CHAPTER XVII

INCOME, CAPITAL FORMATON AND SAVINGS

An analysis of the trends in national and per capita income, capital formation and savings can throw significant light on economic growth and its major determinants. The rate of growth of national income is commonly employed as a measure of the pace at which an economy has been advancing. This concept is a simple and analytically serviceable, though not, an adequate measure of economic progress. Its inadequacy is, however, obvious. First, there is often a large margin of error emanating from unsatisfactory bases and arbitrary assumptions involved in certain sectoral estimates; and secondly, it fails to portray qualitative changes. Economic growth is a generic term and comprehends a wide range of improvements pervading the entire life and living in a community. Improvements in the physical and mental ability to work, development of initiative and enterprise in a community, modernization of institutional arrangements, advancement in the level of techniques of production and structural realignments in the productive apparatus, and more equitable distribution of incomes are some of the more important facets of economic progress, all contributing to the end-result of making the community more prosperous.

Some of these are qualitative improvements and cannot be reduced to a common measure. The normal technique of national income estimation fails to comprehend these and express them in quantitative terms. While all this is true, the use of national income estimates has the merits of identifying the components so vital to the analysis of sectoral growth of an economy. It also enables concentrated attention on the readily measurable and causally inter-related aggregates like income, consumption, investment and savings. Further, after allowing for changes in population, the rate of growth of per capita income provides an index of the rise in productivity and standard of living and, therefore, of economic welfare in a community. It is for these reasons that in the analysis presented here, the rates of growth of national and per capita income have been used as indicators of economic progress and related to the analysis of investment and savings trends, their major determinants.

I. National and Per Capita Real Income

Each sector of the economy *viz.*, agriculture, industry, mining, trade, transport, banking and other services, whose development has been discussed in earlier chapters, employs human and material resources and contributes to the aggregate flow of goods and services during a given

time-period which may be normally specified as a calendar year. This aggregate flow of goods and services represents the aggregate income earned by factors of production employed during the year, and is termed as national income in technical parlance. It is a sum of domestic output counted without duplication *i.e.* value added by factors domestically employed and originating within the economy and net income earned from financial investments abroad. Changes in nominal national income are measured at current prices and in real national income at constant prices. A distinction is usually made between *gross* and *net* national income; the former does not, while the latter does, allow for capital consumption or depreciation of the stock of capital during the accounting period. What is relevant for the analysis of economic growth is the *net* national income whose rate of growth is indicative of the pace at which the economy has been growing.

The rate of growth of *net* national income when compared with the rate of growth of population indicates whether the economy is declining, stagnant or developing. If the rate of growth of national income is lower than the rate of growth of population, per capita income declines, the economic condition of the people (on an average) deteriorates and the economy exhibits a declining trend. When net national income grows at a rate equal to the rate of growth of population, per capita income remains constant and the economy continues to stagnate. It is only when *net* national income grows at a rate faster than the rate of growth of population that per capita income depicts a rising trend. The community is able to improve its living standard and add to its stock of capital, and the economy moves on the path of a rising level of activity and productivity. A developing economy is characterized by such a trend.

An analysis of trends on the lines indicated above presupposes the availability of fairly reliable and comparable time-series of data on national *real* income, population and per capita *real* income. In India, the first attempt to estimate national income and per capita income was made for the year 1867-68 by Dadabhai Naoroji. This was followed by several intermittent efforts by individuals — officials as well as non-officials. The Table I sets forth the more important estimates made for particular years before World War II.

All these estimates are at current prices and differ widely in territorial coverage, conceptual basis, method of estimation and basic data used. They do not provide a series of comparable estimates adequately reliable to study the growth of Indian economy over the period. In view of this deficiency of national income statistics, some research workers have, of late, attempted to study the trends during the period by following two alternative methods: one is based on available time-series data on physical units of output and the other on a time-series of national and per capita

TABLE I

Estimator	*Year*	*Estimates*		
		National income (Rs. crores)	*Population (crores)*	*Per capita income (Rs.)*
Dadabhai Naoroji (1)	1867-68	340	17.0	20
Baring (Earl Cromer) and Barbour (2)	1882	525	19.5	27
Lord Curzon (3)	1897-98	675	22.5	30
William Digby (4)	1898-99	428	24.5	17.5
Atkinson (5) (i)	1875	574	18.8	30.5
(ii)	1895	877	22.2	39.5
Findlay Shirras (6) (i)	1911	1,942 (1,204)	24.3	80 (50)
(ii)	1920-21	2,598 (1,771)	24.7	(107 (72)
(iii)	1921-22	2,866 (2,079)	24.7	116 (85)
Shah and Khambatta (7) (i)	1900-14	1,106*	30.5*	36*
(ii)	1914-22	1.862*	31.8*	58.5*
(iii)	1900-22	1,380*	31.0*	44.5*
(iv)	1921-22	2,364	31.9	74
V.K.R.V. Rao (8)	1931-32	1,689 $\pm$ 6%	27.2	62 $\pm$ 6%

*Average for the period

(1) Dadabhai Naoroji: *Poverty of India* (London 1878) also *Poverty and Un-British Rule in India* (London 1901). (2) Quoted by William Digby in *Prosperous British India* (London 1901) pp. 364 etc. seq and 442 et seq. (3) *East India. Finance Statement* 1901-2 pp. 212-14 (official estimate of Govt. of India); (4) William Digby: *Prosperous Britisn India* (London 1901). (5) Fred. J. Atkinson: "A Statistical Review of the Income and Wealth of British India", *Journal of the Royal Statistical Society*, LXV (1902) pp. 209 ff. (6) G. Findlay Shirras: *Tne Science of Public Finance* (London, 1924) pp. 138-49. Figures within brackets are based on the old mthod followed in Govt. of India's official estimates (vide 3 above). (7) K. T. Shah and Khambatta: *Wealth and Taxable Capacity of India*, Bombay 1924, p. 200. (8) V.K.R.V. Rao: *National Income of British India*, 1931-32 (London, 1940).

(2) For a critical review of these estimates see: V.K.R.V. Rao: *An Essay on India's National Income*, 1925-29, London 1939; also the section on *National Income Estimates* in Daniel Thorner's paper on "Long-term tends in output in India" published in "*Economic Growth: Brazil, India and Japan*" edited by Simon Kuznets and others, Duke University Press, 1955.

incomes specially constructed by moving backward and forward the later estimates, like that of Dr. V.K.R.V. Rao for 1931-32 or the official estimate for 1948-49, with the help of indices of prices, agricultural production, business activity, etc. Proceeding on the former basis, Daniel Thorner draws the following inference from his study of the trends in Indian economy during the pre-independene period:

"In retrospect, the net effect of British rule was to change drastically the social fabric of Indian agriculture, but to leave virtually unaffected the basic process of production and the level of technique. The upper strata of the new agrarian society benefited handsomely. The position of the cultivators deteriorated. Capital needed for the development of agriculture was siphoned off and the level of total output tended towards stagnation.

"By contrast with agriculture, there seems little doubt that total non-agricultural activity has been rising in India over the last sixty years. The contribution to the total national product from medium industry, domestic commerce, and the services has been on the increase. Whether, in view of the static condition of agriculture and the growing population, this expansion of other sectors has been sufficiently large to maintain the level of per capita total product, is a difficult question to answer .. Some hold that in the twentieth century per capita income has been rising; others that it has not been rising. There is a third logical possibility that per capita income has been declining. Until knowledge of India's economy and its evolution comes to rest on a more solid foundation, it would seem premature to rule out this third possibility"*.

