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Youth Self-Employment in Households Receiving Remittances in the Republic of Macedonia*

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Abstract
The objective of this study is to investigate whether youths in households receiving remittances in Macedonia have a higher probability of establishing their own businesses. In addition, we investigated whether the effect of remittances on youth labor supply is homogenous across the genders and across ethnic and rural/urban divides. We used the DotM 2008 Remittance Survey and the instrumental variables (IV) approach to address the potential endogeneity of remittances with respect to the self-employment status. We used two instrumental variables which affect remittances, but not the decision to be self-employed, except through remittances: a non-economic motive to migrate and the existence of a migrants' network. Moreover, we overcome some of the deficiencies of the IV estimation by applying the Roodman's conditional mixed-process (CMP) estimator. The results robustly suggest that youths in households that receive remittances have a considerably larger probability of establishing their own businesses, ranging between 28% and 33%, compared to their non-youth, non-receiving counterparts. The main policy recommendation is that the Macedonian government should start devising a strategy for channeling remitted money into more productive uses, especially converting those funds into jobs for youths.

1. Introduction

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

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Macedonia is a small country which relies heavily on remittances from its diaspora. The annual amount of money entering the economy has recently been USD 2 billion, or about USD 1,000 per capita, putting the country in the same league as St. Kitts and Nevis and Lebanon as countries that receive very high levels of remittances—about 20% of GDP, similar to the cases of Samoa and Nepal. It is estimated that, out of these, about USD 300 million per year is received as pure cash remittances, which is significant, and at the household level remittances total approximately USD 2,700 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 (the most recent studies include, for example, Acosta *et al.,* 2008, and Banga and Sahu, 2010). Another 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 the labor-leisure choice (Killingsworth, 1983), remittances—a source of non-labor income—may alleviate budget constraints, raise reservation wages and, through an income effect, reduce the likelihood of employment and hours worked for remittance-receiving individuals. However, could these effects be different for youths, i.e. are youths less risk-averse than older household members while recognizing opportunity in the remittances the household receives? To our knowledge, rigorous and quantitatively-supported analysis of how the youth labor supply responds to remittances is deficient.

The objective of this study is to investigate how the employment status of youths in Macedonia varies by remittance-receiving status in the country. In addition, we will investigate whether the effect of remittances on the youth labor supply is homogenous across the genders and ethnic and rural/urban divides. To achieve this objective, we will rely on the DotM 2008 Remittance Survey and the instrumental variables (IV) approach to address the potential endogeneity of remittances with respect to the self-employment status.[1]

The results suggest that youths in households which receive remittances have a considerably larger probability of establishing their own businesses, ranging between 28% and 33%, compared to their non-youth, non-receiving counterparts. We also document the widespread result in the literature that remittances are, in general, likely to create dependency on such money and reduce the probability of establishing one's own business, which is in line with risk-aversion, which likely increases with age. We further find that ethnic Albanian youths in receiving households have a stronger entrepreneurial inclination, likely due to the larger amount of remittances received and closer connections with their diaspora, while remittance-receiving youths have a much higher probability of establishing their own businesses in the capital than in 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 a discussion. Section 6 concludes the paper and offers policy recommendations.

[1] Note that by "self-employment", here we consider establishing one's own business, usually in the form of a micro-enterprise. It could be in the form of business entrepreneurship as well, but it should not be assumed that that self-employment would take that particular form.

2. Literature Review

Migration can be considered as an implicit contract between the members of a household who collectively decide to send a member of the household abroad (usually the one with greatest employment and income potential) in order 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 behavior (Lucas and Stark, 1985; Dermendzieva, 2010). Motivation to remit can be related to different incentives such as altruism or self-interest (Lucas and Stark, 1985; Ruiz and Vargas-Silva, 2009; Dermendzieva, 2010). The former arises because the migrant cares about the social welfare of his/her family, country and society (Tchouassi and Sikod, 2010), while the latter is more complex, as it is related to more self-interested motives of the migrant, i.e. they care about their potential inheritance or their reputation upon returning home.[2] In this case, the migrant buys services at home, for instance, by taking care of his/her family at home, while the size of the remittance depends on the likelihood of returning (Rapoport and Docquier, 2006). In addition, it might be related to repaying a past debt comprising investment in education to the principal (a household that previously financed the education of the migrant) (Ruiz and Vargas-Silva, 2009; Tchouassi and Sikod, 2010).

Remittance flows have broad impacts on the host country, both positive and negative, and at both the macro and micro levels. Studies show that they influence the labor supply, changes in the 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 effects of these flows on labor supply decisions and on the probability that the migrant will open a business upon their return. According to the neoclassical model of the labor-leisure choice (Killingsworth, 1983), remittances—a source of non-labor income—may alleviate budget constraints, raise reservation wages and, through an income effect, reduce the likelihood of employment and hours worked for remittance-receiving individuals. The impact of remittances on the decision to work was previously examined by, among others, 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 and Hanson (2005) in Mexico. These studies in general confirm that remittances reduce the labor supply and employment of the recipient households/individuals, with the result being stronger for females. However, for rural females, non-wage employment might increase with migration since they have to replace the migrants' labor, i.e. there is a negative income effect (Binzel and Assaad, 2011). For instance, a study by Dermendzieva (2010) finds that, controlling for the endogeneity of remittances with respect to labor supply, remittances significantly reduce employment probability, though to different extents for different categories of the population. For instance,

[2] The literature on remittances most often overlooks the relationship between the decision to remit and the migrant's intention to return home.

among males aged 46–60, the combined effect of a household having migrants and receiving remittances is linked to a 20% to 50% reduction in the probability of working. However, to the best of our knowledge, rigorous and quantitatively supported analysis of how the youth labor supply responds to remittances is deficient. The youth labor supply may be impacted differently and its response to remittances may vary by gender and the geographical area covered.

