

Determinants of Migrants' Earnings and Remittances: Evidence from Kosovo

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This paper is an attempt to find the main determinants of migrants' earnings and analyze what makes migrants remit money to their home countries. We use the dataset on migrants compiled by the Riinvest Institute² in 2006. Ordinary least squares (OLS) and interval regression methods are used to estimate the migrants' earnings model, while for the remittances model we use OLS and Tobit estimation methods. The results suggest, inter alia, that the returns to education are positive for migrants; also, migrants in countries with higher per capita GDP have higher family earnings. Among the most important determinants of remittances are migrants' investments in their home countries, migrants' perceptions of the business environment, migrants' earnings, gender and the duration of migration. This paper tries to fill the gap in the literature, especially for the case of Kosovo, by exploring what determines the earnings of migrants and what makes migrants remit part of these earnings.

JEL classification: D31, F22, F24

Keywords: Remittances, migration, personal income

1 Introduction

Migration from Kosovo has both political and economic reasons. It peaked in the 1990s, when more than 60% of migrants left the country, especially during the war of 1998–1999. A large number of Kosovan refugees settled in Western Europe and the U.S.A. Given the income gap between Kosovo and Western countries, a significant number of migrants did not return home after the war. According to a survey conducted by the Riinvest Institute in 2006, migration is seen as the solution to economic problems by around 30% of households in Kosovo, as the country's unemployment level is considered to be very high. The current number of migrants' lies somewhere between 20% and 25% of Kosovo's total population, which is estimated to be 2.1 million.³ Remittances are highly important both for Kosovo's economy and for the entire region. For instance in 2008, the inflow of remittances to Kosovo was EUR 535 million or around 14% of GDP (CBK, 2008). Remittances are also very important for Albania and Bosnia and Herzegovina, where they account for around 17% and 19% of GDP, respectively (Schipou and Siegfried, 2007). What are the motives to remit money is a commonly asked question in migration literature. There is still no systematic theory that explains remittance behavior, and evidence is also scarce.

2 The Determinants of Migrants' Earnings

Human capital theory recognizes several factors which determine the level of earnings for individuals. Among the most rewarded attributes in this context is the level of education level and labor market experience (Becker, 1975; Mincer, 1958). Even though there is a general consensus in the literature, Chiswick and

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² Riinvest Institute for Development Research (www.riinvestinstitute.org).

³ Given that the last census was in 1981, population and migration figures are estimates (see www.ks-gov.net/ESK/).

Miller (2005, 2007) suggest that migrants face difficulties in transferring their skills to more developed economies. The findings of Chiswick and Miller (2007) suggest that education is likely to be more easily transferable across international labor markets than experience, since the skills obtained at school are less specific compared to practical working experience. An additional year of education for migrants would help increase earnings by around 4% to 6%, while for native-born workers returns to an additional year of education are a 5% to 10% rise in earnings. This could be attributed to the lower transferability of labor market experience as well as to the fact that migrants tend to perform low-skill jobs. Schools in less developed countries are not able to match the requirements of the destination countries. Similarly, technical skills are nontransferable since the technology in developed countries is more advanced than that in developing countries. Chiswick and Miller (2007) suggest that the longer migrants stay in the respective host country, the better are the jobs they are offered since, over time, they obtain new skills, become more familiar with the host country's language and culture and, most importantly, gain experience in the host country's labor market.

In the situation of Kosovo, additional factors are relevant in explaining the possible lower transferability of skills. One very important factor is the education system which was in place in Kosovo until 1999. The so-called "parallel"⁴ system was not recognized by other European countries (with a few exceptions). The facilities used for education were frequently of low quality. The experience and training of Kosovan migrants is not expected to have a significant effect on their earnings. This is because formal training in Kosovo may not fulfill the requirements of developed economies.

