CHAPTER THREE

GENERAL PERFORMANCE OF THE CENTRAL COVERNMENT UNDERTAKINGS

The Central government undertakings occupy a pivotal position in the public sector, covering a wide range of economic activities in the country. This chapter is devoted to examining of general working of Central Government Undertakings.

3.1 CLASSIFICATION :

The Central Government undertakings can be broadly classified into two groups. The first group consists of production enterprises covering steel, minerals, coal, petroleum and chemicals etc. The second group is composed of service enterprises including financial and tourist services.

According to another classification approved by the Committee on public undertakings, the running concerns under the aegis of the Central government, can be distributed into seventeen categories like, steel, minerals and metals,coal, petroleum, chemicals and pharmaceuticals, heavy engineering medium and light engineering, transportation equipment, consumer goods, agro-based enterprises, trading and marketing services, transport, contracts and construction services, industrial development and technical consultancy services, development of small industries, tourist services and financial services.

The public enterprises may also be classified into six convenient groups such as manufacturing, trading, contract and consultancy services, developmental and promotional, financial and transport.

The manufacturing group consists of ten categories such as steel, minerals, coal, petroleum, chemicals and pharmaceuticals, heavy engineering, medium and light engineering, transportation equipment, consumer goods and agro based industries.

The developmental and promotional group contains industrial development and technical consultancy services, development of small industries and tourist services.

Other categories like trading and marketing services, transport, contract and construction services and financial services form separate groups.

3.2 SIZE AND DISTRIBUTION :

The growth of public enterprises under central government was rapid. The number of units rose to 42 by 1961 from 5 in 1947. In 1970 the number of central government undertakings was 90 and reached 153 in 1978.

The distribution of units in 1978 is given below :

		No. of units
1.	Enterprises under construction.	11
2.	Enterprises in the manufacturing.	94
3.	Trading and marketing.	21
4.	Contract and construction.	7
5.	Developmental and promotional.	10
6.	Financial services.	3
7.	Transportation services	7
	Total	153

It is apparent from the statement that manufacturing units dominate the public sector, they account for more than 61 per cent of the total undertakings under the Central Government.

3.3 GROWTH AND PATTERN OF INVESTMENT :

The importance of Public sector units is usually reflected in the growth of investment over a period of time. The investment in paid-up capital and long term loans in the Central Government enterprises is shown below :

Period	No. of units	Total Investment Rs. crores
1961	42	956
1962	45	1170
1963	49	1499
1964	61	1705
1965	66	2037
1966	74	2415
1967	77	2841
1968	83	3333
1969	85	3902
1970	91	4301
1971	97	4682
1972	101	5052
1973	101	5571
1974	122	6237
1975	129	7261
1976	129	8973
1977	145	11097
1978	153	12851

Source : Bureau of Public Enterprise, a handbook of Information on Public Enterprises, 1970, BPE, Annual Reports.

It is apparent from the statement that the volume of investment shows steady upward trend through out the period. The investment in Central government non-departmental undertakings has grown to Rs. 12851 crores in 1978 from Rs. 956 crores in 1961, a 12 fold increase and annual compound growth rate of 15.5 per cent, at current prices.

Of the total investment of Rs. 12851 crores, paid up capital accounted for Rs. 6785 crores and long term loans Rs. 6066 crores.[1]

The sectoral distribution of the investment in 1977-78 is given below :

	Rs. Crores	% share
1. Manufacturing	10576.82	82.30
2. Trading	565.09	4.40
3. Contract and consultancy services	48.13	0.40
4. Developmental and promotional	61.52	0.60
5. Financial	520.28	4.00
6. Transport	1079.59	8.40
Total	12851.00	100.00

It is apparent from the statement above, that the manufacturing accounts for 82.3 per cent of the aggregate

1. Bureau of Public Enterprise - Annual Report 1977-78, Vol.I, p.3.

investment. The developmental and promotional group receives a nominal share less than one per cent, with the investment of Rs. 61.52 crores only. The share of the transport is small it accounted for 8.4 per cent of the aggregate investment effort.

The contributions to aggregate investment effort and their relative shares are given below for the year 1977-78.

		Rs. crores	% share
1.	Central government	11059	86.1
2.	State governments	214	1.7
3.	Indian private parties	894	6.9
4.	Foreign private parties	684	5.3
	Total	12851	100.00

The bulk of the investments in paid up capital and long term loans i.e. 86.1 per cent come from the central government. The investment by the state governments accounted for 1.7 per cent, foreign private parties accounted for 5.3 per cent only while Indian private parties invested 6.9 per cent of the total investments in central government undertakings.

