Are Remittances Spent in a Healthy Way? Evidence from Albania

Kalaj, Ermira Hoxha

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Ermira Hoxha Kalaj, PhD

ermirahoxha @uamd.edu.al

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ABSTRACT

Using household survey data for Albania, the paper investigates the effect of remittances on health capital accumulation. 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, rural and urban area. In the paper both instrumental variable and propensity score matching are used to give answer to the research question about the impact of remittances in the health capital investment.

The findings indicate that households increase their expenditure for 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 the rural area. The magnitude is lower in the case of total expenditure for visits and laboratory. However, total expenditure for visits and laboratory are likely to have significant impact on the health outcome given their prevention nature.

These findings show that remittance flows pay a heterogeneous role in the decision making process of remittance-receiving household members. However, these non-labor income flows may play an important role in supporting expenditures, especially for those living in rural areas.

Keywords: remittances, health expenditure, instrumental variable

JEL classification;F24, I15, C36

INTRODUCTION

As labour markets become internationalized and people increasingly migrate to find work, remittances have become important for the survival of the low-income households in regions of outmigration. Remittance flows, funds received from migrants working abroad, have become enormously important as a source of income in many developing countries (Giuliano and Ruiz-Arranz, 2005; Mundaca, 2009).

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

Since the fall of the Berlin Wall in 1989, migration from Eastern Europe including the Balkans has increased sharply. According to World Bank estimates, in 2005 Albania was the fourth-ranked country in the world in terms of share of emigrants in relation to population, with 27.5 percent of Albanians living abroad, mostly in Greece and Italy. In 2006, remittances were 13 percent of Albania's GDP, exceeding by more than three times both the FDI and the total amount of development aid received by the country. There are reasons to believe that this extraordinary volume of migration and remittances is likely to have had extensive consequences for the Albanian economy. In their review of the existing literature, for example Rapoport and Docquier (2006) argue that remittances have short-run economic benefits, and may have long-run implications for households' labor supply decisions, education opportunities for offspring and 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 their implications in terms of costs and benefits for the local economy. Researchers disagree over the extent to which remittances-receiving households use these financial resources productively. Some findings suggest the use of remittances mainly for short-term consumption needs rather than for long-term investments. The extent to which remittances contribute to local development depends upon the household context, circumstances and the way decisions are made.

Since the beginning of the transition from a centralized to a market economy Albania has been characterized by rapid growth in the volume of migration with a particular peak in 1997-1998[1] following the Pyramid Scheme collapse (Azzarri & Carletto, 2009), and in 2000. Figure 1 shows the flow of the first-time migrant in the period 1991-2004, with a peak in 2000. In conjunction with the migration, the volume of remittances directed to households in Albania has grown rapidly. Remittances represent the most direct and immediate benefit for the remittance-receiving households and the local community. The lack of microeconomic restructuring, however, seems not to have stimulated local production and remittances have generally been used for the consumption of goods (Castaldo & Reilly, 2007), thus deepening the extroversion of the economy[2]. While remittances are generally flows of small individual transactions and the method of transfers may sometimes be informal or irregular, the total amount of remittances is substantial.

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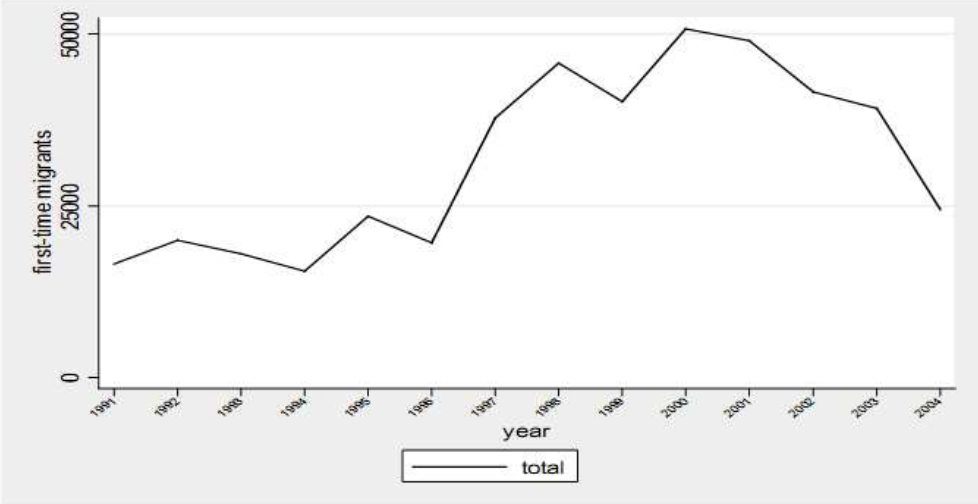
[1] Peaking in 2000 at about 50.000 new migrants per year and steadily decreasing after that.

[2] Extroversion of the economy: meaning that the local consumption is higher that the GDP, while the difference is compensated by remittances and foreign aid (Samson, 1996).

