CHAPTER - III

FINANCIAL PERFORMANCE OF GSRTC

INTRODUCTION :

The study of the financial performance of any public enterprise is not only necessary but it is also essential as it throws light on certain issues e.g. whether it has achieved the desired objectives or not, whether it requires any policy changes so that it can work smoothly and satisfy the interest of the larger public. The present chapter attempts to study the financial performance of GSRTC and changes their in over a period of time from the following angles :

[1] Trends in gross earnings, gross expenditure and profit/loss during 1960-61 to 1994-95, both at current prices as well as at constant prices.

[2] Examination of earnings, expenditure and profit/loss per km. during the period under consideration, both in current rupee as well as in constant rupee.

[3] The structure of revenue, particularly in terms of operating revenue and non-operating revenue. The operating revenue is also examined in terms revenue from express services, ordinary services, Luxury services etc.

[4] The structure of expenditure is examined both at current price and at constant price mainly in light of personnel expenditure, expenditure on fuel and lubricants, payment of various types of taxes, depreciation, interest payment etc. The trends in them and change in the relative share of each in total expenditure will throw light on changing structure of expenditure of GSRTC.

[5] The concession provided by the GSRTC is one of the factors explaining the profitability of GSRTC. Not only that but the passenger tax is imposed by the state government and it is so high that it affects the profitability of GSRTC. In the light of this it is attempted to examine the extent to which these two factors are responsible for the loss of GSRTC.

[6] The social surplus is estimated and the social surplus per employee is also estimated at current prices as well as at constant fare and cost to evaluate the performance of GSRTC.

[7] Another way of evaluating the financial performance is to estimate the elasticity of earning. The same is estimated for the period 1960-61 to 1994-95.

[8] It is generally believed that the demand for public utility service is more or less fare inelastic. In the light of this an attempt is made in the present chapter to estimate the elasticity of demand for Gujarat State Road Transport Services.

[9] To evaluate the financial performance, value added per employee at constant fare and constant cost is estimated during the period under consideration.

[10] It is generally believed that the AC curve has a declining tendency in public utility services. The AC at constant prices is estimated to examine the above said hypothesis.

[11] The rate making process starts with the regulation of the cost of doing business and ends with the pricing of the public utility. The public utility is a special kind of business organisation and its economic characteristics differ from the one that is dealt with in the general economic theory. In the light of this, the pricing of transport services provided by GSRTC is discussed following various methodologies.

I. TRENDS IN GROSS EARNINGS, GROSS EXPENDITURE AND PROFIT/LOSS :

The size of any organization is reflected in its absolute earnings and expenditure. Looking at the earnings and expenditure of GSRTC over a period of time i.e. 1960-61 to 1994-95 at current prices, it is observed that both have increased by significant amount. The earnings of GSRTC has increased from Rs. 644.38 lakhs in 1960-61 to Rs. 68037.14 lakhs

in 1994-95. It shows that the gross earnings have increased by more than 100 times during the period under consideration. The expenditure of GSRTC has increased even at a faster rate which has increased from Rs.645.47 lakhs in 1960-61 to Rs.76330.35 lakhs in 1994-95. Looking at the Graphs - III.1 and III.2 one observes that gross earnings and gross expenditure have increased continuously over a period of time. The growth rates of these two are estimated through the following model.

$$\log Y = a + bt + u$$

Here b gives the annual growth rate of earnings and expenditure during the period under consideration.

$$\log Y = 6.727368 + \underset{(63.32)}{0.136638\ t} \qquad R^2 = 0.991815$$
...Gross Earnings .... [1]

$$\log Y = 6.743106 + \underset{(51.04)}{0.138527\ t} \qquad R^2 = 0.989212$$
...Gross Expenditure.. [2]

Equations [1] and [2] reveal that the growth rate is positive and statistically significant for both earnings and expenditure and it is more or less same for both. The value of R^2 is also very high. It is to be noted that both are at current prices, and therefore picture they do not represent real picture as the part of increase is due to increase in price level.

TABLE : III.1

EARNINGS, EXPENDITURE AND PROFIT OF GSRTC

[Current Prices]
[Rs. in Lakhs]

Year	Gross Earnings	Gross Expenditure	Loss or Profit	Gross Earnings/ Gross Expenditure
1	2	3	4	5
1960-61	644.38	654.49	-10.11	0.9846
1961-62	767.34	781.64	-14.30	0.9817
1962-63	941.22	932.18	9.40	1.0096
1963-64	1113.19	1112.78	0.41	1.0004
1964-65	1317.18	1301.96	15.22	1.0117
1965-66	1559.14	1568.53	-9.40	0.9940
1966-67	1839.07	1944.05	-104.97	0.9460
1967-68	2282.66	2289.27	-6.61	0.9971
1968-69	2741.49	2736.38	5.11	1.0019
1969-70	3026.62	3027.53	1.10	0.9997
1970-71	3563.59	3601.80	-38.21	0.9894
1971-72	4156.84	4236.86	-80.02	0.9811
1972-73	4602.46	4702.56	-100.10	0.9787
1973-74	4916.66	5328.81	-412.15	0.9227
1974-75	6710.55	7481.09	-780.94	0.8970
1975-76	7677.78	7977.11	-299.33	0.9625
1976-77	8653.52	8922.10	-268.60	0.9699
1977-78	9670.07	10063.93	-391.86	0.9611
1978-79	10935.50	11327.18	-391.50	0.9654
1979-80	12556.70	13102.34	-545.64	0.9584
1980-81	13687.24	16246.56	-2559.32	0.8425
1981-82	16767.46	20442.18	-3674.72	0.8202
1982-83	21041.43	21596.24	-554.81	0.9743
1983-84	22429.04	22957.00	-527.96	0.9770
1984-85	23456.28	27099.03	-3642.75	0.8656
1985-86	23810.63	28186.60	-4375.97	0.8447
1986-87	25707.49	30145.52	-4438.03	0.8528
1987-88	31451.45	33595.62	-2144.17	0.9362
1988-89	36528.26	36914.92	386.66	0.9895
1989-90	41794.91	44350.06	-2555.15	0.9424
1990-91	46524.61	46200.64	323.94	0.0070
1991-92	51610.88	51819.53	-208.65	0.9960
1992-93	60831.90	60439.30	392.60	1.0065
1993-94	67456.76	70328.55	-2871.79	0.9592
1994-95	68037.14	76330.80	-8293.66	0.8913

Source : Administration Reports & Statistical Report of GSRTC.

The Table - III.2 gives information regarding gross earning, gross expenditure, profit/loss and ratio of gross earnings to gross expenditure in real terms. The total earning and total expenditure both have increased in real term during 1975-76 to 1994-95. The total earning has increased from Rs.19298.78 lakhs to Rs.39989.55 lakhs and total expenditure from Rs.28488.77 lakhs to Rs.54554.44 lakhs during the period under consideration. In order to get the real picture total revenue and total cost[1] are regressed on time considering 1975-76 to 1994-95 as the required information is not available prior to 1975-76.

The growth rate of total revenue and of total expenditure is found to be 4.25% and 2.97% per year respectively and both are statistically significant where as total earning and total expenditure have increased at the rate of 11.76% and 11.53% respectively at current prices, during the same period.

The absolute figures of earning and expenditure in isolation do not reflect anything regarding financial strength of GSRTC. It is the difference between the two represents the true picture of GSRTC. The earnings exceeding the cost represent profit earned by the corporation. Over a period of time for majority of the years, GSRTC incurred losses at current price. Profits are observed during 1962-63, 1963-64, 1964-65, 1968-69 and 1969-70. After 1969-70, GSRTC incurred profit during 1988-89

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1. The methodology of estimating total revenue at constant fare and total expenditure at constant cost is explained in detail in this chapter.

