Individuals of around 32 years are most likely to migrate. The likelihood of migration increases with age below 32 years, but over 32, the likelihood of migration reduces when people grow older. To test whether correlation between marital status and age affects the results, we dropped SINGLE and CHILDREN in model 3. As can be seen from comparing model 1 and 3 in table 6, the estimated coefficients for AGE and AGESQ remain highly significant and are rather robust to the change in specification.

The coefficient of EDUCATION is positive and statistically significant at the 10% level while the coefficient EDUCATIONSQ is negative but statistically insignificant. Although the joint test of significance gave a $\chi_2^2 = 5.79$, implying that coefficients are jointly significant at the 10% level, the estimation results for Model 1 do not make clear the relationship between education and migration. Therefore, to

[8] Another method may be to evaluate the marginal effects at every observation and then taking the average. In "large" samples, by applying the Slutsky theorem, this result is similar to the result obtained by evaluating the marginal effects at the sample means (Greene, 1997)

further analyse the impact of education on migration, in Model 2 we replaced the continuous variables EDUCATION and EDUCATIONSQ by dummies SECOND and UNIV. The estimated coefficient of SECOND is positive and significant, but the coefficient of UNIV is not significant suggesting that, *ceteris paribus*, individuals who have secondary education are more likely to emigrate than those with just primary school education, but having a university degree does not significantly raise the migration probability. The reasons why university educated individuals are not more likely to migrate are (a) that such persons are more likely to have better income and employment opportunities in Albania, (b) that it is difficult to get recognition for university degrees obtained in Albania in foreign countries, especially when migration is illegal, (c) that most of the employment opportunities are for lower skilled employment and one has to accept the negative side-effects of living as illegal migrants.

MALE is highly significant. As could be seen from the data in table 3, Albanian men are much more likely to emigrate than women. Estimation results confirm that compared to female individuals and *ceteris paribus*, male individuals have indeed a larger tendency of migration (3.9 percentage points, or 38.2% higher in the probability of migration). As we argued above this is due to a combination of cultural and traditional patterns of behaviour in rural society in Albania.

As regards the marital status, the positive and significant coefficient of SINGLE confirms that single individuals are more likely to migrate. The main reasons are (a) that such persons have no wife or children to take care of (b) that migration costs increase with marriage. However, for those individuals that are married, having dependent children (i.e. children younger than 15years of age) is not exerting any significant deterrent effect on their migration decision. The coefficient for variable

CHILDREN is negative but insignificant. Looking to the marginal effect, the results indicate that single state increases the probability of migration by nearly 1 percentage points or 9.8%.

We turn now to the estimated effects of the second group of explanatory variables, individual's household characteristics. The coefficient of LXPINCOME is positive and LXPINCOMESQ is negative and both are statistically significant at the 5% level (the joint tests of significance gave for Model 1 $\chi_2^2 = 8.37$, for Model 2 $\chi_2^2 = 9.05$ and for Model 3 $\chi_2^2 = 10.37$ indicating that coefficients are jointly significant at the 5% level). This implies that migrants are not most likely to come from the poorest households. The likelihood of migration increases with pre-remittance household income levels for low income households. Moreover, the impact is non-linear. With higher income, the relationship between migration and incomes becomes negative as members of richer households are less likely to migrate. In fact, the result is consistent with previous findings in the literature (Adams, 1993) which suggest that individuals from average income rural households are most likely to migrate. The reason is that these households are the ones who are most in need of remittance income among those who are able to meet the transport and opportunity costs associated with migration of household members. The poorest households cannot cover such costs.

NONFARM is negatively and statistically significantly related with migration. Hence, the likelihood of migration reduces (nearly by 0.6% percentage points or 5.6%) if household members are involved in non-farming business, besides farming. Access to non-farming business reduces household credit-constraints and allows them to diversify their sources of income and hence to reduce income risk without participation in migration. In this perspective, the negative relationship of

NONFARM with probability of migration suggests that members of households that have diversified their income portfolio are less likely to migrate.

This conclusion is reinforced by the negative and significant effect of WAGE. Members of households involved, besides farming, in wage labour have lower probabilities of migration. Compared to members of households involved only in agriculture, *ceteris paribus*, individuals of households involved in wage labour have a probability of migration 0.9 percentage points or 8.9% lower.

