Full Length Research Paper

Effects of remittances on poverty among rural households in Nigeria

Olowa, Olatomide Waheed[1]*, Awoyemi, Taiwo Timothy[2], Shittu, Musediku Adebayo[3] and Olowa, Omowumi Ayodele[1]

[1]Department of Agricultural Education, Federal College of Education (Technical) Akoka, Lagos State, Nigeria.
[2]Departmentof Agricultural Economics, University of Ibadan, Oyo State, Nigeria.
[3]Departmentof Agricultural Economics and Farm Management, Federal University of Agriculture, Abeokuta, Ogun State, Nigeria.

Poverty in Nigeria is more prevalent in the rural sector due to dwindling and inequitable distribution of real income. Remittances can be poverty reducing. However, the extent to which remittances affect poverty has not been adequately documented in Nigeria. This paper uses Nigerian National Living Standard Survey (NLSS), 2004 to analyse the impact of domestic remittances (from Nigeria) and foreign remittances (from African and other countries) on poverty in rural Nigeria. The socioeconomic characteristics showed that on the average, households that received foreign remittances had older heads (61.7 ± 19.7 years), smaller household size (4.0 ± 2.5), bigger land size (18.53 ± 26.5 ha), higher literacy rate (0.50 ± 0.5) and non-poor (0.08 ± 0.3) with higher annual per capita expenditure (₦111,768 $\pm$ ₦179,868). Poverty analysis showed that both types of remittances reduce the level, depth and severity of poverty in rural Nigeria. However, poverty is reduced more when domestic, as opposed to foreign remittances are included in household income, and when poverty is measured by the more sensitive poverty measures: poverty gap and squared poverty gap. At a poverty line of ₦23,733 per annum, a 10% increase in domestic remittances decreased Poverty Incidence(PI), Poverty Gap (PG) and Squared Poverty Gap (SPG) by 1.80%, 1.60% and 1.60% while 10% rise in foreign remittances reduced poverty incidence (PI), Poverty gap (PG) and Squared poverty gap (SPG) by 0.86%, 0.62% and0.62% respectively in rural Nigeria. Across GPZs, While 10% increase in foreign remittances reduced PI (-0.88%) in North-Central it had no effect in North-East (NE) (0.00%). Same increase in domestic remittances reduced PI, PG, SPG most in the South-South (-0.29%, -1.85% and -0.75%) and least in NE (-0.09%, -0.82% and -0.22%).

Key words: Remittances, rural Nigeria, poverty reduction.

INTRODUCTION

Much is not known about the effect of remittances on poverty in a high remittance-receiving country like Nigeria. Though, there is a general consensus on the importance of remittances with respect to welfare and income distribution of other countries such as Morocco (World Bank, 2003; Bourchachen, 2000). De Haas (2007) raised caveat on the danger of unrestrained optimism concerning the potential of remittances to reduce poverty.

*Corresponding author. E-mail: Olowa1@yahoo.com.

He noted that the observation that remittances significantly contribute to income stability and welfare in developing countries does not necessarily imply that they contribute to poverty alleviation.

Though Nigeria is a high remittance-receiving country, yet, there are evidences in the literature that point to the increasing level of poverty and income inequality in Nigeria over the last two decades (Addison and Cornia, 2001; Kanbur and Lustig, 1999). More likely, only a small proportion of the population is having access to receiving remittances and thus increasing remittances is not having effect on poverty. The increasing level of poverty has been pervasive in the rural areas and has also been a concern to policy makers for a long time. For instance, the incidence of poverty increased from 28.1% in 1980 to 46.3% 1985. The poverty problem grew so worse in the 1990s that in 1996, about 65.6% of the population was poor, while the rural areas account for 69.3% (FOS, 1999). Recent data showed that in 2004, 54.4% of Nigerians were poor (FRN, 2006), by 2009 about 69% of Nigerians were reported poor (NBS, 2010). In short, it is a general belief that poverty is more widespread and prevalent in rural than urban areas (IFAD, 2007), and that inequality is higher in rural than urban Nigeria (Oyekale et al., 2006). This level of inequality and poverty according to Awoyemi and Adeoti (2004) may be partly explained by the neglect of the rural sector, where majority of the people reside. Also, the zonal distribution of poverty shows that the northern zones of the country are worst hit by poverty and inequality than the southern zones with the northern zone recording a poverty incidence of 65.1% in 1996 (Okojie et al., 2001). In terms of concentration of the poor and the non-poor, nearly two-thirds of the non-poor communities are in the south, while almost half of the poor communities are in the north (World Bank, 1996). Thus, spatial differences exist in the incidence of poverty in Nigeria.

An important finding by the DFID in 2006 on Nigerian migration history and remittances is the ethnic and regional differences in the migrant population. Of the two hundred and fifty distinct ethnic groups that make up Nigeria, two major ethnic groups, the Ibos from the southeast and Yoruba from the southwest, constitute a significant number of the migrant population. Other ethnic communities include the Edo, and Ogoni. Thus, the migration history seems to favour southern regions of the country with this region portrayed as having long history of migration. Long history of migration has been associated with prevalence of remittances (Taylor et al., 2005). The flow of remittances to different households and regions or zones is determined by access to migrant labour market. Because rural out-migration entails costs and risks, pioneer migrant tend to come from household in the upper segment of income distribution of sending area, remittances is therefore likely to widen income inequality and poverty gap in the migrant source area. On regional basis, the explanation becomes clearer, as region

with long history of migration or early access to migrant labour market enjoys high prevalence of remittances when compared to another region or zone that had recently begun to send migrant abroad (Taylor et al., 2005). The likely differences in time of access to migrant labour market and resulting prevalence of remittances amongst regions or zones may generate different poverty effect of remittances across these zones. These facts combined with the high and varied incidence of poverty across regions in Nigeria is worrisome.

