Trends in Diversion of Grain from the Public Distribution System

REETIKA KHERA

This paper estimates the proportion of grain diverted from the public distribution system to the open market in the past decade by matching official offtake figures with household purchase reported by the National Sample Survey. At the all-India level, diversion of PDS grain remains a serious issue; however there are interesting contrasts at the state level. Based on trends in monthly per capita purchase of PDS grain and estimated diversion, states are categorised into three groups – “functioning”, “reviving” and “languishing” states. The paper also discusses the possible reasons for the improvement in the PDS in the reviving states and questions the assessment of the PDS as uniformly and irreversibly dysfunctional.

1 Introduction

In the recent debates around the proposed National Food Security Act (NFSA), the large-scale “diversion” of grain from the public distribution system (PDS) has been a major cause of concern. Diversion refers to the proportion of grain that does not reach beneficiary households. There have been periodic estimates of scale of diversion from PDS (Government of India 2002 and 2005a, Jha and Ramaswami 2010, Himanshu and Sen 2011, Khera 2011c, among others).

The current discussion on diversion relies on data from the 61st round of the National Sample Survey (NSS) (pertaining to 2004-05) or older data, or worse, no data. For instance, Bardhan (2011) describes the PDS as “dysfunctional” on the basis of “a rough estimate that less than a quarter of the subsidised foodgrains reaches the poor” (no source provided). Banerjee (2011) cites an outdated diversion figure, from a Planning Commission report published in 2005. Basu (2011) relies on estimates of leakage calculated using NSS data from 2001-02, ignoring the 2004-05 estimates. The latest calculations are those by Jha and Ramaswami 2010 (who stop in 2004-05) and Himanshu and Sen (2011). The use of outdated estimates has led to the portrayal of the PDS as uniformly and irreparably defunct which, in turn, allows one to begin with an assumption of a dysfunctional PDS and to make a case for replacing it with “cash transfers” (Basu 2011, Bardhan 2011, Somnathan 2011, Banerjee 2011).

In this paper, I extend the series of diversion estimates to 2007-08, the latest year for which data are available. I find that there are divergent trends across states insofar as per capita purchase of PDS grain (wheat and rice) and proportion of grain diverted are concerned. These estimates suggest that the states can be grouped into three broad categories: in a handful of states, PDS purchases are relatively high and diversion of grain is not a major concern (“functioning” states). Other states (“reviving” states) have seen a marked increase in PDS purchases in recent years, starting from a low base, associated with a decline in diversion. In yet others, the situation remains grim where low purchases, high diversion, and little improvement over time (“languishing” states). This suggests that it would be incorrect to label the PDS as uniformly and irreparably “dysfunctional”.

A reassessment of the PDS is required for another reason. State-level innovations in food policy (e.g., the proportion of households covered by the TPDS, or the difference between market and PDS price of grain) have been initiated in several states from 2007 onwards. These reforms have reinforced the trend towards a revival of the PDS. Section 5 documents some of these policy
changes and how they may have contributed to the revival of the PDS in some states.

2 Data and Methodology

“Diversion” estimates presented in this paper include leakages due to corruption, transport losses, losses due to spoilage and so on. The general practice has been to attribute all such losses to the illegal sale of PDS grain, meant for ration cardholders, on the open market. In this paper, the conventional interpretation of diversion is adhered to, as there are no reliable estimates of losses due to other reasons. This suggests that these figures should be treated as the “upper-bound” on diversion. Other reasons these estimates may provide the upper limit on diversion are discussed in Section 4.1.

The analysis here roughly covers the past decade, including two “thick” rounds of the NSS: the 55th (1999-2000) and 61st (2004-05) rounds and three “thin” rounds: the 57th (2001-02), 63rd (2006-07) and 64th (2007-08). The 64th round pertaining to 2007-08 is the latest round for which data are available from the NSS. Though the 63rd and 64th rounds are “thin” rounds, it is possible to generate reliable estimates at the state level.