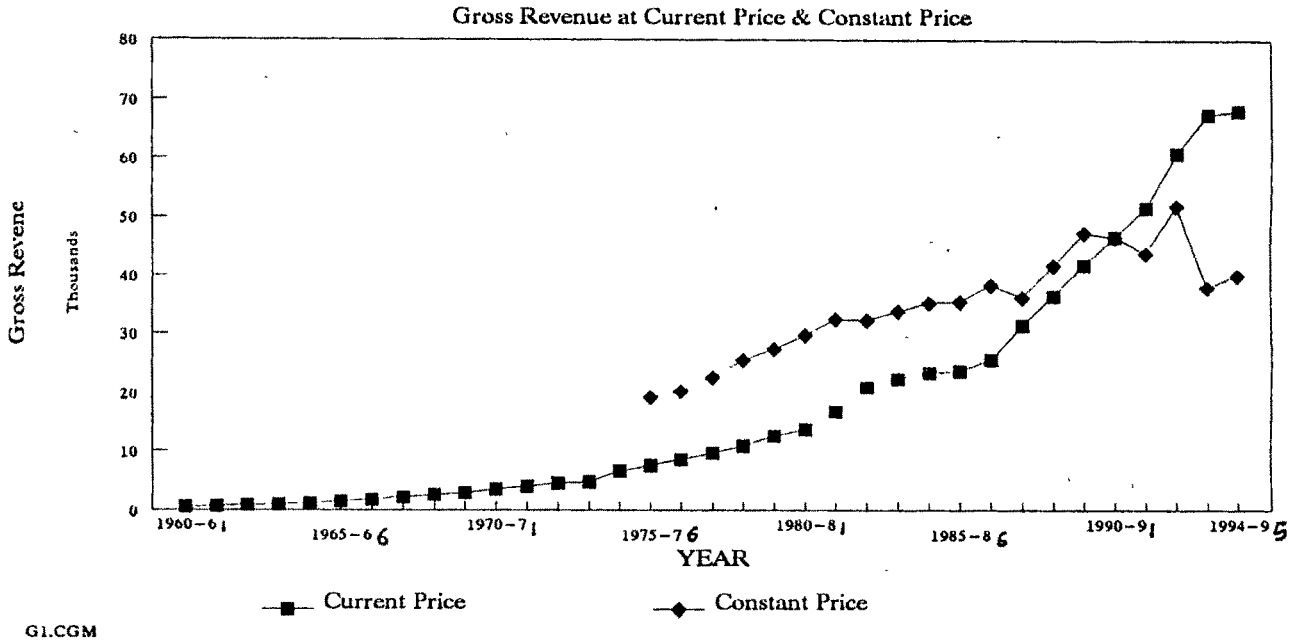
TABLE-III.2

REVENUE, EXPENDITURE AND PROFIT OF GSRTC

[Constant Prices]
[Rs. in lakhs]

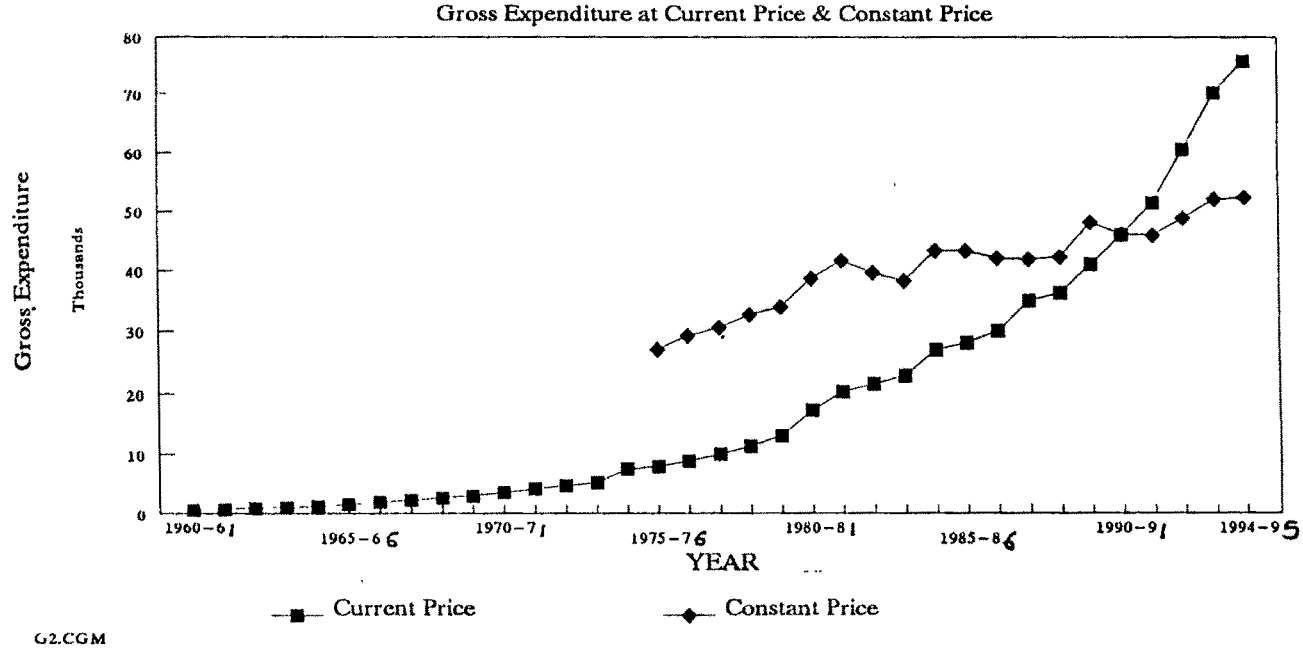
Year	Total Revenue	Total Expenditure	Profit or Loss	Total Revenue/ Expenditure
1	2	3	4	5
1975-76	19298.76	28488.77	-9190.01	0.6774
1976-77	20304.66	31092.96	-10788.30	0.6530
1977-78	22656.69	32929.76	-10273.07	0.6880
1978-79	25634.84	34282.40	-8647.56	0.7578
1979-80	27439.98	35201.42	-7761.44	0.7795
1980-81	29853.78	37188.97	-7335.19	0.8028
1981-82	32546.19	39691.59	-7145.40	0.8280
1982-83	32240.21	38624.00	-6383.79	0.8347
1983-84	33903.67	39290.02	-5386.35	0.8629
1984-85	35318.01	44313.36	-8995.35	0.7970
1985-86	35508.86	43319.48	-7810.62	0.8197
1986-87	38351.69	42949.03	-4597.34	0.8930
1987-88	36167.89	42847.70	-6679.81	0.8441
1988-89	41690.61	43912.27	-2221.66	0.9494
1989-90	47301.82	48312.26	-1010.44	0.9791
1990-91	46524.61	46200.64	323.97	1.0070
1991-92	43819.01	47113.16	-3294.15	0.9301
1992-93	51963.71	50107.20	1856.51	1.0371
1993-94	37888.51	53664.77	-15776.26	0.7060
1994-95	39989.55	54554.44	-14564.89	0.7330

