

REGIONAL ACCOUNTING IN INDIA*

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INTRODUCTION

Studies on regional accounting in India were initiated in the forties of the present century. A region was mostly taken to coincide with a State, that is an administrative unit which is one of the constituent units of the India federal set-up with full autonomy in matters of internal administration and legislation, etc. These States at present are seventeen in number; there are also eleven union territories. These differ from each other in physical endowment, distribution of population in urban and rural areas, pattern of employment and material and manpower resources. The population of Jammu and Kashmir State with 4 million persons in 1969 is far larger than the population of a number of countries in Africa and Latin America while that of Uttar Pradesh with 89 million persons constitutes about 2.5 per cent of the world population. A number of States have metropolitan towns with wider responsibilities entrusted to them for undertaking developmental activities in areas under their jurisdiction. Several of them have Panchayati Raj (i.e., democratically elected) institutions at the district and village level. These institutions have administrative and developmental responsibilities for the areas under their jurisdiction and have to take decisions in respect of nature of developmental activities to be undertaken by them, priorities to be allotted to such activities, methods of finance and raising of resources, etc. As such the studies on regional accounting have not remained confined to the State level but have been extended to sub-regions, districts and metropolitan towns as well.

The objective of the present paper is to study the development of regional accounting practices in India. For this purpose, in the first instance, a broad framework of regional accounting in the light of the requirements for economic analysis and decision making at the Centre, regional and sub-regional levels is considered. This is followed by a discussion of the important developments in respect of (1) state income, state and district domestic product, (2) final expenditure, (3) saving, (4) inter-district and inter-state comparison of real income and level of consumption and (5) distribution of income. The use of input-output table at regional level has also been briefly considered. Finally, the current state of regional accounting in the country is discussed.

FRAMEWORK OF REGIONAL ACCOUNTS

A framework for regional accounts should be flexible enough to provide data required for economic analysis, decision making at the centre and state

*Views expressed in this paper are those of the author and not of the organization to which he belongs. The paper was prepared for the Eleventh Annual Conference of the IARIW, held in Nathanya, Israel, August 1969.

and even lower levels for the purpose of plan formulation and plan assessment. The objective of economic development in India has been to organize the efficient utilization of resources, increase production, step up the tempo of economic activity in general and industrial development in particular, and provide productive employment to all. At the State and lower levels this is sought by greater diffusion of enterprise and ownership of means of production, increasing productivity of the weaker units and widening opportunities of productive work and employment to the common man and particularly the less privileged sections of the society. All such diffusion and growth of activity and employment involve detailed local planning and implementation. It is through the adoption of this approach to area and activity development that the common man too can participate in and benefit from the growth of the economy. The imbalances in development as between States arise due to variations in the activities of co-operative, private (corporate and non-corporate) and public sector. Through a realistic and integrated program of activity development by these agencies, necessary conditions can be created to enable them to play their role effectively and the regional imbalances can be corrected. The basic goal of planned efforts is a rapid increase in the standard of living of the people through measures which also promote equality and social justice. The Plan should result in greater equality in income and wealth and there should be progressive reduction of concentration of incomes, wealth and economic power.¹

The framework of regional accounts in India should be so evolved as to best realize the above objectives. Some suggestions have been given on the subject of suitable framework of regional accounts in India. B. Natarajan² considered provincial income to be of great help in providing a guidance to future lines of economic policies. Uma Roy Choudhry (Mrs.)³ considered regional income as one of the most convenient measures of both the economic development of the area as well as welfare of its normal residents. S. Basu (Miss)⁴ considered estimates of States' income as the most comprehensive indicator of the progress. They reveal the structure of the State economy and are useful for regional policy formulation. B. Dey, M. Mukherjee and B. Roy⁵ questioned the usefulness of State income estimates in Indian conditions in an inter-State comparison of economic development and advocated the use of information on variations in levels of consumer expenditure and estimates of the quantity and value of material output by States; the former will give an idea of the differential levels of living between States while the latter will be needed in the assessment of production possibilities. They further suggested that comparisons of level of consumer expenditure should take into account seasonality and price level and

¹Fourth Five Year Plan, 1969–1974 (Draft), 1969.

²Natarajan, B. *An Essay on National Income and Expenditure in India*, 1949.

³Roy Choudhury, Uma (Mrs.) "Allocation of net domestic product for study of regional disparity"; in Report of the Ninth Conference of Central and State Statisticians, 1960.

⁴Basu, S. (Miss). *Distribution of final products in India by States during 1957–1958* A.I.C.C. Economic Review, January 4, 1962.