However, in order to empirically investigate the determinants of Kosovan migrants' earnings, we develop a model similar to those introduced in the literature. In addition to the number of years of education (Sch), we also control for some characteristics such as the number of years since a person first migrated (YSM), which is a proxy of host-country labor market experience. However, earnings are expected to have a decreasing marginal return on experience (Chiswick and Miller, 2007; Becker, 1974). For this reason, we include in the model the squared value of YSM. The destination country is also important in determining earnings, meaning that migrants who go to more developed countries, i.e. countries with higher levels of GDP per capita, are likely to have higher earnings reflecting the higher standards of living and the scarcity of low-skilled workers.

Regarding the difference between migrants who originate from urban and rural areas, we expect migrants from rural areas to be employed in agriculture-related sectors and hence have lower earnings compared to their counterparts from urban areas. Variables such as the age of the respondent migrants (Age), their marital status (Ma), legal status (C), employment status (E) and gender (G) will be taken into account.

⁴ Education in Kosovo was organized separately from the former Serbian institutions and funded by Kosovan Albanians and the diaspora of Kosovo.

From the above, the following model is specified to find what determines the earnings of Kosovan migrants:

$$\begin{aligned}
 LnY = & \beta_0 + \beta_1 Age + \beta_2 Sch + \\
 & + \beta_3 YSM + \beta_4 GDP_{Capita} + \\
 & + \beta_5 G + \beta_6 Ma + \beta_7 C + \beta_8 NoEm + \\
 & + \beta_9 U + \beta_{10} E + \beta_{11} Age^2 + \beta_{12} YSM^2 + u_i
 \end{aligned} \tag{1}$$

Furthermore, as the earnings reported in the Riinvest survey are those of entire families in migration, in this model we also controlled for employment of other family members (*NoEM*). The unobserved factors will be represented by the error term u_i . The data used in this study are obtained from a Riinvest Institute survey with migrants conducted in December 2006. Migrants between the ages of 17 and 76 were interviewed at the borders of Kosovo. Measures of per capita GDP for the 25 identified host countries in 2006 were obtained from the IMF World Economic Outlook.

2.1 Results on Earnings Determinants

As in most earnings functions, residuals are not normally distributed; therefore, transforming earnings to $\log(y)$ provides less heteroscedastic variance and the results are closer to normal distribution. The similarity of the results of ordinary least squares (OLS) and interval regression is an indication of their robustness. As we controlled for the age and education of the head of household in our model, the results may be distorted since we do not know whether the head of household generates the majority of income and neither do we know the size of social and/or retirement benefits which might have been included in the family earnings.

The results presented in table 1 are mostly in line with the literature on earnings models for migrants. We can see that migrants' earnings increase at a slower pace than their age. It is also estimated that at the age of 63, migrants will see their earnings reach a peak while afterwards, earnings decrease with every additional year. The education of Kosovan migrants was expected to be an insignificant determinant of earnings in the respective host countries due to its nontransferability to foreign labor markets; however, the results suggest a positive relationship. As expected, the per capita GDP of the host country has a significant effect on migrants' family earnings: Family earnings are higher in countries where the standard of living is higher. Contrary to expectations and statistically significant is the influence of the marital status of the head of household, suggesting a significant negative effect on family earnings for households that are married-couple families. A possible explanation may be that an unmarried migrant may be working overtime and generate more income, whereas married migrants may be spending time with their families and hence work less. The results also suggest that if more than one person from the same family worked, earnings then would be double. The dataset used here also covers migrants who are not employed. They reported some earnings from either retirement benefits or state unemployment benefits. We therefore included a variable for migrants' employment status which suggests that

