

CHAPTER 1

DEVELOPMENT OF NATIONAL ACCOUNTS STATISTICS

Historical development

Early Attempts

1.1 The national income accounts or simply national accounts can be defined as a set of systematic statistical statements which reflect the value of the total final output produced in the various sectors of the economy such as agriculture, industry, transport, trade, banking etc., together with details of distribution of factor incomes among different groups and final expenditure of the economy. From production of goods and services to their final disposal, innumerable transactions take place. National accounts help us to understand in a nutshell how these various transactions are inter-related and give us an idea of the working of an economy. In India, prior to the development of national accounting system which started in sixties, the main focus was on computing nation's income. Before independence several attempts were made to compute nation's income by individual economists and research workers. But all these efforts were based essentially on macro-level data and involved a number of assumptions for want of requisite data and adequate resources. Notwithstanding the limitations, these studies provided the base for post-independence work on the subject. Since Independence, due attention is being given to development of official estimates of national income and related aggregates to meet the requirements for planning and policy purposes. Recognising the need for providing estimates of national income on a regular basis, the Government of India set up an Expert Committee in 1949 known as "National Income Committee" under the chairmanship of Prof. P.C. Mahalanobis with Prof. D.R. Gadgil and Prof. V.K.R.V. Rao as members, to make recommendations regarding the compilation of estimates of national income, the improvement of the statistical data on which the estimates were to be based and to suggest measures to promote research in the field of national income. To assist the Committee a 'National Income Unit (NIU)' was set up. It was for the first time that this Committee provided the estimates of national income for the entire Indian Union. The estimates and details of methodology adopted were published in the first and final reports of the National Income Committee brought out by Ministry of Finance in 1951 & 1954 respectively. The Committee recommended preparation of national income estimates on a regular (annual) basis. Accepting this recommendation, the Government of India transferred the entire establishment of NIU, then working for the National Income Committee, to the Ministry of Finance to take charge of the work on a regular basis. The work of estimation was later transferred to the Central Statistical Organisation (CSO) and a full-fledged National Income Division was created which is now designated as National Accounts Division (NAD) in conformity with the expansion in its activity.

Conventional Series

1.2 As per the methodology and the pattern of presentation recommended by the National Income Committee, the first official estimates of national income were prepared by the CSO with base year 1948-49 for the estimates at constant prices. These estimates at constant (1948-49) prices alongwith the corresponding estimates at current prices and the accounts of the Public Authorities were published in 1956 in the publication, "Estimates of National Income" in 1956. This series, commonly known as the "conventional series" was continued to be published till 1966 under the same title.

Revised Series (With Base 1960-61)

1.3 With the gradual improvement in the availability of basic data over the years, a review of methodology for national income estimation and its extension to other fields of

macro-economic aggregates was undertaken with a view to update the data base and to shift the base year from 1948-49 to a more recent year. Special efforts in this regard were made for a comprehensive review of all available data both published and unpublished. The first results of these efforts were presented in the "National Income Statistics - Proposals for a Revised Series for National Income Estimates, 1955-56 - 1959-60 (CSO, 1961)". These proposals were discussed at a Seminar specially organised for the purpose. In the light of the views expressed in the Seminar, several follow-up studies were undertaken. The 'proposals' as improved/amended on the basis of the studies alongwith estimates as per the revised series of national income with 1960-61 as new base for estimates at constant prices were published in the "Brochure on the Revised Series of National Product, 1960-61 to 1964-65 (CSO, 1967)" replacing the earlier series with base 1948-49. Simultaneously, work on the estimation of related aggregates like "capital formation" and "saving" for the years 1960-61 to 1965-66 was also undertaken. These estimates were published alongwith the methodology in two special brochures, (i) "National Income Statistics-Estimates of Capital Formation in India, 1960-61 to 1965-66" and (ii) National Income Statistics-Estimates of Saving in India, 1960-61 to 1965-66 (CSO, 1969). With the introduction of this series with base 1960-61 (hereafter referred to as 1960-61 series), the title of the annual publication was changed to "Estimates of National Product". The coverage of the NAS was extended gradually from time to time to incorporate the estimates of private consumption expenditure, saving, capital formation, factor incomes, consolidated accounts of the nation and detailed accounts of the public sector. The title of the publication was, therefore, again changed to the present title 'National Accounts Statistics' (NAS) with effect from January 1975 to depict the expanded scope of the publication.

1.4 Further, to meet the demand of the users a special supplement, "National Accounts Statistics, 1960-61 to 1972-73- Disaggregated Tables (CSO, 1975)" was brought out. This publication included disaggregated tables on output, input, value added, private consumption expenditure, saving and capital formation. While the publication presented the estimates at current prices for the years 1960-61 to 1972-73, those at constant (1960-61) prices were presented for the entire period of 1950-51 to 1972-73. From the subsequent issue, the NAS 1976, all those tables presented in the special supplement became regular features of the NAS.

