Ermira Hoxha Kalaj

Are remittances spent in a healthy way? Evidence from Albania

Abstract

This article investigates the effect of remittances on health capital accumulation. Total expenditure is divided into expenditure on medicines; and expenditure on visits and laboratory services. An estimation is presented for rural and urban sub-groups. Both instrumental variable and propensity score matching are used to assess the impact of remittances on health capital investment. Households increase their expenditure on medicines and other health services in the presence of remittances. This positive relationship is statistically significant in the case of remittance-receiving households living in rural areas, although the magnitude is lower in the case of total expenditure on visits and laboratory services. However, total expenditure here is likely to have a significant impact on health outcomes given their preventive nature. Remittance flows thus play a heterogeneous role in the decision-making processes of remittance-receiving household members. However, such non-labour income flows may play an important role in supporting expenditures, especially for those living in rural areas.

Keywords: *remittances, health expenditure, instrumental variable*

Introduction

As labour markets become internationalised and people increasingly migrate to find work, remittances have become important for the survival of low-income households in regions of outwards migration. Remittance flows, i.e. 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, 2009).

Remittances have grown from $3bn in 1975 to close to $370bn in 2007 (World Bank, 2008). This dramatic growth has had important implications for poverty reduction (Adams and Page, 2005), economic growth (Solimano, 2003) and financial development (Agarwal *et al*, 2006). Several studies have suggested that remittances are the second largest source of external finance for developing countries after foreign direct investment (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, 2008). A surge of financial inflows, including foreign aid, can erode a country's competitiveness, but remittances do not seem to have this adverse effect. Rajan and Subramanian (2008) argue that remittances may not lead to a significant loss of competitiveness because they tend to dry up if exchange rates become overvalued.

Migration from eastern Europe, including the Balkans, has increased sharply since the fall of the Berlin Wall in 1989. According to World Bank estimates, Albania was, in 2005, the fourth-ranked country in the world in terms of the share of emigrants in relation to the population, with 27.5 per cent of Albanians living abroad, mostly in Greece and Italy. In 2006, remittances accounted for 13 per cent of Albania's GDP, exceeding by more than three times both FDI and the total amount of development aid received by the country.

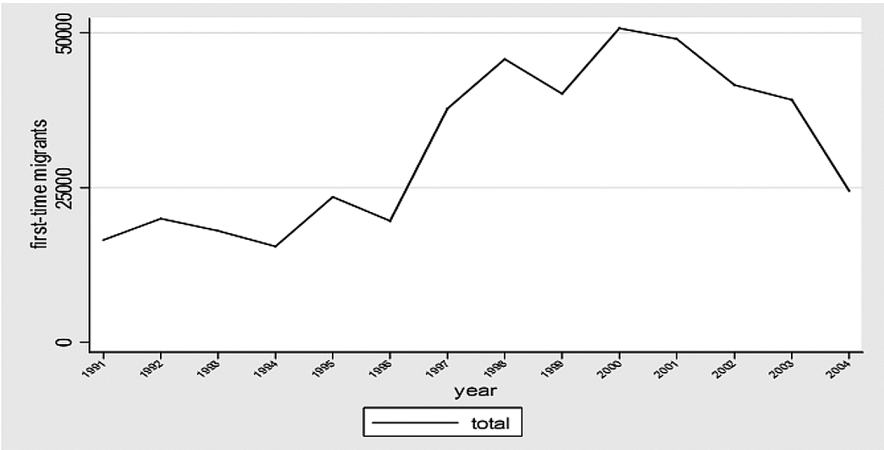
There are reasons to believe that this extraordinary volume of migration and remittances is likely to have had extensive consequences for the Albanian economy. In their review of the existing literature, for example, Rapoport and Docquier (2006) argue that remittances have short-run economic benefits but may also have long-run implications for households' labour supply decisions, for education opportunities for offspring and for investment in household businesses.

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 the implications they have in terms of costs and benefits for the local economy. Researchers disagree over the extent to which remittance-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 investment. The extent to which remittances contribute to local development depends upon the household context and circumstances, as well as the way in which decisions are made.

Albania has been characterised, from the beginning of its transition from a centralised to a market economy, by rapid growth in the volume of migration, with a particular peak in 1997-1998,[1] following the collapse of the pyramid schemes (Azzarri and Carletto, 2009), and in 2000. Figure 1 shows the flow of first-time migrants between 1991 and 2004, demonstrating the 2000 peak.

1 Peaking in 2000 at about 50 000 new migrants per year, and steadily decreasing after that.

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



Source: C. Azzarri and G. Carletto (2009)

In conjunction with migration, the volume of remittances directed to households in Albania has grown rapidly. Remittances represent the most direct and immediate benefit for remittance-receiving households and the local community. The lack of microeconomic restructuring, however, seems not to have stimulated local production and remittances have generally been used for the consumption of goods (Castaldo and Reilly, 2007), thus deepening the extroversion of the economy.[2] Generally, remittances constitute flows of small individual transactions, and the method of transfers may sometimes be informal or irregular, but the total amount of remittances is substantial.

There have been few empirical studies of the impact of remittances on labour market issues in Albania. Utilising 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 the presence of higher incomes from household members working abroad (Rodriguez and Tiongson, 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) also 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 (2010) provide evidence on 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 these had on the living standards of the recipient. According to this paper, transfers are negatively correlated with both the sender's and the recipient's levels of education.

2 Extroversion in an economy means that local consumption is higher than GDP, with the difference being compensated by remittances and foreign aid (Samson, 1996).

Remittances have a positive impact on economic indicators such as 'satisfaction with current situation', the adequacy of food consumption and the level of affordable expenditure (Duval and Wolff, 2010).

Using data from the 2005 Albanian LSMS, Kilic *et al*. (2009) 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 effects 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 separate sub-samples of male and female household members. Dermendzhieva (2009) obtains large and negative coefficients for the receipt of remittances as regards young females and older males. These findings held when an instrumental variable was introduced.

Remittances are not only invested in physical capital but are also productively invested in human capital accumulation, such as education. Gary Becker's 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 (Becker, 1991); in this model, a range of factors may influence 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, therefore, remittances from abroad may facilitate investment in education.

Studies of households in Albania have focused mainly on decisions to work and do not consider what impact remittances have on human capital investment. Consequently, little is known up to now about the extent to which remittances affect socio-economic outcomes, such as school attainment. According to the literature on remittances, labour migration seems – from what little we do know – to have had a contradictory impact on the education of household members left behind.

The development potential of remittances is, however, being increasingly recognised by researchers and policy-makers. This article examines the contribution of migration and remittances on human capital investment, using cross-sectional data for Albania. Health is an important factor of future productivity; consequently, it has a direct impact on economic growth and poverty reduction. According to Grossman (1972), health capital differs from other forms of human capital because an individual's stock of knowledge affects his or her market and non-market activities, while 'the stock of health' determines the amount of time he or she can spend earning money and consuming commodities. This brings differences in the demand for health when compared to demand for other types of capital. Health is demanded for two reasons: as a consumption commodity; and as an investment commodity. Consumers' demand for health correlates positively with labour incomes. Does this positive relationship still hold with non-labour incomes, such as remittances? And do remittances affect the household's consumption of health?

Empirical studies show that remittances can relax household budget constraints and finance the cost of health care (Amuendo-Dorantes *et al*, 2007). On the other hand, remittances may help maintain household consumption during an unexpected health

shock (Wagstaff and Menno, 2005). Migration networks also provide information which may motivate left-behind households to adopt healthier lifestyles or better health-seeking behaviours (Hildebrandt and McKenzie, 2005).

Literature review

Research studies focused on the relationship between migration and health in developing countries can be divided into two themes: on the one side, the impact of migration and remittances on health outcomes or status; and, on the other, the impact of migration and remittances on access to health care or health spending.

The nature of the demand for health care

If we accept the economist's view of health as an asset capable of being produced, then health production can be viewed as an investment which counterbalances capital consumption (Zweifel *et al*. 2009). Investment is achieved by the input of medical care and prevention. The return on the stock of health capital can be expressed as spending less time in poor health. Demand for medical care is a derived demand. Consumers consume health care not as an end in itself but because they wish to be healthy. Economic agents will maximise overall utility by the optimal management of their stock of health over time.

