Remittances and Income Mobility in the Rural Areas of Nigeria

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Abstract

In Nigeria, an issue that is discussed less is intertemporal income mobility â??" who is getting ahead, who is falling behind, who is standing still, and why. This article examines the effects of remittances on rural households? income mobility. We used the living standard survey (NLSS), Harmonised living standard survey (HNLSS) and balance of payments on remittance data set produced by the government of Nigeria to help track Inequality and income mobility progress. The unit of analysis was the household, upon which information on remittances was analysed. Average Quintile Immobility Rate (AQIR) and the Average Quintile Move Rate (AQMR) were estimated to determine the status of intertemporal income mobility with and without remittances while the progressive index (P-value) was estimated to ascertain whether income mobility has contributed to long-term income equality. From the results, remittances pushed up rural households? income mobility and had long-term contribution to income equality.

Index terms— income mobility, income inequality, remittances, rural nigeria, household.

1 Introduction

igeria persistently ranks among the most unequal in the world in terms of distribution of earnings and wealth. Discussion of this problem has produced agreement on some of its causes: the Country's disappointing distributive performance has been due to pervasive levels of macroeconomic vulnerability, inequality in political voice and problems of social exclusion that are rooted in history. However, the notion of mobility has not yet taken a central place in this discussion. An issue that is discussed less is intertemporal income mobility -who is getting ahead, who is falling behind, who is standing still, and why?

As a concept advanced by [1], income mobility describes changes in the income of an individual or a set of individuals in the overall income distribution of a defined group. The focus in income mobility studies is to observe movements in income levels by employing relevant methods to estimate and analyze dynamic changes of a targeted position in the income distribution. Income mobility has already become a crucial part of income distribution analysis **??**2, 3,4,5,6,7,8, and 9]. For reasons of data availability, empirical studies of income mobility began with cases pertaining to developed countries **??**10, 11, 12, and 13] and just a few developing countries [14].

2 N

High and persistent inequality is consistent with lower mobility, although the causal relationship stillrequires an empirical investigation. Some studies related to income mobility have been carried out in other Climes (Gottschalk 1997;Wodon 2001; Maasoumi and Trede 2001;Fields 2007), where the outcomes reveal that income mobility contributed to income equality and urban households' income mobility appeared to be stableor changing slowly over time. Studies related to the direct and indirect effects of the remittances on rural households' income have been conducted in Nigeria (Osili, 2004, Chukwuone, et al, 2007, Odozi, et al, 2010and Olowa and Shittu, 2012). To the best of our knowledge, no study has considered the impact on income mobility of remittances among rural dweller, a gap which this paper seeks to fill. To achieve this, the paper provides answer to following questions:

what effect has remittance income on income mobility in rural areas of Nigeria? What is the contribution of remittances to long-term income inequality? II.

3 Concepts/Literature Review

In contrast to the voluminous theoretical and applied income inequality literature, the literature on the measurement and interpretation of mobility is more limited and generally more ad hoc (Fields and Ok, 1999). Important distinctions are made between relative and absolute mobility. The former examines changes in rank of households between two periods and is thus mainly concerned with the ability of individuals to move up (and down) in the rankings of incomes while the latter examines absolute changes in income between two periods and thus is additionally concerned with changes in absolute well-being (and poverty). For these reasons, we reported on both in this paper.

As far as measures of mobility are concerned, one first needs to distinguish between what Cowell and Schluter (1998a) call single-stage and two-stage indices. Single-stageindices consider the entire distribution in both years and examine mobility using thatentire distribution, while two-stage indices first allocate individuals to income groups(either exogenously fixed income groups or endogenously determined ones likequintiles) and then examines mobility between these groups. Examples of single stage indices are the correlation coefficient of incomes between two periods, Shorrock's rigidity index, Fields and Ok's measures, and King's measure (Fields, 2001;Cowell and Schluter, 1998a). They have the advantage of using all available information inherent in the actual distributions and thus give the most comprehensive assessment of mobility. They have the disadvantage, however, of being particularly sensitive to measurement error which is a particular problem when data from only two waves are available, as happens to be the case here.

