

Working paper

Youth self-employment in households receiving remittances in Macedonia

Marjan Petreski
Nikica Mojsoska-Blazevski

Maja Ristovska
Edi Smokvarski

July 2014
(of publication)



pep
partnership for
economic
policy



PAGE

policy analysis on growth and employment

IDRC
International Development
Research Centre

CRDI
Centre de recherches pour le
développement international

pep
partnership for
economic
policy

UKaid
From the British people

Youth self-employment in households receiving remittances in Macedonia

Marjan Petreski

Asst. prof., University American College Skopje

Macedonia

marjan.petreski@uacs.edu.mk

Nikica Mojsoska Blazevski

Asst. prof., University American College Skopje

Macedonia

nikica@uacs.edu.mk

Abstract

The objective of this study is to investigate if youth in households receiving remittances in Macedonia have higher probability of establishing own business. In addition, we investigated if the effect of remittances on youth labour supply is homogenous across the genders, ethnic and rural/urban divide. We used the DotM 2008 Remittance Survey and instrumental variables approach to address the potential endogeneity of remittances with respect to the self-employment status. Two instrumental variables were used which affect remittances, but not the decision to self-employ, except through remittances: a non-economic motive to migrate, and the existence of migrants' network. Moreover, we overcome some of the deficiencies of the IV estimation by applying the Roodman's conditional mixed-process (CMP) estimator. Results robustly suggest that youth in households receiving remittances have considerably larger probability to establish own business, ranging between 51% and 57% than compared to the non-young non-receiving counterparts. The main policy recommendation is that Macedonian government should, start devising a strategy for channelling remitted money into more productive use, especially converting those funds into jobs for youth.

JEL: F24, J21

Keywords: remittances, migration, self-employment, Macedonia

Acknowledgements

This research work was carried out with financial and scientific support from the Partnership for Economic Policy (PEP) (www.pep-net.org) with funding from the Department for International Development (DFID) of the United Kingdom (or UK Aid), and the Government of Canada through the International Development Research Center (IDRC). The authors are also grateful to Jorge Davalos and Paola Ballon for technical support and guidance, as well as to ... for valuable comments and suggestions.

Contents

1	INTRODUCTION	1
2	LITERATURE REVIEW	2
3	DATA AND STYLIZED FACTS	4
3.1	DATA	4
3.2	REMITTANCES AND SELF-EMPLOYMENT	7
4	METHODOLOGY	9
4.1	ECONOMIC MODEL.....	9
4.2	METHOD OF ESTIMATION AND ENDOGENEITY	11
5	RESULTS AND DISCUSSION	13
5.1	BASELINE FINDINGS	13
5.2	FURTHER DISCUSSION AND ROBUSTNESS CHECKS	16
6	CONCLUSIONS AND POLICY IMPLICATIONS	18

List of tables

Table 1. – Households with absent migrant	5
Table 2. – Profile of households that receive remittances and households that do not	6
Table 3. - Some patterns in remittances across different groups	6
Table 4. – Usage of remittances	7
Table 5. – Employment and unemployment rates	8
Table 6. – Self-employment rates for individuals in remittance-receiving and non-receiving households	8
Table 7. – Percentage of respondents thinking that:	9
Table 8. Assessing exogeneity of instruments	12
Table 9. – Baseline results	15
Table 10. – Differential analysis	17
Table 11. – Robustness analysis	18

List of figures

Figure 1 – Remittances in the region of Western Balkans	5
---	---

List of abbreviations

ALMP	Active Labour Market Policies
CCT	Conditional Cash Transfer
CMP	Conditional Mixed Process
DotM	Development on the Move
EU	European Union
GDP	Gross Domestic Product
ICT	Information Communication Technologies
IV	Instrumental Variables
OLS	Ordinary Least Squares

1 Introduction

Low job creation and high and persistent unemployment, especially among youth, remain the most severe economic and social problems in Macedonia. The unemployment rate of 30% is among the highest in Europe, while, on average, one of every two young persons searching for a job cannot find it. Since 2007, the Government has been implementing active labour market policies (ALMPs) some of which are specifically targeted at young persons (for instance, subsidised employment, self-employment, internships, etc.). However, the effect of the ALMPs on the overall and youth unemployment seems to be marginal. Amid the global economic crisis, tightened credit conditions, lack of venture capital financing and the malfunctioning labour market, youth restrain their entrepreneurial aspirations and rarely risk new venture. On the other hand, the reliance on microenterprises and self-employment can be an important pathway to growth.

On the other hand, Macedonia is a small country which heavily relies on remittances of its outward migration. The annual amount of money entering the economy reaches two billion USD, which boils down to about 1,000 USD per capita, hence embedding the country together with St. Kitts and Nevis and Lebanon, i.e. among countries that receive most remittances – and to about 20% of GDP, similarly as Samoa and Nepal. It is estimated that out of these, about 300 million USD per year is received as pure cash remittances, which is still significant 2,700 USD per household.

Little is known about the microeconomic impact of remittances despite their magnitude in countries like Macedonia. A strand of the literature documents the poverty-alleviation role of remittances (e.g. Acosta et al. (2008); Banga and Sahu (2010) among the more recent. Other strand finds that remittances support inactivity or discourage job search activity (e.g. Frank, 2001; Mojsoska-Blazevski, 2011). Indeed, according to the neoclassical model of labour-leisure choice (Killingsworth, 1983), remittances – a source of non-labour income – may alleviate budget constraints, raise reservation wages and, through an income effect, reduce the employment likelihood and hours worked for remittance-receiving individuals. However, could these effects be different for youth: are they less risk-averse than the older household members, while recognizing opportunity in the remittance the household gets? To our knowledge, rigorous and quantitatively-supported analysis of how youth labour supply responds to remittances largely lacks.

The objective of this study is to investigate how the employment status of youth in Macedonia varies owing to remittances inflow in the country. In addition, we will investigate if the effect of remittances on youth labour supply is homogenous across the genders, ethnic and rural/urban divide. To achieve this objective, we will be relying on the DotM 2008 Remittance Survey and instrumental variables approach to address the potential endogeneity of remittances with respect to the self-employment status.

Results suggest that youth in households receiving remittances have considerably larger probability to establish own business, ranging between 51% and 57% compared to the non-young non-receiving counterparts. We also document the widespread result in the literature that remittances in general likely create parasitism and reduce the probability of establishing own business, which is in line with the risk-aversion which likely increases with age. We further find that ethnic Albanian youth in receiving households have lower entrepreneurial inclination, likely due to the lower level of education; while remittance-receiving youth have quite higher probability to establish own business in the capital than compared to the other cities.

The paper is organized as follows. Section 2 provides a brief overview of the referent literature. Section 3 reviews the survey data used by supplying stylized facts. Section 4 delves into the methodological approach pursued and the economic model used. Section 5 presents the results and offers discussion. The last section concludes and offers policy recommendations.

2 Literature review

Migration is an implicit contract between the members of a household who collectively decide to send a household member abroad (usually the one with largest employment and income potential) to protect each other from income loss (Rapoport and Docquier, 2006). The impact of remittances on the receiving household largely depends on the motivation behind the migrant's remitting behaviour (Lucas and Stark, 1985; Dermendzieva, 2010). Motivation to remit can be related to different incentives, altruism or egoism (Lucas and Stark, 1985; Ruiz and Vargas-Silva, 2009; Dermendzieva, 2010). The former arises because the migrant takes care about the social welfare of his/her family, country, society (Tchouassi and Sikod, 2010), while the latter is more complex as it is related to the "self-interest" behaviour of the migrant, that is, the care about the potential inheritance or the reputation once returning home.¹ In this case, the migrant buys services home, for instance, taking care about his/hers family at home, while the size of remittances depends on the likelihood of return (Rapoport and Docquier, 2006). In addition, it might be related to repaying the past debt of investment in education to the principal (household that has previously financed the education of the migrant) (Ruiz and Vargas-Silva, 2009; Tchouassi and Sikod, 2010).