The literature which explores the relationship between migration and remittances, on the one hand, and having a small business in the home country, on the other hand, is mainly focused on the likelihood that a returning migrant is shown to have started a business after their return, rather than on whether members of the migrant's household have done so. Remittance flows improve access to capital funds, which alleviates the credit constraint 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 microcredit. Absent or largely incomplete credit markets raise production constraints for households, and this can be addressed with remittances (Kilic *et al.,* 2007). Moreover, having a migrant in the household can be viewed as a tool for diversifying the risk of poverty while substituting for formal insurance. In addition, the human capital accumulated while abroad (skills, ideas, entrepreneurial knowledge) positively impacts the probability that a returning migrant will start a business; human capital is often very weak in cases of self-employment of a household member. Dermendzhieva (2011) finds that remittances provide initial capital for starting a business across the migrant's household members in Armenia. Similarly, the study by Funkhouser (1992) found that remittances slightly increase self-employment among non-migrants in Nicaragua, while Göbel (2012) found that they increase self-employment at extensive margin for women in Peru. Also, Yang (2008) finds that higher remittances lead to households being more likely to engage in entrepreneurial activities and to spend more hours in self-employment, but with no significant effect on the overall labor supply. This positive effect of remittances on starting a business is associated with higher income elasticities of migrants' households for investment and savings (Kilic *et al.*, 2007). Indeed, Taylor and Mora (2006) and Woodruff and Zenteno (2001) argue that the likelihood that a Mexican household will invest is positively associated with having a current migrant. Woodruff and Zenteno (2001) find that remittances are responsible for almost one-fifth of the capital invested in microenterprises throughout urban Mexico. Conversely, 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) and some (e.g. Gibson *et al.*, 2009) indeed find them insignificant for self-employment.

To our knowledge, the study by Braga (2009) for Albania is so far the only study which examines the link between remittances and the labor market behavior of youths (aged 15–24) in remittance-receiving households. The author finds evidence that remittances reduce the probability of young people being inactive, which suggests that young people may spend remittances more wisely and/or are less risk-averse (given that for the overall working-age population, labor supply decreases with remittances). The effect is stronger for females. However, the study does not

investigate the link between remittances and youth self-employment. The finding that young people spend remittances more "cleverly" 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 youths.[3] In the case of microcredit, this is because young people lack collateral, whereas the latter is because the head of the household (usually an older person) is the one who receives the transfer.

In summary, studies generally conclude that an increase in remittances discourages active job searches, but there is some evidence that it may promote self-employment. However, the remittances-entrepreneurship debate basically opens the question of whether remittances provide short-term poverty relief without providing the poor with the tools to exit poverty by their own means. If remittances are to have a positive effect on entrepreneurship, these concerns could be dismissed. As mentioned above, these hypotheses have barely been researched in the literature. On the other hand, the effects of other money inflow programs have been analyzed 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; and Lichand (2010) in the context of the Brazilian conditional cash transfers program—to name only a few such studies—all found positive effects of these programs on entrepreneurship, i.e. self-employment.

3. Data and Stylized Facts

3.1 Data and Overview of Remittances

The dataset that we use in this study was 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 was conducted in July-September 2008 and covers 4,173 individuals in 1,211 households. The survey was conducted right before the onset of the global economic crisis,[4] so the relationships studied herein were not affected by the crisis, unless the crisis effect in the sending countries started earlier, which we believe is still an insignificant effect. Also note that this is the only available survey studying remittances at the individual level in Macedonia. The primary focus of this survey was to analyze migration and the households left behind, so there is a multitude of questions about remittances.

The survey is stratified on two levels—region[5] and rural/urban. On the first level of stratification, each region was included in the survey with the number of surveyed households proportional to the total number of households in the particular region. On the second level of stratification, the number of surveyed rural and

[3] Banerjee *et al.* (2013) 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, among other things, alleviation of wealth constraints.

[4] The first quarter when the crisis hit Macedonia was Q4 2008.

[5] There are eight regions in Macedonia: Skopje, Vardar Valley, Pelagonija, Polog, Southwest, Northeast, East and Southeast.

Table 1 Households with a Current Migrant

	Total number of households	The number of households who reported current migrant	Percentage of hh with current migrant who is also immediate family	Remittance receiving households	% of remittance receiving households	% of hh who reported current migrant and who does not send money
Male-headed	695	165	96.8	93	13.4	43.6
Female-headed	516	177	97.9	97	18.8	45.2
Total	1211	342	97.4	190	15.7	44.4

Source: DoTM Survey (2008).

urban households in each region was made proportional to the total number of rural/ /urban households in the particular region. After the number of rural and urban households for each region was determined in this way, households were selected randomly. However, such stratification was reflected in the weights obtained alongside the dataset and these will be used in the analysis hereafter.

Remittance flows represent an important source of income for households in Macedonia and an important source of financing of 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). The upward trend of remittance inflow has been maintained despite the recent crisis—in 2008, before the crisis, remittances amounted to EUR 277 million, while in 2012, after the crisis, they were estimated to have been EUR 294 million (World Bank data).