3.4 CHANGING PATTERN OF INVESTMENT :

The relative shares of the various sectors in the total investment effort have undergone significant changes during the period of 1962-63 to 1977-78. The following statement shows the changing investment portfolio in the Central Government undertakings.

Relative share in the total investment - percentages.

	1962-63	1977-78
1. Steel	49.23	23.80
2. Engineering	13.46	6.40
3. Petroleum	9.16	19.70
4. Petroleum	7.47	6.30
5. Minerals	7.19	7.30
6. Transport	5.48	8.40
7. Trading	-	4.40
8. Financial	4.64	4.00*

Source : Bureau of Public Enterprise, A Handbook of Information on Public Enterprises, 1970 and Annual Report, 1977-78.

(-) dash signifies negligible.

* The total does not equal 100 because other groups are not shown here.

The statement above explains the changing significance of different sectors. For example the steel and engineering, the dominant sectors in 1962-63, suffered in their relative shares in 1977-78, while chemicals and transport improved their relative shares during the same period. The relative share of the steel group is reduced to 23.8 per cent in

1977-78 from nearly half i.e. 49.23 per cent in 1962-63, but still it continued to be a dominant sector in 1977-78. The relative share of the engineering sector has been reduced from 13.46 per cent to 6.48 per cent during the same period.

Inspite of growing volume of investment in steel, its relative share has declined over a period of time. It implies that the investment in other groups like trading and marketing, (state trading corporation and food - corporation of India) and chemicals has been growing at faster rate during the period under consideration.

This leads us to another pertinent problem concentration of investment. To study in detail the concentration of investment, returns and other related problems, 121 central government running concerns during 1975-76 have been selected.

3.5 SAMPLE SELECTION :

For the study in detail as noted earlier, a sample of 121 Central government non-departmental running concerns registered under companies Act, during the year 1975-76 are selected.

In 1976-77 one central government undertaking namely Central Road Transport Corporation, was wound up. Hence the sample size is reduced to 120 during subsequent years.

During 1977-78, the data pertaining to some enterprises are not available, hence the analysis of various problems is restricted to 1976-77, the latest year, during the period, the size of the sample remains the same 120 units.

3.5.1 Procedure :

The data pertaining to individual units in the sample are collected from annual reports published by the Bureau of public enterprises. The detailed annual reports are not available for the years prior to 1966. The information on wages and salaries, and year-wise employment in each underking is not available. The data on capital employed, net worth, paid-up capital, gross block, gross profits, net profits, sales turnover, and value added in respect of production enterprises has been collected. The data on value added for each producing unit is not available prior to 1972-73. As a consequence, the data on value added could not be used for the entire period i.e. 1960-61 to 1977-78, under study.

The aggregate figures are arrived at by adding [illegible] data year-wise for each unit, in respect of capital employed, gross profits, gross block and paid up capital. The year-wise aggregate figures are used in the analysis in subsequent pages.

3.6 <u>CONCENTRATION OF INVESTMENT</u> :

The investment in gross fixed assets of the Central Government undertakings appears to have concentrated in very few public enterprises. Table III-1 shows distribution of public enterprises by gross block. It is apparent from the table that more than half (67 units) of the total units in the sample possess gross assets of value less than Rs. 10 crores. There are 16 large scale enterprises whose fixed assets exceed Rs. 100 cross in the year 1976-77. It is implied that 13.33 per cent of the total 120 units in the sample possess assets over Rs. 100 crores. Top 16 public enterprises whose assets exceed Rs. 100 crores cover important fields like steel, transport, petroleum and heavy engineering etc. The list of top 16 public enterprises is given in Table III.2.

Nearly 63 per cent of the total units in the sample (75 units) have paid up capital less than Rs. 10 crores. Table III-3 reveals that only 11 public sector units whose paid up capital exceed Rs. 100 crores are operating in the fields of steel, coal, fertilisers, and heavy engineering. Table III-4 presents the list of top 11 public enterprises whose paid up capital exceed Rs. 100 crores. The steel group consisting of three units accounts for 57.09 per cent of the aggregate equity capital.

It implies that there is a heavy concentration of investment in the steel group.

Table III- 5 shows the distribution of public enterprises by capital employed. The volume of capital employed in 62 units does not exceed Rs. 10 crores. There are top sixteen public enterprises whose capital employed exceeds Rs. 100 crores. It reveals heavy concentration of capital employed in a few public sector units.

3.7 RETURNS :

Table III- 6 explains the tren in the distribution of public enterprises by ROCE.[3] The number of units showing negative returns reached 33 in 1977-78. The top group, the best performers in terms of ROCE   enterprises showing over 30 per cent ROCE contains 13 units in 1977-78. The performance of the public sector units was not uniform during three years 1975-76 to 1977-78, as the coefficient of variation of ROCE fluctuated from 537 per cent to 1497 per cent.

