Working Paper

Remittances and Labor Supply: The Case of Kosovo

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Abstract:

This study investigates the impact of remittances on the intensity of job search for unemployed respondents in receiving households in Kosovo. The novelty of this study, is that it considers two outcomes, reservation wage and registration at the local unemployment center, to proxy for the intensity of job search. Using household-level data from Kosovo and instrumental variables approach, I show that remittances have a negative but small effect on labor supply. The results indicate that the elasticity of monthly reservation wage with respect to monthly remittances for the unemployed, is approximately 0.03 – 0.19. The results also support the hypothesis that an increase in remittances decreases the probability of registering with the local unemployment center. The study provides policy recommendations in light of Kosovo's current economic conditions and its aspirations to join the European Union.

Key-words: Remittances, Labor supply, Kosovo, reservation wage, unemployment center, European Union.

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I. Introduction

In the recent decades, with the increase in the efficiency of money transfer channels along with the increase in the rate of out migration, remittances have become an integral part of many developing countries' economies. Remittances to developing countries are higher in value than the total development aid sent to these countries (Adams, 2011). Researchers and policy makers are interested in understanding the mechanisms through which remittances affect household outcomes in the countries of origin. An increase in the money inflow may increase households' expenditures in education, health, and overall wellbeing, as well as increase households' investments – all necessary inputs for economic development (Amuedo-Dorantes and Pozo, 2006a).

However, remittances may also lead to dependency of the developing countries if this source of income is used primarily for consumption (Amuedo-Dorantes and Pozo, 2006a). One channel through which remittances may increase dependency is by decreasing the employment rate. A decrease in labor supply is manifested by higher reservation wages, longer spells of unemployment, and less active job search.[1] Labor theory suggests that an increase in unearned income increases the reservation wage through an income effect, which could lead to a decrease in the employment rate (Amuedo-Dorantes and Pozo, 2006b). Higher unemployment is generally viewed as a negative outcome of remittances (Dermendzhieva, 2009). However, several studies suggest that a decrease in labor force participation may have positive outcomes by freeing up time to acquire more education, engage in parenting activities and in household production (Acosta, 2006; Görlich et al. 2007). This study adds to the literature of studies that investigate

[1] Hofler and Murphy (1994) define the reservation wage as "the wage such that employment offers paying wages less than the reservation wage are rejected."

the impact of remittances on labor supply outcomes of receiving households. Specifically, I investigate how remittances affect the reported reservation wage and registration at the local unemployment center, of the unemployed adults, by using cross-section household data from Kosovo.

Empirical studies have investigated the impact of remittances on various household outcomes. Studies find that higher remittances are linked to a reduction in poverty (Lokshin et al. 2010), an increase in school attendance (Cox-Edwards and Ureta, 2003), better mental health for adults (Stillman et al. 2006), an increase in child health (Lopez-Cordova, 2005) and an increase in business ownership for receiving households (Woodruff and Zenteno, 2007). However, the empirical results are not always consistent across various studies.[2] Labor supply is one of the outcomes of remittances for which there is no widespread consensus in the empirical findings. Kim (2007) analyzing data from Jamaica concludes that remittances lead to a decrease in the labor supply. In a study using Nicaraguan data, Funkhouser (2006) comes to a similar conclusion. Acosta (2006) using data from El Salvador concludes that the negative impact is only significant for females, but remittances have no effect on males' labor force participation. However, Dermendzhieva (2009) using data for Albania finds the converse, namely, remittances negatively impact the labor force participation of males (age 46 to 60), but have no impact on the labor force participation of females.

This study contributes to the literature by investigating the impact of remittances on labor supply outcomes from a different angle. It uses information on the reported reservation wage of the unemployed adults and information on whether or not unemployed adults are registered with

[2] See Adams (2011) for an extensive review of empirical studies on the impact of remittances on receiving households' outcomes.

the local unemployment center. Remittances, by providing continuous financial support, may decrease the intensity with which unemployed respondents from receiving households seek employment. Hence, I empirically test the following two hypotheses: 1. an increase in the level of remittances received leads to an increase in the reported reservation wage, and 2. an increase in remittances received negatively affects the likelihood of registering with the local unemployment center. Evidence supporting these hypotheses is evidence that remittances have a negative effect on the intensity of job search for the unemployed, and hence negatively impact labor supply.

In countries where the level of remittances received is high and the unemployment rate is very high (such as in Kosovo), it is important to understand the link between remittances and labor supply. A negative impact of remittances on labor supply in Kosovo, would further increase the dependency of the already fragile economy, and also make Kosovo more vulnerable to international financial crises. Furthermore, Kosovo's aspiration to join the European Union is deeply affected by its state of economic and social development. A recent Communication from the European Commission to the European Parliament and Council, addressing Kosovo's steps towards integration, states: "Kosovo's social and political stability depends on sustained economic development and strengthened social cohesion" (2009). The Communication further warns that the level of remittances and foreign direct investments is expected to decrease, and hence that Kosovo faces serious economic challenges (COM, 2009). Therefore, understanding the link between remittances and labor supply, helps shed light into one aspect of how remittances affect Kosovo's economic development and also its goal toward full integration into the European Union.

To the author's knowledge, this is the first study to use reported reservation wage and registration with the local unemployment center of the unemployed, as the main outcomes of interest. An additional contribution of this study is that it controls for reverse causality, measurement error, and selection bias, using an instrumental variables approach. Finally, the study uses household data from Kosovo that have become available only in the recent past. Kosovo is a war-torn country that has experienced many waves of out-migration in the last decades, due to economic and political problems. Kosovo is also an important case study on this topic, given its high dependence on remittances and high unemployment rates. While previous studies have investigated the impact of remittances on various Kosovo household outcomes (Havolli 2009, Shaorshadze and Miyata, 2010) to the author's knowledge this is the first that deals specifically with the impact of remittances on labor supply. In summary, this study finds evidence to support the hypothesis of positive impact of remittances on reported reservation wage. Estimation results indicate that the elasticity of monthly reservation wage with respect to monthly remittances for the unemployed, is approximately 0.03 – 0.19. Results also support the hypothesis that an increase in remittances decreases the probability of registering with the local unemployment center.