GRAPH – III.1



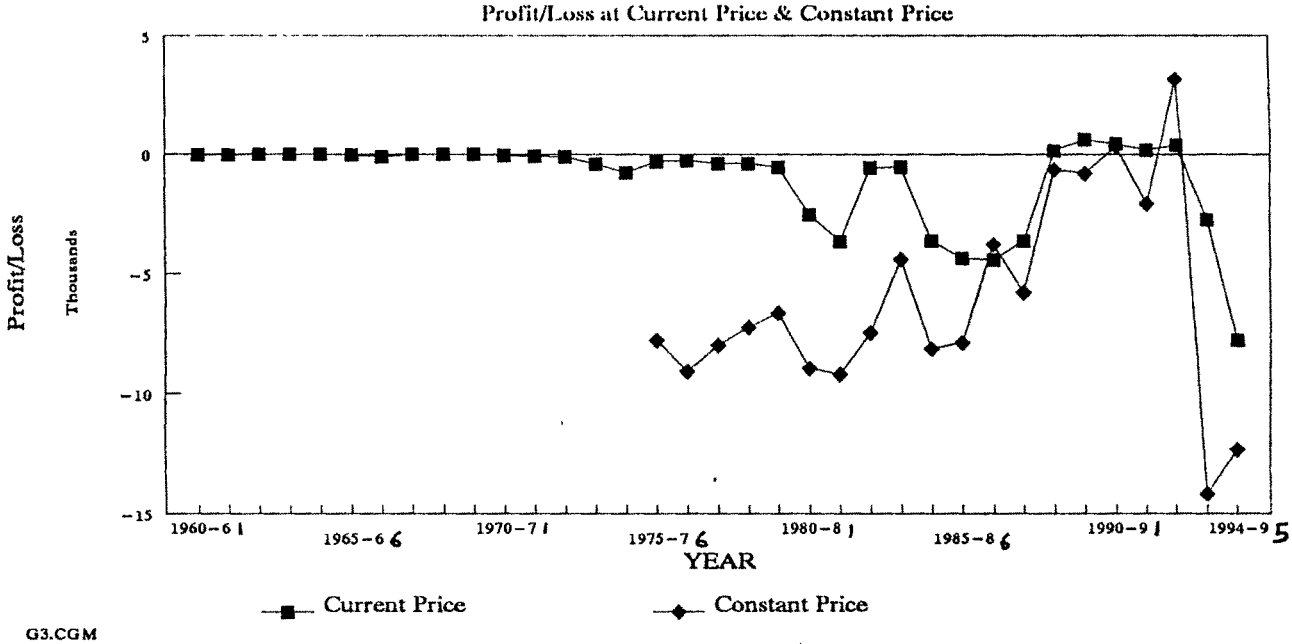
G1.CGM

GRAPH – III.2



G2.CGM

GRAPH – III.3



G3.CGM

to 1992-93. In order to arrive the profit in real term total revenue and total expenditure of GSRTC are to be estimated in real term. The total revenue is broadly classified into two parts, operating revenue and non-operating revenue. The operating revenue at constant fare of 1990-91 is derived through deflating operating revenue by fare index with 1990-91 equal to 100. The non-operating revenue in real term is derived through deflating it by consumer price index with 1990-91 equal to 100. The total of this two gives total earning of GSRTC in real term. The total expenditure of GSRTC in real term is arrived through deflating various commoponents of expenditure by different price indices with the base year 1990-91. The detailed methodology follows in this chapter. Examining the profit/loss of GSRTC in real terms, it is observed that it incurred profit only during 1990-91 and 1992-93 and during remaining years, it incurred losses. Its losses have increased significantly during 1993-94 and 1994-95.

The estimation of the ratio of earnings to expenditure is another way to look at the problem. If the ratio is greater than one, GSRTC earns profit. The ratio less than one, indicates losses on the part of GSRTC. The unit ratio indicates equality between earnings and expenditure. During the profit making years as mentioned above, the ratio exceeded one but marginally. Similarly when the ratio was less than one, it was nearer to one. The year 1980-81 shows the lowest ratio of earnings to expenditure indicating there by very poor performance of GSRTC. Similarly the ratio found to be highest in 1989-90 which shows

that during 45 years of time interval GSRTC was in the best situation in terms of profit in 1989-90.

The Graph - III.3 represents the profit/loss of GSRTC both at current price and constant price and it is found that GSRTC incurred losses during majority of the years under study.

Thus it is obvious that GSRTC incurred losses at current prices as well as at constant price. The report of the Gujarat State Finance Commission[2] has rightly pointed out the following factors responsible for mounting losses.

[i] The corporation has no freedom to revise fares to cover increases in operational costs. While there has been weighted average increase of 1513.20% in the operational cost till the end of 1992 as compared to 1961, the fares increased by only 346.43% during this period.

[ii] The corporation has to provide minimum two trips to any village even when there is insufficient traffic on these routes.

[iii] Running of buses on Kutcha roads to cover all villages in the state leads to higher cost of operation.

[iv] There is high rated passenger tax in Gujarat.

[v] Heavy concessions to students also contribute to the operational losses of the corporation.

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2. Government of Gujarat : The Report of the Gujarat State Finance Commission, April 1994, Pp. 65-70.

II. EARNINGS, EXPENDITURE AND PROFIT/ LOSS PER EFFECTIVE KILOMETRE :

The total earning and expenditure of GSRTC mainly depend upon the total effective kilometres operated during the year. With the increase in the effective kms. operated, the increase in earnings and expenditure is expected. The earning and expenditure per effective km. are estimated at current prices and at constant prices. The gross earnings per km. has increased from 97.75 paise in 1960-61 to Rs.7.35 in 1994-95 where as the expenditure per km. has also increased from 99.2 paise in 1960-61 to Rs. 7.58 in 1994-95.

The gross earning per km. is same as average revenue per km. It is argued out the public utility services are generally supplied by the single seller. In this sense, these services are reorganised as natural monopolies. It is in this light, it is essential to examine, whether transport services provided by GSRTC face monopoly market or the perfectly competitive market. It is well known that the AR and MR coincide with each other and are horizontal straight lines under perfectly competitive market and both are downward sloping under monopoly. In order to examine this, it is required to estimate AR and MR at constant prices. AR and MR can be estimated in two different ways.

$$[1] \quad AR = \frac{\text{Gross Earnings}}{\text{Effective Km.}} \qquad MR = \frac{\text{Change in Gross Earning}}{\text{Change in Effective Km.}}$$

$$[2] \quad AR = \frac{\text{Gross Earnings}}{\text{Passenger Km.}} \qquad MR = \frac{\text{Change in Gross Earning}}{\text{Change in Passenger Km.}}$$

TABLE-III.3

EARNING, EXPENDITURE AND PROFIT/LOSS

PER EFFECTIVE KILOMETRE

[at current Price]
[In Paise]

Year	Gross Earning Per Km.	Gross Cost Per Km.	Profit or Loss Per Km.
1	2	3	4
1960-61	97.75	99.20	-3.20
1961-62	98.13	99.97	-13.23
1962-63	99.94	98.98	-20.81
1963-64	102.80	102.76	-7.91
1964-65	107.71	106.47	-6.76
1965-66	110.57	111.24	-9.11
1966-67	114.77	121.32	-8.22
1967-68	126.91	127.28	-10.40
1968-69	135.13	134.88	-46.42
1969-70	143.22	143.17	-59.72
1970-71	145.25	146.82	-9.22
1971-72	150.63	153.54	-8.65
1972-73	147.14	150.34	-3.20
1973-74	157.82	171.04	-13.23
1974-75	178.93	199.74	-20.81
1975-76	202.91	210.82	-7.91
1976-77	217.79	224.55	-6.76
1977-78	223.58	232.59	-9.11
1978-79	229.57	237.79	-8.22
1979-80	239.02	249.42	-10.40
1980-81	248.25	294.67	-46.42
1981-82	272.50	332.22	-59.72
1982-83	349.65	358.87	-9.22
1983-84	367.45	376.10	-8.65
1984-85	360.19	416.13	-55.94
1985-86	364.40	431.37	-66.97
1986-87	376.17	441.15	-64.98
1987-88	431.07	480.89	-49.82
1988-89	488.35	486.13	2.22
1989-90	532.50	524.58	7.92
1990-91	603.15	597.61	5.54
1991-92	629.97	627.84	2.13
1992-93	711.99	707.39	4.60
1993-94	728.45	707.39	-29.59
1994-95	735.37	758.04	-83.84

Source : Administration Reports and Statistics of GSRTC.

TABLE - III.4

AVERAGE EARNING AND MARGINAL EARNING

[PASSENGER KM.]