The proportion of PDS grain that is diverted from the system can be estimated by matching data on “offtake” by state governments from the Food Corporation of India (FCI) with data on household purchase from PDS shops, collected by the NSS. “Offtake” refers to the amount of grain that the states take from the FCI for distribution through the PDS. These data are available from the department of food and civil supplies which publishes monthly data (state-wise, for rice and wheat separately) in the Monthly Foodgrains Bulletin.

On the other hand, the NSS collects data on monthly purchase of rice and wheat from the PDS as part of its consumer expenditure surveys. This can be aggregated up to the state level, by multiplying per capita purchase at total population for the relevant year. The Census of India publishes projected population which can be used for scaling up per capita purchases to the state level.

I aggregate the data on monthly offtake from FCI to match the reference period of the NSS surveys (i.e., from July to June). The difference between offtake and total purchase gives an estimate of the amount of grain that is diverted.

3 Purchase and Diversion of PDS Grain

3.1 Per Capita Purchase of Rice and Wheat from the PDS

Tables 1A and 1B report the per capita purchase of wheat and rice for rural and urban areas separately for each of the relevant years. In rural areas, though average per capita purchase of PDS grain is low, there is a lot of variation in the trends at the state-level. Average per capita purchase of grain is approximately 1kg per month in the case of rice, and even lower (less than 500 grams) in the case of wheat. The highest per capita purchase of rice is recorded in Tamil Nadu (4.84kg/month in 2007-08). Himachal Pradesh (HP) records the highest monthly per capita purchase of wheat (2.46kg).

Before proceeding, a few clarifications may help. One, though the targeted PDS (or TPDS) was introduced in 1997, in effect, the subsidy for above poverty line (APL) households ended in 2000-01. Two, between 1999-2000 and 2001-02, PDS entitlements for BPL households increased from 20kg/month/household to 35kg/month/household. Between 2001-02 and 2007, PDS entitlements remained the same. Three, the proportion of BPL households was fixed by the central government when the TPDS was introduced in 1997. These proportions were

### Table 1A: Per Capita Purchase of PDS Rice (kg/month)

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<thead>
<tr>
<th>State</th>
<th>Rural</th>
<th>Urban</th>
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<tbody>
<tr>
<td>Andhra Pradesh</td>
<td>0.22</td>
<td>0.03</td>
</tr>
<tr>
<td>Assam</td>
<td>0.47</td>
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<tr>
<td>Bihar</td>
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<td>Haryana</td>
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<td>Orissa</td>
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<tr>
<td>Punjab</td>
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<tr>
<td>Rajasthan</td>
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<tr>
<td>Tamil Nadu</td>
<td>0.35</td>
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<td>Uttar Pradesh</td>
<td>0.7</td>
<td>0.3</td>
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<tr>
<td>West Bengal</td>
<td>0.7</td>
<td>0.84</td>
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<tr>
<td>Source: Author's calculations using NSS data. Chhattisgarh, Jharkhand and Uttarakhad were created as new states in 2000, therefore there are no estimates for those states for 1999-2000.</td>
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based on the Planning Commission’s poverty estimates using 1993-04 NSS data. Again, these proportions remained largely unchanged until 2007 when several state governments began expanding coverage. PDS grain allocated to states for BPL households has therefore not undergone any change. Fourth, even after the subsidy for APL households was phased out, the central government continued to allocate grain for APL households. APL allocations have been periodically revised on the basis of the concerned state’s offtake history (Himanshu 2011). Finally, in this paper, per capita PDS purchase refers to the average over all households (i.e., APL and BPL).

Based on per capita purchase of PDS grain, states can be grouped into three broad categories. The first category is that of “languishing” states (see Figure 1 and Figure 1A (p 110)). Roughly speaking, these are states where per capita purchases have remained below 1kg/month. This group consists of several states of north India (Haryana, Punjab, Rajasthan) and eastern India (Assam, Bihar, Jharkhand and West Bengal). The eighth state in this category is Gujarat, the only state where there has been a decline in per capita purchase of PDS grain over the past decade.