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3 Return on Capital Employed (ROCE), defined as gross profits as percentage of Capital employed (see glossary)

Table III-1

Frequency Distribution of Public Enterprises under the Central Government by Gross Block 1976-77.

Size of the Group Gross Block Rs. crores	No. of Public enterprises	Percentage
Less than Rs. 10 crores	67	65.83
10.1 to 20	14	11.67
20.1 to 30	7	5.83
30.1 to 40	5	4.17
40.1 to 50	3	2.50
50.1 to 60	4	3.33
60.1 to 70	1	0.83
70.1 to 80	1	0.83
80.1 to 90	0	0.00
90.1 to 100	2	1.67
100 and above	16	13.33
Total	120	100.00

Source : Bureau of Public Enterprises - Annual report.

Table III-2

Central Government undertakings. Top Public Enterprises. Gross Fixed Assets. 1976-77

	Public Enterprise	Rs. Crores
1.	Hindustan Steel Ltd.	1326.98
2.	Bokaro Steel Ltd.	698.09
3.	Shipping Corporation of India	686.25
4.	Oil and Natural Gas Commission	561.23
5.	Fertilizer Corporation of India	466.50
6.	Indian Oil Corporation Ltd.	345.31
7.	Bharat Heavy Electricals Ltd.	291.74
8.	Air India	212.66
9.	Heavy Engineering Corporation	200.40
10.	Hindustan Aeronautics	196.53
11.	Nevy Veli Lignite Corporation	195.72
12.	Indian Air Lines	192.90
13.	Food Corporation of India	142.50
14.	Hindustan Copper Ltd.	134.96
15.	Mogual Lines	128.29
16.	National Mineral Development Corporation	114.60
	Total	5894.66

Source - Bureau of Public Enterprises - Annual report. 1976-77.

Table III-3

Frequency Distribution of Public Enterprises

Under the Central Government by paid up capital 1976-77.

Size of the group Rs. crores.	No. of public Enterprises	Percentage
Less than 10 crores	75	62.5
10.1 to 20	16	13.30
20.1 to 30	5	4.16
30.1 to 40	2	1.61
40.1 to 50	4	3.33
50.1 to 60	1	0.50
60.1 to 70	1	0.50
70.1 to 80	2	1.60
80.1 to 90	1	0.50
90.1 to 100	2	1.68
100 and above	11	9.17
Total	120	100.00

Source : Bureau of Public Enterprises - Annual Reports.

Table III-4

Central Government Undertakings, Top Public Enterprises : 1976-77

		Paid up Capital Rs. crores
1.	Steel Authority of India Ltd.	1557.14
2.	Hindustan Steel Ltd.	819.85
3.	Fertilizer Corporation of India	662.75
4.	Bokaro Steel Ltd.	600.52
5.	Coal India Ltd.	472.17
6.	Oil and Natural Gas Commission	241.17
7.	Food Corporation of India	204.60
8.	Indian Petrochemicals Ltd.	186.00
9.	Neyveli Lignite Corporation	179.03
10.	Heavy Engineering Corporation Ltd.	161.79
11.	Bharat Heavy Electrical Ltd.	130.00
	Total	5215.19

The top 3 enterprises except Fertilizer Corporation of India are in the Steel group constituting 57.09 per cent of the aggregate paid up capital of top 11 public enterprises.

The table reveals the concentration of paid up capital in the steel group.

Table III.5

Frequency Distribution of Central Government undertakings by Capital Employed. For the period 1960-61 to 1977-78.

Size of the group Rs. crores	Frequency	Mean ROCE* $\bar{X}$	Standard deviation. $\bar{X}$	Co-efficient of variation $\bar{X}$
Below 10	62	1.09	39.89	3659.68
10.1 to 20	15	17.09	56.86	332.71
20.1 to 30	10	4.50	29.13	647.33
30.1 to 40	7	7.59	7.59	98.95
40.1 to 50	4	15.97	15.79	99.49
50.1 to 60	2	3.30	2.67	80.91
60.1 to 70	2	10.78	5.89	54.64
70.1 to 80	2	10.27	0.55	5.36
80.1 to 90	0	-	-	-
90.1 to 100	16	3.63	5.83	160.61
Total	121			

Source : Bureau of Public Enterprises - Annual Reports.

*ROCE : Return on capital employed

Table III.6

Frequency Distribution of Public Enterprises by ROCE in the sample.