Grossman's model of the health demand function proceeds from the assumption that individuals are born with an initial capital stock of health which diminishes with age; that this stock can be increased by investment in health; that households are subject to a household production function and attempt to maximise their utility given income and resource constraints; and that medical care is one of a number of inputs into a utility function, being subject to the same income and resource constraints as any other.

The model assumes that individuals assess the benefits from expenditure that improves their health and compare the benefits of this to those benefits which are derived from expenditure on other goods and services. Consumers are assumed to have knowledge of their own health status, its rate of depreciation and the production function which relates health improvements to expenditure on health care.

The inter-temporal utility function for a typical consumer is assumed to be:

$$U = U\,(\phi_0 H_0,..., \phi_n H_n; Z_0..... Z_n).$$

where H_0 is the inherited stock of health; H_i the stock of health in period i; ϕ_i the amount of health care consumed; $\phi_i H_i$ the total consumption of health services; and Z_i is the total consumption of other commodities, excluding health.

This utility function can be maximised to derive the expected behaviour of the rational consumer. Maximisation within a budget constraint leads the individual to equate the marginal return on health to the marginal cost. The return to the jth individual is made up of the marginal physical return (a_j) and the marginal monetary return

(y_j).[3] The cost of health capital is the rate of interest foregone on other assets (r_j) plus the rate of depreciation (δ_j):

$$y_j + a_j + r_j + \delta_j$$

Some important implications from the cost-minimising demand for medical services for a given health capital H_i are; first, the higher the price of medical care, the smaller the quantity demanded; and, second, the higher the initial wage rate, the higher the demand for medical care. A higher level of education has a negative effect on the demand for medical care.

The model provides a starting point for a series of health demand studies. The empirical findings show that households see health care in the same light as other consumption items, meaning that it is consumed if it contributes more in net terms to the household's welfare than the alternatives.

The demand for medical care depends on the level of health capital which is chosen optimally by the individual. In the pure investment model (Grossman, 1972), health is only valued for its impact on wealth. There are some important predicted partial correlations of this model. First, an increase in the price of medical care raises the cost of investment in health capital and thus reduces its optimal quantity. Second, a higher available wage level increases the demand for health as a capital good. This effect dominates the increased cost of time, since medical care consumes less time than the working time gained (Zweifel *et al*, 2009). Therefore, a rise in the wage rate causes the optimal quantity of health capital to increase. Third, a higher educational level raises health productivity[4] and, if the price elasticity of the demand for health is less than 1, when all other things are accounted for, we may expect to find a negative relationship between education and the amount of medical services demanded.[5]

There is an additional implication which involves the investment in health over the life cycle. If the price elasticity of demand is less than 1, then the effect of age on the demand for medical care is positive if the rate of depreciation of health rises with age.

The link between migration, remittances and health outcomes

The literature on the causal effects of income on health finds evidence of a positive relationship both at the micro and at the macro level. Strauss and Thomas (1998) focus on the positive role of health in labour market supply. Health has a positive and statistically significant effect on economic growth. Bloom *et al*. (2004) suggest that a one year improvement in population life expectancy contributes to an increase of 4 per cent in output.

Some empirical studies conclude that the migration of a household member results in a poor health situation for those household members left behind: the findings of

3 Utility is measured in monetary metric terms.

4 More highly-educated people are more skilful at combining medical inputs to produce health.

5 Elasticity with respect to wealth must also be less than 1 to have a negative effect on education (Grossman, 1972).

Kanaiaupuni and Donato (1999), based on the use of multilevel methods to review the Mexican data, suggest higher rates of infant mortality in Mexican communities experiencing intense US migration. However, two factors diminish the disruptive effects of migration: migrant remittances to the village; and the institutionalisation of migration over time.

Hildebrandt and McKenzie (2005) found that migration from Mexico to the US improves health outcomes, resulting in lower rates of infant mortality and higher birth weights as regards the members of households who are left behind. According to their results, migrants are negatively selected from the overall rural distribution in terms of the health of their children. They show that, in addition to the health improvements which arise from income effects, having a migrant member is associated with sizeable increases in health knowledge on the part of the mothers.

According to Fajnzylber and Lopez (2007), children from remittance-receiving households tend to have higher health outcomes than those from non remittance-receiving households with similar demographic and socio-economic characteristics. Their study focuses on the relationship between remittances and anthropometric child health indicators in two countries: Guatemala and Nicaragua. The results suggest also that the impact of remittances on children's health is concentrated on low-income households located in the first quintile of the income distribution.

Using country-level longitudinal data over the period 1990-2004 from sub-Saharan countries, Bhargava and Docquier (2008) analyse the effects of the medical 'brain drain' on life expectancy and the number of deaths due to AIDS. They estimate a system of equations in a random effects specification for medical 'brain drain' rates, life expectancy and the numbers of deaths due to AIDS. Their findings show that, in countries in which the HIV prevalence rate exceeds 3 per cent, a doubling of the medical brain drain rate is associated with a 20 per cent increase in adult deaths from AIDS.

The link between migration, remittances and health care expenditure

In a narrower way, other sources of income transfers, such as remittances, are expected to have a positive impact on health expenditure. In analysing the role of remittances in the provision of health care, it is important to consider the relationship between migration and health.

Using the 2002 Mexican LSMS, Amuendo-Dorantes and Pozo (2009) find that international remittances raise health expenditure. Approximately six pesos in every one hundred peso increment in income from remittances are spent on health. However, health care expenditure is less responsive to remittance income among lower-income households. They also find that households lacking any health care coverage exhibit greater sensitivity to income remittances. Hence, remittances may contribute to an equalisation between the usage of health care services by households with and without some kind of health care coverage.

Lindstrom and Munoz-Franco (2006) used data from Guatemala to examine how the experience of migration and social ties to migrants influence the probability of using maternity health care services. They find that remittances are a potential means through which migration affects health care services in rural areas. The migration experience is strongly associated with the formal delivery of assistance. However, this relationship

is due to the positive association between migration and the presence of enabling resources.

According to Jorge (2008), there is a statistically significant positive relationship between remittances and household expenditure on health among those households which do not have access to employment-based medical insurance. Jorge uses a Tobit model with random effects, finding that 10 per cent of changes in remittances are devoted to health expenditure. The study shows an important difference in the effect between remittances and 'institutional transfers'.

Using the 2005 LSMS, Tomini and Maarse (2011) explore the demand side of informal payments for health care in Albania. They used multivariate logit and OLS to explain informal payments. Their findings suggest differences in the determinants of informal payments in inpatient and outpatient care. Informal payments depend on demographic characteristics, but are less dependent on income, suggesting a homogeneity of payments across income categories.

Given current and projected declines in the flows of remittances, it is important to understand the role of these transfers in household well-being through better health outcomes. This is the reason for this study choosing to focus on the effect of remittances on health capital accumulation in Albania. The relationship is analysed in two directions: i.e. as regards both the direct and the indirect consequences. First, do remittances further spending on health care and services? And, second, is there any relationship between migration and remittances concerning health outcomes or health status?

An overview of Albania's health profile

Emigration from Albania has grown rapidly since 1992. According to INSTAT (2005), forty per cent of those who have left the country are aged 19-40 years old, many of them with high levels of education. Compared to the averages for Eur-B+C countries,[6] Albania has a relatively high proportion of people aged 0-14 and a low proportion of people aged over 65. However, according to WHO (2005), the percentage of people 65 and over is predicted to double by 2030.

6 Referring to World Health Origination, the reference group for comparison includes geographical groups with similar health and socio-economic trends and development. The 27 European countries, with very low child mortality and very low adult mortality, are designed as Eur-A. The other 25 European countries with low child mortality and low or high adult mortality are designed as Eur-B+C.