Revised Series (With Base 1970-71)

1.5 The base year of the revised series was subsequently changed from 1960-61 to 1970-71 (hereafter referred to as 1970-71 series) and the estimates according to 1970-71 series were published in NAS, January, 1978. These estimates had the same scope, coverage and methodology as for earlier estimates included in NAS, October, 1976. These estimates were based on the latest available data from various sources, like population census, livestock census, various sample surveys and ad-hoc studies undertaken in the NAD. Both 1960-61 series and 1970-71 series are known as "revised series". The detailed methodology of estimation used in the revised series was published in the special publication known as "National Accounts Statistics : Sources & Methods, April 1980" (CSO, 1980). The revisions/changes in the methodology/data base made have been described in the 'Notes & Methodology' in various issues of NAS as also in a special article in the Monthly Abstract of Statistics, in its October, 1985 issue. In order to have comparable series of macro-economic aggregates resulting from the change of base year to 1970-71, the estimates for the back years upto 1950-51 at 1970-71 prices were prepared and published in 1979 and 1980 issues of NAS.

New Series (With Base 1980-81)

1.6 The CSO released a new series of national accounts aggregates with 1980-81 as base year (hereafter referred to as 1980-81 series) in February, 1988. This series has been introduced after a comprehensive review of the data base as well as the methodology employed in the estimation of various aggregates. It also involved a number of revisions arising out of the conceptual and methodological improvements as well as use of the latest available data. The

revisions brought about for the 1980-81 series are the results of a large number of studies including those for the estimation of consumption of fixed capital based on the estimates of fixed capital stock using perpetual inventory method (PIM) carried out by the NAD since 1983, in collaboration with the Reserve Bank of India (RBI), the Directorate of Economics & Statistics (DESAg) of the Ministry of Agriculture & Directorates of Economics & Statistics (DESSs) of the State Governments. The coverage of the series has been enlarged to include the State of Sikkim. The improvements proposed for the 1980-81 series were also considered in depth at the Pune Seminar and Conference of the Indian Association for Research in National Income & Wealth (IARNIW) held in December, 1984 and November, 1985 respectively. These proposals and the consequential changes were discussed in detail by the Advisory Committee on National Accounts at two meetings specially convened for this purpose in April 1986 and June 1987. The CSO also benefited from the suggestions received from many other experts in the field of national accounts.

1.7 Efforts have also been made to use as much current data as possible to replace the proportions based on the old bench-mark surveys. Further, the results of the latest Population Census, Livestock Census, All-India Debt & Investment Survey (AIDIS), follow up surveys of the Economic Census (EC), Cost of Cultivation Studies (CCS) etc., have been made use of. Special mention may be made here of the data collected under the programme of follow-up surveys of EC. The EC and its follow-up surveys have been particularly designed to fill the data gaps pertaining to unorganised segments of the non-agricultural sectors of the economy.

1.8 The Brochure "New Series on National Accounts Statistics (with 1980-81 as the base year)" giving the estimates from 1980-81 to 1985-86 as also a brief description of the important changes/improvements effected in the new series vis-a-vis the 1970-71 series was issued in February, 1988, and the usual annual publication NAS in May 1988.

Improvements in 1980-81 Series

1.9 The various methodological improvements carried out in 1980-81 series relate to the revised procedure of estimation of evaluation of paddy, value added of textile group in case of unregistered manufacturing, domestic product from public administration and defence at constant prices, consumption of fixed capital (CFC), consumption of textiles and other items of private final consumption expenditure, change in stocks, losses of the departmental enterprises of the government etc. The following paras describe changes effected and the results of the latest census/sources of data used in respect of each of the macro-economic aggregates and also of the transactions of the public sector.

Domestic Product

Agriculture and Livestock

1.10 The earlier practice of evaluating rice (including bran and husk) and deducting rice milling charges therefrom to obtain the value of paddy has been given up. The value of paddy is now worked out directly. This has been done because of prevailing practice of farmers to dispose of paddy as such and the corresponding prices thereof available regularly.

1.11 Growing of trees on farm land and village common land hitherto covered in the agriculture sector, has been shifted to form part of forestry sector.

1.12 The evaluation of milk is done by evaluating total production of milk at the wholesale prices of milk. Earlier a portion of the total milk production was evaluated in the converted form of butter & lassi. This changed procedure has been adopted as reliable data on the extent of conversion of milk and corresponding prices are not available.

1.13 For estimating value of by-products of various crops annual data on value of yield per hectare available from the CCS of Ministry of Agriculture have been adopted in place of yield rates available through bench-mark sample surveys conducted by the State Governments and National Sample Survey Organisation (NSSO).

1.14 Duplication in the production of gur/khandsari/bura etc., covered under manufacturing sector has been removed. Similarly, adjustment has been made in the estimates of meat for the slaughter of animals undertaken in the manufacturing sector.