Table 1

Determinants of Migrants' Earnings

Variable: Migrants' earnings	OLS		Interval regression	
Constant	5.9 *	5.2 *	5.3 *	5.2 *
	(19.3)	(14.1)	(15.8)	(12.4)
Age	0.03 **	0.03 **	0.03 **	0.04 **
	(2.4)	(2.3)	(2.1)	(2.1)
Age squared	-0.0003 ***	-0.0004 ***	-0.0004 ***	-0.0004 ***
	(-2.0)	(-1.9)	(-1.8)	(-1.8)
Years of education	0.04 *	0.05 *	0.04 *	0.04 *
	(3.6)	(3.0)	(2.8)	(2.6)
Gender	0.04	0.1	0.04	0.1
	(0.8)	(1.4)	(0.9)	(1.4)
GDP per capita (host country)	0.00002*	0.00002*	0.00002*	0.00002*
	(7.4)	(5.8)	(6.8)	(5.8)
Marital status	-0.1 **	-0.2 ***	-0.1 **	-0.2 **
	(-2.2)	(-1.9)	(-2.4)	(-2.0)
Citizenship (host country)	0.1	0.02	0.06	0.02
	(1.6)	(0.4)	(1.5)	(0.4)
Employed	0.3 *	0.4 *	0.3 *	0.4 **
	(4.0)	(4.0)	(3.9)	(4.2)
More than one family member employed	0.6 *	0.5 *	0.6 *	0.5 **
	(13.1)	(10.2)	(13.3)	(10.4)
Location	0.1 ***	0.04	0.08 ***	0.03
	(1.9)	(0.8)	(1.9)	(0.7)
Years since migration		-0.02		-0.02
		(-0.8)		(-0.7)
Years since migration squared		0.001		0.001
		(1.2)		(1.0)
Number of observations	974	663	974	663
Log likelihood	n/a	n/a	-1,330.4	-896.3
Within R-squared	0.255	0.241	n/a	n/a

Source: Author's calculations.

Note: T-ratios and Z-statistics in brackets. *, ** and *** denote significance at the 1%, 5% and 10% level, respectively.

earnings are much higher for employed migrants compared to their counterparts. The variable which controls for pre-migration location (i.e. urban or rural) is positive and significant, suggesting that migrants originating from urban areas earn more; though when the variable “years since migration” is included in the model, the location variable loses its significance. The explanation for the lower payoff for migrants originating from rural areas may be the agriculture-related sector jobs they are likely to be engaged in. Surprisingly, the effect of the variable “years since migration” is statistically insignificant. This may suggest that labor market experience in the host country does not pay off for Kosovan migrants.

In conclusion, our results are in general consistent with the literature. Human capital variables explain a significant proportion of differences in income: The higher the number of years of education, the higher are earnings. Age, used here as a proxy of labor market experience, has a positive effect on earnings. Years spent abroad do not have a statistically significant effect on earnings. Not surprisingly, the number of employees per family plays a highly significant role in determining family earnings; we also find that families that originate from urban areas earn more. Another highly significant determinant of earnings is the host country's per

capita GDP; our evidence suggests that migrants working in countries with higher per capita GDP earn significantly more than those working in countries where per capita GDP is lower (a more detailed description on estimation methods and results can be found in Havolli, 2007, available upon request).

3 Determinants of Remittances

Some authors suggest that migration itself is a strategy households use to minimize income risk while others suggest that it is an individual strategy to maximize income (Garip, 2006). If the latter holds, migrants will not be motivated to remit (part of) their earnings to their home countries. By contrast, if the argument of minimizing households' income risk holds, one would expect remittance flows from the migrants in question. The main theories on the motives to remit money distinguish between two general motives: the altruistic motive and the exchange motive.

