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Edlira Narazani

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The wiiw Balkan Observatory

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Labour supply, remittances and the new flat tax in Albania

Edlira Narazani¹

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In this paper we use Living Standard Measurement Survey (2005) to analyze the effects of remittances on the labor participation decisions of the Albanian non-migrants. We apply a micro-econometric two-sector labour supply model where the individuals remaining in Albania are allowed to choose among several labour market alternatives (non-employment, part time, full time and extra-time) together with the choice of being self-employed or wage workers. The estimated coefficients of the utility function indicate a positive effect in average of the remittances' receipt on the preferences for leisure for both males and females. However, using the estimated coefficients of the utility function to simulate the effect of a percentage increase in remittances on hours worked, we find that non-migrant substitute income for leisure only in case they are wage workers while a labour incentive effect is observed for the self-employed. The flat tax would make labour behaviour of individuals in Albania more neutral versus remittances due to their shift in budget constraint especially in case of self employed.

Keywords: Migration, remittances, Labor supply, discrete choice models, inequality, poverty.

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1. Introduction

Migration and remittances have been increasing in Albania during the last 18 years, generating significant welfare gains either for the whole country or for the immigrants themselves. Remittances may affect labour supply by reducing the supply of labour provided by household members who use this remittance benefit to buy leisure. This reduction in supplied labour is known in the neo-classical labour supply literature as an income effect and is generally not a concern as it represents part of the welfare gain from remittances. By contrast, remittances may induce the individuals to supply less labour if the migrant conditions the remittance on low household income. Such an effect will reduce the welfare gain from remittances by distorting the household labor decisions. Despite, it is worthwhile to investigate which of them is prevailing.

Looking at the overall effect, a rise in remittances reduced labor force participation in Managua, Nicaragua but increased self-employment (Funkhouser 1992). Remittances were estimated to reduce the participation rates of remaining household's heads in a number of Caribbean countries although the direction of causality was hard to establish (Itzigsohn 1995). Yang (2004) points to more encouraging labor supply effects than the standard model when he determined that remittances reduce the supply of child labor but increase that of adult labor. Rodriguez et al. (2001) show that migrants reduce the labour supply of Philipines non-migrant relatives, and this benefit is generally higher for men. Amuedo-Dorantes and Pozo (2006) find that in Mexico, remittance flows only reduce female labour supply while male labour supply remains unaffected. The effect of remittances on labour supply changes by gender and also by regions.

As regards the impact of remittances on poverty and inequality, remittances are believed to reduce the poverty headcount ratio in Ghana and Bangladesh (Adams 2005) while in Guatemala they reduce the depth and severity of poverty (Adams 2004). Wodon et al. (2002) find a decreasing effect of remittances in the headcount poverty ratio in Mexico arguing that this is quite comparable with government programs targeted in reducing poverty. Despite the negative effect of remittances on poverty, their impact on inequality is ambiguous. Nevertheless, analysing the impact of remittances on the inequality is not of great importance seeing that remittances are merely non-labour income and not related to government policies.

Many researchers have analyzed peculiar aspects of Albanian migration concentrating mostly on the determinants of emigration and remittances. King (2005) depicts the characteristics of the Albanian migration with a special focus on the relationship between migration and economic and

social development through financial channels, such as remittances and demographic ones such as the migrant selection and return migration. Furthermore, Konica and Filer, 2005 show that remittances had an income effect that brought to a reduction in female labour supply. Azzarri et al. find a potential disincentive effect on labour effort and participation which may be worried, according to them, as “would have implications in terms of missing opportunities for development”. Other studies has dealt with the relationship between migration and poverty (Zezza et al., 2005), and on the propensity to emigrate (Castaldo et al., 2005). Most of these studies are macroeconomic studies; nevertheless migration is an individual choice, thus what this research attempts to do is to fill-in the gap in economic studies of migration and remittances at micro level and bringing new insights with respect to individual decision on migration labour supply and remittances.

On the other hand, although these contributions are interesting and useful in easing the empirical implementation of theoretical results, they suffer from a possible inconsistency between the theoretical model and empirical ways of their implementation. Their limitations are mostly due to the negligence of limitations on the choice of hours of work and the participation decisions and hour's decisions not simultaneously accounted, no clear modelling of hour's decisions or participation decisions. Furthermore, despite the fact that a wide strand of economic research has investigated the effects of remittances on a variety of topics such as labor supply participation of households composed of migrant individuals, there is no a formal analysis of the impact of remittances on labor supply and income inequality for Albania. Hence, the aim of this paper is to tackle several questions. Do remittances affect the labor participation decisions of emigrant households in Albania? If yes, what is the sign of this affect? Does this effect differ for wage employees and self-employed? What is the impact of remittances on inequality and poverty? In addition, other questions are addressed as regards the implementation of a flat tax in Albania. Is the new flat tax more redistributive than the previous one in terms of income and welfare? Does the new flat tax result in labour incentives or disincentives? How the flat tax would affect the labour supply reaction to remittances?