The second group consisting of five states (Figure 1 and Figure 1B (p 110)) is that of “reviving” states where per capita purchases were below the 1kg/month benchmark at the beginning of the period being studied, but have risen since then. This is a mixed group: Orissa in the east, Chhattisgarh and Madhya Pradesh in central India, Uttarakhand and Uttar Pradesh (up) in the north. Note, however, that in the case of up the signs of revival are only barely perceptible – average purchase has risen from 0.29kg/month/capita, at the beginning of the period, to 1.02kg/month/capita in 2007-08 (see Tables 1A and 1B). The most remarkable improvement is in Chhattisgarh where per capita purchase in 2007-08 was 3.2kg/month, putting it among the top five states on per capita purchase (after Himachal, Tamil Nadu, Jammu and Kashmir (J&K) and Andhra Pradesh).

The remaining seven states, where per capita purchase of PDS grain has been greater than 1kg/month throughout the period under study and has also improved over time, are the “functioning” states (see Figure 1 and Figure 1C (p 110)). These include all four southern states (Andhra Pradesh, Karnataka, Kerala and Tamil Nadu) and Maharashtra. This category includes two states from the mountainous north (Jammu and Kashmir and Himachal Pradesh). Note that the “functioning” states are primarily rice-consuming states.

The trend of per capita PDS purchase emerging from Kerala requires further comment. Average purchase of rice crashed from 4.1kg/capita in 1999-2000 (the highest across states in that year) to 1.71kg/capita in 2004-05, and then recovered partially in subsequent years to 2.24kg/capita at the end of the reference period. By 2007-08, however, Kerala loses its top position to Tamil Nadu (where the monthly average was 4.84kg/capita).

In general, the PDS seems to deliver more in rice-consuming states. As far as wheat is concerned (see Table 1B), per capita purchases remained low throughout the reference period (between 300 and 400 grams per capita). The only exception is Himachal which has been doing well both in terms of level and trend. Average purchase rose from 1.27kg/capita in 1999-2000 to 2.46kg/capita in 2007-08.

Average per capita purchase in urban areas is nearly half of the corresponding figures for rural areas (0.69kg/capita for rice and 0.21kg/capita for wheat). In urban areas, the same (as in rural areas) rice states do well: Tamil Nadu, Andhra Pradesh, Himachal Pradesh, Jammu and Kashmir and Chhattisgarh. In the case of wheat, only Himachal Pradesh crosses the 1kg/capita barrier (average purchase of wheat in urban Himachal was 2.01kg/capita).
3.2 Diversion of Rice and Wheat

Table 2 reports the estimated proportions of wheat and rice diverted in the two “thick” NSS rounds (1999-2000 and 2004-05) and three “thin” rounds (2000-01, 2006-07 and 2007-08). This section discusses the main trends in diversion rates.

First, comparing performance of the states over this period, one finds that across states things got worse between 1999-2000 and 2004-05 (see Table 2). At the all-India level, the leakages from the PDS increased from 24% to 54%. The deterioration at the beginning of the period was visible even among the “functioning” states of the south (for instance, Kerala). However, since the last “thick” round (i.e., 61st, pertaining to 2004-05) and more recent “thin” rounds of the NSS (63rd and 64th rounds), one notices some signs of improvement, though only marginal, at the all-India level. The overall diversion of grain has come down from 54% in 2004-05 to 44% in 2007-08 (see Figure 2, p. 111). In spite of this marginal improvement, diversion rates were higher in 2007-08 than in the pre-PDS period (i.e., in 1999-2000 when 24% of wheat and rice were diverted). Diversion rates in the “linguaging” states remained high throughout the period. Among the “functioning” states, diversion rates were lower than the all-India average but even here two states, Karnataka and Maharashtra, have unacceptably high rates of diversion (see Table 2). Not surprisingly, the lowest diversion at the end of the period is in Tamil Nadu (4.4%) with Himachal Pradesh not far behind (13.2%).