Remittance flows have wide impacts on the host country, both positive and negative, and on macro and micro level. Studies show that they influence the labour supply, augmentation of capital stock, consumption, educational investments, inequality and poverty, economic growth, etc. (Kilic et al. 2007; Dermendzieva, 2010). On the other hand, currency appreciation and inflationary pressures are among the most frequently cited detrimental effects of remittances on the receiving country (Ruiz and Vargas-Silva, 2009).

Micro studies on the impact of remittances primarily focus on the effect of these flows on labour supply decisions and on the probability of the returned migrants to start a business. According to the neoclassical model of labour-leisure choice (Killingsworth, 1983), remittances – a source of non-labour income – may alleviate budget constraints, raise reservation wages and, through an income effect, reduce the employment likelihood and hours worked for remittance-receiving individuals. The impact of remittances on the decision to work has been previously examined by Binzel and Assaad (2011) for Egypt, Dermendzhieva (2010) in Albania, Dermendzhieva (2011) for Armenia, Rodriguez and Tiongson (2001) in the Philippines, Funkhouser (1992) in Nicaragua, Hanson (2005) in Mexico, etc. These studies in general confirm that remittances reduce labour supply and employment of the recipient households/individuals, the result being stronger for females. Though, for rural females, non-wage employment might increase with migration since they have to replace the migrant's labour, i.e. there is a negative income effect (Binzel and Assaad, 2011). For instance, the study of Dermendzieva (2010) finds that, controlling for the endogeneity of remittances with respect to labour supply, remittances significantly reduce employment probability, though at different magnitude for different categories of population. For instance, for a subgroup of males aged 46-60, the combined effect of a household having migrants and receiving remittances is

¹ The literature on remittances in general oversees the relation between the decision to remit and the migrant's intention for returning home.

estimated at 20% to 50% reduction in the probability of working. However, to the best of our knowledge, rigorous and quantitatively-supported analysis of how youth labour supply responds to remittances largely lacks. Youth labour supply may be impacted differently and its response to remittances may vary according to gender and geographical area covered.

The literature which explores the relationship between migration and remittances, on one hand, and having a small business in the home country, on the other, is mainly focused on the likelihood that return migrants start a business, rather than the members of the migrant's household. Remittance flows improve the access to capital funds, which alleviates the credit constrain for starting a business (Lucas and Stark, 1985; Ruiz and Vargas-Silva, 2009). This effect of remittances on starting a business might be amplified in countries with underdeveloped capital and insurance markets, including micro-credits. The absent or largely incomplete credit markets raise production constraints for households which can be addressed by remittances (Kilic et al. 2007). Moreover, having a migrant can be viewed as a tool for diversifying the risk while substituting for formal insurance. In addition, the accumulated human capital abroad (skills, ideas, entrepreneurial knowledge) have a positive impact on the probability to start a business of a return migrant; an element which is absent or very weak in case of self-employment of a household member. Dermendzhieva (2011) finds that remittances provide initial capital for starting a business across migrant's household members in Armenia. Similarly, the study of Funkhouser (1992) found that remittances slightly increase self-employment of non-migrants in Nicaragua. This positive effect of remittances on starting a business is associated with higher income elasticities of migrant households for investment and saving (Kilic et al. 2007). Indeed, Taylor and Mora (2006) and Woodruff and Zenteno (2001) argue that the likelihood that a Mexican household invests is positively associated with having a migrant. Woodruff and Zenteno (2001) find that remittances are responsible for almost one fifth of the capital invested in microenterprises throughout urban Mexico. On contrary, there is a strand of literature which argues that remittances are primarily spent on consumption including housing rather than for productive purposes (Kule et al. 2002; Clement, 2011; Petreski and Jovanovic, 2013).

To our knowledge, the study of Braga (2009) for Albania is so far the sole study which examines the link between remittances and labour market behaviour of young people (aged 15-24) in remittance receiving households. The author finds evidence that remittances reduce the probability of young people being inactive which might point that young people more wisely spend remittances and/or are less risk-averse (given that for the overall working-age population labour supply decreases with remittances). The effect is stronger for females. Though, the study does not investigate the link between remittances and youth self-employment. The finding that young people spend remittances "cleverer" might be related to the lack of alternative channels to finance business start-ups that they face. In particular, the alternative options for access to initial capital available for older citizens such as microcredit or conditional cash transfers (CCTs) are not accessible for young people.² The former, since young people are short of collateral, whereas the latter since the head of the household (that is usually an older person) receives the transfer and not them.

In summary, studies generally conclude that the increase in remittances discourages active job search, but there is some evidence that it may help self-employment. However, the debate remittances-entrepreneurship, basically, opens the question if remittances deal with short-term poverty relief without providing the poor with the tools for breaking away with poverty by their own means. If remittances are to have a positive effect on entrepreneurship, these

² Banerjee et al. (2010) provide an assessment of the effect of microcredit on the profitability of new businesses, investment and consumption. Lichard (2010) assesses the effect of CCTs on entrepreneurship, through *inter alia* alleviation of wealth constraints.

concerns could be dismissed. However, these hypotheses have been little researched in the literature, as mentioned above. On the other hand, the effects of other money-inflow programs have been analysed in the literature: Gertler et al. (2012) in the context of the Mexican social assistance program; Sadoulet et al. (2001) in the context of the Mexican agricultural support program; Ravallion and Chen (2005) in the context of the Chinese temporary cash transfer program; Lichand (2010) in the context of the Brazilian conditional cash transfers program – to name a few – all found positive effects of these programs for entrepreneurship, i.e. self-employment.

3 Data and stylized facts

3.1 Data and overview of remittances

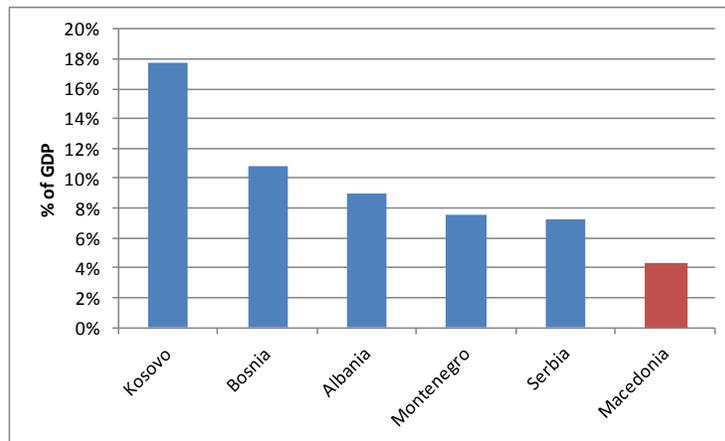
The dataset which we use in this study has been collected for the project “Development on the Move: Measuring and Optimizing the Economic and Social Impacts of Migration in the Republic of Macedonia”, by Educon Research, Macedonia. This survey has been collected in July-September 2008 and covers 1,211 households. The primary focus of this survey is to analyze migration, so there is a multitude of questions about remittances.

The survey has been stratified on two levels – region³ and rural/urban. On the first level of stratification, each region has been included in the survey with a number of households proportional to the total number of households in that region. Then, on the second level of stratification, the number of rural and urban households from each region has been made proportionate to the total number of rural/urban households in that region. Then, after the number of rural and urban households for each region has been determined in this way, those households have been selected randomly. However, such stratification has been reflected into the weights obtained alongside the dataset and these will be used in the analysis hereafter.

