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Impact of migration on child growth in Albania and Macedonia

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Abstract

Albania and Macedonia are two Western Balkan countries that are characterised by high emigration and remittance dependency rates that appear to have affected the development of these countries across different socio-economic and cultural dimensions. Child growth in particular is one of these important outcomes. This paper uses a survey administered to mothers in Albania and Macedonia to investigate whether migration and remittances have had any impact on child growth in these countries. Child growth indicators, such as body mass index, weight, height, stunting and obesity dummies, together with child health inputs, such as the frequency of visiting the doctor, chronic diseases and reasons for not going to the doctor, are used as left-hand side variables. The paper finds that while migration has led to less stunting and increased height in Albania, in Macedonia, it seems to have led to increased weight and body mass index values and more obesity. These findings imply that exposure to international migration can have different consequences for these countries as Albania appears to have realised improvements in height and stature, while Macedonia has suffered from increased weight associated with increases in obesity.

Key words: Migration, Remittances, Albania, Macedonia, Child health

JEL Codes: O15, I12, F22

1. Introduction

Albania and Macedonia are two Western Balkan countries that are characterised by a high emigration rate. Although in Macedonia, the phenomenon of guest worker emigration started in the 1960s with the intention of alleviating labour market imbalances and economic problems, Albania underwent a renewed tradition of migration only after the collapse of the communist system in 1991. Not surprisingly, the migration flows out of and within these countries have become a crucial factor in shaping their growth and development and have resulted in significant changes in the socio-economic composition and demographic trends. The most recent statistics confirm that the number of migrants abroad in 2011 is more than 1.4 million (half of the population that is currently living in Albania), and 85% of them reside in the EU (World Bank, 2013). In Macedonia, World Bank estimates show that over 400 thousand Macedonians have emigrated, which is more than 20% of the country's population (Uzunov, 2011; World Bank, 2013). The transition processes these countries have undergone have resulted in a weakening of the social protection systems and in a heavy reliance on remittances as a source of external finance. Indeed, migrant workers' remittances have become an important source of income with officially recorded remittances accounting for more than 10% of the GDP. In Albania, remittance transfers are estimated to have reached US\$ 1.156 billion in 2010, constituting 11% of the GDP (2010), while remittances in Macedonia have also represented a considerable percentage of Macedonia's GDP over the past two decades. There is a high percentage of remittance receiving households at the national level, and a major part of Macedonia's 2 billion USD (2012) trade deficit is financed by remittances.

This intensive migration prospect justifies a whole literature researching the impact of migration on the development of the Western Balkan societies across different socio-economic dimensions. In the words of King (2005), "Albania is a laboratory to study international migration". The economic dimension has been extensively researched with robust findings that indicate that in the short-run remittances help to increase consumption, especially among poor families, but they also cause disincentive effects in the labour supply. However, less attention has been paid to the long-term consequences of migration, namely with respect to education performance, gender and cultural changes in home societies (Levitt, 1998) and health status performance. The latter, health status, and more specifically, the health status of children left

behind has been left almost untouched by researchers due to the scarcity of health data at the individual level, although development economics has considered health a key factor.²

To fill this gap in the migration literature, this paper addresses the link between migration and child health in Albania and Macedonia. In particular, the paper assesses the impact of migration on child growth indicators such as weight-for-height, height-for-age and weight-for-age, which are the three most commonly used anthropometric indices to judge growth status and the levels of stunting and overweighting or obesity among children in a given population (World Health Organisation, 2013). Stunting or low height for a given age reflects the accumulated effect of malnutrition since pregnancy and therefore can be considered as a form of long-term reduction in child growth.³ Overweight status or high weight for height in childhood is associated with a higher likelihood of obesity in adulthood. Obese children are likely to suffer from short-term and long-term health consequences such as diabetes and cardiovascular diseases. With respect to a population, high rates of stunting, wasting and obesity are associated with poor socio-economic conditions and increased risk of frequent and early exposure to adverse conditions such as illness and/or inappropriate feeding practices. Similarly, decreases in the national rates for stunting, wasting and high weight are usually indicative of improvements in overall socio-economic conditions of a country.

Albania and Macedonia are on track to achieve their Millennium Development Goal (MDG) targets in the field of health by halving child and maternal mortality and underweight rates. Though these countries are meeting their MDG targets, and underweight prevalence is under 6%, there is a prevalence of stunting and obesity among children, especially in Albania. According to the 2010 report of the World Health Organization (WHO), Albania and Macedonia rank second and eleventh with childhood obesity rates of 25.2% and 16.2%, respectively. Stunting rates are also unacceptably high, namely, 26% in Albania and 11% in Macedonia (UNICEF, 2009).

Despite the gravity of these child growth statistics, little is known about the factors behind them. Therefore, a survey was conducted through face-to-face interviews with mothers in

² The research on effects of migration on educational attainment of children belonging to migrant households is a subject of another paper written by ACSER, Tirana, and Analytica, Skopje.

³ Underweighting - low weight for age - is not considered in this research as it is not a concern in the countries of interest.

Albania and Macedonia between June and September 2012. The target groups were spouses of migrants and non-migrants with children aged of 6 to 15 years. Taking into consideration the objectives and the specificities of this research, the interviews were collected following a snowball sampling approach that allowed for the sample to be gradually formed using information from one source to another, including respondents with and without migration experience and respondents used to have family members abroad.

The paper is organised as follows. The second section presents a review of the relevant literature, the third and the fourth sections describe child health statistics in Albania and Macedonia and the survey data used and the fifth section discusses the econometric model used together with the estimation results.

2. Literature review

In the literature pertinent to health dependence on remittances and migration status, various hypotheses on either deterioration or improvement of health outcomes of the non-migrating individuals prevail. Child health is quite important for the well-being of households and determines long-term development of human capital (Mara et al., 2012a). Starting from Grossman's health production function (1972), remittances help to improve child health outcome by the means of purchases of childcare and nutrition, while migration phenomenon may affect child health first due to the smaller amount of time spent by parents with their children and second through the health knowledge acquired abroad.

Hildebrandt and McKenzie (2005) find positive effects of migration on health outcomes of migrant households by matching increases in monetary and social remittances with increases in birth weights and reductions in infant and child mortality. They also find that migration results in lower numbers of breastfed and vaccinated children but higher levels of health knowledge among mothers. Hildebrandt and McKenzie provide a first investigation of the channels through which these networks affect child health, and they show that the migration process can result in improved health knowledge. The first avenue is the direct effect of migration on income and wealth through remittances and repatriated savings, which allow households to spend additional resources on food and health services. Second, migrants may gain health knowledge through exposure to destination country practices, thus resulting in a more effective use of financial

resources and, consequently, the attainment of better health. The authors find evidence that migration influences health outcomes through an increase in wealth and health knowledge. They find that the children of migrants are less likely than the children of non-migrants to be breastfed, fully vaccinated, or taken to a doctor in their first year of life.

Frank and Hummer (2002) show positive effects on birth weights in families experiencing out-migration versus those without migrants. They argue that members of migrant households are characterised by more positive birth outcomes than those of non-migrant households in that they have lower proportions of low birth weight and prematurity.

Lopes-Cordova (2005) investigates the link between migration and child health and finds that a one percent increase in the remittances reduces the infant mortality rate by 1.2 per thousand. The analyses of Acosta et al. (2007) show that children in recipient households enjoy a better health status than those in non-recipient households across all the aforementioned health indicators. In their study, Amuedo-Dorantes and Pozo (2011) argue that the potential impact of remittance income on health care expenditures appears to increase with income transfer from abroad. Health care expenditures are more responsive to increases in remittance income than to other expenditures.

According to McKenzie (2007), while some of the improvement in health outcomes is likely to arise from the increase in household income after remittances, migration has at least two additional impacts on child health. These include higher opportunity costs of time and the absence of parents, which may make children of migrants less likely to receive certain types of health inputs. Evidence for this effect is evidenced in children in migrant households having a lower probability of being breastfed and of receiving their full dose of vaccines. A more positive impact is observed in terms of maternal health knowledge. Mothers in migrant families are found to have higher levels of health knowledge, and there is also evidence of knowledge spillovers to mothers in non-migrant households. Kabki (2003) argues that remittances that most of the Netherlands-based migrants from Ghana's rural Ashanti community send to their home communities are primarily used for medical expenses.

In contrast, Kanaiaupuni and Donato (1999) find a negative effect of migration and remittances on child health and more specifically an increase in infant mortality, which may be due to the disruptive effect of family separations. However, this disruptive effect is observed

only in the initial stage of the migration. In the long-run, remittances bring significant reductions in infant mortality. The findings of the authors are that the effects of migration on infant mortality unfold over time. In its initial stages, migration is disruptive to communities and families, but with time, it eases household survival as the family becomes part of the local institutions and community life. Migration raises infant mortality in the short run and lowers mortality risks in the long run. Initially, migration disrupts normal community activities as growing numbers of the able-bodied workforce leave home and as infant mortality levels rise. Over time, however, migration brings positive changes as it becomes an institutionalised part of local life, raising standards of living and infant survival probabilities. Together, these findings suggest that infant health is crucially linked to a community's position in the process of migration.

Glewwe (1999) studies the mechanisms through which mother's education raises child health using the case of Morocco and concludes that mother's health knowledge rather than their level of schooling per se is the crucial skill for improving child health. Migrants may gain information about basic health practices while abroad and share this with family members. Such information may include a better understanding of contraceptive practices, the importance of sanitation, and knowledge about diet, exercise and other lifestyle behaviours. Menjivar (2002) provides evidence that social networks among Guatemalan immigrants in the U.S. engage in the regular transmission of medical knowledge, thereby helping one another with information about treatments and health advice. The mentioned informal networks play a key role in providing access to treatments that include prescription drugs and traditional medicines.

In a recent strand of research, data from a migration lottery programme in New Zealand are used to compare families of successful applicants (winners) with those who were not successful and, in this way, assess the impact of migration on the families involved. Accordingly, while Gibson et al. (2011) find deterioration in diets and anthropometric indicators among Tongan children left behind, an improvement in health status is evidenced among children who migrate. These experimental studies have produced insignificant results regarding children left behind mainly because the migrants are not their parents (the lottery rules favour family migration in the case of married applicants).