Second, the most interesting pattern is in thereviving states where there has been an impressive decline in diversion rates in the past few years (see Figure 2). In Chhattisgarh, diversion has declined from half to zero between 2004-05 and 2007-08 (see discussion in Section 4.3). In UP too the diversion rate has plunged from 58% to 27% in the span of three years. Though rates of diversion in 2007 remain high (see Figure 3, p. 111), the experience of the reviving states shows that leakages can be reduced. Possible explanations for these improvements are discussed in Section 5.

Third, note that there is a regional dimension to PDS purchase and diversion rates, with the bulk of the functioning states falling in the peninsular region, whereas, barring Rajasthan and Gujarat, the languishing states are concentrated in the eastern part of the country (Assam, Bihar, Jharkhand and West Bengal).

Fourth, the level of diversion of rice is lower than wheat in each of the years. In 1999-2000, about one-tenth of the rice was diverted, whereas nearly half (49%) of all wheat was diverted. However, the proportion of rice that is diverted increased between 1999-2000 and 2004-05 – from just 9.9% in 1999-2000 to 18.2% in 2001-02 and to 41.3% in 2004-05. Since 2004-05, there has been a marginal decline (approximately five percentage points) in the rice that is diverted. In 2007-08, a little over one-third (37%) of rice was diverted.

Finally, there is no clear trend in the indicators for two states (Haryana and Punjab). Per capita purchase of grain is very low in these states (less than 1kg/capita/month). Diversion rates fluctuate widely over the past decade. One plausible explanation for this is that while what the PDS delivers (in terms of per capita purchase) in these two states has not undergone much change, the allocation and offtake have gone down, which has led to an improvement in terms of diversion.

## 4 Methodological Issues

Four important methodological issues related to the estimation of diversion rates are briefly discussed here.8

4.1 Possible Under-Recording of PDS Purchase in NSS Data

First, it is possible that there is some under-recording of PDS grain purchase in the NSS data. There are two possible reasons why this may need investigation: One, Deaton and Drèze (2009)

### Table 2: Diversion of PDS Grain

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1 Proportion (%) of grain offtake from FCI, that does not reach households. 2 For a discussion of “negative” diversion estimates, see Section 4.3.
find that for some years the NSS somewhat understates total cereal consumption in India, compared with total availability according to Ministry of Agriculture (see Figure 6, Deaton and Drèze 2009). If under-recording of PDS purchase (distinct from total cereal consumption) is an issue, using the method outlined above would lead us to automatically attribute this underestimation, or some part of it, to diversion.

Second, NSS data on consumption is based on recall for the past 30 days which require investigators to spend time carefully reconstructing purchase figures for each item. It is plausible that there is under-recording of PDS purchases in NSS data.9 This suggests that crosschecking PDS purchase against other data sources might be a useful exercise.10 In the case of the mid-day meal scheme, the proportion of children benefiting from the midday meal are much lower according to NSS than from other data sources (see for instance, De et al, forthcoming and Pratham 2011) and independent field evidence.11 Field evidence indicates that the improvement in the Chhattisgarh PDS began after 2004, when PDS reforms were initiated. As the discussion in Section 4.3 suggests, these improvements are only partially reflected in the 2007-08 data. Similarly, according to two informal studies of PDS purchase in Orissa conducted in 2010, three-quarters of sample households reported getting their full quota of rice from the PDS (see Rai 2011 and Office of the Commissioners of the Supreme Court 2010). It would be interesting to see whether data from the next thick round of the NSS (pertaining to 2009-10) validates the results of these smaller field studies.