Altruistic migrants are those who enjoy sending money to relatives in their country of origin (Funkhouser, 1995; Lucas and Stark, 1985; Rapoport and Docquier, 2005; Carling, 2008). Even though the altruistic motive is often considered the least important factor in determining remittances, it is of importance because it is likely to be one of the few motives that can guarantee the stability of remittances over time (Bougha-Hagbe, 2006). The exchange motive mostly applies to migrants who are motivated by one, or several, of the following motives: inheritance considerations, maintaining links, investments, and the implicit loan repayment motive. Migrants motivated by inheritance considerations are those who send remittances to support their families in order to ensure the right of inheriting assets in their country of origin. The maintaining links theory implies that migrants are likely to remit funds when they are willing to return to their country of origin. They send remittances so that they can show their intentions to return and to maintain links with their family; the longer they stay in the host country, the more their willingness to maintain links with their relatives decreases and hence, remittances decrease in the long term. However, if migrants are expected to return to their home countries, this possibly generates investments, such as land or house purchases.

However, this group of self-interested migrants sends remittances to “buy” what Lucas and Stark (1985) call “social assets” – the relationship with their family members and friends. Lucas and Stark (1985) explain the investment theory as follows: Migrants remit money so they can ensure the maintenance of the assets they have invested in or plan to invest in. Related to this, Garip (2006) and Rapoport and Docquier (2005) suggest that investment conditions in the home country play an important role for the decision to send remittances and for the amount of these remittances. If migrants consider business conditions in their home country favorable, the amount of remittances is higher. Implicit loan repayment theory offers another explanation for remittance. Under this theory, migrants send remittances as a repayment of previous implicit loans from their families for expenses made in developing their human capital (i.e. their education).

An increase in migrants' income would affect remittances positively since earnings are the source of remittances. The distance between the host and home countries and the number of years since migrants left their home countries have a

negative effect on migrants' intentions to return, and hence on remittances, as a result of weakened links.

Finally, the number of dependants and other relatives living in the home country positively affects remittances, which is explained by the altruistic motive (e.g. investment in children's education) and maintaining links.

The general model that will be used here to examine the determinants of remittances for Kosovan migrants is:

$$\begin{aligned}
 R = & \beta_0 + \beta_1 Y + \beta_2 Age + \beta_3 Sch + \\
 & + \beta_4 Be + \beta_5 I + \beta_6 M + \beta_7 Dep + \\
 & + \beta_8 Cr + \beta_9 YSM + \beta_{10} G + \\
 & + \beta_{11} L + \beta_{12} D + \beta_{13} Age^2 + \\
 & + \beta_{14} YSM^2 + u_i
 \end{aligned} \tag{1}$$

where R is the monthly amount of remittances, Y is the reported migrants' income in euro, which is treated as exogenous,⁵ and Sch is the number of years of migrants' education, Be stands for migrants' perceptions of the business environment in their home country, coded 1 if favorable and 0 otherwise. Whether migrants have invested in any property or business in their country of origin will be taken into account by variable I . M is a control variable for migrants' marital status, Dep controls for the number of dependants (spouse and/or children) in the home country, Cr shows whether the migrant has other close relatives residing in the country of origin. YSM is the duration of migration. The distance from the home country is represented by D . We also control for migrants' age (Age) and gender (G), while L represents their location of origin (1 for urban migrants and 0 otherwise). The term u_i represents the error term.

The same source of data as in the earnings model will be used for the remittances model. Migrants initially were asked whether they remit money or not, and in case they did, they were asked about the amount. Within this dataset, about 14% of migrants said they did not make remittances. The determinants of the size of remittances will initially be estimated by OLS. However, around 14% of migrants said they did not send remittances. Hence, the Tobit method is appropriate for estimating the respective model (Wooldridge, 2006). Since the sign and significance of the results from both methods should be comparable, we will apply both OLS and Tobit.

3.1 Model Results on Determinants of Remittances

In this model, two estimation methods are used to check the robustness of the results. The explanatory variables proved to be jointly significant suggesting that the model is correctly specified in all estimation methods. It was also tested for the normality problem regarding the Tobit estimation method, and the results

⁵ The reason why earnings may be endogenous to remittances is that there may be some migrants who would like to work more to be able to remit higher amounts.