Remittance flows represent an important income for households in Macedonia and important source of financing the current account deficit - since 2004 they have averaged 4% of GDP, roughly the same as flows from foreign direct investment (Petreski and Jovanovic, 2013). Actually, as Figure 1 suggests, despite large in magnitude, remittances in Macedonia are the lowest in the region of Western Balkans, which is known to have a large migration. In addition, their upward trend has been maintained despite the recent crisis – in 2008, before the crisis, they amounted to 277 million euro, while in 2012, after the crisis, they are estimated to be 294 million euro (World Bank data).

³ There are 8 regions in Macedonia – Skopje, Vardar Valley, Pelagonija, Polog, South-West, North-East, East and South-East.

Figure 1 – Remittances in the region of Western Balkans



Source: World Bank.

Table 1 offers some more details on the households with absent migrant. Nearly 16% of the households in Macedonia receive remittances, with the share being larger for the female-headed household. High levels of remittances are in line with the large poverty rates in the country, so that in the search for better life, usually the male head leaves the home and supports the family income from abroad. Nevertheless, the number of those households who reported absent migrant is apparently double than those with absent migrant who send money and almost all migrants are close-family member to the responded in our survey.

Table 1. – Households with absent migrant

	Total number of households	Remittances' receiving households	% of remittances' receiving households	The number of households who reported absent migrant	% of hh with migrants not sending money	Percentage of hh with close-family migrants
Male-headed	695	93	13.4%	165	43.6%	96.8%
Female-headed	516	97	18.8%	177	45.2%	97.9%
Total	1211	190	15.7%	342	44.4%	97.4%

Source: DoTM Survey (2008).

Table 2 profiles the surveyed households, observing the divide between the remittance-receiving and non receiving households. Apparently, the share of male-headed households is smaller among the receivers, owing to the fact that usually the male head is the one who (first) migrates. The share of receiving households is larger in the urban areas, which may be due to the increased probability of information flows in the urban areas, but also the reliance on agriculture in the rural areas, should a household is hit by existence shock. The migration obviously causes a reduction of the size of the household and an increase of the average age, suggesting that usually younger male members or entire families (parents and children) migrate so that the families left behind are usually older family members.

Table 2. – Profile of households that receive remittances and households that do not

	All	Receiving households	Non-receiving households
% of male-headed households	57.4%	48.9%	59.0%
% of urban households	76.5%	83.2%	75.3%
Average size of the household (people)	3.5	3.2	3.5
Average age of the household members (years)	43.5	51.1	42.1
Highest education of head	high school	high school	high school
Average % of members employed	37.1%	30.2%	38.4%
Average household consumption	3,550	3,783	3,507

Source: DoTM Survey (2008).

Table 3 shows the patterns in remittances for different types of households. It can be observed that female-headed households on average get more remittances than male-headed, despite they have the same consumption level. Another interesting fact is that Albanian households get much higher remittances than Macedonian households, albeit the share of Albanian households receiving remittances is not that larger than the share of Macedonian households. This suggests that Albanian migrants send larger or more frequent sums of remittances, suggesting that the crisis likely hit Albanian and Macedonian remitters. This may be explained by the fact that Albanian migrants are located in countries which coped relatively well during the crisis (like Switzerland), while most of the Macedonian remitters work in EU countries who have suffered more during the crisis, like Italy.

Table 3. - Some patterns in remittances across different groups

	Average consumption (euro)	Average remittances (euro)	% of remittance in consumption (for HHs receiving remit.)	Share of households getting remittances (%)
All HHs	3550	313	0.146	0.157
Male headed	3537	220	0.069	0.138
Female headed	3567	437	0.25	0.192
Poor	1031	338	0.393	0.172
Non poor	4420	304	0.07	0.158
Albanian	4464	440	0.296	0.175
Macedonian	3213	265	0.089	0.156
Rural	4543	361	0.08	0.178
Urban (other than capital)	2973	356	0.227	0.175
Capital	3687	164	0.051	0.114

Source: DoTM Survey (2008).

Finally, Table 4 portrays the usage of remittance inflows. Remittances are mainly used for consumption, but disaggregation suggests some interesting differences across households' characteristics. For instance, female-headed, urban, Albanian and poor households spend larger amounts of remittances for education and health, while the male-headed, Macedonian, non-poor and urban households are more inclined to invest. Still, the share used for starting up an own business is still very low. We portray this issue in more details next.

Table 4. – Usage of remittances

	Consumption of the household (good, clothes, home equipment, car)	Family events	Property investment (excpt. agr. land)	Education	Health	Starting up a business	Agricultural land investment	Savings	Debt repayment	Lending
All	40.2%	9.8%	6.1%	11.0%	11.0%	7.3%	4.9%	6.1%	3.7%	0.0%
Male-headed	35.7%	14.3%	4.8%	7.1%	9.5%	9.5%	9.5%	4.8%	4.8%	0.0%
Female-headed	45.0%	5.0%	7.5%	15.0%	12.5%	5.0%	0.0%	7.5%	2.5%	0.0%
Macedonian	38.7%	8.1%	8.1%	8.1%	9.7%	8.1%	6.5%	8.1%	4.8%	0.0%
Albanian	45.0%	15.0%	0.0%	20.0%	15.0%	5.0%	0.0%	0.0%	0.0%	0.0%
Poor	47.6%	4.8%	4.8%	23.8%	9.5%	0.0%	4.8%	4.8%	0.0%	0.0%
Non-poor	37.7%	11.5%	6.6%	6.6%	11.5%	9.8%	4.9%	6.6%	4.9%	0.0%
Capital	38.0%	10.0%	6.0%	8.0%	12.0%	8.0%	8.0%	6.0%	4.0%	0.0%
Urban (other than capital)	41.9%	9.7%	6.5%	16.1%	9.7%	6.5%	0.0%	6.5%	3.2%	0.0%
Rural	100.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Source: DoTM Survey (2008).

3.2 Remittances and self-employment

This section briefly reviews some statistics related to self-employment in the surveyed households, with special reference to the divide between remittance-receivers and non-receivers. Note that as opposed to the previous section, this section deals with individuals and not households. Table 5 examines the employment and unemployment rates for different subgroupings of our surveyed individuals. First thing to note is that the employment figure is overestimated while the unemployment one is underestimated than compared to the official figures, largely owing to the reporting of the unpaid work. Herein, we treat these individuals as part of the employment rate calculation, while otherwise they may self-report in the Labour Force Survey as unemployed persons.

Expectedly, larger employment rates (both wage employees and self-employed rate) are observed among male-headed households, due to the traditional role of women in the society as house-breeders, child-raisers. In addition female-headed households receive more remittances from the male migrant and females tend to engage in unpaid work in agriculture. The latter is evident from column (4). The ethnic disaggregation, on the other hand, observes pronounced differences in the unemployment rate: unemployment is higher among Macedonians compared to ethnic Albanians. Unexpectedly, the employment rate is higher in the rural areas (larger even compared to the capital), likely due to the large unpaid work (or family contributing work) in agriculture. Rural individuals are also more inclined to self-employment, likely in the agricultural sector. Finally, the age disaggregation suggests twice as higher unemployment of young people as that of the older ones, as well as lower inclination for self-employment among the former.

Table 5. – Employment and unemployment rates

	Rates				
	Employed	Employed for salary	Self-employed	Unpaid work	Unemployed
	(1)	(2)	(3)	(4)	(5)
All	63.5%	38.4%	10.8%	14.3%	19.8%
Male	66.8%	43.8%	16.5%	6.6%	19.3%
Female	60.2%	33.2%	5.4%	21.6%	20.2%
Macedonian	62.8%	41.5%	10.5%	10.8%	21.2%
Albanian	65.2%	30.6%	11.5%	23.1%	16.2%
Capital	63.2%	44.5%	10.6%	8.1%	18.0%
Urban (other than capital)	61.8%	41.5%	9.2%	11.1%	22.7%
Rural	67.4%	28.2%	13.8%	25.3%	15.5%
Young (15-29)	63.9%	38.0%	8.5%	17.4%	31.1%
Non-young	63.4%	38.6%	11.5%	13.4%	15.5%

Source: DoTM Survey (2008).