While sometimes the brackets of a transition matrix are exogenously fixed income classes, the more common method are endogenously determined income groups based on quantiles of the distribution in a given year (such as quintiles ordeciles). The advantage of the transition matrix is that it can nicely summarize mobility at various points in the distribution which is harder to gauge from a single index. It also turns out to be more robust to measurement error **??**Cowell and Schluter, 1998). There are serious costs as well, including the disregard of important information, such as income changes within a bracket and the different absolute income changes that underlie a change in income bracket (Fields and Ok, 1999). In order to off-set this shortcoming we proceed to estimate the progressive index (P-value) to compare the extent of income distribution equality during different periods with and without remittances; if the P-value in the period i outweighs that in the period j, the average income distributions in the period i are more equal than that in the period j; if the P-value in the period i is less than that in the period j, the average income distributions in the period i are more unequalthan that in the period j; if the P-value in the period i equals that in the period j, the average income distributions in the period i are as equal as that in the period j. We adopted this method in analysis of remittances on Income Mobility.

The International monetary fund (IMF) defines workers' remittances as international transfers of funds sent by migrant workers from the country where they are working to their countries of origin (Kihangire and Katarikawe 2008). However, in most studies, remittanceshave been defined as that portion of migrants' income sent from the migration destination to the place of origin either in cash or in kind and can be across borders or within borders (Quartey 2006;Chukwuone et al., 2007).There are three views of the effect of remittances on development. The first view, the developmental optimism of the 1950s and the 1960s sees migration as a major engine of development through the diffusion of ideas, technology and skills. Regarding two-stage indices, the most commonly used measure is the transition matrix and indices derived from it. For a transition matrix, the data are divided into n equally sized income classes (e.g. deciles or quintiles) which are endogenously determined for each year. Let P be a matrix of n x n transitions, the ij thelement of which, Pij, is the percentage in the income class i at time t 0 of those who at time t 1 were in class j.

The units which moved from one income class to another (i ? j) between time t 0 and time t 1 refer to as "mobiles". Those who remain in their original income class will be called "immobiles". Mobiles who experienced a positive change in relative well-being ($i < j$) will be referred to as "winners" as opposed to "losers" ($i > j$).

The pessimist view of the1970s and 1980s, influenced by dependency theory, argues that migration and remittances create dependent relationships between migrants and non-migrants and between sending and receiving countries. The third view is the new economics of labour migration (NELM), which emerged in the 1990s as a response to the optimist and pessimist views. This view is based on a neo-liberalist functionalist perspective that links decisions to migrate to household survival and the quest to raise income and/or obtain capital for investment. This study posits that income mobility indicators will be expected to improve if the poor have access to migration and remittances opportunities. That is, the level of income mobility is better among households with remittances than households without remittances.

There are relatively few studies on income mobility in developing countries and even fewer that are roughly comparable. This is partly due to the paucity of reliable panel data sets although increasing numbers of such data sets are becoming available. Unfortunately many of these panels have very few waves where issues of measurement error are particularly pertinent (Deaton, 1997). Moreover most analyses focus, for obvious reasons, particularly on poverty dynamics rather than on household income mobility more generally (e.g. Jalan and Ravallion, 2000; Dercon and Krishnan, 2000; Scott, 2000; Justino and **??**ichfield, 2002, McCulloch andCalandrino, 2002).