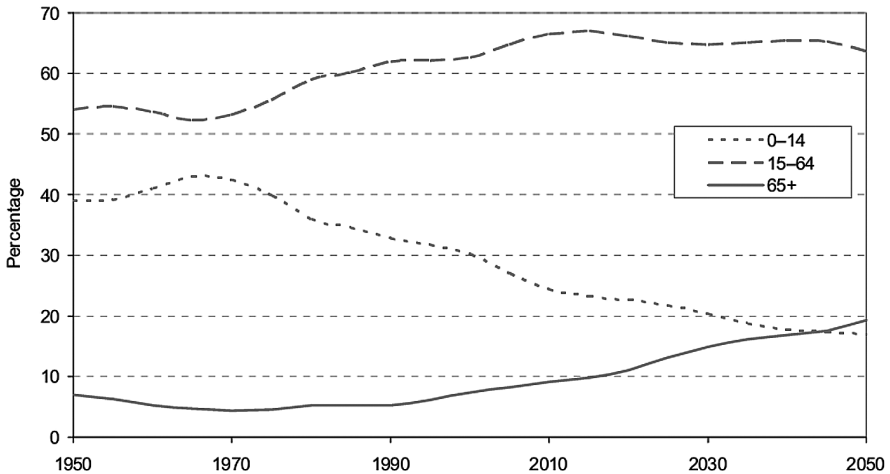
Table 1 – Demographic indicators for Albania and other Eur-B+C countries (data from WHO, 2005)

	Albania	Eur-B+C		
		Ave	Min	Max
Population (in 1000s)	3,102.8		-	
0-14 years (%)	28.1		-	
15-64 years (%)	64.1		-	
65+ years (%)	7.9		-	
Urban population (%)	43.2	63.7	25.0	73.3
Live births (per 1000)	15.2	12.8	8.6	27.1
Natural population growth (per 1000)	9.4	0.8	-7.5	23.0
Net migration (per 1000)	-4.9	1.8	-6.6	2.1

The natural population growth is much higher in Albania than the average in Eur-B+C countries, as shown in Table 1. The birth rate is high compared to other Eur-B+C countries; however, this rate is falling, as shown by Figure 2. Furthermore, the uncontrolled movement of the population in the post-communist era has changed the urban/rural ratio. In 1989, only 36 per cent of Albanians lived in urban areas; but this figure had risen to 43 per cent by 2002 (WHO, 2005). Nevertheless, the indicators on the urban population are still lower than those in Eur-B+C countries.

The World Bank (2011) has estimated that a person born in Albania in 2010 can expect to live for 77 years on average. Women in Albania have around three more years of life expectancy (LE). National figures show that Albanians gained more than three years LE between 1987 and 2003. With increases in the length of their lives, people may respond with changes in lifestyle. In this context, health care services need to shift adequately towards prevention and the management of chronic diseases.

Figure 2 – Percentage of the Albanian population aged 0-14, 15-64 and 65+ (1950-2050 projected)



Source: United Nations, 2005

Income is an important factor affecting health status. Higher incomes enable people to afford the goods and services that contribute to better health, better food and improved living conditions. Total expenditure on health as a percentage of GDP is around seven per cent (WHO, 2010). The structure of total expenditure on health was composed in 2009 from 41 per cent being general government expenditure on health, with the remainder being covered by private expenditure. The Albanian per capita expenditure on health was $534 (WHO, 2010); from this amount $354 represents government expenditure, while the rest consists of households' out-of-pocket spending on health.

The Ministry of Health is the major funder and provider of health care services in Albania. The Ministry organises most health services, with the partial exception of primary care. Figure 3 represents the organisational chart of the health care system. Under the Ministry of Health, the Institute of Public Health is responsible for health protection,[7] environmental health and the control of the quality of drinking water and air. It works mainly through district health services. The local government authorities in all rural communes own and organise their primary health care facilities. The Ministry of Health gives them grants for equipment, maintenance and the payment of staff salaries. In urban areas, Ministry of Health district offices still own and manage such services.

Private health services begin to develop in Albania at the beginning of the 1990s. Today, the private health sector provides various types of services and facilities. Most private sector facilities are well equipped and organised.

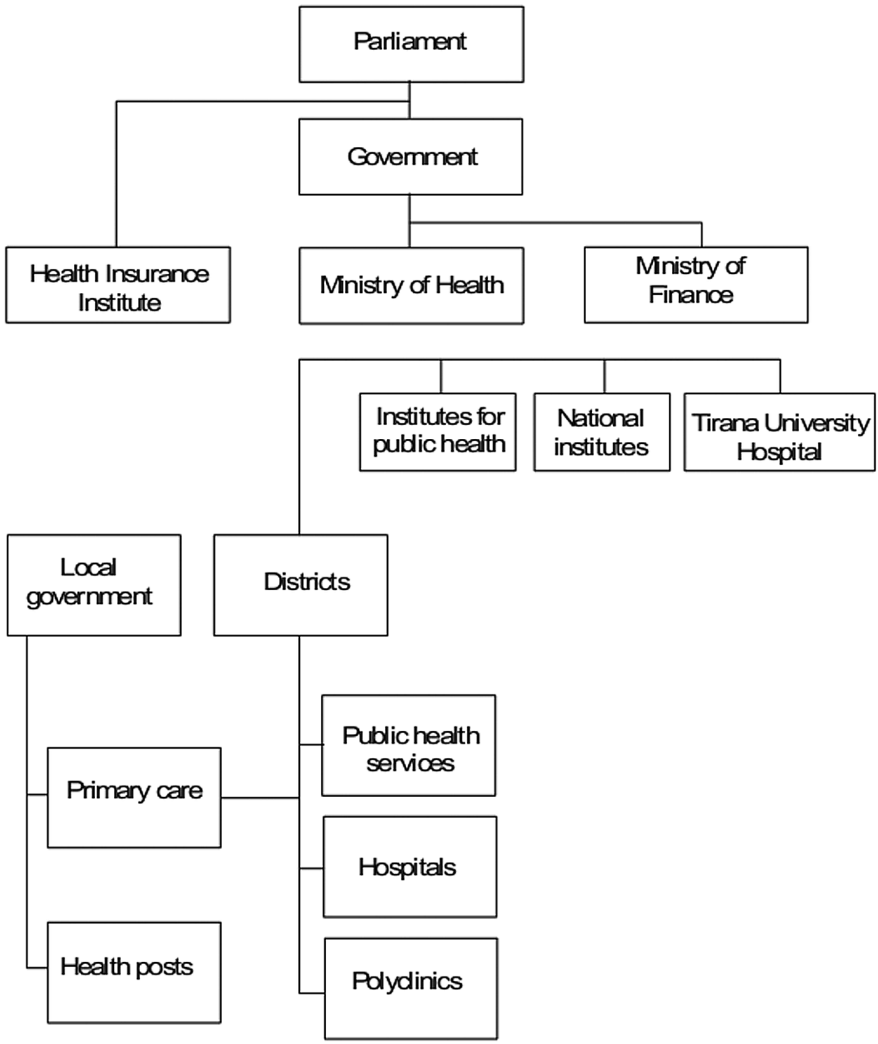
7 The Institute of Public Health is responsible, in particular, for the prevention and control of infectious diseases and the national vaccination programme.

Albanian health services are funded through a mix of taxation and statutory insurance. The state remains the major source of health care financing, although its contribution has shrunk from the 1990s onwards. The Ministry of Finance allocates money to the Health Insurance Fund, to cover unwaged groups, and to the Ministry of Health

The Health Insurance Institute has been established to provide an additional source of health care financing, to offer a broader range of health care services, to control administrative costs and to ensure equity. Premiums have been kept low with different rates for different income groups and the purchase of a restricted package of health services and pharmaceuticals. At the same time, insurance contributions are collected by the district offices of the Social Insurance Institute (SII). Contribution rates are set according to income rather than health risk.

A complementary source of health financing is out-of-pocket payments, which account for an increasing proportion of health care expenditure.

Figure 3 – Organisation chart of the Albanian health care system



Source: Nuri, 2005

Eligibility for health care is based both on citizenship and on the payment of insurance contributions. Access to free primary care is restricted to patients and their dependants who have paid their insurance contributions. The state is responsible for low-income groups; therefore, people are not refused medical services. There is another barrier to access in some rural areas, where medical staff, including both doctors and nurses, have left medical facilities due to socio-economic factors.