Figure 1.1: Flows of first-time migrants by year of migration, 1991-2004



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

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

Using data collected between 2002 and 2004 by the World Bank, Duval and Wolff (2010) provide evidence about the patterns of remittances in Albania. This study used random and fixed effects discrete choice models to examine both the determinants of remittances sent by family members and adult children living abroad and the impact of these remittances on the living standards of the recipient. According to this paper, transfers are negatively correlated with both the sender's and recipient's levels of education. Remittances have a positive impact on economic indicators like "satisfaction with current situation", adequateness of food consumption, and the amount of affordable expenditure (Duval & 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 effect of migration and remittances on labor market participation. A linear probability model is estimated for the probability of a household member to be working on the subsamples of male and female household members separately. Dermendzhieva (2009) obtains large and negative coefficients for receiving remittances for young females and older males. These findings held when an instrumental variable was introduced.

Remittances are not only invested in physical capital, but also productively invested in human capital accumulation, such as education. The Becker (1991) model of investment in education states that families take into consideration their education rate of return and its cost in order to choose the optimal education level for their children; in this model a range of factors may influence the educational attainment. If families have financial constraints the level of schooling for their children will be lower than optimal. By relaxing the household's liquidity constraints, remittances from abroad may facilitate investments in education.

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

The development potential of remittances is increasingly being recognized by researchers and policymakers. This paper examines the contribution of migration and remittances on human capital investment using cross-sectional data for Albania. Health is an important factor of future productivity, in this way 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 her market and nonmarket activities, while "the stock of health" determines the amount of time she can spend earning money and consuming commodities. This brings differences in the demand for health if compared to the demand for other capitals. Health is demanded for two reasons; as a consumption commodity and as an investment commodity. Consumers demand for health is positively correlated with labor incomes. Does this positive relation still hold with non-labor incomes, such as remittances? Do remittances affect household consumption of health?

Empirical studies show that remittances can relax household budget constraints and finance the cost of healthcare (Amuendo-Dorantes, et al., 2007). On the other hand remittances may help maintain household consumption during an unexpected health shock (Wagstaff & Menno, 2005). Migration networks also provide information motivating left behind households to adopt healthier lifestyle or better health seeking behavior (Hildebrandt & McKenzie, 2005).

LITERATURE REVIEW

The research focused on the relationship between migration and health in developing countries can be divided into two research areas. On one side, the impact of migration and remittances on the health outcome or status and on the other hand the impact of migration and remittances on the 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 counterbalance for the 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 is spending less time in bad 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 maximize overall utility by the optimal management of their stock of health over time.

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

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

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 is the stock of health in period *i*, ϕ_i, the amount of health care consumed, $\phi_i H_i$ is the total consumption of health services, and Z_i is the total consumption of other commodities, excluding health. This utility function can be maximized to derive the expected behavior of the rational consumer. Maximization within a budget constraint leads the individual to equate the marginal return on health to the marginal cost. The return to the

j-th individual is made up of marginal physic return (a_j) and the marginal monetary return (y_j)[3]. The cost of health capital is the rate of the interest forgone 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-minimizing 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, 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 in 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 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 consume less time than the working time gained (Zweifel, et al., 2009). Therefore a rise in the wage rate causes the optimal quantity of capital health to increase. Third, a higher educational level raises health productivity[4] and if the price elasticity of demand for health is less than 1, when all other things are accounted for, he expects to find a negative relation between education and the amount of medical services demanded[5]. There is an additional implication 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 depreciation rate on health rises with age.

THE LINK BETWEEN MIGRATION, REMITTANCES AND HEALTH OUTCOMES

The literature on the causal effect of income on health has find 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 the labor market supply. Health has a positive and statistically significant effect on economic growth. Bloom, et al., (2004) suggests that a one year improvement in a population life expectancy contributes to an increase of 4 percent in output.

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[3] Utility is measured in money metric terms.

[4] More highly educated people are more skillful in combining medical inputs to produce health.

[5] The elasticity with respect to wealth must also be less than 1to have a negative effect on education (Grossman, 1972)

Some empirical studies conclude that migration of a household member results in poor health condition for those household members left behind. Kanaiaupuni and Donato (1999) findings suggest higher rates of infant mortality in Mexican communities experiencing intense U.S. migration. However two factors diminish the disruptive effects of migration: migrant remittance to the village and the institutionalization of migration over time. They use multilevel methods to data from Mexico.

Hildebrandt and McKenzie (2005) found that migration From Mexico to U.S. improves health outcomes resulting in lower rates of infant mortality and higher birth weight for members of household 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 health improvements which arise from income effects, having a migrant member are associated with sizeable increases in the health knowledge on the part of mothers.

According to Fajnzylber and Lopez (2007) children from remittance-receiving households tend to have higher health outcomesthen those from non remittance-receiving household with similar 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 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) analyze the effects of the medical brain drain on life expectancy and 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 numbers of deaths due to AIDS. Their findings show that in countries in which the HIV prevalence rate exceeds 3 percent, the double of the medical brain drain rate is associated with a 20 percent 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 positive impact on the health expenditure. In analyzing the role of remittances in the provision of health care it is important to consider the relationship between migration and health.

Using 2002 Mexico Survey, Amuendo-Dorantes and Pozo (2009) find that international remittances raise health expenditures. Approximately 6 pesos of every 100 peso increment in remittance income are spent on health. 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 remittance income sensitivity. Hence remittances may contribute to equalization in 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 migration experience and social ties to migrants influence the probability of using maternal health care servoces. They find that remittances are a potential way through which migration affect health care services in rural areas. Migration experience is strongly associated formal delivery assistance. However, this relationship is due to the positive association between migration and enabling resources.

