

Price Floors and Household Nutrition: Heterogeneous Effects under China's Minimum Grain Procurement Policy

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Abstract

This research analyzes the impact of the Minimum Grain Procurement Policy (MGPP) on consumers by using both a theoretical framework and empirical analysis. MGPP is a procurement policy for specific crops (mainly for rice and wheat). The government announces the minimum price before the sowing seasons, and when market price is lower than the minimum price, the government will buy grain directly from farmers. This policy stabilizes the income of farmers, but for non-agriculture households, there is a possibility that raising grain prices might influence on the welfare of them.

This research examines the impact of MGPP on consumers' nutritional intake through two key mechanisms: the price channel (the negative effect arising from higher grain prices) and the income channel (the positive effect through increased household income). Using data from the China Health and Nutrition Survey (CHNS), we conduct an empirical analysis based on household-level panel data from Hunan and Guizhou provinces over the period 1997–2015, focusing on households that were not engaged in agriculture production prior to the policy. We construct a theoretical model based on the Stone–Geary utility framework and employ a difference-in-differences (DID) approach for the empirical analysis.

The results show that although the average effect of MGPP on consumers' nutrient intake is limited, the impacts differ substantially depending on households' pre-policy calorie intake levels. Specifically, for households with relatively high calorie intake prior to the policy, rising grain prices have a negative effect on carbohydrate and total calorie intake, and this effect is mainly driven by the price channel. More specifically, the policy-induced increase in grain prices can also affect non-agricultural household income—either through spillovers to local labor markets or by encouraging entry into agricultural activities after the policy is implemented. Our empirical analysis on household income provides supporting evidence for the presence of this income-related mechanism. In contrast, for households with relatively low pre-policy calorie intake, fat and protein intake increase after the policy, indicating that the income channel dominates. Thus, the policy impact is not uniform; rather, it depends on whether households operate in an income-effect–dominant domain or a price-effect–dominant domain, as determined by their distance from the subsistence level.

Based on these findings, our analysis highlights the importance of accounting for heterogeneity by households' pre-policy calorie intake levels when evaluating MGPP. Grain price support policies can improve dietary quality for nutritionally vulnerable households through income spillover effects, while negatively affecting households with relatively high nutritional status through higher food prices. Although income spillovers benefit nutritionally vulnerable households in our setting, such effects are indirect and may not generalize. Price support policies therefore work best when combined with targeted income support and social protection, a consideration relevant for other Asian countries with similar grain price programs.