The second method has been followed by the following research workers who have constructed as many as 14 series-estimates. These are:

TABLE II

	Period covered	*Number of series constructed*
H. C. Arora and K. V. R. Iyengar (1)	1900 to 1955	3 (one unpublished)
R. C. Desai (2)	1931-32 to 1940-41	1 (consumer expenditure series)
Eastern Economist (3)	1939-40 to 1949-50	1
G. S. Gouri (4)	1931 to 1949	1
K. M. Mukherji (5)	1900 to 1952	2 (unpublished)
M. Mukherjee (6)	1900 to 1948	1 (unpublished)
N. A. Narasimhan (7)	1919 to 1952	1
S. J. Patel (8)	1896 to 1955	1
V. K. Sastry (9)	1920-21 to 1946-47	1
G. F. Shirras (10)	1921-22 to 1932-33	2

(1) "Long Term Growth of National Income in India: 1900-1956", published in *Papers on National Income and Allied Topics.* ed. by Dr. Rao, Sen and others, Bombay, 1960, pp, 209-11.

(2) *Standard of Living in India and Pakistan;* also "Consumer Expenditure in India, 1931-32 to 1940-41", *Journal of the Royal Statistics Society*, CXI, Part IV, 1948.

(3) *Annual Number, Dec.* 29, 1950: Explanatory and Statistical Appendix: *A National Income*, pp. 1057 ff.

(4) G. S. Gouri; "National Income Estimates in India, 1931-39, *Indian Economic Journal, July*, 1957.

(5) *D. Phil Thesis* accepted by Calcutta University.

(6) *Unpublished Manuscript.*

(7) *A Short Term Planning Model for India*, 1956.

(8) "Long term change in output and income in India", *Indian Economic Journal*, January, 1958.

(9) "India's External Trade: Some Problems", *Indian Economic Journal*, July, 1955.

(10) *Poverty and Kindred Economic Prolems in India* 1935;.

*Daniel Thorner. *op. cit.* pp. 127-8.

These series-estimates have been reviewed and interpreted by M. Mukherji of the Indian Statistical Institute, Calcutta in a paper* submitted to the Second Indian Conference on Research in National Income held at Delhi in 1960. His findings are quoted below:

"Not much validity attaches to anyone of the individual series considered here .. It is safer, however, to examine all the available series before drawing any conclusion and in this context, Arora and Iyengar's all three estimates, Suren Patel's series and K. Mukherjee's two series deserve consideration.

"All the six series just mentioned depict a gradual growth of per capita real national ncome over the period 1900 to about 1925. For the remaining period Patel's figures show a steady decline. In the remaining five series, there is some kind of a stability of per capita *real* income over the period 1925-1940 in rough way, a decline during 1940-50 roughly, and a rise to the peak reached ever earlier during the following years under consideration. Thus Patel's hypothesis though reasonable is unlikely to be true, if one has to accept all the available evidence. On the other hand, it seems likely that the general picture presented by the five other series gives a more or less realistic picture of what happened during the period. Thus one may conclude that our per capita income grew over the first half of the half century under review, then remained more or less steady upto the Second World War, declined to some extent during the next decade and overtook and surpassed the highest levels reached in the past during the last few years. Thus, on the whole, we get a slight rise over the half century with periods of growth,** stagnation and decline."

The break in the fifties from the declining trend of the forties is also brought out by the official estimates* of national and per capita *real* incomes prepared on a consistent basis for each of the years in the post-independence period. The Table below shows that during 1948-49 to 1950-51 (pre-plan period) national *real* income grew at the compound rate of 1.2 per cent per year while population increased at the compound rate of 1.6 per cent per year. Consequently, per capita *real* income registered a decline. In contrast, during the first fourteen years of economic planning (1951-65) national *real* income rose at the compound rate of 3.9 per cent per annum; the corresponding rate of growth for

*That the first quarter of the current century was a period of mild growth is also inferred by Shah and Khambatta (*op. cit.* pp. 203-4) on a comparison of the average level of per capita *real* income during the two periods 1900-14 and 1914-22. They write: "The picture that we have depicted, though a dark one, is not too gloomy, for it reveals a slight but distinct advance — We have not been going backwards nor is it that we are remaining stationary. On the contrary, the present enquiry shows a real increase of Rs. 2-2-0 per head in course of about fifteen years.

	Pre-War (1900=14)	Post-War (1914=133)
**Gross Income per head at pre-war (1900-14) price level	Rs. 36	Rs. 38-2-0

population being 2.1 per cent per annum, per capita *real* income increased at a compound rate of 1.8 per cent per year. The next two years were characterized by severe setbacks to the growth of agricultural and industrial production and as a result national income showed a substantial decline in 1965-66, followed by a marginal improvement in 1966-67. The ensuing year, however, witnessed a marked recovery. According to the latest available estimates — these relate to 1968-69 — the total *real* national income shows a rise of 91 per cent and *real* per capita income of 31 per cent over the 1950-51 level. The annual rate of increase (compound) during these eighteen years works out to 3.6 per cent for aggregate national income and 1.5 per cent for per capita income.

TABLE III

	1948-49	1950-51	1964-65	1968-69	*Compound rate of growth per cent per annum* Pre-Plan period 1948-51	Plan period 1951-65	1951-69
National Income* (Rs. crores)	86,50	88,50	149,80	169,10	1.2	3.9	3.6
Population** (Million)	346.6	357.6	474.6	521.4	1.6	2.1	2.1
Per capital Income (Rs.)	249.6	247.5	315.6	324.3	—0.4	1.8	1.5

*At 1948-49 prices.
**Estimates implicit in the derivation of per capita income.

With the commencement of economic planning in the fifties, per capita *real* income has undoubtedly shown an upward trend, but the rate of its annual growth so far has been slow. The Fourth Plan document, therefore, postulates a vigorous effort to step up the rate of per capita income in the coming years. The 1968-69 level of national income is expected to get doubled by 1980-81. And since population is expected

*The official estimates of national income at 1948-49 prices prepared annually for the years since 1948-49 follow the method and factual bases recommended by the National Income Committee appointed by the Government of India in 1949. The committee comprised Prof. Mahalonobis as Chairman, Prof. D. R. Gadgil and Prof. V. K. R. V. Rao as members. Its First Report was published in 1951 and the Final Report in 1954. The latter reviewed the estimate made for 1948-49 in the First Report and presented a revised estimate for 1948-49 together with further estimates for 1949-50, and 1950-51. The methodology followed was discussed in detail, sources of data used indicated and steps to be taken for data improvement recommended. The Report recognized the large margin of error emerging from the paucity of data for certain sectoral estimates, which as estimated in the Report ranged between $\pm$ 10% for factory establishments, mining, Railways, organized banking and Government sectors to as much as $\pm$ 33.3% for small enterprises, house prosperty, other commerce and transport, etc. For the overall estimates, the margin of error is worked out at $\pm$ 10%. The quality and coverage of basic data have since improved and in August 1967 the Central Statistical Organization (C.S.O.), released its brochure on revised series of national product. The improvements incorporated in the revised series relate to the industrial classification of the national product, presentation of estimates separately for gross and net product, incorporation of 1961 Census data and the results of the various surveys undertaken by the C.S.O. and other agencies. The estimates at constant (*i.e.* 1960-61) prices have also been improved by building up more appropriate indicators and deflators for measuring gross/net product in various industries.

to rise by about one-third during this period, *real* per capital income in 1980-81 would be 53 per cent higher than its level in 1968-69.

The economic growth registered in the last eighteen years is also reflected in the changes in the industrial origin of the national output as well as in the shift in the occupational pattern, Some light on this crucial question is thrown by the analysis of the sectoral rates of growth undertaken in the following table:

TABLE IV

	1950-51		1967-68		*Compound rate growth (percent) per annum Plan Period 1951-68**
	Amount (Rupees crores)	*Per cent*	*Amount (Rupees crores)*	*Per cent*	
A. **Agriculture, animal husbandry and ancillary activities**	4,340	49.0	6,880	41.6	2.8
B. **Non-agricultural sectors**	4,530	51.2	9,850	59.7	4.7
1. Mining and manufacture and small enterprises	1,480	16.7	2,750	16.7	3.7
2. Commerce, transport and communications	1,660	18.8	3,170	19.2	3.9
3. Other services	1,390	15.7	3.930	23.8	6.3
C. **Net domestic product at factor cost**	8,870	100.2	16,730	101.3	3.8
D. **Net earned income from abroad**	—20	—0.2	—210	—1.3	14.8
E. **Net national income (output) at factor cost**	8,850	100.0	16,520	100.0	3.7

*Conventional Estimates of Net National Product (at 1948-49 prices).