Group by Return on Capital Employed	1975-76			1976-77			1977-78		
	No. of enter-prises	Per-cen-tage	Cumula-tive frequ-ency	No. of enter-prises	Per-cen-tage	Cumula-tive Frequ-ency	No. of enter-prises	Per-cen-tage	Cumula-tive Frequ-ency
No positive Returns	24	19.83	24	22	18.33	22	33	27.5	33
0.1 to 5	18	14.88	42	15	12.50	37	14	11.67	47
5.1 to 10	20	16.53	62	26	21.67	63	17	14.17	64
10.1 to 15	20	16.53	82	18	15.00	81	13	10.83	77
15.1 to 20	17	14.05	99	16	13.33	97	13	10.83	90
20.1 to 25	3	2.48	102	5	4.17	102	5	4.17	95
25.1 to 30	5	4.13	107	1	0.84	103	3	2.5	98
30 & above	14	11.17	121	17	14.14	120	13	10.83	111
N.A.	-	-					9	7.50	120
Total	121	100.00		120	100.00		120	100.00	
Mean ROCE	7.4096			1.992			5.9488		
S.D.ROCE	39.8452			59.783			63.0835		
C.V. % ROCE	537.75			1497.57			1060.44		

Source : Bureau of Public Enterprises - Annual Reports.

Table III.7

Central Government Undertakings returns on the Capital Employed in the sample.

Year	Aggregated capital employed Rs. crores	Aggregate Gross profits Rs. crores	Return on capital employed Percentages
1960-61	151.28	10.86	7.18
1961-62	205.18	13 .01	6.34
1962-63	863.38	14.16	1.64
1963-64	919.83	41.81	4.54
1964-65	1140.77	44.01	3.86
1965-66	1357.09	50.65	3.73
1966-67	1839.93	56.95	3.10
1967-68	2403.66	49.54	2.06
1968-69	2962.64	90.09	3.04
1969-70	3064.98	136.00	4.43
1970-71	3414.35	173.99	5.10
1971-72	3809.99	131.10	3.44
1972-73	4429.79	241.64	5.39
1973-74	5180.05	354.68	6.91
1974-75	6488.19	598.05	9.22
1975-76	8666.72	671.80	7.75
1976-77	10557.83	1010.33	9.57
1977-78	11880.96	954.65	8.03
Mean	3852.03	257.95	5.30

(The enterprises started functioning after 1975-76 are not included)

Source : Bureau of public enterprises - Annual reports on the working of industrial and commercial undertakings of Central Government.

The volume of aggregate capital employed of the Central Government undertakings in the sample has been steadily increasing during the period 1960-61 to 1977-78. Table III.7 reveals upward tend in aggregate capital employed. The volume of aggregate capital employed swelled to Rs. 11880.00 crores in 1977-78.

The volume of gross profits[4] also increased to Rs. 954.65 crores in 1977-78 from Rs. 10.86 crores in 1960-61.

The general performance of the public enterprises is usually reflected in ROCE, the return on capital employed. During the first three years under study, ROCE showed declining trend. The return on capital employed decreased to 1.64 per cent in 1962-63 from 7.18 per cent in 1960-61. It remained below 6 per cent till 1972-73, subsequently it remained above 6 per cent but below 10 percent. Generally 12 percent return on capital employed is considered desirable for public enterprises by the planning commission.

3.8 COMPARISON WITH THE PRIVATE SECTOR :

It is difficult to make an over all comparison with the private sector because the accounting practices differ and the private sector comprises of all the sectors of the economy including large scale modern industry, small industries,

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4 See glossary for definition.

cottage industries, trade, commerce, transport, stock raising and agriculture etc. Hence an attempt is made to compute capital employed in the corporate private sector and shown in Table III. 8 for the period 1960-61 to 1974-75.

The Reserve Bank of India publishes every year data for 1650 large scale and medium scale public limited companies in the private sector. The returns to capital employed in these private sector companies are compared with the returns to capital employed in the Central Government undertakings.

People tend to compare the performance of the public sector with that of private sector in terms of financial ratios. An attempt is made to evaluate the performance of the Central Government undertakings against the private sector performance. The following financial ratios are used as the instruments of evaluation - (1) Return on capital employed (2) Profit margins (3) Inventories to sales (4) Wages, salaries and other benefits as a proportion of Net value added, (5) Net value added to capital employed.

