CHAPTER 2

CONCEPTS AND METHODOLOGY

2.1. INTRODUCTION

In recent years, considerable attention has been paid to the measurement of the size of the government expenditure and the underlying factors which govern its growth. As a result, there has been a significant increase in the volume of literature pertaining to the hitherto neglected area of public expenditure. Ever since the German economist Adolf Wagner put forth his famous "law of increasing state activity," it has vastly interested scholars of public finance and political economy. His law has been put to rigorous empirical tests for both developed and developing countries in a variety of studies, and it still remains the most frequently studied theoretical proposition.

The main aim of the present study is to bring out the relationship between the growth of the total government expenditure and the growth of the aggregate national output over time, and also to ascertain the determinants that are responsible for the growth of government expenditure in India. However, one has to be careful not only in interpreting the results of any analysis carried out but also in precisely defining the terms government expenditure and national output when compiling the actual statistics to be compared and analyzed. The definition of the government expenditure and the concept of national income to be used have been a matter of wide ranging views and opinions and, therefore, a uniform yardstick has not been applied in the available literature relevant to this field. Nevertheless, a

proper understanding of the conceptual and statistical problems encountered becomes a necessity while undertaking such a study. For completeness, a brief discussion of the more significant of these problems and the methods adopted to address them is provided below.

2.2. CONCEPTUAL PROBLEMS

The conceptual problems arise because of the lack of uniformity in defining such terms as government expenditure and the choice of the national income concept. The non-uniformity is primarily on account of differences of opinion regarding the inclusion/exclusion of certain items in the definition of government expenditure as discussed below. Therefore, before undertaking any study of the present nature, it is a good practice to decide how the government expenditure is to be defined and which particular concept of national income will be appropriate for the study.

2.2.1. Definition of Government Expenditure

Whether or not the government expenditure should include both expenditure on goods and services and on transfers and subsidies has been a matter of some controversy in the past. Bird [1970], while supporting the exclusion of transfers and subsidies from the total government expenditure, has argued that their inclusion gives an exaggerated size of the government expenditure since transfers and subsidies form a considerable portion of the total expenditure. Musgrave and Musgrave [1989] also agree with the exclusion proposition for the same reason as cited above. However, Wiseman and Peacock [1961], in their study

of the growth of public expenditure in U.K., strongly recommend inclusion of transfers and subsidies. According to them, the ratio of the government expenditure to national income omitting transfers and subsidies would be without any economic significance. These have to be provided for in the budget and are clearly of importance in many economic contexts (e.g. in the use of the government expenditure as an indicator of tax burden implied by the activities of the government). However, if government expenditure (including transfers and subsidies) is expressed as a proportion or share of the national income, then it gives an over-estimate of the share of government in the total national output. This is because the transfers and subsidies are not a part of the national income as they do not reflect the output of goods and services currently generated. Their inclusion would rob the total expenditure figure of its usefulness as a measure of the value of the economy's output of goods and services. More recently, the same view has been endorsed by Buchanan and Flowers [1987].

The present study aims at analyzing the Central Government expenditure and follows the definition of the expenditure as given in "An Economic-cum-Functional Classification of the Central Government Budget," published by the Ministry of Finance, Government of India and includes the expenditure on transfers and subsidies. A detailed discussion on the various available concepts of expenditure and the justification for choosing the above concept is given later in this chapter.

2.2.2. Choice of National Income Concept

After having defined government expenditure, the next most important step is the choice of the national income concept relevant for the study. Opinions differ even regarding the concept of national income to be used. Frederick Pryor [1968] has used the Gross National Product (GNP) at factor cost for a cross-section study of the government expenditure. According to him, the expenditure data is essentially factor price data because the portion of public expenditure represented by payment of net indirect taxes is extremely small. However, in a time series data, the inclusion of indirect taxes can reveal a great deal about the tax burden imposed by the government and, hence, it has been opted to use GNP at market price for a time-series analysis in the above study. Balbir Sahani and Balvir Singh [1984] have used Net National Product (NNP) at factor cost in their study for testing the causality between the government expenditure and national income. Wiseman and Peacock [1961] have used Gross National Product (GNP) at factor cost in their study. According to them, this too is a compromise. If we wish to relate the total creation of economic wealth by the community and the consumption of that wealth by the government, then the NNP might be more suitable. However, the calculation of depreciation necessitated by the use of the latter approach is difficult and the reliability of the estimate is in any case questionable owing to the approximations involved. Hence, the choice of the net product measure may not furnish us with any additional information than the gross product measure. Since the government purchases have an indirect tax content, the indirect taxes should

be reflected in the measure of aggregate national output. So, the GNP at market price, which includes the indirect taxes, becomes the natural choice. Following this logic, the GNP at market price has been used as the concept of national income in the present study. Incidentally, it may also be mentioned that Reddy et al. [1984] have also opted to use the GNP at market price in his study of government expenditure in India.

2.3. STATISTICAL PROBLEMS

The statistical problems relate mainly to the actual collection of suitable statistics and preparing a consistent series of statistics of government expenditure and GNP at constant prices for the entire sample period. This problem is aggravated due to the lack of uniformity while generating a series of national income, as the official published data is based on methodologies which have undergone a change several times. This problem has now been solved, as a continuous series of national income is available from 1950-51 to 1989-90 in the Central Statistical Organization's (CSO) "New Series on National Accounts Statistics" with 1980-81 as the base year.