Table 6 observes the self-employment rate in the households receiving remittances versus those who do not receive. Some differences in the sub-groups are interested to observe. Male individuals are more inclined to self-employ in both receiving and non-receiving households. On the other hand, ethnic Albanian receivers are likely quite more predisposed to self-employ, suggesting that they may be using remittances more productively than ethnic Macedonians, given that the difference in the self-employment rates is negligible for the non-receivers. Then, the business opportunities the capital offers and the agricultural opportunities in the villages likely also steer individuals to invest some of the remitted money in own business, as compared to the other urban areas whereby the self-employment rate is embarrassingly low. Finally – and very much important for this study – figures offer early evidence signals that young persons may be utilizing remittances more than older persons and more than their non-receiving counterparts. Certainly, this is only preliminary evidence and the more rigorous econometric evidence that follows will reveal the statistical significances of those differences.

Table 6. – Self-employment rates for individuals in remittance-receiving and non-receiving households

	All	Remittances' receivers	Non-remittances' receivers
All	10.8%	11.6%	10.8%
Male	16.5%	16.0%	16.5%
Female	5.4%	8.9%	5.3%
Macedonian	10.5%	8.0%	10.6%
Albanian	11.5%	19.0%	11.2%
Capital	10.6%	23.1%	10.4%
Urban (other than capital)	9.2%	4.3%	9.4%
Rural	13.8%	19.6%	13.5%
Young	8.5%	13.0%	8.4%
Non-young	11.5%	11.3%	11.5%

Source: DoTM Survey (2008).

Still, to give a flavour of these preliminary observations, Table 7 presents some of the answers obtained in the survey, supporting the predisposition of young people to invest the remitted money. Namely, on the question what they think the money sent back may be used for (Table 7a), 14.3% of the young persons in the remittance-receiving households answer they could be

used for starting a business, as compared to the 5.9% young persons in the non-receiving households and 9.9% non-young persons in the receiving households.

Table 7. – Percentage of respondents thinking that:

a) Money sent back may be used for starting up a business

	All	Remittance receivers	Non-remittance receivers
All	6.55	10.79	6.41
Young	6.16	14.29	5.95
Non-young	6.7	9.91	6.58

Source: DoTM Survey (2008).

b) Government should make it easier for people to set up a business

	All	Remittance receivers	Non-remittance receivers
All	21.8	28.8	21.6
Young	19.5	10.7	19.8
Non-young	22.7	33.3	22.3

Source: DoTM Survey (2008).

On the other hand, young people are largely opposed to the opinion that the government is responsible for enabling better climate for setting up own business (Table 7b). While the likely aversion to starting a business reaches a third of the non-young persons in remittance-receiving households, this number is only 10.7% for young people in the same type of households. This may suggest that while the literature argues that remittances make people lazier and reluctant to work by changing the value of work over leisure (hence simply being inactive), this regularity may not hold for youth who are likely eager to start a business, if the access to finance were secured or easy. This aspect will be investigated in more details later.

Overall, we documented some initial evidence that young members of households may be more inclined to spend the remitted money for starting an own business, as opposed to their counterparts in the non-remittance-receiving households and the older members of the receiving households.

4 Methodology

4.1 Economic model

In order to investigate how remittances potentially affect the decision to self-employ by young persons, we start with the theoretical model whereby the utility from working/leisure is the underlying latent variable. Then, the additive random utility model specifies the utilities of alternatives 0 and 1 to be (Cameron and Trivedi, 2005):

$$U_0 = V_0 + \varepsilon_0$$

$$U_1 = V_1 + \varepsilon_1 \tag{1}$$

Whereby V_0 and V_1 are deterministic components of utility and ε_0 and ε_1 are random components of utility. The alternative with higher utility is chosen. We observe $y=1$, say, if $U_1 > U_0$. In our context, if the utility from establishing own business (self-employment wage) is higher than the utility from regular employment (wage); or if the first is higher than the utility of leisure (reservation wage), then the person makes a rational decision to establish own

business. Owing to the presence of the random components of utility, this is a random event with:

$$\begin{aligned}
 \Pr[y=1] &= \Pr[U_1 > U_0] \\
 &= \Pr[V_1 + \varepsilon_1 > V_0 + \varepsilon_0] \\
 &= \Pr[\varepsilon_0 - \varepsilon_1 < V_1 - V_0] \\
 &= F(V_1 - V_0) \tag{2}
 \end{aligned}$$

Whereby F is the c.d.f. of $(\varepsilon_0 - \varepsilon_1)$. When ε_0 and ε_1 are normal $(\varepsilon_0 - \varepsilon_1)$ is normally distributed. Normalization of the variance of $(\varepsilon_0 - \varepsilon_1)$ to unity gives the probit model since the $F(\bullet)$ in (2) is the standard normal c.d.f.

Hence, the equation we will be estimating comes from the rational decisions of persons to become self-employed when the wage from self-employment exceeds the wage from regular employment and/or the reservation wage. The equation is as follows:

$$\Pr(SE_i) = \alpha_0 + \alpha_1 R_i + \alpha_2 Y_i + \alpha_3 R_i * Y_i + \sum_{j=1}^n \beta_j Z_i + \varepsilon_i \tag{3}$$

Whereby $\Pr(SE_i)$ is the probability that person i will get self-employed: it takes a value of one if a person is self-employed or not; R_i is a dummy variable taking a value of one if a person belongs to a household getting remittances; Y_i is a dummy variable taking a value of one if a person is young (15-29); $R_i * Y_i$ is the interaction of the latter two; while Z_i contains other explanatory variables. ε_i is the error term which is assumed to be well behaved. Note that with regard to remittances, we are operating with a dummy and not the amount of remittances received, due to the usual mis-measurement (misreporting) of the amount of remittances in the surveys.

Our interest in this study is the coefficient in front of the interaction variable, α_3 , as it will disentangle the probability that a young person decides to establish a business and self-employ when the household is a recipient of international remittances. In other words, α_3 measures the entrepreneurial inclination of youth when they find a source of finance in the remittances obtained from the migrants. In addition, we will be observing the coefficients α_1 and α_2 as well, as they measure if youth are in general more inclined to establish own business and if remittances support or suffocate the entrepreneurial spirit of people, respectively.

The literature includes a multitude of explanatory hereby contained in the vector Z_i (e.g. Funkhouser, 1992). We will be using the following: education, age, age squared, ethnicity, gender, geographical location of household (urban/rural/capital), if the person is married or not, the number of household members, the availability of financial account as an approximation of the access to finance; if the household to which the person belongs owns a house; the log of the per capita consumption of the household; and the log of the distance to the main employment centre (the capital Skopje). A person with a secondary education either completed a general or a vocational secondary school; a person with tertiary education either completes a university or a post-graduate degree. Consumption approximates the wealth of the households, as wealthier households may behave differently in terms of establishing a business than those which are poorer. We control for regional factors affecting the probability of a person to self-employ through including the distance of the household's municipality from Skopje.

4.2 Method of estimation and endogeneity

Given the dependent variable in our model (1) is binary variable, we need to rely on binary choice models, as OLS estimates would yield biased and inconsistent results of the entrepreneurial effect of remittances for youth. Hence, we will be relying on a probit estimation technique and Roodman's (2011) conditional mixed-process (CMP) estimator. However, the estimation of our model (1) faces another more important econometric challenge, as we discuss next.

