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The Impact of Remittances on Labor Supply: Case of Kosovo

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Abstract. This paper examines the impact of remittances on labor force participation in Kosovo using propensity score matching. Investigating whether remittances have any impact on labor force participation is of utmost importance for the case of Kosovo since still today the rate of unemployment and dependency on remittances are very high. Using the Household Budget Survey 2011, this paper applies the propensity score matching techniques to identify the matching group. Through nearest neighbor matching method, this study obtains the matching results, showing the difference in labor force participation between the remittance recipient and non-recipient household members. Covariates used in the model contain information about household and household members characteristics including age, gender, marital status, education, area of living, etc. Empirical findings of the study are in line with a growing body of literature and economic that the presence of remittances leads to a reduction in the rate of labor force participation

Keywords: Remittances, Labor force participation, Propensity score matching, Kosovo

Introduction

This paper aims to examine whether remittances have an impact in altering the labor market participation in Kosovo using the Household Budget Survey 2011. Investigating this effect is of outmost importance for the case of Kosovo since these findings can contribute to the economic development of the country, as still today the rate of unemployment and dependency on remittances remain very high. Remittance inflows have a profound impact on developing countries, presenting the second largest external financial source (Adams and Page, 2005).

Based on the latest annual report of IMF (2016), remittances today in Kosovo have shown an increase of 8.5 percent by reaching an amount of 752.4 million euros (see Figure 1), and are expected to continue growing in the future. Eurostat statistics show that remittances account for 16.7 percent of country's GDP while constituted 18 percent of the GDP in 2011.

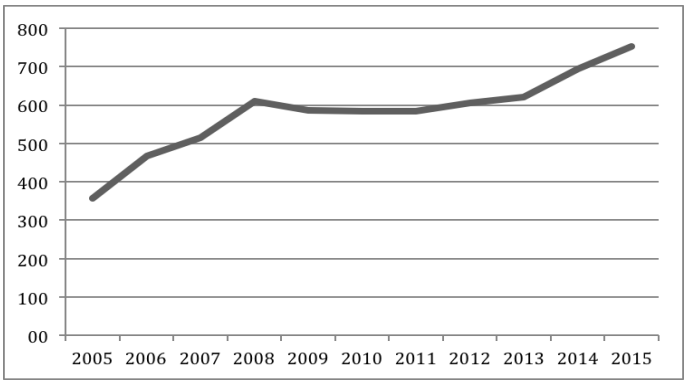

Fig. 1. Remittances in Kosovo during 2005-2015 period. Source: Central Bank of Kosovo, Annual Reports

Nonetheless, the effect of remittances on employment decision of recipient household members has been a controversial topic for a long time now. While remittances can have several positive impacts on economic development of receiving countries, such as alleviating poverty, improving education and smoothing consumption (World Bank, 2006; Petreski et al., 2013), they are sometimes considered as disincentives or discouragements for the labor market. On one-hand, it is argued that remittances have a positive impact on labor force participation by allowing recipient household members to get involved in business investments (Kilic et. al., 2009) and accumulate assets or increase self-employment (Adams, 2005). On the other hand, if only used for consumption and leisure spending, remittances can discourage labor market participation by increasing reservation wage. To measure the impact of remittances on labor force participation for Kosovo this study makes use of the rich dataset of Household Budget Survey (HBS) 2011 and concentrates on the effect of remittances on the labor force participation of household members, HBS is a statistical questionnaire that covers families in rural and urban territories of Kosovo assessing information on individuals and household characteristics such as consumption expenditures, household income, self-consumption, key measures of living conditions as well as economic, social and demographic characteristics of household members. The survey sets up the standard demographic characteristics of all family members and the labor status of individuals over 12 years old. This study uses this dataset, as it contains information that is directly relevant to the impact aimed to measure. The data used for this study dates back to 2011 and is not the latest version of household data collected by Kosovo Agency of Statistics but it is the one I was granted the access to. Even though limited to a year, findings of this paper it can serve as an avenue for further research and a base of comparison with other studies.
In order to see whether remittances act as discouragement tool for potential job seekers, this study addresses the following research question: *Do remittances alter force participation by acting as disincentives for recipient household members to participate in the labor market?*

Data and Descriptive Statistics

The objective of this section is to provide descriptive statistics of the variables utilized. Table 1 is presented below to compare the means of the two groups in terms of relevant variables.