However, it may be mentioned here that, since the data for wages & salaries (compensation of employees), expenditure on purchase of commodities & services and gross capital formation in the public sector ware not available for the period 1950-51 to 1959-60, the calculation of price deflators for these categories at 1980-81 prices was not possible. The deflators for the above categories, for the period 1950-51 to 1959-60 alone, have been adopted from the work of Reddy et al. [1984] which considers

1970-71 as the base year. Hence, for consistency, the base year for the present study has been changed to 1970-71 making appropriate mathematical calculations as detailed in Appendix IIA.

The importance of the distinction between the real (adjusted) and current (unadjusted) values of the government expenditure and national income can be decided depending upon the problem at hand. Buchanan and Flowers [1987], Lewis-Beck and Rice [1985] and Musgrave [1969] have all favoured the use of current values as, according to them, the use of current values is a better indicator of the government's scope and influence on the national economy. Abidzadeh and Yousefi [1988], in their study on government expenditure for Canada, have concluded that the use of either real or current values does not significantly alter the outcome while examining the underlying causes of the growth of public expenditure.

As far as the calculation of real (adjusted) values is concerned, the most logical way out is the use of deflators. The most common practice is to use the wholesale price index for adjusting the government expenditure and national income figures for price changes. Although this procedure is misleading due to the fact that the composition of government purchases may not match that of the community as a whole, it can be useful in obtaining a reasonable estimate of the growth of expenditure and national income. However, the more closely the set of commodities included in the price index chosen matches with the set in the series at current prices, the better is the precision

of the deflation procedure. For this reason, one might want to opt for the method of double deflation of various components of the total government expenditure.

Wiseman and Peacock [1961], while favouring the use of separate deflators for various items of expenditure, have suggested in their study of public expenditure that the actual choice of deflators can be based upon the relative importance of the different components of government expenditure. For instance, they have opted to use the index of current goods and services as the deflator for changes in stocks and the value of work in progress, by way of an arbitration. The important point to be considered here is that the above item was not an important component of government gross capital formation for most of the period investigated in the study by Wiseman and Peacock [1961]. Hence, this deflation procedure does not significantly affect the final figure of real government expenditure. In the same study, separate price indices for current goods & services and capital goods have been compiled for deflating the current and capital components of both government expenditure and national product. The transfers and subsidies have been deflated by the general price index of current goods & services, because of the difficulty in identifying the recipients of such payments and their consequent purchases.

Bird [1970], too, has used different deflators for various components of expenditure. For example, the exhaustive/current exhaustive series and the capital expenditure have been deflated by the implicit price index of the government expenditure on

current account and capital account, respectively. The transfers and subsidies have also been separately deflated in the above study. Similarly, Fredrick Pryor [1968] has made use of different deflators, based on Paasche's Index and Laspeyre's Index, for various heads of government expenditure.

It is also pertinent to mention here that a substantial degree of ambiguity is present in all comparisons of expenditure and national income over time. This is because of the fact that the government expenditure and national income figures can not be satisfactorily adjusted for the influences of the price changes over very long periods, marked by significant changes in the economic structure and catastrophes like wars and depression. Hence, any of the deflators employed may at best be a compromise and one cannot strongly contend having used the "best" method of deflation.

2.3.1. Deflators Used

In light of the above discussion, the choice of the deflators used in the present study is discussed below in detail. For deflating the government expenditure, the total Central Government expenditure is disaggregated as follows:

1. Expenditure on wages and salaries
2. Expenditure on goods and services
3. Gross capital formation
4. Current transfers
5. Capital transfers
6. Financial investments and loans to the rest of the economy.

For deflating the expenditure on wages and salaries, the implicit deflator for the compensation of employees of the government administration is used. This was constructed using the data on compensation of government employees at current and constant prices from the Central Statistical Organization's (CSO) National Accounts Statistics.

The expenditure on goods and services is deflated by using the implicit deflator for the purchase of goods and services by the Central Government. This was calculated using the CSO's data relating to expenditure on goods and services at current and constant prices.

The gross capital formation is deflated by implicit price deflator for gross capital formation in the public sector calculated from CSO's estimates of public sector capital formation at current and constant prices.

The current transfers as well as the financial investments and loans to the rest of the economy, for want of a better alternative, are all deflated by the same implicit Gross Domestic Product (GDP) deflator. This deflator was calculated on the basis of the current and constant price series of GDP at factor cost. The current transfers include such diverse items as interest payments on national debt, statutory grants and plan & non-plan grants to States and Union Territories, subsidies and pensions, relief expenditure, grants to various public sector institutions (e.g. CSIR, ICAR, UGC etc.). Similarly, the financial investments and loans to the rest of the economy are comprised of the share capital of non-departmental commercial

undertakings, loans for capital formation including those for creation of capital assets, ways and means advances to States and Union Territories, agricultural loans, loans for natural calamities, subscription to IMF, IBRD, ADB, IDA etc., net purchase of gold and silver. In view of such diversity of constituents, it is difficult to deflate each one of them separately and, hence, a single common deflator has been used.

Capital transfers are deflated in a similar way as the gross capital formation because the capital transfers mainly relate to the grants given for capital formation to States and Union Territories, departmental commercial undertakings, local authorities and others.

