
UNIT 7 EVOLUTION OF NATIONAL INCOME ACCOUNTING WITH SPECIAL REFERENCE TO INDIA

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7.0 OBJECTIVES

After going through this unit, you will be able to:

- describe the evolution of national income accounting in India;
- discuss the national accounting procedure in pre-independence India; and
- critically evaluate the present state of national income accounting in India.

7.1 INTRODUCTION

In many advanced countries of the world, we have information on the growth of national income in the past. A comprehensive indicator of this nature is very useful in tracing the economic history of the nation. Unfortunately information on this topic is not available for India in any reliable form and we cannot say with certainty that, today, our level of per capita income is higher or lower than that in 1900 or in 1850 and by how much. In this respect our knowledge about the period 1850 to 1900 is nearly non-existent. The position is somewhat better in respect of the first half of the 20th century. A fairly large number of estimates, of course, of very uneven quality are available for the period. After independence, time series (annual) estimates of national income and related aggregates are available.

The evolution of national income in general is discussed in section 7.2. Section 7.3 discusses its evolution in India. The discussion on evolution of national income in India is bifurcated between the Pre-Independence period and Post-Independence period, with emphasis on the latter. For a comprehensive review

of the estimates prepared for the pre-independence period one may refer to M. Mukherjee's book *National Income of India, Trends and Structures* (1969).

7.2 EVOLUTION OF NATIONAL INCOME ACCOUNTING IN INDIA

The idea of national income can be traced back to the 17th century when Sir William Petty of England made the first known estimate in 1665. Gregory King followed Petty in giving a breakdown of national income, as well as aggregate figures for 1688. His estimates included the national income, the national expenditure, and the national saving as well as the distribution of these aggregates among the different social and occupational classes.

In France, Boisguilleberts introduced the concept of measurable national income and prepared the first estimate of national income of his country in the last quarter of seventeenth century. A number of estimates were published during the 18th and the 19th century by different researchers for England, France and some other European countries. England was, however, the acknowledged leader in this field. This tendency of preparing estimates of national income continued for the first two decades of the 20th century. England was, however, the acknowledged leader in this field. This tendency of preparing estimates of national income continued for the first two decades of the 20th century. In **United States** the initial estimates were made only in 1843 by George Tucker. Adam Smith, Karl Marx, Alfred Marshall, A.A. Walras and J.M. Keynes laid the modern theoretical groundwork for national income analysis.

In the inter-war decades of the twenties and thirties, national income estimates were stimulated by the problems of reconstruction and the Great Depression. In 1918, estimates were being prepared for 13 countries, and by 1939 for thirty-three countries. Most of these were private efforts, with aids from non-governmental institutes. Among the pioneering individuals are Simon Kuznets in the U. S., Colin Clark in England and Ragnar Friesch in Norway.

Nine countries began making official estimates, extending them back in time to develop a continuous series. In 1944, national income estimators of England, Canada and the US met in Washington to establish uniform procedures. The result was the first international agreement on the conceptual methods and presentation of national income estimates. During and after World War II, the responsibility for national income estimates became almost universally a government task. Increasingly, these estimates began to be used for fiscal programmes and government planning. By 1957, ninety-two countries were preparing national income estimates. At international level, League of Nations for the first time published in 1939 national income estimates for 26 countries giving the estimates for all or part of the period 1929 to 1938. Estimates for half the countries were compiled as official estimates and for the rest as academic or other private studies.

When the Second World War ended there was an immediate need for comparable measures of national income as a basis for apportioning the expenses of international organisations. To help address this need, a Sub-Committee on National Income Statistics of the League of Nations Committee of Statistical Experts was formed. The Committee submitted its report in 1947. The Report gave the concepts and definitions of national income and related aggregates and the methodology of their estimation based on the experience in

national accounting accumulated in the early post-war years. By 1950 the United Nations Statistical Office was able to assemble estimates from country sources for National Income Statistics, 1938-48 for several years from 41 countries. A standardised System of National Accounts (SNA) was published in 1952 and a revised version in 1953.

As the work relating to national accounting progressed in different developing and developed countries of the World and as there were many improvements and extensions in this field of research; a revised SNA was issued in 1968. This revised SNA is the basis of preparing national accounts of different countries of the world. By the early 1970s, about 120 countries were reporting national accounts statistics to the United Nations for inclusion in the Year Book, and 40 more were added a decade later. SNA of 1968 has again been revised in 1993. The revised SNA has to replace the 1968 SNA over years to come.

