

APPENDIX ADATA : ADJUSTMENT AND SOURCES

The variables on which we need data for the present study are of two types. First category includes socio-economic and demographic variables and the second category includes government expenditure variables. Section I discusses the sources, problems and required adjustments for the data on socio-economic, demographic variables and Section II is devoted to the sources and adjustments of the data on government expenditure variables.

I. Basic Data on Socio-economic and Demographic variables for 1961, 1971 and 1981 :

Although, in majority of the cases data were readily available, in some of the cases a few adjustments were needed, either on account of unavailability of some of the data or due to acknowledged severe measurement errors in the available data or due to several other reasons discussed below.

MLR and FLR : According to Indian census, a person who can read as well as write is defined to be a literate person. Our literacy figures are; percentage of populations age five and older who are literate. The data are readily available from the decennial Census publications for the

years 1961, 1971 and 1981. Since the set of data for these three years are quite comparable and consistent over years and across the States, no adjustments were needed.

Birth Rate : Although, data on this variable based on Civil Registration System are readily available from various sources like Health Statistics of India and Vital Statistics of India which are published every year, We have not used them, since they are known to be highly defective on account of high extent of underreporting of births and deaths in various states. (See, Vital Statistics of India, 1979 and 1980). Instead, we have used the data on BR based on Sample Registration System (SRS) which are likely to be fairly reliable (See, Vital Statistics of India). For the years 1971 and 1981, we could obtain the SRS data on BR, from The Yearbook of Family Welfare Programme in India - 1983. However, for the year 1961 SRS data are not available since the system started functioning only around mid sixties. For 1961 therefore, we used the crude estimates of Birth Rate for the period 1951-61, based on census actuaries. This data were directly obtained from Zacharia and Patel (1984). For the years 1971 and 1981 three yearly average was used, except for the states like Bihar and West Bengal, where even the available SRS data are found to be quite defective. Zacharia and Patel (1984) had made due adjustments in the data for these two states for the years 1971 and 1981 which we adopted for our purpose.

Death Rate : For this variable also, we did not rely upon the data based on Civil Registration System due to the same reasons mentioned earlier. For the period 1970-72 and 1980-82, SRS data on this variable were available and hence were used. These data were obtained from the Year Book of Family Welfare Programme in India, 1983. SRS data on Bihar and West Bengal for these two periods were reestimated due to their known defects of under reporting. They were reestimated by us on the basis of actual reported data and possible extent of underreporting available from Vital Statistics of India, 1979. For the year 1961 we had to depend on crude estimates of DR for 1951-61, available from Agarwal, S.N. (1967). Data on Jammu and Kashmir were not available from this source and therefore were estimated by similar method as above.

Consistency of this estimate was checked with respect to sample data on Jammu and Kashmir for the years 1964-67 given by Mitra (1978, Table 2.3.8).

Infant Mortality Rate : Data base on this variable has been quite weak, despite the importance and wide spread interest in infant mortality in India. Nevertheless, we have used the data on this variable based on SRS for the years 1971 and 1981 since they are considered to be the most reliable out of all available sources of data. For the states like Bihar and West Bengal even SRS data were not readily available and therefore had to be estimated by applying all India rate of

fall in IMR to, already crude estimates of IMR for the years 1951-61. This was no doubt, a crude but inevitable adjustment. For the period 1951-61, three alternative estimates of IMR were available - estimates of IMR by Kohli (1977); by S.P.Jain (1967); and by Sample Census (1962). Out of these three estimates a plausible set of data for the period 1951-61 was constructed, which is presented in Appendix Table B.1, Col. 6. Moreover, for the year 1981, SRS data on IMR were not available and hence average of 1979 and 1980 was used for the purpose.

Life Expectancy : For the year 1981, statewise data on LE at birth are yet not available and therefore, we had to drop this variable from our model for the period 1971-81. Data on LE for 1951-61 were obtained from Kohli (1977). For 1961-71, we used the estimates of LE by Natarjan et al. (1977) reproduced by Mitra (1978, Table 2.3.22). Figures for Kerala as calculated by them was without the adjustment due to decline in mortality and therefore had to be reestimated. It was adjusted by taking percentage increase at all India level.