The foregoing phenomenon lends credence to the controversial debate about the effect of remittances on the development of recipient countries (a major objective of development is reduction in poverty and inequality). Experts have identified both positive and negative effects in terms of development. On the positive side, evidence indicates that remittances increase national income; augment reserves of foreign currency and contribute to stabilizing the balance of payments; support entrepreneurial activities; contribute to savings; and create demand for local goods and services (Ratha, 2003). On the negative side, remittances are also said to increase the demand for and consumption of imported goods, cause inflation and increase inequality. For instance, while Stahl (1982) finds that remittances would not benefit the poor, Adams and Page (2005) and IMF (2005) find positive and significant impacts of remittances on poverty reduction. In any case, there is no consensus on any of these points and empirical evidence of the positive or negative impacts of remittances is not conclusive, but rather point to an intricate set of mixed influences.

Meanwhile the dramatic increase in remittances observed at the global level over the past few years has been mirrored in Nigeria. In fact, officially recorded remittances flows to the country have increased tremendously since Central Bank of Nigeria (CBN) began collecting data on remittances in 2002. For emphasis, CBN reported approximately US $2.26 billion, $2.66 and $3.56 in remittances for 2004, 2005 and 2006 respectively (DFID, 2006). Suppose that remittances remain the same at the 2008 level, in 2010 it will amount to $17.9 billion (Nigerian Muse, 2008). These figures probably under-estimates the tremendous rate of increase in foreign remittances to Nigeria, in as must as large amount of such income enters the country in a way that is not counted. To buttress this, IMF (2005) statistics showed while total remittances to Nigeria via formal channel in 2005 was $2.6 billion, fund remitted through informal channels exceeded $3 billion. Although, this estimate is likely to be on the high side, it nevertheless highlights the fact that a collapse in remittances appears unlikely in the near future. Apparently most studies and statistics on remittances are concentrated on foreign or foreign remittances with little attention paid to vast growing domestic remittances and its possible effects on poverty and inequality as it's a kind of remittance that flow

to all categories of households alike (National Bureau of Statistics (NBS), 2005).

On a general term despite the ever increasing size of remittances, both domestic and foreign, there has been little effort to analyze its effect on economic development especially on poverty in rural Nigeria. Adams (2005) observes that little attention has been paid to examining the economic impact of these transfers on households in developing countries despite the ever increasing size of official foreign remittances. In fact, notwithstanding that remittance has been implicated as a vital source of income with crucial income smoothening effect and contribution to improved standard of living, its effect in rural Nigeria is not known. Thus because of the increasing level of remittances and increasing incidence of poverty across regions in rural Nigeria, poor understanding of the impact of remittances in Nigeria's economic and national development, have been engendered. Thus, the research seeks to measure to which extent remittances can affect poverty in rural Nigeria. By doing so, the research is expected to answer the following key policy questions: Are there differences in the socio-economic characteristics of household receiving domestic and foreign remittances. How do remittances affect poverty in rural Nigeria? Specifically, what is the difference in poverty level among households that receive remittance (domestic and international)?

MATERIALS AND METHODS

Data

The study utilized the 2004 National Living Standard Survey (NLSS) data collected by the National Bureau of Statistics (NBS) in Nigeria. The NLSS was a cross-sectional survey that covered all the states of the federation and Federal Capital Territory. Households were selected using a two-stage stratified sampling method. All the 14,512 rural households included in the NLSS were used for this study. Data extracted for the study included socio-economic characteristics, expenditure, household income, Domestic Remittances (DRs) and Foreign Remittances (FRs). The data were analysed using descriptive statistics, Foster, Greer and Thorbecke (FGT) poverty measures.

Analytical technique

Poverty decomposition with and without remittances

Income with and without remittances was used to measure the levels of poverty and compare them. There are many indices to compute poverty. $P\alpha$ class of poverty indices (FGT, 1984), which is widely used in empirical work was adopted:

$$P_{\varepsilon} = \frac{1}{n} \sum_{i=1}^{q} \left(\frac{z - y_i}{z} \right)^{\alpha} \tag{1}$$

Where, y_i represents income of household i, ordered from the poorest (i=1) to the richest (i=n) where n represents the total number of households considered, q represents the number of

households classified as poor in which their income $y_i \leq z$. Alpha, α, represents aversion to poverty and increased values of α imply an increased relative weight on the poorest among the poor. Z represents the poverty line and, in this study, the poverty line represents 2/3 of average income.

Poverty decomposition: Changes in remittances

A modification of the Foster-Greer-Thorbecke (1984) poverty index was used to analyze the poverty implications of changes in remittances (Objective Four). More commonly, sectoral decompositions of poverty are proxied by undertaking standard poverty decomposition for groups defined by primary sectoral source of income, or other characteristics such as household size, group or location. This proxy method is difficult to justify where a typical farm household's income is diversified across a variety of activities (Taylor et al., 2005), this is the case of rural Nigeria.

Following the notation of Foster, Greer and Thorbecke (FGT) (1984) and Taylor et al. (2005), let $Yd=(Yd1,Yd2,...,Ydl)$ represent household incomes in increasing order and let $z > 0$ denote the predetermined poverty line. The FGT poverty measure is defined by:

$$P(Y_d; z) = \frac{1}{nz^{\alpha}} \sum_{i=j}^{q} g_i^{\alpha} \tag{2}$$

Where n is the total number of households, $q = q(Yd; z)$ is the number of poor households, and $gi = z - Ydi$ is the income shortfall (the gap between the household's income and the poverty line) of the ith (poor) household, and α is a parameter. This index satisfies the two axioms formulated by Sen (1976) for poverty measures to satisfy: (1) that a reduction in the income of a poor household, *ceteris paribus*, increases the poverty measure (monotonicity); and (2) that a pure transfer of income away from a poor household increases the poverty measure (the transfer axiom).