Variables that measure the role of regional conditions turn to be also important determinants of migration. Thus, members of households living in the areas along the coastal line as well as members of households living in the areas close to the border with Greece are more likely to emigrate. Both COAST and BORDER are positive and statistically significant at the 1 and 5% level respectively. The calculated marginal effects indicate that, *ceteris paribus*, compared to individuals of households in Central Albania, for members of households living in the areas along the coastal line the probability of migration is nearly 1.1 percentage points or 10.8% higher while for individuals of households living in the areas along the land-bordering with Greece the probability of migration is nearly 1.2 percentage points or 11.8% higher. On the other hand, not much can be told for members of households living in the northern areas of Albania. The estimated coefficient of NORTH is not significant.

The degree of inequality in the distribution of household income within districts, captured by GINI, is positively and statistically significantly, at the 1% level, related with migration. Hence, likelihood of migration increases with the increase of inequalities in income distribution among households in a district. Then, members of households located in districts with a higher degree of income inequalities face higher probabilities of migration.

Finally, after controlling for the first three groups of variables, the estimation results indicate that migration networks are important determinants of migration probability as well. The estimated coefficients of both migration network variables, PREVIOUS and CURRENT, are positive and highly significant, implying that the existence of previous experience with migration in the household as well as household's access to migration networks (through current members living already abroad) positively and significantly influence the household member's probability of migration.

5. Conclusions and Implications

This paper presents the first study of the characteristics of Albanian migrants based on a unique representative survey of rural households in Albania in 2000.

The analysis confirms that migrants are mostly young, male, and single. The impact of age is non-linear with the highest propensity to migrate in the age group of around 32 years. Older people are more risk averse towards migrating illegally. Marriage increases mobility costs and constraints. Cultural gender biases towards working outside the family constrain women migration.

The analysis also yields a series of insights which are less straightforward. First, we find that migrants do not come from the poorest rural households suggesting that migration costs are an important constraint. The fact that migration costs are a significant factor is also confirmed by the result that members of households living along the coastal line or in the bordering areas with Greece are more likely to migrate. However, at higher levels of income – those who can afford the costs of migration – the impact of income on migration turns negative. Furthermore, we also find that migration is higher in regions with more income inequality.

Second, education has a positive, albeit non-linear, effect on the likelihood of migration. Migrants are more likely to have a high school diploma than non-migrants. This increases their employment opportunities abroad. Characterised by deep poverty and lack of infrastructure to attract investments, rural areas in Albania offer just a few choices for employment other than low-wage agricultural work. University education has not positive effect on migration, as such education offers more opportunities at home, while it does not enhance employment opportunities or wages abroad.

Third, migration is negatively related with household access to alternative income sources and reduced financial constraints. Our analysis shows that members of households that have managed to diversify income sources (for example through combining farming and non-farming activities) are less likely to migrate.

Forth, migration networks serve an important role in migration from rural Albania. Results indicate that experience with migration by household members as well as household's access to migration networks tend to increase the likelihood of household members' migration.

The findings of this paper have important implications for policies. Our conclusions imply that aid programs and government initiatives to invest in rural infrastructure and rural education may very well have mixed effects on migration. To the extent that they increase human capital, access to markets and production factors, and stimulate incentives to invest they will reduce incentives to leave. Yet at the same time, such investments may lower migration costs, increase the likelihood of finding a job abroad, raise incomes, and increase the poorest households' ability to finance migration of household members.

For example, the national strategy for socio-economic development, launched by the Albanian government in November 2001, puts a strong emphasis on

education[9]. To reduce poverty and promote socio-economic development, the Albanian government aims to increase the enrolment rates in education, particularly at the secondary level for children from rural areas. The findings of this paper suggest that an increase in the level of secondary education for the rural population, when it is not accompanied by an increase in employment opportunities, may well increase migration rather than constraining it, because it increases the human capital skills but not the local employment opportunities.

Finally, findings of our analysis suggest that the most important policy target to reduce migration is the creation of non-farm rural employment and access to finance. These factors seem to have the clearest negative incentive effect on migration.