1.15 Output of major livestock products is based on current data obtained from the Ministry of Agriculture who have started releasing the production estimates on the basis of Integrated Sample Surveys pertaining to milk, eggs and wool undertaken in most of the states. This has replaced the old method of preparing estimates using the yield rates obtained from pilot studies and sample surveys and the estimated livestock population.

1.16 The estimates of consumption of diesel oil prepared on the basis of old norms for tractors and diesel engines were found to be on the higher side for deduction as input. These have now been based upon data from CCS.

1.17 As regards market charges, in place of data relating to early 50s, hitherto utilised, fresh data based on the administrative records available with the Ministry of Agriculture have been used as input.

1.18 Estimates of repairs and maintenance of the fixed assets have now been based on the latest AIDIS, 1981-82 of RBI.

Forestry and Logging

1.19 Hitherto the value of unrecorded production of fuelwood had been assumed at only 10 per cent of the recorded production. In addition, fuelwood was also being estimated in the agriculture industry as a part of farm yard wood. However, on the basis of studies carried out in a number of states, it has been considered that unrecorded production constitutes a much larger proportion of the recorded production than was assumed. The unrecorded production which covers the production in the forestry, road sides, canal sides and agricultural fields has now been assumed to be 10 times of the recorded production. This unrecorded production of firewood now estimated for the year 1980-81 works out to be 2.6 times of the estimated production of firewood in agricultural field (covered earlier in agriculture) plus 10 per cent of recorded production of firewood in forestry. However, it has been observed that the total production of fuel wood was declining much faster as compared to the trend observed from the NSSO surveys on consumption expenditure for 1978-79 and 1983-84. As such the trend observed from NSSO surveys has been superimposed on the estimates of unrecorded production for the bench-mark year to estimate total unrecorded fuelwood production.

1.20 The trade and transport margin used to be taken as 25 per cent of the assembling centres prices has now been revised to 10 per cent on the basis of studies undertaken by the State Governments and discussions held with Chief Conservators of Forests (CCFs).

1.21 For arriving at economic value of the minor forest products for which production data are not available, the royalty value has now been inflated by 10 times instead of 4 times taken earlier.

Unregistered Manufacturing

1.22 The production of cloth in the decentralised sector under the textile group covering cotton blended and man-made fabrics obtained from NSSO surveys earlier, is now estimated on the basis of information provided by the Office of the Textile Commissioner.

1.23 The production of khadi, woolen, polyester, pure silk and hosiery goods for which no estimates are provided by the Office of the Textile Commissioner is estimated from the data supplied by All-India Survey of Textiles Committee (Consumption Panel Project).

1.24 Data on Bidi production have been obtained directly from the Directorate of Tobacco Development.

Construction

1.25 The value of cement used for construction now includes the value of the cement products like RCC hume pipes, asbestos sheets, cement jallies also as available from the Annual Survey of Industries (ASI) while in 1970-71 series the value of cement only was accounted.

1.26 The coverage of the value of timber & roundwood used for construction purposes has been enlarged so as to include a portion of value of veneer, plywood and their products available from ASI.

1.27 The procedure of estimation of bricks and tiles has been changed. The value of production of bricks and tiles as available from ASI has now been taken into account explicitly. To this has been added the production of bricks worked out with the help of coal dispatches to the kiln owners. The contribution of rural households producing bricks for their own use with indigenous fuel materials has also been revised from 50 per cent to 10 per cent of bricks produced with the use of coal. This has been revised on the basis of ratio of workers engaged in the manufacture of structural clay products in the household industry to total number of workers in the household and non-household industry.

1.28 The ratio of other materials to basic material has been revised to 30 per cent from 34 per cent in the 1970-71 series. This has been done on the basis of latest information available from National Buildings Organisation (NBO), Central Public Works Department (CPWD) and Central Building Research Institutes (CBRI), Roorkee. The exclusion of certain materials like hume pipes, asbestos sheets, veneer, plywood etc., from other materials and their inclusion into the basic materials also justified lowering of the ratio of other materials to basic material.

1.29 In case of pucca construction, the proportion of gross value added to the value of material inputs has been lowered to 47.5 per cent from 60 per cent in 1970-71 series. This has been done on the basis of latest information/results of study available from the NBO, CPWD and other sources.

1.30 The scope of labour intensive kutch construction in the public sector has been enlarged to include not only the expenditure on afforestation and reforestation but also the expenditure on soil conservation and area development, field drains, kutch canal, roads and bridges etc. This has been done on the basis of discussions CSO officials held with the officials of some of the state governments and on-the-spot visit taken with them.

1.31 In the case of all kutch construction, the gross value added has now been taken as 75 per cent of the value of output on a uniform basis.

