Economics Bulletin

Volume 32, Issue 4

Microeconomic determinants of migrant remittances to Nigerian households

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Abstract

This study analyses the determinants of both the decision to remit money and the total remittances by Nigerian migrants. The study distinguishes itself from other existing migration studies in Nigeria by focusing on the microeconomic determinants of remittances from both the sending and receiving end. A recent and richer remittances survey data for Nigeria by the World Bank is used to extend the analysis to both internal and international migration. Tobit and Heckit's models were used in the analyses. The empirical findings indicate that duration of the migrant in the country of residence, household asset, household size, living in OECD, highest level of education attained before migration, being male, being a son, daughter or father to the head of the household, and type of employment have statistically significant positive impact on both the probability of remitting and the amount of remittances sent by the migrant to the household. These findings vary significantly by the country of current residence of the migrants. All these suggest that the future inflow of remittances to Nigeria would largely depend on the migrant country of destination, level of education prior to migration, and the type of work done by the migrants in the country of current residence. The work situation of the migrant may in turn depend on the macroeconomic conditions in the country of residence.

This paper was jointly prepared while the corresponding author was a visiting senior research fellow at the United Nations University Institute for Natural Resources in Africa (UNU-INRA), Accra, Ghana, under a fellowship grant from the Centre of Environmental Economics and Policy in Africa (CEEPA) at the University of Pretoria, South Africa. We gratefully acknowledged the helpful comments from two anonymous reviewers and the journal editor John P. Conley. All other disclaimers apply.

Citation: Nwosu O. Emmanuel and Fonta M. William and Aneke Gladys and Yuni N. Denis, (2012) "Microeconomic determinants of migrant remittances to Nigerian households", *Economics Bulletin*, Vol. 32 No. 4 pp. 3425-3438.

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Submitted: October 04, 2012. **Published:** December 20, 2012.

1. Introduction

This study analyses the determinants of remittances and the remittances behavior of Nigerian migrants from a microeconomic perspective. Nigeria is one of the top destination countries for remittances inflow. In 2003, total international remittances inflow to Nigeria stood at a little over US$1 billion. However, since the mid-2000s, remittances inflow to Nigeria is now a significant source of external finance. Data compiled by Migration and Remittances Factbook 2011, indicates that total remittances inflow to Nigeria since 2007, has remained over US$9 billion. More specifically, the data showed that in 2007, 2008, 2009 and 2010, the total remittances inflow to Nigeria were respectively US$9.2, US$9.9, US$9.6 and US$9.9 billion dollars. Additionally, the Factbook shows that the stock of Nigerian emigrants stood at over 1 million and the stock of emigrants as a percentage of the population stood at about 0.6%. Furthermore, the Factbook suggests that the top destination countries for Nigerian migrants are the United States, the United Kingdom, Chad, Cameroon, Italy, Benin, Côte d'Ivoire, Spain, Sudan, and Niger respectively (Migration and Remittances Factbook, 2011).

Currently, there exists large volume of empirical studies on the determinants of remittances although mainly from a macroeconomic perspective. Straubhaar (1986) was one of the first researchers to rigorously shed light on the macroeconomic determinants of remittances inflow from Germany to Turkey. Straubhaar (1986) found that available wages and the possibility to become active in the host country were the two most significant determinants of remittance inflows to Turkey. Thereafter, many subsequent studies found exchange rate, investment and domestic inflation among other factors, as other significant macroeconomic determinants of remittances inflow (see, for e.g., Schiopu and Siegfried 2006, El-Mouhoud *et al*, 2008, El-Sakka and Mcnabb 1999, Vargas-Silva and Huang 2006, and Lin 2011).

One of the implicit assumptions in studies examining the macroeconomic determinants of remittances is that the migrant has full knowledge of macroeconomic conditions in the home country as well as how they evolve over time. However, while the migrant may know much about the exchange rate movements in the home country because it is a key variable of interest, he or she may not know with certainty the evolution of the entire macroeconomic variables of the home country. Moreover, it usually takes a longer time period before current macroeconomic data are released in most developing countries in Sub-Saharan Africa (SSA) such that, associating migrants' remittance decisions to macroeconomic conditions may not be robust. Also, macro-level analysis may leads to endogeneity and reverse causality problems and equally do not allow investigation of how financial development exerts its effects on migrants' remitting decisions (Bettin *et al*, 2012). Similarly, household characteristics as well as the characteristics of the migrant which include altruistic and self-interested motives may equally play a more significant role in the determination of remittance inflows (Lucas and Stark 1985). In fact, Fiani (2007) in an attempt to investigate the controversy on whether skilled workers remit more or less concluded that skilled migrants may have a small propensity to remit from a given flow of earnings. Equally, Bettin *et al*, (2012) found that the level of financial development in recipient countries, have a strong positive effect on remittances though in diverse ways.