[9] National Strategy for Social-Economic Development, 2001

References

Adams R.H.J. (1993): "The Economic and Demographic Determinants of International Migration in Rural Egypt", *Journal of Development Studies*, 30(1), pp. 146-167

Borjas, G. J. (1991b): "Immigration and Self-Selection", in J. Abowd and R. Freeman, eds., *Immigration, Trade and Labour Market*. Chicago: University of Chicago Press, pp. 27-96

Chicwick, B.R. (1994): "The Performance of Immigrants in the United States Labour Market", in H. Giersch (eds.), *Economic Aspects of International Migration*, Springer Verlag: Berlin, pp. 95-114

Davis, B., Stecklov, G. and Winters, P. (2002): "Domestic and International Migration from Mexico: Disaggregating the Effects of Network Structure and Composition", *Journal of Population Studies*, 56, pp. 291-309

De la Briere, B., Sadoulet, E., De Janvry, A. and Lambert, S. (2002): "The Roles of Destination, Gender, and Household Compositionin Explaining Remittances: an Analysis for the Domenican Sierra", *Journal of Development Economics*, 68, pp. 309-328

Djajic, S. (1995): "Illegal Immigration and Resource Allocation", *paper presented at a CERP Workshop*. Halkidiki, 14-16 September 1995

Emerson, R. (1989): "Migratory Labour and Agriculture", *American Journal of Agricultural Economics*, 71(3), pp.617-629

Gedeshi, I. (2001): "The Role of Remittances from Albanian Migrants and Their Influence in the Country's Economy", *Synthesis of Articles*, Centre for Economic and Social Studies, Tirana

Government of Albania (2000): Albania Interim Report Reduction Strategy Paper

Government of Albania (2001): National Strategy for Social-Economic Development: Medium Term Program of the Albanian Government "*Growth and Poverty Reduction Strategy*" (GPRS 2002-2004)

Ghatak, S., Levine, P and Price, W. S. (1996): "Migration Theories and Evidence. An Assesment", *Journal of Economic Surveys,* 10(2), pp. 159-198

Greene, William (1997): *Econometric Analysis, 3rd edition*. Upper Saddle River, NJ: Prentice Hall

Guest, M. (1989): *Labour Allocation and Rural Development*, Bourder, Colorado, Westview Press

Haddad, L. Hoddinott, J. and Alderman, H. (1997): *Intrahousehold Resource Allocation in Developing Countries: Models, Methods and Policies*, Baltimore: Johns Hopkins University Press

Hanson, G. and Spilimbergo, A. (1999): "Illegal Immigration, Border Enforcement, and Relative Wages: Evidence from Apprehensions at the U.S.-Mexico Border"*, American Economic Review*, 89/5, pp. 1337-1357

Harbison, S.F. (1981): "Family Structure and Family Strategy in Migration Decision Making", in G. F. De Jong and R. W. Gardner (eds), *Migration Decision Making*. *Multidisciplinary Approaches to Microlevel Studies in Developed and Developing Countries,* New York / Oxford: Pergamon Press

Harris, J. R. and Todaro, M.P. (1970): "Migration, Unemployment and Development: a Two-Sector Analysis", *American Economic Review*, 60, pp. 126-142

Hart, R. (1975): "Inter-Regional Migration: Some Theoretical Considerations", *Journal of Regional Science*, 15, pp. 289-305

Hatton, T. J. (1995): "A Model of U.K. Migration, 1870 – 1913", *Review of Economics and Statistics*, 77/3, pp. 407-415

Hicks, J. (1932): *The Theory of Wages*, MacMillan, London

Hoddinott, J. (1994): "A Model of Migration and Remittances Applied to Western Kenya", *Oxford Economic Papers*, 46, pp. 459-476

International Organization for Migration (IOM), *A human Rights Report on Trafficking of Persons, Especially Women and Children*, The Protection Project, March 2002

Lucas, R. (1985): "Migration Amongst the Botswana", *Economic Journal*, 95, pp.358-382

Maier, G. (1985): "Cumulative Causation and Selectivity in Labour Market Oriented Migration Caused by Imperfect Information", *Regional Studies*, 19, pp. 231-241

Markle, L., Zimmermann, K. (1992): "Savings and Remittances: Guest Workers in West Germany", in K. Zimmerman (ed.), *Migration and Economic Development*. Berlin: Spring-Verlag, pp. 55-75

Massey, D. and Garcia Espana, F. (1987): "The Social Process of International Migration", *Science*, 237, pp 733-738

Massey, D. (1988): "Economic Development and International Migration in Cooperative Perspective", *Population and Development Review*, 14, pp.383-413

Mincer, J. (1978): "Family Migration Decisions", *Journal of Political Economy*, 86, pp. 749-773