3.8.1 Return on Capital Employed :

The return on capital employed in the private sector, i.e. large and medium scale joint stock companies in the sample of RBI, has been found to be higher than the public enterprises during the period of 1967-68 to 1974-75. The capital employed, in the private sector has been computed as per the definition given by the Bureau of public enterprises to make it a more meaningful, comparison. In 1967-68, the return on capital employed in the Central Government undertakings was 2.07 Pc. as against 19.61 P.C. in the private sector. After 1970-71, the returns in the both the sectors show upward trend. In 1974-75, the return on capital employed in the private sector was 38.59 p.c. as against 8.44 p.c. only in the public sector.[5]

3.8.2 Profit margins - Another measure of performance usually applied in business undertakings is profit margin, defined as gross profits as a proportion of sales turnover. It is a rough measure of efficiency. The profit margin in the private sector hovered around 10 p.c. while in the public sector it ranged from 3 to 5.96 P.C. during the period 1967-68 to 1974-75. In 1974-75, the profit margin in the

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5 The evaluation of performance of the public sector is a complex process, because of the presence of social obligation and a comparison with the private sector is not free from erraneous conclusions.

private sector was 11.37 p.c. as against 5.47 p.c. in the public sector. The tables III.8 and III.9 reveal that during the period of 1967-68 to 1968-69, the profit margin was low around 9 p.c. in the private sector, while in the public sector it was below 5 p.c. during 1969-70 to 1973-74. The profit margin in the public sector appears to have made smant recovery in 1974-75.

3.8.3 Inventories to Sales :

The ratio of inventories to sales explains business efficiency. The accumulation of inventories indicates bad management of stocks and stores. So the business undertakings usually allow a minimum of necessary inventories. The ratio of inventories to sales in the private secotr was less than 1/3 of sales during the entire period, while in the public secotr the ratio fluctuated between 16.28 p.c. to 89.06 p.c. The fluctuations in this ratio signifies bad management; surprisingly this ratio was the highest during the period 1968-69, 1969-70 in the public sector. In 1974-75, the inventories to sales in the private sector was 33.14 p.c. while it was 32.20 p.c. in the public sector. This ratio was subject to numerous factors in the public sector.

3.8.4 Wages salaries, other benefits as a proportion of net value added -----

This ratio may be called labour share in the output. It is generally held that ~~as~~ labour share increases as profit share declines. Increased labour share indicates greater expenditure on labour welfare activities. In 1968-69, the labour share in the public sector was 65.34 p.c. as against 66.07 p.c. in the private sector. This labour share has been declining in the private sector while in the public sector it increased marginally and in 1974-75, it fell to 65.13 p.c. while in the private sector it was only 57.78 p.c. during the same period. This ratio is dependent on government policies.

3.8.5 Net value added to capital employed :

The net value added as a proportion of capital employed, called capital productivity has shown upward trend in the public sector. It increased from 5.55 p.c. in 1968-69 to 24.19 p.c. in 1974-75. Increased capital productivity means the scare capital is put to optimum utilisation. During the period 1968-69 to 1974-75, the ratio of net value added to capital employed was over 55 p.c. in the private sector and it showed upward trend and reached peak in 91.40 p.c. in 1974-75. It is general practice that the ratio of gross value added to capital employed, is used as capital efficiency measure. But the net value added to capital employed is also a rough measure of capital productivity in business undertakings.

Table III.8

Performance of Private Sector, Financial Ratios

(Percentages)

Year	Return on capital employed	Profit Margins.	Inventories to sales.	Wages salaries to net value added.	Net value added to capital employed O/K.
1960-61	22.93	10.67	32.93	62.88	61.78
1961-62	22.85	10.52	33.14	62.62	61.14
1962-63	23.21	10.58	32.87	60.40	61.64
1963-64	24.19	10.84	31.70	61.27	62.44
1964-65	23.80	10.56	31.79	62.73	63.85
1965-66	23.35	10.02	32.57	63.95	64.77
1966-67	22.07	10.47	33.93	61.97	58.03
1967-68	19.61	9.21	34.48	65.34	56.59
1968-69	18.83	8.84	31.51	66.07	55.49
1969-70	21.56	9.60	31.51	63.21	59.10
1970-71	22.83	10.84	32.00	58.98	55.67
1971-72	24.41	10.25	32.27	59.53	60.31
1972-73	25.01	9.72	30.75	61.21	64.46
1973-74	29.10	10.66	32.61	60.02	72.80
1974-75	38.59	11.37	33.14	57.78	91.40

Source - Reserve Bank of India - Financial statistics of Joint Stock Companies in India.

1. Capital employed implies. Net assets plus working capital. (Capital employed and working capital have been computed as per the definition of Bureau of public enterprises)

ROCE- Gross profits as percentage of capital employed.

Profit margin - Gross profits as percentage of sales turn over.