According to Jorge (2008) there is a statistically significant positive relationship between remittances and the household's expenditure on health for households without access to employment's medical insurance. The researcher uses a Tobit model with random effects finding that 10 percent changes in remittances are devoted to health expenditure. The study shows an important difference in the effect between remittances and "institutional transfers".

Using LSMS for 2005 Tomini and Maarse (2011) explores 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 determinants of informal payments in inpatients and outpatients care. Informal payments depend on demographic characteristics but are less dependent on income, suggesting homogeneity of payments across income categories.

Given current and projected declines in remittance flows, it is important to understand the role of these transfers in the household's well-being through better health outcomes. This is why the following study will focus on the effect of remittances on the health capital accumulation in Albania. The relationship will be analyzed in two directions; direct and indirect consequences. First, do remittances further more spending on health care and services and second, is there any relationship between migration and remittances with health outcomes or health status.

AN OVERVIEW OF ALBANIA'S HEALTH PROFILE

Since 1992, emigration from Albania has grown rapidly. According INSTAT (2005) 40 percent of those who have left the country were aged 19-40 years old, many of whom with high levels of education. Compared to 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), by 2030, the percentage of people 65 and over is predicted to double.

Table 1.1: Demographic Indicators for Albania and other Eur-B+C Countries (data from WHO, 2005)

	Albania	**Eur-B+C**		
		Average	**Minimum**	**Maximum**
Population (in 1000s)	**3102.8**		**-**	
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**

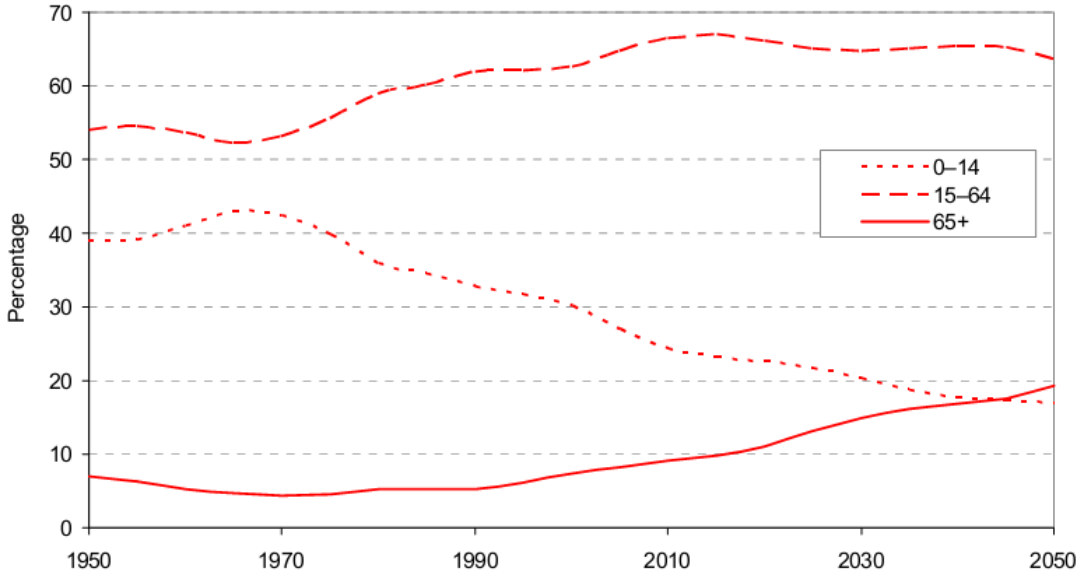
Natural population growth is much higher in Albania than the average in Eur-B+C countries, as shown in table 1.1. The birth rate is high if compared to the other countries Eur-B+C, however this rate is falling, represented in figure 1.2. The

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

uncontrolled movement of the population in the post communist era has changed the urban/rural ratio. In 1989, only 36 percent of Albanian lived in urban areas. This figure was 43 percent, in 2002 (WHO, 2005). Nevertheless, the indicators about urban population are still less than that of Eur-B+C countries.

World Bank (2011) estimated that a person born in Albania in 2010 can expect to live 77 years on average. Woman in Albania have around 3 more years of life expectancy (LE). National figures show that Albanians gained more than three years in LE between1987 to 2003. As the length of life increases, people may respond with changes in lifestyle. In this context, health care services need to adequate shifting toward prevention and management of chronic diseases.

Figure 1.2: Percentage of Albanian Population aged 0-14, 15-64, and 65+ (1950-2050 projected)



Source; United Nations, 2005

Income is an important factor in affecting health status. Higher incomes enable people to afford the goods and services that contribute to better health; better food and living conditions. Total expenditure on health as a percentage of GDP is around 7 percent (WHO, 2010). The structure of total expenditure on health was composed for 2009 by general government expenditure on health in 41 percent, while the rest is covered by the private expenditure on health. Albanian per capita expenditure on in health is 534 in USD (WHO, 2010), from this amount 354 represent the government expenditure on health, while the rest consist in households out of pocket spending on health.