⁵Dey, B., Mukherjee, M. and Roy, B. "Certain problems concerning estimation of income, output and expenditure aggregates as well as preparation of social accounts at a regional level" discussed at a Seminar convened by Indian Conference on Research in National Income, at Poona, December, 1962.

it would be useful to have a price relative of items of consumer purchase and the budget patterns for different regions. They were aware of the fact that with the development of regional planning more detailed needs would arise and hence suggested that thought be given to a framework of regional accounts. R. Mehrotra⁶ considered the development of framework of regional accounts in other countries and adopted a simplified set of four consolidated accounts for each State based broadly on the lines of Richard Stones' regional framework, difference between the two being mainly in the treatment of Central Government sector. R. Dhar⁷ added a new dimension to regional accounts by compiling input-output tables not only for five broad regions of the country but also for the State of West Bengal and Calcutta metropolitan district.

Framework of regional accounts should evolve not only on the basis of requirements for decision making but also feasibility of collection of data to meet such requirements. The institutional sectors from the point of view of decision making may be classified into the following six categories under public and private sectors.

Public Sector

- (i) General administration consisting of Central Government, State Governments, local authorities, including metropolitan towns.
- (ii) Public sector enterprises controlled and/or operated by Central Government, State Governments, Statutory Corporations and local authorities.

Private Sector

- (iii) Private financial and non-financial corporate sector.
- (iv) Non-profit institutions serving households.
- (v) Household enterprises.
- (vi) Household consumer sector.

The State economy being an open economy it is difficult to compile any articulated set of accounts for States as available data on inter-State flows is limited in coverage and fuller data is not easy to collect. In view of this, attention should be concentrated on preparation of limited accounts mostly for the organized sectors to the extent possible.

The administrative activities of the Central Government and its many enterprises are spread over several States. There is a regular flow of data in respect of general administration and public sector enterprises which should permit compilation of accounts for the public sector as well as for each administrative authority operating in a State involving sometimes the adoption of allocation procedure in respect of activities of Central Government and its enterprises. In the case of corporate sector except for a few activities undertaken

⁶Mehrotra, R. Social Accounting & Regional Incomes in India, 1966. Thesis approved for Ph.D. Degree.

⁷Dhar, R. West Bengal and Metropolitan Calcutta: Input Output Tables and Projections 1958-1971, June 1967 (unpublished) and Study of Inter-regional and inter-sectoral relationship of Indian Economy, 1953-1954, Arthavijnana, Sept.-Dec. 1967.

by the headquarter, other activities are undertaken at the State level and as such with some efforts it should be possible to have regional accounts for the corporate sector as well. Difficulties arise in the case of private non-profit institutions and household sector. In the case of the former the problem is only to organize regular flow of data as the accounts are already available for these organizations. The household sector being large and generally unorganized, there are serious difficulties in the collection of data in respect of output, input, capital formation and saving. Hence, it may not seem appropriate to collect annual data, but adopt more efficacious methods and devote adequate resources after an interval of time with a view to obtaining as much information as is feasible. Data on household consumer expenditure is being regularly collected by National Sample Survey (N.S.S.). However, the estimates for the urban population are more reliable than the estimates for rural population and hence such data may fruitfully be collected with an interval of time so that improved estimates could be built up not only at a State level but at district level and for important metropolitan towns and city corporations. Attention is to be paid to collection of information on commodity consumption in greater detail which could permit a meaningful comparison of level of living of the States. Financial institutions play a major role in the developmental process and it seems appropriate to have information about their flow of funds to various sectors in different States on an annual basis. Sectoral rate of growth of regional economy not only helps in assessing the progress but also in deciding policies for development in respect of various industries. In respect of output of certain commodities specially in agriculture and large industries it would be useful if the indices of commodity output at regional level are available not only on an annual basis but also on a short-term basis. Further information on employment specially in the organized sector on a monthly basis should also prove useful.

From the above discussion it would, therefore, be obvious that although the national accounts provide an overall guide-line for regional accounts, the latter have to differ from the former in view of the open character of regional economy and difficulties of availability of data as well as paucity of resources even if such data could be collected on an annual basis. Therefore, there is need to compile such aggregates with further detailed breakdowns for the institutional sectors as well as kinds of economic activities which could help in decision making.

STATE INCOME AND STATE DOMESTIC PRODUCT

Estimates of state income or state domestic product have been compiled by the method of allocation, i.e., allocation of all India totals among States by suitable indicators by compilation of estimates on the basis of data collected at the local level or by a combined procedure depending upon the convenience of the estimator and availability of data.