It will be seen from the Table above that whereas income originating in the agricultural sector increased over the period of 17 years at a compound rate of 2.8 per cent per year, income originating in the non-agricultural sectors (mining, manufactures, small enterprises, commercial transport, communication and other services) increased at a rate of 4.7 per cent. During this period, the share of the agricultural sector in the total domestic product declined from 49 per cent to 42 per cent and that of non-agricultural sector rose from 51 per cent to 60 per cent. It may, however, be mentioned that in 1967-68, the industrial sector had not as yet fully recovered from the impact of the recession. Nonetheless, it is relevant to note that the net output of mining and manufacturing establishment is estimated to have risen at a compound rate of 5.6 per cent per annum betwen 1960-61 and 1968-69, and in terms of the Fourth Plan, this is expected to expand at an overall rate of around 9 per cent during the Fourth Plan period. This order of expansion has been considered conistent with the projected annual growth rate of 5.5 per cent in

national income and 5 per cent in the net output of the agricultural sector. The sectoral composition of the net domestic product as projected in the Fourth Plan is as follows:

TABLE V

Sectoral Composition of Net Domestic Product: 1968-69 to 1980-81

(Rs. 100 crores at 1968-69 prices)

No.	*Sector*	1968-69	1973-74	1978-79	1980-81	*Index of growth* 1980-81 *over* 1968-69
1.	Agriculture and allied activities.	148.6	189.5	234	254	171
5.	Mining, manufacturing and construction	55	80.6	126	150	273
3.	Others	87.1	113	157	178	204
4.	Net domestic product	290.7	383.1	517	582	200

Another indicator of the structural change in the economy is the shift in the pattern of employment. The 1961 Census divides the total population into workers and non-workers. Workers include those deriving their earnings from productive occupations followed either as a principal or a subsidiary means of livelihood, irrespective of the level of earnings, provided they are employed in seasonal work for more than one hour a day throughout the greater part of the working season or in regular work during any of the fifteen days preceding the day of enumeration. A person who was working but was absent from his work during the fifteen days preceding the day of enumeration due to illness or other causes was a worker. A person who was offered work but had not actually joined was treated as a non-worker. Supervisory staff, apprentices (paid or unpaid) and social or political workers are treated as workers while beggers, pensioners, ex-royalty, rent, or dividend receivers not participating in any productive profession, business or commerce, are excluded. The definition is, therefore, more comprehensive and include self-employed as well as earning dependents having a principal or subsidiary means of livelihood. The workers employed have been classified by occuptional categories both for 1961 and for earlier censuses to ensure comparability on the basis of the new definition. Some idea of the sectoral growth in number of workers employed and the consequential shift in employment pattern is given in Table VI.

The Table indicates that the annual rate of growth in the number of workers employed has been faster in industry, construction and transport. These are, broadly speaking, the very sectors whose net output also showed a relatively faster rate of annual growth over about the same period. For subsequent years, the available information relates to the

TABLE VI

	1951 Number (million)	1951 Per cent	1961 Number (million)	1961 Per cent	Compound rate of growth per cent per annum
1. Agriculture*	97.3	69.8	131.0	69.5	3.0
2. Mining, manufacturing ** and other industries	16.7	128.1	25.2	13.2	4.2
3. Construction	1.5	1.0	2.1	1.2	3.4
4. Trade and commerce	7.3	5.1	7.6	4.0	0.4
5. Transport and communications***	2.1	1.5	3.0	1.6	3.4
6. Other services	14.6	10.5	19.5	10.55	2.9
Total	139.5	100.0	188.4	100.0	3.0

*Includes cultivators and agricultural labour.
**Includes forestry, fishery and plantations, etc.
***Includes storage also.

employment in the organized sector (*i.e.* public sector and establishments in the non-agriculture private sector employing more than 10 persons) and shows an annual rate of increase of 4.1 per cent during the period March 1961 to March 1969. The following Table sets forth the relevant details:

TABLE VII

Employment in the Organized Sector*

(Figures in thousands)

	March 1961 Number	*March* 1961 Percentage	*March* 1969 Number	*March* 1969 Percentage	*Compound rate of growth per cent per annum*
1. Agriculture, livestock etc.	850	7.04	1,074	4.46	3.0
2. Mining and quarrying	680	5.63	596	3.58	—1.6
3. Manufacturing	3,390	28.06	4,530	27.24	3.7
4. Construction	840	6.95	942	5.66	1.4
5. Electricity	260	2.15	413	2.48	5.9
6. Trade and commerce	250	2.07	553	3.33	10.4
7. Transport, storage and communications	1,800	14.90	2,267	13.63	2.9
8. Services	4,010	33.20	6,256	37.62	5.7
Total	12,080	100.00	16,631	100.00	4.1

**Employment Reviews*, 1960-61 and 1968-69 — Directorate General of Employment and Training.

The analysis of the trends in output and employment attempted in the preceding paragraph does not, however, tell the whole story of structural transformation initiated in the economy since the commencement of economic planning. It does not bring out the changes within each of the major sectors, some of which are highly relevant for a faster growth

of the economy in future years. It also throws no light on the factors promoting or retarding growth that have been operative during the period in the various sectors. To make up this deficiency, the growth of the two major sectors — agriculture and industry — has been analysed in greater detail on the basis of such supplementary data as are available.

The following Table sets forth the analysis for agriculture proper covering production of both foodgrains and non-food crops:

TABLE No. VIII

	Index Numbers 1949-50 = 100				*Compound rate of growth per cent per annum*			
	1950-51	1955-56	1961-62	1968-69	1951-56	1956-52	1962-69	1951-69
All Crops								
Area	99.9	115.0	123.8	125.7	2.8	1.3	0.2	1.3
Production	95.6	116.8	144.8	158.7	4.1	3.6	1.4	2.9
Productivity	95.7	101.6	117.0	126.3	1.2	2.3	1.2	1.6

It will be seen that agricultural production (all crops) increased at a compound rate of 4.1 per cent per annum during 1951-56, of 3.6 per cent during 1956-62 and 1.4 per cent during 1962-69. Taking the entire period of eighteen years, agricultural production is estimated to have grown at an annual compound rate of 2.9 per cent. Both increase in area under cultivation and improvement in productivity of agriculture contributed to the increase in production. While the increase in the area under cultivation was the dominating factor during the First Plan period, when bulk of the extension of farming to new lands was accomplished leaving scope for only marginal addition during the remaining years, the increased production during the period 1956-69 resulted from improved productivity and more intensive farming. With limited scope for extensive farming in future years, it follows that improvement in the rate of growth of agricultural production can be brought about principally by resort to more intensive farming. The strategy of production as indicated in the Fourth Plan, therefore, places very little reliance on bringing additional land under cultivation; the main emphasis is on intensive agriculture, consisting of extension of high yielding variety programmes and multiple cropping, continued expansion of irrigation facilities, improvement in the utilization of existing potential and intensive efforts in raising the productivity of commercial crops and enlargement in the facilities for inputs, credit and marketing.

Industrial production increased during the period 1951-69 at a compound rate of 6.4 per cent per annum. The general index of industrial production (1960=100) rose from 56.1 in 1951 to 172.4 in 1969. A special feature of industrial development, particularly since the beginning

of the Second Plan has been the emphasis on the development of steel, aluminium, engineering, chemical and petroleum products and on the growth of power and transport. A fairly good idea of the industrial diversification which has taken place can be had from the following data on the growth of certain selected industries.