Table 1 offers some more details on households with a current migrant. About 28% of the households in the survey reported having a migrant in the family. In the majority of cases, the male head of the family is the migrant, resulting in a significantly higher share of female-headed families. In practically all cases (97%), the migrant is a close family member. However, only slightly less than half of the families with migrants, i.e. 15.7% of the total households in the survey, reported receiving remittances. In the case of female-headed households the share of remittance-receiving households is higher, at 18.8%, compared to 13.4% in the case of male-headed households. Nearly 16% of the households in Macedonia receive remittances, with the share being larger for female-headed households. High levels of remittances are in line with the high poverty rates in the country, so in effort to improve their family's life, usually the male head of the household leaves the home and supplements the family income from abroad. Nevertheless, the number of those households that reported a current migrant is apparently double that of those with a current migrant who sends money, and almost all migrants are immediate family members of the respondents in our survey.

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

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 Some Patterns in Remittances Across Different Groups

	Average consumption (euros)	Average remittances (euros)	% 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	0.070	0.158
Albanian	4464	440	0.296	0.175
Macedonian	3213	265	0.089	0.156
Rural	4543	361	0.080	0.178
Urban (other than capital)	2973	356	0.227	0.175
Capital	3687	164	0.051	0.114

Source: DoTM Survey (2008).

usually the male head is the one who (first) migrates. The share of receiving households is larger in urban areas, which may be due to the increased probability of information flows in urban areas, as well as to the reliance on agriculture in rural areas should a household be hit by a major disruption in income or other aspects of their living situation. Migration obviously causes a reduction in the size of the household and an increase in the average age, suggesting that usually younger male members or entire families (parents and children) migrate and those left behind are usually older family members.

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 households, despite having the same consumption level. Another interesting fact is that Albanian households get much higher remittances than

Table 4 Usage of Remittances (in%)

	Consumption of the household (goods, 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).

Macedonian households, though the share of Albanian households receiving remittances is not that much larger than the share of Macedonian households.[6] This suggests that Albanian migrants send larger sums or more frequent remittances. 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 that suffered more during the crisis, such as Italy.

Finally, *Table 4* depicts 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 shares of remittances on education and health, while male-headed, Macedonian, non-poor and urban households are more inclined to invest. Still, the share used for starting a business is still very low. We address this issue in more detail in the next subsection.

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 sub-groupings of our surveyed individuals.

[6] The ethnic distinction between Macedonians and Albanians in Macedonia is important because these are the two constituent ethnicities of the country.

Table 5 Employment and Unemployment Rates (in %)

	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
Youth (15-29)	63.9	38.0	8.5	17.4	31.1
Non-youth	63.4	38.6	11.5	13.4	15.5

Source: DoTM Survey (2008).

The first thing to note is that the employment figure is overestimated while the unemployment figure is underestimated compared to the official figures, largely owing to the reporting of unpaid work. Herein, we treat these individuals as part of the employment rate calculation, while otherwise they may self-report as unemployed persons in the Labor Force Survey.

Expectedly, higher employment rates (of both wage-earning employees and the self-employed) are observed among male-headed households due to the traditional role of women in the society as housewives, child-raisers, etc. In addition, female-headed households receive more remittances from a 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, reveals pronounced differences in the unemployment rate: unemployment is higher among Macedonians compared to ethnic Albanians. Unexpectedly, the employment rate is higher in rural areas (higher than in the capital), likely due to the large amount of unpaid work (or family contributing work) in agriculture. Rural individuals are also more inclined toward self-employment, mainly in the agricultural sector. Finally, the age disaggregation suggests unemployment is twice as high among youths (15–years) than among older people, as well as a weaker inclination toward self-employment among the former.

Table 6 depicts the self-employment rate in households which receive remittances versus those which do not. Some differences in the subgroups are interesting to observe. Male individuals are more inclined toward self-employment in both receiving and non-receiving households. On the other hand, remittance-receiving ethnic Albanians report a significantly higher rate of self-employment than non-remittance-receiving Albanian individuals, while in the case of ethnic Macedonians, the share of remittance-receiving self-employed is significantly lower than in the case of non-remittance-receiving ethnic Macedonians. The business opportunities the capital offers and the agricultural opportunities in the villages likely also steer individuals to

Table 6 Self-Employment Rates for Individuals in Remittance-Receiving and Non-Receiving Households (in %)

	All	Remittance receivers	Non-remittance 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
Youth	8.5	13.0	8.4
Non-youth	11.5	11.3	11.5

Source: DoTM Survey (2008).

Table 7 Percentage of Respondents Thinking that:

a) Money Sent Back May Be Used for Starting a Business

	All	Remittance receivers	Non-remittance receivers
All	6.55	10.79	6.41
Youth	6.16	14.29	5.95
Non-youth	6.7	9.91	6.58

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
Youth	19.5	10.7	19.8
Non-youth	22.7	33.3	22.3

Source: DoTM Survey (2008).

invest some of the remitted money in their own businesses, as compared to the other urban areas where the self-employment rate is low. Finally—and very important for this study—the figures offer early evidence of signals that young persons are more likely to use remittances to fund entrepreneurial activities. Furthermore, remittance-receiving young people appear to have a higher probability on self-employment than the non-young cohort, which otherwise reports a higher share of self-employment than the young group. Interestingly, in the age group of the older cohort, there seems to be no significant difference between remittance receivers and non-receivers with respect to self-employment. Certainly, this is only preliminary evidence and the more rigorous econometric evidence that follows will reveal the statistical significance of those differences.