FGT present a decomposition of this poverty measure by population subgroup, and Reardon and Taylor (1996) and Taylor et al. (2005) decompose the FGT poverty coefficient by income source to understand the impact of a small percentage change in remittances on poverty. To decompose $P(Yd; z)$ by determinants of income, we substitute the sum of income across sources for Ydi in the FGT poverty index. This yield

$$P(Y_d; z) = \frac{1}{nz^{\alpha}} \sum_{j=1}^{q} \left(z - \sum_{k=1}^{k} y_k \right)^{\alpha} \tag{3}$$

The impact of a small percentage change in remittances, e, on poverty, $dP(Yd; z)/de$, is given by:

$$\frac{dP(Y_d, e; z)}{de} = \frac{1}{nz^{\alpha}} \left[\sum_{i=1}^{q_o} -\alpha g_i(e) - \sum_{q^-} g_i(e)^{\alpha} + \sum_{q^+} g_i(e)^{\alpha} \right] \tag{4}$$

where q^* denotes the number of households in poverty both before and after the change in remittances, and $q-(q+)$ denotes the number of households that leave (enter) poverty as a result of the remittance change. Assuming remittances have a positive effect on income (that is, there are not household-to-migrant remittances that outweigh migrant-to-household transfers), the third term $\sum_{q^+} g_i(e)^{\alpha}$

drops out, and the poverty effect is negative (that is, poverty decreases), or at least not positive. The extent of this poverty effect must be determined empirically. It hinges on whether or not poor

Table 1. Selected characteristics of remittance recipient and non-recipient households.

Variable	Receive no remittance	Receive internal remittances (from Nigeria)	Receive external remittances (from Africa and other countries)	t-test (internal remittances vs. no remittances	t-test (external remittance vs. no remittances)
Mean age of household head(years)	46.77	53.66	61.67	-9.89***	-2.55***
Mean household size	4.96	4.14	4.25	7.03***	0.84
FAO equivalent adult	3.87	3.29	3.35	6.49***	0.80
Household head (literate=1,0=illiterate)	0.47	0.52	0.5	-2.22**	-0.16
Mean annual per capita expenditure (excluding remittances)	28604	43345	111768	-10.94***	-1.59
Share of food expenditure	0.64	0.54	0.40	11.75***	3.49***
Mean household members age above 15 yrs	4.83	5.45	6.08	-9.64***	-3.08***
Mean annual per capita income (excluding remittances)	8688	35931	17931	-0.96	-0.68
Land size (Ha)	7.66	10.03	18.53	-1.14	-1.40
Poverty status (Poor=1, 0=otherwise)	0.54	0.29	0.08	12.53***	3.09***

*Significant at 0.10; ** significant at 0.05; *** significant at 0.01.

households have access to remittance income. Three variants of the FGT poverty index are used to estimate the impacts of changes in remittances on rural poverty:

1. The headcount measure $(\alpha = 0, P_H(Y_d;z) = \frac{q}{n}$ measures the incidence of poverty, that is, the share of the population living below the poverty line.

2. The poverty gap $(\alpha = 1, P_G(Y_d;z) = \frac{1}{nz}\sum_{i=j}^{q}(z - Y_d)$ measures the depth of poverty, that is, how far below thepoverty line the average poor household's income falls

3. The squared poverty gap $(\alpha = 2, P_{SG}(Y_d;z) = \frac{1}{nz^2}\sum_{i=1}^{q}(z-Y_{di})^2)$, measures the severity of poverty and is sensitive to changes in the distribution of income among the poor (Adams, 2003).

RESULTS

Descriptive analysis

Analysis of some selected characteristics of remit-tance recipient and non-recipient households (Table 1) shows some important contrasts between the three groups of households: Non-remittance household, receive domestic remittances and receive foreign remittances. On average, when compared to non-remittance households, households receiving remittances (domestic or foreign) have older household heads; smaller family size (household size) and share of food expenditure. However, Share of members of age ≥15 years and FAO equivalent adult is relatively higher in foreign remittance receiving households than the other groups. Comparatively, the remittance recipient household heads have also a higher literacy rate. The higher literacy rate could be the causes for smaller share of children and family size in remittance recipient households. Likewise, the size of land is biggest in households which received remittance from abroad, followed by domestic, and the non-recipient. Consequently, the rate of poverty is higher at non recipients and lowest at recipients from abroad. After analyzing some selected characteristics, and the income and expenditure levels of the households, there appears to be a kind of "income hierarchy" among the three groups of remittance receiving and non-receiving households. That is, the households receiving no remittances have more household size, less educated heads, highest share of food expenditure with low average expenditure, and hence they are relatively poorer. Conversely, the households receiving remittances from abroad are comparatively richer, and the households receiving domestic remittances are in between them.

Table 2 shows differences among the GPZ with respect to the share of each in both the domestic and foreign remittances flow in the country. From the survey, of the total amount of domestic remittances for rural Nigeria received, the South-east GPZ had the highest share (38%) followed by South-south (32%) with south-west (16%) while North central, North-east, and North-west had 3, 4 and 7%, respectively. Similarly, highest number of recipient households (of domestic remittances) was in the South-east GPZ (37%)

Table 2. Categorization of Remittance Size and Share among GPZs in rural Nigeria.