Although many empirical studies have found that macroeconomic conditions affect aggregate remittances, it may not completely explain remittances behavior of the migrants at the micro-level. This is particularly true for Nigeria where few microeconomic studies have rather

focused on the distributional impacts of remittance inflows on household poverty and income inequality (see, for e.g., Osili 2004, Orozco and Bryanna 2007, Chukwuone *et al*, 2008, Agu 2009, Fonta *et al*, 2011, and Olowa and Awoyemi 2012). Moreover, most of these studies used the Nigerian Living Standards Measurements Survey of 2004 (NBS, 2004). The use of 2004 NLSS data to study migration is limited in several ways. First, the survey did not account for the characteristics of the migrants rather it focused on the characteristics of the recipient households. Also, most of the remittances data collected were urban-rural remittances with few observations on international remittances. This therefore limits the scope of analyses that could be done especially on what determines migrants' remittances from a microeconomic perspective. Thus, in the case of Nigeria, very little is still known about microeconomic determinants of remittances at the sending end.

This study therefore makes contribution to existing literature on migration studies in Nigeria in two ways. Firstly, the study employs a recent remittances survey data by the World Bank (World Bank, 2011), to analyses the determinants of remittances inflow to households in Nigeria focusing at both the sending and receiving ends. Secondly, the study distinguishes between internal and international remittances behavior. This is important because many studies have ignored internal migration and remittances, which according to recent survey data is huge and could be very effective in poverty reduction. Also, analyzing the determinants of internal remittances inflow to Nigeria is important because Nigeria is now one of the fastest urbanizing countries in the world. Between 1952 and 2006, the proportion of Nigerian population living in urban centers grew from less than 11% to an estimated 46%. This implies an approximate total urban population of about 65 million out of its 140 million persons living in urban centers (United Nations, 2008). This is higher than the average of one third of population living in urban centers in other African countries. If this rate of urban growth and migration continues unabated, more than half of the nation's population would be living in urban centers before 2020.

2. Theoretical Framework and Model

Based on the seminar work of Lucas and Stark (1985), migrants' remittances may be driven by several motives. For instance, one is the so-called pure altruistic motive, in which the migrant is motivated to remit in order to care for the people left behind. The other is the self-seeking or self-interested motive that is driven by the concern for inheritance back at home, as well as the desire to return home ultimately in dignity, and probably to enjoy the fruits of ones labor. In terms of pure altruism, Lucas and Stark (1985) argue that the migrant derives utility from the utility of those left at home, and this later utility is a function of household per capita consumption (pcexp). This would in tend vary with household income (hhinc) and household size (hhsize). Thus, following Lucas and Stark (1985), the building block for our remittance function is given by,

$$\text{Re}mit = (pc\exp, hhsize) \qquad [1]$$

However, relying on purely selfish motivations and the absence of altruism by migrant toward the family, the migrant may remit for three reasons. First is the concern to maintain favor in the line of inheritance. This suggests two things namely; larger remittances would mean larger potential to inherit, and since male migrants have higher potential to inherit than female migrants, they would tend to remit more. A second self-interest of the migrant in remitting home may be to invest in assets (such as land, buildings, cattle, and so on) in the

home area and ensure their careful maintenance (Lucas and Stark, 1985). The third is the intent to return home, in which the migrant is motivated to remit for the erection of an imposing residential building to enhance prestige or influence in the society[1]. Following these line of arguments, we modify the remittance function as,

$$\text{Re}mit = (pc\text{exp}, hhsize, gender, hhasset) \quad [2]$$

Other important issues pointed out by Lucas and Stark (1985) includes the belief that urban migrants are usually better educated and must remit to pay for the initial cost of education. This invariably implies that the household receipts should rise with the education level of the migrant and the effect larger for certain household members (such as sons, and daughters) than others (such as daughters-in-law, sons-in-law, even spouse). Also, remittances are often seen as a method of diversifying certain types of idiosyncratic risks faced by the household such as the risk of crop failure, price fluctuations, livestock diseases, other forms of economic insecurity. One form of diversification is to send some members to urban areas or even off, to other countries. Based on the foregoing, we further modify our remittances function in equation (2) to incorporate these important issues as,

$$\text{Re}mit = (pc\text{exp}, hhsize, gender, hhasset, migrantedu, urban, son, othermembers) \quad [3]$$