In this spirit, we will investigate the microeconomic implications of remittances on the well-being of individuals by focusing on the labor supply behaviors and income inequality in order to conclude on the dependency rate of Albania from the remittance and migration patterns. Secondly, we analyze the impact on individual behavior and welfare from reducing the progressivity in the tax system replacing the 2007 tax system by a 10 percent flat tax. Third the microeconomic impact on labour supply and inequality will be confronted using both tax systems.

We have employed a micro econometric model of labor supply developed by Dagsvik et al. (2007) to simulate labor supply responses and welfare of individuals under both tax rules. This is called a “two-sector” labour supply model and allows individuals to face choice sets of feasible jobs within some sectors, in our case the self employed and dependant employees. In Dagsvik et al. the choice of feasible jobs is done within private and public sectors. Nevertheless, in Albania, it is more realistic to assume that individuals might rather choose among the self employment or non self-employment spells rather than working in private or public sectors. In effect, we show that negative labour supply responses to remittances shadow stronger and different inter-sectors responses for both genders but at diverse magnitudes. Furthermore, this study considers individual labour supply behaviours as the insufficiency of data on remittances doesn’t consent focusing on married couples whose behaviour is more motivating for policy implications.

To our knowledge, there are no studies done in the migration field employing a two-sector labour supply microeconomic model. The simulation methods might be more promising than estimating linear or nonlinear regressions.

This paper is organized as follows. The next section depicts the Albanian migration experience and the changes in the fiscal systems. In the section 3, the model is explained briefly. The section 4 describes the data and the estimation results while the last section concludes.

2. Description of data and the Tax system in Albania

Aggregate Data

Until July 2007, the personal income taxation was composed of 5 tax brackets such as below:

Table 1

Personal Income Tax before July 2007			
Over (in All)	To (in All)	All	Percentage
0	14000	0	+1% of the amount over 0
14000	40000	140	+5% of the amount over 14000
40000	90000	1440	+10% of the amount over 40000
90000	200000	6440	+15% of the amount over 90000
200000	+	22940	+20% of the amount over 200000

Note: Fact sheet No.7 Taxation, Albinvest

Since July 2007, a new tax rule is implemented with the intention of encouraging the legalization of the evaded labour, simplifying tax collection and also drawing creates a friendlier investment climate ask foreign direct investment. Considering this new taxation rule, personal income are taxed by a flat tax of 10% which results to be one of the lowest tax rates in the world. Income under 10000 leke will be tax exempted. Albanian government decided to adopt the flat tax following the “successful” story of many ex-communist countries such as Estonia, Russia, Rumania, Latvia, Slovakia, Ukraine, Georgia, Macedonia and Serbia. Nevertheless, these radical reforms embraced by the above countries have been subject neither of ex-ante nor ex-post analysis, (Keen et al.). The advocates of “flat tax” dedicate the successful performance of Baltic countries to the simplicity and efficiency of this reform without giving any explanation on the Slovenia case which is one of the best “pupils” of the Balkan performing successfully without any flat tax.

Table 2 shows the trend of remittances as a percentage of imports, exports, trade of balance and GDP for the period 1996-2005 in Albania. The structural break with reference to the year 1997 was due to the collapse of pyramid schemes. After that year, due to the internal and external migration the number of Albanian population dropped drastically and especially that male. These large flows of migrants have contributed through their remittances significantly to the improvement of the economic life of the Albanian households and GDP.

Table 2

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005
Workers'remittances	500	267	452	368	531	615	632	778	1,028	1,161
Remittances to import (%)	54%	38%	56%	39%	49%	46%	43%	44%	47%	47%
Remittances to TB (%)	74%	50%	75%	56%	65%	60%	55%	58%	65%	64%
Remittances to GDP (%)	<u>15%</u>	<u>11%</u>	<u>16%</u>	<u>11%</u>	<u>14%</u>	<u>15%</u>	<u>14%</u>	<u>13%</u>	<u>14%</u>	<u>14%</u>
GDP	3,360	2,375	2,768	3,490	3,709	4,114	4,505	5,859	7,549	8,380

Source: Bank of Albania

Figures in Millions of USD

LSMS Data

In this study WE have used the dataset extracted from the Living Standard Measurement Survey (LSMS), 2005 for Albania. This survey contains information on 3638 households at a national level covering 17302 individuals and provides individual level and

household level socio-economic data from urban and rural areas in Albania. The sample was designed to be representative of Albania as a whole, Tirana, other urban/rural locations, and the three main agro-ecological areas (Coastal, Central, and Mountain). This dataset provides useful information as regards main labour supply variables such as hours and disposable income. Also data on remittances, migration history of household members, temporary or permanent character of migration, illegal or legal feature and the informal or formal money transfer can be retrieved. Also data on the social and demographic characteristics as regards especially number of children, age and education are generously provided by the dataset. Nevertheless, the structure of the households is quite complicated as it incorporates other households. In the same time, being household head doesn't mean being the first breadwinner. In fact for many of these composed households, especially in the northern part of the country, the household head position is just simply assigned to the oldest member of the household who might be often non active anymore in the labour market.