Let us consider the relationship between household wealth, personal characteristics, remittances, and self-employment. Both migration and self-employment involve fixed costs. If households face credit constraints, poorer households may be less able to send migrants abroad and less able to make investments, i.e. self-employ. More able, more motivated and less risk averse persons, on the other hand, may be more able to emigrate and more able to self-employ. If we do not observe all facets of household wealth and personal characteristics, there would be omitted variables correlated with both remittances (which are the 'product' of migration) and self-employment. Hence, remittances would tend to be correlated with the unobserved determinants of self-employment, biasing the OLS estimate (Hanson and Woodruff, 2003). Another example is the case when the decision to migrate follows a failure to establish own business due to credit constraints, regulatory burden and so on; i.e. migration and self-employment are determined simultaneously. The endogeneity stemming from both simultaneity and omitted variables (unobserved variables) is well documented in the literature (see, e.g. Wooldridge, 2002). Hence, the endogeneity between remittances and the self-employment in the household is a major methodological concern.⁴

Dealing with the problem of endogeneity calls for an estimation approach that involves instrumental variables (Cameron and Trivedi, 2005; Amuedo-Dorantes and Pozo, 2006; Hanson and Woodruff, 2003). The instrumental variables used to correct the remittances' endogeneity should not affect the self-employment decision of the young household members other than through their effect on the remittance income (see Wooldridge, 2002, pp.621). Though it is hard to find such instruments, candidates include variables such as variable on the existence of migrant network, an indicator of whether there is other member(s) of the broader family already having migrated before; an indicator of non-economic motive to migrate; an indicator of the wealth of the migrant once he/she settled in the foreign country, and so on (Hanson and Woodruff, 2003; Dermendzhieva, 2010). These variables are suitable candidates since while they affect the decision to migrate and/or the fact that remittances have been sent, they do not affect the decision to self-employ directly, except through remittances.

Given the information on disposal from the survey, we make use of two instruments: the non-economic motive to migrate and the existence of a family member having migrated before. The first variable is a dummy created from the question where respondent was able to choose (multiple) options from the following: economic reasons, political reasons, education, marriage/family reunion, other. The dummy takes a value of one for those households who have not selected economic reasons as any of the possible choices. Thus, this variable should

⁴ Some studies (e.g. Cox-Edwards and Rodriguez-Oreggia, 2009) rely on propensity score matching to estimate remittances' effect on labour market choices. As this technique uses a probit equation for the probability of migration and then matches each receiving with a non-receiving household, it addresses a potential problem of endogeneity stemming from observables. However, it ignores the problem we identify herein: endogeneity stemming from unobservables. Hence, the propensity score matching may be associated with larger bias than the instrumental variable approach. Indeed, McKenzie et al. (2010) find that a study using a good instrumental variable works best by overstating the gains from migration by only 9 percent, while a propensity score matching overstates these by 19 to 33 percent.

not be correlated with the self-evaluation status of the member, if the economic reasons for migrating are uncorrelated with the other reasons.

The other instrumental variable is a dummy of the existence of a (at least one) close family member who has migrated before in the same country of departure. Apparently, this could be a weaker instrument from the economic point of view: while departure may be triggered (eased) by the fact that the migrant has relatives to rely on in the immigrating country, it still may be motivated by economic reasons. Hence, it may be that it affects the self-employment decision directly.

Therefore, Table 8 offers two pieces of information to assess instruments exogeneity: panel (a) checks for the statistical partial correlation of the instruments, by regressing each of the instrument on the dependent variable from the second-stage regression (the self-employment dummy). Both coefficients are statistically insignificant pointing out to their non-partial-correlation with the self-employment variable. Panel (b) presents the tetrachoric correlations between self-employment and each instruments: correlations are statistically not different than zero. Both findings hence give some support for using the two proposed variables as instruments.

Table 8. Assessing exogeneity of instruments

a) Logit regression (partial correlations) §		
	Migration for non-economic reasons	Other family member migrated before
Self-employment	-.183 [-0.66]	-.367 [-1.17]
b) Tetrachoric correlations †		
Self-employment	-0.0456 [0.6028]	0.0322 [0.7233]

, ** and * denote significance at 10%, 5% and 1%, respectively*

§The dependent variables are shown in the heading row. Logit is used for estimation. The constant is not reported. T-values in parentheses.

† Tetrachoric rho reported. 2-sided exact P given in parentheses, testing the null of independence between self-employment and the instrument.

Given that we have grounds for concern that both simultaneity (i.e. reverse causation) and the omitted variables (due to unobserved variability) probably make remittances endogenous in our framework, we will proceed with the IV approach and its CMP counterpart. The technique belongs to the broader field of impact analysis methods, but to the best of our knowledge has not been used in the remittances literature. Therefore, our approach will contribute to the current sparse of knowledge and applications in this specific domain.

5 Results and discussion

5.1 Baseline findings

Table 9 presents the baseline results; **marginal effects are reported**. For the purpose of comparison, column (1) presents the OLS estimates; and column (2) probit estimates. The first is biased and inconsistent due to the binary dependent variable, while the latter suffers the endogeneity problem. The next two columns present the IV results, the difference between the two being the set of instruments used. Recall that we utilize two instruments: non-economic motive to migrate; and existence of migration network. Column (4) uses only the first instrument, while (5) both. Toward the bottom of the table, the Amemiya-Lee-Newey test tests the null that instruments are valid and in both cases it fails to reject the null hypothesis. In columns (5)-(6) we go a step further. While IV-probit considers a binary dependent variable and deals the endogeneity (and omitted variables) bias due to remittances, it still relies on a linear model. Recently, Roodman (2011) proposed a general tool for estimating parameters in multi-equation, multi-level, conditional mixed-process systems, known as CMP, allowing for a probit regression with an endogenous dummy regressor. Details on the CMP estimator are given in the Appendix.

The non-IV estimates in columns (1)-(2) give plausible estimates of the coefficients. We will focus the attention on the remittances variable, which is suspected for endogeneity. These results suggest that persons in households receiving remittances are more inclined to self-employ; though, the probability that a young household member will utilize remittances for establishing a business is lower than their non-young counterparts in non-receiving households. This may be counterintuitive, though. First, because the literature largely documented the ‘parasitism’ remittances produce, i.e. the reduced probability of employment due to remittances. Second, because of some observations in Section 3 suggesting that youth in households receiving remittances expressed increased attitude toward supporting their entrepreneurial spirit. Therefore, we were likely right to doubt endogeneity.

That this may be the case, some evidence is provided in the IV estimates in columns (3)-(4) and in their CMP counterparts in columns (5)-(6)⁵. Results across these columns are similar, suggesting that they are relatively insensitive to the particular combination of instruments employed. As results between IV-probit and CMP do not differ, we base the discussion herein on all columns. Once remittances have been instrumented, their sign switches. Results suggest that if a household receives remittances, the probability of a member being self-employed declines in the magnitude of between 47% and 52%, compared to non-receiving households. The result is largely confirmed in the literature investigating remittances effect on employment overall; e.g. Dermendzhieva (2010) documents a lower probability of working by 20% to 50% for a member in remittance-receiving household compared to non-receiving one.

However, when it comes to young households members in the receiving households, the probability to establish own business is larger by 51 to 57% than their non-young counterparts in the non-receiving households. Hence, while the literature likely documented the ‘parasitism’ effect of remittances, it likely overlooked the entrepreneurial spirit of young persons who likely recognize source of finance in remittances to channel into longer-term productive usage.