As regards the empirical research exploring the impact of migration on child health status in Albania, there are only a minimal number of extant studies (Mara, et al., 2012a). Narazani (2013) provides the first empirical attempt in the Albanian context and shows that migrants' households have lower rates of infant mortality. However, no comparable research has been conducted regarding the case of Macedonia.

3. Child Health Statistics in Albania and Macedonia

The infant and child mortality as well as maternal mortality rates are considered the basic indicators for determining the degree of progress a country has made in the areas of social and economic development. According to different statistical sources, Albania had significantly high child and infant mortality rates in the early 1990s compared to its Balkan neighbours. However, these rates have decreased rapidly since then. Their declining trends may mask an indirect effect of migration and remittances, a phenomenon that has occurred in other remittance-dependent countries. For example, infant mortality fell from 15.1 per 1,000 live births in 2004 to 10.3 by 2009. The maternal mortality rate in 2008 was 10 per 100,000, which was down by half from the 2001 level. The 2010 child mortality rate was 18 per 1,000 live births, down from 39 per 1,000 births in 2000. During that same period, infant mortality fell to 16 per 1,000 births from 35 per 1,000 births. With respect to the goal to reduce maternal mortality, the mortality rate in 2010 was 27 per 100,000, which was down by half from the 2001 level (Mara et al., 2012b). These improvements are due in large part to Albania's well-developed health care system, which features an extensive infrastructure of facilities that provide maternal care services. Overall, levels of antenatal care (ANC) and delivery assistance are high. Almost all pregnant women (97%) in Albania receive antenatal care from a skilled provider at least once during their pregnancy. Additionally, ANC is universal in Tirana, almost universal in coastal areas (99%), very high in central Albania (97%) and somewhat lower in mountainous areas (92%). Almost all deliveries, 97%, occur in a health facility, while only 3% occur at home (Mara, et al., 2012b). However, in Albania, total health care expenditures are very low with public and private spending amounting to only 6.5% of the GDP in 2010. One of the main challenges to effective health service delivery lies in the general low quality of health services, on the one hand, and the lack of access to health services, on the other hand. Furthermore, system-wide capacities in

health administration remain weak, which further impedes a cost-effective delivery of health services, especially in rural and mountainous areas (Mara et al., 2012b).

In Macedonia, infant mortality rates have dropped significantly to 8.5 deaths per 1,000 live births. However, this is still a high rate compared with the EU average of five deaths per 1,000 live births. In Macedonia, total health care expenditures are very low as public and private spending amounted to only 7.1% of the GDP in 2010. Furthermore, most of Macedonia's citizens are health insured. In fact, all employed and retired individuals as well as students are health insured either through their employers or, for those not working, through the social healthcare system. Most child health indicators show positive trends. For example, the under-five mortality rate has dropped from 33.3 per 1,000 live births in 1990 to 11 per 1,000 live births in 2010. Similar trends have been noted with the infant mortality rate, which decreased from 31.6 in 1990 to 10 per 1,000 live births in 2010 (Mara, et al., 2012b). However, despite the achievements and the downward trends, these indicators remain far below the EU average. The infant and under-five mortality rates differ in various geographic areas, regions and municipalities, and there are differences between urban and rural areas as well as among the various socio-economic groups. Child mortality in rural and outlying settlements is higher than in urban areas mainly owing to the lower socio-economic status of the rural areas. The nutritive status is an indicator of the children's health condition, the household's socio-economic status and, to some degree, the access to primary healthcare. While malnutrition is not a serious problem among children in Macedonia, 2% of children under five are moderately underweight and 0.5% are seriously underweight (Mara et al., 2012b). The leading causes of death among infants in 2007 were prenatal complications, which accounted for 61.5% of the deaths, followed by congenital malformations, accounting for 20.9%, and symptoms, signs or other abnormal clinical findings, which accounted for 10.3%. A positive trend has been observed in the group of infectious diseases, whose share in the causes of death among infants dropped from 16.4% in 1990 to 5.9% in 2003 and to 3.4% in 2007. The most common diseases among children under five are respiratory infections, anaemia and acute diarrhoeal diseases, the prevalence of anaemia being higher among children in rural areas (Mara et al., 2012b).

4. Description of survey data

The data used in this study are extracted from a survey conducted through face-to-face interviews with mothers in Albania and Macedonia between June and September 2012. The target groups were spouses of migrants and non-migrants with children aged 6 to 15 years.⁴ The questions asked of the respondents were designed to examine the health status of their children. For the purpose of analysing and capturing the potential impact of migration of family members/parents as well as remittances on the health of children left behind, the sample was drawn by considering two groups, mothers who have a family member abroad (particularly husbands) and, as a control group, mothers who do not have a family member abroad. The questionnaire was composed of four modules. The first module collected information regarding the socio-demographic characteristics of the household member interviewed, including questions about family composition and characteristics of other household members who live in the same household. The second module of questions addressed employment and standard of living issues (sources of income, costs of living and type of expenditures, allocation of income sources by main items). The third module was composed of questions related to the migration experience of the family member living abroad for those respondents who confirmed so, including questions related to remittances (frequency of receiving remittances, amounts of remittances). The fourth module was related to children's health status and also asked direct questions of how migration may have affected those children who had family members abroad.

The sample consisted of 193 mothers in Macedonia and 95 mothers in Albania. The sample of children with or without a family member abroad at the time of the survey was 437 children from 193 households in Macedonia and 177 children from 95 households in Albania. Regarding the field work in Macedonia, 61% of the interviews were conducted in the territory of the city of Skopje, while 39% were conducted in the rural areas of Skopje. In Albania, 63% of

⁴ Taking into consideration the objectives and the specificities of this research, the interviews were collected following a snowball sampling approach allowing for the sample to be gradually formed using information from one source to another, including respondents with and without migration experience or respondents used to have family members abroad. Assessing the impact of migration on children left behind requires understanding the patterns of migration of family members and particularly of migrated parents. As in most of the cases, the father is the parent who has migrated, thus leaving the children and the wife behind, For the purpose of this analysis, it was considered more appropriate to interview mothers. The decision to interview women is because women are the heads of the households during the husbands' absence as a result of migration. Other reasons for interviewing mothers were mainly because of the type of health-related questions asked, e.g., types of diseases, occurrence of conical and non-conical illnesses, frequency of visiting the doctor, anthropometric measurements (weight and height) and migration-related questions, as mothers tend to be better informed and more aware than the fathers as the mothers are the primary caregivers of the children.

the interviews were conducted in Tirana, and the remaining 37% were conducted in other rural and urban areas in the central area of the country.⁵

With respect to the migration experience within the household, 40% of the children in the Macedonia's sample live in a household that has a family member abroad compared to 47% of the children in the Albanian sample.

The average age of the mothers is approximately the same in Albania and Macedonia, 37 and 38 years, respectively. Regarding their ethnic origins, in the case of Macedonia's sample, 21% are Macedonian, 71% are Albanian, and the rest are Turks, Roma or another ethnicity. Regarding the Albanian sample, ethnicity loses complete importance, as almost 98% of the sample is Albanian.

The main reason why the majority of respondents in the case of Macedonia were of Albanian ethnic origin is the difficulties encountered during the targeting of the migrants' households and in particular migrants of Macedonian ethnic origin. From the total number of ethnic Macedonians in the study, only 6% are migrants, while from the total number of ethnic Albanians, 54% of them are migrants, thus implying that ethnic Albanian households receive most of the remittances.

With regards to education level, in the case of Macedonia's sample, approximately 4% of the respondents have not completed primary education, 46% of the respondents have completed primary education, 32% have completed secondary education and 22% have a tertiary education. The education level of the mothers in the Albania sample is notably higher with 9% of the interviewed mothers having completed primary education, approximately 47% having completed secondary education and 44% having a tertiary education.

Of the mothers in Macedonia in migrant households, 13% had previous migration experience, while among their counterparts in Albania, approximately 24% had such experience. The main reasons why they returned include personal interest, personal needs, unsolved marital status and family reasons. In Macedonia's households, 41% of the migrants are the husbands,

⁵ Because of limited resources, the survey was conducted only in those regions most affected by migration. The sample is not representative of Albania and Macedonia as a whole. Also, Tirana and Skopje may not be optimal geographic areas for such impact measurements and may not represent an adequate territorial distribution to represent impacts at national levels. However, due to limitations encountered in targeting the migrant experiencing families, snowball method was used to interview mothers of the children who were willing to participate, targeting both urban and rural populations.

whereas in Albania this was true in only 10% of the cases. The top 3 countries for migration among Macedonia's migrants in this study are Germany with 34% followed by Austria and Switzerland followed at 14% each. For Albanian migrants, the main destination countries are Italy at 35% and Greece at 32%, while the remaining 33% are dispersed among the other EU countries.

Of Macedonia's respondents who have a family member abroad, 80% indicated that they receive monthly remittances and 18% of them have been receiving remittances for 10 years, while 10% have been receiving them for 4 years. With respect to the Albanian respondents, 45% confirmed that they receive remittances and among that 45%, only 15% reported to receiving monthly remittances. Respondents were asked the following question, "What is the average monthly income of the migrant in the country of migration?" Of the Macedonian respondents, 32% stated that they did not know the income of the migrant, 12% responded that the migrant receives from 800 to 1000 Euros per month, 13% of the respondents said that the migrant receives from 1500 to 2000 Euros and 13% responded that the monthly income of the migrant is above 2000 Euros. In Albania, almost half of the respondents did not provide an answer. Of those who did respond, 21% said that the migrant earned an average of 1300 Euros per month and 29% said the migrant earned more than 1300 Euros per month. However, in Albania and Macedonia, the three most important reasons why the migrant sends money home to support the family's daily living expenses, to pay for education and to pay for health care expenses.