The studies that exist generally suggest that income mobility in developing countries is higher than in industrialized countries, particularly at the bottom end of the distribution (e.g. Dercon and Krishnan, 2000;Fields, 2001). They also seem to suggest increasing mobility over time in most places. Panel data from Peru based on expenditures points to increased mobility in the 1990s (Fields, 2001). Data from rural China point towards rapidly increasing mobility from very low levels in the 1980s (Nee, 1994) types, and sources all extracted from the income transfer file. Also contained in this file is the code to identify households with and without migrants, identified as migrant households and non-migrant households. To link remittances with other household characteristics, such as sources of income, the files were merged using household identifiers. This study aggregated household earnings into the following sources: wages and salaries, agriculture, nonfarm business, rental and remittances. Of 1704 total household observations contained in the income transfer file, 75% are non-migrant households while 25% are migrant households. We augment the two waves of NLSS with the balance of payments data on remittance flows received by Nigeria over the period 1975-2010. The intermittent year, 2005-2008 were provided for from the balance of payments data to determine the Progressive index (P-Value) used to compare the extent of income distribution equality during different periods.

Total income and remittances of sample households were deflated using the rural consumer price index from the Nigerian Statistical Yearbooks, published by the National Bureau of Statistics. (2)

4 III.

5 Analytical Technique

The m x m transition matrix P: = [P ij] is called one step transition probability matrix, obviously,ji ij P andP P = ? 0 (3)

If variable is in state i at period T n , but shift to state j by t steps, we then call this probability of transition t step transition probability, which is: m j i K P i X J X P ij n k n ....., 2 ,**1**K p K p K p K p K p K p K p K p K p K P mm m m m m ij (5)

The element P ij indicates the probability of numberi rural household in the base year shifting to number j income group in the final year. The matrix is full mobility matrix with P ij =1/n, which has absolute timeindependent and acts as the frame of reference. b) Calculating the Average Quintile Immobility Rate (AQIR) and the Average Quintile Move Rate (AQMR):

AQIR and AQMR are indices derived from transition matrix. Because rural household income mobility is not easily observed from income mobility transition matrix, it is necessary to calculate the Average Quintile Immobility Rate (AQIR) and the Average Quintile Move Rate (AQMR). Reflecting the income mobility of rural households, the AQIR is the average proportion of rural households that have the same income at t period after the initial income, which is the average of the diagonal values in the matrix. The equation is:? = = m i ij P m i AQIR 1 (6)

The AQIR estimates the average proportion of rural households at the same position. The higher the rate means the less the mobility. The AQIR of the full mobility matrix is n/1. The AQMR is the weighted average of transition probability and the weight is the shift between different groups.

The AQMR is the scale of the overall rural household income mobility, and the higher the value means the higher the mobility.

We arrange all sample rural households into five quantities according to the income levels and then create a 5*5 matrix.

6 c) Progressive Index (P-value)

To determine Progressive Index (P-value) it is imperative to first determine the Gini coefficient for rural income with and without remittances thus we use the following formula to measure Gini coefficient for sample rural household income with and without remittances:?? = = ? ? = n i n j j i x x x n G 1 1 2 2 1 (8)

Where: ? x is the arithmetic mean income corresponding tox. The progressive index (P-value) is written as:) ( ) (1 0 1 1 x G x G P ? ? = (9)

In the above equation, ?) (1 x is the arithmetic income of rural households for a certain period; is the income of the number i rural household in the initial year; G (.) is the Gini coefficient. If P >0, the average income distribution is more equal than the original distribution; if P < 0, the average income distribution is more unequal than the original year; if P = 0, the average income distribution remains the same as the initial year.

IV. 1). Similarly, the age of household head also decreased over time. Poverty rose by about 27 percentage points while mean income rose considerably as well. Furthermore, the average amount of credit available to rural households was ?1938.10 but rose slightly to ?2003.213. This is rather low and a higher proportion of them could not even access this.

7 Results

8 a) Descriptive

Transfer to Government (Tax) followed similar trend as it increased from ?496.44 in 2004 to ?785.52 in 2009. This may not be unconnected with the recent drive for tax collection by most state government in Nigeria.