4.2 Choice of Multiplier: NSS vs Census Projections

Another issue to bear in mind is the choice of multiplier for aggregating per capita PDS purchase up to the state level. There are two obvious choices for this: census population projections and NSS population multipliers. The norm, insofar as estimation of diversion is concerned, has been to use census population projections. In addition to that, I use NSS multipliers to get estimates of total rural and urban population. Using NSS “population” multipliers can provide a useful check for the reliability of population projections made by the Census of India.12 Here again, estimated diversion using both methods is not very different (see Table 4, Khera 2011c).

4.3 Contribution from the ‘State Pool’ and Accounting Practices

The centre allocates grain to states in accordance with the proportion of BPL families fixed by the Planning Commission. Where states have expanded the PDS (e.g., Andhra Pradesh, Tamil Nadu, among others, see Table 3, p 112) the actual number of BPL households is higher than that sanctioned by the central government. When coverage of BPL households is increased, states have three options to fulfil additional grain requirements. First, they can spread the centre’s allocation (of 35 kg per BPL household) over a larger number of households by reducing per household entitlements. For instance, the Government of Tamil Nadu gives only 20 kg per household but covers to all households. Second, states can purchase the additional grain required, either from the PCI or locally (i.e., within the state, through the state civil supplies corporation). This is being done, for instance, in Chhattisgarh. Third, states can take grain allocated for APL households at higher prices and use it to meet the needs of the additional BPL households (as is done in Andhra Pradesh among other states). By a combination of these measures, the Government of Tamil Nadu has been able to run a universal PDS.

Chhattisgarh, Tamil Nadu and Andhra Pradesh (and possibly a few other states too) augment centrally allocated grain (through Open Market Sales or OMS purchases or “state pool” contributions). Where states augment foodgrain supply, using the allocation and offtake figures reported in the Monthly Foodgrains Bulletin would be incorrect because that only reports allocation and offtake from what is called the “central pool”. This would lead to underestimation of grain diversion.13 To get an accurate estimate, in such cases one would have to add to the offtake figure, the grain allocated to the PDS by the state from local procurement and other sources.
As information on which states currently “top up” rci allocations is not readily available, I take a closer look at these two issues using data from the Government of Chhattisgarh for 2007-08. This is the first year in which Chhattisgarh began contributing rice from the state pool in order to run an expanded rps. The department of food of the Government of Chhattisgarh provides data on rice and wheat by source: the state's contribution as well as allocation and offtake from the central pool of the rci.

The first point to note is that there is a small discrepancy in “offtake” data as reported in the Monthly Foodgrains Bulletin and by the respective state governments. Though the reason for this discrepancy is not clear, it could be attributed to leakages, transit losses, lags in accounting and so on.

The second important point is that when we add Chhattisgarh state's contribution to estimate diversion, the proportion of foodgrain diverted in Chhattisgarh in 2007-08 jumps from -1% to 37.7%. Note, however, that such revisions would be required only in those states where rci allocations are “topped up” by state government. Given the manner in which data is compiled today, it is not easy to tell if there are any other states for which such an exercise is required.

In the case of Tamil Nadu, the department of food provided offtake and “liftment” from the central pool. “Liftment” refers to the data that is sold at the rps outlet. Note that Tamil Nadu is probably the only state in the country that has a system for tracking sales at the rps outlet. Using rci offtake and sales data provided by the state government, diversion figures for Tamil Nadu rise from 4.4% to 8% (see Khera 2011b, Table 6).

Finally, note that for some states, using the above method, the estimated proportion of grain diverted is negative. This means that more grain is bought from ration shops than is supplied according to the Monthly Foodgrains Bulletin. Using lags (i.e., offtake of grain allocated this month may happen in subsequent months) does not resolve this issue. This also suggests that further streamlining of this methodology is required and diversion figures must be treated as approximations.