Electricity, Gas & Water Supply

1.32 The coverage of the gas has been expanded by the inclusion of gobar gas. The estimates of gobar gas have been prepared using statewide production data published in the annual reports of the Khadi and Village Industries Commission (KVIC). The value of output has been treated as value added on the assumption that the input of gobar in production of gobar gas yields corresponding value of indigenous fertilizers as its by-product.

1.33 The estimates of Liquid Petroleum Gas (LPG) have been revised on the basis of the input-output coefficients supplied by Bharat Petroleum Corporation Limited for the year 1980-81 in consultation with the Bureau of Industrial Costs and Prices (BICP). In the absence of these coefficients for subsequent years, the input-output coefficients of 1980-81 have been assumed to hold good for subsequent years also. The LPG produced from natural gas has also been taken into account. In the earlier series, the LPG estimates of output were treated as value added in absence of input-output coefficients.

Communication

1.34 The estimates of value added from telecommunication factories have been shifted from this sector to the registered manufacturing sector.

Public Administration & Defence

1.35 All pension payments made by the government were so far treated as part of government administrative departments. These payments covered payment made in respect of the employees of some of the departmental enterprises also. Suitable adjustments have now been made on the basis of salary bills of the departmental enterprises.

1.36 Non-commercial broadcasting activity earlier treated as administrative activity of the government is now covered under the departmental enterprises.

1.37 Consumption of fixed capital has been provided for the first time. It is independently estimated on the basis of the estimates of fixed capital stock.

1.38 The procedure of preparation of estimates at constant prices has been revised. In the earlier series amounts of dearness allowance (DA) etc., sanctioned from time to time used to be deducted from the total disbursement of salary and related allowances to arrive at the estimates at constant prices. Since complete details of DA etc., so released are not available from the budget documents, the estimates prepared from the budget documents were suspected to be on the higher side. Now the DA is directly linked to the Consumer Price Index of the Industrial Workers, the estimates at current prices are deflated by using this index to arrive at the estimates at constant prices.

Other services

1.39 The estimates of other services in the private sector are based on the interpolated results of the follow-up surveys of EC conducted by CSO and NSSO in 1979 and 1983-84 respectively.

Consumption, Saving and Capital Formation

Consumption of Fixed Capital

1.40 For deriving the estimates of various aggregates on net basis, CFC is subtracted from the gross value figures. For example, the estimates of net domestic product are derived by

subtracting CFC from the estimates of gross domestic product. Hitherto, estimates of CFC were based generally on the provision for depreciation made in the books of accounts of enterprises or on the basis of the proportion of depreciation to value added observed from the various censuses, surveys or ad-hoc studies. In the case of the fixed assets of the government, no provision for depreciation is made by the government departments. The method of estimation hitherto followed had been the subject of criticism on the ground that the depreciation included in the books of accounts of enterprises did not provide for the replacement cost of fixed assets. This together with the absence of any such estimates made in respect of the government departments, had resulted in an under-estimation of the CFC and over-estimation of rates of net saving and capital formation etc. Significant departure has now been made to arrive at the estimates of CFC with the help of estimates of fixed capital stock and expected life of each type of assets using the perpetual inventory method (PIM) as per the recommendations of the United Nations System of National Accounts, 1968 (SNA) (For details please refer to Chapter on Capital Stock & Consumption of Fixed Capital). The details of estimation of capital stock and the consumption of fixed capital have also been published in a special publication 'Estimates of Capital Stock of the Indian Economy, December, 1988' (CSO, 1988).

Private Final Consumption Expenditure

1.41 In order to provide additional disaggregation, the classification has been enlarged and the results are now presented for 38 sub-groups as against 24 in the earlier series.

1.42 As explained in Paragraph 1.55, the procedure for estimating change in stocks of food grains and agricultural commodities has been revised.

1.43 For clothing, the estimates have been revised as a consequence of the revision in the output referred to in Paragraph 1.22.

1.44 Marketable surplus ratios are made use of to arrive at the estimates of private final consumption expenditure in respect of agricultural commodities. These ratios were based on market reports of commodities which used to be, in many cases, pretty old. These ratios have now been revised as per the recommendations of a sub-group set up in the Ministry of Agriculture in connection with the revision of index numbers of wholesale prices. Wastages ratios have also been revised on the basis of latest Directorate of Marketing and Inspection (DMI) reports and discussions CSO officials held with the officers of DMI.

1.45 Gur consumed as animal feed had not been accounted for earlier. The adjustment for the same has now been made.

1.46 The ratio of utilisation of the tobacco in the form of (a) cigar and cheroot, (b) snuff, (c) hukka tobacco, and (d) chewing tobacco has been worked out from the data published by the Directorate of Tobacco Development.

1.47 The norms of household consumption to total output in case of items of fuel and power are now based on the latest survey of National Council of Applied Economic Research (NCAER) on "Domestic Fuel Survey with reference to Kerosene, 1978-79".