7.3 EVOLUTION OF NATIONAL INCOME IN INDIA

7.3.1 Pre-Independence Period

The estimate of National Income in India was, for the first time, prepared by Dada Bhai Naoroji for the year 1867-68. Since then various estimates have been prepared from time to time by different persons. Estimates for seven points of time are available for the second half of the 19th century and 35 point estimates are available for the pre-independence period of the 20th century. In addition, a few time series estimates have been prepared for the first half of the 20th century or a part of the period (See M. Mukherjee, 1969). The following table gives certain broad details about the more important of the estimates prepared by different researchers.

Table 7.1: Estimates of National Income: Before Independence

Author	Territory covered	Year when attempted	Year for which estimated	Per Capita Income (Rs.)
1. Dr. Dada Bhai Naoroji	British India	1876	1868	20
2. Baring and Barbour	"	1882	1882	27
3. Lord Curzon	"	1901	1897-98	30
4. William Digby	"	1902	1899	18
5. F.G. Atkinson	"	1902	1875	27.3
6. F. G. Atkinson	"	1902	1895	35.2
7. Sir B. N. Sarma	"	1921	1911	50
8. Findlay Shirras	"	1922	1921	107
9. Shah and Khambhata	Whole of India	1924	1921	74
10. Wadia and Joshi	British India	1925	1913-14	44.3
11. Vakil and Muranjan	Whole of India	1926	1910-14	58.5
12. V. K. R. V. Rao	British India	1938	1931-32	62

Source: Rao, V.K.R.V., (1940), *The National Income of British India, 1931-32*, Pub: Macmillan and Co. London, p.2.

The estimates prepared by individual researchers related to different time periods, and their method of estimation as well as geographical coverage varied. There were conceptual differences among estimators which made their results divergent. Also the estimates were at current prices, and therefore, were incomparable without adjustment for price changes.

The estimates were severely limited by data availability. Estimates of agricultural production were unreliable. Estimates of industrial production were patchy in the extreme. In spite of these difficulties it is highly creditable for the researchers to prepare the estimates of national income of India.

7.3.2 Post-Independence Period

National Income Committee

Since independence, to meet the requirements for planning and policy, due attention has been given to the development of official estimates of national income and related aggregates. Recognising the need for providing estimates of national income on a regular basis, the Government of India set up 'The National Income Committee' in August 1949 under the Chairmanship of P.C. Mahalanobis with D. R. Gadgil and V.K.R.V. Rao as members.

The Committee was asked to make recommendations regarding the compilation of estimates of national income, the improvement of 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 the methodology adopted were published in the first and final reports of the National Income Committee brought out by the Ministry of Finance in 1951 and 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 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 of its activity.

The Final Report of the Committee gave the sector-wise estimates of national income for the years 1948-49 to 1950-51. As per the methodology and the pattern of presentation recommended by the NIC, the first official estimates of national income at constant prices were prepared by the CSO with base year 1948-49. These estimates at constant prices along with the corresponding estimates at current prices and the accounts of the public authorities were published in 1956 in the publication 'Estimates of National Income'. 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: Subsequent to the publication of the Final Report of the NIC, there were various studies on the sources of data and

suitability of the methods adopted by the NIC in the preparation of national income estimates. With the gradual improvement in the availability of basic data over the years, a review of methodology of 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 to 1959-60 (CSO, 1961). These proposals were sent for comments to experts in the field of national income and to various official and non-official research organisations. These proposals were also discussed at a seminar specially convened for the purpose. In the light of the views expressed by various experts, several follow-up studies were undertaken. The 'proposals' as improved/amended on the basis of the studies along with estimates as per the revised series of national income with 1960-61 as the new base for estimates at constant prices were published in the **'Brochure on the Revised Series of National Produce 1960-61 to 1964-65'** (CSO, 1967) replacing the earlier series with base 1948-49.

During this period two other developments took place. First, the name of National Income Unit was changed to National Income Division (NID). Secondly, the Brochure of 1967 used the term 'National Product' in place of the term 'National Income'. The main improvements in the new series related to:

- a) agriculture where all-India estimates are obtained by aggregating the state-wise estimates which are based on the fully revised estimates of output of agricultural commodities, revised yield rates of minor crops, livestock products and agricultural bye-products, wider empirical base for data on prices and use of latest data on cost of deductions;
- b) large scale manufacturing where the detailed data thrown up by the **Annual Survey of Industries** along with the provisional index of industrial production with 1960 base, have been used;
- c) unorganised sectors like unregistered manufacturing, transport other than railways, trade, hotels and restaurants and other services where the national sample survey data supplemented by the results of other available surveys and the 1961 Census of population based work force estimates have been used'
- d) construction, where expenditure and commodity flow approach instead of income approach have been adopted;
- e) real estate and ownership of dwelling, where the estimates have been prepared on the basis of number of residential houses reported in the 1961 Census; and
- f) Public Administration and Defence.