The average age of the children whose mothers participated in the survey is 11 years in both countries. Their mean weight is 38 kilograms in both Albania and Macedonia, while the average heights on Macedonia is 1.60 metres and 1.37 metres in Albania. As expected, 82% of the children in the respective countries were taken to the doctor due to an illness, but in Macedonia, only 4% of all the children reported visiting a doctor because of a chronic disease, while in Albania, 21% reported that a chronic illness was the main reason for visiting the doctor. In the case of Macedonia, approximately two-thirds (61%) of the children who have visited doctors do not have a family member abroad and only 39% are from a migrant household. In contrast, in Albania, half of the children who visited a doctor did not have a family member

abroad. Nevertheless, these results indicate that children from migrant households are less subject to illness compared to children from non-migrant households.

This trend is confirmed in the following question, which was posed to the respondents. “How often have you visited a doctor?” The characteristics of the children who have made frequent visits to the doctor is as follows: 67% are from non-migrant households and 33% are from migrant households in each of the respective countries. There are no statistically significant differences regarding difficulties visiting doctors due to the costs associated with visiting a doctor, the costs associated with medicines, distance to the hospital or permission to visit a specialist between the two observable groups (migrant and non-migrant households). There is a higher level of concern among the mothers from migrant households regarding the availability of a female doctor in the hospital compared to the reported concerns from non-migrant households. Thus, 16% of the migrant respondents are concerned that in the hospital there is not a female doctor available during their visit, while only 1% of the mothers from non-migrant households share this concern.

Based on child anthropometric measures such as height and weight of children (reported by the mothers interviewed), this paper uses child growth indicators, such as body mass index ($BMI = \text{weight}/\text{height}^2$), obesity, wasting, stunting and overweight. Weight, height and BMI are standardised by age and gender and expressed as z-scores to show how many standard deviations a child is away from the age and gender specific outcome in a reference population of well-nourished children. Normally, for transforming child anthropometric data to z-scores, two sets of population-based reference data are used, the 1990 British Growth Reference and the 2000 Centres for Disease Control. In this study, we use the 1990 reference values for the United Kingdom (as derived in Cole et al., 1998) to transform crude data to standard deviation z-scores.

Based on the recommendation of the Childhood Obesity Working Group of the International Obesity Taskforce, cut-off points of the BMI endorsed by the World Health Organisation are used to categorise children as normal weight, overweight, or obese based on age, gender, and BMI (Cole et al., 2000). Accordingly, a $BMI < 25 \text{ kg/m}^2$ refers to normal weight, a BMI between 25 and 29.99 refers to overweight and a BMI of 30 kg/m^2 indicates obesity. Stunting refers to the standardised < 5 th percentile in the reference population, while obese refers to a BMI ≥ 95 th percentile in the reference population.

In the case of the Albanian sample, *Table 1* shows that children living in migrant households have both greater height and weight than their counterparts. They are also less stunted, but no significant difference result from the obesity figures. No underweight child exists in the sample. The summary of statistics for the Macedonia sample leads to different conclusions. That is, children in migrant households are unquestionably more stunted and obese than children in non-migrant households (*Table 4*).

Table 1: Summary of statistics by migration - Albanian sample

	Non-migrant	Migrant	All
BMI	19,63	19,29	19,47
Weight	36,49	38,56	37,47
Height	134,2	139,1	136,5
Stunting	0,368	0,131	0,256
Obesity	0,0735	0,082	0,0775
Normal	0,588	0,721	0,651
Overweight	0,338	0,197	0,271
Child's Age	10,47	10,82	10,64
Boy	1,426	1,475	1,45
Birth Order	1,279	1,311	1,295
Mother's Age at Birth	28,94	27,05	28,05
Mother - Primary Education	0,103	0,0656	0,0853
Mother - Secondary Education	0,426	0,508	0,465
Standardised Income	9,7	9,892	9,793
Number of Children	1,559	1,623	1,589
Living in Rural Area	0,176	0,246	0,209

Table 2: Summary of statistics by migration - Macedonian sample

	Non-migrant	Migrant	All
Body Mass Index	19,2	20,14	19,59
Weight	38,22	38,18	38,2
Height	139	136,6	138
Stunting	0,109	0,14	0,121
Obesity	0,124	0,218	0,162
Normal	0,624	0,553	0,595

Overweight	0,159	0,145	0,153
Child's Age	10,94	10,54	10,78
Boy	1,519	1,497	1,51
Birth Order	1,748	1,821	1,778
Mother's Age at Birth	27,41	27,3	27,36
Mother - Primary Education	0,477	0,547	0,506
Mother - Secondary Education	0,26	0,324	0,286
Standardised Income	4,291	4,539	4,396
Number of Children	2,496	2,642	2,556
Living in Rural Area	0,221	0,631	0,389

5. Estimation model and results

To evaluate the impact of migration on child health status, we estimate the following equation:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 Z + \mu$$

where the left-hand side variable Y refers to

1. child growth indicators, such as standardised weight, height and BMI, obesity and stunting
2. child health inputs such as frequency of visits to a doctor and incidence of a chronic disease as well as a set of reasons why the mother has not sent her child to the doctor when ill (visiting doctor is costly, buying medicines is costly, the health centre is too far, need for permission to go to the doctor, the doctor is not a woman).

On the right hand side of the equation, we have included the following variables: the vector X1 is related to child specific variables (age, sex, birth order position, whether child is living with both parents); the vector X2 is related to mother specific variables (age and level of education); the vector X3 refers to household characteristics such as the number of children, standardised household income and locations (urban or rural).

To account for migration experience and remittances, three specifications are used where the variable Z acts as a proxy of

- a) migration experience within a household

- b) mother's own migration experience
- c) receipt of remittances

First, five regressions are run to assess the effect of migration experience of any member within the household on the selected child growth variables (*Table 1, Appendix B*). This set of regressions is rerun to assess the effects of mother's migration and remittances on child growth (*Tables 4 and 5, Appendix B*). Similar regressions are run to assess the effect of migration and remittances on health inputs (*Tables, Appendix B*). Considering all the possible combinations for the dependent variables described herein and the proxy used for migration and remittances, we have run 42 regressions, which are further summarised in *Tables 3 and 4*.

6. Estimation results

Estimation results for Albania

Table 3 shows a summary of the results obtained from the regressions using the Albanian data.

The results show that having a migrant member in the household has a positive and significant effect on the child health indicator **related to height and a negative effect on the likelihood of being stunted**, while showing no significant effect on weight and BMI indicators. The same results hold when the receipt of remittances is used instead of household migration experience, while no significant effect stems from the mother's migration. These findings imply that there is an entire overlap between migration experience within the household and the receipt of remittances regarding the way in which they affect child growth.

Table 3 also indicates that children living in migrant households visit the doctor more frequently than children of mothers who have migrated or children whose households receive remittances and that these children suffer less from chronic diseases. Mother's own experience and the fact that the household receives remittances do not make any significant contributions regarding the frequency a child visits the doctor. When considering the reasons reported by the mothers for not going to the doctor, *Table 3* shows that the main concern in migrant households is the distance of the health centre and the gender of the doctor, while in households where the mother herself has migrated, the high cost of doctor visits and medicines are less important than

in other households where no permission from other household members to visit the doctor is a factor. This contrasting behaviour between mothers in migrant households and returnee mothers is a consequence of the way these mothers are exposed to migration, that is, directly (returnee mother) or indirectly (mother in migrant households). In other words, returnee mothers have greater autonomy (indicated by more money and the freedom to move) than do mothers in migrant households.

Based on these estimations, other factors also appear to be important. For example, there are important differences in terms of gender and age in that girls are less likely to be stunted than boys and the likelihood of being stunted and obese decreases with age. However, being the first or the second child does not result in any significant difference for any of the indicators.

With regards to parents' characteristics, while mother's age is not important for child health status, her level of education is significant as mothers with a primary education are more likely to have obese and shorter children than are mothers with a tertiary education. Furthermore, living with both parents versus living with one parent does not have any significant effect on the identified health indicators

Finally, the study examines the household characteristics. Children living in rural areas have a lower BMI and are more stunted than those living in urban areas. While household incomes are also found to be important, they seem to deteriorate child stature in that children living in wealthier families are more obese and stunted. This positive link between obesity and stunting from one side and wealth from the other side is not a novelty as in most developing countries, the increasing obesity patterns are thought to be a consequence of the social and economic transition these countries experience and income growth is one of these underlying factors (Monteiro et al., 2004).

Considering these estimation results, it can be concluded that in the case of Albania, children living in households exposed to migration and receiving remittances have a higher probability of not being stunted and are also taller than children living in non-migrant households.

Table 3: The impact of Migration and Remittances - Albanian data

Child Growth	BMI	Weight	Height	Stunting	Obesity
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	coef/t	coef/t	coef/t	coef/t	coef/t
Migrant Household	-0,075 (-0,649)	0,106 -0,923	0,324** -2,049	-1,228*** (-2,753)	0,414 -0,691
Mother's Own Migration	0,041	-0,095	-0,27	-0,181	1,309
Remittances	-0,289 0,053 -0,392	(-0,674) 0,276** -2,067	(-1,380) 0,417** -2,253	(-0,397) -1,161** (-2,297)	-1,621 -0,063 (-0,088)
Reasons for not visiting doctor	Visiting doctor is costly	Buying medicines is costly	Health centre is too far	Need permission to go to the doctor	Doctor is not woman
	coef/t	coef/t	coef/t	coef/t	coef/t
Migrant Household	0,142 -0,675	-0,047 (-0,226)	0,532** -2,453	-0,087 (-0,414)	0,661*** -2,958
Mother's Own Migration	-0,844*** (-3,206)	-0,922*** (-3,493)	-0,141 (-0,538)	-0,594** (-2,233)	-0,246 (-0,865)
Remittances	0,098 -0,406	-0,091 (-0,374)	0,129 -0,526	-0,228 (-0,956)	0,326 -1,215
Frequency of visiting doctor and presence of chronic disease	(1) - Visiting doctor frequently	(2) - Visiting doctor frequently	(1) - Have chronic disease	(2) - Have chronic disease	
	coef/t	coef/t	coef/t	coef/t	
Migrant Household	0,696** -2,465	0,723** -2,542	-1,223** (-2,480)	-1,236** (-2,402)	
Mother's Own Migration	0,015	-0,064	-0,712	-0,722	
Remittances	-0,045 0,438 -1,445	(-0,190) 0,388 -1,262	(-1,366) -0,521 (-1,277)	(-1,382) -0,398 (-0,934)	

note: *** p<0.01, ** p<0.05, * p<0.1

Estimation results for Macedonia

Table 4 shows a summary of the results obtained from the data on Macedonia. The results indicate that Macedonia's children living in migrant households are more likely to **present with increased weight, higher BMI values and an increased probability of obesity**. An increased

probability of obesity is present also in those households that receive remittances. On the other hand, a mother's own migration is related to a lower probability of obesity.