However, because the level of financial development invariably affect the money sending channels of the migrants, we extent our empirical specification to reflect this. In fact, Bettin *et al*, (2012) found that transfers increase with the level of financial development as well as partly being determined by altruistic and investment motives. The current work situation of the migrant is therefore included to capture his earnings potential. We expect migrants that have full-time employment as well as those that are self-employed, to remit more relative to the unemployed. To control for country of current residence of the migrant in our empirical specification, country dummies are included. We assigned the value of 0, if a migrant is living within Nigeria, 1 if living in OECD, and 2 if living in African and other countries. Marital status is equally introduced to account for the fact that migrants who are married, and are living with their family members may be less likely to remit. On the basis of this, our empirical remittance function can now be stated as follows,

$$\begin{aligned}\text{Re}mit = (&pc\text{exp}, hhsize, gender, hhasset, migrantedu, urban, son, relationhh,\\ &worksituation, duration, country, maritalstatus,)\end{aligned} \quad [4]$$

A comprehensive review of the remittances literature by Hagen-Zanker and Siegel (2007) suggest that on the general sphere, altruism, insurance, loan repayment, bequest and exchange are the most significant determinants of remittances inflow. However, the authors pointed out that it is very important to take into account the country of residence of migrants when analyzing the determinants of remittances inflow. Based on this, we therefore modify our empirical model as follows,

$$\begin{aligned}\text{Re}mit = &\beta_0 + \beta_1 pc\text{exp} + \beta_2 hhsize + \beta_3 gender + \beta_4 hhasset + \beta_5 migrantedu +\\ &\beta_6 urban + \beta_7 son + \beta_8 relationhh + \beta_9 worksituation + \beta_{10} duration +\\ &\beta_{11} durationsq + \beta_{12} country + \beta_{13} livealone + \beta_{14} age + \mu\end{aligned} \quad [4.1]$$

[1] We used the principal component method (PCM) to generate an asset index for each household (hhasset) that captures investment in assets or investment in fixed capital such as building.

3. Estimation Issues and Data

In order to consistently estimate the parameters of equation [4.1], two issues are involved, namely; the decision to remit money, and how much money to remit back home. Whether or not these two issues are driven by the same mechanisms or by different mechanisms remain an empirical issue that warrants different estimation techniques. If the decision to remit is not independent of the amount remitted, then the appropriate estimation technique is the Tobit model[2]. This approach has been extensively used in the remittances literature (see, for e.g., Gubert 2002, and Amuedo-Dorantes and Pozo 2006). The standard Tobit model often used is one with censoring from below at zero (i.e., the threshold parameter say L equals zero), and the latent variable say y^*, is linear in the independent variables, with an additive error that is normally distributed and homoscedastic. However, one major weakness of the Tobit estimator is the assumption of normality and homoscedasticity (Cameron and Trivedi, 2009). When these assumptions fail, the model may not consistently estimate the parameters of equation [4.1][3].

On the other hand, if the zeros and positive values are generated by different mechanisms, the two-part model or the hurdle model can provide a better fit by relaxing the Tobit assumptions (Cameron and Trivedi, 2009). Cameron and Trivedi (2009) argued that the two-part model attains some of its flexibility and computational simplicity by assuming that the two parts (i.e., the decision to remit and the amount remitted), are purely independent. However, if it is conceivable that, after controlling for regressors, those migrants that sent positive amount of remittances are not randomly selected from the population, then the results of the second stage regression suffer from selection bias. Hence, the selection model developed by Heckman (1976) considers the possibility of such bias by allowing for possible dependence in the two parts of the model. The Heckman 2-step estimator has been widely utilized in the remittances literature either as an alternative, or as a complement to the Tobit model (see, for e.g., Agarwal and Horowitz 2002). We therefore employed Heckman's 2-step model in estimating equation (4.1) under the assumptions highlighted above.