Still, to give a taste of these preliminary observations, *Table 7* presents some of the answers obtained in the survey, supporting the predisposition of young people

to invest remitted money. Namely, on the question of 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 that the money could be used for starting a business, as compared to the 5.9% of young persons in the non-receiving households and 9.9% of non-young persons in the receiving households.

On the other hand, a smaller share of youths think the government should make it easier for people to set up a business (*Table 7b*). While the likely aversion to staring a business is held by 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 more reluctant to work by changing the value of leisure over work (hence simply being inactive), this regularity may not hold for youths who are likely eager to start a business if access to financing is secured or easy. This aspect will be investigated in more detail later.

Overall, we documented some initial evidence that young members of households may be more inclined to spend remitted money on starting their own business, as compared 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 of young persons to engage in self-employment, we devised the following model:

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

where $\Pr(SE_i)$ is the probability that person i will be self-employed: it takes the value of one if a person is self-employed or zero otherwise; R_i is a dummy variable taking the value of one if a person belongs to a household which receives remittances; Y_i is a dummy variable taking the value of one if a person is young (15–29); R_i*Y_i is the interaction of the latter two; while $\mathbf{z_i}$ 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 will decide to establish a business and be self-employed when the household is a recipient of international remittances. In other words, α_3 measures the entrepreneurial inclination of youths when they find a source of financing in the remittances obtained from the migrants. In addition, we will be observing the coefficients α_1 and α_2, as they respectively measure whether youths are in general more inclined to establish their own businesses and whether remittances support or suffocate the entrepreneurial spirit of people.

The literature includes a multitude of explanations contained here in the vector $\mathbf{z_i}$ (see, for example, Funkhouser, 1992). We will be using the following: educa-

tion, age, age squared, ethnicity, gender, geographical location of households (urban/ /rural/capital), whether the person is married, the number of household members, the availability of financial accounts as a proxy for access to financing; whether the household to which the person belongs owns a house; the log of the household's per capita consumption; and the log of the distance to the main employment centre (the capital, Skopje). A person with a secondary education either completed general or vocational secondary school; a person with tertiary education either completed a university or a post-graduate degree program. 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's being self-employed by including the distance of the household's municipality from Skopje.

4.2 Endogeneity

The estimation of our model (1) faces an important econometric challenge. 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 needed for self-employment. Persons who are more able, more motivated and less risk averse, on the other hand, may be more able to emigrate and more able to engage in self-employment. If we did 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. Remittances would thus tend to be correlated with the unobserved determinants of self-employment, biasing the OLS estimate (Hanson and Woodruff, 2003). Other examples include cases when the decision to migrate follows a failure to establish one's own business due to credit constraints, the regulatory burden and so on; i.e. migration and self-employment are determined simultaneously or when the migrant reduces the amount of money spent after earlier remittances helped establish a business. The endogeneity stemming from both simultaneity and omitted variables (unobserved variables) is well documented in the literature (see, for example, Wooldridge, 2002). Hence, the endogeneity between remittances and self-employment in a household is a major methodological concern.[7]

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, p. 621). Though it is hard to find such instruments, candidates include variables such as the existence of a migrant network, an indicator

[7] Some studies (e.g. Cox-Edwards and Rodriguez-Oreggia, 2009) rely on propensity score matching to estimate remittances' effect on labor market choices. As this technique uses a probit equation for the probability of migration and then matches each receiving household 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, propensity score matching may be associated with a larger bias than the instrumental variable approach. Indeed, McKenzie *et al.* (2010) find that a study using a good instrumental variable works best, in that it overstates the gains from migration by only 9%, while propensity score matching overstates these by 19% to 33%.

Table 8 Assessing the Exogeneity of Instruments

	Migration for non-economic reasons	Other family member migrated before
Logit regression (partial correlations) [a]		
Self-employed	-0.183 [-0.66]	-0.367 [-1.17]
Tetrachoric correlations [b]		
Self-employed	-0.0456 [0.6028]	0.0322 [0.7233]

Notes: [a]The dependent variables are shown in the heading row. Logit is used for estimation. The constant is not reported. T-values in parentheses.

[b] Tetrachoric rho reported. Two-sided exact P given in square brackets, testing the null of independence between self-employment and the instrument.

of whether other member(s) of the broader family previously migrated, an indicator of a non-economic motive to migrate, and an indicator of the wealth of the migrant once he/she settled in the foreign country (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 become self-employed directly, except through remittances.

Given the information at our 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. As for the majority of instruments, their suitability to the particular purpose could be contested, but we try to provide some evidence in favor of their usage as instruments.

The first variable is a dummy created from the question about the motivation to emigrate, where the respondent was able to choose (multiple) options from the following: economic reasons, political reasons, education, marriage/family reunion and other. The dummy takes the value of one for those households that did not select economic reasons as one of the possible choices. Thus, this variable should not be correlated with the self-employed status of the member, following an assumption that the economic reasons for migrating are uncorrelated with the other reasons. However, a counter-argument may be the preference for freedom, which might be higher in self-employment and in the destination country. However, less than 3% of the respondents articulated freedom as a motive to migrate and the results remain highly robust to their exclusion.