Morrison, A. R. (1994): "Capital Market Imperfections, Labour Market Disequilibrium and Migration: A theoretical and Empirical Analysis", *Economic Inquiry*, 32, pp. 290-302

Munshi, K. (2001): "Identification of Network Effects: Mexican Migrants in the U.S. Labour Market", *Quarterly Journal of Economics*, 118/2, 549-597

National Institute of Statistics (INSTAT): *The Population in Albania in 2001. Main Results of the Population and Housing Census*, Tirana, Albania, 2002

National Institute of Statistics (INSTAT): *Social Indicators Yearbook*, 2000, 2001, 2002, Albania

Reinicke, K. (2002): *"Men Facing the 3rd Millennium: A European Comparison",* Danish National Centre for Research and Documentation on Gender Equality

Schultz, P. T. (1982): "Lifetime Migration within Educational Strata in Venezuela: Estimates of Logistic Model", *Economic Development and Cultural Change*, 30/3, pp. 559-593

Sjaastad, L. A. (1962): "The Costs and returns of Human Migration," *Journal of Political Economy,* 70/1, pp. 80-93

Stark, O. (1991): *The Migration of Labour,* Massachusetts: Blackwell Publishers

Taylor, J. E. and Martin, P. L. (1999): "Human Capital: Migration and Rural Population Change", University of California, Davis, department of Agricultural and Resource Economics

Winters, P., De Janvry, A. and Sadoulet, E. (2001): "Family and Community Networks in Mexico-US Migration", *Journal of Human Resources*, 36/1, pp. 159-184