The data used for the analysis was extracted from the World Bank Household Surveys for the African Migration Project for Nigeria, 2009. The sampling frame was the 2006 National Population Census. For administrative purposes, Nigeria has 36 states and the Federal Capital Territory. These states are grouped into six geopolitical zones that is, the Northcentral, Northeast, Northwest, Southeast, Southsouth and Southwest. Given the relative rareness of households with out-migrants to international destinations within the 10 year reference period (selected by the World Bank for all countries) prior to the planned survey, sampling methods appropriate for sampling rare elements were desirable, specifically, stratified sampling with two-phase sampling at the last stage. 12 states were randomly selected with probabilities of selection proportionate to the population size of each state. Hence, states with larger

[2] In the dataset, of a total of 1228 observations on migrants' total remittances, about 545 of the migrants sent 0 amounts. In other words, we have 545 censored observations.

[3] In the dataset used for the estimations, the total remittance variable shows nonnormal kurtosis and is highly skewed. We found during the estimations that the Tobit model was better suited in modeling the log of total remittances (i.e., logtotremit) than the total remittance (i.e., totremit) variable.

populations were accordingly more likely to fall in the sample from the high stratum states. Two LGAs were randomly selected from each sample state and 2 Enumeration Areas (EAs) per sample local government area – LGA (one urban, one rural) were selected to yield a total of 48 EAs in the high stratum states. For the low stratum, 6 states were randomly selected. From each of the state within the low stratum, 1 LGA was randomly picked and 2 EAs were selected per sampled LGA to give a total of 612 EAs in the low stratum. This yielded a total of 60 EAs for both strata. Given the expected range of 2000 households to be sampled, approximately 67 households were to be sampled from each LGA or about 34 households from each EA. Eventually, a total of 2,251 households with 13,415 individuals were actually sampled. Of the total households sampled, 563 had international migrants, 875 had internal migrants, while 813 had nonmigrant households[4]. The sample was concentrated in the South because it was expected that the South should have more households with international migrants. The data was appropriately weighted so that it would reasonably be representative of the whole country with both internal migrant and nonmigrant households.

4. Empirical Results and Discussions

Table 1 presents the remittances behavior of migrants with respect to their educational qualifications.

Table I: Remittances Status of Migrants by Educational Qualifications

Characteristics	Sample (%)	Col (%)	Row (%)
Never Sent Money			
No formal education	2.59	5.11	66.12
Alphabetization	1.33	2.62	82.00
Primary School	9.00	17.74	63.47
Secondary School	23.08	45.50	61.15
Secondary Level School	3.40	6.70	56.45
Tertiary/University	8.22	16.21	28.22
Post-secondary	0.65	1.28	43.48
Graduate School	0.78	1.53	22.22
Other	0.87	1.72	60.00
Don't know	0.81	1.60	86.21
Ever Sent Money			
No formal education	1.33	2.69	33.88
Alphabetization	0.29	0.59	18.00
Primary School	5.18	10.51	36.53
Secondary School	14.66	29.76	38.85
Secondary Level School	2.62	5.32	43.55
Tertiary/University	20.91	42.44	71.78
Post-secondary School	0.84	1.71	56.52
Graduate School	2.72	5.52	77.78
Other	0.58	1.18	40.00
Don't know	0.13	0.26	13.79

[4] There is certainly the possibility of some households having both internal and international migrants however; this group was not captured and reported in the data set. However, extra efforts were made to report the results for households with internal (i.e., Nigeria) and international migrants (i.e., Africa and Others, OECD, Europe, USA etc.,) in different columns of Tables 3, 4 & 5.

As reported in Table 1, migrants with higher education are more likely to send money compared to migrants with lower education. For example, about 34% of migrants with no education send money to the household members against to 66% who do not. At higher levels of education, the percentage of migrants who have ever sent money to the household members increases steadily. For instance, about 72% of migrants with tertiary or university education remitted money to household members against 28% who do not. Similarly, about 78% of migrants with graduate schooling remit money back home against just 22% who do not remit. In order words, migrants with tertiary education are about 2 times likely to send remittances relative to migrants with no educational background. The same could be said about migrants with graduate schooling as they are equally 2.3 times more likely to remit money to household members relative to migrants with no educational background.

