Extended Abstract
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Paper/Poster Title	Rural Structural Change in Nigeria: Landholding and Rural Income Inequality

Abstract prepared for presentation at the 98th Annual Conference of The Agricultural Economics Society will be held at The University of Edinburgh, UK, 18th - 20th March 2024.

Abstract	200 words max

The problems of land inequality have attracted renewed interest in the development literature due to the notion that inequality is economically costly. Changes in population and macroeconomic policies impact farm size distribution as labor migrates from farm to non-farm sectors resulting in overall productivity growth. We investigate the role of landholding in the process of structural change. Leveraging data from the four waves of the Nigeria General Household Panel Survey (GHS)(2010, 2012, 2015, and 2018), we address the following specific objectives: (1) the pattern of landholding distribution across household income and expenditure over time (2) Changes in rural income inequality pathways by income source, over time (2), Changes in the extent of the variation within and across land sizes reflected in total inequality over time(3) the role of landholding on rural income inequality amidst contextual effects using regression-based decomposition (4) the role of a changing landholding in a locality on rural income. To address our questions of interest we used decomposition approaches by income sources and sub-population-group with a focus on land size distribution. We used a regression-based decomposition approach and regression model.

Keywords	Land reforms, land ownership, income inequality, structural change
JEL Code	Q1, Q12, Q15, Q18 see: www.aeaweb.org/jel/guide/jel.php?class=Q)

Introduction	100 – 250 words

Changes in population and macroeconomic policies impact farm size distribution as labor migrates from farm to non-farm sectors resulting in overall productivity growth. Land and labor are key endowments possessed by households in rural economies, with land serving as the primary asset utilized to produce wealth (Vendryes, 2014). Although land tenure systems and farm productivity have been studied extensively, relatively little attention has been paid to the role of landholding in the process of structural change. Land reforms (both market and state-led) enabled some households to acquire additional land while some others were left landless. We empirically analyze what it means for rural income inequality and the neighborhood effects in a locality. Such information is essential for broad-based agricultural productivity growth particularly in countries like Nigeria with considerable frictions- weak markets and institutions for land governance - amplify production factor concentration. We examined the following objectives (1) the pattern of landholding distribution across household income and expenditure over time (2) the rural income inequality pathways by income source, and the changes over time (2), the extent of the variation within and across land sizes reflected in total inequality(3) the role of landholding on rural income inequality using regression-based decomposition (4)

the role of a changing landholding on rural income in a locality using fixed effects econometric approach.

Methodology	*100 – 250 words*

We used panel data of agricultural households collected by Nigeria's National Bureau of Statistics in collaboration with the World Bank to address our objectives. The data set provides data on demographics, expenditure, income sources, and community information. We used the four waves (2010, 2012 2015, and 2018) of Nigeria's household data for the analysis. We divided income into various income sources in a way that reflects the key livelihood activities by which households generate their income. farm self-employed, non-farm self-employed, wage income, transfer income, rental income, and other income. We also classified landholding into various classes both at the household and locality levels. We applied income sources decomposition by Lerman and Yitzhaki ([1985](#)) and Stark, Taylor, and Yitzhaki ([1986](#)) to analyze the income pathways of rural inequality by income source and the changes over time. We used a sub-population-group decomposition analysis using the Gini inequality measure to estimate the extent of the variation both within and across farm size classes and the changes over time. We used a regression-based decomposition approach to isolate the returns to landholding while controlling for various mediating factors in the income-related landholding inequality nexus. Finally, we test the neighborhood hypothesis effects of changes in landholding in a locality using a panel fixed effects regression.

Results	*100 – 250 words*

Our income inequality decomposition results suggest contrasting rural income inequality estimates of 0.46, 0.50, 0.64, and 0.54 respectively over the years, 2010, 2012, 2015, and 2018. Farm income inequality was the key driver of total inequality in 2010. Farm income, comprising crop and livestock incomes was the largest income pathway in 2010 contributing 61% to total rural income. Wage income was the second largest income pathway (38%). The contribution of transfer income made of remittances, and safety nets was minimal. Wage income became the largest income pathway in 2012 contributing 35% share of total income as well as the key driver of total rural income inequality for that year. From 2015 onward, the role of enterprise income became pronounced. The share in total income increased between 2012 and 2015, from 25% to 51%, and was the largest income pathway in 2015. The role of enterprise income increased between 2010 and 2015 up to 2018 with the largest income pathway consisting of a 61% share of total rural income and a key driver of rural inequality. We find that the inequality between farm size groups explains a larger amount of the total over the years 2010(0.52 or 64%), 2012(0.29 or 43%), 2015(0.32 or 47%), and 2018(0.26 or 43%); while the inequality within farm size groups accounts for a smaller part 2010(0.10 or 12%), 2012(0.11 or 16%), 2015(0.1 or 13%) and 2018(0.1 or 15%). Our multivariate regression-based decomposition shows large income returns for a small amount of land while controlling for contextual factors. Finally, the overall impact of the inequality in landholding distribution on some of our income measures was positive and highly significant.

Discussion and Conclusion	*100 – 250 words*

The problems of land inequality have attracted renewed interest in the development literature due to the notion that inequality is economically costly. The agrarian literature posits the sensitivity of Economic efficiency and productivity to the distribution of wealth and productive assets (Bardhan, Bowles, and Gintis (1998); Carter and Zimmerman (1998)). However, Chamberlin and Jayne, (2019), noted that while an equal distribution of agricultural land is beneficial to "stimulate rural development more effectively than a polarized land distribution", the gains from large farms if there are spillover effects can promote the labor productivity of the small farm size operators. First, we found heterogeneous rural income inequality estimates over time. Second, we found income inequality among rural households is driven by three key pathways of income sources namely, farm income, wage income, and non-farm income. While farm income was most pronounced in 2010, the role reduced in 2015 and 2018 giving prominence to non-farm income. From our income-related landholding inequality decomposition, we find inequality between landholding groups explaining more of the total inequality over the years suggesting changes in the relative mean income across landholding groups as drivers of rural inequality. Our multivariate regression-based decomposition shows large income returns for a small amount of land while controlling for contextual factors. Finally, the overall impact of the inequality in landholding distribution on some of our income measures was positive and highly significant.