

Government Expenditure and Income inequality in Tanzania: A Policy Dimension

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In the wake of reducing poverty and income inequality, among others, the government supports the rural poor both in agricultural and non-agricultural activities. Such support, results in different consequences. This study has revealed that, support to the non-agricultural sector shows an income inequality decreasing effect, thus implying further poverty reduction, while support to the agricultural sector results into an income inequality increasing effect (further increase in poverty). Thus, in order to alleviate and eventually eradicate poverty, the government policy should be geared to support the economic activity, which has the characteristics of income inequality decreasing; in this case based on this rural setting study, non-agricultural activities.

INTRODUCTION

Since independence, Tanzania has been tackling three major development problems, poverty being one of them. Therefore, the past few years have witnessed an increased effort to identify effective mechanisms for steering poverty-reduction efforts. The broad agreement around the Millennium Development Goals, and the introduction of Poverty Reduction Strategy Papers as country-driven policy documents that guide donor efforts, are two of the principal initiatives toward poverty alleviation in Tanzania.

Government expenditure has been on the increase in an attempt to alleviate poverty since the onset of the Poverty Reduction Strategy Paper (PRSP) towards the end of 1990s specifically as a special program toward poverty alleviation. The sharp increase was realized from 444.8 billion in 1995 to 2,993.8 billion in 2004. Such an increase has been in line with increase in real GDP from 3.6 percent in 1995 to 6.9 percent in 2004. Not only that but also donor fund inflows to support poverty alleviation has been increasing from 55.5 million (USD) in 1995 to 566.9 million (USD) in 2004 (Bank of Tanzania, 2005). Despite all these achievements, individual observations have shown that the living condition for vast majority, particularly the rural ones is deteriorating, and income inequality has been rising. It is from this background that this study intends to investigate the extent to which government expenditure has contributed or played a meaningful role in poverty reduction, at the same time observing the how the expenditure on different activity categories has affected income equality/ inequality in Tanzania.

This paper is based on a field study; it investigates whether or not the government expenditure in the household sector results in income inequality decreasing, or income inequality increasing. Specifically it determines the income earning pattern between agricultural and non-agricultural economic activities, and assesses whether or not, the incomes earned in agricultural and non-agricultural activities, result in income inequality decreasing or income inequality increasing effects.

POVERTY AND MODELS TO FOR INCOME INEQUALITY IN TANZANIA

Poverty Profile

Poverty reduction has been a central goal of the Tanzania government and was a driving force behind the economic reforms initiated in 1986. While recent growth performance and future prospects are good, Tanzania remains a very low-income country with a per capita GDP of less than \$300 (GoT, 2004). With a relatively equitable distribution of resources, poverty is widespread throughout the country. Life expectancy is 48 years; under five mortality is 160 out of 1,000 live births; infant mortality is 80 per

1,000 live births; maternal mortality is 200 per 200,000; health facility person ratio is 1:7431; One hospital bed to 1,000 people; one physician to 33,000 people; 30% of the people live more than five kilometers from the nearest health centre; and 27% of the population walk more than 30 minutes to water sources.

Tanzania's strategy for reducing poverty includes the three key elements of broad-based growth, human resource development, and social safety nets (Wangwe, 1997). The vast majority of Tanzania's population, its labor force, and its poor are located in rural areas where livelihoods continue to be primarily linked to small-scale agriculture.

Public Expenditure

Targeting government expenditure simply to reduce poverty is not enough. To provide a permanent solution to the poverty problem and to increase the overall welfare of all rural people, government spending must stimulate economic growth as well (REPOA, 2003).

Much of the success of the government's structural adjustment program since 1989 was due to prudent fiscal management, which had important implications for the level and sectoral allocation of public expenditures, including the sectors most directly related to poverty alleviation. In real per capita terms, capital spending was reduced by 60 percent between 1990-91, while current spending declined by 20 percent. A notable feature of the fiscal adjustment was that social sector spending was protected relative to other sectors, so that its share of discretionary government expenditure actually increased.

Income inequality

Income inequality refers to disparities in the distribution of economic assets and income. The term typically refers to inequality among individuals and groups within a society, but can also refer to inequality among nations. Income inequality generally refers to equality of outcome, and is related to the idea of equality of opportunity (Lambert, 2002).

Several different measures of inequality have been proposed in the literature. The question has always been which one of these measures should be chosen for decomposition? According to Foster (1985), the chosen measure should have five basic properties: i. Mean independence, ii. Population size independence, iii. Symmetry, iv. Pigou-Dalton transfer sensitivity, v. Decomposability and vi. Statistical testability

An inequality measure can be regarded as source decomposable if total inequality can be broken down into a weighted sum of inequality by various income sources (such as agriculture or non-agricultural). However, since activities that influence a particular source of income are likely to have an impact on other activities from that total income is comprised, any inequality measure that is source decomposable must address the problem of covariance among the income sources.

The measures of income inequality available include Theil's entropy index T, Theil's second measure L, the Coefficient of Variation and the Gini coefficient. These measures are used as decomposition techniques to pinpoint the contribution of different sources of income to total income inequality. The two Theil measures, however are not decomposable when sources of income are overlapping and not disjoint (Adams, 1994). A typical example of income decomposition is that used by Adams (1994) who examined the impact of non-farm income on inequality in rural Pakistan by using Gini coefficient and coefficient of variation. He decomposes total rural income among five sources: non-farm, agricultural, livestock, rental and transfer. The analysis shows that non-farm income represents an inequality-decreasing source of income.