In Table 2, we present the remittances status of migrants with respect to their current work situation.

Table II: Remittances Status of Migrants by Work Situation of the Migrant

Characteristics	Sample (%)	Col (%)	Row (%)
Never Sent Money			
Paid employment (full-time)	7.97	15.76	22.97
Paid employment (part-time)	1.07	2.11	26.40
Self employed	11.21	22.17	42.98
Full-time student	20.38	40.29	94.87
Unemployed/looking for work	3.30	6.53	78.46
Retired from work	0.29	0.58	60.00
Housewife	3.24	6.41	68.97
Long-term sick or handicapped	0.16	0.32	100.00
In military service	0.23	0.45	29.17
Not looking for a job	0.29	0.58	100.00
Other	0.52	1.02	69.57
Don't know	1.91	3.78	81.94
Ever Sent Money			
Paid employment (full-time)	26.72	54.06	77.03
Paid employment (part-time)	2.98	6.03	73.60
Self employed	14.87	30.08	57.02
Full-time student	1.10	2.23	5.13
Unemployed/looking for work	0.91	1.83	21.54
Retired from work	0.19	0.39	40.00
Housewife	1.46	2.95	31.03
Long-term sick or handicapped	0.00	0.00	0.00
In military service	0.55	1.11	70.83
Not looking for a job	0.00	0.00	0.00
Other	0.23	0.46	30.43
Don't know	0.42	0.85	18.06

As shown in Table 2, about 77% of migrants in paid full-time employment send money compared to only about 23% in the paid full-time employment who do not send money. Similarly, about 73% of migrants in paid part-time employment send money against 27% in the same category that never sent money. Furthermore, migrants who are not employed and those on long-term sickness as well as full time students do not send remittances. This suggests that the current work situation of migrants play an important role in migrants' remittances behavior.

Table 3 reports the summary statistics of the variables used in the analysis. As observed, on the average, about N72,544 or about US$483.6 was remitted by an internal migrant against N411,042 or about US$42,740.3 from those residing in EU or USA. Also, about N185,767 or US$1,238.5 was remitted by migrants from other African countries. It thus appears on the average that international migrants remit more than internal migrants. This is expected given the exchange rate of the naira to the dollar, Euro and other currencies in the EU area, which when converted to the local currency, result in huge amounts. Equally, years of schooling for migrants that live in EU and USA on the average, are higher than those living in Nigeria and other parts of Africa, so is the average age. Also, EU and USA migrants have at least 7 years of stay in current residence compared to 5 years reported by migrants residing in other African countries and 6 years for internal migrants.

Table III: Summary Statistics of the Variables Related to the Migrant

	Nigeria	Europe and USA	Africa
	Mean	**Mean**	**Mean**
Total amount of remittances sent by migrant to HH in past 12months	72,544 ($483.6)	411,042 ($42,740.3)	185,767 ($1,238.5)
Number of years of schooling completed before migration	13	15	13
Duration migrant living in current location (years)	6	7	5
Sex of migrant	1	1	1
Age of migrant	32	35	32
Marital status of migrant	3	3	4
Money sending channel by migrant to household	9	4	6
Current occupation of migrant	4	3	3

Tables 4 and 5 reports estimates of the Tobit and Heckman's estimators decomposed into internal and international remittances (overall, Africa and Abroad) alongside their marginal effects. Starting with Table 4 (i.e., the Tobit estimates), in terms of the overall results, the duration of the migrant in the country of residence, household asset, household size, living in OECD, highest education attainment prior to migration, being male, being a son, daughter or father to the head of the household, and type of employment have statistically significant positive impact on both the probability of remitting and the amount of remittances sent by the migrant to the household. More specifically, one additional year lived in the current location leads overall to 23.1% higher probability of remitting money. On the other hand, one additional year lived in the country of residence increases the probability of remittance by 20% for migrants living in Nigeria and by about 32% for migrants living outside of Nigeria. The square of duration is also statistically significant and negative suggesting that there is threshold number of years beyond which both the probability of remitting money and the amount remitted will we begin to decline. Household asset, overall, increases the probability of remittance significantly by about 35%. This is not statistically significant when we estimated different models for domestic and international migration.