Table III.9

Performance of the Central Government undertakings
Financial ratios

(Percentages)

Year	Return on capital employed.	Profit Margins.	Inventories to sales.	Wages and salaries to net value added.	Net value added to capital employed O/K
1960-61	-	-	-	-	-
1961-62	-	-	-	-	-
1962-63	-	-	43.32	-	-
1963-64	-	-	20.50	-	-
1964-65	-	-	16.28	-	-
1965-66	-	-	19.42	-	-
1966-67	-	-	21.27	-	-
1967-68	2.07	3.00	47.68	-	-
1968-69	1.92	5.96	89.06	65.34	5.55
1969-70	1.96	4.83	81.08	67.68	6.46
1970-71	4.01	4.81	49.52	68.47	12.70
1971-72	4.21	4.70	50.39	67.52	12.97
1972-73	5.11	4.62	33.71	66.16	15.10
1973-74	6.35	4.93	35.90	69.83	21.06
1974-75	8.44	5.47	32.20	65.13	24.19

Source - Bureau of public enterprises - Annual reports

ROCE - Gross profits as percentage of capital employed.
Profit margin - Gross profits as percentage of sales turn over.

3.9 BEST PERFORMERS :

It is natural to want to know the best performers in the sample. The enterprises showing 30 per cent average returns and above may be considered the best performers during the period under study. The enterprises showing the best working results during the entire period, are Indian oil Blenning Ltd., Indo Burma Petroleum Co., Hydro Carbons India Pvt.Ltd., Lubrizol India Ltd., Cashew Corporation of India Ltd., HMT International Ltd., Metal Scrap Trading Corporation of India Ltd., Minerals and Metals Trading Corporation Ltd., SAIL International Ltd., State Trading Corporation Ltd. and Hindustan Steel Works Construction Ltd., These public sector units under the central Government have shown consistently good working results as reflected in ROCE, during the period under study.

3.10 POOR PERFORMERS :

It is not difficult to identify the poor performers in the sample defined as the enterprises showing average negative returns during the period under study. The following are the enterprises yielding average negative returns during the entire period under study.

1. Bokaro Steel Ltd.
2. Bharat Aluminium Co.Ltd.
3. Bharat Gold Mines Ltd.
4. Bharat Refractories Ltd.
5. Bolani Ores Ltd.
6. Indian Fire Bricks & Insulation Co.Ltd.
7. National Mineral Development Corporation Ltd.
8. Coal India Ltd.
9. Fertilisers and Chemicals (T) Ltd.
10. Hindustan Salts Ltd.
11. Braithwaite & Co.Ltd.
12. Bridge & Roof Co.of India Ltd.
13. Burn Standard Co.
14. Heavy Engineering Corporation Ltd.
15. Jessop & Co.Ltd.
16. Bharat Dynamics Ltd.
17. Bharat Pumps & Compressors Ltd.
18. Bieco Lawrie Ltd.
19. National Instruments Ltd.
20 Central Inland Water Transport Corporation Ltd.
21. Scooters India Ltd.
22. Bharat Opthalmic Glass Ltd.
23. Hindustan Protofilms Mfg.Co.Ltd.
24. Rehabilitation Industries Corporation Ltd.
25. Tannery Foort-wear Corporation Ltd.

26. Banama Fruit Development Corporation Ltd.
27. Central Fisheries Corporation Ltd.
28. Tea Trading Corporation Ltd.
29. Air India Charters Ltd.
30. Central Road Transport Corporation Ltd.
31. Mineral Exploration Corporation Ltd.
32. National Building Construction Corporation Ltd.
33. Engineering Project (I) Ltd.
34. Hotel Corporation of India Ltd.

3.11 AGE AND RETURNS :

Why do some concerns perform better than others ? One of the factors mentioned is age of the enterprise. It is generally believed that profitability picks up after the teething troubles are over. Therefore here we test the hypothesis regarding age and profitability of the enterprise.

Table III.10 shows the frequency distribution of public sector units in the sample according to the period of working from 3 years to 18 years and above. Only 5 units are operating in the age-group of 3 years and 22 units are in operation in the top group of 18 years and above. The public sector units in the sample are more or less equally divided between two groups and the dividing line is 10 years.

As the units reach maturity (usually 6 or 2 years of working period), they are expected to show better results and unsatisfactory results during the initial atages of development are commonly attributed to teething troubles. An attempt is made to find whether the length of working period of public sector units will improve the efficiency, reflected in the working results presented in the balance sheet for the accounting year.

The following Null hypothesis was tested.

Null Hypothesis : There exists no relationship between the age of the enterprise and rate of return on capital employed.