B. Natarajan was the pioneer in the use of allocation procedure. He presented estimates of income for British provinces in undivided India for the years 1938–1939 and 1949–1950 by carrying forward the estimates of national income prepared by V. K. R. V. Rao^a for the year 1931–1932 in three broad

^aRao, V. K. R. V. National Income of British India, 1931–1932 (1940).

sectors: (a) agriculture, forestry, hunting and fishing; (b) industries; and (c) services including trade, transport, government, professional and domestic services. For price change he made use of the index number of wholesale prices published by the Economic Adviser, while for physical change he assumed no increase in agricultural production, for industry he made use of indices of industrial activity published by Capital and for services sectors the estimates had to be conjectural based on the use of available limited data in conjunction with increase in the number of persons employed. The estimates so arrived at were allocated among States on the basis of combined indices prepared for each sector. The agricultural index was based on (a) cultivated area, (b) population occupied in exploitation of land, (c) total yield of principal crops, and (d) livestock population (cows and buffalos). However, no specific weighting procedure was applied. What was considered as the most appropriate ratio in the light of figures worked out was adopted in each case. In the case of industry, separate ratios were worked out for organized and unorganized industries on the basis of number of persons employed in them and a combined index prepared, organized industries receiving a higher weightage than the unorganized industries. Here again the exact weighting pattern adopted had not been indicated. For the services sector the index was prepared on the basis of employment under each category weighted with reference to the average income under each source. The industrywise estimates so compiled on the basis of allocation of all India totals were further grouped into primary, secondary and tertiary sectors.

The estimates of income at current and constant prices for 1921–1922, 1931–1932 and 1938–1939 of one single State in India, i.e., the United Provinces (U.P.) was brought out in 1951 by the present author.⁹ These too were point estimates like those of B. Natarajan. In the compilation of these estimates extensive data on output, input income per worker, etc., at the State and local level was collected and pressed into service. The inventory method was used in respect of agriculture, livestock, fishing and hunting, forestry and mines, while income method was applied to remaining sectors, i.e., minerals, industry, transport, trade, professions and liberal arts and domestic services. The aggregate estimates were checked up by production approach and under-estimation in income assessed to income-tax estimated in order to arrive at estimates of net provincial income. For obtaining estimates of real income, a wholesale price index as well as a retail price index was specially prepared which were used for deflation purposes. The estimates of average income per earner at current as well as at 1921–1922 prices were also obtained for broad industry groups adopted by Natarajan. It would be interesting to compare the estimates of aggregate and per capita income at current prices for the year 1938–1939 prepared by the present author with those obtained by Natarajan.

Estimates of per capita income as well as those for tertiary sector by Natarajan are not very different from those by the present author but there are wide variations in respect of primary (55 percent) and secondary (29 percent) sectors as well as aggregate estimates (32 percent). The estimates obtained by allocation procedure may serve a useful purpose in measuring change in income and output overtime for a given State but have a restricted use insofar as they are utilized

⁹Tiwari, S. G. Economic Prosperity of the United Provinces, 1951.

ESTIMATES OF INCOME OF UNITED PROVINCES FOR 1938-1939
(Rs. crores)

Sectors (1)	By Natarajan (2)	By Tiwari (3)	(2) as Percentage of (3) (4)
Primary	202.0	130.2	155
Secondary	51.0	39.5	129
Tertiary	65.4	72.2	91
Total	318.4	241.9	132
Per capita	Rs. 59.0	Rs. 56.1	105

for measurement of regional disparities, unless the indicators utilized for making allocations are so numerous that ultimate results obtained are not likely to deviate much from those obtained on the basis of data collected at the local level.

Like Raj, Ravi Varma¹⁰ made an attempt to derive comparable estimates of state income for the period 1951-1952 to 1959-1960 from national aggregates by means of local economic indicators for the period 1951-1952 to 1959-1960. Index of agricultural production was used in allocating income from agriculture, livestock, forestry and fishing and index of industrial production in respect of income from mining, manufacturing and small scale sector. In respect of remaining sectors, indicators like employment, etc., were employed. His estimates being based on use of broad indicators, turned out to be widely different from those of Raj for 1958-1959 for which comparison was made.

The India Institute of Public Opinion¹¹ compiled estimates of state and per capita income as well as sectoral estimates for all important sectors and industry groups. The estimates so compiled related to years 1950-1951, 1955-1956 and 1965-1966 for the purpose of assessing the increase in State income as well as sectoral output as a result of First, Second and Third Plans. The methods followed were a combination of allocation approach and use of limited local data. As such the estimates did not turn out to be better than those compiled by SSBs.

M. D. Chaudhry¹² worked out estimates of state domestic product for the year 1955-1956 by allocating the provisionally revised all India estimates by Central Statistical Organization. The total economy was divided into four sectors: agriculture, mining and manufacturing, commerce and transportation and other services. Each sector was further divided into sub-sectors. The national total for each sub-sector was initially divided into small homogenous economic

¹⁰Varma, Ravi. "Estimation of State Income by Allocation Method." Paper discussed at Third Indian Conference on Research in National Income, 1961.

