

## *Rationale for Subsidies: An Example*

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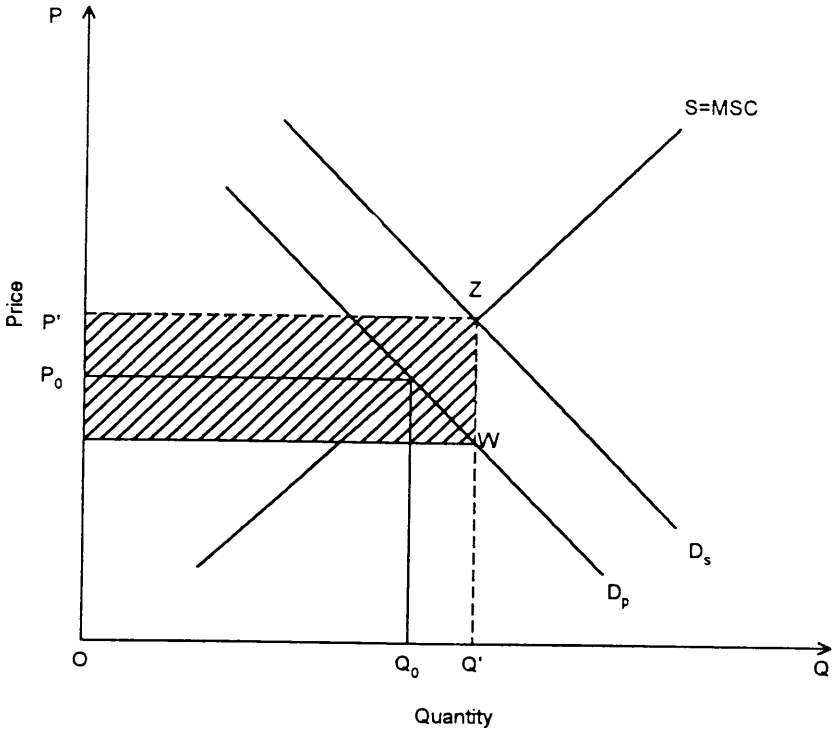
**A**s an illustration one case is considered here. In Diagram 1, the private demand curve for a good ( $D_p$ ) is below that of social demand curve ( $D_s$ ) due to externalities. The supply curve ( $S$ ) represents (social) marginal cost of providing the good.

Left to the market forces, the quantity consumed will be  $Q_0$ , which is less than the socially optimal consumption  $Q^*$ . The government can intervene in the market by giving a subsidy which is equal to the vertical distance between the two demand curves, per unit of the good. This would shift the private demand curve to coincide with the social demand curve, increasing the consumption of the good to  $Q^*$ . The total amount of subsidy that is required is indicated by the shaded area. The increased consumption results from the fact that although the total unit price increases from  $P_0$  to  $P^*$ , the private cost is reduced to  $WQ^*$ ,  $ZW$  being the element of subsidy in the price.

Other illustrations may be considered distinguishing between cases where (i) the good is produced exclusively by private producers and (ii) by both private producers and the government. Differentiation can also be made where the price includes a private cost element in addition to a social cost element with the good being produced entirely by the government. Differentiation in the extent of subsidy according to economic status or other considerations can also be examined in this analytical framework.

In the illustration given above, one market was considered at a time. However, subsidies would also have repercussions in other markets. For example, as consumers buy more of the product under consideration, the demand for other products may decline. Assuming production to be subject to increasing cost (positively sloped supply curve), this will lower their price. Similarly, as the output mix changes, so would the derived demand for various factors. The ideal analytical framework for a consideration of subsidies, like that of taxes, is a general equilibrium framework.

Diagram 1



## *CSO Estimates of Subsidies*

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The Central Statistical Organisation (CSO) estimates the amount of subsidies given by the Central and the State governments as a part of the economic-cum-functional classification of the budgets of these governments. Consistent with its overall commitment to follow the System of National Accounting (SNA) proposed by the Statistical Office of the United Nations in 1993, the definition of subsidies employed closely follows that in the SNA. As already discussed, the essential features of this are:

- Subsidies are received by producers or importers only. Direct consumer subsidies are therefore *not* treated as subsidies.
- All subsidies are in the nature of current expenditures. Thus "capital subsidies" are not treated as subsidies, but as capital transfers.
- The objective(s) of subsidies must be to influence the level of production, the product price or the rate of return of the concerned unit(s); it is therefore necessary to establish a nexus between a good or a service and the payment for them which may qualify as a subsidy, irrespective of the terminology used in the government budgets.