While the deflators stated above have been used for deflating different components of expenditure, the national income series has been deflated using the implicit GDP deflator. The methodology of calculating the various deflators and the procedure adopted for converting the series of different components of expenditure and the national income at current prices into constant prices is discussed in Appendix II A.

2.4. STATISTICAL TOOLS USED

After a discussion on various conceptual and statistical problems encountered while undertaking a study of the present nature, the statistical tools used are enlisted below.

(1) For calculating the growth of Central Government expenditure and national income, an exponential fit of the form

$$y = ae^{gt} \qquad (2.1)$$

has been used with y being the level of government expenditure or GNP, t the time period and g the rate of growth to be determined from the above fit. Transforming the above equation as

$$\ln y = \ln a + gt \qquad (2.2)$$

the growth rate of expenditure and national income has been calculated using the **Ordinary Least Squares Estimation Method.**

(2) Ratios and proportions are used to study the structure of Central Government expenditure.

(3) The effect of various determinants of government expenditure like proportion of dependent population (i.e. population under 15 and over 60 years of age), tax revenue, per capital income and expenditure on non-traditional functions of the State has been investigated using the **Least Squares Multiple Regression** on a time-series data.

(4) To determine the causality pattern between GNP and aggregate government expenditure and also between GNP and the various functional categories like education, health, transport and communication etc., the **Granger Causality Framework** has been used.

Each of the statistical tools used has been elaborated and dealt with in greater detail subsequently in the respective chapters.

2.5. CLASSIFICATION OF BUDGETARY EXPENDITURE

Finally, it will be appropriate to also consider the

different ways in which the Central Government expenditure can be classified and to choose the best one to study its structure and growth. The budgetary expenditure in India is classified and presented in a number of ways:

1. Revenue and Capital Expenditure
2. Developmental and Non-developmental Expenditure
3. Plan and Non-plan Expenditure
4. Economic Classification
5. Functional Classification
6. Economic-cum-functional Classification

Depending on the aim of the study and the broad purpose for which it is carried out, one can choose a particular type of classification. For an easy reference, the concepts, merits and demerits of each type of classification is given below.

2.5.1. Revenue and Capital Expenditure

The expenditure on capital account denotes outlays incurred on the acquisition of capital assets, repayment and discharge of all kinds of debts and grants-in-aid given to various institutions such as local bodies, autonomous and semi-autonomous bodies for different purposes. The expenditure on revenue account concerns the expenditure on running the governmental machinery, maintenance of law and order and other departmental services such as Post & Telegraph and is generally of a recurring nature. In other words, it is the expenditure on goods and wages which the government has to incur for providing various kinds of services such as defence, administration, education etc. to the community.

The main limitation of this type of classification is that it does not reflect the real position of the expenditure on either revenue or capital account. If productivity is chosen as the criterion for allocating different heads under revenue and capital account, then the expenditure on defence and interest payments cannot be termed as productive and, therefore, capital expenditure can not be said to be growth promoting always. Also, the transfer of certain items of expenditure from capital to revenue account or vice-versa, as was done in some budgets, implants a degree of arbitration in the classification. Hence, the distinction between capital and revenue expenditure has no proper basis.

2.5.2. Developmental and Non-Developmental Expenditure

Developmental expenditure, as the name suggests, includes all items of expenditure that are designed directly to promote economic development and social welfare. All the remaining heads of expenditure fall under the non-developmental category. However, the developmental expenditure consists of expenditure on both revenue and capital account. For example, the salaries of the teachers on revenue account and the cost of building of schools on capital account together form the developmental expenditure on education.

The conceptual difficulties in precisely defining the content of developmental expenditure arise from the fact that the economic development itself assumes different meanings depending upon the stage of economic development of a country and the major goals of development planning adopted. The difficulty in

demarcating the expenditure which has no impact, direct or indirect, on development poses another problem. A minimum of sound administrative machinery is necessary for accelerating the rate of growth. In this case, the expenditure on administrative services is set to promote development indirectly, but is put under non-developmental expenditure.

2.5.3. Plan and Non-Plan Expenditure

The plan expenditure allocates funds for new projects which do not exist prior to the birth of a particular plan. On the other hand, non-plan expenditure is the provision of further funds for those projects which were undertaken in the previous plan period but were not completed during the same. The plan expenditure consists of both revenue and capital expenditure and, therefore, does not coincide with the concept of capital formation. It does not correspond to the concept of developmental expenditure as defined earlier, for the simple reason that the developmental expenditure includes old as well as new expenditure and not the expenditure on new schemes only as included under plan expenditure. For example, the plan expenditure will include salaries of only the newly employed teachers in schools started under the current plan and not of the old teachers, whereas developmental expenditure includes the salaries of all teachers (new and old) paid by the government.

The distinction between plan and non-plan expenditure has no great significance except for having an idea about the resources available for financing the plan. The non-plan expenditure, when added to the plan expenditure, gives the total expenditure and

hence its utility lies only in understanding the growth of government expenditure. However, the desirability of the reduction of non-plan expenditure is questionable. It so happens frequently that schemes included under the plan require recurring expenditure but they cannot be included in the plan expenditure but can be done so under non-plan expenditure. This method of classification is of limited use in economic analysis but is of practical importance in government transactions and in the operations of planning.