TABLE IX

	1950-51	1960-61	1964-65	1965-66	1968-69
Finished steel (000 tonnes)	1,040	2,300	4,430	4,600	4,800
Aluminium ingots (000 tonnes)	4.0	18.3	54.1	65.0	125.5
Diesel engines — stationary (000)	5.5	43.2	74.1	85.0	119.5
Automobiles (000)	16.5	55.0	70.8	68.5	79.0
Machine tools (value in Rs. crores)	0.3	7.0	20.0	23.0	25.3
Sugar machinery (value in Rs. crores)	Nil	4.2	9.1	8.0	11.4
Bicycles organized sector (000)	99	1,071	1,442	1,700	1,954
Sulphuric acid (000 tonnes)	101	361	695	664	1,017
Cement (million tonnes)	2.7	8.0	9.8	10.8	12.2
Nitrogenous fertilizers (000 tonnes of N)	9	99	234	233	486
Caustic soda (000 tonnes)	12	99	192	218	314
Coal (million tonnes)	32.8	55.7	64.4	70.0	75.0
Iron ore (million tonnes)	3.0	11.0	15.1	23.0	21.2
Petroleum products (million tonnes)	0.2	5.8	8.4	9.9	15.4
Electricity generated (million kwh)	6,575*	20,123	29,280	36,400	45,000

*Relates to calendar year.

The progress of industrialization during this period has led to a gradual transformation of the industrial structure. The weight of the consumer goods industries as determined by their percentage contribution to net value added by all industries has been steadily reduced while that of producer goods industries correspondingly increased. This trend is brought out by the Table below:—

TABLE X

Contribution to Net Value Added

(Percentages)

Industries	1950-51	1960-61	1964-65	1965-66
Consumer goods	67.9	45.7	36.5	34.0
Intermediate goods	23.3	37.3	41.4	43.3
Machinery	8.0	16.3	21.4	22.0
Others	0.8	0.7	0.7	0.7
Total	100.0	100.0	100.0	100.0

II. Net Capital Formation

The foregoing analysis points to the urgency of a progressive step-up in the allocation of real resources for furthering production. If area under improved seeds is to be progressively extended to raise the rate of growth of agricultural output, it is imperative to set apart an increasing proportion of the output of farms using improved seeds for seed purposes. There will also be the need for building up at a corresponding pace seed storage and distribution facility. The storage facility has also to be built for stockpiling of foodgrains. Similarly, the use of fertilizers per hectare can be stepped up only if the availability of fertilizers improves *pari passu*. This entails larger allocation of real resources to expand the capacity of domestic production, transport and storage of the various types of fertilizers. The building up of irrigation potential and its fuller utilization also calls for an extended scale of investment in construction of irrigation works, canals, and distribution channels. Likewise, speedy and diversified industrial development involves an accelerated rate of investment to create additional capacity for production and transport. In short, a progressive stepping up of the rate of investment in the economy is a precondition for its more rapid growth. This is possible only if the real resources required for an accelerated rise in the rate of investment are forthcoming on an adequate scale, whether from domestic sources or from the rest of the world. What light do recent trends in net investment and savings throw on this problem?

Till recently, the available data on net capital formation were rather scrappy. The non-availability of data on saving and investments have long stood in the way of preparation of a comprehensive system of national accounts. The earliest attempt was made in the First Five Year Plan, which estimated net investment in 1948-49 prices to be Rs. 450 crores in 1950-51. This formed about 5 per cent of the national income for the year estimated at Rs. 9,000 crores.* The Taxation Enquiry Commission estimated (in Volume I of its report) net investment at current prices for 1950-51 and 1953-54. The magnitudes were Rs. 555

**First Five Year Plan, p.* 108.

**Taxation Enquiry Commission Report, New Delhi 1955 Vol. I, p. 138.

***Second Five Year Plan, pp. 3 & 11

This was subsequently published in *Papers on National Income and Allied Topics* ed. by V. K. R. V. Rao, S. R. Sen and others, Bombay, 1960, pp. 122-34. The method followed is broadly the same as in the paper by M. Mukherjee and A. K. Ghosh estimating capital formation for 1948-49 (vide the Pattern of Income and Expenditure in the Indian Union: A Tentative Study, subsequently published in the *Bulletin of the International Statistical Institute*, December 1961) and in the paper on "Capital Formation in the Indian" Union jointly prepared by the C.S.O. and the Economic Division of the Ministry of Finance published in Papers relating to the formation of the Second Five Year Plan, October, 1955. *Ibid*, p. 121.

crores and Rs. 730 crores respectively.** The Second Five Year Plan estimated net capital formation (at 1952-53 prices) at Rs. 790 crores for 1955-56. This formed 7.3 per cent of national income (at 1952-53 prices) and was expected to be raised to 10.7 per cent by the end of the Second Plan.***

In a paper submitted to the first session of the Indian Conference on Research in National Income, Baldev Kumar of the Central Statistical Organization presented a 7-year series-estimates covering 1948-49 to 1954-55 for domestic fixed capital formation at current as well as 1948-49 prices. The series give sector-wise as well as overall estimates of fixed capital formation. In another paper read at the same conference, Honavar, Ghosh, Avadhani and Trikha of the Ministry of Finance presented totals of capital formation in the Indian Union for the years 1949-50 to 1954-55. These magnitudes were worked out at current prices by adding domestic savings to official donations and net borrowings from abroad as worked out from the Balance of Payments statistics. These efforts are signicant more for the exploration of the techniques of estimation and availability of basic statistics that could possibly be used for calculating net investment over a time-period than for the magnitudes indicated. Yet another attempt at estimation of net investment was made by the Statistics and Economics Departments of the Reserve Bank in a paper submitted to the Working Group on Resources for the Third Five Year Plan in July. 1959. These estimates had a wider coverage and were based on better data that had since become available, for example, from the balance sheet analysis of the public and private limited manufacturing companies conducted by the Reserve Bank and the Rural Credit Survey Reports for 1951-52 and 1956-57.*

The results of all the efforts at estimation of net capital formation cited above** were available when the Third Five Year Plan was being formulated.

Nonetheless, the available data suffered from the absence of a continuous series of comparable estimates of net capital formation at constant prices for the entire period. Therefore, what can be described as notable developments in this field were the three series estimates of capital formation as brought out by (a) the Reserve Bank of India (R.B.I.); (b) National Council of Applied Economic Research (N.C.A.E.R.); and (c) Central Statistical Organization (C.S.O.). The first two were primarily concerned

*The follow up Survey.

**Among works of individuals not cited above reference may be made to the following:

1. D. K. Rangnekar: *Estimates of capital formation in India for the period* 1948-49 *to* 1951-52, *Poverty and Capital Development in India*, 1958.
2. B. K. Barpujari: *National Income of India*; 1951-52 *to* 1955-56, *Papers on National Income and Allied Topics*, Vol. I, Indian Conference on Research on National Income, 1960.
3. S. J. Patel: "*Growth in Income and Investment in India and China*, 1952 60", *Indian Economic Review*, Feb. 1957.
4. W. Malenbaum: *Prospects for Indian Development*, 1962.

with the estimation of domestic savings and the estimates of net investment presented by them were, therefore, either incidental to or a step towards this primary task. In March 1960, the Reserve Bank published[1] its series of estimated domestic savings for 1950-51 to 1957-58 at current as well as 1948-49 prices which included, as a necessary constituent, estimates of net physical asset formation by households in the form of farm and non-farm investment in agriculture, urban and rural housing, as also increases in fixed assets and inventory by non-corporate industry. This series of domestic saving was refined and extended and republished in August 1961[2] and again in March 1965[3] together with a series of estimated net investment in the economy as a whole for the period 1950-51 to 1962-63.