Female Singulate Mean Age At Marriage : For the year 1961 FMAM in different states was estimated by Goyal (1975), cited in Mitra (1978). We made use of these estimates for the year 1961. For 1971 and 1981, data on FMAM were obtained from Census of India, 1981, Part II - Special, Report and Tables based on 5 percent sample data. Data for Haryana for 1961 were

obtained from Zacharia and Patel (1984).

Proportion of People Below The Poverty Line : Due to differences in method and criteria used for measuring poverty, the data sets for 1961, 1971 and 1981 on this variable are not strictly comparable, although, some attempts were made to make them at least broadly comparable. In absence of availability of the consistent set of estimates for these years, we had to reconcile with the existing data on this variable. For the year 1961, estimates of Dandekar and Rath (1971) for all the states except Kerala and Punjab were used. The authors are criticised on the ground that they have grossly overestimated the number of poors in Kerala and underestimated the number of poors in Punjab (Thakur, D.S., 1985). Panikar (1972) had put their estimate on Kerala to careful scrutiny. Although, Panikar did not estimate the number of poors in Kerala, he concluded that the requisite calorie level in rural Kerala would be met by only half the expenditure as considered by Dandekar and Rath. If we apply Panikar's (1972) criteria, then the proportion of people below the poverty line in Kerala roughly turns out to be 45 percent of the total population, which is used for the present study. This estimate is quite consistent with Bardhan's (1974) and Da Costa's (1963-64) estimates. Similarly, for Punjab, we adopted the view of Rajaraman Indira (1975) and used her estimate of poverty proportion in Punjab for the year 1961.

For the year 1971, data on poverty were obtained from Report of the Finance Commission (1978), Appendix IV.9, p. 214 and for 1977-78 were obtained from Sixth Fiveyear Plan 1980-85, p. 16. Since the statewise data on poverty for 1981 were not available the 1978 estimates were linearly extrapolated by applying all India rate of fall in poverty during 1978-81. All India estimates of poverty were obtained from Seventh Five year Plan 1985-90. Although, the above estimates of poverty for 1961, 1971 and 1978 are based on NSS Consumer expenditure data only, they have used slightly different norms for measuring poverty. In the study by Dandekar and Rath (1971) an intake of 2250 Calories per capita per day was assumed as adequate under Indian conditions, both in rural and urban areas; whereas for the year 1971 and 1978 estimates are based on the criteria given by Planning Commission. For the year 1971 and 1978, poverty line was defined as the mid-point of the monthly per capita expenditure class having a calorie intake of 2400 per person in rural and 2100 in urban areas.

Crime Rate : Total number of crimes considered by us include the major reported crimes under Indian Penal Code, such as murder, decoity, theft and house breaking only. These data were obtained from various volumes of Statistical Abstract of India. For the year 1961 and 1971, three yearly average was used. For 1981, statewise data on this variable were not

available and therefore had to be estimated through linear extrapolation by applying all India rate, available from the above said publications.

Child Worker Participation Rate : Number of workers between the age 5-14, engaged in any kind of economic activity are defined to be the child-labourers. Total number of child worker between the age 5-14 divided by total number of population of that age would give the Child Worker Participation Rate (CWPR). These data were estimated according to 1971 census definition of 'workers' which does not include 'marginal' workers. For the years 1971 and 1981 these data were obtained from Census Publications on General Economic Tables. For the year 1961 the data on main workers were obtained from the 'Resurvey'. The number of child workers for 1961 were estimated by applying percentage of child labour to total labour as per 1961 census to these 'Resurvey' data. Although we made an effort to make the data for 1961, 1971 and 1981 comparable, they cannot be considered as strictly comparable on account of change in definition of 'workers' between 1961 and 1971 census.

Male Participation Rate in Non-Agriculture Sector : Total male workers minus male agriculture labourers and cultivators are defined to be the workers in non-A Sector. For the years 1971 and 1981 these data were obtained from Census Publication, on

General Economic Tables. However, between 1961 and 1971 there was change in the definition of worker and therefore 1961 data on workers were reestimated according to 1971 definition. These estimates were available from Resurvey (1974) and ~~also~~ used for our purpose.