With regards to health inputs, children in migrant households record more visits to the doctor than children in other types of households. The same is true for households receiving remittances versus households not receiving remittances. Moreover, children whose mothers have never migrated are less likely to go to the doctor, while at the same time, returnee mothers are less concerned with costly medical visits and medicines or with the fact that the health centre is difficult to access (which is related to transportation costs). Rather, the main concern of these mothers is the fact that the doctor is not female. This concern explains why these mothers are less inclined to take their children to the doctor. On the other hand, mothers in migrant households are less inclined to take their children to the doctor because of the high costs of medical visits and medicines and the fact that the health centre is not easily accessible. In other words, migrant mothers are less concerned with the taking their children to a female doctor than are returnee mothers.

The findings indicate that the possibility of being stunted and obese decreases as children grow and age, while the gender of children and birth order have no impact. Regarding the mother's characteristics, older mothers are more likely to have children who are of appropriate weight and height and are less stunted and obese than are the children of younger mothers, a fact that may be attributable to motherhood experience. Additionally, better educated mothers are less likely to have obese children.

With respect to household characteristics, children in wealthier families demonstrate better health performance in terms of BMI and weight, while children living in rural areas are likely to be obese. Finally, children living in households with many children are shorter and more often stunted than children living in small households.

Considering these estimation results, it can be concluded that in the case of Macedonia, children living in households exposed to migration and receiving remittances have an increased probability of being stunted, while children living in migrant households are more likely to present with increased weight, higher BMI values and an increased possibility for obesity.

Table 4: The impact of migration and remittances - Macedonian data

Child Growth	BMI coef/t	Weight coef/t	Height coef/t	Stunting coef/t	Obesity coef/t
Migrant Household	0,576** -2,079	0,363** -2,129	0,033 -0,159	0,121 -0,58	0,690*** -3,245
Mother's Own Migration	-0,004 (-1,610)	-0,002 (-1,302)	0 -0,128	-0,002 (-0,833)	-0,006*** (-3,009)
Remittances	0,423 -1,569	0,228 -1,37	-0,247 (-1,212)	0,044 -0,224	0,486** -2,401

Reasons for not visiting doctor	Visiting doctor is costly coef/t	Buying medicines is costly coef/t	Health centre is too far coef/t	Need permission to go to doctor coef/t	Doctor is not female coef/t
Migrant Household	0,326** -2,31	0,592*** -4,19	0,331** -2,31	-0,09 (-0,586)	-0,841*** (-5,526)
Mother's Own Migration	-0,003** (-2,315)	-0,006*** (-4,187)	-0,003** (-2,297)	0,001 -0,576	0,009*** -5,513
Remittances	0,183 -1,333	0,479*** -3,521	0,02 -0,144	-0,06 (-0,398)	-0,799*** (-5,452)

Frequency of visiting doctor and presence of chronic disease	(1) - Visiting doctor frequently coef/t	(2) - Visiting doctor frequently coef/t	(1) - Have chronic disease coef/t	(2) - Have chronic disease coef/t
Migrant Household	0,467*** -3,265	0,457*** -3,179	0,324 -0,959	0,328 -0,965
Mother's Own Migration	-0,005*** (-3,265)	-0,005*** (-3,178)	-0,003 (-0,962)	-0,003 (-0,968)
Remittances	0,257*	0,243*	0,341	0,348

-1,865 -1,752 -1,012 -1,023

note: *** p<0.01, ** p<0.05, *
p<0.1

7. Conclusions

This paper examined the impact of migration on child health status using survey data from households in Albania and Macedonia. Child growth indicators (body mass index, weight, height, stunting and obesity dummies) and child health inputs (frequency of visiting the doctor, chronic diseases and reason for not going to the doctor) were regressed on a dummy variable used as a proxy for a migration event within the household, mother's own migration and receipt of remittances.

In the case of the Albanian survey data, the results show that children living in migrant households who also receive remittances are less likely to be stunted and shorter than those living in non-migrant households. Furthermore, children living in migrant households go to the doctor more frequently, and they suffer from fewer chronic diseases. The reasons for the aforementioned results are different for mothers of migrant households compared to returnee mothers. While the former are concerned mainly with the distance of the health centre and the gender of the doctor, the latter are less concerned with health costs and seem to enjoy greater autonomy.

In the case of Macedonia, it is found that children living in migrant households are more likely to be stunted, have higher weight and BMI values and increased possibilities for obesity. In addition, children living in migrant households that receive remittances are sent more often to the doctor than others while a contrasting result holds for children of returnee mothers. This behaviour may be explained as follows. While the returnee mothers are mainly concerned with the fact that the doctor is not female, the mothers in migrant households are more concerned with health costs.

With respect to child growth, migration has positive effects in Albania and negative effects in Macedonia. This probably masks the fact that the migration networks work differently in these two countries. While Albanian women (from Albania) are more open abroad than they are at home, Macedonia's women stay in close communities. Accordingly, they transfer different

values and social norms from these countries. Another aspect is the difference of destination countries. Albanians migrate mainly to Italy where the attention to health is higher than it is in Germany, the country to which Macedonia's population primarily migrates. It is worth noting that there are fewer obese people in Italy than in Germany.

Country comparison of the effects of migration and remittances on child growth

	Albania	Macedonia
Migration effect	Positive effect: children living in households exposed to migration have higher probabilities of not being stunted and are also taller than children living in non-migrant households	Negative effect: children living in migrant households are more likely to be stunted, have higher weight and BMI values, and higher possibilities for being obese
Remittance effect	Positive effect: children living in households receiving remittances have higher probabilities of not being stunted and are also taller than children living in non-migrant households	Negative effect: children living in households receiving remittances are more likely to be stunted, have higher weight and BMI values, and higher possibilities for being obese
Effect by gender	No significant difference between girls and boys	No significant difference between girls and boys

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APPENDICES

Appendix A

Table A1: Top 25 Countries by Childhood Obesity Rates

COUNTRY	% OVERWEIGHT	RANK
Bosnia and Herzegovina	25.6	1
Albania	25.2	2
Libyan Arab Jamahiriya	22.4	3
Comoros	21.5	4
Georgia	21.0	5
Egypt	20.5	6
Serbia	19.3	7
Syrian Arab Republic	18.7	8
Guinea-Bissau	17.0	9
Lebanon	16.7	10
Macedonia	16.2	11
Montenegro	15.6	12
Iraq	15.0	13
Kazakhstan	14.8	14
Mongolia	14.2	15
Azerbaijan	13.9	16
Belize	13.7	17
Bulgaria	13.6	18
Djibouti	13.4	19
Morocco	13.3	20
Algeria	12.9	21
Uzbekistan	12.8	22
Armenia	11.7	23
Benin	11.4	24
Swaziland	11.4	25

Extracted from WHO Report
2010

Appendix B

Table 1: The impact of household migration on child growth indicators - Albanian dataset

	BMI coef/t	Weight coef/t	Height coef/t	Stunting coef/t	Obesity coef/t
Migrant Household	-0,075	0,106	0,324**	-	0,414

				1,228***	
	(-0,649)	(0,923)	(2,049)	(-2,753)	(0,691)
Child's Age	0,209***	-0,003	0,284***	0,423***	-0,672**
	(-10,024)	(-0,143)	(9,949)	(-4,131)	(-2,029)
Boy	-0,286**	0,104	0,466***	1,112***	-0,147
	(-2,528)	(0,920)	(3,001)	(-2,616)	(-0,263)
Birth Order	0,175	0,147	0,004	-0,700	
	(1,058)	(0,889)	(0,019)	(-1,018)	
Mother's Age at Birth	0,016	-0,006	-0,024*	0,034	-0,006
	(1,593)	(-0,545)	(-1,758)	(0,977)	(-0,122)
Mother - Primary Education	0,648***	0,174	-0,727**	0,620	3,383**
	(2,687)	(0,722)	(-2,197)	(0,841)	(2,225)
Mother - Secondary Education	0,111	0,138	0,054	-1,100**	0,316
	(0,834)	(1,033)	(0,298)	(-2,168)	(0,355)
Standardised Income	0,307***	0,020	0,390***	0,529***	0,586**
	(7,272)	(0,472)	(-6,735)	(3,066)	(2,077)
Living with Both Parents	-0,154	-0,153	-0,023	0,711	-1,457*
	(-0,855)	(-0,846)	(-0,092)	(1,158)	(-1,679)
Number of Children	0,039	-0,090	-0,199	-0,398	-0,638
	(0,306)	(-0,700)	(-1,134)	(-1,049)	(-0,890)
Living in Rural Area	0,492***	-0,258	0,279	1,111**	-1,289
	(-3,041)	(-1,596)	(1,258)	(2,013)	(-1,369)
Number of Observations	126	126	126	126	90
Adjusted R2	0,775	0,029	0,723		

note: *** p<0.01, ** p<0.05, * p<0.1

Table 2: The impact of household migration on Reasons of not visiting doctor - Albanian dataset