After the Brochure on the estimates of national product in 1967, two other Brochures; one, on the **'Estimates of Savings in India, 1960-61 to 1965-66'** and the other on the **'Estimates of Capital Formation in India - 1960-61 to**

1965-66' were brought out by the CSO in 1969. The estimates of savings in the economy have been split up into three sectors - Public Sector, Private Corporate Sector and Household Sector. The Brochure, on capital formation, gives the estimates of gross and net capital formation in India, both at current and 1960-61 prices separately for (i) Construction, (ii) Machinery and Equipment, and (iii) Changes in stocks. The other classification of the capital formation was into (i) Public Sector split-up into General Administration and Defence, and Public Sector Undertakings and (ii) Private Sector split up into Corporate Sector and Household Sector.

After the introduction of the new series the title of the annual publication was changed to 'Estimates of National Product. A need was felt 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 sectors. 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.

Further to meet the demand of the users a special supplement "National Account 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: 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 series included in NAS October, 1976 (latest available for 1960-61 series). 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. The detailed methodology of the estimation used in this revised series was published in the special publication known as "**National Accounts Statistics: Sources and Methods**, April 1980".

New Series with Base 1980-81: The period revision of the series continued and 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 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 for consumption of fixed capital, based on the estimates of fixed capital stock prepared by the NAD. The improvements proposed for the '1980-81 series' were considered in depth at the Pune Seminar and Conference of the Indian Association for Research in National Income and Wealth (IARNIW) held in December, 1984 and

November, 1985 respectively. These proposals and the consequent changes were discussed in detail by the Advisory Committee on National Accounts Specially convened for this purpose in April 1986 and June 1987.

For this series, efforts have been made to use as much current data as possible. For instance, the proportions based on the old bench mark surveys have replaced. Further, the results of the latest population Census, livestock Census, All India Debt and Investment Surveys, follow-up surveys of Economic Census (EC), Cost of Cultivation Studies, etc. have been made use of. The EC and its follow-up surveys have been particularly designed to fill the data gap pertaining to unorganised segments of the non-agricultural sectors of the economy.

The estimates of this series were initially brought out for 1980-81 to 1985-86, through a Brochure issued in February, 1988. The usual NAS publication with 1980-81 series was issued in May, 1988 and since then we are having the estimates with 1980-81 as base year. CSO brought out a special publication - **National Accounts Statistics - Sources and Methods, 1989.** This publication has discussed in details, the improvements and revisions made in the new series, the methodology adopted in preparing the estimates, and the source material utilised for the purpose. The concepts and definition have also been explained.

Revised Series of National Accounts with 1993-94 as Base

The series with base 1980-81 has now (in the year 1999) replaced by the Revised Series with 1993-94 as base. The detailed methodology of the revised series has not yet been published. Broadly, the following revisions have been affected in the series:

- i) the estimation of income from unregistered manufacturing and service activities have been made on the basis of new estimates of work force based on NSSO Surveys instead of estimates derived from population censuses.
- ii) Several new products have been included in many a sectors. For example, in the agricultural sector several horticulture and floricultural crops have been added.
- iii) Improvement has been affected in the coverage of existing products.
- iv) There is methodological improvement in applying a new indicator of constant price estimates for banking and insurance. There is also an improvement in allocation of imputed banking charges to industries and final uses.
- v) There is a major change in the use of the data generated from the Annual Survey of Industries (ASI). This change is made possible by the reduction of time lag in the availability of data from about 3 years to about 9-10 months.

So far (in 1999) the data in the revised series is available only for the period 1993-94 to 1997-98. CSO has also decided to change the base every five years.

Check Your Progress 1

- 1) Write a brief note (in 100 words) on the early attempts on estimating the national income in Europe.

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- 2) i) State very briefly attempts made to estimates the nation income of India before the Independence. What were their limitations?
 - ii) State five prominent names that brought out the estimates.
 - 3) Complete the following sentence.
 - i) The Government of India set ‘The National Income Committee’ in under the chairmanship of
 - ii) The other members of the Committee were
 - 4) CSO brought out the first estimates of National Income at constant prices at the prices of the year
 - 5) State till now, how many times base year for the estimates of NI have been revised. Give the years for each revision.

7.4 CONTENTS OF THE NATIONAL ACCOUNTS STATISTICS IN INDIA

The National Accounts Statistics (NAS) are prepared by the Central Statistical Organisation (CSO). NAS present the estimates onwards both at current and constant prices is the statistics are divided into 5 parts:

Part I - ‘Macro-Economic Aggregates’ This part presents the summary statements of macro-economic aggregates and their relationship, growth rate, implicit price and quantity deflators, consolidated accounts of the nation covering all principal transactions of the economy and performance of the Public Sector.