The remainder of the paper is organized as follows. Section II describes the unique household-level data that have been utilized for the purpose of this study. It also provides a brief overview of historic outmigration from Kosovo. Section III outlines the empirical model and identification strategy. Section IV provides a discussion of empirical results. Finally, section V provides concluding remarks and policy recommendations.

II. Background and Data

This study makes use of data collected by the United Nation Development Programme (UNDP). As part of the Kosovo Remittance Survey 2012, 8,000 randomly selected Kosovo households were surveyed. The dataset includes extensive demographic information on households. It also includes information on labor force participation of household members, earned and unearned income, and household expenditures. An especially useful (for the purpose of this study) feature of the survey, is that it includes information on reported reservation wage for the unemployed. That is, unemployed respondents are asked the following question: "What is the minimum level of monthly wage for which you would accept to work?" It also includes information on the duration of the last unemployment spell and whether or not the respondent is registered at the local unemployment center.[3] Finally, it includes extensive information on family members residing abroad, such as: remittances received from such family members and the relationship with remitters. Table 1 provides summary of statistics for the full sample. The average household in the sample has close to five members and is highly likely to have a male head. Approximately 75 percent of the households in the sample are Albanian, and a little over half of households are from the rural areas. The average respondent is highly likely to be married and has more than eleven even years of formal education. Approximately one in three households in Kosovo report to have family members residing abroad, and approximately 22 percent of the Kosovo households report to receive remittances.

[3] If currently unemployed, the respondent is asked the following questions: 1. For how long have you been unemployed? 2. Why did you become unemployed? 3. Are you registered at the local Unemployment Centre? And 4. What is the major reason for not seeking work? (UNDP, 2012).

Table 1: Sample Summary of Statistics (N=8,000)		
Variable	**Mean**	**St. Deviation**
Household Size	4.72	1.94
Rural (%)	50.41	50.00
Albanian (%) [1]	75.00	43.30
Household Head Male (%)	87.10	33.50
Household Head Age	48.02	13.09
Household Head Education [2]	11.34	3.21
Married (%)	87.21	33.40
Household Total Monthly Income [3]	550.85	453.92
Household Total Monthly Expenditures [4]	372.42	394.39
Has Family Abroad (%) [5]	33.79	47.30
Household Receives Remittances (%) [6]	22.48	41.74
Monthly Cash Remittances in 2012	133.62	175.56
Monthly Total Remittances in 2012 [7]	162.51	234.32
Reservation Wage (per month) [8 9]	262.32	91.29
Unemployment Duration (in years) [9]	6.35	6.26
Registered at local unemployment center (%) [9]	57.67	49.45

Source: Kosovo Remittance Survey, 2012, UNDP – Kosovo, and author's calculations.

[1] The non-Albanian ethnicities in Kosovo include: Serbian, Bosnian, Goran, Turk, Roma, Ashkali, and Egyptian.

[2] Years of education completed.

[3] The sum of income in Euros from various sources (such as permanent employment, pension benefits, unemployment benefits, and student scholarships) for all members of the household.

[4] The sum of household monthly expenditures in Euros on various categories (such as food, clothing, and entertainment).

[5] Has at least one family member residing outside of Kosovo at present.

[6] Percent of households from the whole sample that report to receive remittances. Of the subsample that reports to have family abroad, 67 percent report to receive remittances.

[7] Monthly value in Euros of cash and in-kind remittances received in 2012.

[8] The response options were in ranges. I imputed the reservation wage to be the mid point of the range. For example, if the range chosen was 51-100, the imputed value is 75.50 Euros per month.

[9] Applies only to the respondents who are unemployed.

Remittances are an integral part of income for Kosovo households. The average monthly value of cash remittances received for households that reported to receive remittances, was

€133.62 during the year 2012.[4] The average monthly total value (sum of cash and in-kind) of remittances per receiving household in 2012 was €162.51. For comparison, the average household reports to spend €372 per month to cover all daily necessities. This indicates that remittances received finance over one third of an average household's reported expenditures, for receiving households. The unemployed respondents indicate that they would accept work on average, for €262.32 per month. The average duration of the current unemployment spell for the subsample of unemployed respondents, is over 6 years.

This dataset is unique in that it allows researchers to explore the impact of remittances for a country that is highly dependent on this source of income. While remittances decreased slightly from 2010, likely due to the crisis in the Euro zone where most of the Kosovo emigrants reside, they continue to be an integral source of income (second only to income from employment) (Elezaj et al., 2012). Kosovo's economy is characterized by a high rate of unemployment, estimated at 45 percent, and with a high prevalence of poverty (CIA World Factbook). In these circumstances, it is important to understand the significance of remittances on Kosovo's economy, especially on labor supply.

Emigration from Kosovo is separated into four waves depending on the reasons of migration, the characteristics of the emigrants, and the political and economic situation in the country: 1960s-1970s, 1989-1997, 1998-1999 and post-1999 (Elezaj et al. 2012). Information from the survey suggests that even in 2012, thirteen years after the end of the 1999 war and four years after Kosovo's unilateral declaration of independence, many have intentions to leave the country. Approximately 13 percent of the respondents indicate to have specific plans to migrate

[4] In 2012, €1.00 exchanged for $1.28 on average. Source: http://www.xrates.com/average/?from=USD&to=EUR&year=2012

in the near future, 67 percent of those citing economic reasons as the main reason for migration. It is interesting to note that less than 19 percent of those receiving remittances report to have started receiving money from abroad prior to 1999. Hence, in terms of remittances received in Kosovo, the last wave of migration matters significantly more than previous ones.