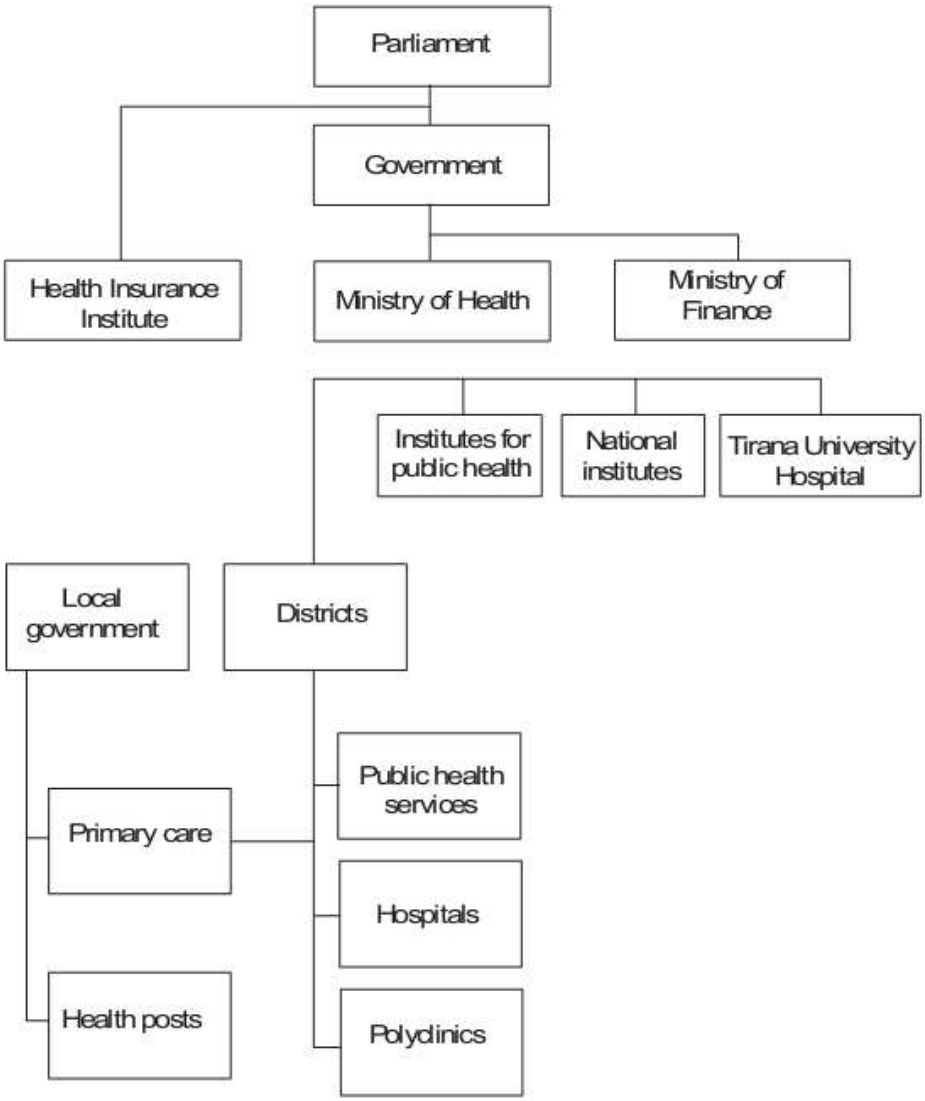
The Ministry of Health is the major funder and provider of health care services in Albania. This Ministry organizes most health services, with the partial exception of primary care. In figure 1.3 there is represents the organization chart of the health care system. Under the Ministry of Health, the Institute of Public Health is responsible for health protection[7], environmental health, the quality control of drinking water and air. It works mainly through the district health services. The local government authorities of all rural communes own and organize their primary health care facilities. The Ministry of Health gives them grants for equipment, maintenance, and paying the staff salaries. In urban areas, Ministry of Health district offices still own and manage such services. Private health services begin to

[7] The Institute of Public Health is particularly responsible for the prevention and control of infectious disease, and the national vaccination programme.

develop in Albania in the beginning of 1990s. Today the private health sector provides various types of services and facilities. Most private sector facilities are well equipped and organized.

Albanian health services are funded through a mix of taxation and statutory insurance. State remains the major source of health care financing, its contribution shrank from 1990s, while out-of-pocket payments increased. The Ministry of Finance allocates money to the Health Insurance Fund, to cover unwaged groups, and to the Ministry of Health. Health Insurance Institute is 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 purchase a restricted package of health services and pharmaceuticals. On the other hand, 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. Complementary source of health financing are out-of-pocket payments which account for an increasing proportion of health care expenditure.

Figure 1.3: Organization chart of Albanian Health Care System



Source; Nuri, 2005

Eligibility to health care is based on both citizenship and payment of insurance contribution. Access to free primary care is restricted to patients, and their dependants who have paid their insurance contribution. The state is responsible for low-income groups; therefore, people are not refused the medical services. There is another barrier to

access in some rural areas where medical staff; doctors and nurses, have left the medical facilities due to socioeconomic 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 country's socioeconomic development. The health insurance system 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, self-employed) are not making contributions which affect the equity of health care financing. The growing proportion of private expenditure for health through out-of-pocket payments further influences health care equity and access. Albania's health care service is still facing challenges, due to internal migration and health personnel in rural areas.

In this context it is important to understand if remittance inflows may contribute in the health care utilization. Because facts show that trends of out-of-pocket payments are increasing, remittances may play an important role in increasing health care access for those households by filling in the shortfalls in the health care recourses.

METHODOLOGY

THE ESTIMATION FRAMEWORK

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

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

In equation (1) the self-reported Health Status (HS) is given in relation to the 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 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 are a key input to economic policy. The way to al overcome this issue is to instrument remittances.