The other variables included in the analysis have largely consistent coefficients across specifications, hence serving as robustness check. We will briefly review the findings. Having

⁵ We do not report the remaining variables’ coefficients for the remittances equation due to space. These are available on request.

a primary education increases the probability of self-employment by 120% than compared to a person without education. This coefficient is larger than those associated to secondary and tertiary education, 79% and 93%, respectively, likely due to the need of many low-educated persons to find self-employment into low-paid jobs, like agriculture, handicraft, artisans and the like. An additional year of age increases the probability of self-employment by about 16%, on average, but up to about 44 years of age, which may be a bit high.

Ethnic Albanians are more inclined to self-employment, on average by 27% than ethnic Macedonians, which is expected given the perception that the former are usually less risk-averse than the latter. Males are more inclined to take risks, by 60% compared to females, which is also expected in a highly patriarchal-minded society. Persons living in the capital have higher probability of self-employment than in the other urban areas by about 110%, given the role it has as economic, financial and political centre. Given the large agricultural sector, rural areas have larger probability of generating own businesses by 27%. Married persons have larger probability of establishing own business by nearly 5%, than compared to non-married persons. This result may be unexpected, but it may be due to the reduction of risk aversion the marriage may offer, especially if the partner has already secured employment.

The next two variables may offer counter-intuitive findings. If a person has access to finance, then the probability of self-employment is reduced. However, we use the fact that the person possesses a financial account or not as a measure of the access to finance, as other variable has not been available. This can be certainly criticized, but it may point out that those who have already established some connection with a bank or other institution already have a possibility to finance a potential business, so that the remittances do not play a role here. If the household owns a house, then the probability of self-employment declines. If this result is seen in conjunction with the access to finance, then the negative coefficients may be meaningful, given that banks are usually not a source to finance start-ups, given that loans are extended only if they are backed by income flows and not solely by collateral.

The next result points out that if consumption per capita increases by 1%, the probability to self-employ declines by 6.9%, on average. Higher consumption per capita, though, may be suggesting wealthier families who are already generating income from employment (and salary), hence implying a negative effect for the probability to self-employ. On the other hand, the more distant is the place of living from the capital, the larger the probability to establish own business; while we found that the probability to invest in own business is the highest in the capital, this result points to the differences in employment opportunities within the country: lower opportunities in the other places than compared to the capital is likely to motivate people to think for establishing their own business. Finally, young persons have larger probability to self-employ by 28% than non-young persons. This is expected given their reduced risk-aversion due to age.

Overall, we document the usual result in the literature that remittances reduce probability of establishing a business, i.e. create a type of parasitism among the recipients. However, we also documented a largely not-known result in the literature – that remittances increase the probability of a young person to establish own business, i.e. may steer the entrepreneurial spirit of young people in households receiving remittances. While this finding is largely not documented, it may offer important policy recommendations in times of rising youth unemployment in many countries across the globe. We return to this in Section 6.

Table 9. – Baseline results

	OLS	Probit	IV probit		CMP	
	(1)	(2)	(3)	(4)	(5)	(6)
Primary education	0.157***	0.475***	1.219***	1.216***	1.232***	1.232***
Secondary education	0.0408***	0.201***	0.790***	0.787***	0.805***	0.805***
Tertiary education	0.0720***	0.339***	0.933***	0.930***	0.949***	0.949***
Age (years)	0.0296***	0.0326***	0.162***	0.162***	0.162***	0.162***
Age squared	-0.000333***	-0.000366***	-0.00182***	-0.00182***	-0.00182***	-0.00182***
Albanian (1 = Albanian; 0 = Macedonian)	0.0624***	0.0556***	0.271***	0.270***	0.269***	0.269***
Gender (1 = Male)	0.135***	0.127***	0.601***	0.602***	0.595***	0.594***
Capital	0.240***	0.318***	1.102***	1.102***	1.096***	1.095***
Rural	0.0660***	0.0596***	0.271***	0.271***	0.269***	0.269***
Married (1= Married)	0.00982***	0.0105***	0.0440***	0.0443***	0.0443***	0.0442***
Number of household members	0.00106***	0.00222***	0.00669***	0.00696***	0.00595***	0.00586***
Access to finance (1 = possesses financial account)	-0.0321***	-0.0264***	-0.114***	-0.114***	-0.113***	-0.113***
Own house (1 = the household owns a house)	-0.00552***	-0.00347***	-0.0356***	-0.0349***	-0.0350***	-0.0353***
Log of consumption p/c	-0.0208***	-0.0160***	-0.0682***	-0.0685***	-0.0663***	-0.0660***
Log of distance to main employment center	0.0445***	0.0416***	0.206***	0.206***	0.205***	0.205***
Young (1 = Aged 15-29)	0.0535***	0.0632***	0.281***	0.281***	0.277***	0.276***
Remittances (1 = The household receives remittances)	0.0527***	0.0456***	-0.524***	-0.468***	-0.452***	-0.461***
Young * Remittances	-0.0757***	-0.0477***	0.571***	0.519***	0.503***	0.512***
Constant	-0.684***	-	-	-	-6.290***	-6.291***
Amemiya-Lee-Newey minimum chi-sq statistic (p-value)	-	-	0.2412	0.1397	-	-
Ho: Instruments are valid						
Instrument: Non-economic motive					1.790***	1.816***
Instrument: Other family member						-0.481***
Observations	901,808	901,808	901,808	901,808	901,808	901,808

Source: Authors' calculations. *, ** and *** signify statistical significance at the 10, 5 and 1% level, respectively.

5.2 Further discussion and robustness checks

Table 10 provides further evidence in favour of our results presented in the previous section. While we offer differential analysis according to gender, ethnicity and geography, the section also serves robustness checks of the established regularities. We focus our attention to the variable of interest – youth in households receiving remittances – along the differential effects presented toward the bottom of the table. CMP estimator is used.

While we concluded that overall youth have higher inclination to establish own business, we hereby find that the proclivity of the ethnic Albanian youth is on average 3.1% lower than that of ethnic Macedonians. This is a relatively small difference, which enlarges when it comes to the households who receive remittances. In this case, ethnic Albanian youth's probability to invest is about 12 percentage points lower than for ethnic Macedonian youth. This may be ascribed to the lower average level of education of Albanian youth in Macedonia, as well as due to the possibility that opened after the Ohrid Framework Agreement has been signed in 2001, which entitled Albanian ethnicity for quota employment into the public institutions and the government.

Male young persons are more inclined to establish own business, suggesting the female entrepreneurial spirit should be supported in the country more than that of males. However, when it comes to households receiving remittances, we were unable to obtain separate estimate for both genders, likely due to the small number of respective observations. Similarly, rural youth were found to be with reduced entrepreneurial spirit than urban youth, but separate estimate for those in remittance-receiving households was unable to be estimated. On the other hand, youth in the capital are slightly more inclined to invest than urban youth, but the probability that capital-residing young person in a household which receives remittances will invest the money in business is found to be about 169% higher than that of other urban youth.