This series gave estimates at current as well as 1948-49 prices. Total investment was measured by adding to the estimates of domestic savings for each year the amount of net capital inflow from abroad. The latter was arrived at by adjusting current account deficits in the balance of payments for official donations, retained earnings of foreign branches and subsidiaries, unpaid imports and the approximate amount of gold smuggled into the country. The National Council of Applied Economic Research published[4] in April 1961 its series — estimates of gross and net domestic investment at current as well as 1952-53 prices for the period 1948-49 to 1957-58.[5] These attempted to provide the base from which the estimated inflow of capital from abroad could be deducted to arrive at the rate of net domestic savings as a residual item. The estimates of investment were made separately for Government, corporate and individuals' sectors. The Central Statistical Organization estimated only gross capital formation for the entire economy for the period 1948-49 to 1960-61 both at current and 1958-58 prices.[6]

These estimates were based on the commodity flow approach[7], and no

1. *The Reserve Bank of India Bulletin*, March, 1960, pp. 296-327.
2. *The Reserve Bank of India Bulletin*, August 1961 pp. 1200-1.
3. *The Reserve Bank of India Bulletin*, March 1965, pp. 314 333.
4. National Council of Applied Economic Research: *savings in India*, New Delhi, 1961. pp. 12—14, 22—25.
5. This series was refined and extended to 1961-62 in "*Saving in India* 1950-51 to 1961-62" "N.C.A.E.R., July, 1965—but again refined and extended to 1964-65 and republished in "*Saving in India During the Plan Periods*" Monograph No. 16, June 1966, together with a series of estimated net investment in the economy as a whole for the period 1950-51 to 1964-65 at current and 1948-49 prices.
6. C.S.O.: *National Income Statistics Estimates of gross capital formation in India for* 1948-9 *to* 1960-61, New Delhi, 1961. (Estimates for net capital formation at current prices are also given and broken down into net fixed assets and inventory changes pp. 60, 64).
7. For a critical review of C.S.O. estimates see "*Chapter in the Capital Structure of the Economy over the Two Plan periods*" b y Uma Datta — a paper submitted to the Fourth Indian Conference on Research on National Income held at Bhopal in November, 1963.

sectoral break-down was provided. Only the break-up of gross fixed capital formation (at 1958-59 prices) into construction and machinery and equipment was separately given. The Table below shows the three series of estimates of capital formation between 1950-51 and 1960-61:

TABLE XXI

Estimate of Investment

(Rs. crores)

	Estimate by C.S.O. at 1958-59 *prices*	*Estimate by R.B.I. at* 1948-49 *prices*	*Estimate by N.C.A.E.R. at* 1948-49 *prices*	
			Direct	*Indirect*
1950-51	1,231	496	670	659
1951-52	1,329	688	808	778
1952-53	1,294	377	635	742
1953-54	1,344	538	663	769
1954-55	1,531	867	996	1,021
1955-56	1,832	1,086	1,275	1,233
1956-57	2,118	1,415	1,425	1,428
1957-58	2,259	1,230	1,486	1,677
1958-59	2,153	1,230	1,417	1,318
1959-60	2,248	1,246	1,367	1,496
1960-61	2,475	1,683	1,715	1,774

All the three series show a generally rising trend. The level estimate for 1960-61 is 2.0 times higher than in 1950-51 in the C.S.O. series, 3.4 times in the R.B.I. series and 2.6 times in the N.C.A.E.R. series. The S.C.O. series, however, start at a considerably higher level and remain so throughout for two reasons first, these estimates are for gross and not net capital formation and do not allow for capital consumption. Secondly, they are at 1958-59 prices, which were considerably higher than 1946-49 prices on which the N.C.A.E.R. or R.B.I. estimates are respectively based. The N.C.A.E.R. estimates for net investment are also consistently higher than the R.B.I. estimates. This is partly due to certain adjustments made, for example, for changes in inventory valuation. However, the differences between the R.B.I estimates and N.C.A.E.R. estimates have been narrowed down after certain refinements and both the series have tended to move quite close to the net estimates of capital formation by C.S.O. given in the Appendix to its paper.

The authors of these series themselves admit the limitations of the estimates emanating from restricted and inadequate basis, and the somewhat arbitrary assumptions underlying the estimational procedure adopted for certain components. Till such time as more refined and reliable estimates of net capital formation at constant prices are available for different sectors and by forms of investment in the various lines of activity in each sector, one cannot go beyond making a general statement that the step-up in the rate of real income growth in the fifties was

accompanied by a substantial step-up in the rate of net investment in the economy, and the latter must have contributed to the former in a significant manner.

Some interesting light on this aspect is, however, obtained when we turn our attention to some alternative sources of data. Three attempts have been made in recent years to estimate the stock of reproducible tangible wealth in India, which broadly corresponds to the stock of capital employed in economic activity. The first estimate was made by Uma Datta and Vinod Prakash[1] for the year 1949-50, the second by Mukherjee and Sastry[2] again for 1949-50, and the third by the Department of Statistics[3] of the Reserve Bank of India for the year 1960-61. All the three estimates are at current prices and give overall estimates as well as the sectoral break-downs. The Reserve Bank estimates for 1960-61 follow closely the estimates of Mukherjee and Sastry and are made on comparable lines. They are also presented side by side as estimates for the two points of time, 1949-50 and 1960-61. These estimates have been reviewed by Uma Datta in a paper[4] read at the Fourth Indian Conference on Research in National Income held in Bhopal in November 1963. This latter paper converts the 1949-50 estimates of Mukherjee and Sastry to 1960-61 price base, in order to study the change in the stock of reproducible tangible wealth in real terms between 1949-50 and 1960-61. The sectoral break-downs in the original estimates have also been rearranged in conformity with the grouping in the sectoral estimates of net domestic output available in National Income Estimates. This has been done to work out the capital-output ratios for the various sectors and the economy as a whole.

The Table XII constructed on the basis of the data in the paper by Uma Datta brings out some interesting aspects of economic growth since 1949-50:

Although the estimates of reproducible tangible wealth like those of net capital formation cited in the preceding paragraphs are also weak in parts and do not warrant reading too much into them, the broad trends indicated by them are worth noting. The data set forth in the Table XII shows that reproducible tangible wealth has grown over the period 1950-61 in real terms at a compound rate of a little over 4 per cent per annum, while number of workers employed has increased at a compound

1 "*An Estimate of the Reproducible Tangible Wealth in India*, 1949-50", Papers on National Income and Allied Topics, Vol. I, 1960, pp. 247-58.

2 *An Estimate of the Tangible Wealth of India, Income and Wealth Series VII* — The Measurement of National Wealth Association for Research in Income and Wealth.

3 "*Estimates of Tangible Wealth in India*", Reserve Bank of India Bulletin, January 1963,. pp. 8-19.

4 *op. cit.*,

TABLE No. XII

Reproducible Tangible Wealth: Net Domestic Product and Workers Employed
(At 1960-61 prices)

	1949-50	1950-51	1960-61	*Cumulative rate of growth per cent per annum* 1949-61	1950-61
Reproducible tangible wealth (Rs. crores)	20,622	21,224	32,164	4.1	4.2
Net domestic product (Rs. crores)	9,834	9,867	14,210	3.4	3.7
Capital output ratio	2.10	2.15	2.26	—	—
Workers (million)	N.A.	139.5*	188.4*	—	3.0
R.T.W. per worker (Rupees)	—	1,521	1,707	—	1.2
Output per worker	—	707	754	—	0.7

*Refers to 1951 and 1961 Census years.
Source: 1961 Census.

rate of 3 per cent per annum. As a result, capital per worker has gone up from Rs. 1,521 in 1950-51 to Rs. 1,707 in 1960-61, registering a growth at the compound rate of over 1 per cent per annum. This slow improvement in capital per worker must have contributed to the growth of net domestic product over the same period, which occurred at a compound rate of 3.7 per cent per annum. This is reflected in net domestic product per worker going up in real terms from Rs. 707 in 1950-51 to Rs. 754 in 1960-61. Even so, the capital intensity in the economy has only slightly improved. Capital-output ratio rose from 2.10 in 1949-50 to 2.15 in 1950-51 and 2.26 in 1960-61. This may, in part, explain the slow rate of growth of output during the period as also suggest the need for a still faster rate of growth in reproducible tangible wealth in future years, if capital intensity and, therefore, productivity of the economy, is to improve faster, and output per worker is to register a sharper increase from 0.7 per cent per annum achieved during the period (1950-61).

