

The Public Distribution System

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The public distribution system (PDS henceforth) refers to a network of retail outlets (popularly known as 'ration shops') through which the government sells grain (principally, rice and wheat) and kerosene. The scope of this article is restricted to the public distribution system for grain. Grain sales occur at a fixed price called the 'issue' price that is typically lower than the market price. Two conditions govern the sale of subsidized grain. First, the buyer of grain must possess a 'ration card'. Second, grain purchases are subject to a quota. The public distribution system is supported by a procurement operation that procures and funnels supplies to the PDS. Through the Food Corporation of India (FCI), the government procures grain at the 'procurement' price and then stores and transports it to the various consuming locations.

Till the late 1960s, the principal policy question was how food could be procured cheaply. Towards this end, the government imposed mandatory levies on rice mills, instituted zoning regulations on movement of grain from surplus to deficit areas (so that prices are lower in the surplus zones), prohibited external trade except on government account and severely curtailed large trading operations through "anti-hoarding" controls on stocks.

The food policy context changed in the 1970s with the technological breakthroughs of the Green Revolution. Earlier concerns about movements in inter-sectoral terms of trade adverse to industry faded away. With large food surpluses, declining real prices of foodgrains, and greater political clout of farmers, the emphasis of food distribution shifted to support of farmgate prices, stabilization and subsidy for lower income groups. Food subsidy as a major item of government expenditures made its

appearance around this time. In recent years, the principal policy issue for the government has been to find acceptable ways to cap the food subsidy. Issues that are current in the policy debate are the efficacy and impact of food subsidy expenditures.

Issues in Intervention

In principle, food market interventions are supposed to enhance the efficiency of food markets as well as improve the equity of food market outcomes. The efficiency effect arises from price stabilization. As private storage of foodgrains is typically unprofitable across years, markets do not supply price stabilization even though it is socially desirable, as poor risk-averse food consumers cannot obtain credit or insurance against crop failures. The reduction in risk is beneficial to producers as well. Even with stabilization, the market outcome involves unacceptably low food consumption for the poor. The equity objective of food market intervention is to augment the food consumption of such target groups by offering subsidies.

Both these goals could be achieved by procurement, storage and distribution. To meet the equity goal, the government offers limited quantities of food to poor consumers at subsidized prices. Suppose this requires an annual distribution of 15 million tones of grain. The supply of this grain is secured by procurement. However, annual procurement could vary depending on the size of harvest and available stocks. In times of abundant supplies, the government will wish to procure more than 15 million tonnes (and build stocks) while the procurement target would be lower than the distribution target (drawing down stocks) in times of shortfall. Such a scheme could smooth out the inter-temporal variability in crop harvests with the exception of very unusual

circumstances such as a sequence of record harvests or a series of disastrous crop failures.

In practice, food market interventions rarely approximate the ideal. The goal of stabilization is to stabilize prices around their mean. However, technological progress and Engel's law (that demand for food grows slower than income) typically tends to decrease the relative price of food. As a result, interventions that try to stabilize with reference to historical supply levels tend to carry too much stock. A greater difficulty is that price stabilization of food crops leads producers to allocate resources away from nonfood crops to food crops. Such a supply response also calls for adjusting interventions to higher supply levels. However, as market interventions develop political interests, price stabilization is eroded by the politics of supporting producer incomes.

On the distribution side, the issue is that while the poor can be counted (by means of surveys), it is not easy to identify them. The difficulty is that the criteria to identify the poor cannot be those that can be claimed or mimicked by the nonpoor. Targeting schemes usually involve a trade-off between errors of exclusion (when some members of the target group are excluded from subsidies because of stringent targeting criteria) and errors of inclusion (when some members of non-target groups receive subsidies because of minimal targeting criteria). Subsidies with universal access (as was the case with the PDS prior to 1997) minimize exclusion errors but maximize inclusion errors.

The Food Subsidy

The food subsidy arises from government procurement and distribution of two commodities: wheat and rice. Significantly, coarse cereals (bajra and jowar) do not

receive subsidies even though, in some states, they are major components of food budgets of poor households. In the past subsidies have been offered on other commodities such as edible oils and most notably sugar. These are now unimportant. The food subsidy consists of two components. The first component is the distribution subsidy that comes about from the fact that the difference between the issue price (at which the government sells) and the procurement price is not enough to cover the costs of distribution. The second component is the cost of carrying buffer stocks.