The CSO has to examine all payments to producing or importing units contained in the revenue and capital budgets and reclassify them using the above yardsticks. An important example is that of government expenditure on irrigation. All expenditures for the provision of this service (by the departmental undertaking) net of receipts, in other words the losses of the irrigation department, are treated as subsidies, since the objective is taken to be the supply of water at rates deliberately kept low. Losses of other departmental undertakings, however, are treated as losses and not subsidies. While some of the explicit subsidies contained in the budget may not be counted as such under the CSO classification, their estimate of subsidies

would generally be higher than the explicit subsidies alone on balance, as a number of items recorded as grants in the budgets are treated as subsidies. However, it should be noted that there is no attempt to actually estimate any imputed subsidies, since those are not a part of the government budgets based on cash flows. In effect, the estimates of subsidies by the CSO are derived from a reclassification of the budgetary accounts only.

Table A2.1 shows total subsidies as a percentage of GDP as per the CSO estimates given by the Centre and the State governments. For the Centre, as a percentage of GDP, the subsidies increased in the second half of the eighties as compared to the first half. Since then, a declining trend is visible coinciding with the reform years. However, in the last year under observation, the declining trend has been reversed, although as a ratio of GDP in 1993-94, central subsidies were still below the level observed for the first half of the eighties. For the States, as a percentage of GDP, subsidies are lower than that for the Centre. This does not match with our findings based on our methodology for budget-based subsidies. In general, the CSO estimates put subsidies at a much lower level than our estimates.

**Table A2.1**  
Subsidies as Percentage of GDP: CSO Estimates

<i>Government</i>	<i>Average 1980-85</i>	<i>Average 1985-90</i>	<i>1990-91</i>	<i>1991-92</i>	<i>1992-93</i>	<i>1993-94</i>
Centre	1.67	2.38	2.23	1.77	1.41	1.50
States	0.73	0.99	1.00	1.64	1.24	1.16
All-India	2.40	3.37	3.23	3.42	2.65	2.67

Table A2.2 reports State-wise total subsidies and those on economic and social services as percentages of Net State Domestic Product (SDP) and in per capita terms to facilitate comparisons. A broad correlation between the levels of income (per capita SDP) and per capita subsidies is discernible in Table A2.2. States are divided into three groups, *viz.*, high, middle and low income States. On average, the per capita subsidies are the highest for the high income group of States, and the lowest for the low income group of States. But the differences become negligible when the subsidy-SDP ratio is considered. In general, the same pattern of higher per capita subsidies in higher income States is reflected here, as already discussed in the context of our estimates.

**Table A2.2**  
**CSO Estimates of Subsidies in Selected States: 1993-94**

<i>State\Categories</i>	<i>Total Subsidies</i>		<i>Subsidies on Social Services</i>		<i>Subsidies on Economic Services</i>	
	<i>As Percentage of SDP</i>	<i>Rs. Per Capita</i>	<i>As Percentage of SDP</i>	<i>Rs. Per Capita</i>	<i>As Percentage of SDP</i>	<i>Rs. Per Capita</i>
<b>High Income States</b>						
Gujarat	4.31	327.98	0.01	0.55	4.30	327.39
Haryana	1.41	146.76	0.00	0.27	1.40	146.50
Maharashtra	1.02	110.89	0.00	0.00	1.02	110.89
Punjab	0.80	98.56	0.00	0.19	0.80	98.37
<b>Middle Income States</b>						
Andhra Pradesh	2.15	142.29	0.88	58.22	1.27	84.07
Karnataka	1.38	96.49	0.00	0.28	1.37	96.21
Kerala	0.52	32.96	0.01	0.38	0.52	32.58
Tamil Nadu	3.06	223.35	0.94	68.33	2.12	155.02
West Bengal	0.64	38.60	0.03	1.80	0.61	36.80
<b>Low Income States</b>						
Bihar	2.15	78.55	0.00	0.00	2.15	78.55
Madhya Pradesh	2.42	131.82	0.04	2.31	2.38	129.51
Orissa	1.08	51.38	0.00	0.09	1.08	51.29
Rajasthan	1.26	65.50	0.00	0.18	1.26	65.33
Uttar Pradesh	1.41	66.19	0.00	0.00	1.41	66.19

A disaggregated analysis based on CSO estimates of subsidies shows the dominance of the economic services in subsidies (96 per cent in 1993-94). The relative share of the Centre in subsidies in 1993-94 as per the CSO estimates works out to 56 per cent of the total subsidies. This picture is quite the reverse of our findings based on comprehensive budget-based subsidies, where it is the States which have a higher share in both social and economic services. As mentioned earlier, this is primarily due to the way subsidies are defined by the CSO. The bulk of unrecovered costs which are not in the form of explicit subsidies are not reflected in the CSO estimates. Since such unrecovered costs are far greater at the State level, the relative shares of the Centre and the States in the total subsidies project completely different pictures.