Another interesting feature is brought out by the XIII Table:

The shift in the sectoral shares of net output over the period broadly conforms to the shift in the sectoral shares of the stock of reproducible tangible wealth, the only exception being Railways and Services. The share of railways in net output has improved but its share in the stock of reproducible tangible wealth has gone down. This is quite likely since the period has been one of heavy expenditure on renewal and replacements of railways' fixed assets, and these normally contain elements of improved quality which go to enhance productivity. Further, a more effective utilization and increased turn over of the rolling stock is reported to have taken place, which must have also added to railways' productivity.

TABLE XIII

Sectoral Distribution of Reproducible Tangible Wealth and Net Output
(At 1960-61 Prices)

(Per cent)

	Reproducible Tangible Wealth		*Net Output*	
	1949-50*	1960-61	1949-50	1960-61
Agriculture	29.4	28.2	51.8	48.6
Mining	0.6	0.6	0.9	1.1
Large enterprises	10.2	16.1	6.9	9.3
Small enterprises	4.6	3.7	10.3	7.9
Railways	9.6	8.6	2.2	2.5
Communications	0.6	0.6	0.3	0.4
Trade and transport	17.1	17.3	13.2	13.5
Services	27.9	24.9	14.4	16.7
Total:	100.0	100.0	100.0	100.0

*Both were exceptionally good year for agriculture.

Part of the increase in output may also have come from improvement in the efficiency of workers employed quite independently of the increase in capital per worker. As for the services sector, the improvement in its share of net domestic product despite decline in its share of the stock of reproducible tangible wealth is quite legitimate to expect, since it includes net output of Government administration the expansion of which reflects mainly an increase in the number of employees. The shift in sectoral distribution brings out pointedly the impact of the Plans in initiating a structural transformation of the economy; the sharp rise in the share of large enterprises in both net output and the stock of reproducible tangible wealth provides the evidence.

In the preceding paragraphs, attention has been concentrated on data throwing light on developments in the fifties. In recent years, significant strides have been made in improving on the data on saving and capital formation as in the construction of flow-of-fund accounts. The C.S.O. published in 1963 the Report of its Working Group on the construction of flow-of-fund accounts of the Indian economy for 1957-58. Based on the flow-of-fund approach, K. C. Sharma's paper on "Financing of capital formation in the public sector, 1951-52 to 1960-61" read at the Fourth Annual Conference on Research in National Income provided a detailed analysis of the public sector investment and its financing pattern. The construction of flow-of-funds for the various sectors of the Indian economy has since been further refined and its scope extended by the Reserve Bank of India as revealed by the various studies published in its monthly bulletins.

The R.B.I. is also continuously engaged in improving its series on saving and investment. The latest development in the field is the C.S.O.'s

publication in 1969, of its estimates of saving and capital formation in India for 1960-61 to 1965-66. In its original monograph published in 1962, the C.S.O. had derived its saving estimates in an indirect fashion by deducting from its estimates of gross capital formation, the corresponding figures of net capital inflow from abroad. Their estimates of saving, now released, have been built up directly for three sectors (*e.g.* public, corporate and household) and have been added up to get estimates for the economy as a whole. As regards the C.S.O.'s estimates of capital formation, they are based mainly on the expenditure-flow approach. The relevant magnitudes which emerge are as follows:

TABLE XIV

Estimates of Capital Formation

Year	*At current prices*	*At* 1960-61 *prices*
1960-61	1,665	1,665
1961-62	1,789	1,624
1962-63	1,920	1,794
1963-64	2,353	2,120
1964-65	2,681	2,286
1965-66	3,056	2,442

Mention may also be made of some other related developments in this field. In February 1957, the Ministry of Finance issued an economic classification of the Central Government Budget for 1957-58. This brought out the magnitudes of net investment in construction and machinery and equipment directly undertaken by the Central Government as also the financial assistance given to other sectors of the economy for capital formation. This work was extended to the transactions of the State Governments and non-departmental undertakings of the Central Government for the years 1951-52 to 1960-61. The economic classification of the transactions of these entities together with that of the Central Government since 1951-52 had enabled the construction of a time-series of net investment by the Central and State Governments together for the period 1951-52 to 1960-61.* The scope of work has since been extended. The brochure on economic classification of the Central Government issued in 1967 contained a review of developments in the first three Five-Year Plans and also initiated an economic-cum-functional classification which is now brought out every year. Some of the State Governments have also started bringing out an economic classification of their respective budgets. The transactions of the public sector are also presented in terms of national income categories in the C.S.O.'s Annual White Paper on National Income.

*Reference may be made in this connection to A.V.N. Iyengar's paper — "Saving and investment of the public sector 1951-52 to 1960-61" read at the Fourth Annual Conference on Research in National Income.

Fairly satisfactory estimates are available for capital formation in the public sector. The following Table presents the data on net capital formation worked out by the Ministry of Finance on the basis of the economic classification of the transactions of public authorities.

TABLE No. XV

Net Capital Formation by the Public Authorities

(Rs. crores)
(At current prices)

	1951-52	1955-56	1960-61
1. Central Government Administration and departmental industrial and commercial undertakings	64	103	213
2. Central Government non-departmental industrial and commercial undertakings	3	17	175
(a) Industry	2	10	150
(of which, steel industry)	(—)	(3)	(112)
(b) Mining	—	—	32
(c) Transport	1	4	8
(d) Trading and other undertakings	—	3	5
3. State Government Administration and departmental industrial and commercial undertakings	150	253	346
Total	217	373	754

The Table brings out the sharp rise in the level of net capital formation during the period covered by the first two Plans. The level of total investment by public authorities in 1960-61 was twice the level in 1955-56 and three and a half times the level in 1951-52. The bulk of the net investment by Central Government administration and departmental undertakings was in railways, while the bulk of net investment by non-departmental Central Government undertakings was in basic industry (steel, fertilizers, chemicals and electricals) and by State Government Administration and departmental undertakings in irrigation works, power projects, roads and road transport schemes.

The break-down of net investment by form of investment is shown in the following Table:

TABLE No. XVI

Net Investment by Form of Investment

(Rs. crores)
(At current prices)

	1951-52	1955-56	1960-61
1. Construction	158	342	503
2. Machinery and equipment	14	62	186
3. Inventory accumulation	45	(—)31	65
Total	217	373	754

The sharp swing in favour of investment in mahinery and equipment during the Second Plan reflects the higher priority given to industry in public sector investment.

Although the figures given above are in current prices, the rise in public investment is so large that even if allowance were made for the price rise during the period, a marked step-up in public investment would still be indicated. This is corroborated by the following Table giving net investment by form of investment at 1960-61 prices:

TABLE No XVII

Net Investment by Form of Investment

(Rs. crores) (At 1960-61 prices)

	1951-52	1955-56	1960-61
1. Construction	198	413	503
2. Machinery and equipment	17	71	186
3. Inventory accumulation	48	—42	65
Total:	263	442	754

Note: The deflators used are based on:

(1) Price Index for Construction (*vide* R.B.I. Bulletin, January 1963, p. 19).