¹¹"Regional Distribution of Income of States of the Indian Union, 1950-1951 to 1955-1956" in Quarterly Economic Report, Volume III, No. 2, October 1956. "The National Income of the Reorganized States and Analysis of Economic Power in the new Indian States, 1950-1951 to 1955-1956", *ibid*, Vol. III, No. 3, January 1957. "Regional Incomes over the three Plans—An Analysis of Disparities in Regional Income Growth," *ibid*, Vol. III, No. 1, 1961.

¹²Chaudhry, M. D. Regional Income Accounting in an Underdeveloped Economy, 1966.

units as feasible and then each unit total allocated among the States according to available suitable indicator of the economic activity at the State level. Chaudhry's method of allocation is an improvement over that adopted by Raj inasmuch as local data was readily available to him; he made use of it in working out his indicator for the allocation of all India totals.

Making use of local data, V. V. Divatia¹³ prepared comprehensive estimates of domestic product for Bombay State for the period 1938–1939 to 1948–1949 in respect of agriculture, livestock, forestry, organized industry, public administration and house property based on both product and income approach. S. R. Bose¹⁴ also compiled broad estimates of State Income of Bihar for 1946–1947 by making use of limited data available at the State level. M. A. Telang,¹⁵ B. W. Chawan,¹⁵ M. D. Chaudhry,¹⁶ B. F. Haselitz,¹⁶ and the present author¹⁷ in collaboration with others, were some of the other workers who contributed towards compilation of comparable estimates of state domestic product and made extensive use of the local data. J. N. Sarma and Ajit Singh¹⁸ studied certain aspects of regional variations in economic growth on the basis of estimates of domestic product compiled by State Statistical Bureaus. A. G. Mazumdar¹⁹ studied rates of growth in organized industry, B. Dey²⁰ in mining industry while Ajit Singh²¹ in Agriculture.

National Council of Applied Economic Research (NCAER)²² undertook comprehensive studies in connection with their techno-economic surveys not only at the State level but also at the district level. They also undertook detailed sectoral estimates for agriculture, industry and services. These estimates were based on comprehensive data collected at the State level. The detailed procedures adopted by NCAER have been brought out in their several studies on the subject.

¹³Divatia, V. V. "Income of Bombay State" in Quarterly Bulletin of Economics and Statistics (Government of Bombay), 1950.

¹⁴Bose, S. R. "State Income of Bihar" in Quarterly Bulletin of Statistics (Government of Bihar), 1950.

¹⁵Telang, M. A. and Chawan, B. W. "Report on the State Income of Maharashtra, 1955–1956 to 1958–1959" in Quarterly Bulletin on Economics and Statistics, (Government of Maharashtra), 1961.

¹⁶Chaudhry, M. D. and Haselitz, B. F. "State Income of Delhi State 1951–1952 and 1955–1956" in Economic Development and Cultural Change, April 1963.

¹⁷Tiwari, S. G. and collaborators. "On the Statewise Estimates of Net Value of Output in Certain Sectors of Economy." Paper discussed in a Seminar on State Income organized under the auspices of the Indian Conference on Research in National Income, December 1962.

¹⁸Sarma, J. N. and Singh, Ajit. "Regional Variations in Economic Growth in India—some aspects." Paper discussed at the Sixth Indian Conference of Research on National Income, 1968.

¹⁹Mazumdar, A. G. "Statewise Rates of Growth of Organized Industry during the period 1951 to 1964". Paper discussed at the Sixth Indian Conference on Research in National Income, 1968.

²⁰Dey, B. "Growth of Mining Industry in the Indian Union by States, 1951–1960." Paper discussed at the Sixth Indian Conference on Research in National Income, 1968.

²¹Singh, Ajit. "An Estimate of Gross Value of Agricultural Output of the Punjab (excluding Pepsu) from 1901 to 1961". Paper discussed at the Fourth Indian Conference on Research in National Income, 1963.

²² (i) Agricultural Income by States, 1960–1961 (1965).

(ii) Income and Structure Manufacturing Industry, 1960–1961 (a Statewise analysis).

(iii) Summing up Pattern of Growth of States, 1965.

(iv) Estimates of State Income (1950–1951, 1955–1956 and 1960–1961 at 1960–1961 prices), 1967.

These procedures are by and large the same as those adopted by State Statistical Bureaus (SSBs) in the compilation of comparable estimates of State domestic product (to which reference is made in the next paragraph) except in respect of use of prices for estimating farm output and certain other minor variations. They also presented State income (domestic product) estimates at 1960-1961 prices for the years 1950-1951, 1955-1956 and 1960-1961 and made significant contributions to the development of regional accounts and provided comparable and valid estimates of State domestic product for assessing effects of developmental efforts in various States during the first two Plan period.