The employment situation in Kosovo deserves some more in-depth discussion, especially as it relates to the inflow of remittances. Approximately 14 percent of the respondents report to be unemployed. While this percentage is quite significant, it is drastically smaller than the official figure of a 45 percent unemployment rate. This discrepancy is likely due to the large portion of the population employed in the informal sector. Respondents who report to have family residing abroad and who report to receive remittances are slightly more likely to be unemployed than the rest of the respondents. The unemployed respondents report whether they receive social assistance or not. As expected, a much larger portion of the unemployed who have family abroad and receive remittances report to not receive social assistance, compared to those who do not. Of those who report to be employed, having family abroad and receiving remittances has no effect in the portion employed in the private sector as employers and in the public sectors as employees. However, having family abroad and receiving remittances is correlated with the respondent being significantly less likely to be an employee in the private sector compared to the overall sample (31 and 29 percent respectively compared to 36 percent for the full sample). Table 2 provides a summary of statistics on employment status by those who have family abroad and those who do not, and those who report to receive remittances compared to those who do not.

Table 2: Respondent Employment Status by remittances and family abroad categories

Employment Status	Full Sample		Has Family Abroad		No Family Abroad		Receives Remittances		No Remittances	
Employee Public Sector	2,218	28	733	27	1,485	28	471	26	249	29
Employee in Private Sector	2,914	36	850	31	2,064	39	530	29	303	36
Employer in Private Sector	162	02	54	02	108	02	28	02	26	03
Self-Employed	220	03	64	02	156	03	36	02	27	03
Unemployed, not receiving Social Assistance	751	09	330	12	421	08	259	14	66	08
Unemployed, receiving Social Assistance	391	05	97	04	294	06	67	04	27	03
Non-permanent Employment	58	01	14	01	44	01	11	01	2	00
Part-time Employment	36	00	15	01	21	00	10	01	5	01
Retired, receives pension	528	07	242	09	286	05	180	10	58	07
Housewife	277	03	126	05	151	03	91	05	35	04
Student	51	01	20	01	31	01	14	01	6	01
Other	11	00	2	00	9	00	1	00	1	00
Don't know/No answer	383	05	156	06	227	04	100	06	48	06
Total	8,000		2,703		5,297		1,798		853	
	N	%	N	%	N	%	N	%	N	%

Source: Kosovo Remittance Survey, 2012, UNDP – Kosovo, and author's calculations.

A closely related issue is that of the self-reported reservation wage. As explained above, unemployed respondents are asked about the minimum monthly wage for which they would accept work. Table 3 provides summary of statistics for the full sample as well as for the subgroups of those who report to have family abroad and those who report to receive remittances. The data seem to indicate that respondents who report having family abroad and receiving remittances tend to have a slightly higher reservation wage compared to the rest of the population.

Table 3: Unemployed Respondents' Reservation Wage by remittances and family abroad categories

Reservation Wage (Monthly)[1]	**Full Sample**		**Has Family Abroad**		**No Family Abroad**		**Receives Remittances**		**No Remittances**	
0 - 50 €	5	00	1	00	4	00	0	00	1	01
51 - 100 €	19	01	9	02	10	01	6	01	3	02
101 - 150 €	48	03	14	03	34	04	11	03	2	01
151 - 200 €	129	09	35	06	94	11	23	06	9	07
201 - 250 €	466	33	192	35	274	32	141	35	46	34
251 - 300 €	37	03	12	02	25	03	8	02	3	02
301 -350 €	141	10	69	13	72	08	52	13	17	13
351 - 400 €	92	07	28	05	64	07	23	06	5	04
401 - 450 €	50	04	20	04	30	03	12	03	8	06
above 451 €	62	04	19	03	43	05	16	04	2	01
Don't know/Refused	366	26	153	28	213	25	115	28	38	28
Total	1,415		552		863		407		134	
	N	%	N	%	N	%	N	%	N	%

Source: Kosovo Remittance Survey, 2012, UNDP – Kosovo, and author's calculations.

[1] Respondents who reported to be unemployed were asked the following question: "What is the minimum level of monthly wage for which you would accept to work?"

III. Empirical Model and Strategy

Remittances likely affect many household outcomes in Kosovo, as in the rest of the world. The goal of this study is to test two related hypotheses. The first hypothesis is that an increase in remittances received by the household increases the unemployed respondent's

reported reservation wage. In order to identify the impact of interest, I employ regression analysis to control for confounding variables suggested by theory and empirical studies on labor supply. For individual i in household j, the benchmark model specification is:

$$Ln(ResWage)_i = \alpha_0 + \beta_1 Ln(Rem)_j + \gamma_l IC_{li} + \delta_k HC_{kj} \quad (1)$$

where $ResWage$ denotes the reported reservation wage and Rem denotes monthly remittances received, and both are continuous variables.[5] [6] I chose a logarithmic specification form for ease of interpretation, however the results' section reports both the level and logarithmic estimation results. Control variables include a set of l individual characteristics IC, and a set of k household characteristics HC. Individual characteristics include respondent's gender, age and level of education – all of which are factors likely to affect an individual's reservation wage and hence labor supply decisions. Labor theory suggests that work experience is also an important factor in determining the reservation wage. Given the lack of information on respondents' work experience on this dataset, I follow the literature and proxy for experience by including both age and years of formal education. However, as previously discussed, the average unemployed respondent has been unemployed for an extended period of time. Hence, I also control for unemployment duration in the analysis. Unemployment duration may affect the reservation wage because during the years of unemployment, persons lose the opportunity to get further training and know-how, and hence reduce their expectations on wage offers from potential employers. While imperfect, the combination of age, years of education and years of unemployment serve as a proxy for a respondent's years of work experience. I also control for a series of household

[5] I impute the reservation wage to be the midpoint of the chosen range (see Table 1). For the category "€451 and above," the imputed value is €475.50.