4.4 Data Gaps

Several data gaps hinder an exercise of this sort. Estimates of transport and storage losses are not available. Even basic information on coverage and entitlements in each state is not compiled accurately at the central level. Table 3 which reconstructs these entitlements relies on state government websites, online newspaper reports and so on. Data on the states’ contribution to the rps (mentioned above) are also not readily available. There is no easy way of finding out which states are augmenting rci supplies of grain with their own purchases. There are other such gaps: e.g., the Monthly Foodgrains Bulletin which used to be available on the website of the department of food and civil supplies until 2005 is no longer publicly available. These and other data gaps need to be addressed urgently.

5 ‘Reviving’ and ‘Functioning’ States

To understand the revival of the rps in some states, one needs to look at state initiatives in the field of food policy. Some such initiatives for selected states are listed in Table 3. When the TPDS was introduced, the central government began allocating subsidised foodgrain for households classified as below poverty line (BPL). The proportion of BPL households in each state, in turn, was decided on the basis of the 1993-94 poverty estimates of the Planning Commission. This compelled state governments to “downsize” their rps in accordance with what they got from the central government once the TPDS was introduced. However, a few years into the TPDS, several state governments realised that it had led to the exclusion of many poor households. For instance, according to NSS data from 2004-05, only 53% of rural households belonging to the poorest monthly per capita expenditure (MPCE) quintile had a BPL ration card. These large exclusion errors can be attributed to the small TPDS coverage (in other words, the Planning Commission’s poverty estimates were too low) and also to the poor design and implementation of the BPL survey. As a partial remedy to this (at least) since 2006, state governments began to spend state resources to increase the coverage, or provide additional subsidy to those households covered by the TPDS. As Table 3 shows, in several states, the rps is now quasi-universal (Tamil Nadu, Andhra Pradesh, Chhattisgarh, Karnataka, Himachal Pradesh). In many others, states governments...
have expanded the coverage (e.g., Rajasthan) and/or reduced prices (e.g., Jharkhand). The additional subsidy burden is met either by reducing quantities (e.g., from 35 kg or 20 kg in Madhya Pradesh) supplied to eligible households or by putting in additional state resources or both.

Out of seven “functioning” states, four (Andhra Pradesh, Himachal Pradesh, Kerala and Tamil Nadu) are states where the PDS remained (or became) universal or quasi-universal because of extra commitment of resources by the state government. In Tamil Nadu the PDS is universal in rural and urban areas; in Himachal Pradesh APL families continue to get wheat and rice from the PDS, albeit at a higher price than BPL households. Andhra Pradesh runs a quasi-universal PDS: it covers many more households than the centre provides for and like Tamil Nadu provides an additional subsidy on the issue price (only Rs 2/kg for rice). Each of these functioning states (in 2007-08) have shown a consistent improvement over the reference period. At least two (Himachal and Tamil Nadu) of these states have a well-established record of good performance in social welfare schemes.19

What could be behind the improvements noticeable in the reviving states? Khera (2011b) discusses two alternative sets of explanations: demand-side and supply-side factors that could affect PDS purchase by households. A common feature across reviving states is that the PDS has been expanded (e.g., by increasing coverage, or the implicit subsidy) in recent years. For instance, in Chhattisgarh the state provides an additional subsidy and has increased the coverage of the PDS to approximately 80% of rural households (from just 45%). Field-based evidence from the reviving states suggests that when the issue price is lowered, say to Re 1/kg or Rs 2/kg, people are unwilling to let go of their grain. These are referred to as “demand-side” factors that contribute to enhancing voice. Another measure that enhances voice is the increased difference between market price and PDS price in recent years. The gap between market and PDS price has grown because of a rise in market prices and because many states have lowered the PDS issue price. This has had the effect of increasing the interest of both the state government and APL cardholders in taking as much as possible from the central pool and PDS shop respectively. As market prices of wheat and rice have risen, grain sold at APL prices by the FCI has become cheaper than the open market. This is one of the reasons why state off-take of APL grain has been high in recent years.20

The expansion of the PDS has been accompanied by supply-side PDS reforms (e.g., computerisation of records, deprivatisation of PDS shops, upward revision of official commissions for ration dealers).21 Last and certainly not the least, renewed political commitment to the programme has been an important part of the reform in these states.