Between 1971/72 and 2001/02, the food subsidy has averaged a little less than 0.5% of GDP. Broken up by decade, the food subsidy has increased over this period and is nearly 0.6% of GDP in the decade leading up to 2001/02. In recent years, the food subsidy has risen sharply above the historical averages (to nearly 0.9% of GDP) and it remains to be seen whether this rise is permanent or transitory. Relative to government expenditures on health and education (including all governments – states and central), the level of food subsidy is 46% and 17% respectively (in the 1990s). The food subsidy accounts for about 7.3% of the tax revenues of the Central government. This indicates the pressure of the food subsidy on Central government finances, as it is an expenditure of the Central government alone.

The division of the food subsidy into the distribution and buffer stock subsidy varies from year to year. However, it is not uncommon at all for the buffer stock subsidy to exceed the distribution subsidy. Indeed, this has been the typical pattern in the late 1990s. This happens whenever the government carries large stocks.

Stabilization

In an economy, where the government stabilizes annual supplies, procurement and public distribution sales should balance over the span of a crop cycle (typically about 5-6 years). This was indeed the case over the two decades between 1972/73 and 1991/92. However, since 1992/93, procurement has been consistently larger than public distribution sales. As a result, grain stocks rose sharply towards the end of the 1990s. This in turn inflated the buffer stock subsidy and hence the aggregate food subsidy.

The failure of stabilization and the accumulation of stocks are commonly attributed to the political clout of the farm lobby. Grain surpluses are regionally concentrated – in Punjab, Haryana, Uttar Pradesh and Andhra Pradesh. In the 1990s, it is argued, that these states were able to exercise greater influence over the procurement prices determined by the Central government because of the formation of coalition governments at the Centre. While political interests have undoubtedly developed around the government's market intervention, there are other factors as well.

Once public stocks get large it can be hard to get back to sustainable levels because of price expectations. For a grain seller, the opportunity cost of sale to the government is the market price of grain but at a later point in time (as the procurement price is fixed at the same level throughout the year). Price expectations are in turn dependent on future government actions. When government stocks are large, it is natural to expect future sales from these stocks (open market sales is one of the ways by which the government brings down stocks from unwanted levels) which reduces private storage. Indeed, stocks can be so large that private stocks might not be carried at all as it happened in the wheat market in 2001. At this time, the wheat stocks with the government were equivalent to the annual market supplies. Grain stocks were brought down by a

combination of special measures including subsidised exports, expanded welfare programs and open market sales as well as the fortuitous circumstance of a drought in 2002/03.

Reaching the Poor

In 1999/00, 36% of poor households (i.e., households with expenditures less than poverty line) report purchases of rice or wheat from the public distribution system. The corresponding figure for nonpoor households is 31%. If rural and urban sectors are considered separately, the PDS participation rate of poor rural households is no different from nonpoor rural households (at 35%). The small disparity in overall participation rates is driven by the urban sector where 37% of poor households access the PDS as against 23% of all nonpoor households. These figures establish that while the PDS includes significant numbers of the nonpoor, it also excludes the bulk of the poor.

Within this overall picture, there are noteworthy regional differences. More than 70% of the poor use the PDS in Andhra Pradesh, Karnataka, Kerala and Tamil Nadu. Between 50 to 60% of the poor use the PDS in Assam, Gujarat, Maharashtra and Orissa. Participation rates of the poor vary between 6 to 22% in Bihar, Madhya Pradesh, Rajasthan and Uttar Pradesh. As for the nonpoor, their participation rates are lower than that of the poor. Across states, the correlation between participation rates of the poor and nonpoor is 0.98. This has led some analysts to conclude that the interests of the poor lie in universal subsidy schemes rather than targeted schemes.

Case studies have thrown up a variety of reasons for low participation rates of the poor such as the difficulty of obtaining ration cards, the limited liquidity of poor

households (as ration entitlements can be accessed only once every fortnight rather than continuously), uncertain ration supplies, inferior quality of PDS grain, inconvenient location of PDS shops and the slender subsidy offered in most states. Lack of geographical access to the PDS network seems to be a powerful factor inhibiting participation. States where households have easy access to PDS shops also are states with high participation rates.