[6] I measure remittances as cash remittances and total remittances (sum of cash and in-kind), and report estimation results for both in the Results section.

characteristics, including household size, whether the household resides in a rural area, household ethnicity and total household monthly income (excluding remittances).[7]

In estimating equation (1), I assume that other household members' labor force participation decisions affect the respondent's reservation wage only through total household income. Hence, I adopt the individual utility with family budget constraint modeling approach. As with any study on the impact of remittances on household outcomes, this work is confronted with the issues of reverse causality, measurement error and selection bias. There are two main concerns with this work. The first is related to endogeneity issues regarding the decision to migrate – that is, households who have family members residing abroad may be inherently different than those that do not, in ways that are not observable to the researcher. If those attributes that make households different in that aspect are also related to respondents' reservation wages, than any estimates on the impact of remittances on the reservation wage are biased. Given the lack of panel data, in this study I address this issue by only considering households that do have family residing abroad. This takes care of the first endogeneity issue discussed above, but also significantly reduces the already small sample size. For completeness, I report the results for the entire sample (including those that report to not have family residing abroad and hence receive no remittances) in the Appendix.

The second endogeneity issue regards the decision to send remittances. In this case, there are several concerns. Reverse causality occurs if a respondent's reservation wage affects the amount of remittances received by the household. Selection bias occurs if respondents in households who tend to receive a higher level of remittances, also have higher reservation wages.

[7] Respondents are asked questions about the amount of income received from individual sources, for all household members. Such sources include labor income, rental income, support from family and friends residing in Kosovo, social assistance, student scholarships, etc. Income from all sources and all family members are summed up to calculate the household's total monthly income, excluding remittances.

This may be due to observable factors, such as education levels of the members of the household; but they may also be due to unobservable factors such family members' preferences for certain working conditions and wages. Again, with the given data, it is impossible to control of household time-consistent unobservable characteristics. An alternative econometric approach to dealing with these issues is that of using instrumental variables. An instrument in adequate if it is exogenous and relevant (Wooldridge, 2009). In this specific case, an instrument that satisfies these conditions is such that the variable is highly correlated with the amount of remittances a household receives, but has no explanatory power if included as a control in equation (1) above. In other words, the instrumental variable needs to only affect the respondent's reservation wage through the amount of remittances received. I use the frequency with which the family member living abroad visits Kosovo (a proxy for the strength of the relationship) as an instrumental variable.

Intuitively, family members who visit Kosovo more frequently have stronger family ties and hence are more likely to send their families a higher level of remittances. However, the visit frequency of family members residing abroad does not affect the respondent's reservation wage, except through the level of remittances. Table 5 provides a summary of the level of remittances by the frequency of visits to Kosovo of family members living abroad. Aside from the "several times a year," and "other" categories, the statistics support the story that a higher frequency of visits to Kosovo is correlated with a higher level of remittances.

Table 4: Value of Remittances by Remittent's Frequency of Visits to Kosovo

Remittent's frequency of visits to Kosovo	Monthly Cash Remittances[1]			Monthly Total Remittances[2]		
	Freq.	Mean	St. Deviation	Freq.	Mean	St. Deviation
Less than once a year	140	107.87	103.19	139	117.46	137.48
Once a year	839	112.64	157.32	861	136.86	196.15
Twice a year	347	169.33	198.82	354	222.90	310.43
Three to four times per year	82	236.84	295.71	82	283.59	352.58
Several times per year	65	149.58	135.17	66	151.86	134.41
Other	50	119.50	137.90	51	125.00	136.71

Source: Kosovo Remittance Survey, 2012, UNDP – Kosovo, and author's calculations.

[1] Cash remittances (measured in Euros) in 2012.

[2] Total remittances include cash and in-kind remittances (measured in Euros) in 2012.

An additional challenge with the analysis proposed above, is that of measurement error in the dependent variable, namely, reservation wage. Bertrand and Mullainathan (2001) argue that a dependent variable that is based on subjective data (as in this case), very likely suffers from measurement error that instrumental variables cannot fix, hence leading to biased results. Hofler and Murphy (1994) offer a detailed account of the sources of measurement error in the typical reservation wage variables. They argue that, among other things, respondents may engage in wishful thinking or not have a clear idea of the other job characteristics, when they respond to the survey question regarding reservation wage (Hofler and Murphy, 1994). Hence an alternative to using the subjective information contained in the reservation wage variable, is to use information on whether or not the respondent has taken specific actions to find employment. One such variable is that containing information on whether or not the respondent has registered with the local unemployment center. Unlike the reservation wage, this variable is less likely to suffer from measurement error (registering at the local unemployment center requires certain procedures, and most individuals remember whether or not they have gone through such procedures). Registering with the local unemployment center is likely to increase a person's

likelihood of finding a job, by providing additional training, career information and networking activities. Additionally, it allows respondents to apply for modest social assistance benefits (Government, Republic of Kosovo, n.d.). I hypothesize that an increase in remittances received, decreases the likelihood that the unemployed respondent registers at the local unemployment center, because the urgency to find a job decreases when there is a steady flow of income from family members residing abroad. Formally, for individual i and household j, I estimate:

$$RegUnempCenter_i = \alpha_0 + \theta_1 Rem_j + \gamma_l IC_{li} + \delta_k HC_{kj} \quad (2)$$

Where all the terms have already been defined above, except for $RegUnempCenter$, which is a binary variable indicating whether or not the unemployed respondent has registered with the local unemployment center. I test the hypothesis that $\theta_1 < 0$. I keep the same set of control variables as in (1) given that a set of individual characteristics such as age, level of education and unemployment duration, along with family characteristics, are likely to impact the likelihood that a respondent registers with the local unemployment center. Note that, as with equation (1), I report the results of the estimation for only the subsample that has family abroad, as well as for the full sample. It is unlikely that this specification suffers from reverse causality, but selection bias may not be ruled out, on the same grounds as for the reservation wage. Given the lack of an appropriate instrument, I cannot interpret the results from estimating equation (2) as causal. I report estimation results of equation (2) from probit, logit and linear probability model – and as discussed below, the results are robust across all three methods.