Among the official agencies, estimation of State domestic product was first started by the SSBs of Bombay, U.P. and Bihar around the 1950's. This was followed by Madhya Pradesh. Estimation work on a large scale started in 1957 on the lines followed by the National Income Committee, when the subject of State income was discussed by a preliminary Indian Conference on Research in National Income and on whose recommendation the Central Statistical Organization (CSO) constituted a Working Group on State Income, to provide continuing guidance to SSBs for compilation of comparable estimates of State Income. In the first few years, the Working Group devoted itself to examination of the estimates of state domestic product compiled by individual States at current as well as at constant prices with different base years and made recommendations for their improvement. The work in this field got speeded up after 1962. The CSO in the mean time collected detailed information on concepts and procedures followed and source material used by SSBs in respect of agriculture, mining and manufacturing and service sector and the quality of basic data used in working out estimates for agriculture. These provided the basis for resolving

TABLE 1
NET DOMESTIC AND PER CAPITA PRODUCT BY STATES FOR 1964-1965

States	Net Domestic Product (excluding defence) (Rs. millions)	Population ('000)	Per Capita Domestic Product (other than defence) (Rs.)
1. Andhra Pradesh	16,900	38,518	438
2. Assam	5,800	13,160	441
3. Bihar	15,050	50,384	299
4. Gujarat	11,890	22,724	523
5. Haryana	4,270	8,465	504
6. Jammu & Kashmir	1,270	3,739	341
7. Kerala	7,250	18,468	393
8. Madhya Pradesh	13,200	35,350	373
9. Maharashtra	22,770	43,320	526
10. Mysore	10,750	25,602	420
11. Orissa	6,580	18,976	347
12. Punjab (Reorganized)	7,140	12,417	575
13. Rajasthan	7,950	22,328	356
14. Tamil Nadu	15,520	35,755	434
15. Uttar Pradesh	29,850	79,783	374
16. West Bengal	19,160	38,442	498

the problems which were hindering compilation of comparable estimates of State domestic product. The Working Group on State Income has laid down standard methodology for adoption by SSBs in most of the sectors. Comparable estimates of State domestic product at current prices for the years 1961–1962 to 1964–1965 have been finalized and those in respect of 1964–1965 are presented in the following table. However, such estimates at constant (1960–1961) prices are available only for agriculture, forestry, fishing, mining and manufacturing sectors and efforts are in progress for compilation of estimates for the remaining sectors. In the evolution of standard methodology two approaches have been adopted: (i) use of local data in respect of broad sector agriculture, manufacturing, transport by other means, trade, storage, hotels and restaurants, real estate and ownership of dwellings, local administration and other services; (ii) allocation procedure in respect of income from railways, banking and insurance, Central Government services and communication. The method of estimation in respect of sectors under (i) is exhaustive and is broadly the same as adopted for compilation of national income estimates. In fact sectoral estimates for the country have been arrived at by aggregation of estimates compiled at State level. Indicators for allocation in respect of (ii) are based on the papers by Mrs. Uma Roy Chaudhry²³ and K. N. C. Pillai²⁴ and on the work undertaken in the Central Statistical Organization and State Statistical Bureaus.

With respect to railways, after adjusting for wages and salaries of the headquarters staff, the remaining product is divided into (a) value added from passenger traffic, (b) value added from goods traffic; the former is allocated among States on the basis of track kilometres and the latter on freight tonne kilometres. In respect of communication, Statewise breakdown in respect of Posts and Telegraphs and Overseas communications are available which are subtracted from national totals and the remaining income allocated among States on the basis of such indicators as total expenditure, circle-wise and balance of revenue over expenditure. For Central Government services other than defence services and establishments located abroad, Statewise information obtained from Accountant General is duly adjusted for expenditure on staff shown under “India Circle” in the light of information obtained from Central Ministries. For banking and insurance, Statewise data on wages and salaries is separately available; rent is allocated on the basis of employment and operating surplus allocated on the basis of bank credit in respect of banking sector and net premium income in respect of insurance sector.

Estimates of district domestic product at current prices were compiled by S. R. Bose,²⁵ Madhya Pradesh SSB,²⁶ Assam SSB²⁷ and the NCAER.²⁸ The

²³Roy Chaudhry, Uma (Mrs.). *Ibid.*

²⁴Pillai, K. N. C. “Statewise Breakdown of National Income” in the Report of the Ninth Conference of Central and State Statisticians.

²⁵Bose, S. R. “Inter-District Levels of Income in Bihar” in Quarterly Bulletin of Statistics, Bihar, 1955.