1.48 The results of NSSO, 38th round, (1983-84) 'Survey on Consumption Expenditure, 1983' have been utilised to estimate consumption of spices, pan, salt, medical care and health and private tuition fees.

1.49 The purchase of transport services by household is now estimated on the basis of results available from the Directory Establishments Survey, 1979-80 and NSSO 34th round (1979-80).

1.50 In case of manufacturing items, share of consumable goods by households to total output at three digit level of National Industrial Classification (NIC) have been revised on the basis of detailed results of ASI 1983-84. Percentage utilisation of consumer durables by households is now based on AIDIS, 1981-82.

Saving

1.51 Earlier, the estimates of saving were prepared by RBI as well as by the CSO. There were slight differences in the two sets of estimates because of differences in methodology and data base adopted by the two agencies. These differences have been sorted out and the two agencies have now agreed on a uniform methodology and data base. It has since been decided that each agency would be responsible for compilation of estimates of specified sectors and supply the same to the other agency to provide a total picture. In terms of this arrangement the CSO now prepares the estimates of public sector and household saving in the form of physical assets, life fund, provident and pension funds while the responsibility of estimating the saving of the private corporate sector and that of the household sector in other instruments of financial savings has been entrusted to the RBI. In the present series, therefore, the estimates of the corporate sector are those prepared by RBI.

1.52 A minor change has been introduced in the estimates of saving of the non-government, non-financial public and private limited companies. The saving is now estimated as equivalent to their retained profits and not as the sum of retained profits and taxation provision, net of advance tax paid as in the earlier series.

Capital formation

Construction

1.53 The changes made in respect of construction have already been discussed in paragraphs 1.25 to 1.31 above.

Machinery and Equipment

1.54 The changes in estimates for machinery & equipment are due to use of new proportions in respect of partly capital goods etc., based on AIDIS, 1981-82 and ASI, 1983-84.

Change in Stock

1.55 The stocks of agricultural commodities other than food-grains retained by the producers have been treated as nil. Further, the earlier procedure of estimating stocks of cereals and cereal substitutes with private traders has been replaced by the method followed by Prof. Dandekar in his recent work entitled "Agriculture, Employment and Poverty", a paper presented at the Conference on the Indian Economy organised by the Centre for Asian Development Studies, Boston University, October 4-7, 1986. According to the latter the consumption of food grains is subtracted from the net availability of food grains with the public during the year to arrive at the estimates of stocks with the producers and private traders. The industry-wise estimates of stocks of the Joint Stock Companies of private corporate sector are now furnished directly by the RBI. The change in stocks of the private corporate sector has been worked out by bringing the stocks of the beginning of the year at the current year price before subtracting from the stocks at the end of the year.

1.56 In case of the estimates of fixed capital formation by industry of use, the estimates in respect of private agriculture activity and ownership of dwellings have been revised on the

basis of the results made available by AIDIS, 1981-82 and of storage, warehousing and other services in the household sector on the basis of results of Enterprise Survey, 1983-84.

Public Sector Transactions

1.57 There is no provision for consumption of fixed capital in the administrative departments. This has now been provided on the basis of estimates of fixed capital stock.

1.58 The item rent, rates and taxes was being treated as purchase of commodities and services (PCS) as separate data on rent were not available. As a result of several exercises undertaken, it has now become possible to segregate the element of rent and treating it as a factor income. To the extent of the estimated value on that account, the figures of PCS have been reduced and the gross/net value added has been increased.

1.59 In the case of government printing presses including security presses and ordnance factories, the losses were treated as government final consumption expenditure, while in the remaining Departmental Commercial Undertakings (DCUs) except irrigation, the same were treated as losses as such. These are now treated as losses uniformly. Thus, the final consumption expenditure of government (GFCE), and the gross/net value added of DCUs is reduced by the amount of the losses so treated. In the case of irrigation, the losses are treated as imputed irrigation subsidies as in the 1970-71 series.

1.60 Earlier, accounts of the enterprises of Railways and Communications were merged with the DCUs and a combined capital finance account of the Central Government was compiled. SNA recommends that for the larger DCUs, complete accounts i.e., production account, income and outlay account and capital finance account may be compiled separately. Following this recommendation, separate accounts for Railways and Communication have been prepared. Similarly, the production account of producers of government services has also been attempted.

1.61 A change in the treatment of pension payment and shifting of commercial broadcasting from Administrative Department to DCUs have already been stated. Port Trusts earlier covered under DCUs have now been shifted to Non-Departmental Commercial undertakings (NDCUs).

NATIONAL ACCOUNTS STATISTICS

Contents

1.62 The detailed estimates of macro-economic aggregates, accounts of the public sector, consolidated accounts of the nation etc., are issued annually in NAS. The coverage of the NAS has been extended from time to time to incorporate the estimates of consumption expenditure, saving, capital formation, transactions of the public sector, consolidated accounts of the nation and detailed disaggregated statements. With the introduction of the 1980-81 series, the formats of some of the statements have been modified. Further, various statements of NAS have been re-arranged so as to make NAS more user-oriented.

