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Public Distribution System vs. Market: Analysis of Staple Food Consumption in India Using Quadratic Almost Ideal Demand System with Rationing

Marta Kozicka, Matthias Kalkuhl, Regine Weber

University of Bonn, Center for Development Research (ZEF), Dept.of Economic and Technological Change, Germany

Abstract

There is a growing concern about the high fiscal and economic costs, as well as effectiveness of the Targeted Public Distribution System (TPDS) in insuring food security in India. The current study, apart from better explaining the impact of the TPDS on total staple food consumption, contributes to a growing discussion on implementing cash transfers instead of food subsidies. Our research questions are as follows:

- What is the impact of TPDS wheat and rice consumption on total wheat and rice consumption?
- How does a higher subsidy affect consumption?
- What are the reasons for PDS under-purchase?
- Would cash transfer be a more cost-effective way to increase cereals/staples consumption?

Our analysis is based on the 68th round of the Indian National Sample Survey (NSS) of Household Consumer Expenditure, carried out by India's National Sample Survey Office of the Ministry of Statistics and Programme Implementation.

First, we show that under-purchase from TPDS is due to the supply constraints and as a result consumption from TPDS is exogenous to market consumption. Next, we estimate a three-stage demand system for staple foods. In the third stage, we estimate a Quadratic Almost Ideal Demand System with Rationing (QAIDSR), where the TPDS wheat and rice are treated as strictly rationed goods and the rest of the consumption good s in the system are the market consumed staples.

As an output, we will present results of the simulations of higher subsidy, higher ration and higher income (cash transfer) on wheat, rice and other staple food consumption.

Keywords: Demand estimation, India, public distribution system, quadratic AIDS

Contact Address: Marta Kozicka, University of Bonn, Center for Development Research (ZEF), Dept.of Economic and Technological Change, Walter-Flex Str. 3, 53113 Bonn, Germany, e-mail: marta.kozicka@gmail.com