	Visiting doctor is costly	Buying medicines is costly	Health centre is too far	Need of permission to go to the doctor	The doctor is not woman
	coef/t	coef/t	coef/t	coef/t	coef/t
Migrant Household	0,142 (0,675)	-0,047 (-0,226)	0,532** (2,453)	-0,087 (-0,414)	0,661*** (2,958)
Child's Age	-0,010 (-0,260)	-0,030 (-0,785)	0,012 (0,309)	-0,025 (-0,653)	-0,001 (-0,022)
Boy	0,163 (0,792)	-0,172 (-0,844)	-0,114 (-0,551)	0,384* (1,869)	0,080 (0,368)
Birth Order	0,162 (0,519)	0,221 (0,728)	-0,273 (-0,902)	0,012 (0,039)	-0,241 (-0,758)
Mother's Age at Birth	0,031 (1,532)	0,030 (1,531)	- 0,058*** (-2,901)	-0,026 (-1,329)	- 0,064*** (-3,058)
Mother - Primary Education	-0,926* (-1,868)	-1,156** (-2,337)	-0,086 (-0,189)	0,189 (0,413)	0,424 (0,840)
Mother - Secondary Education	- 0,821*** (-3,316)	-0,777*** (-3,177)	-0,248 (-1,010)	-0,137 (-0,568)	0,023 (0,087)
Standardised Income	0,553*** (3,234)	0,633*** (3,672)	-0,124 (-0,742)	0,376** (2,240)	0,104 (0,574)
Living with both parents	- 0,940*** (-2,875)	-0,996*** (-3,095)	-0,125 (-0,370)	-0,131 (-0,410)	0,002 (0,006)
Number of Children	-0,575** (-2,225)	-0,298 (-1,219)	-0,512** (-2,036)	-0,772*** (-3,002)	-0,403 (-1,554)
Living in Rural Area	-0,246 (-0,816)	-0,196 (-0,660)	- 1,414*** (-4,661)	-0,572* (-1,951)	0,035 (0,113)
/cut1	3,554* (1,868)	3,989** (2,107)	- 6,336*** (-3,218)	0,625 (0,332)	-3,343 (-1,594)
/cut2	4,475** (2,332)	4,885** (2,557)	- 5,239*** (-2,680)	1,097 (0,582)	-2,468 (-1,183)
/cut3	5,393*** (2,795)	5,890*** (3,067)	-4,593** (-2,361)	1,652 (0,874)	-2,026 (-0,973)
/cut4	5,993*** (3,097)	6,757*** (3,503)	-3,869** (-1,998)	2,333 (1,234)	-1,337 (-0,644)

Number of Observations	126	126	126	126	126
Adjusted R2	0,177	0,169	0,158	0,100	0,088

note: *** p<0.01, ** p<0.05, * p<0.1

Table 3: The impact of household migration on the frequency of visiting doctor and presence of chronic disease - Albanian dataset

	(1) - Visiting doctor frequently	(2) - Visiting doctor frequently	(1) - Have chronic disease	(2) - Have chronic disease
	coef/t	coef/t	coef/t	coef/t
Migrant Household	0,696** (2,465)	0,723** (2,542)	-1,223** (-2,480)	-1,236** (-2,402)
Child's Age	-0,056 (-1,139)	0,015 (0,242)	-0,502*** (-3,586)	-0,592*** (-3,681)
Boy	0,048 (0,186)	0,089 (0,342)	-0,105 (-0,277)	-0,210 (-0,522)
Birth Order	0,269 (0,743)	0,217 (0,591)	1,746** (2,565)	1,879*** (2,622)
Mother's Age at Birth	0,018 (0,684)	0,010 (0,394)	-0,002 (-0,043)	0,000 (0,005)
Mother - Primary Education	-0,461 (-0,836)	-0,665 (-1,172)	2,939*** (2,781)	3,212*** (2,864)
Mother - Secondary Education	-0,493 (-1,602)	-0,568* (-1,821)	1,274** (2,392)	1,419** (2,506)
Standardised Income	0,178 (0,779)	0,176 (0,770)	-0,126 (-0,376)	-0,155 (-0,452)
Living with Both Parents	0,784* (1,807)	0,888** (1,999)	-2,659*** (-2,963)	-2,630*** (-2,881)
Number of Children	-0,405 (-1,342)	-0,348 (-1,141)	-1,374** (-2,349)	-1,519** (-2,512)
Living in Rural Area	1,270*** (3,476)	1,515*** (3,857)	-4,009*** (-4,455)	-4,212*** (-4,399)
normal		-0,702* (-1,959)		0,779 (1,510)
_cons			11,512***	12,377***

			(2,657)	(2,784)
/cut1	0,910 (0,349)	1,158 (0,445)		
/cut2	3,217 (1,233)	3,512 (1,345)		
Number of Observations	98	98	126	126
Adjusted R2	0,177	0,200	0,498	0,517

note: *** p<0.01, ** p<0.05, * p<0.1

Table 4: The impact of mother's migration on child growth indicators - Albanian dataset

	BMI coef/t	Weight coef/t	Height coef/t	Stunting coef/t	Obesity coef/t
Mother's Own Migration	0,041 (0,289)	-0,095 (-0,674)	-0,270 (-1,380)	-0,181 (-0,397)	1,309 (1,621)
Child's Age	0,210*** (-9,764)	0,004 (0,171)	0,299*** (10,117)	0,393*** (-4,214)	0,815** (-1,988)
Boy	-0,289** (-2,528)	0,096 (0,843)	0,454*** (2,891)	-0,994** (-2,525)	-0,462 (-0,682)
Birth Order	0,161 (0,956)	0,110 (0,659)	-0,042 (-0,180)	-0,512 (-0,803)	
Mother's Age at Birth	0,017 (1,539)	-0,003 (-0,288)	-0,020 (-1,352)	0,047 (1,358)	-0,030 (-0,627)
Mother - Primary Education	0,665*** (2,689)	0,103 (0,419)	0,892*** (-2,623)	0,900 (1,257)	4,211** (2,378)
Mother - Secondary Education	0,107 (0,776)	0,109 (0,799)	0,008 (0,040)	-1,163** (-2,250)	0,635 (0,769)
Standardised Income	0,298*** (7,047)	0,027 (0,640)	0,361*** (-6,204)	0,419*** (2,788)	0,652** (2,076)
Living with Both Parents	-0,142 (-0,775)	-0,145 (-0,801)	-0,024 (-0,096)	0,975 (1,641)	2,360** (-2,141)
Number of Children	0,035	-0,031	-0,078	-0,662	-0,654

	(0,265)	(-0,236)	(-0,434)	(-1,600)	(-0,928)
Living in Rural Area	0,486***	-0,265	0,253	0,899*	-1,361
	(-2,941)	(1,612)	(1,110)	(1,657)	(-1,385)
Number of Observations	124	124	124	124	89
Adjusted R2	0,776	0,024	0,719		

note: *** p<0.01, ** p<0.05, * p<0.1

Table 5: The impact of mother's migration on Reasons of not visiting doctor - Albanian dataset

	Visiting doctor is costly	Buying medicines is costly	Health centre is too far	Need of permission to go to the doctor	The doctor is not woman
	coef/t	coef/t	coef/t	coef/t	coef/t
Mother's Own Migration	0,844***	-0,922***	-0,141	-0,594**	-0,246
	(-3,206)	(-3,493)	(-0,538)	(-2,233)	(-0,865)
Child's Age	0,000	-0,018	0,012	-0,028	-0,003
	(0,003)	(-0,464)	(0,306)	(-0,703)	(-0,064)
Boy	0,146	-0,213	-0,063	0,439**	0,116
	(0,703)	(-1,035)	(-0,306)	(2,104)	(0,533)
Birth Order	0,187	0,255	-0,289	0,052	-0,255
	(0,585)	(0,822)	(-0,956)	(0,168)	(-0,804)
Mother's Age at birth	0,047**	0,052**	0,063***	-0,020	0,070***
	(2,226)	(2,467)	(-3,079)	(-0,950)	(-3,260)
Mother - Primary Education	-1,142**	-1,440***	-0,013	0,398	0,525
	(-2,227)	(-2,793)	(-0,028)	(0,824)	(0,997)
Mother - Secondary Education	0,864***	-0,872***	-0,112	0,039	0,206
	(-3,326)	(-3,371)	(-0,446)	(0,154)	(0,761)
Standardised Income	0,617***	0,655***	0,027	0,591***	0,299
	(3,340)	(3,520)	(0,153)	(3,235)	(1,537)
Living with Both	-0,818**	-0,805**	-0,271	-0,003	-0,174

Parents					
	(-2,513)	(-2,512)	(-0,802)	(-0,011)	(-0,488)
Number of Children	-0,497*	-0,238	-0,414*	-0,831***	-0,298
	(-1,924)	(-0,963)	(-1,677)	(-3,179)	(-1,158)
Living in Rural Area	-0,467	-0,430	1,416***	-0,838***	-0,057
	(-1,494)	(-1,394)	(-4,622)	(-2,720)	(-0,183)
/cut1	3,328*	3,449*	5,275***	2,057	-2,150
	(1,648)	(1,711)	(-2,590)	(1,028)	(-0,964)
/cut2	4,271**	4,378**	-4,234**	2,583	-1,318
	(2,098)	(2,154)	(-2,090)	(1,287)	(-0,592)
/cut3	5,248**	5,440***	-3,616*	3,177	-0,893
	(2,568)	(2,667)	(-1,793)	(1,578)	(-0,401)
/cut4	5,858***	6,339***	-2,895	3,911*	-0,215
	(2,861)	(3,099)	(-1,439)	(1,939)	(-0,097)
Number of Observations	124	124	124	124	124
Adjusted R2	0,201	0,200	0,143	0,138	0,072

note: *** p<0.01, ** p<0.05, * p<0.1

Table 6: The impact of mother's migration on the frequency of visiting doctor and presence of chronic disease - Albanian dataset

	(1) - Visiting doctor frequently coef/t	(2) - Visiting doctor frequently coef/t	(1) - Have chronic disease coef/t	(2) - Have chronic disease coef/t
Mother's Own Migration	0,015 (0,045)	-0,064 (-0,190)	-0,712 (-1,366)	-0,722 (-1,382)
Child's Age	-0,055 (-1,106)	0,015 (0,246)	-0,491*** (-3,378)	-0,571*** (-3,591)
Boy	0,070 (0,277)	0,114 (0,444)	0,034 (0,093)	-0,025 (-0,067)
Birth Order	0,197 (0,559)	0,143 (0,401)	2,048*** (2,792)	2,131*** (2,802)
Mother's Age at Birth	-0,000 (-0,018)	-0,005 (-0,199)	0,051 (1,242)	0,055 (1,270)