However, as the main intention of this study is the impact of the remittances on the labour participation segregated by sectors (self-employed and wage workers), below we show the labour participation rates by gender and sector and their remittances in average. In the selected sample, the labour participation rates among women is 55% while among men is 83%. Both for men and women operating in the wage employment sector, we notice only one peak at the full time alternatives while as for those working as self-employed, other peaks at part time and extra time alternatives are pointed up in addition to the full-time alternative. Looking at the average values of remittances across sectors and alternatives, remittances do mainly go to those men working full and part time in case of being self employed and full and extra time in case of being wage worker. As regards women, the highest share of remittances is received by those who don't work at all succeeded by those who work full time.

Table 3: Distribution of Men and their received average remittances

Hours Interval	Percentage	Self	Percentage	Wage Worker
0	17.08%	874	17.08%	874
1-16	1.90%	580	0.92%	1650
18-33	17.58%	1301	4.23%	8968
35-48	37.29%	3024	66.01%	2277

49-64	29.89%	1189	23.37%	1262
65-80	13.33%	760	5.46%	703
All	100.00% (1365)	1824	100.00% (2247)	4622

Table 4: Distribution of Women and their received average remittances

Hours Interval	Percentage	Self	Percentage	Wage worker
0	44.99%	3522	44.99%	3522
1-16	6.84%	1224	1.44%	311
18-33	31.60%	1276	3.71%	1341
35-48	37.92%	5737	83.85%	595
49-64	18.88%	670	10.05%	489
65-80	4.76%	1424	0.96%	4318
All	1345	2857	2620	2634

Note: 1st column refers to the labour supply alternatives, the 2nd and the 4th columns refer to the distribution of individuals across alternatives while the 3rd and the last column refer to the average values of remittances received.

3. Micro-econometric modelling

In this paper we employ a microeconomic model of labour supply similar to random utility model developed by Dagsvik and Strom (2007). This is a two-sector model of labour supply and can be considered as an extension of the standard multinomial logit model where the individuals have preferences over sectors and latent job attributes. Only individuals remaining in Albania either in couple or singles are considered while the behaviour of other family members is taken as exogenous. Let $U(X, h, z)$ be the utility function of an individual, where X is his net individual income, h is hours of work and z indexes jobs. If $B(j)$ is a set composed of two working sectors, an individual faces two wage rates specific for each sector represented by the vector $W(W_1, W_2)$. Let $\Omega(h)$ be the set of available jobs with offered hours h . Let $m_j(h)$ be the number of jobs in the choice set $\Omega(h)$ for each sector, and $\theta_j = \sum_{h>0} m_j(h)$ the total number of

jobs available in the labour market. Then, $g_j(h) = \frac{m_j(h)}{\theta_j}$ is the fraction of feasible jobs with h hours in the sector j . $\Omega(0) = \{0\}$ and $m(0) = 1$ correspond to the nonmarket alternative.

For given hours of work and the wage rates, net individual income is given as:

$$(1) \quad X = f(W_j h, Y)$$

where $f(\cdot)$ is a function that transforms gross individual incomes into net incomes. The gross incomes are labour income $W_j h$, capital income and a set of exogenous variables Y . Household remittances are included among exogenous variables. A five tax bracket regime is applied to the gross incomes if the individuals declare to be entitled to social security benefits.³

In the two-sector framework, the utility function is assumed to have the form of

$$(2) \quad U(X, h, R, z) = \kappa_j v(X, h, R) \varepsilon_j(z)$$

where $v(\cdot)$ is a positive deterministic part which depends on net disposable income, working hours h and a dummy variable R (which takes value one if the household receives remittances and zero otherwise), $\varepsilon_j(z)$ is a positive random taste shifter which accounts for unobserved individual characteristics and unobserved job specific attributes.⁴ κ_j represents the average taste for working in sector j where j takes the value 1 and 2 referring respectively to the sectors of self-employment and wage worker and zero and when $z = 0$ (thus non working taste).

Let $\Psi(h, W, Y, R) = v(f(hW, Y), h, R)$. If the agent chooses the alternative that maximizes his utility function, the probability that a given individual chooses sector j and hours (h) is given by:

³ The tax rule is applied on yearly gross income which is generated by multiplying the average weekly income by 52 (number of weeks per year). In order to simulate potential in-work disposable income for those who are observed to be out of work in the data, the hourly earnings equation is estimated after having estimated the inverse Mill's ratio. Considering the high share of evaded labour, the taxes and social security contribution are set to zero for all those individuals who declare to not be entitled to social security benefits at main job.

⁴ The taste shifter is assumed to be i.i.d across jobs and agents.

$$(3) \quad P_j(h; W, Y, R) = \frac{\Psi(h; W_j, Y, R) g_j(h) \theta_j \kappa_j}{\Psi(0; 0, Y, R) + \sum_{j \in B} \sum_{h \in \Omega} \Psi(h; W_j, Y, R) g_j(h) \theta_j \kappa_j}$$

$$(4) \quad P_j(0; 0, Y, R) = \frac{\Psi(0; 0, Y, R)}{\Psi(0; 0, Y, R) + \sum_{j \in B} \sum_{h \in \Omega} \Psi(h; W_j, Y, R) g_j(h) \theta_j \kappa_j}$$

where $g_j(h)$, $j=1,2$ denotes the opportunity density of offered hours in sector j and θ_j , $j=1,2$ represent the availability of jobs in sector j . The equation (4) stands for the probability of choosing the non-employment alternative. The preference parameter κ_j cannot be separated from θ_j without additional assumptions and in order to achieve identification is set to 1.