The second concern is to understand how remittances influence household health expenditures. Remittances as non-labor income relax budget constraint and may contribute to increase the household medical use. Health care expenditure is modeled as follows (Amuendo-Dorantes et. al. 2009);

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

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. I selected the Instrumental Variable (IV) approach 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 further investigate the dynamic of health expenditure in the suspected presence of endogeneity I will also use the propensity score matching method explained in the previous chapter. The main between the two methods is that propensity scoring uses observable measures to conduct a weight based on selection where IV method rely an instrument variable made for unmeasured factors or characteristics. Both methods present strengths and weaknesses.

In the absence of randomization, observed treatment[8] is generally not independent outcomes[9] and moreover the treatment assignment mechanism is not completely observed. In the absence of randomization, propensity score and IV method can lead to unbiased estimates of casual effects under differing assumptions regarding the assignment of the treatment.

The propensity score, which involves comparing households with similar propensity to receive remittances, attempts to balance observed characteristics in the remittance-receiving group as could occur in a randomized experiment. The propensity score for individual *i*, $e(x_i) = P(D_i = 1 \mid X_i = x)$, is defined to be the probability to receive 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. Thaus, under the assumption that the treatment assignment is ignorable, unbiased estimates of the average causal effect can be obtained by comparing individuals with similar values of the propensity score.

The propensity score aproach is a powerful method for balancing treatment groups in a study according to *observed* characteristics, but only controls for *unobserved* characterstics to the extent that they are correlated with the observed variables. Alternatively, IV methos seek to estimate causal effects in the presence of unobserved differences between treatment groups. According to this approach, the variable denoted as instrument is related to the treatment but not to the outcomes except through their effect on treatment. Application of the IV method proceeds in two stages; first, the instrument is used to predict treatment independent of the unobserved selection effects, and second, individuals outcomes in terms of health expenditure are then compared given the predicted treatment rather than the actual treatment.

RESULTS

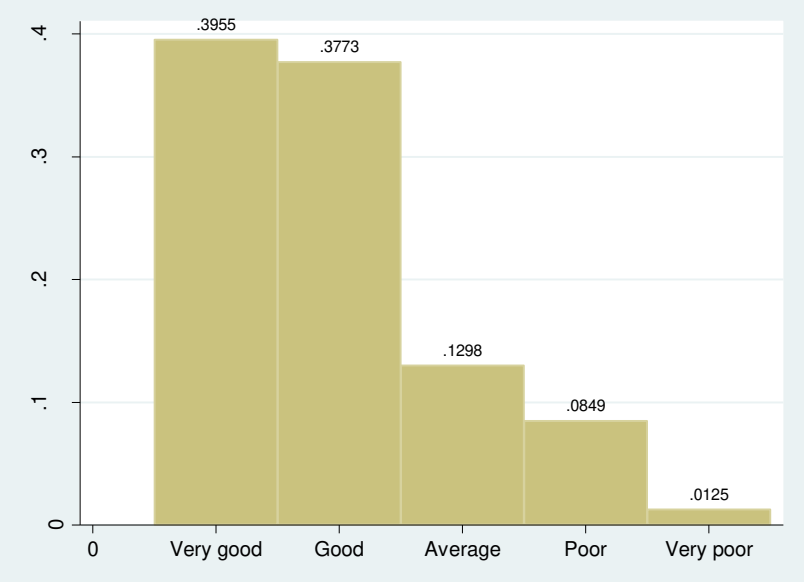
HEALTH OUTCOMES IN PRESENCE OF REMITTANCES

The first step is to understand in terms of outcomes the health conditions of the household members and then capture if there is any difference of these conditions in 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 4 weeks. Figure 1.3 presents the distribution of self-reported health conditions. From 18,231 individuals included in the sample, we have information about the health condition for 4,641 household members.

[8] Remittance receiving status

[9] Higher health expenditure or better health conditions.

Figure 1.4: Rating of Health Conditions



In table 1.2 are summarized results about the relationship between the health conditions and the vector of variables including age, area of residence, gender, education, household size and the presence of remittances. The health conditions are measured as a categorical variable, where 1 means very good and 5 means very poor. Along with the OLS are presented results from the ordered logistic and probit regression. Receiving remittances, even if not statistically significant seems to contribute in a worst self-reported health condition.

As expected, the education level has a positive and statistically significant impact in the health conditions. Living in the urban area, especially in the central part of the country is related with better self-reported health conditions. Statistically significant and contributing in a poorer self-reported health conditions are, female status, the age and the mountain residence. The later maybe related with the lack of access to the health services in this area of the country.

Table 1.2: Estimation of Self-Reported Health Conditions

Rating of Health Conditions	***OLS (1)***	***Ordered Logistic (2)***	***Ordered Probit (3)***
HH size	.008	.027	.013
	(.006)	(.015)*	(.009)
Urban	-.067	-.141	-.085
	(.029)**	(.070)**	(.041)**
Education	-.027	-.059	-.034
	(.003)***	(.008)***	(.005)***
Age	.026	.062	.035
	(.000)***	(.001)***	(.001)***
Female	.112	.304	.165
	(.027)***	(.069)***	(.040)***
Receive Remittances	.029	.084	.045
	(.027)	(.065)	(.038)
Coastal	.058	.154	.079
	(.040)	(.097)	(.056)
Central	-.024	-.067	-.036
	(.041)	(.101)	(.058)
Mountain	.110	.316	.172
	(.042)***	(.101)***	(.058)***
Head of HH	-.012	.031	.022

	(.040)	(.095)	(.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 the statistic significance respectively at 1, 5 and 10 percent level or better.