Mother - Primary Education	-0,550 (-1,008)	-0,769 (-1,363)	2,950*** (2,723)	3,128*** (2,812)
Mother - Secondary Education	-0,547* (-1,813)	-0,630** (-2,055)	1,223** (2,353)	1,334** (2,479)
Standardised Income	0,289 (1,308)	0,289 (1,315)	-0,205 (-0,624)	-0,262 (-0,780)
Living with Both Parents	0,588 (1,361)	0,696 (1,578)	-2,296** (-2,465)	-2,258** (-2,415)
Number of Children	-0,308 (-1,043)	-0,233 (-0,780)	-1,780*** (-2,778)	-1,912*** (-2,889)
Living in Rural Area	1,256*** (3,466)	1,470*** (3,818)	-4,017*** (-4,141)	-4,142*** (-4,202)
normal		-0,660* (-1,868)		0,774 (1,586)
_cons			10,930** (2,479)	11,867*** (2,659)
/cut1	1,164 (0,453)	1,388 (0,542)		
/cut2	3,342 (1,298)	3,616 (1,407)		
Number of Observations	98	98	124	124
Adjusted R2	0,142	0,162	0,455	0,476

note: *** p<0.01, ** p<0.05, * p<0.1

Table 7: The impact of remittances receipt on child growth indicators - Albanian dataset

	BMI coef/t	Weight coef/t	Height coef/t	Stunting coef/t	Obesity coef/t
Receive	0,053 (0,392)	0,276** (2,067)	0,417** (2,253)	-1,161** (-2,297)	-0,063 (-0,088)
Child's Age	0,209*** (-10,004)	-0,000 (-0,012)	0,289*** (10,155)	0,428*** (-4,155)	0,693** (-2,008)
Boy	-0,288** (-2,544)	0,114 (1,023)	0,487*** (3,153)	1,221*** (-2,804)	-0,100 (-0,176)
Birth Order	0,181 (1,092)	0,132 (0,808)	-0,034 (-0,149)	-0,536 (-0,813)	
Mother's Age at Birth	0,018* (0,018)	-0,007 (-0,007)	-0,030** (-0,030)	0,063* (0,063)	-0,017 (-0,017)

	(1,763)	(-0,728)	(-2,192)	(1,725)	(-0,334)
Mother - Primary Education	0,660***	0,183	-0,731**	0,630	3,402**
	(2,735)	(0,771)	(-2,218)	(0,894)	(2,138)
Mother - Secondary Education	0,097	0,107	0,022	-1,210**	0,587
	(0,718)	(0,803)	(0,117)	(-2,284)	(0,624)
Standardised Income	0,295***	0,010	0,389***	0,474***	0,643**
	(7,049)	(0,237)	(-6,798)	(2,977)	(2,077)
Living with Both Parents	-0,125	-0,151	-0,071	0,954	-1,604*
	(-0,700)	(-0,865)	(-0,293)	(1,610)	(-1,845)
Number of Children	0,040	-0,012	-0,059	-0,853**	-0,593
	(0,309)	(-0,096)	(-0,331)	(-1,966)	(-0,836)
Living in Rural Area	0,510***	0,334**	0,171	1,416**	-1,248
	(-3,064)	(-2,038)	(0,752)	(2,317)	(-1,353)
Number of Observations	126	126	126	126	90
Adjusted R2	0,775	0,057	0,725		

note: *** p<0.01, ** p<0.05, * p<0.1

Table 8: The impact of remittances on Reasons of not visiting doctor - Albanian dataset

	Visiting doctor is costly	Buying medicines is costly	Health centre is too far	Need of permission to go to the doctor	The doctor is not woman
	coef/t	coef/t	coef/t	coef/t	coef/t
Receive	0,098 (0,406)	-0,091 (-0,374)	0,129 (0,526)	-0,228 (-0,956)	0,326 (1,215)
Child's Age	-0,009 (-0,229)	-0,031 (-0,809)	0,016 (0,412)	-0,028 (-0,713)	0,005 (0,122)
Boy	0,169 (0,822)	-0,177 (-0,869)	-0,080 (-0,388)	0,372* (1,810)	0,116 (0,532)
Birth Order	0,150 (0,482)	0,227 (0,749)	-0,309 (-1,031)	0,026 (0,084)	-0,300 (-0,949)
Mother's Age at Birth	0,029 (1,448)	0,031 (1,589)	0,065*** (-3,256)	-0,025 (-1,272)	0,073*** (-3,554)
Mother - Primary	-0,925* (-3,064)	-1,163** (-3,851)	-0,138 (-0,526)	0,186 (0,752)	0,337 (1,215)

Education					
	(-1,872)	(-2,343)	(-0,307)	(0,408)	(0,678)
Mother - Secondary Education	-0,820***	-0,767***	-0,218	-0,109	0,021
	(-3,293)	(-3,108)	(-0,878)	(-0,448)	(0,080)
Standardised Income	0,562***	0,636***	-0,072	0,387**	0,135
	(3,291)	(3,697)	(-0,433)	(2,316)	(0,745)
Living with Both Parents	-0,973***	-0,994***	-0,267	-0,131	-0,125
	(-3,025)	(-3,139)	(-0,801)	(-0,417)	(-0,358)
Number of Children	-0,522**	-0,324	-0,382	-0,839***	-0,234
	(-2,027)	(-1,312)	(-1,532)	(-3,238)	(-0,899)
Living in Rural Area	-0,271	-0,172	-1,377***	-0,510*	-0,030
	(-0,875)	(-0,566)	(-4,460)	(-1,697)	(-0,096)
/cut1	3,594*	3,996**	5,993***	0,642	-3,246
	(1,890)	(2,111)	(-3,059)	(0,341)	(-1,553)
/cut2	4,507**	4,893**	-4,973**	1,114	-2,442
	(2,351)	(2,562)	(-2,553)	(0,591)	(-1,173)
/cut3	5,427***	5,898***	-4,357**	1,673	-2,030
	(2,815)	(3,072)	(-2,246)	(0,886)	(-0,977)
/cut4	6,031***	6,764***	-3,644*	2,359	-1,366
	(3,120)	(3,508)	(-1,886)	(1,249)	(-0,658)
Number of Observations	126	126	126	126	126
Adjusted R2	0,176	0,169	0,142	0,102	0,064

note: *** p<0.01, ** p<0.05, * p<0.1

Table 9: The impact of mother's migration on the frequency of visiting doctor and presence of chronic disease - Albanian dataset

	(1) - Visiting doctor frequently coef/t	(2) - Visiting doctor frequently coef/t	(1) - Have chronic disease coef/t	(2) - Have chronic disease coef/t
Receive	0,438 (1,445)	0,388 (1,262)	-0,521 (-1,277)	-0,398 (-0,934)

Child's Age	-0,048 (-0,981)	0,014 (0,227)	-0,435*** (-3,349)	-0,508*** (-3,532)
Boy	0,107 (0,421)	0,142 (0,551)	-0,007 (-0,018)	-0,058 (-0,157)
Birth Order	0,188 (0,528)	0,138 (0,382)	1,690** (2,544)	1,799*** (2,600)
Mother's Age at Birth	0,002 (0,098)	-0,004 (-0,179)	0,023 (0,594)	0,028 (0,698)
Mother - Primary Education	-0,551 (-1,009)	-0,732 (-1,306)	2,655*** (2,666)	2,856*** (2,760)
Mother - Secondary Education	-0,630** (-2,032)	-0,692** (-2,209)	1,147** (2,345)	1,239** (2,434)
Standardised Income	0,244 (1,086)	0,254 (1,130)	-0,234 (-0,786)	-0,266 (-0,881)
Living with Both Parents	0,600 (1,418)	0,681 (1,582)	-2,148** (-2,393)	-2,138** (-2,337)
Number of Children	-0,206 (-0,683)	-0,159 (-0,522)	-1,647*** (-2,815)	-1,763*** (-2,933)
Living in Rural Area	1,177*** (3,227)	1,395*** (3,574)	-3,358*** (-4,144)	-3,518*** (-4,219)
Normal		-0,610* (-1,723)		0,689 (1,421)
_cons			10,315*** (2,607)	10,872*** (2,742)
/cut1	1,110 (0,429)	1,381 (0,535)		
/cut2	3,337 (1,287)	3,643 (1,406)		
Number of Observations	98	98	126	126
Adjusted R2	0,154	0,171	0,447	0,464

note: *** p<0.01, ** p<0.05, * p<0.1

Table 10: The impact of household migration on child growth indicators - Macedonian dataset

	BMI coef/t	Weight coef/t	Height coef/t	Stunting coef/t	Obesity coef/t
Migrant Household	0,576**	0,363**	0,033	0,121	0,690***

	(2,079)	(2,129)	(0,159)	(0,580)	(3,245)
Child's Age	0,130***	0,066***	0,014	0,075***	0,203***
	(-4,486)	(-3,690)	(0,632)	(-3,270)	(-7,003)
Boy	-0,062	-0,124	-0,076	0,098	0,087
	(-0,285)	(-0,922)	(-0,466)	(0,600)	(0,516)
Birth Order	-0,224	-0,119	-0,180	-0,016	0,239
	(-1,077)	(-0,918)	(-1,153)	(-0,102)	(1,350)
Mother's Age at Birth	-0,017	0,030**	0,050***	0,061***	-0,033*
	(-0,777)	(2,253)	(3,066)	(-3,215)	(-1,753)
Mother - Primary Education	-0,022	-0,012	-0,230	0,161	0,660**
	(-0,061)	(-0,055)	(-0,838)	(0,549)	(2,252)
Mother - Secondary Education	-0,239	-0,001	0,058	0,109	0,171
	(-0,753)	(-0,007)	(0,243)	(0,417)	(0,709)
Standardised Income	0,386***	0,154**	0,004	-0,046	0,150
	(3,545)	(2,262)	(0,051)	(-0,538)	(1,582)
Living with Both Parents	0,261	0,003	-0,403	0,257	0,527*
	(0,722)	(0,012)	(-1,489)	(0,883)	(1,794)
Number of Children	0,311*	-0,030	-0,268*	0,343**	-0,143
	(1,705)	(-0,266)	(-1,945)	(2,267)	(-0,959)
Living in Rural Area	-0,295	-0,348**	-0,073	0,035	0,740***
	(-1,032)	(-1,961)	(-0,337)	(0,168)	(-3,191)
Number of Observations	420	412	409	423	423
Adjusted R2	0,138	0,174	0,051		

note: *** p<0.01, ** p<0.05, * p<0.1

Table 11: The impact of household migration on Reasons of not visiting doctor - Macedonian dataset