3.1 Utility function specification

For the utility function we assume a conventional flexible form, quadratic function which represents a second-order Taylor series expansion in income and leisure.

$$(5) \quad v(X, h, R; b) = b_x X + b_h (T - h) + b_{xx} X^2 + b_{hh} (T - h)^2 + b_{xh} X (T - h) + b_R R (T - h)$$

“ b ” represent the utility parameters to be estimated. The “ $T - h$ ” stands for leisure. The last term refers to the interaction created between the dummy variable of remittance receipt and leisure. We also let the variables capturing individual characteristics be interacted with the main utility arguments (income and leisure) as they can’t be estimated alone due to the invariability across alternatives.

Individual characteristics are related to age, employment sectors (agriculture, manufacturing and public), household position (head, spouse or child), number of children (number of children 0-5 years, 6-10 years, total number of children), regional dummies (coastal, central, mountain and the capital), and urbanization (urban and rural). The remittances are calculated as the sum of the total remittances sent in the last year by the migrating children who are either abroad or returned. This sum is further indexed to be compatible with the labour earning which are used on a monthly basis and divided according to a sharing rule among the individuals in working age within each household. The sharing rule is somehow constructed based on the patriarchal feature of the Albanian society so as giving more weight to heads and less to children and spouse (1:0.5:0.3 respectively for head, spouse and children).

The conception of head and spouse in this paragraph and through all the estimation and simulation procedure doesn't comply with that used in the original data consenting in this way to all couples to be included in the study. In other words, head and spouse refer to head and spouse of sub-households now on.

Furthermore we make use of some dummies constructed as follows:

$$Um(h) = 1 \text{ if } h = 0 \text{ and } 0 \text{ otherwise}$$

$$PPm(h) = 1 \text{ if } h \in]0,17] \text{ and } 0 \text{ otherwise}$$

$$Pm(h) = 1 \text{ if } h \in]17,32] \text{ and } 0 \text{ otherwise}$$

$$Gm(h) = 1 \text{ if } h \in]32,48] \text{ and } 0 \text{ otherwise}$$

$$PPms(h) = 1 \text{ if } h \in]0,17] \text{ and } 0 \text{ otherwise}$$

$$Pms(h) = 1 \text{ if } h \in]17,32] \text{ and } 0 \text{ otherwise}$$

$$Gms(h) = 1 \text{ if } h \in]32,48] \text{ and } 0 \text{ otherwise}$$

The first dummy variable refers to the nonmarket alternative, the next three dummies refer to the job opportunities dummies for non self-employed while the last three to self-employed. These dummies capture the peaks observed in the distribution of hours in most studies done in several countries. They can be interpreted as reflecting quantity constraints on the labour market (as in Aaberge et al., 1995, 1999), or specific utility of full-time, part time, extra time jobs, or maybe both (as in Van Soest, 1995)⁵.

3.2 Choice set specification and hour's distribution

The choice set is composed of 11 alternatives for each individual (5 for each sector and one for the non-employment spell) by specifying the interval of hours of work and sample randomly within this interval which has a length of 16 hours and a maximum of 80 weekly hours. The first alternative refers to zero hours of work, the second to 1-16 and so on until the last alternative 64-80. As in the first alternative, individuals can choose between out of labour market, unemployment or

⁵ Van Soest and Das (2001) use a different mechanism to account for "peaks and holes" in observed hour distribution, namely fixed cost of working. This leads, however, to a more complicated estimation and therefore I would not advise the adoption of this procedure in the basic model estimation.

inactive spells. The actual observed hours will be rounded to the closest discrete value. The basic idea can be appropriately modified when one observes directly annual hours or weeks worked. Then, for each individual remained in Albania we compute the net income by using the taxation rule applied before July 2007 for those who have paid taxes.

3. Conditional Logit Estimation and Simulation Results

In this study, only individuals living in Albania (including also those who have returned) and aged from 18 to 65 are selected. We have excluded retired people, students, disabled and those in military service. The final dataset is composed of 5973 observation (3010 males and 2963 females). The coefficients of a conditional logit model are not as easy to be intuitively interpreted as a linear model and only the estimated signs might help to understand the effect of the variables on the utility function. Table 5 shows the estimated coefficients of the conditional logit model both for males and females. The marginal utility of income is positive over the whole sample and decreasing either for leisure or income (the negative sign of the squared leisure and income). However in order to check for the global concavity character of the utility function we have further calculated the first derivative of utility with respect to net income. Almost 90% of the sample satisfies the quasi-concavity conditions and this is important for the predictive capability of the labour supply model.