Table 10. – Differential analysis

	CMP estimates		
	Ethnic divide	Gender divide	Urban/rural divide
	(1)	(2)	(3)
Primary education	1.234***	1.222***	1.212***
Secondary education	0.808***	0.793***	0.807***
Tertiary education	0.951***	0.946***	0.956***
Age (years)	0.161***	0.163***	0.166***
Age squared	-0.00181***	-0.00183***	-0.00186***
Albanian (1 = Albanian; 0 = Macedonian)	0.278***	0.272***	0.265***
Gender (1 = Male)	0.595***	0.580***	0.597***
Capital	1.097***	1.100***	1.076***
Rural	0.269***	0.273***	0.313***
Married (1= Married)	0.0445***	0.0493***	0.0597***
Number of household members	0.00573***	0.00426***	0.00467***
Access to finance (1 = possesses financial account)	-0.112***	-0.109***	-0.114***
Own house (1 = the household owns a house)	-0.0355***	-0.0333***	-0.0362***
Log of consumption p/c	-0.0661***	-0.0683***	-0.0690***
Log of distance to main employment center	0.205***	0.206***	0.204***
Young (1 = Aged 15-29)	0.284***	0.209***	0.331***
Remittances (1 = The household receives remittances)	-0.460***	-0.486***	-0.480***
Young * Remittances	0.589***	1.268***	0.735***
Young*Albanian	-0.0312***		
Young*Albanian*Remittance	-0.123***		
Young*Male		0.110***	
Young*Male*Remittance		-	
Young*Rural			-0.123***
Young*Rural*Remittance			-
Young*Capital			0.0305**
Young*Capital*Remittance			1.687***
Observations	901,808	900,095	899,778

*Source: Authors' calculations. *, ** and *** signify statistical significance at the 10, 5 and 1% level, respectively.*

Table 11 provides some further robustness checks. Column (1) uses the widespread definition of youth (15-24 years of age), instead of the national definition (15-29) we used above. The other three columns add other variables: column (2) – the opinion of whether the government should be responsible for securing better jobs; column (3) - the opinion of whether the government secures favourable business climate; and column (4) – the opinion of whether remittances cause laziness among receivers. Note that these variables are likely to be endogenous; they are perceptions that depend on unobservable attitudes towards entrepreneurship i.e. they are likely to be correlated with the error term of the estimating equation.

Thus, their parameters signs could be interpreted as statistical relationship (partial correlations) and not as causal relationships. The baseline findings remained robust to this analysis.

Table 11. – Robustness analysis

	CMP estimates			
	Young (15-24)	Government's role for jobs	Government's role for business climate	Remittances produce laziness
	(1)	(2)	(3)	(4)
Primary education	1.227***	1.235***	1.233***	1.209***
Secondary education	0.814***	0.804***	0.810***	0.830***
Tertiary education	0.955***	0.953***	0.957***	0.943***
Age (years)	0.103***	0.162***	0.162***	0.166***
Age squared	-0.00121***	-0.00182***	-0.00182***	-0.00187***
Albanian (1 = Albanian; 0 = Macedonian)	0.264***	0.266***	0.264***	0.297***
Gender (1 = Male)	0.595***	0.591***	0.595***	0.592***
Capital	1.106***	1.112***	1.093***	1.104***
Rural	0.274***	0.269***	0.267***	0.289***
Married (1 = Married)	0.0310***	0.0439***	0.0469***	0.0351***
Number of household members	0.0105***	0.00238	0.00623***	0.00576***
Access to finance (1 = possesses financial account)	-0.118***	-0.113***	-0.115***	-0.0980***
Own house (1 = the household owns a house)	-0.0214***	-0.0406***	-0.0319***	-0.00501
Log of consumption p/c	-0.0716***	-0.0678***	-0.0696***	-0.0502***
Log of distance to main employment center	0.204***	0.211***	0.206***	0.201***
Young (1 = Aged 15-29)		0.270***	0.275***	0.267***
Remittances (1 = The household receives remittances)	-0.196***	-0.452***	-0.440***	-0.346***
Young * Remittances		0.493***	0.493***	0.410***
Young (1 = Aged 15-24)	-0.165***	-	-	-
Young*Remittances	0.808***	-	-	-
Role of government for jobs (1 = thinks that the government should provide better jobs)	-	-0.0689***	-	
Role of government for business climate (1 = thinks that the government should improve business climate)	-	-	-0.0607***	
Laziness role of remittances (1 = strongly agree to 5 = strongly disagree)	-	-	-	0.0190***
Observations	901,808	901,808	901,808	887,762

*Source: Authors' calculations. *, ** and *** signify statistical significance at the 10, 5 and 1% level, respectively.*

The three added variables have the expected signs. If a person blames government for being responsible for providing jobs as well being discouraged by the business climate, then the probability to establish own business declines. These two variables were not chosen randomly, since it is a widespread perception in the country, likely inherited from the socialist times, that the government should provide jobs, while private initiative is always perceived very risky in a discouraging business environment. The coefficient on the third added variable – the perception of whether remittances create parasitism – suggests that the more the person disagrees that the remitted money creates lazy people, the larger the probability that the person will engage in establishing a business.

6 Conclusions and policy implications

The objective of this study is to investigate if youth in households receiving remittances in Macedonia have higher probability of establishing own business. In addition, we investigated if the effect of remittances on youth labour supply is homogenous across the genders, ethnic and rural/urban divide. We used the DotM 2008 Remittance Survey, being a very comprehensive survey on many aspects of migration and remittances. Instrumental variables

approach was used to address the potential endogeneity of remittances with respect to the self-employment status. Two instrumental variables were used which affect remittances, but not the decision to self-employ, except through remittances: a non-economic motive do migrate, and existence of migrants' network. Moreover, we overcome some of the deficiencies of the IV estimation by applying the Roodman's conditional mixed-process (CMP) estimator.

Results robustly suggest that youth in households receiving remittances have considerably larger probability to establish own business, ranging between 51% and 57% compared to the non-young non-receiving counterparts. This suggests that indeed remittances have a large potential to steer the entrepreneurial spirit of youth in Macedonia. The study also documented the widespread result in the literature that remittances in general likely create parasitism and reduce the probability of establishing own business, which is in line with the risk-aversion which likely increases with age. However, this result does not apply for youth – a finding largely absent in the referent literature. Also we found that youth in general have lower probability of establishing a business, which is in line with the lack of sources of finance and the malfunctioning labour market whereby the first employment frequently faces higher obstacles. With respect to the differential analysis, we documented that ethnic Albanian youth in receiving households have lower entrepreneurial inclination, likely due to the lower level of education; while remittance-receiving youth have quite higher probability to establish own business in the capital than compared to the other cities.

Given these findings, important policy recommendation stems out of this analysis. Most importantly, the government could start devising a strategy for channelling remitted money into more productive use, especially converting those funds into jobs for youth. Some lines of thought in that endeavour are as follows:

- Exclusion of paying social contributions for young receiving remittances who start a business in the first two years of operation, as well as for every additional job being created for youth in the same business, for up to 5 workers.
- Financial support (matching funds) from the budget in the amount of 30% of the received remittances in the course of a year if these are invested in starting of new business or extending the production and/or activities of an existing family business;
- Direct subsidies in the second year of operation in the amount of 50% of the remittances received if the self-generated business is in the area of high technologies (for instance ICT);
- Full exemption of paying tariff on capital-goods imports, like machines, equipment, technology, fertilizers, etc;
- Subsidizing the costs of interest for obtaining loans for expansion after the third year of operation;
- Increasing agricultural subsidies for agricultural start-ups by youth receiving remittances in rural areas.
- Special social protection and child care for spouses and children of young having established a business from remittances.
- Subsidizing the costs of training of each member of the receiving household involved in the family business whereby a business has been created by a young member;
- Subsidizing the costs for branding of agricultural products of agricultural firms created and run by youth receiving remittances;

- Government-supported promotion of businesses set and run by female youth receiving remittances;
- Subsidizing the costs for marketing in a foreign market and free-of-charge use of the Agency for foreign investment and promotion of export, as logistic channel and marketing vehicle, after the third year of operation of the firm created by young people receiving remittances.

While some of these actions to support self-employment of youth in households receiving remittances in Macedonia may lead to positive discrimination, it is likely that the benefit outweighs the cost, as supporting entrepreneurial spirit in such a way will help in resolving the most ardent problems in the economy: high unemployment, especially among youth; high inactivity, especially among youth and female; and high informality.