Health care spending must be increased and services must be improved in order to strengthen the health care system. Such an increase is strongly linked to a country's socio-economic development. The health insurance system in Albania has been a relative success, with the Fund showing a surplus in its initial years of operation (Nuri, 2005). However, some groups (e.g. farmers and the self-employed) are not making contributions, which affects the equity of health care financing. The growing proportion of private expenditure on health through out-of-pocket payments further influences health care equity and access. Meanwhile, Albania's health care service is still facing challenges as a result of internal migration and the loss of health personnel from rural areas.

In this context, it is important to understand whether inflows of remittances may contribute to health care utilisation. The data show that trends in out-of-pocket payments are increasing, so remittances may play an important role in increasing access to health care, for those households affected, by filling in the shortfalls in health care resources.

Methodology: the estimation framework

The first concern is to determine the differential effect of remittances in health outcomes. The econometric model analyses the relationship between remittances and self-reported health status. Health status is described by two components: a rating of the condition of health; and the number of days unable to carry out usual activities. The following model is specified:

$$HS_i = \alpha_0 + \alpha_1 R_i + \alpha_2 X_i + \varepsilon_i \quad (1)$$

In equation (1), self-reported Health Status (HS) is given in relation to remittance income (R) and a vector of household characteristics: demographic; and socio-economic. However, the estimated parameter in equation (1) may be inconsistent due to endogeneity or reverse causality. The potential correlation between household remittance income and the error term results from the common determinants of remittance and health conditions. The regression estimates measure only the magnitude of association rather than the magnitude and direction of causality. This is a fundamental problem, because such marginal effects have a key input to economic policy. The way to overcome this issue is to construct an instrument variable focused on remittances and not on households' health expenditure.

The second concern is to understand how remittances influence household health expenditures. Remittances, as income sourced from non-labour means, relax household budget constraints and may contribute to an increase in household medical use. Health care expenditure is modelled as follows (Amuendo-Dorantes *et al*, 2009):

$$HCE = \alpha_0 + \alpha_1 R + \alpha_2 X_i + \varepsilon_i \quad (2)$$

In equation (2), Health Care Expenditure (HCE) is given in relation to remittances (R) and the vector of household characteristics. To overcome the endogeneity problem,

I used an instrument which is correlated with household remittance income but not with household health care expenditure. The Instrumental Variable (IV) approach that I selected introduces an instrumental variable, z, which has the property that changes in z are associated with changes in x but do not lead to changes in y (health status and health care expenditure), except indirectly via x. The IV estimator provides a consistent estimator under the very strong assumption that valid instruments exist where the instruments are variables that satisfy $E(u \mid z) = 0$.

To investigate further the dynamic of health expenditure in the suspected presence of endogeneity, I also use the propensity score matching method. The main difference between the two methods is that propensity scoring uses observable measures to conduct a weight based on selection, whereas the IV method relies on an instrument variable made for unmeasured factors or characteristics. Both methods present strengths and weaknesses.

In the absence of randomisation, observed treatment[8] produces outcomes which are generally not independent[9] and, moreover, the treatment assignment mechanism is not completely observed. In the absence of randomisation, propensity scoring and the IV method can lead to unbiased estimates of causal effects under differing assumptions regarding the assignment of the treatment.

The propensity score, which involves comparing households with a similar propensity to receive remittances, attempts to balance observed characteristics in the remittance-receiving group as could occur in a randomised experiment. The propensity score for individual i, $e(\chi_i) = P(D_i = 1 \mid X_i = \chi)$, is defined to be the probability of receiving remittances given a vector of observed characteristics. Rosenbaum and Rubin (1983) have shown that matching on the propensity score produces treatment groups that are balanced. Thus, under the assumption that we can ignore the treatment assignment, unbiased estimates of the average causal effect can be obtained by comparing individuals who have similar propensity score values.

The propensity score approach is a powerful method for balancing treatment groups in a study according to *observed* characteristics, but only controls for *unobserved* characteristics to the extent that they are correlated with the observed variables. Alternatively, the IV method seeks to estimate causal effects in the presence of the unobserved differences between the treatment groups. According to this approach, the variable denoted as the instrument is related to the treatment but not to the outcomes, except through the effect these have on the treatment.

Application of the IV method proceeds in two stages: first, the instrument is used to predict the treatment independent of the unobserved selection effects; and, second, individuals' outcomes in terms of health expenditure are then compared given the predicted, rather than the actual, treatment.

8 Remittance receiving status.
9 Higher health expenditure or better health conditions.

Results

Health outcomes in the presence of remittances

The first step is to understand, in terms of outcomes, the condition of health of household members and then capture if there is any difference in these conditions in the presence of remittances.

Health outcomes will be measured by three different dependent variables: self-reported health conditions; chronic illness presence; and sudden illness in the past four weeks. Figure 4 presents the distribution of self-reported health conditions. From the 18 231 individuals included in the sample, we have information on the condition of health of 4 641 household members.

Figure 4 – Rating of condition of health

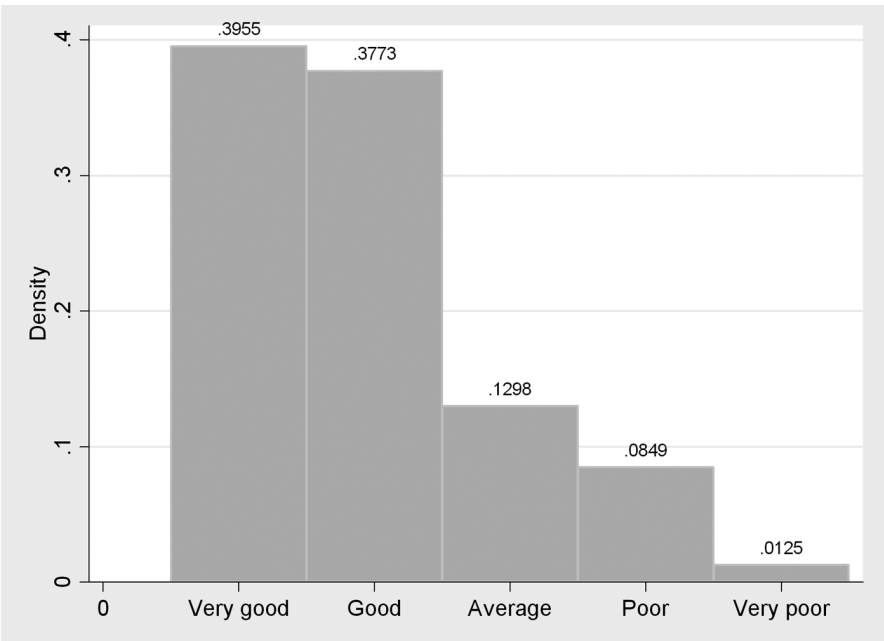


Table 2 summarises the results on the relationship between the condition of health and the vector of variables including age, area of residence, gender, education, household size and the presence of remittances. The condition of health is measured as a categorical variable where 1 means very good and 5 means very poor. Along with the OLS are presented the results from the ordered logistic and probit regression.

Where remittances are received, this seems to be associated with a poorer level of self-reported health condition, even if this is not statistically significant. It was expected that the level of education would have a positive and statistically significant impact on the condition of health. Living in urban areas, especially in the central part of the country, is related with better self-reported health. Statistically significant and contributing

to poorer self-reported health are: female status; age; and mountain residence. The latter may be related to the lack of access to health services in these areas of the country.