The preference for leisure appears to be higher for females than males probably due to their responsibilities towards children and elderly people in the household. The interaction term between income and leisure is negative and significant different from zero implying that income is not separable from leisure. The preference for leisure significantly decreases with age for both males and females but starts increasing after the age of 47. On the other hand, the incidence of small children (0-5 years) makes women more leisure disposed which imply that their leisure is mainly spent on child caring activities. The presence of children older than 5 years doesn't seem to obstacle the participation of women in labour market as they are wholly supported by the private or public school. Individuals in the role of head or spouse within the households seem to have a higher preference for leisure than the others, thus their children and

other household components, and this might be due to immigrant financial backing. Living in the coastal area decreases the preference for leisure than living in Tirana in case of men.

As regards the dummy of “receiving remittances”, the estimates turned out to be significantly positive for both genders. A speculative explanation for this might be that people receiving remittances from their children or relatives tend to work less, thus, a clear income effect. Then again, the magnitude of the coefficient does not consent to go further into conclusions. For that we need to simulate some increase in remittances and analyze its impact on labour supply and individual welfare.

Table 5: Conditional Logit Estimates

Number of observations	3010		2963	
LR chi2(43)	4322,56		9445,9	
			-	
Log likelihood	-5056,39		2391,84	
Pseudo R2	0,2994		0,66340	
Variables	Male		Female	
	coefficients	t-value	coefficients	t-value
Job Opportunities				
PPm	-2,528839	-5,82	-2,245628	-3,72
Pm	-2,147179	-8,89	-1,796559	-5,02
Gm	0,5459453	5,29	1,402569	7,6
PPms	0,6620402	1,37	2,118313	3,33
Pms	0,8372042	3,3	1,34495	3,66
Gms	1,110298	8,33	1,271171	6,1
Self-employed	-2,088824	-3,83	-4,011257	-5,22
Wage worker	-2,847901	-5,22	-4,905074	-6,38
Leisure & Income				
I	0,9813131	11,64	1,209491	10,19
I^2	-0,004053	-10,12	-0,005295	-9,44
disp	0,1835462	9,88	0,2545068	7,5
disp^2	-0,000192	-10,66	-0,0003432	-7,66
I*disp	-0,00148	-9,16	-0,0020707	-6,89
Age*I	-0,005514	-6,66	-0,0061298	-4,73
Age^2*I	0,0000599	7,05	0,0000716	4,6
Age*I*disp	-6,61E-05	-0,63	-0,0000904	-0,55
Self*I	-0,010789	-0,82	-0,1273794	-3,93
Self*disp	0,014267	4,74	0,0150934	1,56
Agriculture*I	-0,320888	-10,64	-0,3619642	-7,46
Agriculture*disp	-0,089389	-9,33	-0,147775	-7,02
Manufacture*I	-0,022898	-1,03	-0,2001525	-6,54

Manufacture*disp	0,0007052	0,16	-0,0270233	-2,99
Public*I	-0,012315	-0,78	-0,0645419	-2,74
Public*disp	0,0015936	0,49	0,0112504	1,95
R*I	1,69E-06	8,08	2,05E-06	6,38
Head(Spouse)*I	0,0253706	2,02	0,0381336	2,81
Head(spouse)*disp	0,0060658	2,23	0,0066506	1,91
child_0_5*I	-0,00171	-0,92	0,0146159	4,56
child_6-10*I	-0,002464	-1,19	0,0031987	1,06
total_child*I	0,0006325	0,57	0,003875	2,18
Coastal*Urban*I	-0,035109	-1,66	-0,0297776	-1,29
Coastal*Rural*I	-0,060007	-2,86	-0,0304021	-1,03
Coastal*Urban*disp	-0,008117	-1,97	-0,0094674	-1,64
Coastal*Rural*disp	-0,013046	-2,9	-0,0161515	-1,91
Central*Urban*I	-0,048222	-2,23	-0,0596685	-2,31
Central*Rural*I	-0,048521	-2,18	-0,0143224	-0,49
Central*Urban*disp	-0,013078	-2,93	-0,0183912	-2,81
Central*Rural*disp	-0,010063	-2,03	-0,0103349	-1,39
Mountain*Urban*I	-0,009323	-0,41	-0,0661984	-2,38
Mountain*Rural*I	-0,032602	-1,39	-0,0173733	-0,49
Mountain*Urban*disp	-0,005674	-1,21	-0,0215176	-2,93
Mountain*Rural*disp	-0,007768	-1,37	-0,0070331	-0,59

Note: "I" stands for leisure, "disp" for disposable income and "R" for the dummy of receiving remittances. child_0_5 and child_6_10 stand respectively for the number of children from 0 to 5 years and from 6 to 10 years while total_child means the total number of children from 0 to 18 years.

Simulation Method and Results

We have simulated three different scenarios to capture the effect of remittances under the taxation rule until July 2007 (M0) and the new taxation rule after July 2007 (M1). The new flat tax has eliminated all tax brackets for all those with income exceeding 10000 leke and also the slight progressivity feature. We simulate an increase of remittances by 50% and study labour supply effect and three poverty indexes for each selected individual. Furthermore their labour supply elasticity is calculated in order to construct a measure which mainly reflects the preferences, individual characteristics (education, age, employment sector, and household structure), tax constraints and other details related to this period. The selected individuals are disaggregated by remittance deciles where higher deciles refer to high remittance receiving individuals. In addition, these simulations account for the differences between self employed and dependent workers.