[At Constant Price]

Year	Average Earning [FI]	Marginal Earning [FI]	Average Earning [CPI]	Marginal Earning [CPI]	Average Earning [WPI]	Marginal Earning [WPI]
[1]	[2]	[3]	[4]	[5]	[6]	[7]
1960-61	0.1474	-	0.2714	-	0.2822	-
1961-62	0.1638	0.3938	0.2976	0.6650	0.3130	0.7443
1962-63	0.1623	0.1560	0.2893	0.2541	0.2986	0.2379
1963-64	0.1579	0.1258	0.2960	0.3463	0.2933	0.2543
1964-65	0.1605	0.1755	0.2728	0.1318	0.2684	0.1173
1965-66	0.1605	0.1608	0.2497	0.1237	0.2495	0.1468
1966-67	0.1600	0.1569	0.2202	0.0593	0.2183	0.0484
1967-68	0.1476	0.0662	0.2154	0.1839	0.2111	0.1632
1968-69	0.1562	0.2199	0.2197	0.2516	0.2257	0.3341
1969-70	0.1578	0.1755	0.2131	0.1421	0.2205	0.1638
1970-71	0.1581	0.1597	0.2053	0.1606	0.2087	0.1414
1971-72	0.1565	0.1474	0.1946	0.1349	0.1955	0.1222
1972-73	0.1566	0.1580	0.1823	0.0667	0.1780	0.0113
1973-74	0.1550	0.1345	0.1643	0.0628	0.1464	0.2492
1974-75	0.1403	0.0725	0.1421	0.0400	0.1311	0.0607
1975-76	0.1490	-4.3720	0.1570	-7.4901	0.1520	-10.5870
1976-77	0.1587	0.3228	0.1682	0.3604	0.1685	0.2696
1977-78	0.1604	0.1762	0.1593	0.0747	0.1523	0.0931
1978-79	0.1605	0.1612	0.1559	0.1303	0.1524	0.1531
1979-80	0.1610	0.1783	0.1520	0.0925	0.1400	-0.0448
1980-81	0.1605	0.1557	0.1395	0.0055	0.1181	-0.1175
1981-82	0.1488	0.0304	0.1345	0.0837	0.1204	0.1440
1982-83	0.1516	0.0266	0.1599	-1.0617	0.1471	-1.1336
1983-84	0.1535	0.1884	0.1454	-0.1280	0.1394	-0.0069
1984-85	0.1541	0.1678	0.1400	0.0097	0.1306	-0.0794
1985-86	0.1590	-0.1414	0.1377	0.2755	0.1290	0.2205
1986-87	0.1547	0.1150	0.1216	-0.0248	0.1186	0.0237
1987-88	0.1515	0.2118	0.1436	-0.2832	0.1414	-0.3005
1988-89	0.1655	0.3855	0.1429	0.1322	0.1437	0.1802
1989-90	0.1726	0.2457	0.1423	0.1360	0.1395	0.0968
1990-91	0.1470	0.7579	0.1470	0.0339	0.1470	-0.0320
1991-92	0.1600	0.8313	0.1385	-0.3058	0.1409	-0.1768
1992-93	0.1750	0.3673	0.1371	0.1197	0.1469	0.2244
1993-94	0.1620	0.2479	0.1673	-0.0321	0.1850	-0.0660
1994-95	0.1538	0.0224	0.1456	-0.2056	0.1676	0.1125
C.V.	0.0068	0.7939	0.5174	1.3024	0.0561	1.8183

TABLE - III.5

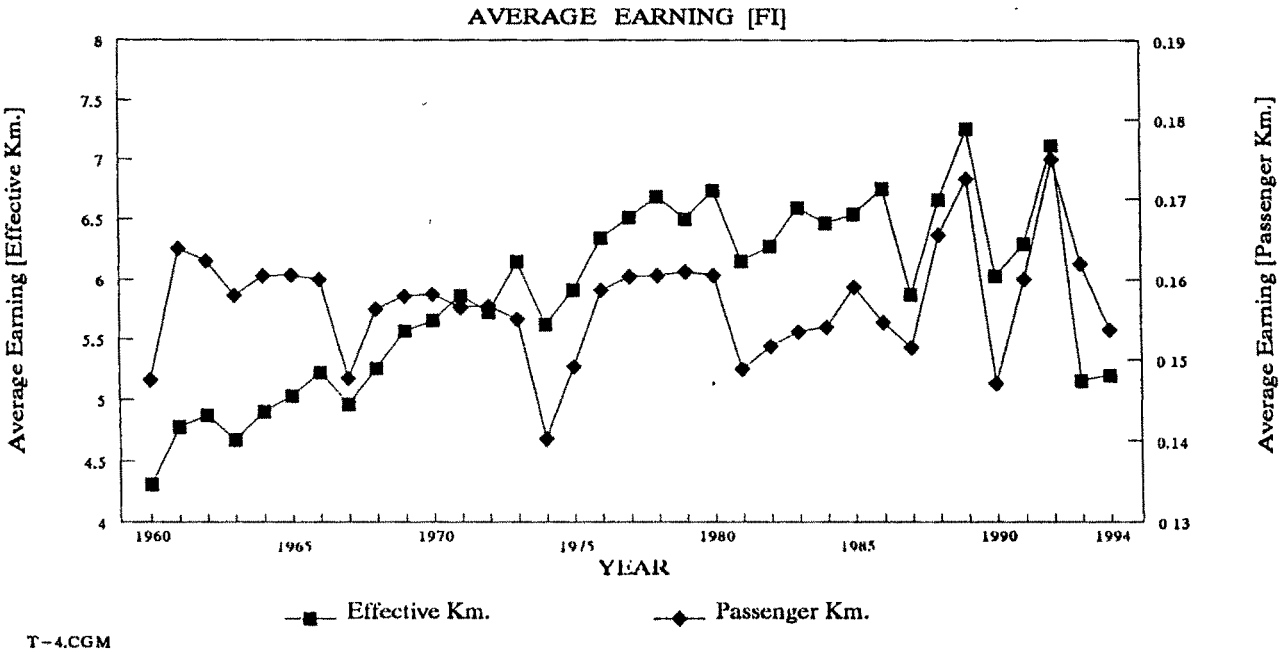
AVERAGE EARNING AND MARGINAL EARNING

[EFFECTIVE KM.]

[At Constant Price]
[Rs. in lakhs]