Table 2 – Estimation of self-reported health condition

Rating of condition of health	OLS (1)	Ordered Logistic (2)	Ordered Probit (3)
Household size	.008 (.006)	.027 (.015)*	.013 (.009)
Urban	-.067 (.029)**	-.141 (.070)**	-.085 (.041)**
Level of education	-.027 (.003)***	-.059 (.008)***	-.034 (.005)***
Age	.026 (.000)***	.062 (.001)***	.035 (.001)***
Female	.112 (.027)***	.304 (.069)***	.165 (.040)***
Receipt of remittances	.029 (.027)	.084 (.065)	.045 (.038)
Coastal	.058 (.040)	.154 (.097)	.079 (.056)
Central	-.024 (.041)	-.067 (.101)	-.036 (.058)
Mountain	.110 (.042)***	.316 (.101)***	.172 (.058)***
Head of household	-.012 (.040)	.031 (.095)	.022 (.054)
Cons	1.098 (.071)***	-	-
N	4,641	4,641	4,641
R-squared	0.332	-	-
Pseudo R-squared	-	0.150	0.148

*Note: ***, **, and * indicate statistical significance respectively at the 1, 5 and 10 per cent level or better.*

The self-reported condition of health may be subjective and represent the perceived health status rather than the objective condition of health, so I have extended the analyses on health outcomes in other dependent variables, as shown in Table 3.

Table 3 – Estimation of condition of health in terms of chronic or sudden illness

	Suffer from chronic illness	Suffer from sudden illness
Household size	-.067 (.025)**	.015 (.029)
Urban	.087 (.108)	-.101 (.132)
Level of education	-.075 (.013)***	-.015 (.016)
Age	.075 (.003)***	.013 (.003)***
Female	.885 (.137)***	.425 (.132)***
Receipt of remittances	-.030 (.101)	.008 (.121)
Coastal	.303 (.146)**	.128 (.200)
Central	.216 (.154)	.450 (.201)**
Mountain	-.208 (.163)	.461 (.203)**
Head of household	.476 (.148)***	.393 (.170)**
Cons	-4.869 (.297)***	-3.520 (.332)***
N	5,005	5,005
Pseudo R-squared	-	0.026

*Note: ***, **, and * indicate statistical significance respectively at the 1, 5 and 10 per cent level or better.*

Table 3 presents the results of logit regressions where the probabilities of suffering from either chronic or sudden illness in the past four weeks are used as dependent variables. Household members are less likely to suffer chronic or sudden illness if they are more educated and younger. The probability of suffering from chronic or sudden illness is higher in the case of female household members. Being head of the household is related with a higher probability of suffering from chronic and sudden illness. Chronic illnesses are more probable in the coastal area. Surprisingly, the greater the size of the household, the lower the probability of chronic illnesses. Receiving remittances lowers the probability of suffering from chronic illness, but the effect is not statistically significant.

Health care expenditure in the presence of remittances

In this section, I focus on the relationship between health care expenditure and remittances. Recognising the endogeneity of migration and remittances, I am using Instrumental Variable techniques: defining an instrumental variable that is correlated with remittances but not with the health care behaviour of household members. Amuendo-Dorantes *et al*. (2007) construct an instrumental variable for remittances using information on the percentage of migrants in the state of residency alongside information on the *per capita* count of Western Union offices in the country during the previous year.

The instruments used by Kilic *et al*. (2007) include whether a household member spoke either Greek or Italian; whether the head of the household had any family relative or friend living abroad in 1990; the distance in kilometres between the place of residence and the closest point of exit from Albania; the annual average number of economic and labour market shocks experienced by the households; and whether the household owned a satellite dish in 1990. All these variables may satisfy the criteria for a valid instrument: they may have an influence on the amount of remittances or the decision to migrate; and they may not have a direct connection with health care attitudes.

In my study, I use a set of three instrumental variables: the number of household members living abroad; the country in which migrants are currently living; and whether a household member spoke Greek or Italian.

Greece and Italy are the major destinations for Albanian migrants. Knowledge of the language of the country of destination may reduce the cost of migration and the possibility of migrants sending remittances back home. The flow of remittances may be determined by the number of household members living abroad and the country of residence of migrants. Neither instrument is correlated to the health care behaviour or health care expenditure of the household members who have been left behind.

Table 4 reports on the impact of remittances on total expenditure on medicines. The IV estimates for the overall sample indicate that the receipt of remittances has a greater impact, in terms of magnitude, to total expenditure on medicines. However, in both cases, remittance incomes do not seem to be statistically significant. Results are represented in the Table divided into two sub-groups: rural and urban. The IV estimates show that remittance incomes have a positive and statistically significant effect only in the case of rural remittance-receiving households, meaning that the total expenditure on medicines rises with the presence of remittances in rural areas.

For the entire sample, the non-IV estimates show that total expenditure rises where the household member is older, female, the head of the household and living in mountain areas of the country. On the other hand, total expenditure on medicine is lower where the household member has more years of education, a health licence, is not working and where the household size is greater. The direction of the relationship still holds in the IV estimates for the entire sample, except in the case of having a health licence. In the presence of remittances, expenditure on medicines increases, depending on the results presented by the IV estimates. We may notice an increase in the magnitude of total expenditure on medicines in the case of female household members.

In the rural sub group, the IV estimates show that remittances have a positive and statistically significant impact. In the same sub group, a positive impact on total expenditure on medicines is held by age, the possession of a health licence, being the head of the household and by not being in work.

Table 4 – The impact of remittances on total expenditure on medicines

Total expenditure on medicines	All		Rural		Urban	
	Non IV	IV	Non IV	IV	Non IV	IV
Receipt of remittances	384.060 (799.926)	1168.343 (10376.090)	154.750 (447.714)	9388.832 (4083.426)**	272.937 (1700.557)	34154.830 (58174.190)
Urban	2793.112 (932.073)**	2352.49 (978.453)**	-	-	-	-
Level of education	-369.817 (116.674)**	-300.846 (127.344)**	-86.950 (71.338)	-31.824 (84.476)	-683.623 (231.441)**	-838.034 (478.271)*
Age	27.673 (78.495)	4.833 (82.974)	43.407 (41.669)	35.549 (49.049)	35.463 (178.717)	111.065 (319.190)
Age squared	.713 (.983)	.840 (1.042)	.488 (.518)	.595 (.603)	1.939 (2.268)	-.574 (4.138)
Female	1415.409 (859.931)*	2151.001 (947.255)**	1231.827 (483.821)**	1652.88 (589.035)***	1036.402 (1798.877)	4229.389 (3070.196)
Has a health licence	-613.849 (840.010)	188.129 (875.050)	769.928 (520.518)	1691.686 (654.832)**	-2119.058 (1611.866)	1044.025 (3550.328)
Income net of remittances	.029 (.013)*	.016 (.013)	-.030 (.010)***	-.041 (.012)***	.053 (.022)**	.019 (.043)
Household size	-493.059 (221.284)**	-243.956 (362.169)	35.135 (118.632)	509.870 (198.529)**	-1181.125 (507.235)**	-1543.127 (1115.884)
Not in work	-258.674 (773.891)	-274.439 (874.495)	1116.467 (464.411)**	1808.881 (600.710)***	-674.316 (1524.258)	-77.491 (1700.451)
Coastal	1273.667 (1202.893)	885.392 (1300.407)	-239.888 (496.536)	762.802 (618.770)	-41.474 (1908.727)	2298.664 (4170.608)
Central	1629.174 (1269.352)	1519.742 (1506.061)	1234.121 (1165.540)	386.602 (633.302)	-343.613 (2121.748)	751.246 (2549.583)
Mountain	4378.423 (1301.748)***	3150.895 (1372.600)**	496.536 (526.829)	156.980 (27.430)***	9519.731 (2250.697)***	6262.789 (2473.883)**
Head of household	4516.190 (1214.094)***	4263.074 (1331.845)***	1293.200 (692.992)*	1727.736 (835.200)**	6736.172 (2528.164)***	6741.399 (3085.784)**
Cons	1457.852 (2470.532)	279.485 (4912.204)	1698.405 (1205.592)	-4575.805 (2380.743)**	9001.387 (5184.701)*	18176.340 (19160.380)
N	8,129	6,328	4,419	3,538	3,710	2,790
R-squared	0.014	0.011	0.031	-	0.019	-
F-statistic	8.370	-	11.80	-	5.61	-
Prob>F	0.000	-	0.000	-	0.000	-

Wald chi2(14)	-	76.57	-	112.98	-	33.58
Prob>chi2	-	0.000	-	0.000	-	0.001

*Note: ***, **, and * indicate statistical significance respectively at the 1, 5 and 10 per cent level or better*

Surprisingly, the relationship between total expenditure on medicines and income net of remittances is negative in the case of households living in rural areas. These results are not in line with the literature related to health care behaviour. More educated household members spend less on medicines; however, we notice that the magnitude is lower in the rural sub-group compared to the urban sub-group. This result may be related to the previous findings of a negative correlation between chronic illness and education which we showed in Table 3. In this case, we can conclude that more educated household members focus more on prevention. Interesting in this sub-group is the positive relationship in the case of households living in mountain areas. The difficulties of access to the medical services infrastructure is, perhaps, one of the reasons for this relationship.

