

A NOTE ON SOURCES OF AND METHOD OF ADJUSTMENT IN THE DATA

B6.1 An important pre-requisite for making normative assessment of expenditure and tax revenues of the State Governments is the availability of detailed data on various determinants. In the case of tax revenues, disaggregated data are required on the various tax base proxies in different States. Similarly, in the case of expenditures, information on various quantity and cost factors affecting the States' expenditures are needed.

B6.2 Unfortunately, for many of the determinants, detailed data are not available on a comparable basis for all the State Governments. In such cases, we had to be satisfied with proxies. Within the time available to us, we assembled considerable information on various factors affecting the tax revenues and expenditures of the States. In this note, we broadly indicate the adjustments that have been made in the data in respect of some important variables used in our analysis.

Adjustment In The Data On Tax Revenues And Non-Plan Revenue Expenditures :

B6.3 The first step in the tax and expenditure analysis is to put the data on a comparable basis both over time and across the States. The non-uniformity in the presentation of the budgets among the States necessitates a proper reclassification to render them comparable. While reclassifying, we have taken care to exclude expenditures on account of contributions to various funds, but included the expenditures met out of such funds. Further, "Appropriation for Reduction or Avoidance of Debt" which is essentially a contribution to the Sinking Fund has been excluded as this contribution is not made out of the surplus in the revenue account nor is it systematic and uniform across the States. On the side of tax revenues, Electricity Duty has been excluded as it is taken into account while estimating the normative returns from Electricity Boards. The cess on Mines included under Land Revenue in some States has been transferred to non-tax revenues for the sake of uniformity in presentation.

Adjustment In The Data On Explanatory Variables:

1. Population And Its Various Components.

B6.4 The latest detailed population data from the Census are available for 1981. For the subsequent years, we have taken the projections made in the "Report of the Expert Committee on Population Projections" published by the Office of the Registrar General, Ministry of Home Affairs, Government of India. These data pertain to 1st October of each year. The estimates of urban/rural population also are available in this source from 1981, but only quinquennially. For the intervening years, we have worked out the estimates on the basis of the compound growth rates and adjusted them appropriately to get the mid-year estimates. Age-wise distribution of population among the States, however, is not available in the above publication. We have, therefore, worked out the estimates for the relevant years on the basis of the data available from the Censuses of 1971 and 1981, using State-specific compound rates of growth.

B6.5 Another important variable used in the analysis is the proportion of population in hill/desert areas in different States. Hill area population figures are available both in the Sixth Five Year Plan document (page 414) and the Seventh Five Year Plan document (Volume II, page 339). The list of hill areas identified by the Planning Commission as per 1981 Census is also given in the latter publication. Our analysis showed that the hill areas so

identified are slightly larger than the areas identified according to the 1971 Census, particularly in the Western Ghats region. We have computed the compound rate of growth of population in hill areas commonly identified according to 1971 and 1981 Censuses and applied them to the hill area population figures in 1981 to arrive at the estimates of the variable for the period 1981 to 1987. Similarly, population in desert areas has been identified on the basis of the list of districts under the Desert Development Programme given in the Seventh Five Year Plan document (page 350). By applying the rate of growth of population in the State, estimate of desert population has been made for the years 1981 to 1987.

2. Computation of Inter-State Price Index:

B6.6 Conceptually, to estimate the differences in the cost of providing public services on account of price differences, it is necessary to construct a suitable index of price differences across the States. This would, however, require detailed information on the commodity composition of government purchases and the prices of the commodities in different States. Unfortunately, such data are not available and the index of price differences across the States relevant to deflate government spending cannot be estimated with the existing data base.

B6.7 However, one can take a broad view that, although the weighting pattern is different, differences in the general price level relevant for the urban areas can be taken as a proxy for the differences in the government expenditure deflator. However, in respect of neither the wholesale prices nor the consumer prices, do we have an index showing the differences in the price levels across the States. The consumer price index for industrial workers computed for 70 centres only gives us the information on the differential growth of prices taking 1982 as the base year. But it does not indicate the differences in the price levels prevailing in these regions at any given time. In other words, the price indices that are available for different centres or those aggregated for the States only show the relative change in prices over time, but do not indicate the absolute difference in prices across these regions.

B6.8 In order to take account of the cost disabilities of providing public services arising from price differences, we have made an attempt at constructing an inter-State price index for a fixed consumption basket for a point in time. The inter-State price index computed by us is based on the data collected by the Labour Bureau for constructing the Consumer Price Index (CPI) for industrial workers (new series). The basic data drawn from a survey conducted by the Labour Bureau gives average annual prices for about 300 commodities in 70 centres for the year 1982. The items cover the following groups : (i) food, (ii) pan, supari, tobacco and intoxicants, (iii) fuel and light, (iv) clothing, bedding and footwear, and (v) miscellaneous, which covers medical care, education, recreation and amusement, transport and communication, personal care and effects and other items. The Labour Bureau also has all-India item-wise weights (provisional) which we have used to represent a fixed consumption basket for all the regions.