1.63 The NAS presents the estimates from 1980-81 onwards both at current and constant (1980-81) prices. It is divided into 5 parts. Part I - 'Macro-Economic Aggregates' presents the summary statements of macro-economic aggregates and their relationship, growth rates, implicit price deflators, consolidated accounts of the nation and performance of the public sector. Statement 1: 'Macro-Economic Aggregates and Population' includes the comparable estimates for back years and Quick Estimates for the latest year of "National Income, Consumption Expenditure, Saving and Capital Formation" etc. This part thus focuses on a long-term series for macro-economic analysis. Part II - 'Domestic Product' presents

statements on gross domestic product (GDP) and net domestic product (NDP) by kind of economic activity alongwith the percentage distribution. Part III - 'Consumption, Saving and Capital Formation' provides the estimates of PFCE, domestic saving and capital formation. The estimates of PFCE are presented for broad items of expenditure. The item level coverage of PFCE has been enlarged to meet the demand from the users. The estimates of saving, as in the past, are at current prices only and are presented by type of institutions and by type of instruments of saving. The estimates of capital formation are presented by type of assets, by type of institutions and by industry of use. Part IV - 'Public Sector Transactions' deals with the transactions of the public sector. Besides details of aggregates like GDP/NDP, Government Final Consumption Expenditure (GFCE), saving, capital formation, this part also presents the economic accounts separately for Administrative Departments and DCUs and NDCUs. As mentioned above, separate presentation of accounts in respect of Railways and Communication is a special feature of the 1980-81 series. The account in respect of producers of government services has been presented separately. Purpose-wise details of Government Final Consumption Expenditure have also been presented in this section. Part V - 'Disaggregated Statements' presents detailed disaggregated statements at crop/item/category level. The statements include the details of value of output, input and value added for each type of economic activity. Thus the details provided under agriculture relate to value of output of each of the crops as well as various livestock products and the total inputs used in the sector by items. Under mining and quarrying details provided relate to value of output of major minerals and minor minerals with further disaggregation of major minerals into fuel minerals, metallic minerals and non-metallic minerals. Output for each of the important major minerals is also given. The details also relate to inputs and value added for fuel minerals, other major minerals and minor minerals. The nature and extent of disaggregated data vary from industry to industry depending on the availability of information and procedure of estimation. Besides, disaggregated estimates in respect of saving relate to financial assets and the liabilities of the household sector. Capital formation by type of assets and by type of institutions and external transaction accounts are also presented in this part. The publication also presents at the end a section on Notes on Methodology which provides information on the revisions in the estimates indicating broadly the changes in the methodology, new source material used etc., for the benefit of the users. In addition to the regular statements, special statements are also included in the publication to provide from time to time data on such aggregates/components which are either not of regular nature or which are presented for the first time or which refer to back year estimates of current series. Sometimes, memorandum items are also presented in the form of special statement. Thus, to meet the users demand, the latest issue of NAS, 1989 contains a special statement on depreciation provision as provided in the books of Accounts.

1.64 As mentioned above, Statement 1 of NAS includes comparable estimates of various macro-economic aggregates for the years prior to 1980-81 according to 1980-81 series. The NAS, 1989 includes the comparable estimates for the years 1970-71 to 1979-80. The estimates for the years 1950-51 to 1969-70 have also since been prepared so that a complete series from 1950-51 to 1987-88 is available for each of the macro-economic aggregates both at current and 1980-81 prices. The detailed estimates for the entire period from 1950-51 to 1979-80 have been published in a special publication, 'National Accounts Statistics (New Series)', 1950-51 to 1979-80 (CSO, 1989). Thus this special publication and NAS, 1989 presents the estimates for the entire period starting from 1950-51 to 1987-88.

Revisions in the Estimates

1.65 Normally the major improvements/changes/revisions in the series are incorporated to coincide with the change in the base year of the estimates at constant prices undertaken normally at an interval of a decade or so. However, some revisions become necessary at shorter intervals and even annually as fresh data become available. This often happens particularly with regard to unorganised sectors when bench-mark estimates become available from periodical censuses/surveys. The practice of undertaking such revision is a normal

feature in the preparation of national accounts in other countries as well where modern techniques are employed to make available data with very short time lag.