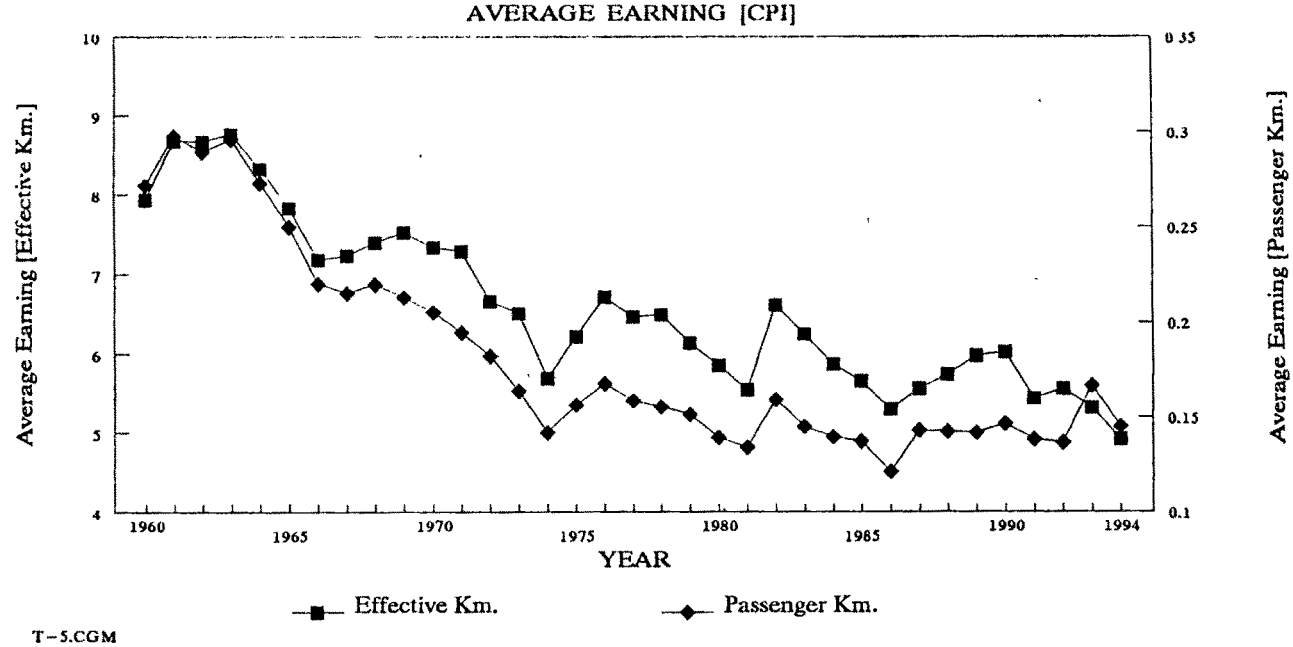
Year	Average Earning [FI]	Marginal Earning [FI]	Average Earning [CPI]	Marginal Earning [CPI]	Average Earning [WPI]	Marginal Earning [WPI]
[1]	[2]	[3]	[4]	[5]	[6]	[7]
1960-61	4.3094		7.9339		8.2502	
1961-62	4.7805	11.1960	8.6845	20.3391	9.1336	21.3909
1962-63	4.8683	5.2973	8.6750	9.4395	8.9546	9.7437
1963-64	4.6770	5.5473	8.7639	10.3947	8.6832	10.2989
1964-65	4.8999	6.6229	8.3296	11.2585	8.1954	11.0771
1965-66	5.0303	5.8823	7.8250	9.1503	7.8206	9.1452
1966-67	5.2222	6.6307	7.1875	9.1261	7.1282	9.0508
1967-68	4.9650	9.1728	7.2434	13.3822	7.0989	13.1151
1968-69	5.2634	7.5082	7.4012	10.5578	7.6043	10.8475
1969-70	5.5745	12.9154	7.5255	17.4355	7.7853	18.0374
1970-71	5.6575	6.1754	7.3440	8.0163	7.4655	8.1489
1971-72	5.8664	7.5382	7.2943	9.3732	7.3308	9.4200
1972-73	5.7304	4.7118	6.6699	5.4843	6.5074	5.3507
1973-74	6.1471	-94.2020	6.5141	-99.8260	5.8069	-88.9875
1974-75	5.6241	8.8750	5.6967	8.9895	5.2575	8.2964
1975-76	5.9119	84.4720	6.2245	88.9377	6.0281	86.1325
1976-77	6.3452	14.9865	6.7260	15.8859	6.3380	14.9695
1977-78	6.5144	8.4277	6.4698	8.3701	6.1849	8.0014
1978-79	6.6884	8.4041	6.4997	8.1669	6.3501	7.9790
1979-80	6.5019	9.1714	6.1388	8.6593	5.6557	7.9778
1980-81	6.7403	11.3701	5.8578	9.8816	4.9586	8.3646
1981-82	6.1525	10.8689	5.5601	9.8223	4.9785	8.7950
1982-83	6.2763	-56.6734	6.6209	-59.7851	6.0897	-54.9885
1983-84	6.5960	28.9930	6.2504	27.4739	5.9889	26.3243
1984-85	6.4656	4.5158	5.8750	4.1033	5.4794	3.8270
1985-86	6.5411	28.8727	5.6655	25.0076	5.3091	23.4347
1986-87	6.7524	11.3588	5.3095	8.9314	5.1792	8.7122
1987-88	5.8782	16.9443	5.5701	16.0561	5.4844	15.8092
1988-89	6.6594	37.6799	5.7507	32.5387	5.7824	32.7178
1989-90	7.2614	19.4697	5.9872	16.0533	5.8714	15.7426
1990-91	6.0315	-34.9802	6.0315	-34.9802	6.0315	-34.9802
1991-92	6.2997	10.6175	5.4505	9.1863	5.5468	9.3485
1992-93	7.1199	26.2423	5.5781	20.5596	5.9779	22.0334
1993-94	5.1570	6.5476	5.3296	6.7667	5.8915	7.4800
1994-95	5.2061	-49.5629	4.9272	-46.9076	5.6737	-54.0150
C.V.	0.7501	28.6806	1.0447	29.4567	1.6473	28.1822