Simulations increasing the remittances by 50%

Tables 6-7 indicate that an increase of 50% of remittances, other things equal, will affect negatively labour supply for both men and women in case they are wage workers while a reverse effect is observed in case they are self-employed. The disadvantage effect of remittances on labour supply is not something new in the migration literature. Nevertheless, these tables indicate that this impact is noticeable only for sizeable amount of remittance share in individual income and especially the last remittance deciles. Table 8 indicates that male labour supply is more elastic to remittance changes than that of female. If remittances are comparable to non-labour income, this is not something new in the literature of labour supply where several studies prove that male labour supply elasticity to non-labour income outnumbers female labour supply while the reverse trend is observed in case of responses to wage changes.

Table 6: Male Labour Supply by Remittances Deciles
(average weekly hours)

	Wage Worker		Self-employed	
Remittances				
Deciles	M0	M1	M0	M1
I	32.61348	32.61282	46.6237	46.62381
II	27.55036	27.54493	46.14353	46.14584
III	28.87537	28.85627	47.50375	47.50652
IV	30.19125	30.15541	48.73935	48.75917
V	30.5533	30.50384	47.85358	47.86404
VI	30.36687	30.23003	48.59375	48.58953
VII	28.10178	27.87871	45.12634	45.27331
VIII	29.74043	29.44362	49.85564	50.07621
IX	32.51592	31.89286	46.94759	47.40201
X	34.79727	30.76408	47.86826	51.16745

Note: M0 refers to baseline model (before July 2007), M1 refers to simulated model (after July 2007)

Table 7: Female Labour Supply by Remittances Deciles
(average weekly hours)

	Wage Worker		Self-employed	
Remittances				
Deciles	M0	M1	M0	M1

I	11,65535	11,65287	52,29045	52,28836
II	9,119665	9,105733	43,74645	43,7582
III	11,87772	11,84187	43,79152	43,83835
IV	13,89162	13,84811	52,4006	52,45588
V	10,71529	10,6642	46,76595	46,81461
VI	11,46077	11,35102	48,09008	48,12782
VII	12,65334	12,52649	45,80028	46,01454
VIII	10,26164	9,992486	42,48617	42,84985
IX	12,0005	11,66052	42,3474	42,59697
X	9,220448	9,07694	42,68828	45,97343

Table 8: Labour Supply elasticities by gender and Remittances deciles

	Male		Female	
Remittances Deciles	Wage Worker	Self-employed	Wage Worker	Self-employed
I	-0,0000314	7,82E-06	-0,00042	-0,0000535
II	-0,0001716	9,63E-05	-0,00347	0,0005524
III	-0,0008296	0,000101	-0,00614	0,0021702
IV	-0,0017062	0,000874	-0,00935	0,0024998
V	-0,0017316	0,000524	-0,01054	0,0022834
VI	-0,0069151	7,41E-05	-0,02326	0,0019825
VII	-0,0117537	0,006108	-0,02386	0,0095027
VIII	-0,0136148	0,009086	-0,05397	0,0184127
IX	-0,0331869	0,020447	-0,07046	0,0131285
X	-0,1964374	0,179482	-0,17188	0,1446428

To investigate the potential effect that an increase in remittances would have on the income inequality we calculate the GINI coefficient. As regards the measurement of poverty we use the standard poverty indexes constructed by Forster, Geer and Thorbecke (1984) and defined as follows:

1. Head count ratio or poverty rate is simply the ration of the number of people with equivalent income below the poverty line.
2. Poverty gap is the average deviation of the incomes of the poor from the poverty line relative to the total population. It measures the extent of being poor on average.

3. Income gap ratio is the average deviation of the equivalent income of the poor population from the poverty line. The product of the income gap ratio and poverty rate results in poverty gap.

Starting from the inequality measures, the Gini coefficient, which is sensitive to income changes in the middle of the distribution, does not record any significant change in the income distribution. Although an increase in inequality is observed for women in the urban areas. Turning to results for the poverty measures, Table 9 shows that the an increase in remittances would also have a small decreasing effect in the incidence of poverty and poverty gap for men while income gap ratio (severity of poverty among poor or poverty depth) will increase. In case of women, a reduction in poverty rates and gap is noticed only in urban areas while an adverse effect occurs in rural areas. However the severity of poverty decreased in both areas.

This means that the remittances are rather targeted to the poorest females than males. This might be due to the way the remittances are distributed inside the family and also the fact that the women are the poorest part of the sample. In this case the remittances do really help the poorest of the poor. Thus the sharing rule of remittances among the household members is quite important under this point of view.