9 b) Gini Coefficient

The Gini coefficient of rural households was estimated with and without remittances from 2004 to 2009. Table 2indicates that the Gini coefficient of inequality decreases by 7 % from 0.896 to 0.833 when total remittances were included in income 2004, but increased from 0.787 to 0.853 in 2005. Gini coefficient also decreases by 6.58% from 0.866 to 0.837 remittances were included but remain unchanged from 0.800 to 0.800 when remittances were included 2007.Gini coefficient went down from 0.745 to 0.735 in2008, but rebounded from 0.832 to 0.894 in 2009 when remittances were added; indicating that there are linkages between remittances and income inequality. The rising inequality generated by remittances is to be expected given that the educated and upwardly mobile rural dwellers are likely to benefit more quickly from migration following the new labour economic theory on remittances than poor and uneducated rural dwellers **??**Taylor et al, 2005).

10 c) Income Mobility

Table 3 shows the result of the calculated AQIR and AQMR for rural Nigeria with and without remittances by year. V.

11 Conclusion

The study employed standard income mobility analytical technique to determine rural households' income mobility with and without remittances. It also evaluated long term income inequality effect of income. Using the NLSS (2004), HNLSS (2009) and the balance of payments data on remittance, found Gini coefficient of inequality decreases by 7 % from 0.896 to 0.833 when total remittances were included in income 2004, but increased from 0.787 to 0.853 in 2005. Gini coefficient also decreases by 6.58% from 0.866 to 0.837 when remittances were included but remain unchanged from 0.800 0.800 when remittances were included in 2007.Gini coefficient went down from 0.745 to 0.735 in 2008, but rebounded from 0.832 to 0.894 in 2009 when remittances were added; indicating that there are linkages between remittances and income inequality. In addition, the sample rural households' income mobility was higher with remittances than without remittances while the P-value shows inclusion of remittances in rural house has contributed to long-term income equality thus, Remittances have reduced the rural households' income inequality (P-value) and helped Income mobility in rural Nigeria over time.

Notwithstanding the limitations of the adopted approach in this paper, the simplistic and misleadingwidely accepted notion of dominating income immobility in rural Nigeria is rejected. This paper is the firstattempt towards uncovering the role of remittances in income mobility. Furthermodeling efforts and the construction of appropriate panel data will be critical in providing the mechanisms through which it operates.

12 Global

Figure 1:

1

Characteristics	2004 Mean	Standard Deviation	2009 Mean	Standard Deviation
Age of Household head(year)	47.325	11.121	42.324	13.111
Household size	4.876	3.665	4.222	4.421
Credit	1936.214	211.000	2003.213	432.233
Tax	496.444	0.000	785.512	1.000
Per capita Expenditure	28442.322	1232.611	29333.231	5107.444
Per capita income	8688.911	5467.332	9874.203	1.61
Educational group(years)	2.59	1.32	3.12	
Poverty Rate*	54.6		73.2	

*in Percentage

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Figure 2: Table 1 :

2

	2004	2005	2006	2007	2008	2009
Gini Coefficient of Income Excluding Remittances	0.896	0.787	0.866	0.800	0.745	0.832
Gini Coefficient of Income Including Remittances	0.833	0.853	0.837	0.800	0.735	0.894

Source : Author's Calculations from NLSS (2004) HNLSS and World Development Indicators (2012).

Figure 3: Table 2 :

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Year AQIR AQMR

With Remittances 0.90 0.80 0.59 0.87 0.60 0.62 As table 3 shows income mobility was low with Without Rem

reduced AQIR by between 5 and 15 percentage point indicating reduction in immobility rate while inclusion of remittances in AQMR increased the indices by between 8 and 20 percent point indicating increase in move rate. Generally, the sample rural households' income mobility was higher with remittances than without remittances

Figure 4: Table 3 :

4

Year	P-Value
2004	0.04
2005	0.05
2006	0.07
2007	0.10
2008	0.11
2009	0.13

Figure 5: Table 4 :

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Figure 6: Table 4

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