(2) Price Index for machinery and transport equipment (vide R.B.I. Bulletin, January 1963, p. 19).

(3) Economic Adviser's Wholesale Price Index.

Public investment promotes income growth both directly and indirectly. Wage and salary component of investment outlays on public construction adds to the income stream directly, while outlays on domestically produced material inputs stimulate output increases in the supplying sectors by encouraging utilization of excess capacity, if any, and installation of additional capacity. Public investment on social and economic overheads generates external economies, and removes bottlenecks to expansion in productive activities. These, in turn, stimulate further investment and output increases in the rest of the economy. Investment creating additional capacity in public enterprises brings about increases in their net output after it goes into production. The increase in output may, however, not occur in the same period in which investment is made. The output increases in such undertakings also induce output increases in other sectors by creating additional demand. All these aspects of growth promotion by public investment cannot be reduced to a common measure, and the growth of net output of public authorities during any period of public investment is but limited aspect of income growth stimulated by it. However, even in this limited sense the period under consideration registered a substantial increase in income generated by public investment. The relevant data are set forth in the Table XVIII:

TABLE XVIII

(Rs. crores)
(At current prices)

	1951-52	1955-56	1960-61
Construction	59	122	196
(i) Central Government	17	34	89
(ii) State Governments	42	88	107
Net output of industrial and commercial undertakings	255	311	436
(i) Central Government	211	250	347
(ii) State Governments	44	61	89
Total	314	433	632

Note: (a) Central Government includes adminstration and departmental and non-departmental commercial undertakings.
(b) State Governments include administration and departmental commercial undertakings.

For the sixties, a combined analysis based on the operations of the Central and State Governments is not available. However, having regard to the fact that the total provision for capital formation out of the budgetary resources of the Central Government accounts for the bulk of capital formation undertaken in the public sector, an analysis of data based on the economic classification of the Central Government budget appears meaningful.

TABLE XIX

(Rs. crores)

	1960-61	1965-66	1966-67	1967-68	1968-69	1969-70 (R.E.)	1970-71 (R.E.)
Gross capital formation	865	1,806	1,793	1,675	1,660	1,770	2,005
(i) Direct	311	520	500	467	276	507	615
(ii) Indirect (*i.e.* through assistance to States, Union Territories and Public Undertakings etc.)	554	1,286	1,293	1,208	1,384	1,263	1,390

The second decade of planning also provides substantial evidence of brisk investment activity. For 1970-71, the total capital formation financed out of the Central Government budget shows an increase of 120 per cent over the level of capital formation in 1960-61. These estimates are, of course, at current prices. However, the step-up is so large that even after allowing for the price factor, a substantial increase in the level of the investment activity should emerge.

The marked step-up in the investment outlays provided in the Fourth Five Year Plan further indicates the order of effort visualized in order to

quicken the pace of economic progress. The Table below gives the comparable figures for the successive Plans:

TABLE XX

(Rs. crores)

	I Plan	*II Plan*	*III Plan*	*IV Plan*
Public sector investment	1,560	3,650	6,300	13,655
Private sector	1,800	3,100	4,100	8,980
Total:	3,360	6,750	10,400	22,635

It may be noted that whereas the investment in the Third Plan was a little more than the total investment undertaken in the preceding two Plans, the provision in the Fourth Plan is a little more than the sum total of investment undertaken in the first three Plans taken together. As a result of the investment activity as postulated in the Fourth Plan document, the rate of investment was expected to be stepped up from 11.3 per cent of national income in 1968-69 to 14.5 per cent in 1973-74. The incremental capital-output ratio works out to 2.0 for the Fourth Plan as compared with 2.4 for the first three Plan periods. Consistent with the strategy of self-reliant growth, the proportion of inflow of foreign aid to national income will come down from 2.5 per cent to 1.3 per cent and the rate of domestic saving is expected to rise from 8.8. per cent in 1968-69 to 13.2 per cent in 1973-74. This means diverting to saving 28 per cent of increase in national income during the Fourth Plan period.

III. Domestic Savings and Net Inflow of Foreign Capital

The setting apart of an increasing proportion of domestic resources for investment involves a progressive step-up in the rate of domestic savings. Under conditions of rising national income, it implies a corresponding restraint on increases in domestic consumption. This is the cost borne by the community for speedily building up a prosperous economy, which will provide for greater rise in consumption standards in future years and thereby compensate the community for the consumption sacrificed during the construction phase. The immediate cost to the community, however, can be kept down to the extent it is possible to draw upon real resources of the rest of the world by augmenting net capital inflow into the country. This implies accelerated mobilization of others' savings for stepping up domestic investment and to that extent obviating the need for the community to forgo increase in consumption. This requires an analysis of what has been the relative contribution of domestic savings and net capital inflow in attaining the step-up in the rate of domestic investment since the commencement of planning and what relative role could be assigned to them for providing real resources required for accelerating the rate of investment in future years?

The analysis of the relative role of domestic savings and net capital inflow in domestic capital formation in the recent past requires a series of the estimates for each at constant prices. The first exploratory attempt to build estimates for domestic savings was made by the Taxation Enquiry Commission for the year 1953-54[1]. This was followed up by the officials of the Union Ministry of Finance who attempted a more detailed estimation and constructed a series for the years 1949-50 to 1954-55[2]. Both the series gave estimates at only current prices and were based on institutional data available in published sources. The successive Five Year Plans, however, indicate the rate of domestic savings attained in the base year and the target to be reached in the last year of each Plan. The First Five Year Plan[3] placed its estimate of domestic savings at 1948-49 prices around Rs. 450 crores for 1950-51. This formed about 5 per cent of the estimated national income and was to be raised to Rs. 675 crores or around 7 per cent of national income by the end of the Plan. The Second Five Year Plan placed the rate of domestic savings attained in 1955-56 at Rs. 731 crores or 7.0 per cent of the national income, both estimated at 1952-53 prices. The target to be attained in 1960-61 was fixed at 9.7 per cent of national income[4]. The Third Plan estimated domestic savings to have reached 8.5 per cent of national income in1960-61; this was to be raised to 11.5 per cent by the end of the Plan period[5]. More systematic attempts at savings estimation have been made since the publication of the Third Five Year Plan by (a) the Reserve Bank of India[6] and (b) the National Council of Applied Economic Research[7]. Both R.B.I. and N.C.A.E.R. have made direct estimates of domestic savings on the basis of institutional data following the balance sheet and income-expenditure approach for different sectors. Their sector-wise as well as overall estimates are presented at current prices as well as constant prices. For the constant price series, both R.B.I. and N.C.A.E.R. estimates use 1948-49 prices. Both series of direct estimates give estimates for public sector, private corporate sector and individuals or household sector separately, and for the latter a breakdown by forms of savings is also provided. In addition to direct estimates, N.C.A.E.R. has also given a series of indirect estimates derived by deducting from total net investment the amount of net disinvestment

1. *T.E.C. Report Vol. I.p.* 138.
2. *Savings in the Indian Union*, 1949-50 *to* 1954-55, published in *Papers on National Income and Allied Topics*, ed. by Rao, Sen and others, pp. 107-21.
3. *The First Five Year Plan*, p. 108.
4. *The Second Five Year Plan*, p. 74.
5. *The Third Five Year Plan*, p. 28.
6. *op. cit.*, For a pioneer attempt in this direction see V. V. Bhatt: "Savings and Capital Formation" *Economic Development and Cultural Change*, April 1959.
7. *op. cit.*,

abroad (*i.e.* net capital inflow from the rest of the world). This series is also presented at current as well as 1948-49 prices.*

TABLE XXI

Estimates of Saving

(Rs. crores)

	R.B.I.		*N.C.A.E.R.*	
	At current prices	*At* 1948-49 *prices*	*At current prices*	*At* 1948-49 *prices*
1950-51	541.9	503.2	733.1	674.4
1951-52	529.4	483.2	668.7	608.5
1952-53	408.3	393.3	670.3	643.4
1953-54	565.0	540.9	700.0	665.0
1954-55	764.2	817.4	895.6	958.3
1955-56	970.5	1,019.2	1,144.1	1,201.3
1956-57	1,076.4	1,047.2	1,093.3	1,060.5
1957-58	797.8	762.7	1,058.7	1,016.3
1958-59	931.4	861.1	1,140.4	1,049.2
1959-60	1,102.0	1,009.2	1,247.3	1,135.1
1960-61	1,371.9	1,235.2	1,408.4	1,267.6

Both the series of estimates (R.B.I. and N.C.A.E.R.) suffered from weakness in parts; nevertheless, both showed about the same trends, if the level differences emerging from adjustments for changes in inventory valuation, and differences in assumptions, method of estimation and coverage of certain components like inventory accumulation and rural and urban constructions were ignored.