Because self-reported health conditions maybe subjective and represent perceived health status rather than objective health conditions, I extended the analyses on the health outcomes in other dependent variables as shown in table 1.3.

Table 1.3: Estimation of Health Conditions in Terms of Chronic or Sudden Illness

	Suffer from Chronic Illness	***Suffer from Sudden Illness***
HH size	-.067	.015
	(.025)**	(.029)
Urban	.087	-.101
	(.108)	(.132)
Education	-.075	-.015
	(.013)***	(.016)
Age	.075	.013
	(.003)***	(.003)***
Female	.885	.425
	(.137)***	(.132)***
Receive Remittances	-.030	.008
	(.101)	(.121)
Coastal	.303	.128
	(.146)**	(.200)
Central	.216	.450
	(.154)	(.201)**
Mountain	-.208	.461
	(.163)	(.203)**
Head of HH	.476	.393
	(.148)***	(.170)**
Cons	-4.869	-3.520
	(.297)***	(.332)***
N	5,005	5,005
Pseudo R-squared	-	0.026

Note: ***, **, and * indicate the statistic significance respectively at 1, 5 and 10 percent level or better.

In table 1.3 are presented the results of logit regressions where as dependent variables are used the probability of suffering of chronic illness and sudden illness in the past four weeks. Household members are less likely to suffer chronic and sudden illness if more educated and younger. The probability of suffering of a chronic or sudden illness is higher in the case of female household members. Being head of the household is related with higher probability of suffering from chronic and sudden illness.

Chronic illnesses are more probable in the coastal area. Surprisingly, greater the size of the household lower the probability of chronic illnesses. Receiving remittances lower the probability of suffering from chronic illness, but the effect is not statistically significant.

HEALTH CARE EXPENDITURE IN PRESENCE OF REMITTANCES

In this section I will focus on the relationship between health care expenditure and remittances. Recognizing the endogeneity of migration and remittances I am using Instrumental Variable techniques. I find an instrumental variable that is correlated with remittances but not correlated with health care behavior of household members. Amuendo-Dorantes, et al., (2007) instrument remittances usign information on the percent of migrants in the state of residency and information on the per capita count of the 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 diastance in kilometers between the place of residence and the closest point exit from Albania, the annual average number of economic and labor 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 influence the amount of remittances or the decision to migrate and may not have a direct connection with health care attitudes. In my study I will use a set of three instrumental variables; the number of household members living abroad, the country where the migrants are currently living, and whether a household member spoke Greek or Italian.

Greece and Italy are the major destinations for the Albanian migrants and knowledge on the language of the country of destination may reduce the cost of migration and the possibility of migrants to send remittances back home. The flow of remittances may be determined by the number of household members living abroad and the country of residence of the migrants. These instruments are not correlated to the health care behavior and health care expenditure of household members left behind.

Table 1.4 reports on the impact of remittances on the total expenditure for medicines. The IV estimates for the overall sample indicate that, receiving remittances has a greater impact in terms of magnitude to the total expenditure for 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 for medicines rise with the presence of remittances in the rural area.

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

In the rural sub group the IV-estimates show a positive and statistically significant impact of remittances. In the same sub group positive impact in the total expenditure for medicines have age, the possession of a health license, being the head of the household and not working.

Surprisingly the relationship between total expenditure in medicines and the income net from remittances is negative in the case of households living in the rural area. These results are not in line with the literature related with the health care behavior. More educated household members spent less for medicines; however we notice that the magnitude is lower in the rural sub group if compared to the urban sub group. This result maybe related with the previous findings about the negative correlation between chronicle illness and education shown in table 1.4. In this case we can conclude that more educated household members focus more on prevention. Interesting in this sub group is the positive relation in the case of households living in the mountain area. The difficulties of the access to medical service infrastructures maybe one of the reasons of this relationship.

In the urban sub group the non-IV estimates show that total expenditures for medicines increase with age, female status, being the household head and living in the mountain area. In the other side the total expenditure for medicines lower in the presence of a health license, if the household size is greater, if the household member is not working and if more educated. In the urban sub group the magnitude for educated household members is higher if compared to the rural sub group. This result is higher in the case of urban sub group IV-estimates.

Table 1.4: The Impact of Remittances on the Total Expenditure for Medicines

Total Expenditure for Medicines	***All***		***Rural***		***Urban***	
	NoIV	***IV***	***NoIV***	***IV***	***NoIV***	***IV***
Receive 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)**	-	-	-	-
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 Health License	-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 Remittances	.029 (.013)*	.016 (.013)	-.030 (.010)***	-.041 (.012)***	.053 (.022)**	.019 (.043)
HH 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 working	-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	3150.895	496.536	156.980	9519.731	6262.789
	(1301.748)***	(1372.600)**	(526.829)	(27.430)***	(2250.697)***	(2473.883)**
Head of HH	4516.190	4263.074	1293.200	1727.736	6736.172	6741.399
	(1214.094)***	(1331.845)***	(692.992)*	(835.200)**	(2528.164)***	(3085.784)**
Cons	1457.852	279.485	1698.405	-4575.805	9001.387	18176.340
	(2470.532)	(4912.204)	(1205.592)	(2380.743)**	(5184.701)*	(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 the statistic significance respectively at 1, 5 and 10 percent level or better.