In the urban sub-group, the non-IV estimates show that total expenditure on medicines increases with age, female status, being the head of the household and living in mountain areas. On the other side, total expenditure on medicines is lower in the presence of a health licence, where household size is greater, where a household member is not in work and where the level of education is greater. In the urban sub-group, the magnitude for educated household members is greater compared to the rural sub-group. This result is higher in the case of urban sub-group IV estimates.

Table 5 reports on variables affecting total expenditure on medical visits and laboratory services. This dependent variable may be considered as the one which describes preventive behaviour. The set of covariates is the same as those in Table 4 and the results are also presented divided by sub-groups of households living in urban and rural areas.

The main variable of interest to us is remittance income. The IV estimates suggest that remittances have a positive impact on expenditure on medical visits and laboratory services. This relationship holds for the rural sub-group; the magnitude is greater in the urban sub-group, but it is not statistically significant. Remittance income positively affects expenditure on medical visits and laboratory services across the entire sample.

The OLS estimates, in the first column of Table 5, show that total expenditure increases in urban areas. In contrast with the findings in Table 4, the relationship between total expenditure on visits and the level of education is positive: more years of education lead to a higher expenditure on visits and laboratory services. This result may be related to a higher propensity for educated household members towards preventive behaviour through visits and other similar services. It was expected that a higher age would mean a higher expenditure on visits and laboratory services.

Referring to the theory, human capital formation predicts a positive correlation between the demand for health care and the rate of depreciation of the health stock. The OLS estimates show that the magnitude is higher in urban areas compared to the sample as a whole and to rural areas.

Table 5 – The impact of remittances on total expenditure for medical visits and laboratory services

Total expenditure on medicines	All		Rural		Urban	
	Non IV	IV	Non IV	IV	Non IV	IV
Receipt of remittances	1217.026 (529.141)**	1828.160 (1075.388)*	967.173 (420.510)**	1115.622 (485.053)**	950.711 (2344.92)	7876.910 (9129.380)
Urban	2239.370 (1384.995)*	1792.218 (1573.710)	-	-	-	-
Level of education	308.607 (171.106)*	137.341 (204.816)	377.468 (161.763)**	329.080 (194.221)*	295.454 (319.137)	580.565 (750.580)
Age	499.468 (116.593)***	432.250 (133.452)***	176.884 (94.487)*	128.774 (112.770)	1072.858 (246.435)***	782.565 (500.925)
Age squared	-6.819 (1.460)***	-6.218 (1.676)***	-2.379 (1.175)**	-1.972 (1.387)	-14.693 (3.127)***	-11.561 (6.494)*
Female	7409.449 (1277.297)***	8586.695 (1523.532)***	7789.948 (1097.095)***	9308.444 (1354.254)***	6843.674 (2480.495)**	5577.973 (4818.249)
Has health licence	-989.794 (1232.583)	-8.582 (1407.400)	-2304.040 (1180.308)**	-623.109 (1505.528)	118.388 (2222.623)	-1985.162 (5571.751)
Income net of remittances	.086 (.018)***	.084 (.022)***	.051 (.023)**	.030 (.028)	.084 (.031)**	.143 (.068)**
Household size	-475.496 (325.974)	390.472 (582.500)	-703.364 (269.006)**	-178.664 (456.439)	109.226 (699.433)	17166.81 (4842.712)***
Not in work	-1722.361 (1139.618)	-1482.819 (1406.507)	2857.365 (1053.082)**	3834.151 (1381.097)**	-6519.365 (2101.820)**	1932.154 (1751.226)
Coastal	-6694.502 (1685.186)***	-5794.548 (2091.528)**	-1968.688 (1125.928)*	875.247 (1422.619)	-3507.643 (2631.969)	-7409.264 (2668.623)**
Central	-6475.467 (1793.183)***	-5855.235 (2422.295)**	1854.564 (1137.305)*	1604.832 (1456.028)	-5805.466 (2925.707)**	-8020.896 (6545.195)
Mountain	-8269.977 (1831.525)***	-7151.328 (2207.641)***	-2423.832 (1194.619)**	475.432 (534.718)	-9236.156 (3103.516)**	-5075.969 (4001.220)
Head of household	9222.295 (1801.848)***	9704.155 (2142.092)***	2701.673 (1571.404)*	4129.855 (1920.213)**	16507.28 (3486.11)***	1932.154 (1751.226)
Cons	1457.852 (2470.532)	-8142.849 (7900.615)	841.550 (2733.756)	-6707.62 (5473.577)	-9360.632 (7149.252)	-37078.500 (30069.58)
N	8,129	6,328	4,419	3,538	3,710	2,790
R-squared	0.022	-	0.023	-	0.023	-
F-statistic	13.55	-	8.78	-	6.85	-
Prob>F	0.000	-	0.000	-	0.000	-
Wald chi2(14)	-	130.19	-	79.78	-	54.14
Prob>chi2	-	0.000	-	0.000	-	0.000

*Note: ***, **, and * indicate statistical significance respectively at the 1, 5 and 10 per cent level or better*

Total expenditure figures show that the estimated relationship is positive for female household members. Male household members are less intensive users of the health care system because they face a higher opportunity cost compared to female household members. All other things being equal, we might have expected household size negatively to affect expenditure on visits and laboratory work: here, the coefficient is negative in the case of the entire sample and the rural sub-group. Larger households will have a lower *per capita* income, reducing the demand for health care. However, the IV estimate is positive in the urban sub-group. Being the head of the household means a higher expenditure on visits and laboratory work.

The direction of the relationship is negative for all three areas of residence: coastal, central and the mountains. However, the effect does not have a clear direction when divided into sub-groups. Income net of remittances has a positive effect, both in the entire sample as well as in the two sub-groups. The theoretical model predicts that the elasticity of demand for all forms of medical services should be positive with respect to income unless it is considered to be an inferior good. The effect of non-working status[10] is negative in the sample, but has a different direction for the sub-groups, suggesting a positive relationship in rural areas and a negative one in urban ones.

Propensity score estimation of health expenditure

The results of the Average Treatment Effect on health expenditure and on the total amount paid for medicines, on the basis of Propensity Score matching, are reported in Table 6. The Propensity Score estimators used in this part of the study are the Kernel and Nearest Neighbour estimators.

10 Household members may be unemployed or otherwise out of the labour force (e.g. children and older members).

Table 6 – Estimation of the average treatment effect for health expenditure and medicine expenses

	Total paid for medicines			Total paid for health services		
	Treated	Controls	Diff.	Treated	Controls	Diff.
Nearest Neighbour estimator						
Unmatched	4164.86	4436.47	-271.61 (795.39)	10385.35	11508.40	-1123.04 (1187.03)
ATT	4164.86	2689.21	1475.65 (1002.47)	10385.35	8800.17	1585.18 (2248.62)
ATU	4436.47	3502.92	-933.55	11508.40	10645.88	-862.52
ATE			-1086.13			-173.58
Kernel estimator						
Unmatched	4164.86	4436.47	-271.61 (795.39)	10385.35	11508.40	-1123.04 (1187.03)
ATT	4164.86	4029.10	135.76 (726.03)	10385.35	10725.86	-340.50 (1157.71)
ATU	4436.47	4401.24	-35.23	11508.40	12036.40	528.00
ATE			-63.53			283.55

Table 6 shows that the average treatment effect (ATE) for an individual drawn from the overall population at random is 1,086.13 lek (regarding the total amount paid for medicines). This means that the amount spent by a randomly-drawn individual would be 1,086.13 lek higher as a result of participation in the treatment group, i.e. via the receipt of remittances. This is the outcome of the positive effect estimated for untreated (ATU), i.e. non remittance-receiving, households who are much more numerous than treated ones.[11] Consequently, the ATE does not have a direct interpretation for the evaluation of the presence of remittances.