Estimates of Real PCI and Population : For the years 1961 and 1971 the estimates of real per capita SDP at 1960-61 prices were directly obtained from Dholakia, R.H. (1985). For the year 1981 the data were obtained from CSO (1984) and deflated with appropriate price indices to convert them in to 1960-61 ~~constant~~ Constant figures. Finally, Midyear population of each state during 1961 to 1981 was estimated through geometric interpolation assuming continuous compound rate of growth of population, for the purpose of generating per capita expenditures and other rates.

One additional point needs to be noted here. Due to bifurcation of the state of old Punjab into Haryana and Punjab in 1966-67, some of the data for these states for 1960-61 are not available. For instance, data on child worker, crime rate, poverty etc. for 1961 for Haryana and Punjab were not available separately and had to be estimated by us through appropriate assumptions. The basic data on all the above variables are presented in Appendix B.

II. Basic Data on Expenditure Variables :

Data on Government expenditure on different categories relate to the state government's expenditure on revenue account only. This includes the expenditure met out of total revenue of the states including grants in aid. Statewise data on these expenditures at current and constant (1960-61) prices for the years 1960-61 to 1977-78 were directly obtained from Rajachandrasekar (1981). For rest of the periods the data were obtained from various volumes of Reserve Bank of India Bulletin and Combined Finance and Revenue Account of the Union and State Governments. Data on primary education, for 1981 could not be readily obtained and therefore were estimated on the basis of previous year's data on government expenditure on primary and total education. Having done this, the average annual rates of government expenditure under various heads during 1961-71 and 1971-81 were calculated. They are presented in Appendix Table B.7 and B.8.

As has been mentioned the data on current expenditures were deflated by overall SDP deflators implicit in the official estimates of national income in current and constant 1960-61 prices published by CSO. Moreover, due to bifurcation of the old Punjab in 1967, the total expenditures in old Punjab before 1965-66 were divided between Haryana, Punjab and other territories in proportion to their population, to

arrive at the separate estimates of Punjab and Haryana for these years.

Total expenditure of the government consist of developmental as well as non-developmental expenditure. The former comprises the expenditure on social and community services and economic services. The non-developmental expenditures are defrayed on administrative services, collection of taxes and duties, debt services and pensions and miscellaneous general services. For the present study, only the former kinds of expenditure were considered. Total government expenditures on social and community services were further divided in to four categories viz. Expenditure on Primary Education (EPE), Expenditure on Other Education (EOE), Expenditure on Medical Health and Family Planning (EMHF) and Expenditure on Other Social and Community Services (EOSCS). EOE includes expenditure on secondary, higher and special education; which includes expenditure on adult education, commercial institutes, research, training, scholarship etc. EMHF consists of expenditure on medical relief, medical education, training, research, Expenditure on public health and sanitation, sewerage, water supply, prevention and control of diseases, prevention of food adulteration etc. EOSCS includes the expenditure on housing schemes, slum clearance, expenditure on social security and welfare such as education and welfare of handicapped, women's welfare,

minimum needs programme, pensions, relief on natural calamities, employment etc.

Expenditure on economic services comprise of four expenditures viz. Expenditure on Agriculture (EAG), Expenditure on Industry and Minerals (EIM), Expenditure on Water and Power Development (EWP) and Expenditure on Transport and Communication (ETC). EAG includes expenditure on agriculture, minor irrigation, soil and water conservation, area development, forests, community development, animal husbandary, fisheries etc. EIM consists of expenditure on industries, village and small scale industries and mines and minerals. EWP includes the expenditure on multi purpose river projects, irrigation navigation, power projects and water and power development services. ETC includes the expenditure on road and bridges, water transport services, tourism and communication services.

The data for 1961 to 1981 were classified as per the new accounting procedures available from R.B.I. Bulletin, May, 1974, p. 883, by Rajachandrasekar. He had regrouped and reclassified some of the current data with the help of statement of classification made available by the Ministry of Finance, Government of Gujarat. We made use of these available data for the purpose of our illustrative exercises carried out in Chapters 4, 5 and 6.

* * * * *