Remittance	Zone	Recipient households (%)	Mean amount of remittances (₦)	Total amount of remittances (₦)	Total sum (%)
Domestic	South South	22.83	25436.94	3688357	32.47
	South East	37.01	18190.62	4274797	37.63
	South West	15.27	18647.24	1808783	15.92
	North Central	6.93	8454.32	371990	3.27
	North East	10.24	6496.63	422281	3.72
	North West	7.72	16181.20	792879	6.98
	Total	100	17888.32	11359087	100
Foreign	South South	30	17683.33	159150	15.55
	South East	36.67	51127.27	562400	54.94
	South West	10	60666.66	182000	17.78
	North Central	3.33	8000	8000	0.78
	North East	16.67	22400	112000	10.94
	North West	3.33	200	200	0.02
	Total	100	34125	1023750	100
Both	South East	100	163216.66	979300	100
	Total	100	163216.66	979300	100

followed by south-south GPZ (23%) and South-west (15%) and North-central, North-east and North-west with 7, 10 and 8% of the total households respectively. With respect to foreign remittances, the highest number of recipient households was found in south-east (37%) followed by South-south (30%) and North-east (16%), South-west (10%), North-central (3%) and North-west (3%) respectively. In term of total amount of foreign remittances to rural Nigeria, South-east GPZ received the largest proportion (55%) followed by South-west (18%) and South-south (16%).Whereas North-central, North-east and North-west had less than percentages -0.78, 10 and 0.02%, respectively.

Effects of migrant remittances on poverty

Poverty line

Poverty analysis is based on a poverty line of 23,733 Naira, which is 2/3 of the average per capita expenditure that is cited as the 2003/2004 poverty line for Nigeria (National Bureau of Statistics (NBS) (2005)). All persons with per capita expenditure less than this amount are considered poor. Those equal to or above are non-poor.

Poverty decomposition with and without remittances

Using this poverty line, Tables 3 and 4 reports three different poverty measures. Columns (1-4) of Tables 3 and 4 report the results for the different poverty measures. Column (1) shows poverty situation excluding remittances for all households. Column (2) measures the situation for all households when only domestic remittances (from Nigeria) are included in household expenditure. Column (3) measures the situation for all households when only foreign remittances (from African or other countries) are included in household expenditure. Column (4) measures the situation for all households when both domestic and foreign remittances are included in household expenditure.

All of the measures show that that the inclusion of remittances –either domestic or foreign – in household expenditure reduces the level, depth and severity of poverty in rural Nigeria. However, the size of the poverty reduction depends very much on the type of remittances (domestic or foreign) received, and how poverty is being measured. According to the poverty headcount measure, including domestic remittances in household expenditure (income), the percentage of poor households dropped from 54 to 38%. That is a poverty head count reduction of 29.6%, while including foreign remittances in such income reduced the percentage of poor households from 54 to 48%, a poverty headcount reduction of 11.1%.

Including all remittances the percentage of poor household dropped from 54 to 29% which is 46.3% headcount reduction. However, poverty is reduced much more when measured by the more sensitive poverty measures: Poverty gap and squared poverty gap. For the poverty gap, the percentage of poor households dropped from 18 to 12% (33.3% drop in poverty gap) when domestic remittances were included in the household per capita expenditure (income) while it dropped from 18 to

Table 3. Poverty indicators with and without remittances.

Household location	Poverty indicators	Without remittances (1)	With domestic remittances (2)	With foreign remittances (3)	With all remittances (4)
Rural Nigeria	Headcount ratio	0.54	0.38	0.48	0.29
	Poverty gap ratio	0.18	0.12	0.17	0.08
	Severity ratio	0.08	0.06	0.08	0.03
	Mean PCEXPDR	28442.32	51452	36447	54363
Northcentral	Headcount ratio	0.65	0.57	0.61	0.56
	Poverty gap ratio	0.37	0.34	0.36	0.25
	Severity ratio	0.31	0.28	0.29	0.18
	Mean PCEXPDR	4436.1	6313	4614	6440
Northeast	Headcount ratio	0.71	0.51	0.64	0.53
	Poverty gap ratio	0.52	0.28	0.47	0.26
	Severity ratio	0.41	0.17	0.21	0.16
	Mean PCEXPDR	25923.0	26524.1	25923.3	26686,5
Northwest	Headcount ratio	0.72	0.67	0.71	0.68
	Poverty gap ratio	0.38	0.34	0.37	0.33
	Severity ratio	0.21	0.18	0.20	0.17
	Mean PCEXPDR	2849.6	4666	2853	4677
Southeast	Headcount ratio	0.45	0.29	0.41	0.26
	Poverty gap ratio	0.21	0.16	0.19	0.14
	Severity ratio	0.11	0.09	0.10	0.08
	Mean PCEXPDR	8495.2	25692	13566	31576
Southsouth	Headcount ratio	0.43	0.38	0.40	0.35
	Poverty gap ratio	0.26	0.19	0.23	0.16
	Severity ratio	0.12	0.09	0.11	0.08
	Mean PCEXPDR	10235.0	11967.0	10261.0	17609.0
Southwest	Headcount ratio	0.44	0.35	0.43	0.31
	Povertygap ratio	0.19	0.14	0.17	0.13
	Severity ratio	0.11	0.07	0.09	0.07
	Mean PCEXPDR	9104.00	13596	9604	14506

Source: Estimated from Nigeria living standard survey data set, 2003/2004. PCEXPDR- mean per capita expenditure.

17% (5.5% drop in poverty gap) foreign remittances were included in the house hold expenditure. Poverty gap dropped by 55.5% when all remittances were included in the household expenditure. The squared poverty gap measure shows that including domestic remittances in household expenditure (income) reduces the severity of poverty by 25%, while including foreign remittances in such income had no effect on the severity of poverty. The poverty headcount, gap, and severity ratios for domestic and foreign remittances differ across geopolitical zones. As the table shows the highest effect of inclusion of domestic remittances in household expenditure (income) on headcount poverty was recorded in the southeast (35.5%) representing a drop in the percentage of poor household from 45 to 29%. Southeast was closely followed by southwest (23%) and the northeast while least effect was 6.9% in northwest that is, the percentage of poor households dropped from 72 to 67%. When foreign remittances were included, northeast (9.8%) and northwest (1.4%) recorded the highest and the least reduction in percentage of poor households. For the poverty gap, results in columns (5) and (6) (Table 4) show that including domestic remittances in household expenditure reduces the poverty gap most in the northeast by 46.2% and least in the northwest (10.5%), while including foreign remittances in such expenditure reduces the poverty gap most by 10.5% in the southwest Southwest is closely followed by northeast and southeast. While the lest effect of foreign remittances on poverty gap was found in northwest (2.6%). In a

Table 4. Percent change in poverty indicators.