Figure 1: Distribution of individuals by age and migration status

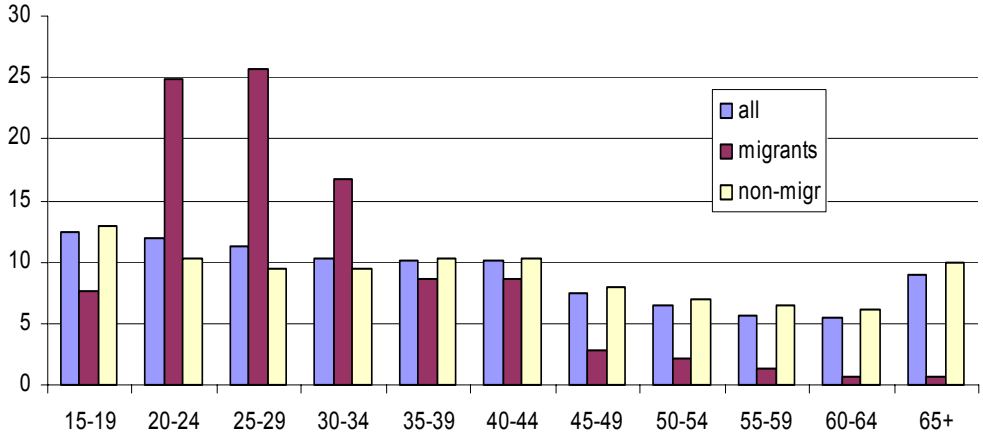

Figure 2: Albania and its neighbours

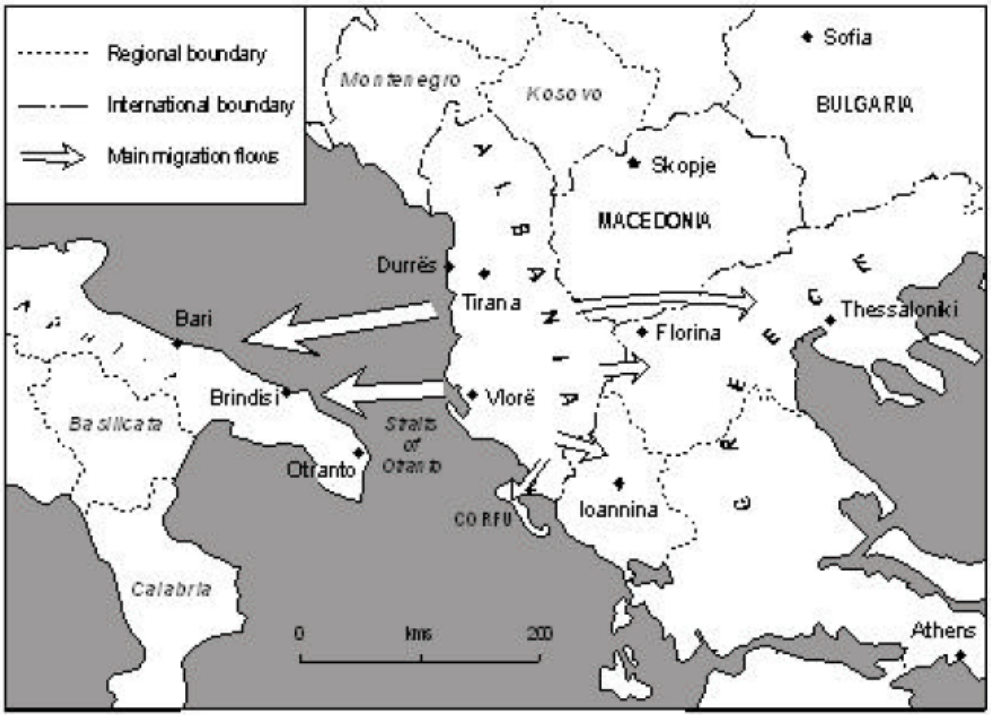

Table 1. Demographic and economic characteristics of the rural households

Characteristic		Households		
		All	With migrants	Without migrants
Male household head	(%)	95.7	95.0	95.9
Age of the household head	(years)	48.7	51.1	47.9
Education of household head	(years of schooling)	7.7	7.9	7.6
Education of adult members	(years of schooling)	8.5	8.9	8.3
Household size	(persons)	5.0	5.3	4.9
Number of adults at working age	(persons)	3.0	3.6	2.8
Number of children (<15 years old)	(persons)	1.5	1.3	1.6
Households involved only in farming	(%)	69.3	80.5	65.4
Households involved in wage labour	(%)	19.9	11.9	22.7
Households involved in non-farm businesses	(%)	14.3	9.9	15.8
Per capita household monthly income[1]	(in LEK[2])	5560.2	5046.8	5735.4
Number of observations	(persons)	1171	322	849

Notes to Table 1

[1]/ excluding transfers from abroad

[2]/ LEK is Albanian currency and 100LEK = US $0.71 in 1999

Table 2: Exposure of households to migration by location

Households	Location								Total	
	North		Border		Coast		Central			
	Nr.	%	Nr.	%	Nr.	%	Nr.	%	Nr.	%
With migrants	35	**20.5**	46	**31.5**	134	**34.8**	107	**22.7**	322	**27.5**
Without migrants	136	79.5	100	68.5	250	65.2	363	77.3	849	72.5
Total	171	100.0	146	100.0	384	100.0	470	100.0	1171	100.0

Table 3. Personal characteristics of household members

Characteristic			All individuals	Migrants	Non-migrants
Kinship					
Household head	(%)		28.9	22.6	29.7
Spouse	(%)		27.9	2.3	30.9
Son of household head	(%)		22.2	63.2	17.5
Of which: unmarried sons		(%)	81.6	83.9	80.6
Other	(%)		21.0	11.9	21.9
Sex (male = 1)	(%)		52.9	90.0	48.7
Marital status					
Single	(%)		28.8	57.2	25.5
Married	(%)		65.3	35.8	68.8
Of which: married with young children		(%)	36.7	19.9	38.6
Age	(years)		38.1	29.2	39.1
Of which: 15 – 19		(%)	12.4	7.6	12.9
20 – 34		(%)	33.4	67.3	29.3
35 – 49		(%)	27.6	20.3	30.9
50 – 64		(%)	17.6	4.1	21.0
65 +		(%)	9.0	0.6	11.2
Education	(years of schooling)		8.4	10.0	8.3
Of which: Illiterate		(%)	1.0	0.0	1.2
1 to 8 years		(%)	68.0	47.8	68.2
9 to 12 years		(%)	29.1	47.7	28.0
More than 12 years		(%)	2.9	4.5	2.7
Location					
North	(%)		13.5	9.5	13.9
Border	(%)		11.9	15.4	11.6
Coast	(%)		33.2	45.5	31.8
Central	(%)		41.4	29.6	42.7
Number of observations			3934	402	3532