2.5.4. Economic Classification

This type of classification brings out the economic significance of the budgetary transactions. It is also useful in understanding how much of the total government outlay goes into current consumption and what part of it goes into capital formation. It also indicates how the total outlay is financed by different sources of income accruing to the government. It further brings out the magnitude of financial assets and liabilities created from government lending and borrowing. The classification depicts the transactions of the Central Government in the form of six accounts (as explained in the Appendix II B), each highlighting different aspects of fiscal operations. The set of six accounts containing the reclassified data from the Central Government budget enables calculation of the following significant magnitudes:

1. Central Government's total expenditure
2. Central Government's final outlay

3. Capital formation out of budgetary resources of the Central Government
4. Various measures of deficit in Central Government's budgetary transactions
5. Income generation by the Central Government
6. Net capital formation and savings of Central Government

2.5.5. Functional Classification

It is designed to group the government expenditure in terms of broad purposes to be served viz. defence, administration, health, education, agriculture, industry etc. The total outlay of the Central Government to which it applies consists of current expenditure in Account-I, capital expenditure in Account-III and financial investments and loans & advances in Account-IV of the economic classification as provided in Appendix II C. The total expenditure of the government has been grouped into four main categories as follows:

1. General services
2. Social services
3. Economic services
4. Unallocable

A detailed explanation of each of the above categories is given in the Appendix IIC.

2.5.6. Economic-cum-functional Classification

This type of classification serves as a very useful tool for analyzing the expenditure from the point of view of highlighting the economic significance of each of the functional heads. For instance, the gross capital formation under the functional head

of 'health' can include the expenditure on building of a new hospital. Hence the utility of this type of classification rates the highest among the different ways in which the budgetary expenditure is presented.

The present study makes extensive use of the economic and functional classification discussed above for studying the growth and structure of the Central Government expenditure.

APPENDIX IIA

DEFLATION PROCEDURE

Appendix Table IIA-1 gives the different series relevant for deriving various deflators, both at current prices and at 1980-81 prices. The price deflators at 1980-81 prices given in Appendix Table IIA-2 are obtained by determining the figures at current prices as a percentage of the respective figures at 1980-81 prices, both of which are available in Appendix Table IIA-1. That is,

$$\text{Price deflator (1980-81 prices) for year t} = \frac{\text{Value at current prices for year t}}{\text{Value at (1980-81) prices for year t}} \times 100$$

For example,

$$\text{GDP deflator for 1950-51 (at 1980-81 prices)} = \frac{\text{GDP (1950-51) at current prices}}{\text{GDP (1950-51) at 1980-81 prices}} \times 100$$

$$= (8979/42871) \times 100$$

$$= 20.94$$

Since the data for wages & salaries (compensation of employees), expenditure on purchase of commodities & services and gross capital formation in the public sector was not available for the period 1950-51 to 1959-60, the calculation of price deflators for these categories at 1980-81 prices was not possible. Hence, the base year for the present study has been changed to 1970-71 so that, for the period 1950-51 to 1959-60 alone, the price deflators for the above categories could be adopted from the book "Central Government Expenditure - Growth,

APPENDIX TABLE IIA-1

DIFFERENT SERIES RELEVANT FOR DEFLATION OF CENTRAL GOVERNMENT EXPENDITURE OF INDIA AT CURRENT AND 1980-81 PRICES (1950-51 TO 1989-90)

(Rs.in crores)

Year	Gross Domestic Product at Current Prices	Gross Domestic Product at 1980-81 Prices	Expenditure on Wages & Salaries at Current Prices	Expenditure on Wages & Salaries at 1980-81 Prices
(1)	(2)	(3)	(4)	
1950-51	8979	42871	--	--
1951-52	9480	43872	--	--
1952-53	9349	45117	--	--
1953-54	10180	47863	--	--
1954-55	9563	49895	--	--
1955-56	9717	51173	--	--
1956-57	11600	54086	--	--
1957-58	11859	53432	--	--
1958-59	13266	57487	--	--
1959-60	13934	58745	--	--
1960-61	15254	62904	245	687
1961-62	16097	64856	279	759
1962-63	17212	66228	323	883
1963-64	19671	69581	419	1089
1964-65	22981	74858	460	1168
1965-66	24063	72122	498	1207
1966-67	27389	72856	566	1254
1967-68	32187	78785	633	1273
1968-69	33943	80841	703	1371
1969-70	37328	86109	758	1462
1970-71	39708	90426	823	1601
1971-72	42248	91339	932	1729
1972-73	46473	91048	994	1763
1973-74	56954	95192	1095	1804
1974-75	67039	96297	1583	2105
1975-76	71201	104968	1790	2207
1976-77	76536	106280	1786	2150
1977-78	87351	114219	1862	2180
1978-79	93880	120504	1983	2264
1979-80	102442	114236	2137	2320
1980-81	122226	122226	2399	2399
1981-82	142876	129776	2708	2407
1982-83	158851	133830	3178	2622
1983-84	185815	144817	3733	2737
1984-85	207781	150542	4448	3060
1985-86	234063	158176	4999	3233
1986-87	260680	164441	6233	3708
1987-88	293306	170363	7729	4212
1988-89	351724	187725	8816	4408
1989-90	395143	197419	9905	4668

.....(APPENDIX Table IIA-1 continued)

.....(APPENDIX Table IIA-1 continued)

(Rs.in crores)