The other instrumental variable is a dummy of the existence of at least one close family member who previously migrated from the same country of departure. Apparently, this could be a weaker instrument from the economic point of view: while departure may be triggered (facilitated) by the fact that the migrant has relatives to rely on in the destination country, it still may be motivated by economic reasons; or it may be that the family possesses a general spirit of entrepreneurship, driving both decisions to become self-employed and to emigrate. Hence, it may be that it affects the self-employment decision directly.

Therefore, *Table 8* offers two pieces of information to assess instrument exogeneity: panel (a) checks for the statistical partial correlation of the instruments by regressing each of the instruments on the dependent variable from the second-

stage regression (the self-employment dummy). Both coefficients are statistically insignificant, pointing to their non-partial correlation with the self-employment variable. Panel (b) presents the tetrachoric correlations between self-employment and each instrument: the correlations are statistically not different than zero. Both findings thus give some support for using the two proposed variables as instruments.

Given that we have grounds for concern that simultaneity (i.e. reverse causation) and also omitted variables (due to unobserved variability) both 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 literature on remittances. Therefore, our approach will contribute to the currently sparse knowledge and applications in this specific domain.

4.3 Method of Estimation

We start our analysis by presenting the results of a standard IV probit method. However, while IV-probit considers a binary dependent variable and addresses 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 context, referred to as conditional mixed-process systems, or CMP, allowing for a probit regression with an endogenous dummy regressor. The CMP method is parametric, meaning that distributional assumptions are imposed on the model, which leads to higher efficiency. The standard IV approach, however, does not; there is an implied trade-off between both estimators. The 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, with 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, while the rest are reduced-form.

According to Roodman (2011), the CMP space contains 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 dataset 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 the CMP method, study the effects of male and female microcredit borrowing on household outcomes such as consumption and school enrolment in Bangladesh. Instances of 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 particular gender. (Notice the mix of processes too: log consumption is continuous and unbounded, enrolment is binary and credit is censored from the left. Similarly, in this study, we have a mix of two processes: the remittances dummy is binary, as is the decision of whether to engage in self-employment.)

Table 9 Baseline Results

	OLS	Probit	IV probit		CMP	
	(1)	(2)	(3)	(4)	(5)	(6)
			First-stage regression	Second-stage regression	First-stage regression	Second-stage regression
Primary education (1 = person has a primary education)	0.156***	0.365***	1.221***	1.221***	1.233***	1.235***
	(-0.00158)	(-0.0125)	(-0.0324)	(-0.0324)	(-0.0325)	(-0.0326)
Secondary education (1 = person has a secondary education)	0.0458***	0.170***	0.812***	0.811***	0.825***	0.827***
	(-0.00137)	(-0.00699)	(-0.0323)	(-0.0323)	(-0.0324)	(-0.0325)
Tertiary education (1 = person has a tertiary education)	0.0755***	0.258***	0.949***	0.948***	0.962***	0.964***
	(-0.00147)	(-0.011)	(-0.0324)	(-0.0324)	(-0.0325)	(-0.0326)
Age (in years)	0.0307***	0.0355***	0.164***	0.164***	0.164***	0.164***
	(-0.0003)	(-0.00035)	(-0.00159)	(-0.00159)	(-0.00159)	(-0.00159)
Age squared	-0.000349***	-0.000402***	-0.00185***	-0.00185***	-0.00185***	-0.00185***
	(-3.39E-06)	(-3.99E-06)	(-1.78E-05)	(-1.78E-05)	(-1.78E-05)	(-1.78E-05)
Albanian (1 = Albanian; 0 = Macedonian)	0.0587***	0.0599***	0.257***	0.257***	0.256***	0.256***
	(-0.00103)	(-0.001)	(-0.00401)	(-0.00402)	(-0.004)	(-0.004)
Gender (1 = male; 0 = female)	0.138***	0.134***	0.616***	0.615***	0.608***	0.609***
	(-0.0007)	(-0.00069)	(-0.00336)	(-0.00336)	(-0.00338)	(-0.00338)
Capital (1 = Skopje region, 0 = otherwise)	0.234***	0.321***	1.137***	1.137***	1.131***	1.132***
	(-0.00183)	(-0.00355)	(-0.0101)	(-0.0101)	(-0.0101)	(-0.0101)
Rural (1 = rural areas, 0 = otherwise)	0.0607***	0.0552***	0.244***	0.244***	0.243***	0.243***
	(-0.001)	(-0.00096)	(-0.00397)	(-0.00397)	(-0.00394)	(-0.00394)