The ATU is estimated by matching a similar remittance-receiving individual to a non remittance-receiving one. Owing to the small number of individuals receiving remittances, one would have to check if a balance is also achieved for this group; otherwise, the ATU might be biased. However, ATE, ATU and ATT are linked as follows:

$$ATE = N_1 /N*ATT+N_0/N*ATU,$$

where N_1 is the number of treated individuals and N_0 the number of untreated ones. So, the number of treated and untreated individuals is important in drawing the final conclusion.

11 From the estimation, the support is divided into 2 288 treated and 5 841 untreated.

However, the sign of the ATT (average treatment effect on the treated) is important in delivering an answer to the question on the presence of remittances. A positive sign for ATT means that the total amount spent on medicines is higher by 1,475.65 lek where the individual receives remittances. This positive result is evident when we used both the Kernel and the Nearest Neighbour estimator. However, we cannot draw the same conclusions for health service expenditure: different estimators indicate different directions of the relationship. These results, according to estimated standard errors, are not statistically significant.

Before running psmatch2 in order to obtain the above average treatment effect, the probit regression results are presented in Table 7. We may notice that the findings are similar to those presented after the use of the IV method, both in the direction of the relationship and its magnitude. However, there are differences in the effect of remittances in urban areas indicated in this table: the direction of the relationship is the opposite to that presented using the IV method, while Table 5 indicates the same is true also for the female variable.

Table 7 – Regression results before matching method

Receipt of remittances	Total paid for medicines	Total paid for health services
Household size	-.082 (.009)***	-.081 (.006)***
Urban	-.093 (.036)*	-.072 (.021)*
Level of education	-.015 (.004)**	-.013 (.004)**
Age	.001 (.003)***	.001 (.003)***
Female	-.003 (.036)	-.002 (.021)
Coastal	.060 (.050)	.058 (.050)
Central	.176 (.052)**	.174 (.052)**
Mountain	-.062 (.054)	-.067 (.043)
Head of household	.034 (.050)	.036 (.050)
Not in work	-.145 (.032)***	-.134 (.057)**
Cons	-.038 (.101)	-.033 (.096)

N	8,129	8,129
Pseudo R-squared	0.20	0.21

*Note: ***, **, and * indicate statistical significance respectively at the 1, 5 and 10 per cent level or better.*

One of the assumptions of the propensity score method is that related to common support or, better, the measure of the overlap of the distribution of the propensities. If the assumption holds, there must be an overlap of the propensity scores of remittance-receiving and non remittance-receiving households. The results are presented in Figure 5 as regards the total amount spent on medicines and health services.

Figure 5 – Estimation of propensity score distribution

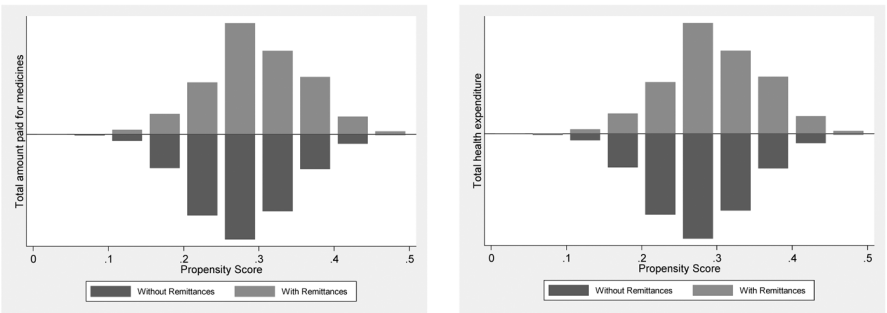


Figure 5 represents the differences in terms of the amounts paid for medicines and health services of the two groups of remittance-receiving and non remittance-receiving households, conditional to the covariates. The histograms show the distribution of the predicted propensity score between remittance-receiving and non remittance-receiving household members. We may notice that there is a good overlap between distributions of the propensity score between the two treatment groups.

Conclusion

This article has examined the relationship between remittance income and total expenditure on health care using the Instrumental Variable method. Total expenditure is divided into two categories: expenditure on medicines; and expenditure on visits and laboratory services. The estimation is presented for two separate sub-groups, these being rural and urban areas.

The overall findings indicate that households increase their expenditure on medicines and other health services in the presence of remittance income. The positive relationship is statistically significant in the case of remittance-receiving households living in rural areas. The IV estimates show that total expenditure on medicines increases by around 9 400 lek in the case of households living in rural areas of the country. The magnitude is lesser in the case of total expenditure on visits and laboratory services. However, total expenditure on visits and laboratory services is likely to have a significant impact on health outcomes given the preventive nature of such services. Remit-

tance flows may therefore play an important policy role in supporting total expenditure on the health care of remittance-receiving households, especially for those living in rural areas where access is limited compared to those living in urban areas.

According to the IV estimates, more years of education mean less expenditure on medicines but more on visits and laboratory services. This may be related to educated household members being more efficient producers of health, meaning that they are more skilful at combining medical prevention services for better health outcomes. Total health care expenditure increases with age, for female household members, and for households living in the mountainous areas of the country.

Part of the research is the estimation of the role of remittance income in self-reported conditions of health. OLS estimates show a positive impact of remittances in increasing the probability of people reporting good or very good conditions of health; however, the effect is not statistically significant. It is interesting that the presence of remittance income lowers the probability of chronic or sudden illness.

Alongside the IV method, I used propensity score analysis to estimate the causal effect of remittances in the amount spent on medicines and health services. The propensity score analyses indicate a small, but significant, benefit to households associated with the receipt of remittances. In the presence of remittances, households increase their expenditure on medicines and other health services. This positive effect is more evident in rural, mountainous areas. The IV estimates were also consistent with a higher benefit to remittance-receiving households, as we mentioned previously. However, the results obtained from the propensity score estimates are not statistically significant.

Both the propensity score and IV approaches rely on critical assumptions and are subject to bias if these assumptions are not met. On the other hand, if there is heterogeneity in the impact of remittances, the propensity score and IV estimates of the causal effects may differ, even if the assumptions are valid. The propensity score analyses rely on the assumption that, conditional on the observed data, remittances are randomly assigned. In contrast, the IV approach relies on the identification of good instruments. The greater the ability of the instrument to predict treatment, the larger the size of the matching population.

The policy implications of the presence of remittances, and the effect they have on the expenditure on health of household members, are also important in choosing the right analytical strategy. The observed characteristics of the set of individuals used to compute the propensity score causal estimates allow us to identify the characteristics of the reference population and, thus, to make recommendations for individuals. On the other hand, IV approaches may be more applicable because they demonstrate the marginal effects of different changes.

Health outcomes are influenced by a variety of factors at individual, household and community levels; as well as diet, health behaviour and access to clean water and to health services. However, other socio-economic determinants – such as income, education and employment – may also affect health status.

According to the literature, education tends to enhance individuals' job opportunities. In this way, it can improve income levels and provide greater access to knowledge about healthy behaviour, as well as increase the tendency to seek treatment. At the same

time, being employed tends to be better for health status than being unemployed. A vulnerability to health risks is correlated with long-term unemployment.

References

Acosta, P, C. Calderon, P. Fajnzylber and H. Lopez (2007) 'What is the Impact of Remittances on Poverty and Inequality in Latin America' *World Development* 36(1): 89-114.

Acosta, P, E. Lartet and F, Mandela (2009) 'Remittances and Dutch Disease' *Journal of International Economics* 79(1): 102-116.

Adams, R and J. Page (2005) 'Do International Migration and Remittances Reduce Poverty in Developing Countries?' *World Development* 32: 1407-1417.