Year	Expenditure on Purchase of Commodities and Services at Current Prices	Expenditure on Purchase of Commodities and Services at 1980-81 Prices	Gross Capital Formation in the Public Sector at Current Prices	Gross Capital Formation in the Public Sector at 1980-81 Prices
	(1)	(2)	(3)	(4)
1950-51	--	--	--	--
1951-52	--	--	--	--
1952-53	--	--	--	--
1953-54	--	--	--	--
1954-55	--	--	--	--
1955-56	--	--	--	--
1956-57	--	--	--	--
1957-58	--	--	--	--
1958-59	--	--	--	--
1959-60	--	--	--	--
1960-61	120	532	1137	4805
1961-62	130	561	1169	4815
1962-63	264	1060	1464	5731
1963-64	509	1877	1671	6473
1964-65	445	1614	1920	6822
1965-66	492	1695	2184	7412
1966-67	508	1661	2114	6569
1967-68	522	1605	2311	6662
1968-69	553	1622	2146	6002
1969-70	583	1645	2234	5997
1970-71	691	1837	2808	6984
1971-72	931	2310	3290	7650
1972-73	933	2190	3740	9033
1973-74	910	1920	4751	8969
1974-75	1021	1636	5557	8757
1975-76	1282	1919	7583	11030
1976-77	1447	2061	8584	12326
1977-78	1543	2126	7846	10445
1978-79	1665	2199	9883	12519
1979-80	2032	2366	11818	13029
1980-81	2190	2190	11767	11767
1981-82	2768	2444	16781	15178
1982-83	3238	2666	20100	16635
1983-84	3716	2855	20381	15502
1984-85	4241	3047	24915	17588
1985-86	6113	4040	29056	18216
1986-87	8076	5027	33674	19584
1987-88	9263	5445	33352	17958
1988-89	10414	5554	39427	19346
1989-90	11257	5457	46156	20895

Sources: (1) "New Series on National Accounts Statistics (1950-51 to 1989-90)" with 1980-81 as the base year, Central Statistical Organisation, Govt. of India, June 1989. (2) National Accounts Statistics, Central Statistical Organisation, Govt. of India (various annual issues).

Note: '--' denotes data not available

Structure and Impact (1950-51 to 1977-78)" by K.N.Reddy, J.V.M.Sarma and Narain Sinha, National Institute of Public Finance & Policy, New Delhi (1984) which provides the deflators at 1970-71 prices.

After having obtained a continous series of deflators at 1980-81 prices as given in Appendix Table IIA-2, the base year of the deflators can be changed according to the requirement, by equalling the desired year's value to 100. For instance, the base year of the GDP deflator in Appendix Table IIA-2 can be converted to 1970-71, by putting the value of the GDP deflator for 1970-71, 43.91 equal to 100. The values for the rest of the years can be obtained by multiplying the corresponding value of the GDP deflator at 1980-81 prices by 100/43.91. The price deflators for wages & salaries, commodities & services and gross capital formation can be obtained at 1970-71 prices, by putting the value for the year 1970-71 equal to 100 and by multiplying the values for rest of the years by 100/51.41 , 100/37.62 and 100/40.21 for the respective years.

For example,

$$\text{GDP deflator for 1950-51 (at 1970-71 prices)} = \frac{\text{GDP (1950-51) at 1980-81 prices}}{\text{GDP (1970-71) at 1980-81 prices}} \times 100$$

$$= (20.94/43.91) \times 100$$

$$= 47.68$$

The price deflators thus obtained in Appendix Table IIA-3 at 1970-71 prices can be employed to calculate the series on various components of Central Government expenditure at constant 1970-71

APPENDIX TABLE IIA-2

PRICE DEFLATORS : 1950-51 TO 1989-90
(1980-81 = 100)

Year	Implicit GDP Deflator at 1980-81 Prices	Implicit Deflator for Wages & Salaries at 1980-81 Prices	Implicit Deflator for Commodities & Services at 1980-81 Prices	Implicit Deflator for Gross Capital Formation at 1980-81 Prices
	(1)	(2)	(3)	(4)
1950-51	20.94	--	--	--
1951-52	21.61	--	--	--
1952-53	20.72	--	--	--
1953-54	21.27	--	--	--
1954-55	19.17	--	--	--
1955-56	18.99	--	--	--
1956-57	21.45	--	--	--
1957-58	22.19	--	--	--
1958-59	23.08	--	--	--
1959-60	23.72	--	--	--
1960-61	24.25	35.66	22.56	23.66
1961-62	24.82	36.76	23.17	24.28
1962-63	25.99	36.58	24.91	25.55
1963-64	28.27	38.48	27.12	25.81
1964-65	30.70	39.38	27.57	28.14
1965-66	33.36	41.26	29.03	29.47
1966-67	37.59	45.14	30.58	32.18
1967-68	40.85	49.73	32.52	34.69
1968-69	41.99	51.28	34.09	35.75
1969-70	43.35	51.85	35.44	37.25
1970-71	43.91	51.41	37.62	40.21
1971-72	46.25	53.90	40.30	43.01
1972-73	51.04	56.38	42.60	41.40
1973-74	59.83	60.70	47.40	52.97
1974-75	69.62	75.20	62.41	63.46
1975-76	67.83	81.11	66.81	68.75
1976-77	72.01	83.07	70.21	69.64
1977-78	76.48	85.41	72.58	75.12
1978-79	77.91	87.59	75.72	78.94
1979-80	89.68	92.11	85.88	90.71
1980-81	100.00	100.00	100.00	100.00
1981-82	110.09	112.51	113.26	110.56
1982-83	118.70	121.21	121.46	120.83
1983-84	128.31	136.39	130.16	131.47
1984-85	138.02	145.36	139.19	141.66
1985-86	147.98	154.62	151.31	159.51
1986-87	158.52	168.10	160.65	171.95
1987-88	172.17	183.50	170.12	185.72
1988-89	187.36	200.00	187.50	203.80
1989-90	200.15	212.19	206.29	220.90