Table 2

Determinants of Remittances

Variable: Remittances	OLS		Tobit	
	EUR			
Constant	-472.9 *	-460.3 *	-739.8 *	-652.5 *
	(-3.7)	(-2.1)	(-4.7)	(-3.4)
Age	11.9 **	5.7	23.6 *	15.5 **
	(2.4)	(1.0)	(3.7)	(2.0)
Age squared	-0.2 **	-0.1	-0.3 *	-0.2 **
	(-2.7)	(-1.0)	(-4.0)	(-2.2)
Log income	41.8 ***	46.3 ***	49.2 ***	58.1 ***
	(3.6)	(3.4)	(3.5)	(3.5)
Gender	72.0 *	61.9 **	102.3 *	91.8 *
	(3.9)	(2.9)	(4.4)	(3.5)
Years of education	5.4	8.0	1.4	1.2
	(1.2)	(1.5)	(0.2)	(0.2)
Perceived business environment	58.5 *	90.65*	50.8	91.3 *
	(3.3)	(4.5)	(2.4)	(3.7)
Investment	38.8 **	40.0 ***	72.2 *	61.6 *
	(2.1)	(1.9)	(3.2)	(2.4)
Marital status	18.7	15.5	23.8	15.6
	(0.9)	(0.6)	(0.9)	(0.4)
Close relatives	87.1 *	101.9 *	113.1 *	112.2 *
	(4.9)	(5.0)	(5.1)	(4.4)
Distance between home and host country	-0.01	-0.01***	-0.002	-0.01
	(-0.7)	(-1.9)	(-0.2)	(-1.3)
Number of dependants in home country	7.3	-8.9	7.8	-12.5
	(1.0)	(-0.8)	(0.9)	(-0.9)
Location	-22.0	-31.0 ***	-36.4 ***	-60.8 *
	(-1.4)	(-1.8)	(-1.9)	(-2.8)
Years since migration		11.9 *		9.4
		(1.8)		(1.1)
Years since migration squared		-0.8 **		-0.7 ***
		(-2.5)		(-1.8)
Number of observations	932	633	945	646
Log likelihood	n/a	n/a	-5,889.2	-4,046.1
Within R-squared	0.10	0.14	n/a	n/a

Source: Author's calculations.

Note: T-ratios and Z-statistics in brackets. *, ** and *** denote significance at the 1%, 5% and 10% level, respectively.

suggest that normality fulfills the conditions for the Tobit estimation method. The results of the regressions are presented in table 2.

Even though positive, the effect of age on remittances increases at a slower pace. This is indicated by the negative coefficient of Age^2 . The inclusion of the number of years passed since migration (YSM) and its squared value affects the significance of Age ; it becomes insignificant.⁶

The effect of income on remittances suggests that higher income has a positive effect on the amount of remittances. The gender variable is highly significant in all the models used. Male migrants remit more, which could be explained by inheritance-seeking aspirations rooted in the culture and tradition of Kosovo. In addition to inheritance motives, men are in general more likely to migrate than women. The fact that the number of years of education has a statistically insignificant

⁶ This may be due to multi-collinearity; however, it is considered that when testing different theories with variables that might be correlated, it is much more appropriate not to drop variables.

effect on remittances can be viewed as an indicator of the nonrepayment of past implicit loans. One of the main findings of this paper is that investments by migrants in Kosovo and their perceptions about the business environment are of high importance in determining the size of remittances; in fact, if migrants perceive that conditions for business in Kosovo are favorable, this has a positive effect on the size of their remittances. The results also suggest that investments in any property or business in Kosovo have a statistically significant positive effect on remittances. Given the importance of these two variables, the government could create incentives that would directly affect these two aspects. Such incentives could consist of promoting a good environment for investment and of reducing taxes on migrants' investments, hence prompting them to invest more in their home country. Moreover, migrants' perceptions of the situation in their home country can also be influenced by making infrastructure investments and fighting negative issues such as corruption. Such policies would have several implications. First, those who perceive business conditions to be good will be more likely to invest and also to send more remittances. Second, for those who have invested in Kosovo, positive changes in the investment environment would have an effect on the amount of remittances and investments. Third, such policies would make it more likely that migrants return to their home country, investing and bringing new technologies.