Household location	Poverty indicators	Percent change (Domestic remittances vs. no remittances) (5)	Percent change (Foreign remittances vs. no remittances) (6)	Percent change (All remittances vs. no remittances) (7)
Rural Nigeria	Headcount ratio	-29.6	-11.1	-46.3
	Poverty gap ratio	-33.3	-5.5	-55.5
	Severity ratio	-25.0	0.0	-62.5
	Mean PCEXPDR	49.2	5.8	56.6
Northcentral	Headcount ratio	-12.3	-6.2	-13.8
	Poverty gap ratio	-8.1	-2.7	-32.4
	Severity ratio	-9.7	-6.4	-41.9
	Mean PCEXPDR	4	45.2	42.3
Northeast	Headcount ratio	-28.2	-9.8	-25.4
	Poverty gap ratio	-46.2	-9.6	-50.0
	Severity ratio	-58.5	-48.7	-60.9
	Mean PCEXPDR	2.3	0	2.9
Northwest	Headcount ratio	-6.9	-1.4	-5.5
	Poverty gap ratio	-10.5	-2.6	-13.2
	Severity ratio	-14.2	-4.8	-19.1
	Mean PCEXPDR	63.8	0.1	64.2
Southeast	Headcount ratio	-35.5	-8.9	-42.2
	Poverty gap ratio	-23.8	-9.5	-33.3
	Severity ratio	-18.2	-9.1	-27.3
	Mean PCEXPDR	202.7	59.7	271.7
Southsouth	Headcount ratio	-11.6	-6.9	-18.6
	Poverty gap ratio	-26.9	-5.0	-38.5
	Severity ratio	-25.0	-8.3	-33.3
	Mean PCEXPDR	16.9	0.3	72.1
Southwest	Headcount ratio	-23.0	-2.3	-29.5
	Poverty gap ratio	-26.3	-10.5	-31.6
	Severity ratio	-36.4	-18.2	-36.4
	Mean PCEXPDR	49.3	5.5	59.3

descending order, Northeast, south-south, southeast, north-central southwest and northwest had poverty gap reduction of 50, 38.5, 33.3, 32.4, 31.6 and 13.2% respectively when all remittances were included in household expenditure. The results for the most sensitive poverty measure – squared poverty gap – shows that poverty actually falls more with the inclusion of domestic remittances. The results in columns (5) and (6) for the squared poverty gap show that including domestic remittances in household expenditure reduces the severity of poverty most in northeast (58.5%) and least in northwest (14.2%), while including foreign remittances in such expenditure reduces the severity of poverty by 48.7% from 41% to 21%in northeast (highest) and by 4.8% from 21% to 20% in the northwest. These results suggest that: (1) Access to inflow of remittances alleviated poverty in rural Nigeria; (2) Poverty headcount, gap, and severity ratios are lower for households who received domestic remittances than households that received foreign remittances, and (3) Domestic remittances reduce the severity of poverty more than foreign remittances in rural Nigeria.

Poverty measure and decomposition: Changes in remittances

The Central Bank of Nigeria (2004) reported that international cash remittances to Nigeria increased by 10% in the first quarter of 2004. We have no information on how relatives and family members abroad have or will modify their remittance sending habits. The basic

Table 5. Rural poverty impacts of a 10% increase in migrant remittances.

GPZ	International remittances				Internal remittances			
	% of recipients' household	% Change in poverty resulting from a 10% increase in remittances using FGT			% of Recipients' household (%)	% Change in poverty resulting from a 10% increase in remittances using FGT		
		$\alpha=0$ Headcount (%)	$\alpha=1$ Poverty gap (%)	$\alpha=2$ Squared poverty gap (%)		$\alpha=0$ Headcount (%)	$\alpha=1$ Poverty gap (%)	$\alpha=2$ Squared poverty gap (%)
Northcentral	16.67	0.00	0.00	0.00	7.72	-0.09	-0.82	-1.22
Northeast	3.33	-0.88	-0.00	-0.00	10.24	-0.29	-1.08	-2.06
Northwest	3.33	-0.57	-0.00	-0.00	37.01	-0.24	-1.46	-2.60
Southeast	36.67	-0.03	-0.18	-0.56	15.27	-0.16	-1.46	-2.59
Southsouth	30	-0.00	-0.00	-0.00	37.01	-0.29	-1.85	-0.75
Southwest	10	-0.00	-0.00	-0.00	6.93	-0.24	-1.37	-2.17
Rural Nigeria	5.36	-0.86	-0.62	-0.62	94.63	-1.80	-1.60	-1.60

assumption of this study is that remittances will continue to increase in spite of the global economic woes since the home front is not favourable for many Nigerians, this will act as an incentive to emigrate in search of greener pasture but the pattern of this increase would vary according to which income groups that receive and family ties between migrant and relatives back which in turn will influence the elasticity of their (migrants) response to income shocks back home. Unfortunately this information is not available so the assumption that remittances will increase across all income groups by the same amount is made and thus, examines their impact on the poverty indices. For the purposes of this analysis we investigate the effects of a 10 and 30% increase in remittances for all Households on the various poverty measures.