Source: Based on APPENDIX Table IIA-1

Note: '--' denotes data not available

APPENDIX TABLE IIA-3

PRICE DEFLATORS : 1950-51 TO 1989-90
(1970-71 = 100)

Year	Implicit GDP Deflator at 1970-71 Prices	Implicit Deflator for Wages & Salaries at 1970-71 Prices	Implicit Deflator for Commodities & Services at 1970-71 Prices	Implicit Deflator for Gross Capital Formation at 1970-71 Prices
	(1)	(2)	(3)	(4)
1950-51	47.68	54.12	46.70	42.53
1951-52	49.19	55.46	70.30	45.36
1952-53	47.18	56.23	46.50	44.76
1953-54	48.41	57.55	64.90	45.20
1954-55	43.63	58.10	66.00	47.68
1955-56	43.22	61.73	45.80	46.62
1956-57	48.82	61.91	49.30	48.46
1957-58	50.53	61.74	50.90	48.58
1958-59	52.53	63.98	51.40	55.55
1959-60	53.99	65.32	52.60	56.43
1960-61	55.20	69.37	59.95	58.85
1961-62	56.50	71.49	61.60	60.37
1962-63	59.16	71.14	66.31	63.53
1963-64	64.38	74.84	72.08	64.20
1964-65	69.89	76.61	73.30	70.00
1965-66	75.97	80.25	77.16	73.28
1966-67	85.60	87.80	81.30	80.04
1967-68	93.03	96.73	86.46	86.26
1968-69	95.60	99.74	90.64	88.93
1969-70	98.70	100.85	94.30	92.66
1970-71	100.00	100.00	100.00	100.00
1971-72	105.32	104.86	107.15	106.96
1972-73	116.23	109.68	113.26	102.76
1973-74	136.25	118.08	126.00	131.76
1974-75	158.52	146.30	165.91	157.83
1975-76	154.47	157.78	177.61	170.99
1976-77	163.99	161.59	186.65	173.23
1977-78	174.15	166.16	192.95	186.84
1978-79	177.40	170.38	201.30	196.36
1979-80	204.21	179.20	228.34	225.62
1980-81	227.73	194.55	265.88	248.75
1981-82	250.71	218.87	301.11	275.02
1982-83	270.30	235.79	322.91	300.54
1983-84	292.21	265.36	346.05	327.03
1984-85	314.32	282.27	370.06	352.36
1985-86	336.98	300.81	402.31	396.76
1986-87	361.01	327.02	426.25	427.71
1987-88	392.07	356.98	452.29	461.99
1988-89	426.69	389.10	498.53	506.94
1989-90	455.81	412.80	548.47	549.47

Sources: (1) Deflator values for the period 1950-51 to 1959-60 for Wages & Salaries, Commodities & Services and Gross Capital Formation are adopted from "Central Government Expenditure - Growth, Structure and Impact (1950-51 to 1977-78)" by K.N.Reddy, J.V.M.Sarma and Narain Sinha, National Institute of Public Finance & Policy, New Delhi (1984). (2) The rest of the values are based on APPENDIX Table IIA-2.

prices (given in Table 4.3) using the series at current prices (given in Table 4.2). This is done by carrying out the following mathematical operation:

$$\text{Value at 1970-71 prices} = \frac{\text{Value at current prices}}{\text{Price deflator at 1970-71 prices}} \times 100$$

APPENDIX IIB

ECONOMIC CLASSIFICATION OF CENTRAL GOVERNMENT EXPENDITURE

The economic classification presented here is adopted from "An Economic-cum-Functional Classification of the Central Government Budget", Ministry of Finance, Government of India.The framework of economic classification is based on the delineation of Central Government transactions in a set of six accounts. However, it may be mentioned that, only the items on expenditure, disbursements or outgoings in each of these accounts are described below :

ACCOUNT-1: Transactions in commodities and services and transfers; Current Account of Government administration.

This account, on the expenditure side, is concerned with the Government's consumption expenditure and current transfer payments, as shown below :

1. **Consumption Expenditure** : The government's consumption expenditure consists of wages and salaries paid to the employees and current expenditure incurred on purchases of commodities and services.

1.1. Wages and Salaries : It denotes the income generated in the form of wages and salaries paid by the Central Government. Besides actual payments by the civil departments in the form of pay of officers and staff, allowances (including dearness allowances and city compensatory allowances) and honoraria, this item includes wages and salaries of defence personnel including

kit and clothing allowance and food grains provided to defence personnel, wages and salaries component of defence capital outlay and of 'repairs and maintenance' and also wage payments to casual labour employed by administrative departments.