IV. Results

The benchmark estimation results of equation (1) where remittances only include gifts in cash are reported on Table 5 below. The first column reports the results for linear form

estimation, where both variables of interest are measured in a linear form. The second column reports the results from the benchmark specification of equation (1) where both variables of interest are specified in the logarithmic form. Finally, column three reports the instrumental variables estimation results using the variable on Kosovo visit frequency. While the magnitudes change, the direction of the impact stays relatively constant across model specifications. The results from the benchmark model specification provide evidence to support the hypothesis, namely that remittances have a positive effect on the respondent's reservation wage. The linear form results indicate that an increase in remittances received by €100 per month, lead to an increase in the monthly reservation wage by €1.20. The log-log specification suggests that a one percent increase in the level of annual remittances received by the household leads to a 0.04 percent increase on the reported monthly reservation wage of the currently unemployed. This impact, while relatively small, is non-negligible. Interestingly, the results from the instrumental variables approach report a much higher effect, namely an elasticity of 0.12. At the mean level of remittances and reservation wages, this result indicates that increasing remittances by €1.34 per month, leads to an increase in the reservation wage by €0.31. However, none of these effects are statistically significant. All reported standard errors are robust. It is important to note that I test the exogeneity restriction of the instrumental variables using a Wu-Hausman test, and at the 5 percent critical value, I fail to reject the null hypothesis that the instrument is exogenous. The results from the first stage regression for the IV model, are reported on Table A1 in the Appendix. The results from the first stage confirm the positive and significant correlation between the level of remittances and the frequency of visits to Kosovo of the family member residing abroad, hence providing further support for the instrumental variable used.

The rest of the results give a more or less expected picture. A higher household income is correlated with a higher reported reservation wage. Being from the rural areas increases the reservation wage and the impact is statistically significant. The impact is positive likely because the individual faces higher costs (such as transportation costs) of participating in the labor force. An increase in the age of the respondent is correlated with a lower reservation wage. As expected, respondents with a higher level of education report a higher reservation wage, whereas a longer unemployment duration is correlated with a decrease in the reservation wage. Albanian respondents on average report lower reservation wages than respondents of other ethnicities. Being male has an ambiguous effect, changing sign across model specification. Hence, these results are not sufficient to settle the debate in the literature, on gender differences in labor supply as a result of remittances.

To check the robustness of the results, I estimate the model (in all its specifications) using a measure of remittances that includes both cash and in-kind gifts. The results are reported in Table A2 in the Appendix. The results for the main variable of interest do not change significantly in magnitude, while the direction remains positive. The control variables maintain the same direction of impact as in the previous specification. Finally, given that the choice to impute the reservation wage as the midpoint of the chosen range is arbitrary, I investigate if the results are robust when the imputed value is the minimum or the maximum of the chosen range. The results are reported in Table A3 and Table A4, respectively, in the Appendix. In both cases the impact of remittances on the reported reservation wage is positive and the magnitude changes very little. For completeness, I also report the benchmark model results using the entire sample (rather than only households who report to have family residing abroad). The results are reported on Table A5 in the Appendix, and tell the same story. Hence, these additional estimation results

provide evidence that the benchmark specification results are robust across different ways of measuring the amount of remittances received, the respondents' reported reservation wage, and sample specification.

The results of estimating equation (2) are reported in Table 6 below. The first column reports the results from the probit model, the second column from the logit model, and the last column from the linear probability model (LPM). The results are robust across model specifications and provide evidence to support the hypothesis of a negative effect. Namely, evaluated at the mean level of remittances, the marginal effect on the likelihood of being registered at the local unemployment center for both the probit and the logit model is -0.013, whereas for the LPM it's -0.011. The impact is small and not statistically significant, but it has the expected sign. As expected, higher household incomes are correlated with a lower likelihood of being registered at the local unemployment center. Of the rest of the control variables, it is interesting to note that males are less likely than females to be registered at the local unemployment center. Table A6 in the Appendix provides the estimation results where remittances include both cash and in-kind remittances.

In Table A7 in the Appendix, I report the results from estimating equation (2) for the full sample. Interestingly, the impact of remittances on the likelihood of registering in the local unemployment center is statistically significant for LPM, in this specification. The magnitude of the impact is still very similar as in the estimates for the subsample with family abroad (Table 6), it ranges from a marginal effect of -0.020 (in logit and probit) to -0.014 in the LPM. It is likely that the lack of statistical significance in previous results is due to the small sample size. Finally, it is important to note that the results are robust with respect to both magnitude as well as direction.