## *Subsidies: An International Perspective*

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Interest in measuring the magnitudes and relative importance of subsidies has increased significantly across the World in the last 15 years. Individual countries, economic unions (CEE, EFTA, OECD) and multilateral agencies (IMF, UN) have undertaken major surveys and studies pertaining to estimation of subsidies. These sources of information can be divided into three groups, *viz.*, System of National Accounts (SNA), Government Finance Statistics (GFS) and other Alternative Sources of Information (ASI). A study by Clements *et.al.* lists the results of three CEE studies (1989, 1990 and 1992), two OECD studies (1990 and 1992), two EFTA studies (1986, 1990) and one USDA (1990) study under ASI.

The magnitude of subsidies relative to GDP, based on GFS and SNA data-bases, is presented below for a comparison of the Indian position with selected developed and developing countries. Tables A3.1 and A3.2 relate to the GFS and Table A3.3 relates to the SNA data bases, respectively. Table A3.1 has two parts. First, figures for subsidy and other current transfers are given as a percentage of GDP. In the lower part of table only subsidy figures (exclusive of other current transfers) as percentage of GDP are given for a selected list of countries for whom relevant data were available from the country sheets of the SNA tables. It will be immediately noticed that the subsidy-GDP ratios are considerably lower as compared to the subsidy plus transfer to GDP ratios. A similar set of figures are given for subsidy plus transfer and subsidy only as a percentage of total government expenditure plus net lending in Table A3.2. Since comparable figures for India are available in these two tables only with respect to the subsidy plus transfer figures, some observation can be made only in this context. For most of the developed countries, subsidies and transfers as a percentage of GDP account for 10 per cent or more. The Indian figure (7.27) lies in the lower half of the range between the lowest (2.42) and the highest (18.14) ratios.

**Table A3.1**  
**Subsidy and Other Current Transfers as Percentage of GDP**

<i>Countries</i>	<i>1988</i>	<i>1990</i>	<i>1992</i>	<i>1994</i>
U.S.	11.49	11.87	13.43	13.42
Canada	12.37	13.54	N.A.	N.A.
Australia	17.24	15.75	18.65	19.38
Japan	8.56	8.46	N.A.	N.A.
U.K.	18.14	19.84	24.21	N.A.
India	7.27	7.43	7.12	N.A.
Indonesia	2.42	3.91	2.44	N.A.
Korea	6.09	7.45	8.41	9.06
Malaysia	13.50	12.76	13.07	12.15
Pakistan	8.07	9.82	11.41	11.83
Philippines	7.55	8.58	7.99	N.A.
Singapore	10.51	10.33	9.64	N.A.
Sri Lanka	9.31	9.37	9.33	9.45
Thailand	9.50	8.76	9.41	N.A.
Argentina	3.51	3.21	N.A.	N.A.
Brazil	5.44	5.80	3.89	N.A.
Chile	6.58	5.67	5.74	5.87
<b>Subsidy Exclusive of Other Current Transfers as Percentage of GDP</b>				
U.S.	0.69	0.63	0.62	0.55
Australia	0.66	0.52	0.64	0.64
Indonesia	0.37	1.83	0.53	N.A.
Sri Lanka	1.70	1.99	1.20	1.27
Thailand	2.37	2.77	1.75	N.A.
India	287.8	397.8	500.6	554.7

(Nominal figure of subsidy and other current transfers in Rs. billion)

Source: Government Finance Statistics (1995), IMF.

Note: 1988 refers to 1987-88.

If we look at total subsidy and current transfers as a percentage of either expenditure or GDP, India's position was eleventh and twelfth in 1988 respectively in the list of selected countries (see Tables A3.1 and A3.2). However, India's position improved marginally in 1992 when total subsidy and current transfers of the consolidated Central government declined from 7.3 per cent of GDP in 1988 to 7.1 per cent in 1992. Similarly, the share of

subsidy and transfers in total expenditure plus net lending declined from 32.6 per cent in 1988 to 31.2 per cent in 1994. Average share of subsidy and transfers over the sample period in total expenditure plus net lending in India (33.3 per cent) is lower than all countries in the sample except Indonesia, Sri Lanka, Argentina, Brazil and Chile. As far as the average share of subsidy and current transfers in GDP is concerned, India does better than all the countries in the sample except Korea, Brazil, Indonesia, Argentina and Chile.