²⁶SSB, Madhya Pradesh. District Income Estimates of Madhya Pradesh—1950–1951 to 1956–1957 (1960).

²⁷SSB, Assam. Districtwise Allocation of State National Income of Assam for the year 1960–1961 (1962).

²⁸National Council of Applied Economic Research: Inter-District and Inter-State Income Differentials—1955–1956 (1963).

procedure generally followed for sectors other than agriculture was allocation of State totals in the ratio of employment at district level. Estimates for agriculture are based on the use of district production and prices. In fact even for estimation of national income product from agriculture is worked out by use of data at district level. Estimates of district being very rough, only limited use has been made of them.

FINAL EXPENDITURE

Data collected by the National Sample Survey (NSS) on household consumption expenditure in rural and urban areas has generally been used in building up aggregate estimates of final expenditure. As such, no problem has been posed in this respect except for the fact that the estimates may have a large margin of error because of limited sample size. Data for general government consumption expenditure for Centre, State and local authorities for 1957–1958 and 1958–1959 were published by the Central Statistical Organization (CSO)²⁹ and also brought out by S. B. Rangnekar and his associates³⁰ and were used by research workers for estimation of general consumption expenditure. However, the problem posed was with respect to Central Government expenditure on administration. S. Basu,³¹ in her effort to build up estimates of final expenditure for the year 1957–1958, made use of the relative proportion of Central Government expenditure among States for allocation purposes. However, S. B. Das Gupta,³² in his effort to obtain comparable estimates of income accruing to different States during 1957–1958 and 1958–1959, adjusted the all India total by 3 percent to make an allowance for Union Territories and then distributed the residual among the States on the basis of Statewise population.

Statewise estimates of capital formation for all the States or for one single State or for an industry or for a few industries were attempted by several workers. In order to obtain estimates of capital formation for 1957–1958, S. Basu projected the estimates of capital formation compiled by the NCAER for the year 1948–1949 to 1956–1957 in respect of farm investment, rural construction, urban construction, non-corporate business investment and transport equipment. These, together with the estimates of capital formation in the public sector as well as in the corporate sector, were allocated among States. Farm investment and rural and urban construction were allocated on the basis of population in rural and urban areas. Non-corporate business investment and investment in transport equipment was allocated in the ratio of total population of each State. Capital formation in the corporate sector was allocated in the ratio of paid-up capital of joint stock companies. The data in respect of capital formation for States was the same as brought out by the CSO. The capital formation undertaken by the Central Government was allocated among States on the basis of

²⁹Central Statistical Organization. Estimates of Gross Capital Formation in India for 1948–1949 to 1960–1961 (1961).

³⁰Rangnekar, S. B. Central and State Government Budgets in India: An Economic Classification, 1958–1959 (Punjab University, 1958).

³¹Basu, S. Ibid.

³²Das Gupta, S. B. Comparable Estimates of Income accruing to different States of India during 1957–1958 and 1958–1959. January 1962 (mimeographed paper).

State-wise proportion of public sector employment. Adoption of employment data for allocating investment for a large sector of the economy, i.e., the household and Central Government is bound to affect the reliability of estimates at a State level. This is evident from a comparison of data on capital formation in farm sector collected by the Reserve Bank of India for the rural areas through Rural Debt and Investment Survey for the year 1961–1962.

The estimates compiled by R. Mehrotra,³³ however, were an improvement inasmuch as he made use of the locally available data. In respect of manufacturing industries, use was made of Annual Survey Industries Report 1959–1960 and estimates of inventories obtained with the help of data contained in the Monthly Statistics of Selected Industries in India. With respect to banks, all India estimates were allocated on the basis of paid-up capital, whereas for cooperatives, the indicator used was ratio of working capital. For household enterprises, estimates of fixed capital formation were based on NSS Report 1958–1959 relating to receipts and disbursements whereas the estimate of all India stock of foodgrains as worked out by the CSO was allocated among States in the light of State-wise pattern of consumer expenditure. For private corporate sector, the indicator used for allocation was paid-up capital. The capital formation by administrative departments of Central Government was allocated in the ratio of capital formation by States for which data was used from the economic classification of State Governments budgets for 1958–1959 by S. B. Rangnekar and associates. As regards departmental commercial enterprises, the indicator used was State-wise proportion of income. In respect of Central Government undertakings, the allocation was made on the basis of paid-up capitals of such companies.