Table 5: Results of Eq. (1) - Reported Reservation Wage of the Unemployed [1]

Notes: Family Abroad Sub-sample/ Midpoint reservation wage/ Cash remittances	Linear	Log	Log w/ IV Kosovo Visit Freq.
(Log) Monthly *Cash* Remittances 2012 [2]	1.200	0.038	0.118
	(4.356)	(0.029)	(0.196)
(Log) HH Income [3]	1.860	0.073*	0.049
	(1.551)	(0.037)	(0.078)
Household Size	5.069	0.012	0.009
	(3.756)	(0.012)	(0.021)
Rural	20.067	0.107*	0.115**
	(14.571)	(0.059)	(0.056)
HH Head Male	0.434	0.018	-0.019
	(21.678)	(0.080)	(0.085)
HH Head Age [4]	-0.463	-0.003	-0.003
	(0.586)	(0.002)	(0.002)
HH Head Education [4]	1.891	0.010	0.006
	(2.673)	(0.010)	(0.013)
HH Head Unemployment Duration [4]	-0.592	-0.001	-0.001
	(0.845)	(0.003)	(0.003)
Albanian	-1.877	-0.056	-0.095
	(30.403)	(0.118)	(0.144)
Constant	219.358***	5.188***	4.976***
	(52.612)	(0.242)	(0.707)
N	168	168	163
R^2	0.064	0.099	0.023

Standard errors in parentheses
* p<0.10; ** p<0.05; *** p<0.01

[1] The imputed reservation wage is the **mid point** of the range chosen by the respondent. For the category "€451 and above," the imputed value is €475.5.

[2] Cash remittances are measured in 100s of Euros per month in the Linear column, and a logarithmic transformation of monthly remittances is taken for the Log-log and IV models.

[3] Household income is the sum of monthly income from all sources, for all the members of the household residing in Kosovo. The logarithmic transformation of income is taken for the Log-Log and IV models.

[4] The respondent's age, years of education and duration of the current unemployment spell, are all measured in years.

Table 6: Results of Estimating Eq. (2) - Registration at Local Unemployment Center

Notes: Family Abroad Sub-sample/ Registration at Local Unemp. Centre/ Cash remittances	Probit	Logit	Linear Probability Model
Monthly *Cash* Remittances 2012 [1]	-0.039	-0.062	-0.011
	(0.036)	(0.065)	(0.006)
HH Income [2]	-0.087**	-0.144*	-0.021**
	(0.042)	(0.074)	(0.010)
HH Size	0.028	0.047	0.003
	(0.074)	(0.132)	(0.026)
Rural	0.297	0.464	0.116
	(0.281)	(0.461)	(0.106)
HH Head Male	-0.198	-0.300	-0.062
	(0.445)	(0.774)	(0.160)
HH Head Age [3]	-0.010	-0.016	-0.002
	(0.012)	(0.021)	(0.004)
HH Head Education [3]	0.108*	0.173*	0.033
	(0.057)	(0.098)	(0.020)
HH Head Unemployment Duration [3]	0.001	-0.000	0.000
	(0.028)	(0.045)	(0.010)
Albanian	-1.386**	-2.368**	-0.471***
	(0.634)	(1.171)	(0.156)
Constant	0.760	1.387	0.744*
	(1.114)	(2.096)	(0.390)
N	102	102	102
R^2 / Pseudo R^2	0.125	0.124	0.142

Standard errors in parentheses

* p<0.10; ** p<0.05; *** p<0.01

[1] Remittances are measured in 100s of Euros per month.

[2] Household income is the sum of monthly income from all sources, for all the members of the household residing in Kosovo.

[3] The respondent's age, years of education and duration of the current unemployment spell, are all measured in years.

V. Conclusions

Remittances are an important source of income for households in developing countries worldwide, including in Kosovo. Remittances lead to an increase in unearned income, which through an income affect, lead to an increase in receiving households' demand for leisure. This study has investigated the impact of remittances on unemployed respondents' reported reservation wage and on the likelihood of registering at the local unemployment center, using data from Kosovo. Using an instrumental variables approach to account for reverse causality and selection bias, this study has established that an increase in remittances leads to an increase in reported reservation wage. It also has shown a negative correlation between the level of remittances received, and the likelihood of registering at the local unemployment center. These results overall indicate that the labor supply in Kosovo is negatively impacted by remittances, but that the impact is relatively small in magnitude. Hence, the results from this study help to settle the debate on the literature, by once again confirming the negative impact of remittances on labor supply.

These results are useful for Kosovo policymakers and stakeholders who strive to decrease the high rates of unemployment in the country. High unemployment rates in Kosovo, along with stagnation in economic development, are barriers in its path towards integration into the European Union – the ultimate goal of the Kosovo government, and a dream and aspiration for the small nation. While this study sheds some light into the mechanisms through which remittances affect labor supply in Kosovo, it relies on a very small sample size. Kosovo policymakers should invest more effort and resources in gathering quality data, as good quality data and large datasets are a tool *sine qua non*, for researchers working in all areas of Kosovo's economic development.

While an important addition to the literature, this study is not without its limitations. Assuming an individual utility level – household budget constraint may not be adequate in the Kosovo context, hence providing an avenue for further research. This study has also relied on reported reservation wages, hence future studies should address the issue on how closely reported reservation wages are related to individuals' actual reservation wages when they are confronted with job opportunities. Finally, as more data become available, it is important to repeat a similar analysis in order to investigate whether or not the results presented here hold for larger sample sizes.

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Appendix

Table A1: IV First Stage Regression - Reservation Wage [1]	
Notes: Family Abroad Sub-sample/ Midpoint reservation wage/ Cash remittances	Log
Kosovo Visit Frequency [2]	0.149**
	(0.061)
(Log) HH Income [3]	0.196***
	(0.074)
Household Size	0.001
	(0.022)
Rural	-0.125
	(0.117)
HH Head Male	0.025
	(0.155)
HH Head Age [4]	0.000
	(0.004)
HH Head Education [4]	0.012
	(0.017)
HH Head Unemployment Duration [4]	0.005
	(0.009)
Albanian	0.539**
	(0.247)
Constant	-1.274***
	(0.457)
N	350
R^2	0.063
Standard errors in parentheses	
* p<0.10; ** p<0.05; *** p<0.01	

[1] The imputed reservation wage is the **midpoint** of the range chosen by the respondent. For the category "€451 and above," the imputed value is €475.5.
[2] Kosovo visit frequency is a count variable.