Table 4: Descriptive statistics of migration equations variables

Variable	Definition	Mean (Std. Dev.)
EMIG	= 1 if individual emigrates; = 0 otherwise	0.1022
	Personal Characteristics	
AGE	Age of the individual in years	38.1261 (15.7821)
AGESQ	Age squared	1702.61 (1326.974)
EDUCATION	Years of individual's education	8.4347 (3.0259)
EDUCATIONSQ	Years of education squared	80.3448 (52.2660)
SECOND	= 1 if individual has obtained a secondary school' s diploma; = 0 otherwise	0.2908
UNIV	= 1 if individual has obtained a university degree; = 0 otherwise	0.02978
MALE	= 1 if individual is male; = 0 otherwise	0.5292
SINGLE	= 1 if individual is single; = 0 otherwise	0.2877
CHILDREN	= 1 if individual is married and has dependent children; = 0 otherwise	0.3665
	Household Characteristics	
LXPINCOME	Natural logarithm of predicted per capita household monthly income	8.3877 (0.5688)
LXPINCOMESQ	Natural logarithm of predicted per capita household monthly income	70.6772 (9.3959)
LIVESTOCK	Total equivalent number of livestock in household at the beginning of year 1999	2.9815 (3.4687)
NONFARM	= 1 if household, besides farming, is involved in non-farming private businesses; = 0 otherwise	0.1487
WAGE	= 1 if household, besides farming, is involved in labour wage; = 0 otherwise	0.2036
	Regional characteristics	
NORTH	= 1 if household is located in the north of Albania; = 0 otherwise	0.1355
BORDER	= 1 if household is located close to the border with Greece; = 0 otherwise	0.1199
COAST	= 1 if household is located along the coastal line; = 0 otherwise	0.3319
GINI	= Gini coefficient of district *k* for *k = 1, 2, ..., 36*	0.3299 (0.0774)
	Migration Networks	
PREVIOUS	Number of current household members with temporary migration experience prior to 1999	0.1881
CURRENT	Number of current household members living abroad but left the household prior to 1999	0.2171

Note to Table 4

Statistics for the above variables is based on 3934 observations

Table 5. Descriptive statistics of variables used in income regression

Variable	Definition	Mean (Std. Dev.)
LXINCOME	Natural logarithm of per capita household monthly income	8.4504 (0.8058)
AGEHH	Age of household head in years	48.1441 (12.9628)
MALEHH	= 1 if the household head is male; = 0 otherwise	0.9552
EDUCATION	Mean education of household members older then 15 years	8.5726 (2.5371)
FAMSIZE	Household size	4.9802 (2.0404)
ADULTS	Household members in working age as proportion of household size	0.6151 (0.2626)
LLAND	Natural logarithm of land cultivated by the household	1.8347 (0.9494)
LIVESTOKM	Mean total equivalent number of livestock in household	2.9823 (2.8150)
MACHINERY	Total equivalent number of owned farm machineries	0.0756 (0.4821)
BUILDING	Total equivalent number of farm buildings	1.4144 (1.5999)
NONFARM	= 1 if household, besides farming, is involved in non-farming private businesses; = 0 otherwise	0,1834
WAGE	= 1 if household, besides farming, is involved in labour wage; = 0 otherwise	0.2465
STATE	= 1 if the household receives income from state pensions or state assistance; =0 otherwise	0.5204

Note to Table 5

1) Statistics for the above variables is based on 795 observations
2) MACHINERY is measured as a weighted index of the presence of eight machinery and equipment items (tractors, trucks, ploughs, sowing machines, mower, harrow, cultivator, grain mill). The following weights are used: tractor = 1, truck = 1, plough for tractor = 0.5, sowing machine =0.5, mower = 0.5, harrow = 0.5, cultivator = 0.5, grain mill = 0.5)
3) BUILDING is measured as a weighted index of the availability of seven building items (cattle stables, storage facilities, sheep shelters, poultry houses, multipurpose sheds, greenhouses and plastic covers). The following weights are used: cattle stable = 1, storage facility = 1, sheep shelter = 1, poultry house = 1, multipurpose shed = 0.5, green house = 1, plastic cover = 0.5

Table 6. Estimation of per capita household income

Variable	Coef.	t-Statistic	
AGEHH	0.0035	1.81	*
MALEHH	0.0351	0.32	
EDUCATION	0.0264	2.82	***
FAMSIZE	-0.1491	-12.05	***
ADULTS	0.1299	1.39	
LLAND	0.4301	16.13	***
LIVESTOCK	0.0309	5.03	***
MACHINERY	0.0382	0.86	
BULDING	0.0317	2.25	**
NONFARM	0.1601	2.75	***
WAGE	0.4941	9.37	***
STATE	0.0716	1.45	
Constant	7.5201	42.92	***
Number of observations			795
Prob>F			0.000
R-squared			0.4512
Adj. R-squared			0.4427