Aggarwal, R, A. Demirguc-Kunt and M. Peria (2006) *Do Workers' Remittances Promote Financial Development?* World Bank Policy Research Paper 3957, Washington DC: World Bank.

Agarwal, R and A. W. Horowitz (2002) 'Are International Remittances Altruism or Insurance? Evidence from Guyana, Using Multiple-Migrant Households' *World Development* 30(11): 2033-44.

Amuendo-Dorantes, C, T. Sainz and S. Pozo (2007) *Remittances and Healthcare Expediture Patterns of Populations in Origin Communities; Evidence from Mexico* Institute for the Integration of Latin America and the Caribbean.

Azzarri, C and G. Carletto (2009) *Modeling Migration Dynamics in Albania, A Hazard Function Approach* World Bank Policy Research Paper 4945, Washington DC: World Bank.

Azzarri, C, G. Carletto, B. Davis and A. Zezza (2006) *Choosing to Migrate or Migrating to Choose: Migration and Labor Choice in Albania* Queensland: International Association of Agricultural Economists.

Bank of Albania (2011) *Annual Report* Tiranë: Bank of Albania.

Becker, G (1991) *A Treatise on the Family* (Enlarged Edition) Cambridge: Harvard University Press.

Becker, S, A. Ichino and G. Peri (2004) 'How Large is the "Brain Drain" in Italy?' *Giornale degli Economisti* 63(1): 1-32.

Bhargava, A and F. Docquier (2008) 'HIV Pandemic, Medical Brain Drain and Economic Development in Sub-Saharan Africa' *World Bank Economic Review* 22(2): 345-366.

Bloom, D, D. Canning and Y. Sevilla (2004) 'The Effect of Health on Economic Growth: A Production Function Approach' *World Development* 32(1): 1-13.

Caliendo, M and S. Kopeinig (2005) *Some Practical Guidance for the Implementation of Propensity Score Matching* Berlin: German Institute for Economic Research.

Castaldo, A and B. Reilly (2007) 'Do Migrant Remittances Affect the Consumption Patterns of Albanian Households?' *South-Eastern Europe Journal of Economics* 1: 25-54.

Chami, R, C. Fullenkamp and S. Jahjah (2005) 'Are Immigrant Remittance Flows a Source of Capital for Development?' *IMF Staff Papers* 52(1): 55-81.

Clark, K and S. Drinkwater (2001) *An Investigation of Household Remittance Behaviour* Manchester University, School of Economics Discussion Paper Series 0114.

Cleves, M, W. Gould, R. Gutierrez and Y. Marchenko (2008) *An Introduction to Survival Analysis Using Stata* Texas: Stata Press.

Cox, D. R (1972' 'Regression Models and Life-Tables (with discussions)' *Journal of the Royal Statistical Society* 34: 187-220.

Durand, J, W. Kandel, E. Parrado and D. Massey (1996) 'International Migration and Development in Mexican Communities' *Demography* 33: 249-264.

Dustmann, C and A. Glitz (2011) 'Migration and education' in E. A. Hanushek, M. Stephen and W. Ludger (Eds.) *Handbook of the Economics of Education* Vol. 4, pp. 327-439, Elsevier.

Frank, R and R. Hummer (2002) 'The Other Side of the Paradox; The Risk of Low Birth Weight Among Infants of Migrant and Nonmigrant Households within Mexico' *International Migration Review* 36: 746-765.

Froelich, M (2004) 'Finite Sample Properties of Propensity Score Matching and Weighting Estimators' *Review of Economics and Statistics* 28: 77-90.

Grosh, M and P. Glewwe (2000) *Designing Household Survey Questionnaires for Developing Countries* Oxford: World Bank.

Grossman, M (1972) *The Demand for Health: A Theoretical and Empirical Investigation* National Bureau of Economic Research.

Guo, S and M. Fraser (2010) *Propensity Score Analysis: Statistical Methods and Applications* Sage Publications.

Hildebrandt, N and D. McKenzie (2005) *The Effect of Migration on Child Health in Mexico* World Bank Policy Working Paper Series 3573.

Hill, M and G. Duncan (1987) 'Parental Family Income and Socioeconomic Attainment of Children' *Social Science Research* 3: 39-73.

INSTAT (2012) *Main Economic Indicators* Tiranë: Institute of Statistics of Albania.

IOM (2008) *Migration in Albania: A Country Profile* Geneva: International Organization for Migration.

Jorge, N (2008) *Remittances and Household Expenditures on Health* MPRA Papers, Munich: University Library of Munich.

Kanaiaupuni, S and K. Donato (1999) 'Migradollars and Mortality: The Effects of Migration on Infant Survival in Mexico' *Demography* 36(3): 339-353.

Kaplan, E. L and P. Meier (1958) 'Nonparametric Estimation from Incomplete Observations' *Journal of the American Statistical Association* 53: 457-481.

Kilic, T, C. Carletto, B. Davis and A. Zezza (2009) 'Investing Back Home' *The Economics of Transition* 17(3): 587-623.

King, R (2005) 'Albania as a Laboratory for the Study of Migration and Development' *Journal of Southern Europe and the Balkans* 7(2): 134-155.

Leuven, E and B. Sianesi (2003) *PSMATCH2: Stata module to perform full Mahalanobis and propensity score matching, common support graphing and covariate imbalance testing* Boston College Department of Economics, available at: https://ideas.repec.org/c/boc/bocode/s432001.html [last accessed 23 August 2009].

Lindstrom, D and E. Munoz-Franco (2006) 'Migration and Maternal Health Services Utilization in Rural Guatemala' *Social Sciences and Medicine* 63(3): 706-721.

Lucas, R and O. Stark (1985) 'Motivations to Remit: Evidence from Botswana' *Journal of Political Economy* 93: 901-18.

Mundaca, G (2009) 'Remittances, Financial Market Development and Economic Growth: The Case of Latin America and the Caribbean' *Review of Development Economics* 13(2): 288-303.

Rapoport, H and F. Docquier (2006) 'The Economics of Migrants' Remittances' *Handbook on the Economics of Giving, Reciprocity and Altruism* 2: 1135-1198.

Rosenbaum, P (2005) 'Sensitivity Analysis in Observational Studies' *Encyclopedia of Statistics in Behavioral Studies* pp. 1809-1814.

Rosenbaum, P and D. Rubin (1983) 'The Central Role of the Propensity Score in Observational Studies for Casual Effects' *Biometrika* 70: 41-55.

Stecklov, G, C. Carletto, C. Azzarri and B. Davis (2010) 'Gender and Migration from Albania' *Demography* 47(4): 935-961.

Strauss, J and D. Thomas (1998) 'Health, Nutrition and Economic Development' *Journal of Economic Literature* 36(2): 766-817.

Taylor, E (1999) 'The New Economics of Labor Migration and the Role of Remittances in the Migration Process' *International Migration* 37(1): 63-88.

UNICEF (2008) *Annual Report* UNICEF.

Vian, T and L. Burak (2006) 'Beliefs about Informal Payments in Albania' *Health Policy and Planning* 21(5): 392-401.

Vidal, R (1998) 'The Effect of Emigration on Human Capital Formation' *Journal of Population Economics* 11: 589-600.

Wagstaff, A and P. Menno (2005) *Health Insurance Impacts on Health and Nonmedical Consumption in a Developing Country* Policy Research Working Paper Series.

WHO (2005) *Albania Health Profile* World Health Organization.

WHO (2012) *Albania Health Profile* World Health Organization.

Wooldridge, J (2002) *Econometric Analysis of Cross Section and Panel Data* Massachusetts: MIT Press.

World Bank (2008) *Migration and Remittances Factbook 2007* Washington DC: World Bank.

World Bank (2010) *Albania: The New Growth Agenda, A Country Economic Memorandum* Washington DC: World Bank.

Yang, D (2008) Coping with Disaster: The Impact of Hurricanes on International Financial Flows, 1970-2002' *B.E. Journal of Economic Analysis and Policy* 8(1) (Advances) Article 13.

Zweifel, P, F. Breyer and M. Kifmann (2009) *Health Economics* Heidelberg: Springer-Verlag.