[3] Household income is the sum of monthly income from all sources, for all the members of the household residing in Kosovo. The logarithmic transformation of income is taken for the Log-Log and IV models.

[4] The respondent's age, years of education and duration of the current unemployment spell, are all measured in years.

Table A2: Results of Estimating Eq. (1) - Reported Reservation Wage of the Unemployed [1]

Notes: Family Abroad Sub-sample/ Midpoint reservation wage/ Total remittances	Linear	Log	Log w/ IV Kosovo Visit Freq.
(Log) Monthly *Total* Remittances 2012 [2]	2.639	0.029	0.187
	(3.831)	(0.025)	(0.253)
(Log) HH Income [3]	1.977	0.085**	0.046
	(1.544)	(0.038)	(0.075)
Household Size	3.919	0.006	-0.004
	(3.620)	(0.011)	(0.011)
Rural	19.905	0.105*	0.113*
	(14.357)	(0.058)	(0.061)
HH Head Male	3.585	0.038	-0.020
	(21.310)	(0.079)	(0.089)
HH Head Age [4]	-0.421	-0.003	-0.003
	(0.578)	(0.002)	(0.002)
HH Head Education [4]	2.197	0.011	0.003
	(2.598)	(0.010)	(0.017)
HH Head Unemployment Duration [4]	-0.496	-0.000	0.001
	(0.842)	(0.003)	(0.004)
Albanian	0.753	-0.037	-0.102
	(29.972)	(0.115)	(0.151)
Constant	213.776***	5.186***	4.766***
	(50.897)	(0.225)	(0.812)
N	175	175	170
R^2	0.061	0.095	
Standard errors in parentheses			
* p<0.10; ** p<0.05; *** p<0.01			

[1] The imputed reservation wage is the **midpoint** of the range chosen by the respondent. For the category €451 and above, the imputed value is €475.5.

[2] Total remittances are measured in 100s of Euros per month in the Linear column, and a logarithmic transformation of monthly remittances is taken for the Log-log and IV models.

[3] Household income is the sum of monthly income from all sources, for all the members of the household residing in Kosovo. The logarithmic transformation of income is taken for the Log-Log and IV models.

[4] The respondent's age, years of education and duration of the current unemployment spell, are all measured in years.

Table A3: Results of Estimating Eq. (1) - Reported Reservation Wage of the Unemployed [1]

Notes: Family Abroad Sub-sample/ Minimum point reservation wage/ Cash remittances	Linear	Log	Log w/ IV Kosovo Visit Freq.
(Log) Monthly *Cash* Remittances 2012 [2]	1.200	0.044	0.115
	(4.356)	(0.034)	(0.223)
(Log) HH Income [3]	1.860	0.084*	0.064
	(1.551)	(0.043)	(0.089)
Household Size	5.069	0.013	0.008
	(3.756)	(0.013)	(0.023)
Rural	20.067	0.127*	0.134**
	(14.571)	(0.068)	(0.063)
HH Head Male	0.434	0.020	-0.015
	(21.678)	(0.090)	(0.096)
HH Head Age [4]	-0.463	-0.003	-0.003
	(0.586)	(0.003)	(0.003)
HH Head Education [4]	1.891	0.012	0.009
	(2.673)	(0.012)	(0.015)
HH Head Unemployment Duration [4]	-0.592	-0.001	-0.001
	(0.845)	(0.004)	(0.004)
Albanian	-1.877	-0.070	-0.104
	(30.403)	(0.134)	(0.162)
Constant	194.858***	5.029***	4.852***
	(52.612)	(0.280)	(0.810)
N	168	168	163
R^2	0.064	0.101	0.051

Standard errors in parentheses
* p<0.10; ** p<0.05; *** p<0.01

[1] The imputed reservation wage is the **minimum** of the range chosen by the respondent. For the category "€451 and above," the imputed value is €451.

[2] Cash remittances are measured in 100s of Euros per month in the Linear column, and a logarithmic transformation of monthly remittances is taken for the Log-log and IV models.

[3] Household income is the sum of monthly income from all sources, for all the members of the household residing in Kosovo. The logarithmic transformation of income is taken for the Log-Log and IV models.

[4] The respondent's age, years of education and duration of the current unemployment spell, are all measured in years.

Table A4: Results of Estimating Eq. (1) - Reported Reservation Wage of the Unemployed [1]

Notes: Family Abroad Sub-sample/Maximum point reservation wage/ Cash remittances	Linear	Log	Log w/ IV Kosovo Visit Freq.
(Log) Monthly *Cash* Remittances 2012 [2]	1.207	0.033	0.115
	(4.362)	(0.026)	(0.176)
(Log) HH Income [3]	1.863	0.065*	0.040
	(1.552)	(0.033)	(0.070)
Household Size	5.053	0.011	0.010
	(3.758)	(0.011)	(0.019)
Rural	20.161	0.094*	0.101**
	(14.590)	(0.052)	(0.050)
HH Head Male	0.346	0.016	-0.021
	(21.710)	(0.072)	(0.077)
HH Head Age [4]	-0.467	-0.002	-0.002
	(0.587)	(0.002)	(0.002)
HH Head Education [4]	1.887	0.008	0.005
	(2.676)	(0.009)	(0.012)
HH Head Unemployment Duration [4]	-0.593	-0.001	-0.002
	(0.847)	(0.003)	(0.003)
Albanian	-1.736	-0.046	-0.086
	(30.422)	(0.106)	(0.130)
Constant	244.226***	5.323***	5.100***
	(52.679)	(0.215)	(0.634)
N	168	168	163
R^2	0.064	0.098	0.002

Standard errors in parentheses

* p<0.10; ** p<0.05; *** p<0.01

[1] The imputed reservation wage is the **maximum** of the range chosen by the respondent. For the category "€451 and above," the imputed value is €500.