Table 9: Inequality indexes measured on net income					
	Females	Headcount ratio	PG	IGP	Gini
URBAN	M0	32.242	11.21	34.769	0.5085271
	M1	31.738	10.843	34.163	0.5288993
RURAL	M0	37.238	18.404	49.422	0.643631
	M1	38.912	19.106	49.099	0.6355637
	Males	Headcount ratio	PG	IGP	Gini
URBAN	M0	24.573	7.732	31.463	0.2513637
	M1	23.208	7.46	32.143	0.2520159
RURAL	M0	24.111	10.819	44.873	0.2870224
	M1	22.925	10.65	46.458	0.2931156

Simulations replacing the 2007 tax with the 10% flat tax

Here we present the simulated labour supply responses from replacing the 2007 tax regime by a flat tax on personal income. The results (see table 10) show negative labour supply responses for high income individuals while those poor appear to work more. Despite the general belief on labour

supply literature, females don't seem more reactive than males in the labour market. This could be due to a high rigidity of working hours faced by women and a lack of part-time possibilities in the Albanian labour market. Table 11 shows the average tax rates under both tax regimes decomposed by gender. A shift to a flat tax implies a significant decrease in both marginal and average tax rates for the high income individuals and especially men. Therefore, the substitution and income effects for these individuals have different signs which results in a counteracting effect on labour supply. For the low-income individuals, the average tax rates slightly decrease while the marginal tax rates probably increase, especially for the women of low-income deciles, and therefore their response in the labour market is quite ambiguous. Thus, the flat tax would strongly favour rich individuals than those poor and stress gender inequalities.

Table 12 reports poverty indicators and Gini index decomposed by gender and area. The results demonstrate that the inequality in the disposable income distribution experience minor changes while poverty indicators show a decrease in poverty for men and increase in poverty gap and income gap ratio for women in the rural areas due to the high share of women who incur higher average and marginal tax rates. This is still enforcing the conclusion drawn by the average tax rates as regards increasing gender inequality.

**Table 10 :Labour Supply Behaviour by Income
Deciles under a 10% flat tax
(average weekly hours)**

Income deciles	Female		Male	
	M0	M1	M0	M1
I	0.441402	0.430932	12.42365	13.69209
II	1.290023	1.332835	30.79224	31.7597
III	2.640668	2.775287	34.70658	35.98861
IV	4.25122	4.441697	37.92401	39.14857
V	6.14892	6.313645	36.37957	37.26931
VI	13.54519	13.59267	38.62137	39.29335
VII	24.85409	24.48521	40.24296	39.92196
VIII	29.84352	29.69886	42.58832	41.67186
IX	40.60626	40.62917	45.12472	43.39161
X	44.48941	42.95726	48.34219	45.31628

**Table 11: Changes in Average tax rates
by gender and deciles**

Males		Female	
M0	M1	M0	M1
0.129	0.105	0.070	0.075
0.120	0.102	0.098	0.089
0.134	0.106	0.112	0.097
0.141	0.107	0.114	0.098
0.153	0.108	0.122	0.102
0.160	0.108	0.118	0.102
0.164	0.109	0.109	0.099
0.169	0.109	0.128	0.105
0.173	0.109	0.140	0.107
0.176	0.108	0.160	0.108

Table 12: Inequality indexes measured on net income for women					
	Females	Headcount ratio	PG	IGP	Gini
URBAN	M0	36.608	16.262	44.421	0.522668
	M1	36.359	15.756	43.335	0.522642
RURAL	M0	42.589	26.663	62.607	0.690769
	M1	42.797	27.402	64.027	0.692901
	Males				
URBAN	M0	22.635	7.995	35.322	0.217942
	M1	21.36	7.066	33.082	0.203806
RURAL	M0	21.986	8.359	38.021	0.273744
	M1	22.606	7.858	34.758	0.273324

Simulations replacing the 2007 tax with the 10% flat tax and increasing the remittances by 50%

Lastly we confront the behavioural and distributional effects of remittances under both tax regimes. The tables 13-15 show that under a flat tax regime, an increase in remittances would be succeeded in average by an increase of labour supply for men and a decrease for women. Decomposing further these labour supply responses by remittances deciles, we find weaker labour supply responses to remittances under the flat tax regime than under the previous more progressive tax regime. Thus, it seems that flat tax would make labour behaviour of individuals in Albania more

neutral versus remittances. This is quite reasonable as a shift in a flat tax would bring to changes in the budget constraint of the receiving remittances individuals. The coincidence of these individuals in the high income groups as well, especially those self employed, explains the disincentive labour supply effect.

If we confront the inequality and poverty measures under both tax rules, the income distribution and poverty performance don't change significantly. Only, the situation of men in rural areas slightly improves in terms of poverty depth mainly due to their higher participation in the labour market.