Married (1 = married, 0 = otherwise)	0.00105	0.00127	0.00112	0.000833	-9.37E-05	0.000451
	(-0.00105)	(-0.00107)	(-0.00478)	(-0.00478)	(-0.00475)	(-0.00475)
Number of household members	0.00331***	0.00433***	0.0155***	0.0153***	0.0131***	0.0137***
	(-0.00033)	(-0.00031)	(-0.00149)	(-0.00149)	(-0.00147)	(-0.00147)
Own house (1 = the household owns a house, 0 = otherwise)	-0.00667***	-0.00975***	-0.0517***	-0.0520***	-0.0538***	-0.0529***
	(-0.00087)	(-0.00084)	(-0.00381)	(-0.00381)	(-0.00377)	(-0.00377)
Log of distance to main employment center	0.0462***	0.0484***	0.224***	0.224***	0.224***	0.224***
	(-0.00036)	(-0.00047)	(-0.002)	(-0.002)	(-0.00199)	(-0.00199)
Youth (1 = aged 15–29, 0 = otherwise)	0.0506***	0.0628***	0.266***	0.265***	0.261***	0.262***
	(-0.00155)	(-0.00186)	(-0.00729)	(-0.00729)	(-0.00727)	(-0.00727)
Remittances (1 = the household receives remittances, 0 = otherwise)	0.0515***	0.0507***	-0.337***	-0.362***	-0.417***	-0.370***
	(-0.00299)	(-0.00296)	(-0.0394)	(-0.0393)	(-0.0218)	(-0.0222)
Youth*remittances	-0.0934***	-0.0530***	0.244***	0.268***	0.332***	0.286***
	(-0.00523)	(-0.00435)	(-0.0441)	(-0.0439)	(-0.0307)	(-0.031)
Constant	0.156***	0.365***	1.221***	1.221***	1.233***	1.235***
	(-0.00158)	(-0.0125)	(-0.0324)	(-0.0324)	(-0.0325)	(-0.0326)
Amemiya-Lee-Newey minimum chi-sq statistic (*p*-value) H_0: Instruments are valid	-	-	0.3624	0.5602	-	-
First-stage results						
Instrument: Non-economic motive to migrate					1.675***	1.667***
Instrument: Other family member already migrated before						0.386***
Observations	1,211	1,211	1,211	1,211	1,211	1,211

Notes: *,** and *** signify statistical significance at the 10, 5 and 1% level, respectively. Reported coefficients represent marginal effect at the mean, while standard errors reported in parentheses. All estimates corrected for heteroskedasticity. Standard errors have been clustered at the household level.

Source: Authors' calculations.

5. Results and Discussion

5.1 Baseline Findings

Table 9 presents the baseline results; marginal effects are reported and standard errors are in parentheses. For the purpose of comparison, column (1) presents the OLS estimates and column (2) presents probit estimates. The first is biased and inconsistent due to the binary dependent variable, while the latter suffers from 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 a migration network. Column (4) uses only the first instrument, while (5) uses both. Toward the bottom of the table, the Amemiya-Lee-Newey test tests the null hypothesis that instruments are valid and in both cases it fails to reject the null hypothesis. In columns (5) and (6) we go a step further by utilizing the CMP procedure. The bottom of columns (5) and (6) presents the coefficients in front of the instruments in the first-stage regression (the other coefficients are available on request). Their significance also justifies their usage as instruments.

The non-IV estimates in columns (1) and (2) give plausible estimates of the coefficients. We will focus attention on the remittances variable, which is suspected of endogeneity. These results suggest that persons in households which receive remittances are more inclined to be self-employed; however, the probability that a young household member will utilize remittances for establishing a business is lower than that of their non-young counterparts in non-receiving households. However, this may be counterintuitive, firstly because the literature has generally documented the dependency that remittances produce, i.e. the reduced probability of employment due to remittances, and secondly because of some observations in Section 3 suggesting that youths in households receiving remittances expressed a more positive attitude toward supporting their entrepreneurial spirit. Therefore, we were likely right to doubt endogeneity.

That this may be the case is supported by evidence provided in the IV estimates in columns (3) and (4) and in their CMP counterparts in columns (5) and (6).[8] The results across these columns are similar, suggesting that they are relatively insensitive to the particular combination of instruments employed. As the 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. The results suggest that if a household receives remittances, the probability of a member being self-employed declines by between 37% and 42%, compared to non-receiving households. This result is largely confirmed in the literature investigating the effect of remittances on employment overall; e.g. Dermendzhieva (2010) documents 20% to 50% lower probability of working (depending on the method used) for a member of a remittance-receiving household compared to a non-receiving one.

However, when it comes to young members of receiving households, the probability of establishing their own business is 29% to 33% higher than that of their non-young counterparts in non-receiving households. Hence, while the literature likely

[8] Due to space constraints, we do not report the remaining variables' coefficients for the remittances equation. These are available on request.

documented the "parasitism" effect of remittances, it likely overlooked the entrepreneurial spirit of young persons who likely recognize financing from remittances as a resource to channel into longer-term productive usage.

The other variables included in the analysis have largely consistent coefficients across specifications, lending confidence with regard to the robustness of the results. We will briefly review the findings. Having a primary education increases the probability of self-employment by 123% compared to a person without education. This coefficient is larger than those at the secondary and tertiary education levels, 83% and 96%, respectively, likely due to the need of many low-educated persons to find self-employment in low-paid work such as in agriculture, handicrafts, as artisans and the like. An additional year of age increases the probability of self-employment by about 16%, on average, but only up to about 44 years of age, which may be a bit high.

Ethnic Albanians are more inclined, toward self-employment (on average by 26%) than ethnic Macedonians. Males are more inclined to take risks, by 61%, compared to females, which is expected in a highly patriarchal-minded society. Persons living in the capital have a 113% higher probability of self-employment than in the other urban areas, presumably due to the role the capital has as an economic, financial and political center. Given the large agricultural sector, rural areas have a 24% higher probability of generating their own businesses. If the household owns a house, then the probability of self-employment declines. The more distant the place of residence is from the capital, the higher the probability that one will establish his/her own business; while we found that the probability of investing in one's own business is highest in the capital, this result points to the differences in employment opportunities within the country: less attractive opportunities in the other places compared to the capital likely motivates people to consider establish their own businesses. Finally, young persons have a 26% higher probability of being self-employed than non-young persons. This is expected, given their reduced aversion to risk due to age.