$r_{xy} = 0$ where

r_{xy} = Coefficient of Correlation between x and y.

x = Age of the enterprises

y = ROCE

Testing :

The coefficient of correlation between the rate of return and age was computed.

$$r_{xy} = -0.0854$$

<u>Testing r</u> :

$$t = \frac{r\sqrt{n-2}}{\sqrt{1-r^2}}$$

Where $n = 16$

$$t = \frac{-0.0854\sqrt{16-2}}{\sqrt{1-(-0.0854)^2}}$$

$$t = 0.3318$$

The computed t-value was found to be less than table of t - (m-2) 2.145 at 0.05 level of confidence and 2.977 at 0.01 level of confidence.

The Null Hypothesis is not rejected even at 0.01 level of confidence. The testing of null hypothesis dispels the doubts that there is no causal relationship between the length of working period and the returns.

Table III.10

Frequency Distribution of Public Enterprises as per age (Operational period) in the sample.

Period of working years	No. of units	Mean $\bar{X}$ ROCE	SD $\bar{X}$ ROCE	CV $\bar{X}$ ROCE
3	5	-14.10	41.27	292.70
4	9	46.68	73.34	157.11
5	9	3.18	11.14	350.31
6	16	-17.55	50.94	290.26
7	5	- 4.07	32.25	792.38
8	3+1	27.68	43.66	157.73
9	9	4.51	9.34	207.10
10	5	10.13	13.23	130.60
11	8	- 0.34	20.91	615.00
12	16	- 2.31	21.92	948.92
13	3	18.70	17.30	92.51
14	6+1	12.68	14.13	111.44
15	0	-	-	-
16	3	0.63	1.65	261.90
17	0	-	-	-
18	22	9.48	12.11	127.74
Total	121			

Source : Bureau of Public Enterprises - Annual Repotts.

3.12 SIZE AND RETURNS :

A second factor often mentioned by way of explanation of inter - unit variations in returns to capital is the size of the enterprise.

The size of any business enterprise is determined by its gross fixed assets. As the size of industrial unit increases, the economies of scale are assumed to operate, hence large scale enterprises are expected to earn more surpluses. Table III.11, the contigency table, to find the relationship between fixed assets and returns on capital, is an attempt to test the null hypothesis stated namely, there exists no relationship between gross fixed assets and returns. The null hypothesis has not been rejected at 10 per cent level of confidence.

The contingency co-efficient was also weak. It implies that in public sector enterprises there is no relationship between the size of the enterprise measured as gross fixed assets and returns.

Table III.11

Contingency Table 1976-77

ROCE	Below 10	10.1 to 50	50.1 to 100	100 & above	Total
No positive returns	15 (12.28)	5 (5.32)	1 (1.47)	1 (2.93)	22
0.1 to 10	20 (22.33)	9 (9.67)	3 (2.67)	8 (5.33)	40
10.1 to 30	18 (22.89)	13 (9.90)	4 (2.73)	6 (5.47)	41
30 and above	14 (9.50)	2 (.4.11)	0 (1.13)	1 (2.27)	17
Total	67	29	8	16	120

(The figures in the parentheses are expected frequencies)

Null Hypothesis : There is no relationship between the two variables i.e. Gross fixed Assets and Return on Capital Employed. In other words there exists no relationship between the Return on Capital Employed and the Gross fixed Assets.

Chi-square test :

The figures in the brackets in the table are expected frequencies.

$$\chi^2 = \frac{(f-e)^2}{e}$$

where f = observed frequency

e = expected frequency.

$\chi^2 = 11.4164$

$n = 120$

$df = (4-1)\ (4-1) = 9$

Table value χ^2 9df

$\chi^2_{0.025}$ 9df $= 19.023$

$\chi^2_{0.005}$ 9df $= 23.589$

The computed value of X^2 is less than table values.

H_0 cannot be rejected.

$C = \sqrt{\chi^2/\chi^2 + n}$

$C = 0.2947$

The contingency coefficient is also weak.

3.13 MARKET SHARE AND RETURNS :

Finally, the market share is said to affect the returns. The market share of any business enterprise is supposed to improve the working results of the enterprise. An attempt is made to test this null hypothesis. For this purpose eight enterprises in the fields of lignite, petroleum, Coal,Gold, Bread, Newsprint, Drugs and pharmaceutical and photofilms are selected. The market share of 100 per cent implies that there is no private sector firm producing that product or service in the economy and public sector unit is in full control of production and distribution of the product or service.

Table III.12 shows that there does not exist any causal relationship between the market share and returns. For example Bharat Gold Mines Ltd., with 100 per cent market share has been continuously showing negative returns and average return during the entire period under study was -44.91 per cent.