Table IV: Tobit Estimates (With Marginal Effects)

Variable	Overall	Margeff.	Nigeria	Margeff.	Abroad	Margeff.
Duration	0.466***	0.231***	0.472**	0.197**	0.485*	0.316*
	(0.000)	(0.000)	(0.002)	(0.002)	(0.027)	(0.027)
Duration squared	-0.0116**	-0.00574**	-0.0111*	-0.00464*	-0.0138	-0.00898
	(0.004)	(0.004)	(0.023)	(0.023)	(0.087)	(0.087)
Urban	0.447	0.221	-0.139	-0.0580	1.106	0.717
	(0.403)	(0.403)	(0.849)	(0.849)	(0.163)	(0.161)
HH asset	0.706*	0.349*	0.669	0.278	0.503	0.327
	(0.022)	(0.021)	(0.107)	(0.106)	(0.284)	(0.284)
Live alone	0.0921	0.0457	0.464	0.194	-0.519	-0.337
	(0.857)	(0.857)	(0.508)	(0.510)	(0.491)	(0.489)
Logpcexp	0.404	0.200	0.243	0.101	0.572	0.372
	(0.082)	(0.082)	(0.480)	(0.480)	(0.072)	(0.072)
HH size	0.204*	0.101*	0.221*	0.0921*	0.181	0.118
	(0.011)	(0.010)	(0.034)	(0.034)	(0.161)	(0.162)
OECD	2.863***	1.501***				
	(0.000)	(0.000)				
Africa & Others	0.374	0.187				
	(0.629)	(0.633)				
Highest Educ B4	0.481**	0.238**	0.573**	0.238**	0.431	0.281
	(0.003)	(0.003)	(0.008)	(0.008)	(0.096)	(0.096)
Female	-1.185*	-0.587*	-1.410	-0.587	-0.523	-0.340
	(0.045)	(0.045)	(0.076)	(0.076)	(0.570)	(0.570)
Age	0.104**	0.0514**	0.108*	0.0450*	0.113*	0.0737*
	(0.002)	(0.002)	(0.010)	(0.010)	(0.046)	(0.045)
Head or Spouse	2.187	1.172	2.768	1.277	1.378	0.937
	(0.100)	(0.127)	(0.145)	(0.186)	(0.458)	(0.476)
Son, Daughter, Father	3.577***	1.773***	4.642***	1.915***	2.349*	1.543*
	(0.000)	(0.000)	(0.000)	(0.000)	(0.010)	(0.011)
Brother, Sister	-0.543	-0.267	-0.264	-0.109	-0.390	-0.252
	(0.473)	(0.469)	(0.819)	(0.819)	(0.699)	(0.697)
Paid Full-Time	12.22***	6.618***	13.18***	6.452***	10.75***	6.887***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Paid Part-Time	12.63***	9.038***	11.36***	7.027***	12.22***	10.06***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Self-Employed	9.954***	5.878***	11.08***	5.532***	6.923***	5.103***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Observations(obs)	1127	1127	720	720	407	407
Uncensored obs.	642	642	364	364	278	278
Left censored obs.	485	485	356	356	129	129
chi2	632.8	632.8	396.4	396.4	189.4	189.4
Pseudo r2	0.114	0.114	0.121	0.121	0.0848	0.0848

Margeff=Marginal effects; *p*-values in parentheses, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

However, the Heckman's 2-step estimates reported in Table 5 indicates that household asset increases significantly the likelihood of sending money for migrants living in Nigeria by 6% but not significantly for migrants living abroad. Hence, the evidence that migrants send more money for asset acquisitions is weakly supported by our empirical findings. Furthermore, the

results suggest that higher household size increases both the probability of remitting and the amount remitted. This implies that remittances increased with household size possibly due to altruistic reasons as suggested by Lucas and Stark (1985). Also, living in OECD countries increases both the probability and the amount of remittances significantly relative to domestic migrants. However, we found no significant difference in the amount of remittances between domestic migrants and migrants in African and other countries. This implies that remittances to Nigeria in the future may partly depend on whether the country of destination is OECD or not.