Overall, we documented the usual result in the literature that remittances reduce the probability of establishing a business, i.e. they create a type of dependence among the recipients. However, we also documented a result that is largely unknown in the literature—that remittances increase the probability of a young person establishing their own business, i.e. remittances may encourage 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 will return to this in Section 6.

5.2 Further Discussion and Robustness Checks

Table 10 provides further evidence in favor of our results presented in the previous section. The table offers differential analysis according to gender, ethnicity and geography, i.e. it identifies the differential remittances' effect on self-employment by gender, ethnicity and the urban-rural divide. The section also serves as a robustness check of the established regularities. Here we focus our attention on the variable of interest—youths in households receiving remittances—along with the differential

Table 10 Differential Analysis

	CMP estimates: second-stage regression reported only		
	Ethnic divide	Gender divide	Urban/rural divide
	(1)	(2)	(3)
Primary education	1.232***	1.227***	1.218***
	(-0.0326)	(-0.0326)	(-0.0327)
Secondary education	0.823***	0.818***	0.831***
	(-0.0325)	(-0.0325)	(-0.0326)
Tertiary education	0.961***	0.964***	0.969***
	(-0.0326)	(-0.0326)	(-0.0326)
Age (years)	0.165***	0.165***	0.165***
	(-0.00159)	(-0.00159)	(-0.00161)
Age squared	-0.00186***	-0.00186***	-0.00187***
	(-1.78E-05)	(-1.78E-05)	(-1.80E-05)
Albanian (1 = Albanian; 0 = Macedonian)	0.244***	0.260***	0.252***
	(-0.00452)	(-0.00401)	(-0.00402)
Gender (1 = male)	0.609***	0.587***	0.610***
	(-0.00338)	(-0.00383)	(-0.00339)
Capital	1.130***	1.132***	1.115***
	(-0.0101)	(-0.0101)	(-0.0103)
Rural	0.243***	0.244***	0.293***
	(-0.00394)	(-0.00395)	(-0.00438)
Married (1 = married)	-8.07E-06	0.00829*	0.0178***
	(-0.00476)	(-0.0048)	(-0.00479)
Number of household members	0.0137***	0.0127***	0.0119***
	(-0.00147)	(-0.00148)	(-0.00148)
Own house (1 = the household owns a house)	-0.0529***	-0.0513***	-0.0581***
	(-0.00378)	(-0.00379)	(-0.00378)
Log of distance to main employment center	0.224***	0.225***	0.223***
	(-0.00199)	(-0.00199)	(-0.002)
Youth (1 = aged 15–29)	0.251***	0.178***	0.322***
	(-0.00767)	(-0.00899)	(-0.0085)
Remittances (1 = the household receives remittances)	-0.374***	-0.400***	-0.403***
	(-0.0222)	(-0.0223)	(-0.022)
Youth*remittances	0.223***	0.832***	0.576***
	(-0.0384)	(-0.0328)	(-0.0425)
Youth*Albanian	0.0428***		
	(-0.00822)		
Youth*Albanian*remittance	0.123***		
	(-0.0443)		

Youth*male		0.138***	
		(-0.00825)	
Youth*male*remittance		-	
Youth*rural			-0.159***
			(-0.00909)
Youth*rural*remittance			-
Youth*capital			0.0185**
			(-0.00931)
Youth*capital*remittance			1.759***
			(-0.0686)
Constant	-6.907***	-6.905***	-6.953***
	(-0.0476)	(-0.0477)	(-0.0479)
Observations	1,211	1,211	1,211

Notes: *, ** and *** signify statistical significance at the 10, 5 and 1% levels, respectively. The reported coefficients represent a marginal effect at the mean, while standard errors are reported in parentheses. All estimates have been corrected for heteroskedasticity. Standard errors have been clustered at the household level.

Source: Authors' calculations.

effects presented toward the bottom of the table. The CMP estimator is used (the first-stage results are available only on request).

While we concluded that youths in remittance-receiving households have an overall higher probability of establishing their own businesses, we hereby find that the likelihood of ethnic Albanian youths is, on average, 4.2% higher than that of ethnic Macedonians. This is a relatively small difference at the aggregate level, but it is much larger when focusing on households which receive remittances. In this case, the probability of ethnic Albanian youths investing is about 12 percentage points higher than for ethnic Macedonian youths. This may be ascribed to the larger amounts of remittances received and the closer connections of ethnic Albanians with their diaspora.

Male youths are more inclined to establish their own businesses, suggesting that 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 estimates for both genders, likely due to the small number of respective observations. Similarly, rural youths were found to have a weaker entrepreneurial spirit than urban youths, but it was not possible to make separate estimates for those in remittance-receiving households. On the other hand, youths in the capital are slightly more inclined to invest than are other urban youths; moreover, the probability that a young person in a household residing in the capital who receives remittances will invest some of the remittances in a business is found to be about 176% higher than that of other urban youths.