Graph -III.4



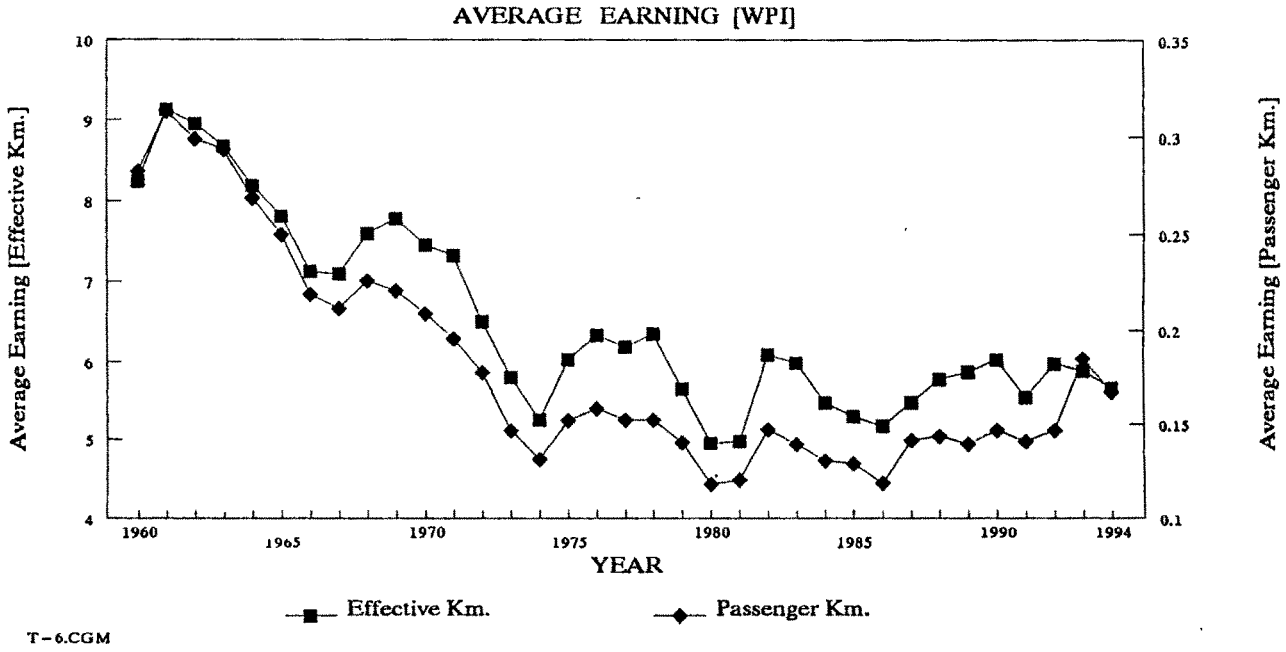
T-4.CGM

Graph - III.5



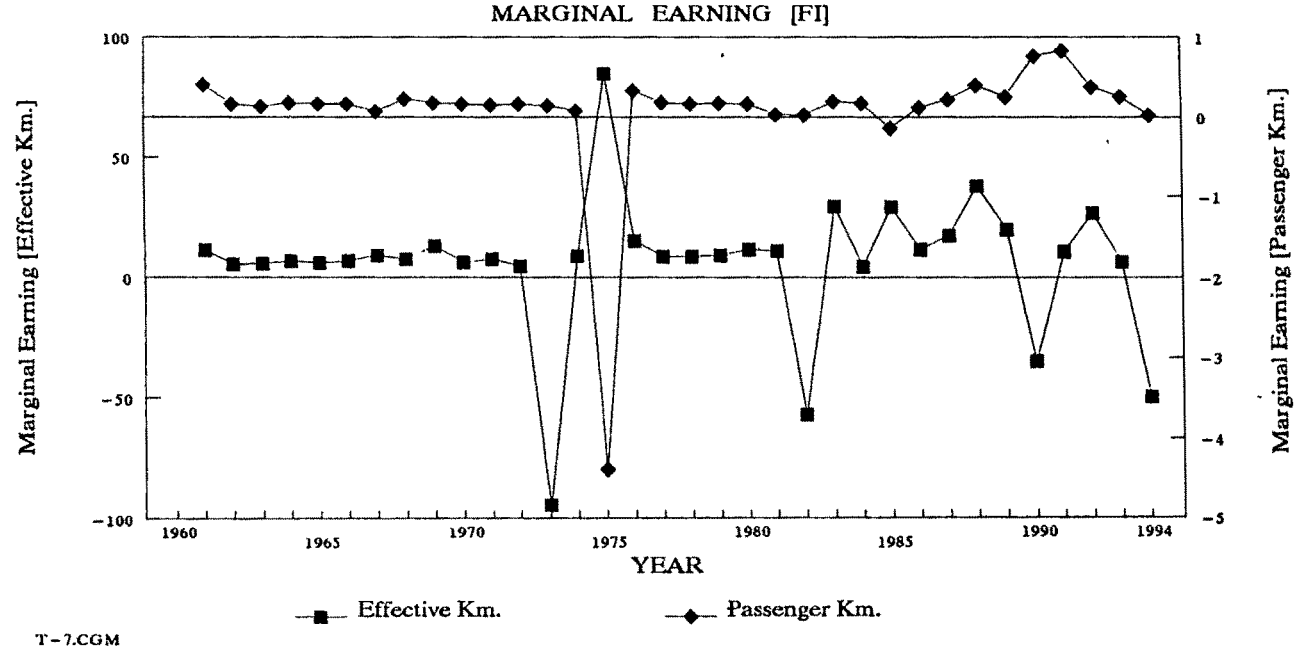
T-5.CGM

Graph – III.6



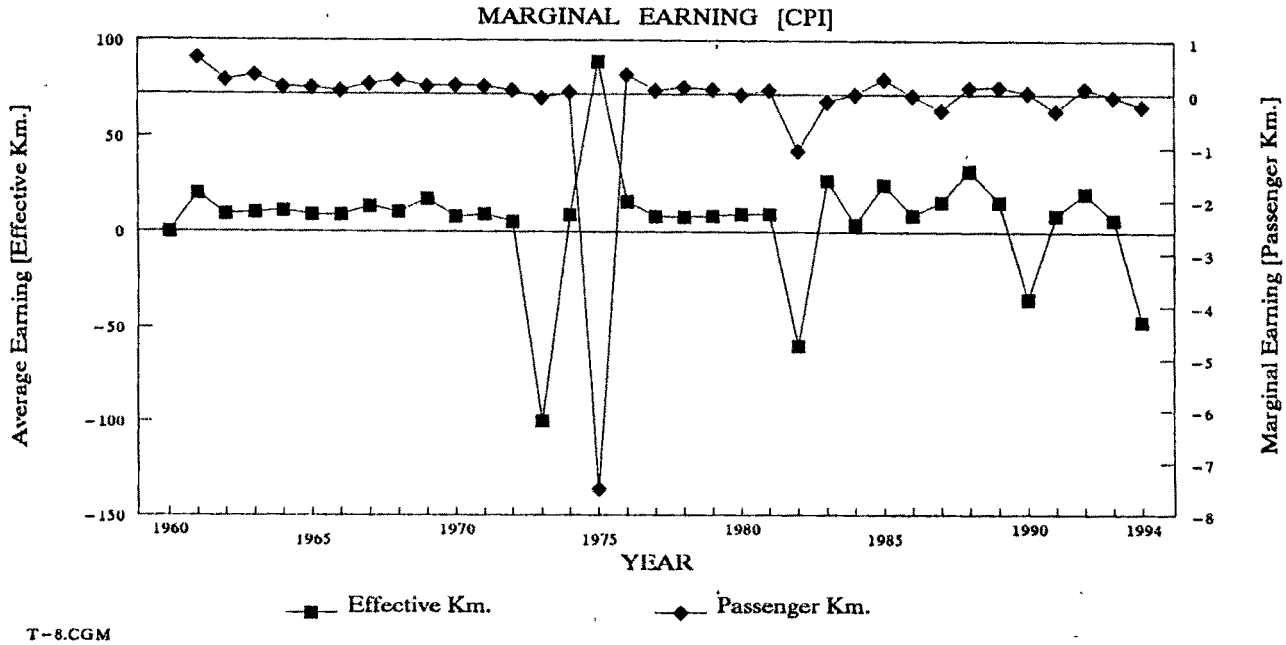
T-6.CGM

Graph – III.7



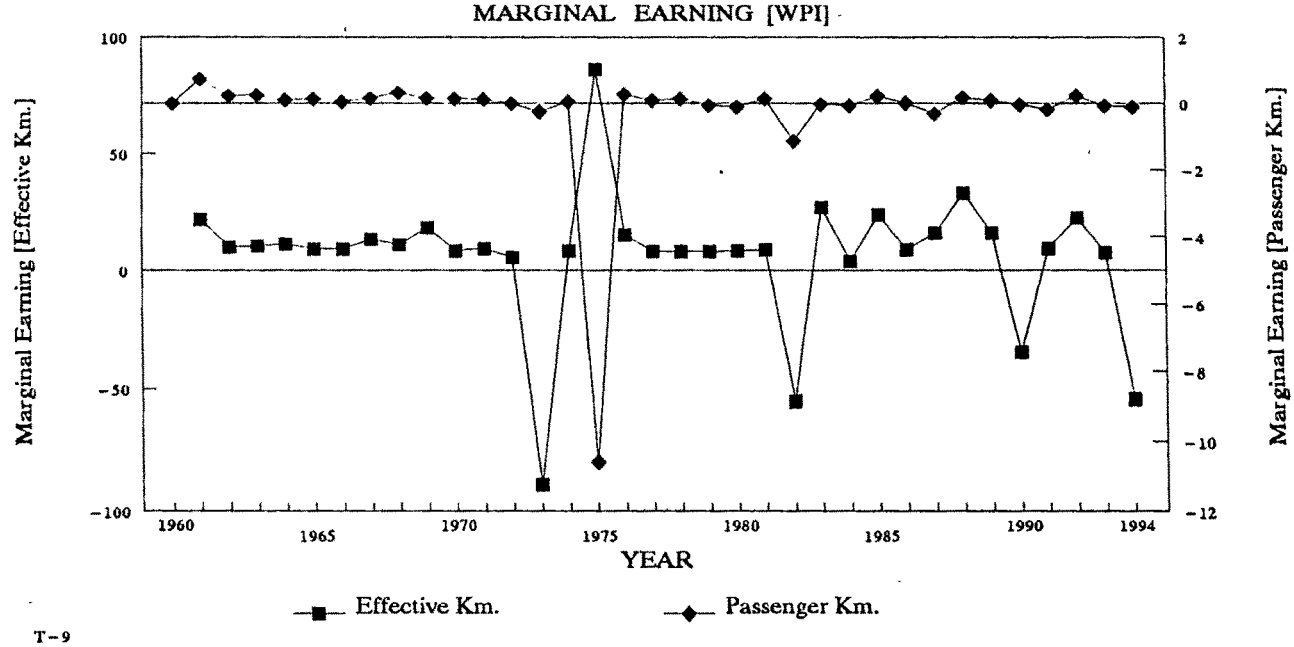
T-7.CGM

Graph – III.8



T-8.CGM

Graph –III.9



T-9

STUs are service organizations satisfying the people's demand for transport. The product is, therefore, a service. In the literature there are two different measurements of the output of STUs. According to S. Sriraman and Others[3] the standard unit for measuring the output is the number of kms. of operation i.e. effective kms. or seat kms. which are obtained by multiplying effective kms. by average seating capacity of the fleet. The same can be measured in terms of passenger kms.[4]

The present study attempts to estimate AR and MR, considering two different concepts of output [i] effective kms. and [ii] Passenger kms.