Gross Margin Measure

In the rural agricultural setting, gross margin measure, is satisfactory for resource use (Omara – Ojunga, 1992). This represents gross income earned and total variable cost for each economic activity.

METHODOLOGY

Design and Sampe

The paper adopts survey strategy by carrying out a multistage sampling procedure, based on sampling the divisions, then wards, followed by villages using simple random sampling, resulting in selecting a purposive sample of 125 grass-root tomato farmers, who received government support for farm and non-farm (trading) activities. The sample is less than 5% of the population, contrary to Saunders, et al (2007) who recommends that at least five percent of the population should be considered a working sample. The justification is that the selected sample was considered representative since the characteristics of the tomato growers were observed to be homogenous and similar. Note that tomato product was selected because it contributes to a biggest percentage in the income earnings.

Data Collection

No single source of information is trusted to provide a comprehensive perspective in any study program Patton (2003) comments that using a combination of data source and methods of collection operate as a validating aspect for cross checking the data. Thus the study used probabilistic methods to collect primary and secondary data based on interviews, observations and document analysis for increasing the validity since the strength of one approach compensates for the weakness of the other (Denxin and Lincoln, 1998). Data variables to be collected were on product flow (purchasing/ selling volume/ revenue and purchasing frequency) information (contact and association), knowledge (extent and effect) and social bond (temporary and permanent).

Data Analysis

Gross margin measure was used as proxy for incomes, as follows:

Let us denote gross margin by Φ , such that,

$$\Phi = R - C$$

$$R = \alpha A \text{ and } C = \beta D$$

Where R = Total revenue; C = Total variable cost; A = output units; D = input units; α = price of A ; β = price of D

Therefore,

$$\Phi = \alpha A - \beta D$$

In analyzing income inequality, the total household income was decomposed to pinpoint the effect of income from both agricultural and non-agricultural activities to total income based on the Theil Measure of inequality, as follows:

$$\psi_i = R_i (T_i/T); R_i = \text{cov}(\Phi_i, R) / \text{Cov}(\Phi_i, R_i)$$

Where:

ψ_i : is the relative concentration coefficient of i-th source in overall inequality

T_i : Theil coefficient of the i-th source of income

Φ_i : series of incomes from the i-th source

R_i : Series corresponding ranks

T : Total income Theil coefficient

R : correlation ratio

To determine whether or not an income source is inequality-increasing or inequality decreasing, it was assumed that the additional increment of that income source are distributed in the same way as the original units. An income source inequality- increasing or decreasing depending on whether ψ_i is greater or less than one (Adams, 1994). If $\psi_i > 1$, this is the case of income inequality increasing; if $\psi_i < 1$, this is the case of income inequality decreasing.

DISCUSSION OF THE FINDINGS

Government support

Government expenditure to the social sector grew at a rate of 6-7% in the period 1992-2007. This was directed to pro-poor sectors, as well as to regions with higher incidence of poverty. The expenditure has not only contributed to agricultural growth and hence indirectly to poverty alleviation, but it has directly created rural non-farm jobs and increased wages. At the level of the household, loans were provided by the government to rural smallholder farmers and small business operators through small loan programs.

Occupations

Fifty two percent of the population were engaged in agriculture, while 48% were engaged in nonagricultural activities, of which seventy six percent were in business including trade, carpentry, tailoring, masonry, catering and providing transport services.

Relative concentration coefficients

From Table 1, it is revealed that the relative concentration coefficient is 1.41 (If $\psi_i > 1$) for agricultural activities, i.e the income source is inequality- increasing. This might be attributed to low returns in agriculture as a result of adjustment programs, making it expensive to engage in agricultural activities. This might have pushed poor household into non-agricultural activities.

On the other hand, the coefficient is 0.62 ($\psi_i < 1$) for business activities, i.e the income source is inequality – decreasing. Higher returns and low cost might be benefiting the rural poor who are engaged in these activities.

Table 1: Measures of Income Inequality

| | Agricultural Activities | Business Activities |
|--|-------------------------|---------------------|
| Gross Margins (Φ) | 1,221,906 | 3,222,091 |
| Correlation coefficients | 0.71 | 0.55 |
| Relative concentration coefficients (ψ) | 1.41 | 0.62 |

CONCLUSIONS AND POLICY IMPLICATIONS

This paper has investigated whether the government expenditure in the household sector results in income inequality decreasing, or income inequality increasing effects. It has been observed that government spending to the social sector, particularly to pro-poor activities, was increasing during the period 1992-2007. By making use of Theil measures of income inequality, it has been established that operating in agricultural activities results into income inequality increasing effects, thus further widening the poverty gap, while the non-agricultural activities, particularly business, result in income inequality decreasing effects, i.e. narrowing the poverty gap. Therefore, any policy intervention in terms of government support to the rural poor in order to alleviate, and eventually eradicate poverty should aim at sectors that have income inequality decreasing effects; in this case, business activities.

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