Using the same poverty line, Table 5 reports three different poverty measures. To estimate the effect of increase in migrant remittances on poverty, first, the three variants of the FGT poverty measure was calculated using Equation 2 with $\alpha = 0$, 1 and 2. We then increased each of the two types of remittances, in turn, by 10 and 30% as the case may be. The first measure - the poverty headcount - shows the percent of the population living beneath the poverty line. However, this headcount index ignores the "depth of poverty," that is, the amount by which the average expenditure of the poor fall short of the poverty line. The table therefore also reports a second measure, the poverty gap index. This index measures in percentage terms how far the average expenditures of the poor fall short of the national poverty line. The third poverty measure -- the squared poverty gap index – shows the "severity of poverty." The squared poverty gap index possesses useful analytical properties, because it is sensitive to changes in distribution among the poor. In other words, while a transfer of incomes from a poor person to a poorer person will not change the headcount index or the poverty gap index, it will decrease the squared poverty gap index.

Results of the poverty experiments are reported in Tables 5 and 6. Overall, poverty decreases when migrant remittances go up. As shown in Table 5, nationally, the rural poverty effect is substantially greater for domestic remittances than for remittances from international migrants using all three poverty measures. For example, the FGT index with $\alpha=2$ decreases by 1.60% as a result of a 10%increase in domestic remittances, compared with 0.62% for foreign remittances. The headcount measure decreases by 1.80% points when domestic remittances increase, but by 0.86% in response to a rise in remittances from abroad. Poverty elasticity of remittances from migrants abroad varies sharply across GPZ. In terms of the amount of poverty reduction, the Squared Poverty Gap measure tends to show the most change, followed by the Poverty Gap. The head count measure ($\alpha=0$) varies from showing the most change in some geopolitical zones (GPZs), to showing little or no change in many others. A likely cause of this is that while a shift in the headcount index requires a "jump" over the poverty line (as a result of the 10% remittances increase); any change in income for families in poverty causes a change in the Poverty Gap and the Squared Poverty Gap measures. Surprisingly, the sensitivity of poverty to domestic remittances is greatest in the low migration, Northwest GPZ, and it is smallest in the high migration, South-south GPZ. Other things being equal, a 10% increase in domestic remittances reduces poverty by2.60% in the North West (according to the FGT index with $\alpha=2$), compared with only 0.75% in the South-South. Based on the headcount measure, there is a twist; with a 10% increase in domestic remittances poverty decreases more in high migration area by 0.24% in the North West, but by 0.29 in poverty in the South-South. The poverty gap measures reveal a similar pattern of greater sensitivity of poverty to remittances in region (south east)

Table 6. Rural poverty impacts of a 30% increase in migrant remittances.

GPZ	% of Recipients' Household	International remittances			% of Recipients' Household(%)	Internal remittances		
		% Change in poverty resulting from a 30% increase in remittances using FGT				% Change in poverty resulting from a 30% increase in remittances using FGT		
		$\alpha=0$ Headcount (%)	$\alpha=1$ Poverty gap (%)	$\alpha=2$ Squared poverty gap		$\alpha=0$ Headcount (%)	$\alpha=1$ Poverty gap (%)	$\alpha=2$ Squared poverty gap (%)
Northcentral	16.67	0.00	0.02	0.06	7.72	-0.11	-0.92	-2.17
Northeast	3.33	-1.08	-0.50	-0.10	10.24	-0.59	-2.16	-2.06
Northwest	3.33	-0.07	-0.03	-0.03	37.01	-0.97	-1.86	-2.60
Southeast	36.67	-1.03	-0.88	-0.96	15.27	-1.16	-2.46	-2.59
Southsouth	30	-0.02	-0.04	-0.04	37.01	-0.89	-1.85	-1.85
Southwest	10	-0.05	-0.00	-0.03	6.93	-0.54	-1.87	-2.17
Rural Nigeria	5.36	-0.88	-0.82	-0.82	94.63	-2.80	-2.55	-2.57

in which a large percentage of households have international migrants.

Table 6 also reports the simulation results which suggest that a severe reduction of remittances of about 30% will impact on the poverty headcount, poverty gap and the squared poverty gap. Smaller increases in remittances are likely to have a less dramatic effect on the poverty measures as the impact of 30% increase in remittances is shown here to be greater than 10%. The simulations were also done by geopolitical zones to capture impacts in the six geopolitical zones of Nigeria. The sensitivity of the indices is much greater for all the geopolitical zones with a 30% increase in remittances, which is unlikely in the short run.

The differences in impact on the poverty indices resulting from 30% increases in remittances amongst geopolitical zones are fairly small than expected but more noticeable for domestic remittances. In rural Nigeria as a whole, a 30% increase in domestic remittances resulted in a fall of 2.8% in the headcount index. This was a larger decline than 0.88% decline in this measure for foreign remittances. In the case of the poverty gap, the decline in poverty gap with domestic remittances was also slightly larger than the decline with foreign remittances. Domestic remittances caused the squared poverty gap to decline by a 2.57% point more than 0, 82% decline caused by foreign remittances in Rural Nigeria. Again, the squared Poverty gap showed a greater decline than the poverty gap with domestic remittances relative to foreign remittances. The relationship between poverty impacts of remittances (for $\alpha=2$) and the extent of household participation in domestic migration does not show a unified pattern because the position of recipient household in the income distribution matters. As the analysis reveals remittances are not yet prevalent (going by NLSS remittance file), while domestic remittances had more impact on the poor, opposite is true for foreign remittances. Prevalence in

remittances suggests both poor and well-to-do have access to receiving from both sources. These findings suggest that the ameliorative effect of foreign remittances on rural poverty increases with the prevalence of migration. They would appear to represent a poverty corollary to the argument advanced by Stark et al. (1986), that the distributional effects of migration become more equal as increasing numbers of households gain access to foreign labor markets. In theory, the relationship between poverty elasticities and the prevalence of migration (remittances) is no more obvious than the relationship between migration and inequality. It depends on the extent to which poor households gain access to migrant labor markets over time, which is an empirical question. It appears that, in the case of international migration, the non-expansion of migration networks (multinomial regression outcome) plays a critical role in shaping the impact of remittances on rural poverty.