**Table 13: Female Labour Supply Behaviour by
Remittances Deciles
(average weekly hours)**

	Wage worker		Self-employed	
Remittances Deciles	M0	M1	M0	M1
I	11.65535	11.23293	52.29045	50.44348
II	9.119665	8.772886	43.74645	44.44839
III	11.87772	11.43087	43.79152	43.95135
IV	13.89162	13.61986	52.4006	51.99167
V	10.71529	10.62831	46.76595	48.3517
VI	11.46077	11.10523	48.09008	46.97416
VII	12.65334	12.36046	45.80028	45.57098
VIII	10.26164	9.841267	42.48617	42.88543
IX	12.0005	11.48152	42.3474	41.21233
X	9.220448	9.043412	42.68828	45.29865

Table 14: Male Labour Supply Behaviour by Remittances Deciles

Remittances Deciles	Wage worker		Self-employed	
	M0	M1	M0	M1
I	32.61348	32.84306	46.6237	48.307
II	27.55036	27.88704	46.14353	47.851
III	28.87537	28.74811	47.50375	47.8994
IV	30.19125	30.09169	48.73935	48.89737
V	30.5533	29.97589	47.85358	49.51893
VI	30.36687	29.75919	48.59375	48.2179
VII	28.10178	27.9736	45.12634	46.09415
VIII	29.74043	29.55699	49.85564	48.87791
IX	32.51592	32.53122	46.94759	46.71379
X	34.79727	30.31108	47.86826	50.21954

Table 15: Labour Supply elasticities by gender and Remittances Deciles

Remittances Deciles	Male		Female	
	Wage worker	Self-employed	Wage worker	Self-employed
I	0.044661	0.075548	-0.05747	-0.06569
II	0.076492	0.082372	-0.02885	0.031899
III	0.043942	0.017219	-0.03966	0.005941
IV	0.030215	0.000202	-0.02734	-0.01407
V	0.004135	0.077861	0.024674	0.068615
VI	0.001057	-0.00762	-0.00514	-0.04735
VII	0.054806	0.04636	-0.01525	-0.00914
VIII	0.030596	-0.03357	-0.03458	0.016224
IX	0.034474	-0.00021	-0.08401	-0.05296
X	-0.19854	0.138091	-0.16151	0.110828

Table 16: Inequality indexes measured on net income					
	Females	Headcount ratio	PG	IGP	Gini
URBAN	M0	32.242	11.21	34.769	0.5085271
	M1	31.738	10.352	32.618	0.5309474
RURAL	M0	37.238	18.404	49.422	0.643631
	M1	39.331	19.427	49.393	0.6348472
	Males	Headcount ratio	PG	IGP	Gini
URBAN	M0	24.573	7.732	31.463	0.2513637
	M1	20.478	6.488	31.683	0.2340927
RURAL	M0	24.111	10.819	44.873	0.2870224
	M1	22.53	10.062	44.662	0.2899156

Note: The poverty line is set at 2/3 of median value

4. Conclusion

In this paper we have employed a two-sector labour supply model to simulate the effect of remittances on the labour supply and poverty in Albania under two tax regimes. The data used is extracted from the LSMS 2005 in Albania. The simulations performed suggest that:

- An increase of 50% of remittances, other things equal, affect negatively labour supply for both men and women in case they are wage workers while a reverse effect is observed in case they are self-employed. This impact is noticeable only for sizeable amount of remittance share in individual income and especially the last remittance deciles. Male labour supply is more elastic to remittance changes than that of female.
- A shift to a flat tax implies a significant decrease in both marginal and the average tax rates for the high income individuals and especially men which in turn result in labour disincentives. Females don't seem more reactive than males in the labour market. The flat tax would make labour behaviour of individuals in Albania more neutral versus remittances due to their shift in budget constraint especially in case of self-employed.
- The Gini coefficient, which is sensitive to income changes in the middle of the distribution, does not record any significant change in the income distribution, even though an increase in inequality is observed for women in the urban areas. As regards to the poverty measures, an increase in remittances would also have a small decreasing effect in the incidence of poverty and poverty gap for men while income gap ratio (severity of poverty among poor) will increase. In case of women, a reduction in poverty rates and gap is noticed only in urban areas while an adverse effect occurs in rural areas. However the severity of poverty decreased in both areas.

This means that the remittances are rather targeted to the poorest females than males. In this case the remittances do really help the poorest of the poor.

- d) If we confront the inequality and poverty measures under both tax rules, the income distribution and poverty picture doesn't change significantly. Only, the state of men in rural areas slightly improves in terms of poverty depth mainly due to their higher participation in the labour market. Poverty indicators show a decrease in poverty for men and increase in poverty gap and income gap ratio for women in the rural areas due to the high share of women who incur higher average and marginal tax rates.

Several policy implications are to be drawn from this study. The negative impact that remittances may have on the labour supply of wage workers may result in a reduction of domestic output and consequently lower tax revenues. Under these circumstances, the government would find it optimal to rely either on fiscal instruments such as labor or consumption taxation or monetary instruments. On the other hand, the labour incentives that remittances might instigate among self-employed should urge policymakers to stick to several measures related to the lowering of capital tax rates in order to make investment attractive, the lowering of costs of business start-up to facilitate the opening of new businesses, the cutting of fiscal costs of financial transfers by allowing the entry of more Money Transfer Operators, the enhancing of the efficiency of the banking system, the increasing of the reliability of information provided to migrants on the transfer rates, the granting of facilities in loans and credit lines to migrants to invest etc.

To conclude, this paper needs to be replicated in other Balkan countries which are highly dependent on remittances (such as Serbia and Kosovo) in order to have a better understanding on the role of remittances in this area and provide useful insights to the policymakers.

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