The AR and MR at constant prices can be derived in different ways as given below. [i] (AR at current price/WPI) x 100 [ii] (AR at current price/CPI) x 100 (iii) (AR at current price/Fare Index) x 100.

In the literature on road transport, all three methods are alternatively used. The study attempts to estimate AR and MR at constant prices through these three methods to inquire about the types of the market faced by GSRTC. The Table III.4 reveals AR and MR at constant prices estimated with the help of WPI, CPI,

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3. S. Sriraman, A V. Raman & M.V. Bagade : "Cost and Financial Models for STUs", Journal of Transport Management, July 1990. Pp. 76-83.

4. M.V. Bagade, "Designing An Economic Fare Policy", Journal of Transport Management, October 1984, also in Fare Polices: A Book of Reading, ed. by the CIRT, Pune, 1995, Pp. 8-19.

FI [Fare Index] respectively considering passenger kms. as output of the GSRTC, where as Table III.5, gives the above information when effective kms. is considered as the output of GSRTC.

The study shows that the AR at constant prices considering passenger kms as output of GSRTC has fluctuated between 0.1403 and 0.1750 [when fare index is applied] between 0.1216 and 0.2976 [when CPI is applied] and between 0.118105 and 0.3130 [when WPI is applied]. One thing that emerged from the table and graphs that the AR in real term has a rising trend when fare index is applied and estimated considering effective kms. as output. However AR has declined when it is deflated by WPI and CPI. Moreover, AR in real term has fluctuated more when it is deflated by CPI.

Two things are observed in case of marginal earnings [considering passenger kms. as output] in real terms.

[i] It did not experience any definite trend during the period under consideration though it has fluctuated considerably looking at the coefficient to variation of marginal earning. It is seen that it is 0.7939, 1.3024 and 1.8183 applying FI, CPI and WPI respectively.

[ii] The marginal earning turned out to be negative in some of the years irrespective of the index applied. However negative

marginal earning is observed only for 1985-86 when FI is applied but out of 19 observation for nearly 10 observation negative marginal earnings is found when WPI is applied.

Examining AR and MR in real term considering effective kms. as output of GSRTC, it is observed that AR in real term [FI index] has increased from Rs.4.31 to 7.2634 in 1989-90 but it has declined to Rs.5.20 in 1994-95 where as the same has declined over a period of time, when CPI and WPI are applied. The marginal earning in real term has fluctuated widely irrespective of the index applied and it was negative in 1973-74, 1982-83, 1990-91 and 1994-95. Looking at the Tables III.4 and III.5 it is observed that fluctuations in marginal earnings exceed the fluctuation in average earnings. Regressing AR and MR on time considering the period 1961-62 to 1994-95 the following results are obtained..

$Y = 5.006236 + \underset{[5.476912]}{0.051254}\ t \quad R^2 = 0.476162$ .. AR [FI, Effe.Km.] ...[1]

$Y = 0.155481 + \underset{[0.848724]}{0.000099}\ t \quad R^2 = 0.021362$ .. AR [FI, Pass.Km.] ...[2]

$Y = 8.199305 - \underset{[-12.6682]}{0.09421}\ t \quad R^2 = 0.829443$ .. AR [CPI,Effe.Km.] ...[3]

$Y = 0.256766 - \underset{[-9.62051]}{0.0044}\ t \quad R^2 = 0.737165$ .. AR [CPI,Pass.Km.] ...[4]

$Y = 8.11502 - \underset{[-8.20922]}{0.0949}\ t \quad R^2 = 0.671286$ .. AR [WPI,Effe.Km.] ...[5]

$$Y = 0.25522 - 0.0041\ t \quad R^2 = 0.629474 \text{ .. AR [WPI,Pass.Km.] ...[6]}$$
$$[-7.48749]$$

$$Y = 7.684124 - 0.10635\ t \quad R^2 = 0.001323 \text{ .. MR [FI, Effe.Km.] ...[7]}$$
$$[-0.20593]$$

$$Y = -0.0684 + 0.008356\ t \quad R^2 = 0.01066 \text{ .. MR [FI, Pass.Km.] ...[8]}$$
$$[0.587187]$$

$$Y = 12.12405 - 0.34647\ t \quad R^2 = 0.013316 \text{ .. MR [CPI,Effe.Km.] ...[9]}$$
$$[-0.67515]$$

$$Y = -0.05148 - 0.00681\ t \quad R^2 = 0.002629 \text{ .. MR [CPI,Pass.Km.] ..[10]}$$
$$[-0.29045]$$

$$Y = 12.93321 - 0.39417\ t \quad R^2 = 0.018828 \text{ .. MR [WPI,Effe.Km.] ..[11]}$$
$$[-0.78363]$$

$$Y = -0.20917 - 0.00328\ t \quad R^2 = 0.000314 \text{ .. MR [WPI,Pass.Km.] ..[12]}$$
$$[-0.10027]$$

In order to examine the trend in average revenue in real term, six different regressions are estimated i.e. average earning per effective km. as well as per passenger km. considering fare index, consumer price index and whole sale price index. It is observed that average earning has positive trend when it is deflated by fare index. However the positive trend is significant with respect to effective kms. But the negative significant trend in average earning in real term is observed both with respect to effective kms. and passenger kms. where CPI and WPI are applied.

The equations 7 to 12 reveal the negative trend in marginal earning both with respect to effective kms. and passenger kms. but none is statistically significant. This tends to suggest that the marginal earning in real term did not experience any trend.

III. STRUCTURE OF GROSS EARNING OF GSRTC :

There are a number of sources through which a bus operator gets his income. They include fare and freights from passengers, receipts from chartered services, publicity and advertisement, royalty from canteens and stalls at bus station, sale of obsolete buses and spare parts etc. Though the sources are many the main source of income of a bus transport operator is the fare from passengers as the proceeds out of all other sources are quite meager. The income of a bus transport organisation is broadly classified into two main heads, traffic [operating] revenue and non-traffic [non-operating] revenue. The former includes that income which is directly received from the passengers in the form of fares and freights. It also includes receipts from contract and tourist bus services, reservation fees etc. On the other hand the latter includes those incomes which are neither of routine nature nor concerned with the operation of bus services e.g. publicity and advertisement, royalty from canteens and stalls, sale of obsolete buses and spares etc.

TABLE - III.6

STRUCTURE OF REVENUE

[Rs. in Lakhs]
[At current Price]

Year	Operating Revenue	Percentage Share of Operating Revenue	Non-Operating Revenue	Percentage Share of Non-Operating Revenue	Total Revenue
[1]	[2]	[3]	[4]	[5]	[6]
1960-61	603.17	93.60	41.22	6.40	644.38
1965-66	1495.03	95.88	64.11	4.11	1559.14
1970-71	3438.98	96.50	124.61	3.50	3563.59
1975-76	7430.56	96.78	247.22	3.22	7677.78
1976-77	8434.58	97.47	218.94	2.53	8653.52
1977-78	9341.13	96.60	328.94	3.40	9670.07
1978-79	10545.51	96.43	389.99	3.57	10935.50
1979-80	12061.10	96.05	495.60	3.95	12556.70
1980-81	13157.98	96.13	529.26	3.87	13687.24
1981-82	16221.94	96.75	545.52	3.25	16767.48
1982-83	20269.07	96.33	772.36	3.67	21041.43
1983-84	21551.58	96.09	877.46	3.91	22429.04
1984-85	22506.48	95.95	949.80	4.05	23456.28
1985-86	22333.94	93.80	1476.69	6.20	23810.63
1986-87	24658.36	95.92	1049.13	4.08	25707.49
1987-88	30524.92	97.05	926.54	2.94	31451.45
1988-89	32706.13	89.54	3822.13	10.46	36528.26
1989-90	36014.24	86.17	5780.67	13.83	41794.91
1990-91	39095.55	84.03	7429.03	15.97	46524.58
1991-92	47025.35	91.11	4585.53	8.88	51610.88
1992-93	49331.13	81.09	11500.77	18.90	60831.90
1993-94	65471.18	97.06	1985.58	2.94	67456.76
1994-95	66113.69	97.17	1923.45	2.83	68037.14

Source : Administration Reports of GSRTC and Statistics of GSRTC.

