

Quality of Life, Poverty and Wellbeing in Rural Households: A Case of Tanzania

Gabriel Kulomba Simbila

Eastern Africa Statistical Training Centre
National Bureau of Statistics, Tanzania

International Association for Research in Income and Wealth

34th Annual Conference
Friday, August 26th, 2016

Introduction: The Case of Tanzania

- Tanzania has a low-income, rural economy.
- About 70% of the population lives in a rural area.
- Agriculture is a substantial portion of the national economy.
- Individuals are largely employed in the agricultural sector.
- Agricultural employment is the main activity for providing food and income.
- Most of the poor are dependent on the agricultural sector.
- Therefore, the performance of the agricultural sector is key to understanding dynamics of poverty.
- Agricultural prices determine the terms of trade for farmers, which then determines household welfare.

Literature: Agricultural Prices

- Zahid and Hyder (1986) show that the domestic terms of trade with respect to consumer prices improved over the late 1970s and declined during the early 1980s, with respect to the base year 1973-74, while the real per capita income terms of trade mostly followed the opposite trend. With respect to input prices, however, the terms of trade improved throughout the study period.
- Chaudhry (1997) criticizes the price policies of governments, arguing that adverse policies have had a greater negative impact on small farmers as compared to large ones, as commodities are often under-priced, with the exception of the 1960s, while Khan (2005) is of the view that the government must support agricultural prices and farmers must be protected from a decline in the market prices of agricultural commodities.

Problem: Poverty and Agriculture

- The alleviation of extreme poverty, found mostly in rural areas, is reliant on the performance of the agricultural sector. If the agricultural sector is uplifted, more people can move out of poverty.
- Around 80% of subsistence farmers are not irrigated and use traditional, time-consuming tools (ex. hand hoe), which are low productivity and have low coverage, with less market value added.
- Poverty alleviation can therefore be achieved through improved farm practices, through the adoption of the best practices by other countries, which can help farmers to produce more outputs with higher market value added.

Problem: Poverty and Agriculture

- As noted by Polak (2007):
- “Most of the extreme poor in the developing world earn their living now from one acre farms.”
- “They can earn much more money by finding ways to grow and sell high value labor intensive crops, such as off-season fruits and vegetables.”
- “To do that, they need access to very cheap small farm irrigation, good seeds, fertilizer, and markets where they can sell their crops at a profit.”

Data: Household Surveys

- The data come from national account statistics of household based surveys, conducted by the National Bureau of Statistics, including:
 - the Household Budget Survey,
 - the Agriculture Sample Census,
 - the National Panel Survey, and
 - the Consumer Price Index.
- These surveys were conducted both periodically and annually from 2007 to 2015, which serves as the period of study.

Methodology: Index of the Terms of Trade

- An index of the terms of trade (ITT) for agricultural and non-agricultural sectors are used to measure the relative change in the prices received by the farmers for their produce sold in relation to the change in the prices paid for commodities purchased for final consumption (FC), intermediate consumption (IC), and capital formation (CF):

$$ITT = \frac{\text{Index of price received by the farmers}}{\text{Index of price paid for FC, IC, and CF}} * 100$$

- $ITT > 100$ indicates favorable terms for the agricultural sector, while $ITT < 100$ indicates adverse terms for this sector.

Methodology: Index of the Terms of Trade

- Final consumption (FC) includes all consumed goods, with the exception of purchases for own construction or improvements of residential housing, which are instead a part of gross capital formation.
- Intermediate consumption (IC) includes goods and services which are entirely used up by producers in the course of production to produce output of goods and services during the accounting period.
- Capital formation (CF) includes only produced and non-produced assets, such as machinery, buildings, and land.

Weighting: Indices of Prices Paid and Received

- For the calculation of the weights with respect to selected commodities, the following criteria are used:
 - Selection of items sold and purchased by the agricultural sector determine the weights.
 - Identification of reliable indicators of prices for all sales and purchases made by the sector, and
 - The base year should be recent enough so that the comparison is meaningful, and it should be a normal year of agricultural production and compared with other data sources.

Weighting: Indices of Prices Paid

- The computation of indices for final consumption (FC), intermediate consumption (IC), and capital formation (CF):

$$I_G = \frac{\sum W_C I_C}{\sum W_C}$$

- where I_G is combined index of price paid, W_C is weight of the commodity or item, and I_C is index of commodity or item.
- The combined index of price paid is based on a weighted average of the three component indices, with 80% on FC, 19% on IC, and 1% on CF, so most of what is produced is consumed in raw form, meaning no added value.

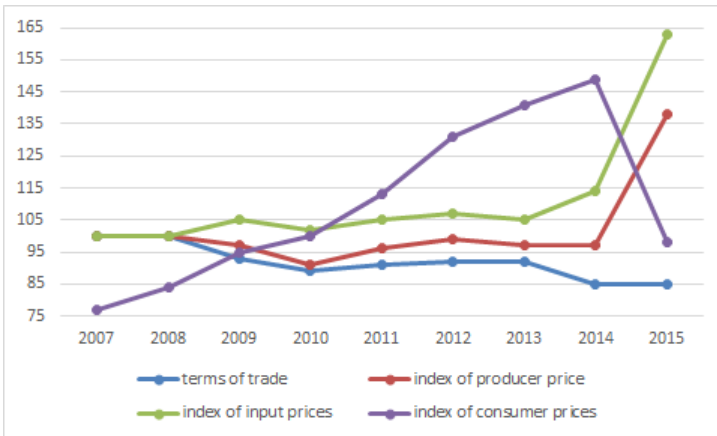
Weighting: Index of Prices Received

- The construction of the prices received by farmers includes 25 major crops and 7 livestock products.
 - These include cereals, pulses, oilseeds, fiber, fruits & vegetables, livestock products, and miscellaneous, which make up 80% of the total value of output.
- The index for produce prices are calculated based on Laspeyers formula, with 2007 as a base year:

$$PI = \frac{\sum W_t P_i / P_o}{\sum W_t}$$

- where PI is the price index, $W_t P_i / P_o$ is the relative price times the weight, where W_t is the weight.

Research Findings: Combined Figure



Research Findings: Summary

- The terms of trade for farmers held steady for only one year and then gradually declined over the rest of the period, meaning that poverty increased and well-being decreased.
- Input prices remain higher than producer prices throughout the period, indicating that no significant value is being added.
- The purchasing power of rural households is declining throughout most of this period, with the exception of the last year, showing that non-agricultural prices were moving faster than agricultural prices.

Conclusions

- The index of terms of trade put forward in this paper can help the government formulate price policy for the purpose of protecting the farmers from an excessive fall of price due to bumper harvests and thus improve the well-being of farmers.
- The government could control the price of inputs and formulate a price policy, in order to protect farmers from a fall in the price of their agricultural produce. The government could additionally build missing infrastructure and irrigation equipment.
- These steps will allow for greater economic growth in poor rural areas, which in turn will move people out of poverty.

Discussion

- A poverty measure should be included.
 - While the connection to poverty being made is understandable and likely, it would be preferable to instead actually see what is happening to the poverty measure over this time.
- Output changes are due to underlying causes.
 - Climate, rainfall, and sunshine are measurable causes, varying by geography and time, which could be used to forecast future output, prices, and terms of trade.
- The text is heavily weighted toward weighting.
 - While the details of the price indices and the weighting are the strengths of this paper, perhaps a paper focusing on the construction of the measures could be made separate a paper that then uses these measures for analysis and policy.