Using expenditure surveys, researchers (Parikh, 1994 and others) have computed the subsidy received by households as the product of the quantity purchased and the difference between the market price and the PDS sale price. This is a partial equilibrium measure, as an ideal measure would use the market price that would have obtained in the absence of a PDS. Following the work of Dantwala (1967) and others, there is a presumption that a procurement plus PDS regime increases market prices. This essentially stems from the income effect on demand from subsidies. If this reasoning is correct, the partial equilibrium measure overestimates the subsidies received by researchers.

However, the bias is of no practical consequence as the partial measures show the received subsidy to be small. In rural areas and for the bottom 4 expenditure deciles, subsidies account for about 1-2% of total household expenditure. The similar range for urban areas is 0.7-1.5%. As a proportion of cereal expenditure alone, the subsidy is in the range of 6-7%. The southern states depart significantly from the national picture. For instance, in Kerala, the state with the widest network of PDS outlets and the highest participation rates, the received subsidy is about 50% of cereal expenditure of the poor households.

These figures suggest that if one is looking to establish the impact of food subsidies on food consumption and nutritional status, then one should look at the southern states. Tarozzi (2005) investigates this question for Andhra Pradesh and concludes that even here the impact of the PDS on food security of poor households is likely to be limited.

Policy Response

Prior to 1997, entitlement to the PDS was not contingent on household characteristics. The most significant policy initiative in reforming food policy was the introduction of the targeted PDS (TPDS) in 1997. In the TPDS, subsidies are restricted to below poverty line (BPL) households. Identification of the poor is the responsibility of state governments. A profound consequence of TPDS is that it ties the central government subsidy to the BPL population within a state. Hence, with this arrangement, the government has bounded the distribution subsidy component of the food subsidy and can expect that it will decline with falling poverty. Very likely, the next reform will be that of the procurement process where the government will look to end its open ended commitment to purchase grain at the procurement price.

The impact of the TPDS on targeting is an open question as the consumption survey data that could answer it is not yet available. Critics of TPDS, however, believe that identification is a difficult process and would lead to large exclusion errors. Moreover, by shrinking the PDS to serve the poor, they fear that it would affect the economic viability of the PDS retail outlets. The TPDS also overlooks the possibility of subsidising commodities particularly favoured by the poor such as coarse cereals.

Targeting could improve as the nonpoor voluntarily opt out (Dutta and Ramaswami, 2004). Other analysis has shown that the food subsidy is expensive not just because of transfers to the nonpoor but also because of fraud (because of illegal diversions of grain to the market) and excess distribution costs of the PDS (relative to the private sector) (Dutta and Ramaswami, 2001). These findings question the deep involvement of the government and its agencies in physically handling the grain. Food coupons or food stamps are an alternative way to deliver food subsidies through the private sector.

The future of food subsidy programs is unlikely to lie in a centralized PDS. A regionally differentiated safety net of food subsidies (but financed primarily by central government funds) is likely to offer more opportunities for designing and delivering subsidies appropriate to local consumption patterns and capabilities.

References

Dantwala, M. K. (1967), “Incentives and disincentives in Indian agriculture”, *Indian Journal of Agricultural Economics*, 22, 1-25.

Dutta, Bhaskar and Bharat Ramaswami (2001), “Targeting and Efficiency in the Public Distribution System: Case of Andhra Pradesh and Maharashtra”, *Economic and Political Weekly*, 36 (18), 1524-1532.

Dutta, Bhaskar and Bharat Ramaswami (2004), “Reforming Food Subsidy Schemes: Estimating the Gains from Self-Targeting in India”, *Review of Development Economics*, 8(2), 309-324.

Parikh, Kirit (1994), “Who Gets How Much From PDS – How Effectively Does it Reach the Poor?” *Sarvekshana*, January-March.

Tarozzi, A., (2005), “The Indian Public Distribution System as Provider of Food Security: Evidence from Child Nutrition in Andhra Pradesh”, *European Economic Review*, 49, 1305-1330.