Table 11 provides some further robustness checks through heterogeneity analysis, i.e. through addition of variables that may have an effect on the decision to engage in self-employment. Column (1) uses the widespread definition of youth

Table 11 Heterogeneity

	CMP estimates: second-stage regression reported only			
	Youth (15–24)	Government's role for jobs	Government's role for business climate	Remittances produce laziness
	(1)	(2)	(3)	(4)
Primary education	1.231***	1.238***	1.236***	1.205***
	(-0.0329)	(-0.0326)	(-0.0326)	(-0.0326)
Secondary education	0.835***	0.827***	0.829***	0.842***
	(-0.0328)	(-0.0325)	(-0.0326)	(-0.0325)
Tertiary education	0.964***	0.966***	0.966***	0.952***
	(-0.0329)	(-0.0326)	(-0.0326)	(-0.0326)
Age (years)	0.104***	0.164***	0.164***	0.168***
	(-0.0014)	(-0.00159)	(-0.00159)	(-0.00161)
Age squared	-0.00122***	-0.00185***	-0.00185***	-0.00190***
	(-1.64E-05)	(-1.78E-05)	(-1.78E-05)	(-1.80E-05)
Albanian (1 = Albanian; 0 = Macedonian)	0.255***	0.254***	0.256***	0.283***
	(-0.00401)	(-0.00401)	(-0.00401)	(-0.00406)
Gender (1 = male)	0.609***	0.608***	0.609***	0.607***
	(-0.00336)	(-0.00338)	(-0.00338)	(-0.00339)
Capital	1.139***	1.144***	1.132***	1.153***
	(-0.0101)	(-0.0101)	(-0.0101)	(-0.0102)
Rural	0.246***	0.242***	0.243***	0.261***
	(-0.00396)	(-0.00394)	(-0.00395)	(-0.00397)
Married (1 = married)	-0.0219***	0.00167	0.000615	-0.0150***
	(-0.00476)	(-0.00476)	(-0.00475)	(-0.00478)
Number of household members	0.0203***	0.0118***	0.0138***	0.0109***
	(-0.00147)	(-0.00148)	(-0.00147)	(-0.00149)
Own house (1 = the household owns a house)	-0.0333***	-0.0544***	-0.0528***	-0.0389***
	(-0.00377)	(-0.00378)	(-0.00377)	(-0.00382)
Log of distance to main employment center	0.223***	0.228***	0.224***	0.221***
	(-0.00199)	(-0.00201)	(-0.00199)	(-0.00203)
Youth (1 = aged 15–29)		0.256***	0.262***	0.263***
		(-0.00728)	(-0.00727)	(-0.00737)
Remittances (1 = the household receives remittances)	-0.148***	-0.359***	-0.361***	-0.257***
	(-0.0224)	(-0.0223)	(-0.0223)	(-0.0227)
Youth * remittances		0.269***	0.277***	0.184***
		(-0.0311)	(-0.031)	(-0.0313)
Youth (1 = aged 15–24)	-0.213***			
	(-0.00892)			
Youth * remittances	0.420***			
	(-0.0386)			

Role of government for jobs (1 = thinks that the government should provide better jobs)	-	-0.0513***	-	
		(-0.00326)		
Role of government for business climate (1 = thinks that the government should improve business climate)	-	-	-0.0279	
			(-0.00395)	
Laziness role of remittances (1 = strongly agree to 5 = strongly disagree)	-	-	-	0.0199***
				(-0.0011)
Constant	-5.556***	-6.871***	-6.901***	-7.039***
	(-0.0442)	(-0.0477)	(-0.0477)	(-0.0481)
Observations	1,211	1,211	1,211	1,211

Notes: *,** and *** signify statistical significance at the 10, 5 and 1% level, respectively. Reported coefficients represent marginal effect at the mean, while standard errors reported in parentheses. All estimates corrected for heteroskedasticity. Standard errors have been clustered at the household level.

Source: Authors' calculations.

(15–24 years of age) instead of the national definition (15–29) we used above. The other three columns add other variables: column (2) adds the opinion of whether the government should be responsible for securing better jobs; column (3) the opinion of whether the government ensures a favorable 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 certainly reflect statistical correlation, but this does not necessarily imply a causal relationship. The baseline findings remained robust to this analysis.

The three added variables have the expected signs, though the second one is insignificant. If a person holds the government responsible for providing jobs and is also discouraged by the business climate, then the probability of establishing his/her 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 a private initiative is always perceived as being very risky and is thus part of a discouraging business environment. The coefficient on the third added variable—the perception of whether remittances create dependence—suggests that the more a person disagrees that remitted money causes people to be lazy, the greater the probability that the person will engage in establishing a business.

6. Conclusions and Policy Implications

The objective of this study is to investigate whether youths in households receiving remittances in Macedonia have a higher probability of establishing their own businesses. In addition, we investigated whether the effect of remittances on the youth labor supply is homogenous across the genders and ethnic and rural/urban divides. We used the DotM 2008 Remittance Survey, which is a very comprehensive survey on many aspects of migration and remittances. The instrumental variables approach was used to address the potential endogeneity of remittances with respect to

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

The results robustly suggest that youths in households receiving remittances have a considerably higher probability of establishing their own businesses, ranging between 28% and 33% compared to their non-young and non-receiving counterparts. This suggests that remittances indeed have a strong potential to encourage the entrepreneurial spirit of youths in Macedonia. The study also documented the widespread result in the literature that remittances in general likely create dependence and reduce the probability of establishing one's own business, which is in line with the risk aversion that likely increases with age. However, this result does not apply for youths—a finding largely absent in the referent literature. Also, we found that youths in general have a higher probability of establishing a business. With respect to the differential analysis, we documented that ethnic Albanian youths in receiving households have a higher likelihood entrepreneurialism, likely due to the larger amount of remittances received and closer connections with their diaspora than compared to ethnic Macedonians, while remittance-receiving youths have a much higher probability of establishing their own businesses in the capital than in other cities.

Given these findings, the main policy recommendation ensuing from this analysis is that the government should start devising a strategy for channeling remitted money into more productive use, especially by converting those funds into jobs for youths.

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