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Food Aid and Consumption: Evidence from the Indian State of Chhattisgarh[1, 2]

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Can the Reforms in Chhattisgarh be used as a Model to Fix the Public Distribution System?[1]

Prasad Krishnamurthy[2], Vikram Pathania[3], and Sharad Tandon[4]

Box 1: The Public Distribution System

1. The Public Distribution System (PDS) in India is one of the world's largest in-kind food aid programs in the world that primarily provides subsidized rice, wheat, sugar, and kerosene to Indian households. The central government identifies the numbers of different types of beneficiaries, and provides commodities to each state. States are responsible to identify individual households that receive each particular subsidy and distribute the commodities.
    a. Prior to 1997, the PDS was universal and tried to maintain stable markets for essential commodities.
    b. After 1997, the PDS targeted poorer households with higher subsidies, but still permitted other segments of the population to consume PDS grains with significantly less subsidies.

2. The country spends a large share of its budget on the PDS and ensuring the poorest households have a minimum level of consumption and food security. The PDS has been plagued by corruption, where estimates of the proportion of PDS grains that do not reach their beneficiaries are alarmingly high (Government of India 2002, Jha and Ramaswami 2010, etc.).
    a. Figure 1 demonstrates the increasing cost of the PDS and share of overall government expenditure devoted to the program.
    b. However, there has been a recent revival of PDS which has started to work quite well in a number of states, although some states continue to dramatically underperform (e.g., Khera 2011).

3. The new National Food Security Bill (NFSB) being shaped in Indi is set to significantly expand in-kind food aid in the country. Although it has not yet passed, the most recent versions have included the following provisions:
    a. 5 kg of subsidized grain per household member at 3,2 and 1 rupee per kilogram for rice, wheat, and coarse grains respectively. However, the "poorest of the poor" will continue to receive their higher existing ration.
    b. Subsidized grains should be available to 75 percent of the rural population, and 50 percent of the urban population.
    c. The central government sets the size of the ration available to each state through existing survey methodology and provides grains to the states, which in turn

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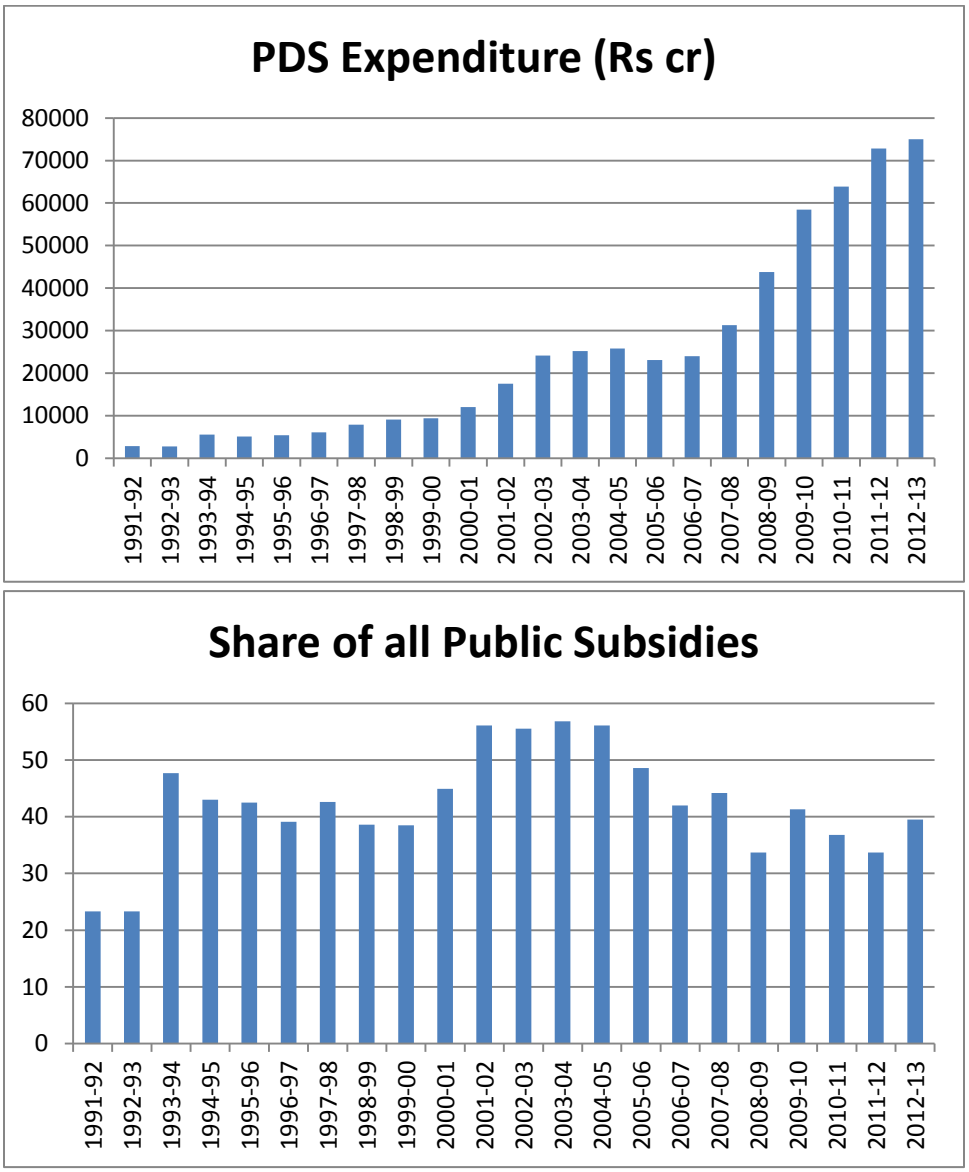
identify beneficiaries and implement the new bill, as well as address household grievances.