1.2. Commodities and Services : It includes expenditure under the head 'other charges'. 'Lump-sum provisions' in the budget have been broken down into expenditure on commodities and services and wages and salaries in the ratio 50:50. Contributions to the U.N. and similar payments made to other international organisations are treated as purchases of services. Except for one-third of the works expenditure which is treated as wages and salaries, the rest of capital outlay on defence appears here.

2. **Transfer Payments** : These expenditures do not involve direct demand on goods and services; they are of the nature of mere transfers intended to add to incomes of others. These comprise interest payments, current grants to States, Union Territories, local authorities and non-profit making institutions, subsidies, pensions and transfer payments to others.

2.1. Interest Payments on national debt are shown here.

2.2. Grants include statutory grants, as well as other non-plan and plan grants to States and Union Territories. The expenditure on rehabilitation of displaced persons routed through State Governments and Union Territories also appear here. The Central assistance to States and Union Territories is given in the form of block grants and loans which have been allocated between current and capital grants in the ratio of 50:50. The sub-item

'grants to others' comprises grants mainly to institutions and these include grants to public sector institutions, like Council for Scientific and Industrial Research (CSIR), Indian Council of Agricultural Research (ICAR) and University Grants Commission (UGC).

2.3. Other Current Transfers include subsidies, pensions (civil and defence) and other current transfers to individuals like scholarships, stipends, prizes, famine and other relief payments. This item also includes relief expenditure (i.e. other than that routed through State Governments and Union Territories) incurred directly on displaced persons.

Item-2 in Account-1 represents the current transfers as shown in the economic classification of Central Government expenditure.

ACCOUNT-2: Transactions in commodities and services and transfers; Current Account of Departmental Commercial Undertakings.

This account sets out the profit and loss account of departmental commercial undertakings. Current expenditure of these undertakings like working expenses of productive enterprises constitute intermediate expenditures that enter into the prices of goods and services as they are sold to the other sectors of the economy. Therefore, they are different in character from final outlays by administrative departments, and hence not included in the total Central Government expenditure.

ACCOUNT 3: Transactions in commodities and services and transfers; Capital Account of Government Administration and Departmental Commercial Undertakings (combined).

This account is concerned with the total capital outlay representing physical asset formation by administration and departmental commercial undertakings and capital transfers. A distinction between administration and departmental commercial undertakings in respect of capital expenditure is not very meaningful, for the reason that the entire expenditure on capital formation is a final expenditure which is a change on the national product and for which Government has to find resources either from its own savings or by drawing on private savings. The main items under disbursements are :

1. **Gross Fixed Capital Formation** : The physical asset formation (excluding the renewal and replacement expenditure of departmental commercial undertakings) and net increase in inventories.

1.1. Building and other construction include all buildings for residential, office and other purposes, road construction, works of railways and posts and telegraphs, power and other capital projects.

1.2. Machinery and equipment include expenditure incurred on the purchase of various types of machinery and equipments including machinery obtained under foreign aid. The expenditure shown against 'renewals and replacements' refers to expenditure financed out of the depreciation funds of the departmental commercial undertakings.

The entire expenditure on machinery and equipment as well as on construction by the government administration, therefore, appears as 'new outlay', since no provision for depreciation of these assets is made in the budget.

2. Increase in Works Stores : The net increase or decrease in stores needed for construction work and inventories of departmental commercial undertakings and administrative departments is shown under this item.

Item 1 in Account-1 and items 1 and 2 in Account-3 together form the final outlays presented in the economic classification of Central Government expenditure.

3. Capital Transfers : The items included under capital transfers are:

3.1. Grants for capital formation : Capital grants to States and Union Territories include one-half of block grants given as Central assistance for plan schemes, as well as such grants as one intended to assist capital formation (e.g. grants for rural works, soil conservation, forests, minor irrigation, etc.). Grants to non-departmental commercial undertakings include capital assistance (other than by way of loans, to autonomous corporations like the Oil and Natural Gas Commission). Grants to others include part of grants to public sector institutions like Council of Scientific and Industrial Research (CSIR) and Institute of Technology (IIT), treated as intended for purchase of equipment and for construction.

3.2. Gratuities and commuted value of pensions are also included under capital transfers.

3.3. Other capital transfers includes grants to foreign countries.

ACCOUNT-4: Changes in financial assets : Capital Accounts of Government Administration and Departmental Commercial Undertakings.

This account is concerned with transactions in financial assets, i.e. investment in share capital of industrial and commercial concerns and loans and granted to the rest of the economy. Investment in shares and loans for capital formation indicate the extent to which the Central Government promotes capital formation in the rest of the economy through financial assistance in addition to the capital formation directly undertaken by it. The main items of outgoings in Account-4 are :

1. **Investment in Shares** of government concerns denote investments in the share capital of such non-departmental commercial undertakings of the government, in which the Central Government ownership is more than 50 percent. Acquisition of shares as a result of nationalisation of banks, general insurance, etc. is also treated as investment. All other concerns whether in private, cooperative or public sector have been treated as 'others'. In case of government concerns a distinction has been drawn between financial concerns and non-financial concerns.

2. **Loans for Capital Formation** include loans given for the creation of capital assets and consists of loans to States, Local authorities, undertakings and others. Loans to States out of small savings have been treated as loans for capital formation.

Only plan loans given to non-departmental commercial undertakings have been taken as loans for capital formation. Loans for capital formation to others include loans to private industrial undertakings, cooperative housing societies and house-building loans to government employees.