Table V: Heckman 2-Step Estimates (with Marginal Effects)

	Overall	**Margeff.**	**Nigeria**	**Margeff.**	**Abroad**	**Margeff.**
Logtotremit						
Highest Edu B4	0.0450	0.0366**	-0.0124	0.0457**	0.143	0.0181
	(0.512)	(0.003)	(0.887)	(0.003)	(0.196)	(0.331)
Duration	0.137*	0.0338***	0.139*	0.0282*	0.100	0.0367*
	(0.010)	(0.000)	(0.038)	(0.012)	(0.325)	(0.014)
Duration squared	-0.00455*	-0.0009**	-0.0048*	-0.0008*	-0.0028	-0.0009
	(0.014)	(0.003)	(0.026)	(0.024)	(0.491)	(0.097)
Urban	0.00343	0.0757	0.102	0.0424	-0.0509	0.0972
	(0.987)	(0.075)	(0.728)	(0.429)	(0.877)	(0.097)
HH Asset	-0.320*	0.0600*	-0.379*	0.0650*	-0.176	0.0378
	(0.013)	(0.016)	(0.024)	(0.036)	(0.393)	(0.269)
Logpcexp	0.361***	0.00663	0.336*	-0.00646	0.410**	0.0183
	(0.000)	(0.725)	(0.014)	(0.800)	(0.002)	(0.421)
HH size	0.0844*	0.00787	0.0591	0.00736	0.142*	0.00602
	(0.012)	(0.230)	(0.170)	(0.364)	(0.011)	(0.520)
OECD	0.784***	0.210***				
	(0.001)	(0.000)				
Africa & Others	0.755*	0.0318				
	(0.025)	(0.581)				
Send Money						
Duration	0.0859***	0.0338***	0.0715*	0.0282*	0.118*	0.0367*
	(0.000)	(0.000)	(0.012)	(0.012)	(0.015)	(0.014)
Duration squared	-0.00229**	-0.0009**	-0.00203*	-0.0008*	-0.0029	-0.0009
	(0.003)	(0.003)	(0.024)	(0.024)	(0.097)	(0.097)
Urban	0.193	0.0757	0.107	0.0424	0.310	0.0972
	(0.076)	(0.075)	(0.430)	(0.429)	(0.095)	(0.097)
HH asset	0.153*	0.0600*	0.165*	0.0650*	0.122	0.0378
	(0.016)	(0.016)	(0.036)	(0.036)	(0.270)	(0.269)
Live alone	0.0186	0.00731	0.0673	0.0266	-0.0733	-0.0228
	(0.854)	(0.854)	(0.601)	(0.601)	(0.670)	(0.672)
Logpcexp	0.0169	0.00663	-0.0164	-0.00646	0.0588	0.0183
	(0.725)	(0.725)	(0.800)	(0.800)	(0.421)	(0.421)
HH size	0.0200	0.00787	0.0186	0.00736	0.0194	0.00602
	(0.229)	(0.230)	(0.364)	(0.364)	(0.521)	(0.520)
OECD	0.559***	0.210***				
	(0.000)	(0.000)				
Africa & Others	0.0815	0.0318				
	(0.583)	(0.581)				
Highest Edu B4	0.0931**	0.0366**	0.116**	0.0457**	0.0583	0.0181
	(0.003)	(0.003)	(0.003)	(0.003)	(0.331)	(0.331)

Sex	-0.268*	-0.106*	-0.302*	-0.119*	-0.116	-0.0360
	(0.018)	(0.018)	(0.032)	(0.032)	(0.568)	(0.568)
Age	0.0190**	0.00748**	0.0237**	0.00936**	0.0147	0.00456
	(0.004)	(0.004)	(0.003)	(0.003)	(0.250)	(0.252)
Head or Spouse	0.226	0.0868	0.346	0.137	-0.00699	-0.00217
	(0.395)	(0.379)	(0.308)	(0.302)	(0.987)	(0.987)
Son, Daughter, Father	0.664***	0.256***	0.794***	0.305***	0.551*	0.167**
	(0.000)	(0.000)	(0.000)	(0.000)	(0.011)	(0.008)
Brother, Sister	-0.152	-0.0599	-0.0445	-0.0176	-0.248	-0.0797
	(0.283)	(0.284)	(0.816)	(0.816)	(0.256)	(0.270)
Paid Full-Time	1.935***	0.643***	2.032***	0.687***	1.761***	0.523***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Paid Part-Time	2.070***	0.462***	1.667***	0.505***	2.265***	0.324***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Self-Employed	1.493***	0.489***	1.597***	0.570***	1.026***	0.245***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Mills Lambda	-0.471		-0.646		-0.0643	
	(0.149)		(0.098)		(0.906)	
Observations	1107	1107	707	707	400	400
Censored Obs.	477	477	359	359	118	118
Lambda	-0.471	-0.471	-0.646	-0.646	-0.0643	-0.0643
S.E Lambda	0.327	0.327	0.390	0.390	0.545	0.545
Sigma	2.495	2.495	2.478	2.478	2.506	2.506
Rho	-0.189	-0.189	-0.261	-0.261	-0.0257	-0.0257