	Visiting doctor is costly	Buying medicines is costly	Health centre is too far	Need of permission to go to the doctor	The doctor is not woman
	coef/t	coef/t	coef/t	coef/t	coef/t
Migrant Household	0,326**	0,592***	0,331**	-0,090	-0,841***
	(2,310)	(4,190)	(2,310)	(-0,586)	(-5,526)
Child's Age	-0,014	-0,002	0,015	0,027	0,032*

Boy	(-0,976) -0,091	(-0,144) -0,107	(0,976) -0,106	(1,573) -0,021	(1,857) 0,141
Birth Order	(-0,814) 0,130	(-0,967) 0,002	(-0,915) -0,183*	(-0,160) -0,047	(1,071) 0,087
Mother's Age at Birth	(1,246) 0,018	(0,019) -0,003	(-1,682) -0,034**	(-0,384) 0,014	(0,719) 0,058***
Mother - Primary Education	(1,395) -0,518***	(-0,242) -0,578***	(-2,568) -0,394*	(0,919) 0,114	(3,456) -0,667***
Mother - Secondary Education	(-2,657) -0,341**	(-3,010) -0,432**	(-1,928) -0,461***	(0,470) -0,124	(-2,652) -0,321
Standardised Income	(-1,989) 0,228***	(-2,550) 0,395***	(-2,579) 0,056	(-0,595) 0,189**	(-1,428) 0,008
Living with Both Parents	(3,297) 0,364**	(5,585) 0,540***	(0,770) 0,113	(2,307) -0,445*	(0,093) -0,158
Number of Children	(1,993) 0,126	(2,944) 0,014	(0,562) 0,191**	(-1,806) 0,003	(-0,758) -0,085
Living in Rural Area	(1,380) -1,215***	(0,160) -1,188***	(2,029) -1,280***	(0,023) -0,851***	(-0,759) -1,226***
/cut1	(-8,268) -0,541	(-8,090) -0,160	(-8,470) -2,668***	(-5,072) -1,770**	(-7,634) -2,192***
/cut2	(-0,903) 0,556	(-0,261) 0,826	(-4,291) -2,008***	(-2,534) -1,262*	(-3,249) -1,368**
/cut3	(0,921) 1,298**	(1,354) 1,708***	(-3,247) -1,372**	(-1,811) -0,778	(-2,026) -0,190
/cut4	(2,156) 1,742***	(2,796) 2,062***	(-2,228) -1,101*	(-1,114) 0,044	(-0,280) 0,268
Number of Observations	(2,893) 423	(3,367) 423	(-1,793) 423	(0,062) 423	(0,397) 423
Adjusted R2	0,128	0,165	0,112	0,093	0,242

note: *** p<0.01, ** p<0.05, * p<0.1

Table 12: The impact of household migration on the frequency of visiting doctor and presence of chronic disease - Macedonian dataset

	(1) - Visiting doctor frequently coef/t	(2) - Visiting doctor frequently coef/t	(1) - Have chronic disease coef/t	(2) - Have chronic disease coef/t
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Migrant Household	0,467*** (3,265)	0,457*** (3,179)	0,324 (0,959)	0,328 (0,965)
Child's Age	-0,015 (-1,056)	-0,015 (-1,017)	0,027 (0,773)	0,026 (0,761)
Boy	-0,057 (-0,505)	-0,058 (-0,516)	-0,253 (-1,004)	-0,252 (-0,997)
Birth Order	0,031 (0,286)	0,034 (0,314)	-0,116 (-0,468)	-0,118 (-0,474)
Mother's Age at Birth	-0,008 (-0,648)	-0,008 (-0,605)	-0,001 (-0,036)	-0,002 (-0,051)
Mother - Primary Education	0,762*** (3,884)	0,762*** (3,881)	0,863* (1,762)	0,861* (1,758)
Mother - Secondary Education	0,219 (1,321)	0,232 (1,394)	0,123 (0,378)	0,118 (0,359)
Standardised Income	-0,019 (-0,276)	-0,019 (-0,273)	-0,128 (-0,702)	-0,130 (-0,709)
Living with Both Parents	0,494*** (2,613)	0,489*** (2,587)	0,758* (1,818)	0,760* (1,822)
Number of Children	-0,044 (-0,470)	-0,043 (-0,459)	-0,334 (-1,471)	-0,333 (-1,468)
Living in Rural Area	-0,785*** (-5,260)	-0,779*** (-5,214)	0,302 (0,858)	0,298 (0,845)
normal		-0,098 (-0,860)		0,028 (0,109)
_cons			2,377 (1,535)	2,389 (1,539)
/cut1	-2,216*** (-3,552)	-2,252*** (-3,601)		
/cut2	-0,762 (-1,250)	-0,795 (-1,302)		
/cut3	1,100* (1,808)	1,067* (1,751)		
Number of Observations	423	423	423	423
Adjusted R2	0,048	0,049	0,127	0,127

note: *** p<0.01, ** p<0.05, * p<0.1

Table 13: The impact of mother's migration on child growth indicators - Macedonian dataset

BMI Weight Height Stunting Obesity

	coef/t	coef/t	coef/t	coef/t	coef/t
Mother's Own Migration	-0,004 (-1,610)	-0,002 (-1,302)	0,000 (0,128)	-0,002 (-0,833)	- 0,006*** (-3,009)
Child's Age	- 0,129*** (-4,407)	- 0,066*** (-3,630)	0,014 (0,619)	- 0,074*** (-3,223)	- 0,199*** (-6,913)
Boy	-0,047 (-0,214)	-0,118 (-0,869)	-0,079 (-0,481)	0,108 (0,657)	0,112 (0,660)
Birth Order	-0,210 (-1,007)	-0,113 (-0,871)	-0,182 (-1,160)	-0,011 (-0,069)	0,255 (1,444)
Mother's Age at Birth	-0,012 (-0,552)	0,032** (2,354)	0,050*** (2,976)	- 0,059*** (-3,070)	-0,026 (-1,405)
Mother - Primary Education	0,033 (0,091)	0,020 (0,088)	-0,228 (-0,833)	0,177 (0,603)	0,713** (2,437)
Mother - Secondary Education	-0,179 (-0,568)	0,043 (0,218)	0,068 (0,287)	0,110 (0,424)	0,222 (0,931)
Standardised Income	0,435*** (4,145)	0,188*** (2,852)	0,009 (0,119)	-0,039 (-0,481)	0,211** (2,286)
Living with Both Parents	0,229 (0,621)	-0,051 (-0,224)	-0,434 (-1,571)	0,303 (1,006)	0,534* (1,781)
Number of Children	0,329* (1,806)	-0,014 (-0,122)	-0,263* (-1,913)	0,340** (2,248)	-0,126 (-0,852)
Living in Rural Area	-0,219 (-0,774)	-0,270 (-1,539)	-0,044 (-0,204)	0,013 (0,061)	- 0,683*** (-3,022)
Number of Observations	420	412	409	423	423
Adjusted R2	0,134	0,169	0,051		

note: *** p<0.01, ** p<0.05, * p<0.1

Table 14: The impact of mother's migration on reasons of not visiting doctor - Macedonian dataset

	Visiting doctor is costly	Buying medicines is costly	Health centre is too far	Need of permission to go to the doctor	The doctor is not woman
	coef/t	coef/t	coef/t	coef/t	coef/t

Mother's Own Migration	-0,003** (-2,315)	-0,006*** (-4,187)	-0,003** (-2,297)	0,001 (0,576)	0,009*** (5,513)
Child's Age	-0,014 (-0,977)	-0,002 (-0,147)	0,015 (0,974)	0,027 (1,573)	0,032* (1,861)
Boy	-0,091 (-0,814)	-0,107 (-0,967)	-0,106 (-0,915)	-0,021 (-0,159)	0,141 (1,071)
Birth Order	0,130 (1,248)	0,002 (0,022)	-0,183* (-1,681)	-0,047 (-0,384)	0,086 (0,715)
Mother's Age at Birth	0,018 (1,396)	-0,003 (-0,240)	-0,034** (-2,567)	0,014 (0,919)	0,058*** (3,452)
Mother - Primary Education	-0,518*** (-2,657)	-0,578*** (-3,011)	-0,394* (-1,928)	0,114 (0,469)	-0,667*** (-2,650)
Mother - Secondary Education	-0,341** (-1,990)	-0,432** (-2,549)	-0,460*** (-2,577)	-0,124 (-0,597)	-0,321 (-1,430)
Standardised Income	0,228*** (3,294)	0,395*** (5,584)	0,056 (0,772)	0,189** (2,306)	0,008 (0,093)
Living with Both Parents	0,364** (1,995)	0,539*** (2,944)	0,112 (0,558)	-0,444* (-1,803)	-0,158 (-0,755)
Number of Children	0,126 (1,380)	0,015 (0,162)	0,191** (2,032)	0,002 (0,022)	-0,085 (-0,763)
Living in Rural Area	-1,216*** (-8,270)	-1,188*** (-8,089)	-1,279*** (-8,464)	-0,852*** (-5,076)	-1,226*** (-7,634)
/cut1	-0,873 (-1,419)	-0,762 (-1,217)	-3,003*** (-4,687)	-1,680** (-2,357)	-1,337* (-1,942)
/cut2	0,224 (0,361)	0,224 (0,358)	-2,344*** (-3,679)	-1,172* (-1,647)	-0,514 (-0,744)
/cut3	0,966 (1,562)	1,105* (1,772)	-1,707*** (-2,692)	-0,688 (-0,965)	0,664 (0,956)
/cut4	1,409** (2,282)	1,460** (2,336)	-1,436** (-2,272)	0,133 (0,187)	1,121 (1,618)
Number of Observations	423	423	423	423	423
Adjusted R2	0,128	0,165	0,112	0,093	0,242

note: *** p<0.01, ** p<0.05, * p<0.1

Table 15: The impact of mother's migration on the frequency of visiting doctor and presence of chronic disease - Macedonian dataset