References

- Amuedo-Dorantes, C. and Pozo, S. (2006) Migration, Remittances, and Male and Female Employment Patterns. *The American Economic Review*, 96(2), p.222-226.
- Banerjee, A., Duflo, E., Glennerster, C and Kinnan, G. (2010) The Miracle of Microfinance? Evidence from a Randomized Evaluation. Innovations for Poverty Action Working Paper, June 2010.
- Binzel, C. and Assaad, R. (2011) Egyptian men working abroad: Labour supply responses by the women left behind. *Labour Economics*, 18(1), p.S98-S114.
- Braga, M. (2009) When the Manna Comes from Abroad - Remittances and Youth Labor Market Behavior in Albania. Paolo Baffi Centre Research Paper No. 2009-41. Available at SSRN: <http://ssrn.com/abstract=1370242> or <http://dx.doi.org/10.2139/ssrn.1370242>. [Accessed on 5 August, 2013].
- Cameron, A.S. and Trivedi, P.K. (2005) *Microeconometrics: Methods and applications*. Cambridge: Cambridge University Press.
- Clement, M. (2011) Remittances and Household Expenditure Patterns in Tajikistan: A Propensity Score Matching Analysis. *Asian Development Review*, Vol. 28, No. 2.
- Cox-Edwards, A. and Rodríguez-Oreggia, E. (2009) Remittances and Labor Force Participation in Mexico: An Analysis Using Propensity Score Matching. *World Development*, 37(5), p.1004–1014.
- Dermendzhieva, Z (2011) Emigration from the South Caucasus: who goes abroad and what are the economic implications? *Post-Communist Economies*, 23(3), p.377-398.
- Dermendzhieva, Z. (2010) Migration, remittances, and labour supply in Albania. CERGE-EI Working Paper.
- Dietz, B. (2010) Migration and Remittances in Macedonia: A Review. SSRN Working Paper, online: <http://dx.doi.org/10.2139/ssrn.1713747>. [Accessed on 23 June, 2013].
- Frank, R. (2001) Philippine Town Plies a Road to Riches via Monthly Stipends: But are Pozorrubians turning into Slakers as Relatives Abroad Send Home Cash? *Wall Street Journal*, May 22, 2001.
- Funkhouser, E. (1992) Migration from Nicaragua: Some Recent Evidence. *World Development*, 20(8), p.1209-18.
- Gertler, Paul J., Martinez, Sebastian W. and Rubio-Codina, Marta (2012) Investing Cash Transfers to Raise Long-Term Living Standards. *American Economic Journal: Applied Economics*, 4(1), p.164-192.
- Hanson, Gordon H. and Christopher Woodruff (2003) Emigration and Educational Attainment in Mexico. UCSD working paper, 2003.
- Kilic, T., Carletto, G., Davis, B. and Zezza, A. (2007) Investing Back Home: return migration and business ownership in Albania. World Bank Policy Research Working Paper, No. 4366.
- Killingsworth, Mark R. (1983) *Labour Supply*. Cambridge: Cambridge University Press.
- Kule, D., Mancellari, A., Papapanagos, H., Qirici, S. and Sanfey, P. (2002) The Causes and Consequences of Albanian Emigration during Transition: Evidence from Micro-data. *International Migration Review*, 36(1): pp. 229-239.
- Lichard, G. (2010) Decomposing the Effects of CCTs on Entrepreneurship. World Bank Policy research working Paper, No. 5457, Impact Evaluation Series, No. 46.
- Lucas, R. E. B. and Stark, O. (1985) Motivations to Remit: Evidence from Botswana. *Journal of Political Economy*, 1985, 93: 901-18.
- McKenzie, D., Stillman, S. and Gibson, J. (2010) How Important is Selection? Experimental vs. Non-Experimental Measures of the Income Gains from Migration. *Journal of the European Economic Association*, 8(4), p.1542-4774.
- Mojsovska-Blazevski, N. (2011) Supporting Strategies to Recover from the Crises in South Eastern Europe: Country Assessment Report, Former Yugoslav Republic of Macedonia. Geneva: International Labour Organisation.

- Petreski, M. and Jovanovic, B. (2013) *Developmental outcomes of remittances in the Western Balkan*. LAP Lambert Academic Publishing.
- Pitt, M.M., and Khandker, S.R. (1998) The impact of group-based credit programs on poor households in Bangladesh: does the gender of participants matter? *Journal of Political Economy*, 106(5), p.958-96.
- Ravallion, M. and Chen, S. (2005) Hidden impact? Household savings in response to a poor-area development project. *Journal of Public Economics*, 89(11-12), p.2183-2204;
- Rodriguez, Edgard R. and Erwin R. Tiongson (2001) Temporary Migration Overseas and Household Labour Supply: Evidence from Urban Philippines. *International Migration Review*, 35(3), p.708-725.
- Roodman, D. (2011) Fitting fully observed recursive mixed-process models with cmp. *The Stata Journal*, 11(2), p.159-206.
- Ruiz, I. and Vargas-Silva, C. (2009) To Send, or Not to Send: That is the Question. A Review of the Literature on Workers' Remittances. *Journal of Business Strategies*, 26(1): 73-98.
- Saudolet, E., De Janvry, A. and Davis, B. (2001) "Cash transfer programs with income multipliers: PROCAMPO in Mexico". *World Development*, 29(6), p.1043-1056.
- Taylor, J. E. and Mora, J. (2006) Does Migration Reshape Expenditures in Rural Households? Evidence from Mexico. World Bank Policy Research Working Paper, No. 3842.
- Tchouassi, G. and Sikod, F. (2010) Altruistic Preferences as Motivation for Migrants in The Diaspora to Remit to Home Communities. *Research in Applied Economics*, Vol. 2, No. 1: E2
- Wooldridge, J.M. (2002) *Econometric Analysis of Cross Section and Panel Data*. London: The MIT Press.
- Woodruff, C. M. and Zenteno, R. (2001) Remittances and Microenterprises in Mexico. UCSD, Graduate School of International Relations and Pacific Studies Working Paper. Available at <http://dx.doi.org/10.2139/ssrn.282019>, [Accessed on 30 July, 2013].

Appendix – Conditional Mixed Process Estimator

The decision of a youth member of a household to self-employ - a binary variable taking either zero or one - might influence the binary variable of whether the household receives remittances or not, and vice versa. The Conditional Mixed Process (CMP) estimator (Roodman, 2011) allows mixing the standard limited dependent variable models in multi-equation systems. CMP method is a parametric one, meaning that distributional assumptions are imposed to the model which leads to higher efficiency. On the other hand, the standard IV approach does not, i.e. there is an implied trade-off between both estimators. CMP method is appropriate for two broad types of estimation situations: 1) those in which a truly recursive data-generating process is posited and fully modeled; and 2) those in which there is simultaneity but instruments allow the construction of a recursive set of equations, as in two-stage least squares (2SLS) (Roodman, 2011). In the first case, CMP is a full-information maximum likelihood (FIML) estimator, all estimated parameters being structural. In the latter, it is a limited-information (LIML) estimator, and only the final stage's (or stages') parameters are structural, the rest being reduced-form.

According to Roodman (2011), within the CMP space is the Heckman selection model, where sample selection, represented by a dummy variable, is modeled in parallel with a dependent variable of interest: selection is modeled for the full data set and the dependent variable for the subset with complete observations. The framework also embraces switching regressions in which the model used for a given variable depends on the data. Pitt and Khandker (1998), in the example that inspired CMP method, study the effects of male and female microcredit borrowing on household outcomes such as consumption and school enrollment in Bangladesh. Male and female credit are instrumented, but their equations are dropped from the model for households in villages with no program offering credit to their sex. (Notice the mix of processes too: log consumption is continuous and unbounded, enrollment is binary, and credit is censored from the left. Similarly, in this study, we have a mix of two processes: remittances dummy is binary, as well the decision to self-employ or not.)