Another significant effect on remittances seems to be migrants' relationship to other family members still living in the home country. The variable controlling for close relatives also covers the brothers and/or sisters of migrants' parents who still live in the home country. The dummy variable indicating that a migrant has close relatives in the home country has a significant effect on the size of remittances. This variable can also be a proxy to test the link maintenance hypothesis as well as to indicate the altruism of migrants toward family members living in the home country. The first motive indicates that migrants wish to maintain links to other family members at home, while the second motive can be explained by the fact that the migrants' utility is affected by the welfare of their family members in the home country. We also included a measure for dependent children and spouses, but it turned out to be statistically insignificant in both specifications. The coefficient measuring the distance between home and host country proved to be statistically insignificant in the first specification. In the second specification, it turned out to be statistically significant, but its overall effect on remittances is very low. Regarding migrants' location prior to migration, the result suggests that migrants from rural areas send more remittances than others. Additional years of migration are positively related to remittances; however, this effect grows at a decreasing rate until the ninth year in migration, and then remittances decrease (inverse U-shaped function) as indicated by the squared value of years since migration. This result is consistent with the theory of maintaining links and suggests no intentions to return and the weakening of family ties with the home country.

4 Conclusions and Policy Implications

This paper provides micro-level evidence for the determinants of remittances for Kosovo. The findings suggest that the longer migrants stay abroad, the higher their remittances are. This relationship is an inverse U-shape function consistent with link maintenance theory. Aspirations to inherit assets in the home country are

another factor that has an effect on remittances. Also, investments of migrants in their home country play a significant role in determining the amount remitted, which is furthermore influenced strongly by their perception of the business environment in their country of origin. Because remittances are important for the economy of Kosovo and because of the high involvement of Kosovo's migrants in the country's economy, policies should be designed to attract more remittances and migrants' investments. Such policies could comprise the improvement of the business environment in the country of origin, the re-assessment of taxation policies for migrant investment as well as an easing of rules governing business procedures, which would facilitate capital inflows, new labor market experiences (brain gain) and the introduction of new technologies. In addition, improving the country's infrastructure and fighting corruption may improve migrants' perception of the business environment in Kosovo. To support the inflow of remittances also in the future, as well as to increase their development impact on the economy, progress in these areas would be highly important.

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Johannes Pann,
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Russian Banks on the Route of Fragile Recovery

Largely thanks to the recovery of the real economy, the situation of Russian banks has improved again. After month-on-month loan growth had quickly ground to a halt in late 2008, banks contributed to Russia's deep economic slump in 2009. The share of nonperforming loans had tripled to 10% of total loans by late 2009 and has since remained at about this level. An incipient recovery of lending made itself felt only in the second quarter of 2010. However, as the national authorities had delivered a comprehensive policy response which helped sustain or reestablish confidence, Russia did not experience any major bank run or failure. Temporary deposit withdrawals after the collapse of Lehman Brothers were followed by a rapid expansion of deposits, starting from early 2009. Following a modest crisis-triggered rise, the share of foreign currency loans declined again to about one-fifth of total loans. Banks' access to international capital markets improved from late 2009/early 2010. Profitability, having plunged to zero in mid-2009, subsequently recovered but is still modest. Thanks to recapitalization exercises, capital adequacy is satisfactory. The stabilization of the banking sector has allowed the authorities to start exiting from crisis response measures. Banks are faced with a vulnerable environment given the world economy's post-crisis fragility and Russia's undiminished dependence on the oil price and capital flows, which is exacerbated by persisting structural weaknesses. Nonetheless, the existing shock-absorbing factors are sizeable.

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Mathias Lahnsteiner