3. **Other loans** to State governments and Union Territories include ways and means advances, short-term agricultural loans, loan for natural calamities and special loans for meeting non-plan gaps. 'Other loans' to non-departmental commercial undertakings include non-plan loans given for meeting their losses and also for repayment of past loans. Loans to foreign governments also include technical credits to countries having rupee payment agreements. Loans to 'others' include conveyance as well as relief (e.g. cyclone) loans to government employees.

4. **Subscription to international financial organizations** like International Monetary Fund (IMF), International Bank for Reconstruction and Development (IBRD), International Development Authority (IDA) and Asian Development Bank (ADB).

5. **Net purchase of gold and silver** after adjusting for any sale of gold.

ACCOUNT-5: Changes in financial liabilities : Capital Accounts of Government Administration and Departmental Undertakings.

This account represents the borrowing account of the Central Government and is concerned with the provision of finance for meeting deficits emerging from Accounts-3 and 4. The outgoings on this account include repayment on account of market borrowings

and foreign loans. The balance emerging from this account represents the net increase in financial liabilities.

ACCOUNT-6: Cash and Capital Reconciliation Account of Government Administrations and Departmental Commercial undertakings.

This is the reconciliation account summing up the net position in respect of Accounts-3, 4 and 5 and showing the effect of all transactions of the Central Government on its cash position.

The sum total of items 1 and 2 in Account-1, items 1, 2 and 3 in Account-3 and items 1, 2, 3, 4 and 5 in Account-4 represent the total Central Government expenditure.

APPENDIX IIC

FUNCTIONAL CLASSIFICATION OF CENTRAL GOVERNMENT EXPENDITURE

The functional classification presented here is adopted from " An Economic-cum-Functional Classification of Central Government Budget," Ministry of Finance, Government of India. The functional classification of government expenditure is designed to group the main items of Government expenditures in terms of broad purposes to be served, i.e. defence, administration, health, education, economic services, etc. The scheme of functional classification relates essentially to expenditure and does not apply to receipts. The total outlay of the Central Government to which it applies is made up of the current expenditure in Account 1, capital expenditure in Account 3 and financial investments and loans and advances in Account 4 of the Economic Classification.

The expenditure of the Central Government have been grouped into four main functional categories :

1. General Services
2. Social Services
3. Economic Services
4. Unallocable

Each of the above categories are discussed in detail below.

1. **General Services** cover both civil and defence expenditures that are incurred on the provision of the basic administrative structure of the nation; thus expenses on general administration, tax collection, police, currency and the mint, conduct of external relations, defence and the non-plan provision against natural calamities are shown under this category. It may be

noted that the administrative expenditures are concerned with the direction and superintendence of the various social and economic activities appear under the relevant functional heads. Where more than one activity is involved (e.g. public works) an attempt has been made to apportion, to the extent possible, the administrative overheads to the various activities.

2. **Social Services** are concerned with the provision of basic social amenities to the community. Expenditure on education, medical and public health and other social services are included here.

2.1. Education covers both general and technical education (e.g. engineering and medical colleges) and also basic research. However, in-service training and applied research have been allocated to the respective activities. For instance, both atomic and industrial research appear under Industry.

2.2. Medical and Public Health also covers family welfare programmes.

2.3. Other Social Services include housing, labour welfare and other social welfare schemes, museums, archaeology, public libraries and also expenditures connected with broadcasting and other publicity media. Expenditures provided in the budget for various programmes of employment are also included here. This sub-group also covers such expenditures as the lump-sum provision made in the budget for primary education, slum improvement, rural water supply and rural home sites. The expenditure on nutrition programme for children is also shown here. The relief

expenditure for displaced persons are included here.

3. **Economic Services** include all such expenditures that promote, directly or indirectly, productive activity within the economy. Producer's subsidies such as for fertilizers, coal and railways, as also the assistance for export promotion and market development are, therefore, included here. Further, sub-division into agriculture, industry, transport and communications and 'other economic services' is done according to the type of economic activity.

3.1. Agriculture includes irrigation, animal husbandry, fisheries, forestry, cooperation and community development.

3.2. Industry broadly covers both large, small scale and village industries, power development, exploitation of mineral resources and trade and export promotion.

3.3. Transport and communications include Railways, Posts and Telegraphs, ports, shipping, civil aviation, roads, etc.

3.4. Other economic services is a residual category which includes items like outlays on multipurpose projects, and States' share in small savings. The block grants and loans granted by the Centre to the States for plan assistance although shown separately also belong to the same category. All these expenditures are such as are concerned with more than one type of economic activity.

4. **Unallocable Services** include certain types of expenditure which cannot be related to specific purposes. The main types of

expenditure included here are interest payments, pensions, consumer subsidies (such as on food, edible oils and controlled cloth) and such transfers to the State Governments as statutory grant in aid, and special loans. While consumption subsidies have been treated as unallocable, other subsidies such as subsidies for fertilizers, cotton and exports have been allocated to the relevant functional categories. The unallocable category also includes transfer to foreign countries, e.g. grants to Nepal and Bhutan, technical credits and other loans to foreign countries. As regards contributions to international organisations, it may be noted that while contributions to such organisations as World Health Organisation and Food and Agricultural Organisation of the United Nations, appear under the respective functional heads (viz. health and agriculture) contribution to the United Nations and also subscription to IMF, IBRD, etc., are shown under General Services.