### 6 Concluding Remarks

In this paper, I estimate the “diversion” of PDS grain (wheat and rice) in India. I also discuss the methodological issues which make the precise estimation of such leakages difficult. This discussion, including the fact that all leakages (storage and transport losses included) have to be clubbed with leakages due to corrupt practices, indicates that estimates of diversion estimated in this manner must be treated as an upper bound on illegal diversion of PDS grain. Imprecise as these estimates may be, computing these proportions over a period of time is still a useful exercise because one can get a sense of which direction things are moving in. Looking at the overall proportion of grain diverted, between 1999-2000 and 2007-08 (i.e., the 55th and 64th rounds of the NSS), the situation is far from encouraging. At the beginning of the period, 24% of grain was diverted. The situation got worse until 2004-05 when 54% of grain leaked but since then there has been a reversal of that trend. At the end of the period (in 2007-08), 44% of PDS grain was diverted at the all-India level.

Studying trends disaggregated by state, the picture is very mixed. Based on level of per capita PDS purchase and trends, I classify states into three broad categories: “functioning” states, “reviving”

### Table 3: Some State-Level Initiatives in the PDS

<table>
<thead>
<tr>
<th>State</th>
<th>Year Description</th>
<th>BPL Cards (lakh)</th>
<th>BPL Allocated</th>
<th>BPL Actual</th>
<th>APL Allocated</th>
<th>APL Actual</th>
</tr>
</thead>
<tbody>
<tr>
<td>Andhra Pradesh</td>
<td>Price reduction, 7 April 2008</td>
<td>40.63</td>
<td>175.5</td>
<td>20 kg rice max (Rs 2/kg)</td>
<td>30 kg rice (Rs 9/kg)</td>
<td></td>
</tr>
<tr>
<td>Chhattisgarh</td>
<td>Price reduction 2007 and December 2008, expansion in 2007</td>
<td>18.75</td>
<td>36</td>
<td>35 kg (Rs 2/kg)</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Himachal Pradesh</td>
<td></td>
<td>5.14</td>
<td>3.17</td>
<td>35 kg (Central Issue Price)</td>
<td>35 kg (Central Issue Price)</td>
<td></td>
</tr>
<tr>
<td>Jammu and Kashmir</td>
<td></td>
<td>7.36</td>
<td>4.8</td>
<td>35 kg (Central Issue Price)</td>
<td>35 kg (Central Issue Price)</td>
<td></td>
</tr>
<tr>
<td>Jharkhand</td>
<td>Price reduction in October 2010</td>
<td>23.94</td>
<td>14.76</td>
<td>35 kg (Rs 1/kg rice)</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Karnataka</td>
<td>April 2005</td>
<td>31.29</td>
<td>76.77</td>
<td>25 kg rice/wheat (Rs 3/kg)</td>
<td>13 kg rice, 3 kg wheat (Rs 6.7/9/kg)</td>
<td></td>
</tr>
<tr>
<td>Kerala</td>
<td>At least since 2006</td>
<td>15.54</td>
<td>14.82</td>
<td>25 kg rice (Rs 3/kg)</td>
<td>35 kg (Rs 8.9 rice; Rs 6.7 wheat)</td>
<td></td>
</tr>
<tr>
<td>Madhya Pradesh</td>
<td>Price and quantity reduction in April 2008</td>
<td>41.25</td>
<td>52.65</td>
<td>20 kg (Rs 3/kg for wheat and Rs 4.50/kg for rice)</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Orissa</td>
<td>1 July 2008, reduction of issue price</td>
<td>32.98</td>
<td>37.63</td>
<td>25 kg/month (Rs 2/kg rice)</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Rajasthan</td>
<td>Price and quantity reduction, expanded coverage, 1 May 2010</td>
<td>24.85</td>
<td>35.57</td>
<td>25 kg (Rs 2/kg)</td>
<td>35 kg (6.50)</td>
<td></td>
</tr>
<tr>
<td>Tamil Nadu</td>
<td>Price reduction 15 September, 2008; universal since 2006</td>
<td>48.63</td>
<td>181.9</td>
<td>Max 20 kg rice and wheat: 5-10kg (Rs 1/kg rice and Rs 7.50/kg wheat)</td>
<td>-</td>
<td></td>
</tr>
</tbody>
</table>