Estimates of capital formation through the procedure of direct collection of data have been compiled by Assam and Maharashtra States Statistical Bureaus (SSBs). The Assam Bureau³⁴ attempted estimates for the years 1950–1951 to 1960–1961 and presented them in the form of gross fixed capital formation for public and private sectors. In respect of private sector, estimates for rural household sector were obtained from the data collected by the NSS during 1959–1960. In respect of industries, use was made of data of Annual Survey of Industries and Sample Survey of Industries as done by Mehrotra. Similarly, data was also collected in respect of minerals in 1962. For building construction in urban areas, use was made of the data from survey of urban house building activity, 1956–1957 and these estimates were projected backward and forward with the help of index number of value of import of cement into Assam for the use of individuals and other non-Governmental agencies. Estimates for road transport were obtained on the basis of figures of annual registration of taxis, buses and public carriers. However, estimates for small enterprises were not compiled because of non-availability of data.

For the public sector, use was made of the data contained in an economic classification of the State Government budgets. For the local bodies, estimates were obtained on data on construction available in the Annual Reports of

³³Mehrotra, R. *Ibid.*

³⁴State Statistical Bureau, Assam. "Estimates of Capital Formation." Paper presented at Fourth Indian Conference on Research in National Income, 1963.

Municipalities for 1950–1951 to 1952–1953 which were projected backward and forward on the basis of wages, salaries, paid to the employees. For Central Government, use was made of employment data in allocating estimates for construction of office buildings, staff quarters and construction of air-fields as done by Basu. For Central Government enterprises which are located in the States, data was directly obtained. However, in the case of posts and telegraphs and railways, estimates of investment were available at the local level for the years 1962–1963 and 1956–1957 respectively which were projected backward and forward on the basis of wages and salaries paid to the employees.

The estimates of change in stocks in the commerce sector were obtained by making use of data on bank advances whereas in respect of other sectors, the source material was the same as that utilized for building up estimates of gross fixed capital formation. The estimates compiled by the Assam SSB being based on local data are more reliable than those available from the allocation procedure and in spite of under coverage for small enterprise sector, the estimates of capital formation by Assam SSB for 1957–1958 at Rs. 21 crores are far different from an estimate of Rs. 53 crores obtained by Basu. The estimates of gross capital formation for 1958–1959 by R. Mehrotra were Rs. 30.8 crores as against Rs. 30 crores obtained by the SSB.

Maharashtra SSB³⁵ compiled comprehensive estimates of capital formation at State level for the years 1961–1962 and 1962–1963 both for public and private sectors on the basis of comprehensive data collected at State level. The estimates were presented by important industry groups, namely, agriculture and allied activities, mining, industries, transport and communications, buildings for residential and administrative purposes, water works and others. Estimates of gross capital formation for private sector were based on the data collected by the Reserve Bank of India through rural debt and investment survey 1961–1962 for the State of Maharashtra, National Sample Survey data for urban household, annual survey of industry reports, sample survey of small and cottage industries conducted by the State Statistical Bureau and data obtained from various Government departments, city corporations, municipal boards, etc.

V. V. Divatia³⁶ made an attempt to compile estimates of gross capital formation of selected industrial groups under large scale manufacturing industries for the years 1960 and 1961 on the basis of data collected through census sector of annual survey of industries, i.e., industries covered were those which employed 50 or more workers working with power and 100 or more workers working without power.

SAVINGS

Estimates of savings have been compiled by S. B. Das Gupta³⁷ and R. Mehrotra.³⁸ Das Gupta made efforts for statewise estimates of savings for

³⁵Maharashtra State Statistical Bureau. Capital Formation in Maharashtra, 1966 (unpublished).

³⁶Divatia, V. V. A Note on Capital Formation in Large Scale Industrial Units in Gujarat State—1960 and 1961 (unpublished).

³⁷Das Gupta, S. B. Ibid.

³⁸Mehrotra, R. Ibid.

1957–1958 and 1958–1959 separately for households, non-profit institutions, general Government and corporations. In respect of households sector, he accepted the estimates of Reserve Bank of India but raised them by $2\frac{1}{2}$ percent to allow for under coverage. These estimates were allocated among States on the basis of following assumptions:

- (i) Rural and urban households with per capita monthly expenditure less than Rs. 15 have no savings.
- (ii) Persons belonging to the expenditure group of Rs. 15 to Rs. 28 per month saved one-third of the all India total in the rural areas and one-fifth of the all India total in the urban areas;
- (iii) Two-thirds of the all India total savings for rural households and four-fifths for urban households are undertaken by persons in the expenditure group of above Rs. 28 per month.

In the light of these considerations, the savings in rural and urban areas were distributed in the Statewise proportion of rural households in the categories (ii) and (iii) above. Further, he allocated the saving of the Central Government among States on the basis of their respective populations. The estimates of saving of corporate sector were obtained by combining the Reserve Bank of India estimates³⁹ based on the analysis of balance sheet of company accounts for private corporate sector and NCAER estimates⁴⁰ for public corporate sector and allocated them among States on the basis of relative shares of different States in the total retained profit of resident companies as worked out on the basis of income-tax assessment data.

