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REPOA Brief

Agricultural Commodity Price Changes, Food Security, and Households' Welfare in Tanzania

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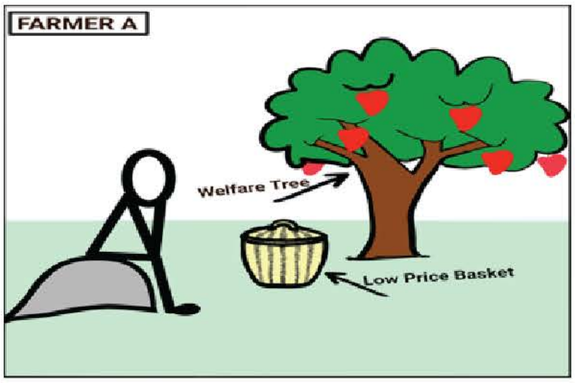
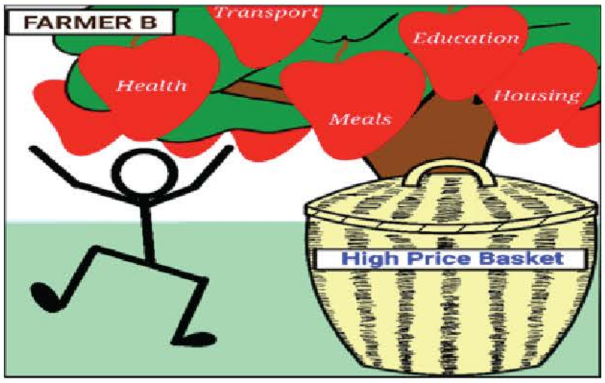
Key Messages

- The welfare gains for agriculture-dependent households are observed to deteriorate at lower prices of agricultural produced goods.
- The households' welfare improves better with the inclusion of the price of labour (shadow wage) and when the households sell their agricultural produce at higher market prices in a specific agricultural sector model.
- Accounting for profit and the ability of the household to substitute cheap agricultural goods to expensive ones is associated with welfare improvements.
- Intra-household transfers and storage traditions cushion food insecurity.
- The households' welfare can be improved by improving market information to expand farmer's access to higher prices for household's agricultural produce along the supply chain in the regional markets.





Introduction

World and domestic prices of agricultural goods have been volatile over time and in this regard raising concerns on food security and households' welfare. The world experienced major cereal price spikes in 2008/2009 and 2010/2011[1] and subsequently, an agricultural commodity price decline in 2014/2015 (Pernechele et al., 2018; Dorosh and Minten, 2020). This study examines the implications of agricultural price changes on households' welfare in Tanzania using panel survey data from 2008 to 2015. Specifically, the highlight is made to unpack the decision dilemma on whether household preference is skewed to either lower or higher prices of agricultural produce. This is achieved by providing empirical evidence on the effect of the experience of lower and higher prices of agricultural products on households' welfare using the response approach that accommodates the joint decisions of the households regarding consumption, production, and labour market.

[1] Equally, the group of 20 developed and leading emerging economies (G20) put the food price spike and food security at the top of their 2011 agenda.

Key findings

A specific agricultural model accounting for consumption, production, labour markets, and household demographic characteristics was used to estimate households' welfare. The negative/positive sign of the estimated parameters entails welfare gains/loss to the households. The estimated results show that under a perfect market, real price increases between 2008/09 and 2010/11 led to an overall welfare gain of 25.43 percent, meaning that a Tanzanian household needed to decrease its total expenditure by 25.43 percent in 2010/11 to achieve the utility level attained in 2008/09. The households' welfare gains declined in 2012/13 because of the experience of low agricultural prices.

Low welfare gains were evaluated at 23.42 percent, suggesting that household would need to be compensated about 23.42 percent of their food expenditures in 2012/13 to offsets the associated effects of price decline between 2012/13 and 2014/15. This finding is supported by Moncarz and Barone (2020) who affirmed that economies blessed with comparative advantages in the production of primary commodities would not prefer lower international prices as they prevent them from reaping the macroeconomic benefits that could be obtained from higher international prices of such commodities in Brazil. A similar argument is made by Kofi Ocran and Adjasi (2009) in Ghana that trade is positively related to enhanced welfare from the year 1999 onwards.

Figure1: Summary statistics for welfare effects under perfect and imperfect market

Source: *Author's estimation based on TZNPS (2008/2009, 2010/2011, 2012/2013, 2014/2015.*

Allowing the shadow wage to determine the welfare, the study finds that households' welfare gains increased by 26.62 under the static effect. Furthermore, the effects of the price changes on households' welfare in a dynamic setup (allowing substitution and profit effects), the households' welfare gains increased further by 57.32 and by 60.33 under perfect and imperfect markets, respectively. The intuition behind these findings is that ignoring the price of labour in the estimations of welfare might have been undermined/ underestimated in the literature "henceforth" undermining the per capita of the households. Sakketa and Gerber (2020) argued that shadow wages matter for the youth's labour supply in the agriculture sector. Evidently, regardless of the price scenario, the households' welfare gains deteriorated less under imperfect markets as compared to perfect markets across the strata and net-market position of the households. Nevertheless, the dynamics effect is associated with higher households' welfares gains compared to the static effect.

Generally, lower price of the agricultural produce are not the desired choices of the agricultural dependant households since it tends to lower their welfare gains. The desired choice of the rational household is skewed on higher price for agricultural produce because of the associated welfare improvements. It is worthy to note that these households are both producers and consumers of agricultural goods. Thus, higher agricultural prices especially that of cereal products is of paramount importance in stimulating agricultural production and preserving employment opportunities in the agricultural sector. Clearly, income from agricultural sales is used in financing education, health services, water, better houses, better meals as well as financing small business activities within the households. In addition, a typical rural household has different mechanisms to cope with the effects of agricultural price rise. Thus, apart from keeping some surplus for smoothening consumptions, rural households could also diversify to another source of income or receive more benefits arising from high prices of other commodities. Also, households can diversify to other income generating activities such as paid wage jobs, self-employment and inter and intra-household's transfers.

Conclusion and Policy Recommendations

The result highlights the implication of extreme price variation on production, food security, income, and labour choices in Tanzania. The findings confirm that welfare consequences of agricultural price changes were, on average, lower when labour market imperfection is considered. Interestingly, the lower price of agricultural produce was found to be reducing the welfare gains of the households. Thus, inclusive solutions are required to close the gap. First, the household's welfare gains deteriorated due to low agricultural prices. This calls for deliberate measures to help households access higher market prices for their products. This can be achieved by establishing auction markets for agricultural goods. The access to better prices can provide the best chances for improving domestic agricultural production with a wider implication of increasing food security and the welfare of the households.

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