Remittances, poverty and income distribution

One of the key findings in Tables 3 to 6 is that domestic remittances have a greater impact on reducing the depth and severity of poverty in rural Nigeria than foreign remittances. One way to explore the reasons for this finding is to examine what kinds of income groups of households receive domestic and foreign remittances. If, for example, households at the bottom of the income distribution are receiving more domestic than foreign remittances or if these "very poor" households are receiving a greater proportion of their income from domestic remittances, then domestic remittances will have a greater impact on poverty than foreign remittances.

To pursue this analysis, Table 7 ranks all the households into decile groups on the basis of per capita

Table 7. Distribution of remittance-receiving households by decile group, ranked by per capita household income, excluding remittances.

Rank	Households receiving domestic remittances (Percent) (1)	Domestic remittances as percent of total per capita household expenditure (including remittances)% (2)	Households receiving foreign remittances (Percent) (3)	Foreign remittances as percent of total per capita household income (including remittances) %(4)
Lowest10	11.2	19.9	3.0	6.3
Second10	7.1	19.1	2.1	7.4
Third 10	5.2	11.4	2.5	7.3
Fourth 10	7.3	10.3	4.4	5.1
Fifth 10	9.5	15.0	5.6	5.9
Sixth 10	10.2	5.5	9.2	13.5
Seventh10	11.3	8.5	11.2	12.2
Eight 10	13.4	10.5	15.2	13.5
Ninth 10	14.6	11.8	21.8	17.2
Top 10	10.2	19	22.1	25.6
	100		100	

household income. As expected, columns (1) and (3) in Table 7 show that rich households specifically, those in the eighth, ninth and top deciles of the income distribution – account for the largest share of remittance-receivers. Households in these three deciles account for between 10 and 15% of domestic remittance-receivers while they account for between 15 and 22% of foreign remittances-receivers. However, surprisingly large shares of households receiving remittances – 11.2% for domestic remittances– are found in the lowest decile group. Of equal importance, columns (2) and (4) in Table 7 show that households in the bottom decile group receive very large shares of their total per capita household income from remittances. On average, households in the lowest decile group receive 19.9% of their total household income from domestic remittances, and 6.3 of such income from foreign remittances. In addition, households in the second lowest decile group receive 19.1% of their total household income from domestic remittances.

The fact that households in the bottom income decile groups are receiving a larger share of their total household income from domestic, as opposed to foreign remittances, serves to explain why domestic remittances have more of an impact on reducing the depth and severity of poverty in rural Nigeria than foreign remittances.

When households in the poorest (and next to poorest) decile group receive domestic remittances their income increases by over 39%. This in turn has a huge effect on any poverty measure – like the poverty gap or squared poverty gap – which considers both the number and the distance of poor households beneath the poverty line. By contrast, foreign remittances account for a much smaller share of total income for households in the two poorest decile groups.

As a consequence, when poor households in rural Nigeria receive foreign remittances, the poverty indices which measure both the number and distance of households beneath the poverty line do not show the same type of changes as with domestic remittances. In rural Nigeria domestic remittances reduce the depth and severity of poverty more than foreign remittances because poor households are receiving a greater share of their income from domestic remittances.

Conclusion

Remittances were found to be poverty reducing. The strong implication is that poverty programs that seek to adjust for remittance shortfalls must examine carefully the situation for all groups but more especially the poor in rural areas. On the other hand, measures that promote remittances or that enhance remittance multipliers on incomes in migrant-sending households can be an effective poverty-reduction tool. The impacts of these measures on poverty would appear to be most favourable in the highest migration regions. The result of simulations done to estimate the impact of increase in remittances on the various poverty measures in light of the recent increase in remittances due to increased migration suggest that for poverty to decline substantially the increase in remittances must be significant. That is, thirty percent increase across board in all remittances would not be sufficient to generate sufficient decline in poverty as expected.

Following from the above, some key policy recommendations are made. In particular, Central Bank of Nigeria (CBN) need to develop a strategy to maximize the benefits of remittances while minimizing their negative repercussions. As a first step, governments need to reduce the cost of sending remittances. Lowering the transactions costs of remittances will help to increase the poverty-reducing impact of international remittances

and will also encourage a larger share of remittances to flow through formal financial channels. A recent survey by Martínez (2005) and others had shown that senders usually pay up to 13 to 16% in fees for remittance transactions below $300 dollars, which is the average amount migrants send every month to their home countries. There is no doubt that reducing the costs of sending remittances would increase the disposable income of migrants' families and encourage them to use the official banking channels. However, banking regulations in Nigeria, in particular those related to anti-money-laundering, while necessary for security purposes, remain unfavourable for remittances and are demanding on the migrants, for whom sending money home may be the only contact with the banking system. Therefore, encouraging partnership between the international banking and postal services and money transfer operators would help reduce remittance costs while preserving high security standards. In addition, since fees are set by financial institutions in both source and destination, Nigerian authority cannot foster the decline of fees alone. Cooperation between financial authorities in sending and Nigeria is required to address the high cost paid by consumers in their remittances transactions.