**Table A3.2**  
**Subsidy and Other Current Transfers as Percentage of**  
**Total Expenditure and Net Lending**

<i>Countries</i>	<i>1988</i>	<i>1990</i>	<i>1992</i>	<i>1994</i>
U.S.	49.41	49.78	54.56	58.08
Canada	57.52	56.77	N.A.	N.A.
Australia	63.12	63.49	66.68	68.59
Japan	52.07	52.94	N.A.	N.A.
U.K.	52.53	54.74	58.75	N.A.
India	32.55	34.18	35.43	31.24
Indonesia	12.59	20.55	13.05	N.A.
Korea	38.83	40.14	44.95	45.95
Malaysia	51.97	44.84	46.49	48.74
Pakistan	32.50	38.70	43.27	45.41
Philippines	44.33	42.37	41.77	N.A.
Singapore	50.79	49.80	48.96	N.A.
Sri Lanka	26.99	30.22	33.93	32.60
Thailand	57.55	59.24	60.08	N.A.
Argentina	31.55	28.72	N.A.	N.A.
Brazil	15.38	14.68	12.20	N.A.
Chile	24.93	28.58	28.22	28.68
<b>Subsidy Exclusive of Other Current Transfers as Percentage of</b> <b>Total Expenditure and Net Lending</b>				
U.S.	2.98	2.64	2.51	2.38
Australia	2.41	2.11	2.30	2.28
Indonesia	1.92	9.62	2.84	N.A.
Sri Lanka	4.92	6.42	4.35	4.37
Thailand	14.38	18.74	11.16	N.A.

Source and Note: As in Table A3.1.



**Table A3.3**  
**Subsidy as Percentage of GDP (General Government)**

<i>Countries</i>	<i>1988</i>	<i>1990</i>	<i>1991</i>
U.S.	0.644	0.509	0.525
Canada	0.187	1.756	2.136
Australia	1.370	1.519	1.544
Japan*	0.918	1.094	0.854
U.K.	1.305	1.153	1.067
India	3.619	3.47	3.188
Korea	0.306	0.553	0.778
Malaysia*	0.003	0.095	0.133
Pakistan*	1.657	1.097	0.696
Philippines	0.339	1.242	0.663
Sri Lanka	1.024	1.149	1.375
Thailand	0.347	0.938	0.633

Source: *Year Book of National Accounts* (U.N.).

Note: \* Government plus supernational organisations.

Figures refer to calendar year.

However, when a comparison is made using the SNA figures (Table A3.3) for subsidy provided by General government, that includes States and local governments, as percentage of GDP, a different picture emerges. The subsidy-GDP ratio is higher than those for many of the developed countries. During the pre-reform period, total subsidy as a percentage of GDP was highest in India. However, it has declined from 3.6 per cent in 1988 to 3.2 per cent in 1991. The total subsidy remained much higher in proportion to GDP in India at the start of the reforms than in many developed countries and Asian countries.

From the ASI studies, apart from measuring subsidies as a percentage of GDP, the relative importance of different policy objectives in the total subsidies, and the relative importance of different subsidisation tools has also been brought out (Clements, *et.al.*, 1995). This information, however, relates mostly to the developed countries. The OECD and the EFTA averages along with individual figures for a selected list of countries are summarised in Table A3.4. Among the policy objectives, trade and regional objectives appear to be relatively important in the developed countries. The relative importance

of different subsidisation tools has been brought out in Table A3.5. Cash subsidies predominate. Although individual country profiles differ, tax subsidies also appear to be quite important.

**Table A3.4**  
Policy Objectives of Government Subsidies  
(as Percentage of Total)

<i>Countries/Country Groups</i>	<i>R&amp;D</i>	<i>SME*</i>	<i>Trade</i>	<i>Sectoral</i>	<i>Regional</i>	<i>Other</i>
OECD (average 1986-89)	10	4	15	8	18	45
EFTA (average 1985-89)	9	1	3	17	19	51
U.K.	10	9	24	3	24	30
U.S.	9	4	14	-	10	63
Sweden	10	3	1	27	22	37
Switzerland	37	4	14	-	27	18

Source: Clements, *et.al.* (1995).

Note: \* Small and medium enterprises.

**Table A3.5**  
Subsidisation Tools Applied in Selected OECD Member Countries  
(Averages for 1986-89)

<i>Countries</i>	<i>Cash Subsidies</i>	<i>Tax Subsidies</i>	<i>Equity Subsidies</i>	<i>Soft Loans</i>	<i>Guaran-tees</i>	<i>Mixed Instruments</i>
Australia	64	19	-	-	-	17
Belgium	7	25	7	-	-	60
Canada	94	-	-	-	2	4
France	42	17	16	3	22	1
Germany	38	43	2	1	15	2
Sweden	37	15	1	18	10	19
Switzerland	14	-	-	-	78	8
U.K.	55	-	24	-	15	5
U.S.	7	89	-	4	1	-

Source: Clements, *et.al.* (1995).