Mehrotra accepted the savings of State Governments as given in Rangnekar's economic classification of Central and State Government budgets. The savings of companies and statutory and financial corporations were allocated among States on the basis of pattern of paid-up capital of such companies. The indicators for allocation were registered office structure pattern of paid-up capital of public limited companies in respect of companies with a paid-up capital of Rs. 5 lakhs and below and the Statewise pattern of distribution of plants and factories and branches of such companies, where paid-up capital was Rs. 5 lakhs and above. In the case of banks, allocations were made in proportion to the number of banking offices. In respect of non-life insurance companies, the indicator was Statewise percentage distribution of such companies. Estimates of saving for households and private non-incorporated trade and business were obtained after deducting the estimates of saving for all other sectors from all India total, allocating it among States in proportion of their personal income excluding net transfers.

INTER-DISTRICT AND INTER-STATE COMPARISON OF REAL INCOME AND LEVEL OF CONSUMPTION

In order to study inter-state and inter-district differentials in the volume of production of goods and services (i.e. the real incomes) the output mix of different

³⁹Monthly Bulletin of Reserve Bank of India, August 1961.

⁴⁰National Council of Applied Economic Research: Savings in India, 1961.

States was evaluated by the NCAER⁴¹ at prices and factor costs. Thus, for measurement of inter-state differentials use was made of all India average prices in respect of commodity output and average earnings per person in respect of sectors. Similar procedure was adopted for estimation of inter-district differentials in real incomes.

B. W. Chawan and the present author⁴² compiled estimates of gross domestic product and productivity per worker at comparable price levels and worked out purchasing power equivalents. The estimates were based on detailed data compiled at the State level in respect of commodity output and the procedures followed were the same as those suggested by Milton Gilbert⁴³ and Irwing B. Kravis.⁴⁴ The difference in the purchasing power between the two States worked out to be 19.6 percent (the upper limit being 22.7 percent and lower limit 16.9 percent).

In 1959, the first attempt on estimation of variations in the level of living in real terms between the States was made by T. Maitra⁴⁵ who made use of the National Sample Survey data on household consumption expenditure in rural areas for the period April to September, 1952 and estimated relationships of purchasing power of Indian rupee in terms of consumption baskets of nine States in India comprising 18 categories of consumption goods. In view of non-availability of data on quantities of consumption goods, Maitra estimated the purchasing power of each State in terms of the prices of the other by adopting percentage of total expenditure of a commodity as weights. Also, preliminary studies on the subject relating to household consumption expenditure by fractile groups and income and asset-holding by size classes are in progress.

INPUT-OUTPUT TABLE

The first regional input-output table, i.e., for West Bengal and Calcutta metropolitan district was prepared by R. Dhar⁴⁶ for estimating the final demand for 1970. He also attempted an inter-regional input-output table for the Indian economy for 1953-1954 and made maximum use of the data available at State and regional levels. However, in view of the inadequacy of data needed for preparing an input-output table of the order required to meet planning needs, any input-output table compiled at regional level can only provide broad dimensions of inter-sectoral flows.

⁴¹National Council of Applied Economic Research: Inter District and Inter State Differentials—1955-1956 (1963).

⁴²Tiwari, S. G. and Chawan, B. W. Comparison of State Domestic Product, Productivity and Purchasing Power of the rupee in Madhya Pradesh and Maharashtra.

⁴³Gilbert, M. and associate. Comparison of National Products and Price Level, OEEC, 1958.

⁴⁴Gilbert, M. and Kravis, I. B. International Comparison of National Products and the Purchasing Power of Currencies.

⁴⁵Maitra, T. "On the variation in prices between States of India", Indian Statistical Institute, Planning Division Working Paper, 1959.

⁴⁶Dhar, R. Ibid.

PRESENT STATE OF REGIONAL ACCOUNTING

From the discussion in the preceding pages, it would be evident that work in the field of regional accounts has been gradually expanding. Initially, the interest of research workers was confined to estimation of State Income and domestic product and sometimes their break-up by districts. The work was carried forward by individuals and institutions including official agencies in order to compile comparable estimates of State domestic product needed for decision making. Simultaneously, the work was also undertaken to obtain estimates of final expenditure and saving. New dimensions relating to distribution of income and inter-regional comparison of level of living and domestic product are being added. Through the plan process the economy is to be further diversified and district planning is to assume a key role and with it the sub-regional estimates of employment, output, expenditure, investment and its financing.

**ERRATUM: “A Naive History of Individual Incomes
in Wisconsin, 1947–1959”**

by Martin David and Roger Miller

**In Table 3.2-6, the columns labeled
“Average number of Years Filed”
should read “Degrees of Freedom”**