1.66 A comparison of such revisions over a number of years and their analysis would not only be interesting but also enable a better judgement about the reliability of these estimates. A look at such estimates of NDP for the past few years (refer different issues of NAS) suggests that the overall effect of revisions on the estimates do not appear to be significant. At the sectoral level, however, in some cases the extent of revision is substantially higher or lower as the case may be, but at aggregate level it is neutralised by revision in item in opposite direction. Thus in the case of the primary sectors, revision of the basic data (with the availability of say final forecasts and fully revised figures of agricultural production and availability of Land Use Statistics (LUS) results) mainly accounts for the variation in the output generated from sectors included in that category. For sectors like manufacturing, there are often gaps in basic data (e.g., non-availability of ASI results) at the time of preparation of the first set of estimates. In the case of Public Administration and Defence, railways and communication, the estimates are replaced by the "actuals" or "revised" in subsequent year. In the case of unorganised sectors, the estimates are often based on limited data used to work out indicators or on past trends observed at the time of preparation of the first set of estimates. Subsequent revision in such situation is necessary when data from fresh surveys/type studies become available.

1.67 Similar comparisons of estimates can also be made with respect to major components of expenditure like final consumption expenditure for saving as well as capital formation. Since the estimates of PFCE and capital formation are obtained by commodity-flow method, all revisions in the estimates of domestic product due to the availability of fresh data relating to production of commodities will consequently alter the estimates of these aggregates. Further, these aggregates would also need revision when there is revision in the data either on exports/imports or on the trade and transport margins. As regards saving, so far as estimates of financial saving are concerned, revision made therein later, on receipt of fresh information is generally marginal, as these estimates are generally based on current data. This, however, is not so for household saving in physical assets where the revisions are linked with the revisions in the estimates of capital formation.

Current Content of Data Sources

1.68 In view of such revisions in the estimates as and when fresh data become available, it is worthwhile to attempt a broad assessment of the extent to which the estimates of domestic product are based on direct current data. This will be particularly pertinent if estimates for one of the more recent years i.e., 1985-86 are used for evaluation. However, it will also be useful to provide this information for 1980-81, the base year for the 1980-81 series for which a lot of current data have been utilized. The proportion of direct current data implicit in the estimates will vary from year to year particularly in respect of the unorganised sectors. The proportion is likely to be higher for those years for which bench-mark year data become available. This would, for example, be true for the estimates for 1981-82 for all such sectors for which either 1981 Census results on population/working force or data from AIDIS form the most important source. The availability of data when available from these sources alter the current content proportion of inputs in agriculture, own account capital formation in the household sector and domestic product in trade, unorganised transport and services sectors from year to year. The current content of data sources used for domestic product has been studied for 1980-81 and 1985-86 for a comparative picture.

1.69 The estimates of the share of GDP for each of the sector alongwith the proportion of estimates based on current data for the years 1980-81 and 1985-86 have been presented in Table 1.1. The estimates are treated to be based on current data if the data from the basic sources had become available for that year. Thus, for example, in respect of agriculture, the data on area and production of crops released by DESAg are treated to be current. However, the estimates prepared using the area figures and yield rates for the bench mark year relating to

the past (in respect of unspecified crops) are not treated to be current, although area figures are annually available. Similarly, the estimates of livestock products like milk, eggs and wool are treated to be based on current data while for all other livestock products the data are not treated as current. Likewise, estimates prepared by carrying forward the bench mark year estimates using the indicators of production of some specified commodities in manufacturing unregistered /trade sectors or vehicles in transport sector or working force in services sectors are not considered to be based on current data. In short the use of indicators to carry forward or backward the bench mark estimates is not considered current while the bench mark estimates based on a survey/study are considered to be current for the reference year of the survey.

1.70 In the case of sectors where production approach is followed, the proportion of estimates based on current data for each of the sectors is presented separately for output and input. The proportion is worked out for the gross value added by combining output and input proportions using the total values of the respective categories as weights. In case of other sectors the proportion is based on the current content of data for gross value added.

1.71 The overall proportion of the estimates based on current data for all sectors is estimated as a weighted average of sectorwise proportion of current content using the percentage share of the respective sectors to total GDP as weights. It may be seen from Table 1.1 that the overall current content of data for 1980-81 is 63.7 per cent and for 1985-86 it is 62.2 per cent.

1.72 It would be observed that in the sectors of (i) mining, (ii) registered manufacturing, (iii) electricity, (iv) railways, (v) communication and (vi) banking and insurance the percentage is almost hundred or close to hundred. In an important sector like agriculture it is as high as 81 which reflects quite a marked improvement as compared to its current content of 58 per cent in 1976-77 in the 1970-71 series (NAS, Sources & Methods, 1980) mainly due to the use of current annual data on output of important livestock products from Ministry of Agriculture based on integrated sample surveys pertaining to livestock products and input based on CCS available from Ministry of Agriculture and Cooperation. In forestry sector it is quite low because of the fact that a large part of the estimates is based on assumed proportion of information on account of non/under reporting. For fishing, current data is mostly available except in respect of inland fishing and subsistence fishing. For manufacturing unregistered, since the estimates are mostly based on indicators of output of the commodity producing sectors or the like, the proportion of current data is quite low. The only current data available relates to cotton textiles which are based on annual data received from Textile Commissioner. In respect of the construction sector, with the availability of results of AIDIS, 1981-82, the proportion of estimates based on current data is as high as 94 per cent for the year 1980-81. This has declined to 59 per cent by 1985-86. For sectors like trade, hotels and restaurants, transport by other means, storage and other services, the extent of estimates based on current data is quite low and this proportion relates mainly to the availability of data for the organised part. In respect of public administration and defence, data for local bodies are not available resulting in the current content of data being 94.2 per cent.