[2] Cash remittances are measured in 100s of Euros per month in the Linear column, and a logarithmic transformation of monthly remittances is taken for the Log-log and IV models.

[3] Household income is the sum of monthly income from all sources, for all the members of the household residing in Kosovo. The logarithmic transformation of income is taken for the Log-Log and IV models.

[4] The respondent's age, years of education and duration of the current unemployment spell, are all measured in years.

Table A5: Results of Estimating Eq. (1) - Reported Reservation Wage of the Unemployed [1]

Notes: Full sample/ Midpoint reservation wage/ Cash remittances	Linear	Log	Log w/ IV Kosovo Visit Freq.
(Log) Monthly *Cash* Remittances 2012 [2]	1.050	0.011	0.118
	(3.922)	(0.011)	(0.196)
(Log) HH Income [3]	1.836	0.080**	0.049
	(1.336)	(0.033)	(0.078)
Household Size	5.299	0.013	0.009
	(3.354)	(0.011)	(0.021)
Rural	13.318	0.090*	0.115**
	(12.109)	(0.050)	(0.056)
HH Head Male	2.840	0.031	-0.019
	(18.230)	(0.075)	(0.085)
HH Head Age [4]	-0.208	-0.001	-0.003
	(0.505)	(0.002)	(0.002)
HH Head Education [4]	3.681*	0.015*	0.006
	(2.059)	(0.008)	(0.013)
HH Head Unemployment Duration [4]	-0.669	-0.001	-0.001
	(0.732)	(0.003)	(0.003)
Albanian	-11.656	-0.084	-0.095
	(19.551)	(0.079)	(0.144)
Constant	199.489***	5.263***	5.517***
	(44.446)	(0.174)	(0.292)
N	233	233	163
R^2	0.059	0.084	0.023

Standard errors in parentheses
* p<0.10; ** p<0.05; *** p<0.01

[1] The imputed reservation wage is the **midpoint** of the range chosen by the respondent. For the category "€451 and above," the imputed value is €475.5.

[2] Cash remittances are measured in 100s of Euros per month in the Linear column, and a logarithmic transformation of monthly remittances is taken for the Log-log and IV models.

[3] Household income is the sum of monthly income from all sources, for all the members of the household residing in Kosovo. The logarithmic transformation of income is taken for the Log-Log and IV models.

[4] The respondent's age, years of education and duration of the current unemployment spell, are all measured in years.

Table A6: Results of Estimating Eq. (2) - Registration at Local Unemployment Center			
Notes: Family Abroad Sub-sample/ Registration at Local Unemp. Center/ Total remittances	Probit	Logit	Linear Probability Model
Monthly *Cash* Remittances 2012 [1]	-0.038	-0.059	-0.011
	(0.036)	(0.062)	(0.007)
HH Income [2]	-0.096**	-0.162**	-0.023**
	(0.044)	(0.079)	(0.010)
HH Size	0.033	0.057	0.005
	(0.073)	(0.131)	(0.025)
Rural	0.336	0.530	0.126
	(0.277)	(0.453)	(0.103)
HH Head Male	-0.154	-0.215	-0.040
	(0.429)	(0.746)	(0.154)
HH Head Age [3]	-0.008	-0.013	-0.002
	(0.012)	(0.020)	(0.004)
HH Head Education [3]	0.085	0.136	0.026
	(0.055)	(0.095)	(0.019)
HH Head Unemployment Duration [3]	0.000	-0.002	-0.000
	(0.027)	(0.044)	(0.010)
Albanian	-1.401**	-2.396**	-0.475***
	(0.634)	(1.181)	(0.155)
Constant	0.863	1.551	0.777**
	(1.100)	(2.077)	(0.378)
N	105	105	105
R^2 / Pseudo R^2	0.116	0.116	0.132
Standard errors in parentheses			
* p<0.10; ** p<0.05; *** p<0.01			

[1] Remittances are measured in 100s of Euros per month.

[2] Household income is the sum of monthly income from all sources, for all the members of the household residing in Kosovo.

[3] The respondent's age, years of education and duration of the current unemployment spell, are all measured in years.

Table A7: Results of Estimating Eq. (2) - Registration at Local Unemployment Center

Notes: Total Sample/ Registration at Local Unemp. Center/ Cash remittances	Probit	Logit	Linear Probability Model
Monthly *Cash* Remittances 2012 [1]	-0.060	-0.099	-0.014**
	(0.051)	(0.092)	(0.006)
HH Income [2]	-0.102***	-0.171***	-0.027***
	(0.035)	(0.062)	(0.008)
HH Size	0.005	-0.000	-0.004
	(0.064)	(0.118)	(0.021)
Rural	0.253	0.398	0.094
	(0.241)	(0.398)	(0.088)
HH Head Male	-0.346	-0.561	-0.121
	(0.357)	(0.616)	(0.131)
HH Head Age [3]	-0.009	-0.015	-0.003
	(0.010)	(0.016)	(0.003)
HH Head Education [3]	0.089*	0.140*	0.026*
	(0.046)	(0.076)	(0.015)
HH Head Unemployment Duration [3]	0.012	0.016	0.004
	(0.023)	(0.038)	(0.008)
Albanian	-1.833***	-3.328***	-0.545***
	(0.577)	(1.175)	(0.095)
Constant	1.746*	3.350*	1.043***
	(1.011)	(1.922)	(0.311)
N	143	143	143
R^2 / Pseudo R^2	0.138	0.138	0.160

Standard errors in parentheses
* p<0.10; ** p<0.05; *** p<0.01

[1] Remittances are measured in 100s of Euros per month.

[2] Household income is the sum of monthly income from all sources, for all the members of the household residing in Kosovo.

[3] The respondent's age, years of education and duration of the current unemployment spell, are all measured in years.