Marginal effects; *p*-values in parentheses, (d) for discrete change of dummy variable from 0 to 1 and * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$

Generally, the results indicate that one additional level of completed education before migration increases significantly both the probability of sending money and amount sent by about 24% for the Tobit and increases the likelihood of sending money by about 6% from the Heckman estimates. This is true for domestic remittances and not the case for international remittance inflows. International remittances may not be influenced much by education because most migrants in OECD countries are not in high profile jobs that requires a certain level of educational qualifications. Also, female migrants overall, have about 59% lower probability of remitting money compared to the male counterparts. These findings are consistent with the argument in the literature that male migrants have higher potential to inherit and as a result are more likely to remit more in order to maintain family ties. Overall, age increases the probability of sending remittances and the amount sent by about 5%. When decomposed into domestic and international remittances age increases the probability of domestic migration by 4.5% and that of international remittances by 7.4%. The marginal effects, though similar in terms of statistical significance, are smaller in the Heckman estimates. One would argue that older migrants especially those living abroad may have higher potential to remit probability due to increasing desire to return home. Such higher remittances may be invested in buildings, landed property and other investment on which the migrant will retire. Being a member of the household immediate family increases the likelihood of remitting money significantly. For example, the Heckman estimates show that being a son, daughter or father to the household head increases the likelihood of remittance by about 31% for domestic migrants and about 17% for migrants living abroad. The marginal

effects are also statistically significant in Tobit estimates. This may be attributed to altruistic motive for remitting money.

Furthermore, the results show that migrant that are in full-time paid employment, part-time paid employment and self-employed significantly increase the probability of remitting money as well as the amount remitted relative to those who are unemployed (including full time students). However, those on part-time employment have higher probability of remitting than those in paid full-time employment or self-employment. This might be attributed to the belief that part-time workers combine different kinds of employment and consequently work longer hours and hence more likely to send more relative to migrants in other kinds of employment. Another reason why part time migrant workers remit more than other migrants is that they have higher potential to return home in future than those in full-time employment and in self-employment, and as a result must remit more money for acquisition of assets that would serve as a cushion upon their return.

5. Conclusion and Recommendations

In this study, we found that the amount of remittances sent to household members by Nigerian migrants depend partly on the characteristics of migrants and partly on the household characteristics as well as the macroeconomic environment of the country of current residence. Also, migrants that have higher levels of educational attainments before migration, those who are in paid or self-employment are more promising remitters of money regardless of the reason for the remittances. However, the stability of the migrants employment and hence income may in turn be determined by the macroeconomic conditions of the country of residence. This obviously implies that migrants that live in more stable countries are likely to be the ones that would remit more in the future for various reasons. The results also show, though consistent with microeconomic empirical evidence, that sex composition of migrants would also determine the future of remittances inflow to Nigerian households. Our results equally indicate that migrants' occupational characteristics play a significantly role in the remittances behavior of Nigerian migrants.

The policy implications of our findings are that determinants of total remittances inflow to Nigeria from other countries especially the USA and EU in future, will depend to a large extend on the characteristics of the people migrating and the country of destination. In other words, the more educated the migrants the better will be the prospects of future remittances to the country. Moreover, the future of labor market and macroeconomic conditions in the country of residence will affect the occupational characteristics of the migrants and hence their capacity to remit. Internal remittances in the future would largely depend also on the occupational and educational characteristics of the migrants. Though the government of Nigerian may have little or no control over the country of destination, sound policies on migration can influence the pattern of migration. This could be through improved diplomatic and bilateral ties with most OECD countries. Similarly, an improvement in the quality of education generally, would help ensure that majority of the migrants' would at least attain a certain level of schooling prior to migrating. The higher the level of education, the higher will be the job prospects of the migrants and the likelihood of remitting more since education plays a significant role in the remittances behavior of migrants.

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