Notes to Table 6

1) Dependent variable is LXINCOME: the natural logarithm of per capita household monthly income
2) *** denotes statistical significance at 1% level, ** denotes statistical significance at 5% level, * denotes statistical significance at 10% level
3) Obtained parameters are used to estimate predicted per capita income (excluding transfers from abroad) for all the households

Table 7. Logit estimation results

Variable	Model 1			Model 2			Model 3		
	Coeff.		Marg. effect	Coeff.		Marg. effect	Coeff.		Marg. effect
Personal Characteristics									
AGE	0.4506 (8.91)	***	0.0054	0.4567 (9.14)	***	0.0058	0.3783 (8.33)	***	0.0042
AGESQ	-0.0070 (-9.82)	***	-0.0001	-0.0071 (-10.10)	***	-0.0001	-0.0064 (-9.27)	***	-0.0001
EDUCATION	0.3248 (1.92)	*	0.0039	…	…	…	0.3065 (1.81)	*	0.0034
EDUCATIONSQ	-0.0138 (-1.63)		-0.0002	…	…	…	-0.0127 (-1.50)		-0.0001
SECOND	…	…	…	0.2567 (1.79)	*	0.0035	…	…	…
UNIV	…	…	…	0.1828 (0.47)		0.0025	…	…	…
MALE	2.6892 (12.54)	***	0.0388	2.6826 (12.48)	***	0.0409	2.7875 (13.44)	***	0.0382
SINGLE	0.7003 (3.08)	***	0.0099	0.7009 (3.09)	***	0.0105	…	…	…
CHILDREN	-0.2283 (-1.08)		-0.0025	-0.2005 (-0.95)		-0.0024	…	…	….
Household Characteristics									
LXPINCOME	7.7678 (2.45)	**	0.0931	8..4453 (2.65)	***	0.1075	7.3753 (2.32)	**	0.0825
LXPINCOMESQ	-0.4552 (-2.37)	**	-0.0054	-0.4939 (-2.56)	**	-0.0063	-0.4276 (-2.22)	**	-0.0048
LIVESTOCK	-0.0367 (-1.47)		-0.0004	-0.0359 (-1.43)		-0.0005	-0.0318 (-1.31)		-0.0004
NONFARM	-0.6562 (-2.95)	***	-0.0064	-0.6529 (-2.94)	***	-0.0068	-0.6335 (-2.88)	***	-0.0058
WAGE	-0.9764 (-4.71)	***	-0.0092	-0.9871 (-4.76)	***	-0.0098	-0.9857 (-4.78)	***	-0.0086
Regional Characteristics									
NORTH	-0.2476 (-1.08)		-0.0032	-0.2848 (-1.24)		-0.0040	-0.2105 (-0.92)		-0.0025
BORDER	0.7208 (3.26)	***	0.0115	0.7211 (3.24)	***	0.0122	0.6654 (3.04)	***	0.0096
COAST	0.7758 (4.28)	***	0.1080	0.7959 (4.39)	***	0.0118	0.7614 (4.22)	***	0.0099
GINI	2.5511 (2.75)	***	0.0306	2.5362 (2.74)	***	0.0323	2.4799 (2.70)	***	0.0277
Migration Networks									
PREVIOUS	0.9206 (8.63)	***	0.1104	0.9405 (8.84)	***	0.0119	0.9354 (8.90)	***	0.0104
CURRENT	1.4233 (13.27)	***	0.01707	1.4412 (13.41)	***	0.0183	1.4718 (13.71)	***	0.0165
Constant	-47.1749 (-3.59)	***		-48.5649 (-3.68)	***		-43.9770 (-3.34)	***	
Nr. of observations			3934			3934			3934
LR chi2			1097.80			1093.86			1085.42
Prob>chi2			0.000			0.000			0.000
Log-likelihood			-748.7691			-750.7374			-754.9603
Pseudo R2			0.4230			0.4215			0.4182

Notes to Table 6:

1) *** denotes statistical significance at 1% level, ** denotes statistical significance at 5% level, * denotes statistical significance at 10% level
2) Numbers in parenthesis are standard z-values