1.73 In the case of PFCE and capital formation, the estimates are prepared generally using commodity flow approach and as such their proportion of current data is linked closely to the estimates of such sectors. However, in respect of saving the estimates are mostly built up from current data. Current data on items like currency, shares and debentures, provident fund, deposits, advances etc., are available regularly. Similarly, in respect of public sector and private corporate sector, the estimates are by and large based on current data. However, the estimates of saving in physical assets of the household is taken as a residual and may not be treated as based on current data.

Quick Estimates of National Product and Related Aggregates

1.74 Besides the regular estimates of various aggregates which are released annually in NAS, CSO also releases a Press Note every year providing quick estimates of national product, final consumption expenditure, saving, capital formation etc., for the latest year. The quick estimates of national product, final consumption expenditure, saving, capital formation and performance of public sector are prepared following essentially the same methodology as used for the preparation of regular estimates, details of which are covered in relevant chapters. However, at the time of preparation of quick estimates detailed requisite data are not always available. As a result suitable indicators based on latest available information and trends observed over the past years have essentially to be used for the preparation of quick estimates for some of the sub-aggregates. The estimates thus prepared on the basis of the incomplete source material are tentative in nature and subject to revision when relevant details become available.

Share of estimates of GDP based on Direct Current data

Sector	Share in GDP (%)	Percentage of estimates based on direct data
1. Agriculture	25.0	78.1
2. Forestry	1.0	28.0
3. Fishing	1.0	90.3
4. Mining and quarrying	1.8	99.5
5. Registered manufacturing	12.5	100.0
6. Unregistered manufacturing	6.9	35.8
7. Electricity, gas & water supply	2.9	96.6
8. Construction	6.0	58.7
9. Trade	13.6	12.1
10. Hotels and restaurants	1.0	16.4
11. Railways	1.1	100.0
12. Transport by other means	5.1	24.4
13. Storage	0.1	38.0
14. Communication	1.4	100.0
15. Banking and Insurance	6.6	90.8
16. Real estate, ownership of dwellings	2.8	0.0
17. Public Administration and Defence	5.3	92.4
18. Other services	6.1	39.6
TOTAL ALL SECTORS	100.0	62.6

Kind of activity	Percentage share in total GDP		Percentage of estimates based on direct current data					
	1980-81	1985-86	Output	Input	Value Added	Output	Input	Value Added
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1. Agriculture	34.7	28.6	87.7	56.3	81.1	85.1	50.6	78.1
2. Forestry & logging	2.5	1.9	30.9	0.0	28.1	30.0	0.0	28.0
3. Fishing	0.8	0.9	97.3	0.0	90.6	97.3	0.0	90.3
4. Mining & quarrying	1.5	3.0	100.0	97.0	99.5	100.0	97.0	99.5
5. Manufacturing								
5.1 Registered	10.0	12.1	100.0	100.0	100.0	100.0	100.0	100.0
5.2 Unregistered	7.7	6.8			34.5			35.8
6. Electricity, gas and water supply	1.6	2.2			100.0			96.6
7. Construction	5.0	5.6	98.9	94.4	97.2	51.1	71.1	58.7
8. Trade, hotels and restaurants								
8.1 Trade	11.3	11.8			11.4			12.1
8.2 Hotels & restaurants	0.7	0.8			15.9			16.4
9. Railways	0.9	1.4			100.0			100.0
10. Transport by other means	3.0	3.9			34.8			24.4
11. Storage	0.1	0.1			35.8			38.0
12. Communication	0.7	0.8			100.0			100.0
13. Banking & insurance	2.8	3.5			98.6			90.8
14. Real estate, ownership of dwellings & business services	6.1	4.9			0.0			0.0
15. Public Administration & Defence	4.7	5.8			92.4			92.4
16. Other services	5.9	5.9			39.6			39.6
17. Total	100.0	100.0			63.7			62.2

* For the sectors where production approach is followed, the proportions are worked out separately for output and input. These proportions are then combined to work out the proportion for the value added. This has been done as follows:

$$V_i = (A_i X_i + B_i Y_i) / (X_i + Y_i)$$

where 'i' represents the sector, V the value added based on current data, 'X' and 'Y' represent the output and input of the sector respectively, and A and B represent the corresponding percentages based on current data. Though it could be argued that this should be obtained as:

$$V = (A_i X_i - B_i Y_i) / (X_i - Y_i),$$

but the above has the disadvantage of showing the V' more than 100 due to the fact that X is always greater than Y and A is also likely to be much higher than B.