Table 1.5 reports variables affecting the total expenditure for medical visits and laboratory services. This dependent variable may be considered as the one describing prevention behavior. The set of covariates are the same as those in table 3 and the results are presented divided by sub groups of households living in urban and rural area. The main variable of interest for us is remittance income. The IV-estimates suggest that remittances have a positive impact in the expenditure for medical visits and laboratory service. This relationship holds in rural sub group; however the magnitude is higher in the urban sub group but not statistically significant. Remittance income positively affects the expenditure in medical visits and laboratory services in the entire sample.

The OLS estimates, in the first column in table 1.5, show that the total expenditure increases in the urban area. In contrast with the findings in table 1.4, the relation between total expenditure for visits and the education is positive. More years of education lead to higher expenditure for visits and laboratory services. This result may be related to a higher propensity of educated household members to the prevention through visits and other similar services.

As expected higher age means higher expenditure for visits and laboratory services. Referring to the theory, the human capital formation predicts a positive correlation of the demand for health care and the rate of depreciation on the health stock. The OLS estimates show that the magnitude is higher in the urban area if compared to the entire sample and the rural area.

Total expenditure figures show that the estimated relation 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 in compared to female household members. All other things being the same we can expect household size to negatively affect the expenditure for visits and laboratory work. 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 for visits and laboratory work.

Table 1.5: The Impact of Remittances on the Total Expenditure for Medical Visits and Laboratory Services

Total Expenditure for Medicines	***All***		***Rural***		***Urban***	
	NoIV	***IV***	***NoIV***	***IV***	***NoIV***	***IV***
Receive 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)	-	-	-	-
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 License	-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 Remittances	.086 (.018)***	.084 (.022)***	.051 (.023)**	.030 (.028)	.084 (.031)**	.143 (.068)**
HH 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 working	-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	-5855.235	1854.564	1604.832	-5805.466	-8020.896

	(1793.183)***	(2422.295)**	(1137.305)*	(1456.028)	(2925.707)**	(6545.195)
Mountain	-8269.977	-7151.328	-2423.832	475.432	-9236.156	-5075.969
	(1831.525)***	(2207.641)***	(1194.619)**	(534.718)	(3103.516)**	(4001.220)
Head of HH	9222.295	9704.155	2701.673	4129.855	16507.28	1932.154
	(1801.848)***	(2142.092)***	(1571.404)*	(1920.213)**	(3486.11)***	(1751.226)
Cons	1457.852	-8142.849	841.550	-6707.62	-9360.632	-37078.500
	(2470.532)	(7900.615)	(2733.756)	(5473.577)	(7149.252)	(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 the statistic significance respectively at 1, 5 and 10 percent level or better.

The direction of the relation is negative for all the three areas of residence; Coastal, Central and Mountain. However the effect does not have a clear direction if divided by sub groups. Income net from remittances has a positive effect either in the entire sample or in the sub groups. The theoretical model predicts that the elasticity of demand for all forms of medical services with respect to income should be positive unless it is considered an inferior good. The effect of non-working status[10] is negative in the sample but have different direction for the sub groups suggesting a positive relation in the rural area and a negative one in the urban area.

PROPENSITY SCORE ESTIMATION OF THE HEALTH EXPENDITURE

Result of the Average Treatment Effect on health expenditure and total amount paid for medicines on the basis of Propensity Score matching are reported in table 1.6. The Propensity score estimators used in this part of the study are the Kernel and Nearest Neighbor estimators.

Table 1.6: Estimation of the average treatment effect for health expenditure and medicine expenses

	Total Paid for Medicines			***Total paid for Health Services***		
	Treated	*Controls*	*Differences*	*Treated*	*Controls*	*Differences*
Nearest Neighbor 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

In table 1.6 the average treatment effect (ATE) for an individual drawn from the overall population at random, is 1086.13 lek (for the total amount paid for medicines). This means that the amount spent by a randomly drawn individual would be 1086.13 lek higher because of the participation in the treatment group so receiving remittances. This results because a positive effect is estimated for the untreated (ATU), non remittance-receiving households who are much more numerous than the treated[11]. So 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 individual. Because of the small number of individuals receiving remittances one would have to check if the balancing is also achieved for this group otherwise the ATU might be biased. However, ATE, ATU, and ATT are linked as

[10] The household members maybe unemployed, or out of the labor force, (e.g. children and older members).

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

follows; ATE=N_1 /N*ATT+N_0/N*ATU, where N_1 is the number of treated and N_0 is the number of untreated. So the number of treated and untreated is important in drawing final conclusion.

However, the sign of the ATT (average treatment effect on the treated) is important in giving answer to the question about the presence of remittances. The positive sign of ATT means that the total amount paid for medicines is raised by 1475.65 lek if the individual receive remittances. This positive result is evident when used both kernel and NN estimator. While, we cannot draw the same conclusions for the health service expenditures. Different estimators give different directions of the relationship. These results according to the 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 1.7. We can notice that the findings are similar to those presented after the use of IV method both in the direction of relationship and the magnitude. There are differences in the effect of remittances in the urban areas in this table the direction of the relation is the opposite of the one presented using IV method, table 1.5 the same difference is noticed for the female variable.