B6.9 The index number of consumer prices in various centres according to the new time series, however, are available to us only for 1983 and 1985. For 1984, the indices have not been compiled for the new series and the 1986 and 1987 indices were not provided to us as they were being used to derive the link factors with the old (1960) series and might undergo some

revisions. The percentage changes in the old series are, therefore, used for those years for which the new series are not available.

B6.10 In attempting to compare prices across regions, some important qualifications should be borne in mind. First, there are differences in the variety and quality of commodities across different centres/States. In respect of some goods, this problem prevails even across different markets in the same centre. In such cases, the Labour Bureau does not work out a base year average price, but rather constructs price relatives for each market and then averages them. We cannot, however, overcome this problem and should be aware that the index we have constructed may also reflect price differences due to quality differences. Second, the price indices may be affected by the extent of public distribution system prevalent in different centres.

B6.11 The following further adjustments in the data had to be resorted to before computing the index of price differences :

- (a) In respect of commodities for which prices were not available in some States, substitute prices were used by taking the prices prevailing in States similar in terms of climate, terrain, socio-economic characteristics and preferences.
- (b) The prices were standardised for fixed units and quantities for each of the centres. State-wise averages and all-India prices were then calculated by assuming equal weight for each centre.
- (c) Some of the commodities or services appearing in the Labour Bureau's CPI were deleted from, or are not covered by, our inter-State price index. These include :
 - (i) Commodities for which very few centres reported prices;
 - (ii) commodities which had large variations in quality or could not be standardised for unit prices; and
 - (iii) commodities which had negligible weights.
 However, care was taken to ensure that the total (all-India) weight of the remaining commodities which were used in our inter-State price index added up to at least 75 per cent of the Labour Bureau's price index.

3. *Computation of Standard Employees:*

B6.12 One of the important components of government spending at the State level is the expenditure on wages and salaries. The expenditure on wages and salaries can differ across the States due to differences in either the number of employees or their salary levels. Generally, public services are quantified on the basis of the inputs that have gone into their provision, and given the employment intensive nature of government activity, information on the number of employees becomes essential to determine the normative levels of spending. Similarly, differences in the salary levels can be an important factor causing variations in the cost of providing public services across the States.

B6.13 However, employees belong to different classes or categories and a head count measure might lead to erroneous conclusions since the proportions of different categories of employees might differ significantly across the States. Further, our attempt to obtain data on the number of employees under various major heads of expenditures in different States too did not meet with success, as a number of States could not supply these figures.

B6.14 In the case of some items of expenditures, a representative category of employees can be taken to quantify the levels of services. The number of judges in subordinate courts and high courts, the number of police constables, and the number of teachers in primary schools and secondary schools are some examples of taking the representative categories of employees in the cost functions. In such cases, we had to take their salaries as an additional explanatory variable. However, in the case of many expenditure functions, we could not find a representative category and at the same time, could not take the head count measure of total number of employees for the reasons mentioned earlier. In such cases, therefore, we have standardised the number of employees. For the purpose, we have obtained information on total salary expenditures under various major heads. Dividing this figure for a State by the average salary per employee in the 14 major States, we have obtained the number of standard employees under each major head in different States for the period, 1980-81 to 1986-87. The information on salary expenditures under different major heads has been taken from the Subsidiary Points submitted by the States to the present Commission for the period 1984-85 to 1986-87. For the earlier period, i.e., 1980-81 to 1983-84, the details submitted to the Eighth Finance Commission have been used. In some cases, where we could not obtain the data for some year, the information available in the subsequent year or the preceding year was used to generate the proportion of salary expenditures under different major heads and the total expenditure on salaries was distributed accordingly.

4. *Computation of salary levels of employees in the States over the period, 1981 to 1987:*

B6.15 Wherever we have used the number of standard employees, the salary differences across the States are automatically taken account of. However, wherever a representative category of employees is taken as an explanatory variable, we have had to use an additional variable indicating the salary levels of the representative category in the States. For the purpose, we have computed the salary levels on the minimum basic pay in the scale of the representative category in different States. Salary was taken to include basic pay and dearness allowances. The report of the Eighth Finance Commission gives the salary levels for the representative categories of employees as on 1.4.1982, corresponding to the Consumer Price Index, 408. We have worked out the time series of salary levels in the States from 1.1.1981 to 1.1.1987 for each of the representative categories taking into account the changes in the pay scales and dearness allowances subsequent to 1.4.1982. Information from different States on the changes in their pay scales was obtained and wherever such changes had taken place subsequent to 1982, we have incorporated them while computing the salary differences. The number of instalments of Dearness Allowance (DA) paid subsequent to 1.4.1982 were computed on the basis of the increase in the Consumer Price Index over 408, with one instalment accruing for every 8-point increase in the Index. To obtain the value of each instalment of DA, we first estimated the difference between the actual DA paid and the DA payable on the salary scale in the base year (1982). By dividing the above for every 8 points in the price index corresponding to the DA payments subsequent to the base year CPI, 408, the value of each DA instalment has been obtained for the representative category.