How to cope with food price shocks? – Assessing children’s nutritional status using biomarker data from Tanzania.

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Surges in staple food prices regularly distress agrarian societies in Africa. In Tanzania, maize prices doubled in 2008 and again in 2017 within few months. Whenever staple food prices increase, households make use of food based coping strategies of affected households include shifts from expensive to cheaper less preferred food items, a reduction of dietary diversity towards energy-rich products, and a general reduction of the quantity consumed; either for all household members or only some members (Matz et al., 2015; d’Souza and Joliffe, 2014).

Yet, depending on the adjustment behavior, the price shock can lead to severe macro and micronutrient deficiencies of children, which are associated with adverse consequence for their physical and mental development. The objective of this research to assess the impact of staple food price inflation on the short-term nutritional status of children between 0 to 60 months. Thereby the study utilizes a unique biomarker data set as part of the Tanzanian DHS 2010. The study fills a research gap in the existing literature (e.g. Abdulai and Aubert, 2004) by looking at micro-nutritional indicators, namely weight-for-age, retinol-binding protein for vitamin A, and the soluble transferrin receptor as a marker of iron status, directly instead of nutrient consumption levels.

The empirical identification makes use of the timely and spatial variation of staple food prices, which are matched with the micro data at the sub-regional level. To account for the serial correlation of standard errors across equations, Zellner’s seemingly unrelated regression equations model is employed. Preliminary findings, controlling for socio-economic and biological characteristics, suggest that there is a significant positive association between staple food price inflation and children’s as well as women’s iron deficiency. On the other hand, weight-for-age seems unrelated to the food price level, while women’s bmi is related to staple prices inflation. Surprisingly, the level of retinol-binding protein for both children and women is positively associated with the price level.

Dietary diversity and meat consumption reduces with increasing staple food prices, but there is also empirical evidence for a substitution of staples by diary products. The differential impact of food prices on women and children, can be a sign of maternal buffering, which is the reduction of caloric intake of mothers in favor of their children. The results indicate the importance to widen the policy focus beyond staple food crops. Further, it is important to better understand substitution and income effects when staple prices rise.