Second, apart from establishing a competitive environment that leads to the reduction in remittance fees, there is a need to improve data on remittances, and the regulation of money transfer companies, broaden access of population to financial services by developing new products for households receiving remittances on a regular basis, etc. To address all these challenges, Nigerian government should establish national policies and strategies on remittances, instead of dealing with them on a piecemeal and ad hoc basis. Countries such as Philippine, Malaysia and Guatemala have done this. A national policy on remittances, for example, could provide the framework under which the efforts of financial sector authorities, migration authorities, poverty alleviation agencies, and ministries of foreign affairs, among others, could be coordinated towards the achievement of common goals. Moreover, a national policy on remittances could help place the issue of remittances on the national and regional development agenda, especially as remittances are beginning to represent a large percentage of our GDP. Indeed, given the weaknesses of the infrastructure supporting remittances especially in rural Nigeria, technological improvements in the banking sector could also significantly reduce transaction costs. New banking technologies that can expedite cheque clearance, reduce exchange losses, and improve disclosure in rural areas can be particularly helpful. New technology would offer potential for greater efficiency, lower costs, and extended outreach. On a positive note, some Banks in Nigeria have, in recent years introduced a wide range of technological solutions such as satellite telecommunications and enhanced management and wire transfer systems. Innovative financial products such as debit cards and mobile telephony add-on services and pre-paid cards are new additions with huge potential. But most of these new innovations are not available in rural Nigeria, where they are available, epileptic power supply, have either crippled them or render them inefficient.

From a developmental perspective, one of the major challenges for policy makers in Nigeria is to motivate senders and recipients of remittances to conduct their money transfer operations through formal financial institutions. In that way, remittances could become formal savings and deposits in financial institutions and, thus have a multiplier effect in the country. This could be addressed by increasing the supply of financial services to both senders and recipients of remittances. Products that could be offered to poor families receiving remittances include deposit and savings accounts, consumer loans, mortgages, life and non-life insurance products, pensions, etc. This would not only deepen the financial system, but more importantly help recipients of remittances improve their living conditions.

ACKNOWLEDGEMENT

REFERENCES

Adams RH (2005). Remittances, Household Expenditure and Investment in Guatemala. *World Bank Policy Research Working Paper. 3532, March.*

Adams R, Page J (2005). Do International Migration and Remittances Reduce Poverty in Developing Countries*?" World Dev.* 33(10):1645-1669.

Adams RH (2003). International Migration, Remittances and the Brain Drain: A Study of 24 Labour Exporting Countries", Policy Research Working Paper No.3069, Washington: World Bank, June.

Addison T, Cornia GA (2001). Income Distribution Policies for Faster Poverty Reduction. Discussion 200:1-93, World Institute for Development Economic Research (UNU/WIDER), Helsinki.

Awoyemi TT, Adeoti AI (2004). The Decomposition of Income Inequality by Sources of Income: The Rural Nigerian Experience. Afr. J. Econ. Pol. 11(1):1-16.

Bourchachen J (2000). Apports des transfers des residents à l´étranger à la reduction delapauvreté: cas du Maroc" paper presented at the workshop: *Statistique, développementetdroits de l' homme,* Montreal.

Central Bank of Nigeria, (CBN). (2004). *Annual Report.* Research and Statistics Department. Abuja.

De Haas H (2007). Remittances, Migration and Social Development.A Conceptual Review of the Literature. *Social Policy and Development Programme Paper Number 34.* UNRISD

DFID (2006). Bilateral. Remittances Corridor Analysis Initiatives (BRCAI). The Challenge of Embracing Formal Transfer System in a Dual Financial Environment. Excerpts   from the Publication Presented at the 2nd International Conference on Migrant Remittances. DFID. London. November 13-14.

FOS (1999). Poverty Profile for Nigeria: 1980-1996: Federal Office of Statistics Lagos, Nigeria.

Foster J, Greer J, Thorbecke E (1984). A Class of Decomposable Poverty Measures," *Economet 52(3):761-766.*

Federal Republic of Nigeria (2006). Poverty Profile for Nigeria. National Bureau of Statistics (NBS) FRN.

IMF (2005). *World Economic Outlook*, International Monetary Fund. Washington D.C

International Fund for Agricultural Development (IFAD). 2007. Sending money home, Rome, Italy http://www.ifad.org/events/remittances/maps/brochure.

Kanbur R, Lustig N (1999). Why is Inequality Back on the Agenda? Paper Prepared for the Annual Bank Conference on Development Economics, World Bank Washington DC. April 28-30.

Martinez CA (2005). Remittances and Poverty in Migrants' Home areas: evidence from Philippines" World Bank's International Migration and Development Research Group.

National Bureau of Statistics (NBS) (2005). Nigeria Living Standard Survey, Abuja FCT.

Okojie C, Ogwumike FO, Anyawu JC, Alayande BA (2001). Poverty in Nigeria: Analysis of Gender dimension, Access to Social services and Labour Market. Final Report Submitted to the African Economic Research *Consortium (AERC)*, Nairobi, Kenya.

Oyekale AS Adeoti AI, Oyekale TO (2006). Measurement and Sources of Income Inequality among Rural and Urban Households in Nigeria. *PMMA Working Paper 2006-20,* Poverty and Economic Policy Research Network (www.pep-net.org).

Ratha D (2003). Worker's Remittances: An important and Stable Source of Foreign Development Finance". In *Global Development Finance: Striving for Development*

Reardon T, Taylor JE (1996). Agro-climatic Shock, Income Inequality, and Poverty: Evidence from Burkina Faso", *World* Dev. 24(5):901-914.

Sen A (1976).Poverty: An Ordinal Approach to Measurement", Econometrica 46:437-446.

Stahl C (1982). Labour Emigration and Economic Development", Int. Migrat. Rev. 16:868-899.

Stark OJ, Edward T, Shlomo Y (1986). Remittances and Inequality. Econ. J. 96:722-40. (Reprinted in Stark, 1991.)

Taylor J, Edward, Jorge M, Richard A, Alejandro L (2005). Remittances, Inequality and Poverty: Evidence from Rural Mexico. Working Paper No.05-003..

World Bank. (2003). Global Development Finance: Striving for Stability in Development Finance. Washington, DC: World Bank.

World Bank. (1996). "Taking Action for Poverty Alleviation in Sub-Saharan Africa" Report of an African Task Force, May 1, World Bank, Washington D.C.