Central Issue prices are APL Rice Rs 8.30; Wheat Rs 6.10; BPL Rice Rs 5.65; Wheat 4.15.

states and “languishing” states. The seven states in the first category are not surprising, as they have a good record on implementation of various social welfare schemes. Apart from the southern states, this category includes HP and JK in the north and Maharashtra. The eight “languishing” states are not surprising either. The group includes Assam, Bihar, Jharkhand, West Bengal – states that have a poor record on other socio-economic indicators too.

The most interesting category is that of the five “reviving” states, which includes Chhattisgarh, Madhya Pradesh, Orissa and Uttar Pradesh, which at the beginning of this period were like the “languishing” states but by 2007-08, seem to be catching up with the “functioning” states.

The evidence on diversion presented in this paper shows that it is no longer possible to label the PDS as a “dysfunctional” programme – it amounts to ignoring the performance of the PDS in seven major states and the signs of revival in at least another five states. Informal field evidence from after 2007-08 (the latest year for which data are available), suggests this trend towards a revival has been further consolidated. There is clearly a need for further research that would help understand the consistently poor performance in some states and reasons behind improvement in others. The future viability of the PDS depends a great deal on the scope for extending these improvements across the country.

NOTES
1 Government of India (2005a) defines diversion differently from the definition used here and in the other studies.
2 I also try introducing lags between offtake and purchase, but that does not affect the main results, so those tables are not reported here.
3 NN does not rely entirely on census projections. This is done, for instance, in Madhya Pradesh, Rajasthan, Kerala, Karnataka (see Table 3).
4 For a full discussion of these methodological caveats, see Khera (2010).
5 In Khera (2011c), alternative estimates of diversion using data from the Indian Human Development Survey (IHDS) conducted in 2004-05 gives comparable levels of diversion (see Table 3 there) and similar patterns at the state-level.
6 Data on sales from PDS outlets is available from the Tamil Nadu Civil Supplies Corporation. Tamil Nadu has been a pioneering state as far as computerisation of stocks down to the ration shop level is concerned. Other states have also begun to do this.
7 A P Drèze and Khera (2004). See also Swaminathan (2008) on social exclusion from the PDS.
8 Another important reason for high APL offtake rates is that in 2006, FCI fixed APL allocation for states based on the state's offtake record prior to that year (Himanshu 2011).
9 Drèze and Khera (2004a). See also Swaminathan (2008) on social exclusion from the PDS.
10 The NSS does not rely entirely on census projections. The NSS multipliers are based on their own methods of house listing, etc., and are likely to be more reliable (Anus Deaton, personal communication).
11 According to De et al (forthcoming) and Pratham (2011), mid-day meals were served in 84% (in 2006) and 83% (in 2010) of schools. According to NSS data (2009-10), only 22.5% of rural households and 8% of urban households were benefitting from the scheme (Government of India 2007).
12 The NSS does not rely entirely on census projections. The NSS multipliers are based on their own methods of house listing, etc., and are likely to be more reliable (Anus Deaton, personal communication).
13 Note, that in most states that have expanded the PDS, the tendency is to spread existing FCI allocations over a larger population. This is done, for instance, in Madhya Pradesh, Rajasthan, Kerala, Karnataka (see Table 3).
14 Note that estimates of diversion reported in Himanshu and Sen (2011) present Chhattisgarh as a turnaround. This could be because they fail to take into account the contribution to the PDS from the “state pool”.
15 Though at times the Government of Tamil Nadu

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