	(1) - Visiting doctor frequently coef/t	(2) - Visiting doctor frequently coef/t	(1) - Have chronic disease coef/t	(2) - Have chronic disease coef/t
Mother's Own Migration	-0,005*** (-3,265)	-0,005*** (-3,178)	-0,003 (-0,962)	-0,003 (-0,968)
Child's Age	-0,015 (-1,058)	-0,015 (-1,019)	0,027 (0,773)	0,026 (0,760)
Boy	-0,057 (-0,505)	-0,058 (-0,516)	-0,253 (-1,004)	-0,252 (-0,997)
Birth Order	0,031 (0,287)	0,034 (0,316)	-0,116 (-0,468)	-0,118 (-0,474)
Mother's Age at Birth	-0,008 (-0,646)	-0,008 (-0,604)	-0,001 (-0,036)	-0,002 (-0,051)
Mother - Primary Education	0,762*** (3,883)	0,761*** (3,880)	0,863* (1,762)	0,861* (1,758)
Mother - Secondary Education	0,219 (1,320)	0,232 (1,394)	0,122 (0,377)	0,117 (0,358)
Standardised Income	-0,019 (-0,276)	-0,019 (-0,273)	-0,128 (-0,702)	-0,131 (-0,710)
Living with Both Parents	0,494*** (2,613)	0,489*** (2,587)	0,758* (1,820)	0,761* (1,824)
Number of Children	-0,043 (-0,469)	-0,042 (-0,458)	-0,334 (-1,471)	-0,333 (-1,468)
Living in Rural Area	-0,785*** (-5,260)	-0,779*** (-5,214)	0,302 (0,857)	0,298 (0,843)
normal		-0,098 (-0,858)		0,028 (0,109)
_cons			2,708* (1,699)	2,724* (1,702)
/cut1	-2,692*** (-4,173)	-2,717*** (-4,206)		
/cut2	-1,238* (-1,960)	-1,260** (-1,992)		
/cut3	0,624 (0,994)	0,602 (0,959)		
Number of Observations	423	423	423	423
Adjusted R2	0,048	0,049	0,127	0,127

note: *** p<0.01, ** p<0.05, * p<0.1

Table 16: The impact of remittances receipt on child growth indicators - Macedonian dataset

	BMI coef/t	Weight coef/t	Height coef/t	Stunting coef/t	Obesity coef/t
Receive	0,423 (1,569)	0,228 (1,370)	-0,247 (-1,212)	0,044 (0,224)	0,486** (2,401)
Child's Age	- 0,132*** (-4,536)	- 0,067*** (-3,733)	0,014 (0,637)	- 0,075*** (-3,271)	- 0,200*** (-7,002)
Boy	-0,061 (-0,282)	-0,125 (-0,928)	-0,085 (-0,521)	0,096 (0,586)	0,085 (0,508)
Birth Order	-0,215 (-1,031)	-0,114 (-0,880)	-0,188 (-1,205)	-0,015 (-0,099)	0,245 (1,388)
Mother's Age at Birth	-0,017 (-0,772)	0,030** (2,235)	0,048*** (2,965)	0,061*** (-3,213)	-0,031* (-1,675)
Mother - Primary Education	-0,024 (-0,066)	-0,011 (-0,047)	-0,199 (-0,727)	0,165 (0,559)	0,665** (2,286)
Mother - Secondary Education	-0,189 (-0,598)	0,035 (0,180)	0,102 (0,429)	0,131 (0,504)	0,213 (0,896)
Standardised Income	0,403*** (3,692)	0,169** (2,464)	0,039 (0,473)	-0,037 (-0,434)	0,176* (1,861)
Living with Both Parents	0,089 (0,259)	-0,115 (-0,546)	-0,483* (-1,889)	0,198 (0,740)	0,248 (0,946)
Number of Children	0,360** (1,989)	0,002 (0,018)	-0,264* (-1,936)	0,354** (2,357)	-0,094 (-0,643)
Living in Rural Area	-0,172 (-0,634)	-0,256 (-1,511)	0,041 (0,199)	0,079 (0,402)	- 0,604*** (-2,720)
Number of Observations	420	412	409	423	423
Adjusted R2	0,134	0,169	0,055		

note: *** p<0.01, ** p<0.05, * p<0.1

Table 17: The impact of remittances on Reasons of not visiting doctor - Macedonian dataset

	Visiting doctor is costly	Buying medicines is costly	Health centre is too far	Need of permission to go to the doctor	The doctor is not woman
	coef/t	coef/t	coef/t	coef/t	coef/t
Receive	0,183 (1,333)	0,479*** (3,521)	0,020 (0,144)	-0,060 (-0,398)	-0,799*** (-5,452)
Child's Age	-0,015 (-1,064)	-0,005 (-0,333)	0,014 (0,946)	0,027 (1,580)	0,035** (2,027)
Boy	-0,095 (-0,856)	-0,110 (-0,999)	-0,112 (-0,968)	-0,020 (-0,150)	0,144 (1,088)
Birth Order	0,132 (1,270)	0,007 (0,072)	-0,184* (-1,693)	-0,047 (-0,388)	0,071 (0,586)
Mother's Age at Birth	0,017 (1,341)	-0,004 (-0,349)	-0,035*** (-2,637)	0,015 (0,921)	0,056*** (3,398)
Mother - Primary Education	-0,519*** (-2,656)	-0,598*** (-3,113)	-0,374* (-1,822)	0,117 (0,480)	-0,578** (-2,315)
Mother - Secondary Education	-0,307* (-1,803)	-0,396** (-2,350)	-0,405** (-2,279)	-0,132 (-0,633)	-0,322 (-1,445)
Standardised Income	0,238*** (3,404)	0,391*** (5,504)	0,088 (1,211)	0,188** (2,269)	0,043 (0,513)
Living with Both Parents	0,254 (1,473)	0,362** (2,108)	-0,032 (-0,167)	-0,423* (-1,751)	-0,019 (-0,093)
Number of Children	0,152* (1,687)	0,064 (0,718)	0,218** (2,340)	-0,004 (-0,036)	-0,154 (-1,384)
Living in Rural Area	-1,121*** (-8,058)	-1,077*** (-7,788)	-1,113*** (-7,859)	-0,872*** (-5,426)	-1,305*** (-8,398)
/cut1	-0,588 (-0,982)	-0,315 (-0,517)	-2,652*** (-4,280)	-1,758** (-2,515)	-1,982*** (-2,941)
/cut2	0,509 (0,844)	0,670 (1,102)	-2,000*** (-3,241)	-1,249* (-1,790)	-1,163* (-1,725)
/cut3	1,246** (2,072)	1,541** (2,533)	-1,366** (-2,224)	-0,767 (-1,097)	0,001 (0,001)
/cut4	1,687*** (2,804)	1,891*** (3,101)	-1,097* (-1,791)	0,053 (0,076)	0,461 (0,684)
Number of Observations	423	423	423	423	423
Adjusted R2	0,125	0,161	0,107	0,093	0,241

note: *** p<0.01, ** p<0.05, * p<0.1

Table 18: The impact of mother's migration on the frequency of visiting doctor and presence of chronic disease - Macedonian dataset

	(1) - Visiting doctor frequently coef/t	(2) - Visiting doctor frequently coef/t	(1) - Have chronic disease coef/t	(2) - Have chronic disease coef/t
Receive	0,257* (1,865)	0,243* (1,752)	0,341 (1,012)	0,348 (1,023)
Child's Age	-0,017 (-1,144)	-0,016 (-1,096)	0,023 (0,675)	0,023 (0,656)
Boy	-0,061 (-0,541)	-0,062 (-0,554)	-0,268 (-1,056)	-0,266 (-1,047)
Birth Order	0,032 (0,302)	0,036 (0,332)	-0,111 (-0,449)	-0,114 (-0,459)
Mother's Age at Birth	-0,009 (-0,716)	-0,009 (-0,668)	-0,003 (-0,091)	-0,004 (-0,113)
Mother - Primary Education	0,759*** (3,868)	0,759*** (3,870)	0,839* (1,704)	0,836* (1,698)
Mother - Secondary Education	0,268 (1,628)	0,283* (1,709)	0,145 (0,452)	0,138 (0,425)
Standardised Income	0,002 (0,025)	0,003 (0,036)	-0,154 (-0,806)	-0,159 (-0,819)
Living with Both Parents	0,332* (1,856)	0,329* (1,840)	0,674* (1,789)	0,677* (1,795)
Number of Children	-0,004 (-0,046)	-0,004 (-0,044)	-0,320 (-1,422)	-0,319 (-1,418)
Living in Rural Area	-0,647*** (-4,602)	-0,641*** (-4,552)	0,323 (0,935)	0,317 (0,911)
normal		-0,108 (-0,946)		0,040 (0,157)
_cons			2,663* (1,668)	2,689* (1,674)
/cut1	-2,245*** (-3,596)	-2,281*** (-3,645)		
/cut2	-0,789 (-1,295)	-0,822 (-1,346)		
/cut3	1,049* (1,723)	1,017* (1,669)		

Number of Observations	423	423	423	423
Adjusted R2	0,039	0,040	0,127	0,128

note: *** p<0.01, ** p<0.05, * p<0.1