	Remittance Recipient			Non-Recipient			Diff.
Variable	Std.Er.	[95% Conf. Interval]		Std.Er.		[95% Conf. Interval]	T-value
Employed	.011	.149	.191	.005	.336	.358	12.35***
Less than primary	.014	.413	.469	.006	.346	.368	-5.67***
Primary	.012	.211	.258	.005	.221	.240	-0.32
Secondary	.013	.260	.312	.005	.322	.343	3.26***
Tertiary	.005	.027	.049	.003	.073	.086	5.13***
Total Education	.043	4.769	4.937	.017	5.142	5.210	6.94***
Male	.014	.426	.482	.006	.489	.512	2.99***
Urban	.014	.335	.389	.006	.526	.549	11.41***
Age	.429	35.369	37.054	.163	34.631	35.268	-2.86**
Age_square	33.744	1468.004	1600.412	12.419	1396.301	1444.991	-3.36***
HHsize	.093	6.242	6.608	.042	6.994	7.159	5.85***
Married	.014	.559	.614	.006	.585	.607	0.65
Max_education	.039	5.844	5.998	.015	6.272	6.333	9.20***
Nr_workinage	.057	4.296	4.521	.026	4.894	4.996	7.82***
Income	12.320	442.5	490.9	4.270	487.8	504.5	2.53**
Region	.058	3.661	3.887	.023	4.065	4.154	5.48***
Ferizaj	.012	.182	.227	.004	.121	.137	-7.02***
Peje	.009	.105	.142	.004	.156	.172	3.59***
Prizren	.009	.106	.143	.004	.124	.140	0.70
Prishtine	.004	.0912	.126	.004	.164	.181	5.56***
Gjilan	.010	.122	.162	.004	.127	.143	-0.65
Mitrovice	.012	.181	.226	.004	.123	.138	-6.79***
Gjakove	.008	.077	.109	.004	.129	.1446	4.18***

Results and Discussion

The first step of a propensity score modeling begins with a logistic regression model where treatment status (receiving remittances) was regressed on the baseline characteristics shown previously in Table 1. This will allow us to predict the reception of remittances (treatment) based on a set of characteristics listed below.

Table 2. Estimation of the probability of receiving remittances. Source: Household Budget Survey 2011 and author's calculations.

Logistic regression

Number of obs = 8731
LR chi2(19) = 460.33
Prob > chi2 = 0.0000
Log likelihood = -3264.7808
Pseudo R2 = 0.0659

Remittances	Coef.	Std Err.	z	P>|z|	[95% Conf. Interval]	
HHsize	.016	.018	.86	0.392	-.020	.051
Age	-.020	.016	-1.26	0.207	-.051	.011
Age_squared	.000	.000	1.79	0.074	.000	.001
Less than primary	.922	.170	5.41	0.000	.589	1.26
Primary	.742	.173	4.28	0.000	.402	1.081
Secondary	.641	.168	3.82	0.000	.312	.970
Nr_workinage	-.181	.028	6.38	0.000	-.237	-.126
Male	-.133	.067	-1.99	0.047	-.264	-.002
Urban	-.780	.069	-11.38	0.000	-.915	-.646
Married	-.150	.094	-1.60	0.110	-.333	.034
Gjakove	-.924	.125	-7.37	0.000	-1.169	-.678
Ferizaj	.008	.104	0.07	0.942	-.197	.212
Gjilane	-.360	.113	-3.20	0.001	-.581	-.139
Peje	-.695	.116	-5.98	0.000	-.922	-.467
Prishtine	-.926	.119	-7.77	0.000	-1.16	-.693
Prizren	-.460	.117	-3.93	0.000	-.689	-.231
Cons	-1.547	.383	-4.03	0.000	-2.299	-.795

Based on the logistic estimations, we see that living in a bigger household increases the probability of receiving remittances. This would lead to the intuitive explanation that households with more members have more expenses hence have higher probability of receiving remittances as financial support. However, this result is not shown to be statistically significant. Having less working age household members in a household on the other hand increases the probability of receiving remittances. The probability of receiving remittances in a household with more working is lower. The more working people within a household, the more income for the family and the lower the need for receiving remittances. Living in urban areas decreases the likelihood of receiving remittances, which can be related to the fact that people living in rural areas of Kosovo are poorer and in greater need of financial support, whereas people residing in urban areas have greater job opportunities and potential to earn more. Variables: age and married are not shown to have a statistically significant effect on the probability of receiving remittances. The probability of receiving remittances also decreases when the household member is male, which can be related to the fact that the ratio of men to women employed in Kosovo is much higher, especially in rural parts of Kosovo. As presented, level of education is negatively related to the likelihood of receiving remittances, the higher the level of education the lower the probability of receiving remittances.