The non rejection of the null hypothesis at 0.01 level of significance implies that in public enterprises there is no causal relationship between market share and return on capital employed.

Table III.12

The share of the public sector in the National Economy and returns.

Sr. No.	Product	Year	Percentage share	Mean ROCE P.C.
1.	Lignite	1977-78	100	0.77
2.	Petroleum	1977-78	99.1	17.41
3.	Coal	1977-78	98	- 3.42
4.	Gold	1976	100	-44.91
5.	Bread	1977	65	9.92
6.	Newsprint	1977-78	100	7.38
7.	Drugs & Pharmaceutics	1977-78	32	0.61
8.	Photo films	1977-78	100	- 1.45
		Mean	86.763	- 1.71
		S.D.	23.59	17.55

Source : 1. Bureau of Public Enterprises - Annual Reports.
2. Documentation centre for corporate & Business Policy Research : The Future of Public Sector in India : New Delhi, 1979, pp. 5-6, 13.

$N = 8,$

$H_o = r_{xy} = 0$ where x = the share of the public sector
y = mean ROCE

$r_{xy} = -0.1737$

$r^2_{xy} = 0.03017$

$t = 0.4321$

Table value of 't' at 6 df. 2.447 at 0.05 level of confidence

" " 3.707 at 0.01 level of confidence

H_o is not rejected as $t_c < t_t$ at

0.05 and 0.01 levels of confidence.

([illegible])

3.14 SUMMARY

The public enterprises under the Central Government cover a wide range of important economic activities in the country such as steel, minerals, metals, coal, petroleum and chemicals etc. The public enterprises according to Cognate groups, can be classified into steel, petroleum, chemicals and heavy engineering etc. They can also be classified into convenient groups like, manufacturing, trading, and developmental or promotional enterprises.

The investment in paid up capital and loans, in the central government undertakings stood at Rs.12851 crores in 1978. There has been heavy concentration of investment i.e.

82.30 per cent in the manufacturing group in 1977-78. The relative share of the steel group in the aggregate investment effort has declined from 49.23 per cent in 1962-63 to 23.80 per cent in 1977-78.

A sample of 121 running concerns in 1975-76, are selected to study in detail the general performance of the public enterprises under the Central government. The investment in gross block in the Central Government undertakings appears to have concentrated in a few groups like steel, heavy engineering, chemicals, trading and transport.

The general performance of the public enterprises reflected in the financial returns is not satisfactory and the overall return during the entire period was 5.30 per cent as against the norm of 12 per cent.

There appears to be no causal relation between the return on capital employed and other variables like gross fixed assets, age of the enterprise, and the market shares in the public enterprises.

People tend to compare the performance of public sector with private sector. The average return in public sector was found to be 6.01 per cent per year during the period 1970-71 to 1974-75 as against 21.2 per cent in the sample of 1650 large public limited companies in the private sector.

This study has enabled us to identify 34 poor performers in the sample of 121 Central Government Undertakings, as against 11 the best performers in terms of average returns during the entire period under study.

GLOSSARY OF CERTAIN TERMS

1. Capital Employed : Capital employed is arrived at by the following formula :

Capital employed = Gross block less depreciation plus working capital.

2. Gross Block : Gross block means original cost of procuring and erecting the fixed assets as appearing in the annual accounts of the enterprises at the end of the accounting year and takes into account additions there to and deductions therefrom by way of sales and transfers.

3. Gross Profits : Gross profits represent the excess of income over expenditure after providing for depreciation and charges pertaining to previous years but before providing for interest on loans, taxes and appropriations to reserves.

4. Net Profits : Net profit represents the figure arrived at after deducting from the gross profit, interest on Loans, and taxes but before appropriation to reserves.

5. Net worth : Net worth represents paid up capital plus free reserve less accumulated losses (deficit) and deferred revenue expenditure, remaining unamortised.

6. Value added : This term has been used in connection with production enterprises. Value added represents value of production less cost of direct materials consumed, cost of power, coal, and oil used as fuel have been regarded as direct materials for this purpose.

7. Value of Production : This means sales and services rendered including transfer of finished goods for internal inter unit transfer use and cost of capital jobs done but excluding sale tax and excise duty, plus or minus acceretion or decretion in the value of closing stock of finished goods and work in progress.

8. Working Capital : Working capital means all current assets, loans and advances, deposits, investments (other than trade investment) less current liabilities and provision (excluding cash credits and bank over drafts and provision for gratuity).

Source : Bureau of Public Enterprises - Annual reports, Vol.I, p.172 of 1975-76 year, on the working of industrial and commercial undertakings of the Central government.