Figure 1. Spending on the Public Distribution System



Note: All public subsidies in the second figure include all non-plan expenditure. Figures obtained from Sharma (2012).

Box 2: The Chhattisgarh Experiment

1. The state of Chhattisgarh (CT) formed in late 2000, breaking away a number of Chhattisgarhi-speaking districts from Madhya Pradesh. The state immediately began to try and improve the functioning of the PDS in the state with a number of pilot programs. This culminated in the following two major pieces of legislation:
    a. The Public Distribution System (Control) Order 2004- changed the ownership and operation of shops that sell PDS commodities to local governments and community groups, and increased the transparency in the system
    b. The Mukhyamantri Khadyann Sahayata Yojana (MKSY) in 2007- increased the size of the poor population entitled to the highest subsidies by nearly 2 million people.

2. The improvement in the PDS in CT was dramatic between 1999 and 2009. Figure 3 presents daily household PDS rice consumption and the share of the population consuming any PDS rice (Participation), which is the staple good of the region. The figure demonstrates the following points:
    a. In 1999, the PDS was in disrepair in the districts that would later form CT. Average PDS rice consumption and participation was far lower than districts neighboring CT and the rest of India.
    b. PDS rice consumption and participation increased dramatically in CT. Rice consumption increased by nearly 880 percent, and participation more than tripled over the time period.
    c. This increase in PDS rice consumption and participation is much larger than the change in bordering districts and the rest of India.

3. Figure 4 demonstrates that the improvement in the PDS began before either of the PDS (Control) Order 2004 or the MKSY in 2007. What caused this improvement?
    a. Perhaps the PDS is easier to operate in smaller and newer states? However, this improvement in the PDS did not occur in Jharkhand or Uttarakhand, which were also newly-formed states in 2000.
    b. Perhaps the Raman Singh-led government, which came to power in 2003 and demonstrated that they wanted to improve the PDS in particular, was targeting the PDS is other unobserved ways? However, the improvement began before the current government came to power in late 2003.

Figure 2. Map of India

Note: Figure obtained from Wikipedia.

Figure 3. PDS Rice Participation and Calories

PDS Rice Participation: Share of Households Consuming PDS Rice				
	1999/2000	2009/10	Difference: (Column 2 – Column 1)	Total Observations
Chhattisgarh	.100 (.006)	.430 (.010)	.330*** (.025)	4524
Border Districts	.342 (.008)	.466 (.009)	.124*** (.031)	6611
Rest of India	.275 (.014)	.316 (.016)	.041*** (.001)	209,039
PDS Rice Calories (calories/day)				
	1999/2000	2009/10	Difference: (Column 2 – Column 1)	Total Observations
Chhattisgarh	153.7 (14.7)	1505.9 (87.4)	1352.2*** (77.9)	4524
Border Districts	519.6 (90.7)	1023.5 (103.7)	503.9*** (70.7)	6611
Rest of India	579.5 (56.2)	709.0 (53.6)	129.5*** (43.4)	209,039

Notes: Each panel of this table presents the average PDS Rice Participation and average PDS Rice Calories per day in Chhattisgarh, bordering districts, and the rest of India for the 55'th and 66'th Rounds of the Consumer Expenditure Survey conducted by the National Sample Survey Organization. The third column presents the difference in the averages of these variables. Standard errors clustered by district are presented in parentheses. For the differences presented in the third column, statistical significance is reported. In the column, *** denotes statistical significance at the 1% level, ** denotes statistical significance at the 5% level, and * denotes statistical significance at the 10% level.

Figure 4. PDS Rice Participation and Calories Prior to Reform

PDS Rice Participation: Share of Households Consuming PDS Rice				
	1999/2000	Round 61 Households Surveyed in 2004	Difference: (Column 2 – Column 1)	Observations
Chhattisgarh	.100 (.006)	.194 (.046)	.094 (.057)	3685
Border Districts	.342 (.008)	.251 (.010)	-.091*** (.031)	5311
Rest of India	.275 (.014)	.202 (.012)	-.073*** (.008)	171,690
PDS Rice Calories (calories/day)				
	1999/2000	Round 61 Households Surveyed in 2004	Difference: (Column 2 – Column 1)	Observations
Chhattisgarh	153.7 (14.7)	772.4 (51.1)	618.7*** (`40.9)	3685
Border Districts	519.6 (90.7)	511.6 (22.1)	7.99 (68.8)	5311
Rest of India	579.5 (56.2)	487.4 (42.2)	-92.1*** (31.6)	171,690

Notes: Each panel of this table presents the average PDS Rice Participation and average PDS Rice Calories per day in Chhattisgarh, bordering districts, and the rest of India for the 55'th and for households surveyed in 2004 in the 61'st Round of the Consumer Expenditure Survey conducted by the National Sample Survey Organization. The third column presents the difference in the averages of these variables. Standard errors clustered by district are presented in parentheses. For the differences presented in the third column, statistical significance is reported. In the column, *** denotes statistical significance at the 1% level, ** denotes statistical significance at the 5% level, and * denotes statistical significance at the 10% level.

Box 3: What Does the Chhattisgarh Experience Mean for the National Food Security Bill and Improving the PDS?

1. Government officials, scholars, and other observers have strongly advocated for the CT reforms to be used as a model to improve the PDS
    a. Government officials, scholars, and other observers have called on less successful states to emulate the CT reforms the reforms in CT
    b. Many portions of the National Food Security Bill have been modeled after reforms instituted in CT

2. However, we do not know what exactly is driving the improvement in the CT PDS.
    a. There are reforms and other factors at play. Although the reforms did have a positive impact on PDS efficiency, it is difficult to say if they would have been as successful without these other factors
    b. It will likely be difficult to replicate or predict the impact of reforms modeled after the CT experiment.