Both the R.B.I. and N.C.A.E.R. have attempted to provide a picture of the financing of net investment by giving estimates of net capital inflow from abroad for the corresponding years. These estimates were based on balance of payments statistics adjusted for items like retained profits

TABL XXII

Net Capital Inflow From Abroad

(Rs. crores)

	R.B.I.		*N.C.A.E.R.*	
	At current prices	*At* 1948-49 *prices*	*At current prices*	*At* 1948-49 *prices*
1950-51	— 7.9	— 7.3	— 4.99	— 4.59
1951-52	+224.4	+204.8	+218.86	+199.16
1952-53	— 17.0	— 16.4	— 8.45	— 8.11
1953-54	— 3.5	— 3.3	— 2.46	— 2.34
1954-55	+ 46.5	+ 49.7	+ 35.26	+ 37.73
1955-56	+ 63.2	+ 66.4	+ 70.11	+ 73.62
1956-57	+337.9	+367.5	+376.21	+364.92
1957-58	+489.1	+467.6	+489.46	+469.88
1958-59	+399.3	+369.2	+399.30	+367.36
1959-60	+258.3	+236.6	+266.80	+242.79
1960-61	+497.3	+447.7	+497.05	+447.35

*C.S.O. has also estimated gross domestic savings for the period 1948-49 to 1959-60 and net domestic savings for 1955-56 to 1959-60. But both are at current prices only and a large part pertaining to the savings of private non-corporate sector derived as a residual by deduction from the estimates of gross capital formaton, the savings of the public and private corporate sector estimated on the basis of income-expenditure accounts, C.S.O.; National Income Statistics — *Financing of Gross Capital Formation for* 1948-49 to 1959-60, *New Delhi.*

of foreign companies, unpaid imports etc., which do not figure in the payments data. Here too, the estimates were at current prices as well as constant (1948-49) prices. Since the method and basis of estimation is common except for some minor differences, there was again perfect conformity between the trends of the two series.

Except in 1951-52, the inflow of foreign capital was hardly significant during the First Plan period. In contrast, data show a marked dependence on this source of capital formation during the Second Plan; in terms of both these series, the net capital inflow from abroad accounted for about one-fourth of the total investment in 1960-61.

Mention has already been made of the C.S.O.'s estimates of savings and capital formation published in 1969—these cover the period1960-61 to 1965-66. The following Table shows the relative rates of domestic and foreign saving in financing capital formation during the Third Plan period, as revealed by C.S.O. data.

TABLE XXIII

Domestic and Foreign Saving

Year	*Domestic saving proportion (in per cent) to national income*	*Foreign saving proportion (in per cent) to national income*
1960-61	8.4	3.4
1961-62	9.1	2.3
1962-63	9.6	2.9
1963-64	11.1	2.6
1964-65	10.2	2.9
1965-66	12.1	2.7

(The C.S.O.'s estimate of domestic saving do not agree with those given in the Plan documents. The Planning Commission's estimate of domestic saving is 8% of national income for 1960-61 and 10.5% of national income for 1965-66.

What emerges out of all this is that while the rate of net domestic investment during the First Plan period was rendered possible by a corresponding step-up in the rate of net domestic savings, the rate of net domestic savings during the subsequent Plans has not been adequate to finance the rising levels of investment activity. During the first half of the Second Plan period, the inflow of resources from abroad was financed largely by liquidation of India's foreign exchange reserves. Thereafter, domestic savings have been supplemented essentially by external assistance. Consequently, the extended scale of real resources provided by the rest of the world through net capital inflow into the country has been an important factor underlying the acceleration of the rate of domestic investment during the planning era. This net capital inflow rose from 0.6 per cent of national income in 1956-56 to 3.4 per cent of national income in 1960-61; it stood at 2.7 per cent in 1965-66.

During the period of Annual Plans, there was a declaration in the rate of domestic saving; the rate of domestic saving, according to the Planning Commission, stood at 8 per cent of national income in 1967-68. The strategy in the Fourth Plan enjoins that concessional imports of food-grains will stop by 1971 and the dependence on net foreign aid by the end of the Fourth Plan will be brought down to about one-half of the 1968-69 level. The objective is to dispense with external assistance completely by 1980-81, and to attain it, the rate of dometic saving has to be stepped up from 8.8 per cent in 1968-69 to 13.2 per cent in 1973-74 and further to 18 per cent in 1980-81.

Effort has, therefore, to be made to accelerate the growth of both public and private savings. The following Table based on the magnitudes emerging from the economic classification of the Central Government Budget shows the growth of the Central Government saving during 1951-52 to 1970-71:

TABLE XXIV

Central Government Savings (net)

(Rs. crores)

	First Plan 1951-56	*Second Plan* 1956-61	*Third Plan* 1961-66	*Annual Plans* 1966-69	1969-70 (*R.E.*)	1970-71 (*R.E.*)
1. *Savings of Government, Administration*	259	236	1,012	298	81	231
2. *Savings of departmental undertakings*	77	—18	353	123	59	111
(a) Retained profits	121	171	297	54	37	87
(b) Depreciation provision	171	245	435	333	116	124
Less (c) Renewals and Replacements	215	434	379	264	94	100
Total	336	218	1,365	421	140	342

The above Table shows that the Central Government saving in the Third Plan was about six times the amount of saving generated during the Second Plan. The rate of saving declined in the period of Annual Plans, reflecting the sluggishness in the Government revenues and receipts of public undertakings and also the growth of such expenditures as provision for food subsidy and large disbursements on account of increases in dearness allowance.

As stated earlier, there has to be a sharp step-up in the rate of domestic saving if the rate of investment has to be raised and dependence on

external assistance reduced. The Table below shows the sector-wise break-up of domestic saving expected to take place in the next decade:

TABLE XXV

Ratio of Net Domestic Savings to National Income by Sectors: 1968-69 to 1980-81*

Sector	1968-69	1973-74	1980-81
Household	6.4	7.6	8.4
Corporation	1.0	1.1	1.4
Public	1.4	4.5	8.2
Total Domestic Savings	8.8	13.2	18.0

*Fourth Five Year Plan 1973-74.

What emerges is the crucial role of public saving. While the saving of the household sector is to rise from 6.4 per cent in 1968-69 to 7.6 per cent in 1973-74 and further to 8.4 per cent in 1980-81, and that of corporate sector from 1.0 per cent to 1.1 per cent and further to 1.4 per cent during these respective years, the ratio of public saving to national income is expected to rise from 1.4 per cent in 1968-69 to 4.5 per cent in 1973-74 and further to 8.2 per cent in 1980-81. The projected order of increase in public saving signifies the effort that will be needed by the public authorities to mobilize additonal resources. This throws a tremendous responsibility on the public sector and implies in terms of additional tax effort that the proportion of tax revenues to national income will have to be raised from about 14 per cent now to about 18.5 per cent by 1980-81.