Part II - ‘Domestic Product’. This part presents statements on gross and net domestic product by kind of activity (agriculture, forestry, fishery, mining, manufacturing, etc.) along with their percentage distribution.

Part III - Consumption, Saving, Capital Formation and Capital Stock. This part provides the estimates of private final consumption expenditure (PFCE) domestic saving, capital formation and capital stock.

The estimates of saving are presented by type of institution. The estimates of gross and net capital formation are presented by type of assets, by type of institutions and by industry of use . The estimates of net capital stock have been given by type of institution and by industry of use.

Part IV - ‘Public Sector Transactions . This part deals with the transactions of the Public Sector. Along with details of value added, consumption expenditure, saving and capital formation, this part also presents the economic accounts separately for administrative departments and departmental and non-departmental enterprises. Purpose-wise details of both current and capital

expenditures of administrative departments also presented in this part. Separate presentation of accounts in respect of railways and communication is a special feature .

Part V - ‘Disaggregated Statements. This part contains disaggregated tables which include the details of gross value of output, input, and value added for each of the sectors. Besides, disaggregated estimates in respect of saving relate to financial assets and liabilities of the household sector. Capital formation by type of assets and by type of institution and external transaction accounts are also presented in this part. This part also contains Factor Incomes and Property Incomes by organised and unorganised sectors and by economic activity (sectors).

This publication also presents at the end a section on ‘Notes on Methodology which provides information on the revision in the estimates indicating broadly the changes in the methodology, new source material used, etc., for the benefit of the user.

Check Your Progress 2

- 1) State the main parts of the present National Accounts Statistics published by CSO.

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- 2) What information does the ‘Notes on Methodology’ given at the end of the National Accounts Statistics present?

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7.5 LET US SUM UP

The evaluation of national income can be traced back to the first known estimate of national income by Sir William Petty of England in 1665. A few other estimates were issued by the end of 17th century. A number of estimates were published the 18th century and 19th century by different researchers of England, France and a few other countries. In USA the initial estimators were made only in 1843 by George Tucker. By the end first four decades of 20th century, thirty three countries had started compiling estimates of national income. In 1944, a meeting of national income estimates was held in Washington to established uniform procedures for preparing the estimates. A standardised system of national accounts (SNA) was published in 1952 and a revised version in 1953. SNA was revised in 1968. Most of the countries are at present following SNA 1968. The latest revised SNA is available for 1993.

In India, the first estimate of national income were prepared by Dada Bhai Naoroji for 1867-68. Since then various estimates were prepared from time to time until the task of preparing these estimates was given to the CSO. The first official estimates were given by the National Income Committees. The first estimates by CSO were published in 1956 in the publication ‘Estimates of

National Income'. Since then the estimates are being regularly published by the CSO. With the passage of time, new and improved data sources as well as improved methodology has been used for preparing the estimates. The base periods have been changed a number of times. The present base period is 1993-94. Now there is a plan to change it every five years. The scope of the publication has been enlarged by the inclusion of estimates of private consumption expenditure, saving and capital formation and the division of the sector-wise national income into different factors of production as well as between organised and unorganised sectors of the economy. The name of the publication is changed to **National Accounts Statistics**, and in place of 'national income' SCO uses the terminology national product.

7.6 KEY WORDS

Assets	:	Goods which produce a stream of returns in the future
Macro-economic Aggregates	:	Indicators that provide an understanding about the state of the overall economy, like inflation, unemployment, national income
Unorganised Sector	:	Sector which is engaged in industrial production but is outside the factory method of production and where each unit employs few workers.

7.7 SOME USEFUL BOOKS

Sam Rosin; 1963, *National Income: Its Measurement, Determination and Relation to Public Policy*; Hot, Rinchart and Winston Inc., New York,.

M. Mukherjee; 1969, *National Income of India: Trends and Structure*; Statistical Publishing Society, Calcutta,.

D. P. Bhatia; 1996, *National Accounting: Concepts and Estimates*, Khanna Publishers, New Delhi,

Central Statistical Organisation; 1989, *National Accounts Statistics: Sources and Methods*,.

7.8 ANSWERS OR HINTS TO CHECK YOUR PROGRESS EXERCISES

Check Your Progress 1

- 1) See sub-section 7.3.1 and answer.
- 2) See sub-section 7.3.1 and answer.
- 3) (i) 1949; P.C. Mahalanobis
(ii) D.D. Gadgil and V.K.R.V. Rao
- 4) See sub-section 7.3.2 and answer.
- 5) See sub-section 7.3.2 and answer

Check Your Progress 2

- 1) See section 7.4 and answer
- 2) See section 7.4 and answer