Table 1.7: Regression results before matching method

Receive Remittances	***Total paid for medicines***	***Total paid for health services***
HH size	-.082 (.009)***	-.081 (.006)***
Urban	-.093 (.036)*	-.072 (.021)*
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 HH	.034 (.050)	.036 (.050)
Not Working	-.145 (.032)***	-.134 (.057)**
Cons	-.038 (.101)	-.033 (.096)
N	8,129	8,129
Pseudo R-squared	0.20	0.21

Note: ***, **, and * indicate the statistic significance respectively at 1, 5 and 10 percent level or better.

One of the assumptions of the propensity score method is that related to the 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 for the total amount paid for medicines and health services in figure 1.5.

Figure 1.5: estimation of propensity score distribution

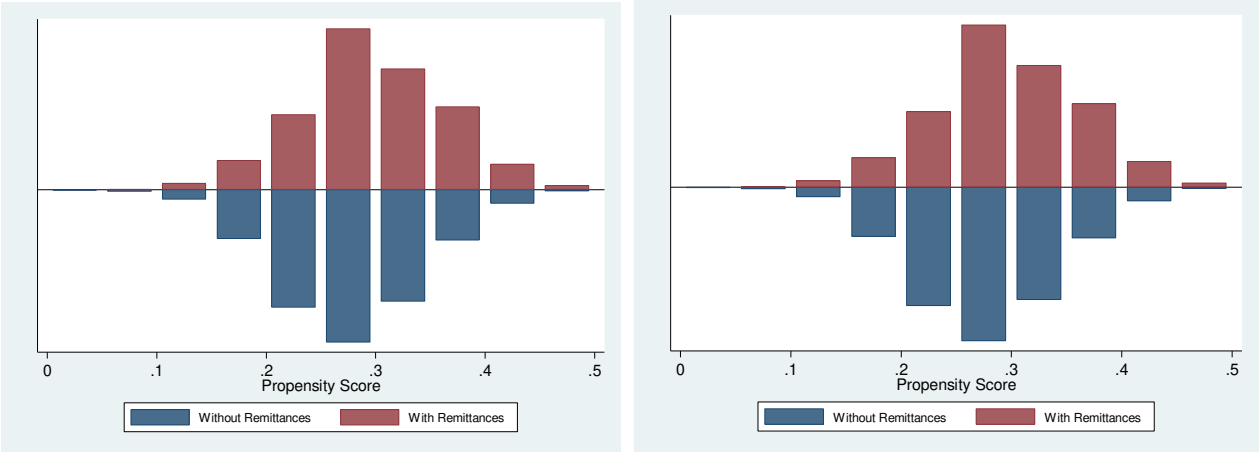


Figure 1.5 represents the differences in terms of amounts paid for medicines and health services of the two groups of remittance-receiving and non remittance-receiving conditional to the covariates. The histograms show the distribution of the predicted propensity score between receiving-remittance household members and non receiving-remittance household members. We notice that there is a good overlap between distributions of the propensity score in the two treatment group,.

CONCLUDING REMARKS

The paper examines the relationship between remittance income and total expenditure for health care using instrumental variable method. Total expenditure is divided into two categories: expenditure going in medicines and expenditure going in visits and laboratory services. The estimation is presented for two separate sub group rural and urban area.

The overall findings of the chapter indicate that households increase their expenditure for medicines and other health services in presence of remittance income. The positive relationship is statistically significant in the case of remittance receiving households living in the rural area. The IV-estimates show that total expenditure for medicines increase by around 9,400 Lek in the case of households living in the rural area of the country. The magnitude is lower in the case of total expenditure for visits and laboratory. However, total expenditure for visits and laboratory are likely to have significant impact on the health outcome given their prevention nature. Remittance flows may play an important policy role in supporting total expenditure for the health care of remittance receiving households, especially for those living in rural area where the access is limited if compared to the urban area.

According to the IV-estimates more years of education means less expenditure for medicines but more for visits and laboratory services. This may be related with the fact that educated household members are more efficient producers of health meaning that they are more skilful in combining medical prevention services for better health

outcomes. The total health care expenditure increases with age, for female household members, and households living in the mountain area of the country.

Part of the research is the estimation of remittance income in the self-reported health condition. OLS estimates show a positive impact of remittances in increasing the probability of reporting good or very good health condition; however the effect is not statistically significant. Interesting is that the presence of remittance income lowers the probability of chronicle or sudden illness.

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

Both propensity score and IV approaches rely on critical assumptions and are subjects to biases if the assumptions are not met. On the other side, if there is heterogeneity in the impact of remittances, propensity score and IV estimates of causal effect may differ even if the assumptions are valid. Propensity score analyses rely on the assumption that conditional on observed data, remittances are randomly assigned. In contrast, 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 in health expenditure of household members are also important in choosing the right analytic strategy. Observed characteristics of the set of individuals used to compute the propensity score causal estimates allow us to identify characteristics of the reference population and thus 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; diet, health behavior, access to clean water, and health services. However, other socioeconomic determinants; income, education, and employment, may affect health status.

According to the literature, education tends to enhance individual's job opportunities. This way it can improve income levels and give more access to knowledge about healthy behavior and increase the tendency to seek for treatment. On the other hand being employed tends to better for the health status then being unemployed. Vulnerability to health risk is correlated with long-term unemployment.

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