Figure 2 visualizes the difference in distributions of propensity score between remittance recipient and non-recipient group, based on selected covariates. It draws the extent to which propensity scores distributions in treatment and matched groups overlap. To test the hypothesis stated in the beginning of this study that remittances have an impact in altering the labor market participation; I examine the difference in the probability of being employed. In order to do so, data was categorized in three groups: treated, non-treated and matched. In total, there are 1,200 remittance-receiving or treated household members. However the common support consists of 7,531 participants.

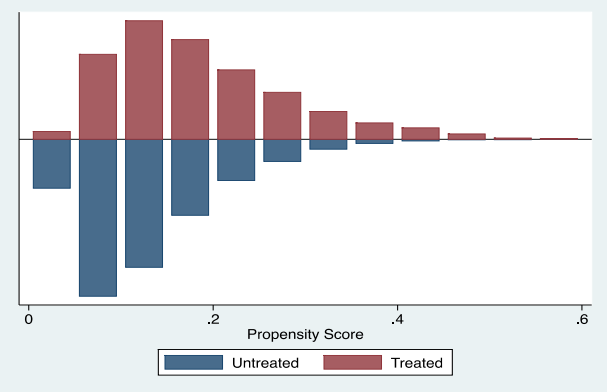

Fig. 2. Propensity score histogram by treatment. Source: Household Budget Survey 2011 and author's calculations.

Finally, Table 3 presents the differences in mean labor force participation between remittance receiving household members and non-remittance receiving ones. Since simply comparing the difference in labor market participation between remittance recipients and non-recipients would lead to bias and selectivity issues; a control group is crucial to have relevant insight.

Table 3. Estimated Effects of Remittances on Individual Labor Force Participation Rates using Propensity Score Matching. Source: Household Budget Survey 2011 and author's calculations

	Sample	Treated	Not Treated	Difference	S.E	T-stat
Employment	***Unmatched***	**.171**	**.347**	**-.176**	**.014**	**-12.24**
	Sample	**Treated**	**Controls**	**Difference**	**S.E**	**T-stat**
	ATT	**.171**	**.307**	**-.136**	**.019**	**-7.14**

Note: ATT means average treatment effect on the treated

- ***Sample Unmatched****:* original sample size (comparison of all treated to untreated)
- ***Sample ATT:*** *the* average treatment effect on the treated. The sample of individuals that include remittance recipients and matched individuals for each treated unit.
- ***Treated:*** *the* average employment of individuals receiving the treatment (remittances).
- ***Not Treated****:* the average employment of individuals not receiving the treatment (remittances).
- ***Controls:*** the average employment of matched individuals; group of individuals with similar characteristics to treated group except for reception of remittances
- ***Difference***: the mean difference between treated and not treated group in full sample and between the treated and control group (matched group)

Conditional on the observed covariates, when remittance recipients are paired with non-recipients with similar propensity scores, the estimated effect of remittances is shown to be statistically significant at 5 percent level of confidence. The average effect of treatment on treated (ATT) shows that the probability of participating in the labor market is greater for individuals who do not receive remittances and the difference is large enough to conclude that this estimated effect of remittances is statistically significant. Not receiving the treatment (remittances) raises the average participation in the labor market by .136 for individuals in the matched group (controls).

Conclusion

This paper provides evidence on the effect of remittances of labor supply of Kosovo by comparing the labor force participation rate of remittance recipients to non-recipients and controlling for selection bias. It adds to the existing literature by studying a specific survey of Kosovo households in 2011 and using a different methodology compared to previous studies.
To conclude, the findings of this study are in line with the theoretical framework used and expectations of a growing body of literature. Certainly this paper is not without limitation but it can serve as avenue for further research, where it would be interesting to expand this study by investigate the working hours in the labor market to see whether remittances alter the hours devoted to work or substitute one activity for another. Expanding the research and investigating the remittance impact on labor force participation in to time series analysis could be another way to grow this study in the future.

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