The Table - III.6 represents operating revenue, non-operating revenue and their percentage share in total revenue during the period under consideration. It is found that the operating revenue and non-operating revenue have increased over a period of time. The operating revenue has increased from Rs.603.17 lakhs in 1960-61 to Rs.66113.69 lakhs in 1994-95. It is to be noted that the operating revenue constitutes a major share in total earnings of GSRTC. Its share fluctuated between 84.03% in 1990-91 to 97.46% in 1976-77. It implies that non-operating revenue has marginal share in earnings of GSRTC. Its share fluctuated between 2.53% in 1976-77 to 15.97% in 1990-91. In brief on can say that the operating revenue plays an important role in total earnings of GSRTC.

IV. STRUCTURE OF GROSS EXPENDITURE OF GSRTC :

The expenditure of GSRTC mainly consists of the following :

[i] Personnel expenditure [ii] Fuel and lubricants [iii] Stores - this takes care of [a] Spare parts; [b] Tyres, Tubes & Flaps [c] Other stores like electrical material, consumables, material, batteries small tools & bus body components at CWA. [d] Tickets & Ticket accessories, printed forms & stationary and uniforms and [e] Building materials. [iv] Taxes - This includes various types of taxes paid by GSRTC to government e.g. passenger tax, motor vehicle tax etc. [v] Depreciation [vi] Interest on capital [vii] Miscellaneous expenditure.

TABLE - III.7

EXPENDITURE OF GSRTC

[At Current Price]
[Rs. in Lakhs]

Year	Personnel Expenditure	Fuel & Lubricants	Stores	Taxes	Depreciation	Interest on Capital	All other Expenditure	Grand Total
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1960-61	142.85	96.58	96.43	88.58	75.58	31.31	123.16	654.49
1965-66	357.72	261.71	252.66	307.48	165.75	82.60	140.62	1568.54
1970-71	887.43	521.29	425.37	832.60	346.10	91.20	497.81	3601.80
1975-76	2162.20	1266.02	1134.23	1898.69	688.58	157.50	669.89	7977.11
1976-77	2549.34	1424.69	1026.72	2142.94	809.47	182.77	786.19	8922.12
1977-78	3037.39	1517.75	1077.14	2388.99	963.63	224.64	852.39	10061.93
1978-79	3327.86	1669.46	1265.14	2698.52	1166.64	299.49	899.89	11327.00
1979-80	3733.40	1983.79	1593.48	3093.56	1404.38	372.05	921.68	13102.34
1980-81	4749.80	2928.17	2023.27	3374.90	1604.52	464.80	1101.10	16246.56
1981-82	5384.31	4252.76	2628.75	4114.83	1975.26	579.76	1506.51	20442.18
1982-83	5961.49	4241.64	2321.41	5077.83	2119.15	639.82	1234.90	21596.24
1983-84	6641.76	4594.03	2069.02	5374.60	2272.17	800.85	1204.57	22957.00
1984-85	9662.78	4857.47	2133.76	5637.87	2404.20	954.18	1448.77	27099.03
1985-86	8764.85	5151.32	2669.67	5707.07	2449.20	1111.20	2333.29	28186.60
1986-87	9816.91	5554.48	2890.16	6240.97	2516.91	1296.20	1829.89	30145.52
1987-88	11730.46	6057.72	3099.15	7643.62	2919.59	166.18	1978.90	33595.62
1988-89	12750.06	6398.42	3175.93	8120.02	2243.77	1740.37	2486.35	36914.92
1989-90	16450.78	6657.08	3975.02	9065.28	2539.12	466.29	5196.49	44350.06
1990-91	18099.52	8597.62	4431.67	8417.00	3089.62	517.81	3047.40	46200.64
1991-92	20457.74	10122.03	4466.02	8487.09	4019.08	597.55	3670.02	51819.53
1992-93	23897.64	11907.04	5854.80	8884.29	4937.10	614.06	4344.37	60439.30
1993-94	25975.71	14451.35	6297.95	10671.15	4205.86	2390.19	6336.34	70328.55
1994-95	28636.15	16481.13	6341.92	10814.89	4004.82	2466.29	7585.60	76330.80

Source : Administration Reports of GSRTC and Statistics of GSRTC.

TABLE - III.8

PERCENTAGE SHARE OF EXPENDITURE OF GSRTC

[At Current Price]

Year	Perso-nnel Expen-diture	Fuel & Lubri-cant	Stores	Taxes	Depreci-ation	Interest on Capital	All Other Expendi-ture
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1960-61	21.83	14.76	14.73	13.53	11.55	4.78	18.82
1965-66	22.80	16.68	16.11	19.60	10.57	5.27	8.96
1970-71	24.64	14.47	11.81	23.12	9.61	2.53	13.82
1975-76	27.10	15.87	14.22	23.80	8.63	1.97	8.39
1976-77	28.57	15.97	11.51	24.02	9.07	2.05	8.81
1977-78	30.19	15.08	10.70	23.74	9.58	2.23	8.47
1978-79	29.38	14.74	11.17	23.82	10.30	2.64	7.94
1979-80	28.49	15.14	12.16	23.61	10.72	2.84	7.03
1980-81	29.23	18.02	12.45	20.77	9.88	2.86	6.77
1981-82	26.34	20.80	12.86	20.13	9.66	2.84	7.37
1982-83	27.60	19.64	10.75	23.51	9.81	2.96	5.72
1983-84	28.93	20.01	9.01	23.41	9.90	3.49	5.25
1984-85	35.66	17.92	7.87	20.80	8.87	3.52	5.35
1985-86	31.09	18.27	9.47	20.25	8.69	3.94	8.28
1986-87	32.56	18.42	9.59	20.70	8.35	4.30	6.07
1987-88	34.92	18.03	9.22	22.75	8.69	0.49	5.89
1988-89	34.54	17.33	8.60	22.00	6.08	4.71	6.73
1989-90	37.09	15.01	8.96	20.44	5.72	1.05	11.72
1990-91	39.17	18.61	9.59	18.22	6.69	1.12	6.60
1991-92	39.48	19.53	8.62	16.38	7.75	1.15	7.08
1992-93	39.54	19.70	9.69	14.70	8.17	1.01	7.19
1993-94	36.93	20.55	8.95	15.17	5.98	3.40	9.01
1994-95	37.51	21.59	8.31	14.17	5.25	3.23	9.94

TABLE - III.9

EXPENDITURE OF GSRTC

[At Constant Price]
[Rs. in Lakhs]

Year	Personnel Cost	Material Cost	All Other Expenditure	Depreciation	Interest on Capital	Taxes	Total Expenditure at Constant Price
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1960-61	1281.17	1955.86	1104.57	661.91	280.81	8417	13701.31
1965-66	2531.63	3819.60	995.19	1150.65	584.57	8417	17498.64
1970-71	4486.50	6199.12	2516.73	1962.66	461.07	8417	24043.09
1975-76	6632.52	8717.24	2054.88	2184.01	483.13	8417	28488.77
1976-77	7873.19	9255.07	2428.01	2555.23	564.45	8417	31092.96
1977-78	8788.74	9625.21	2466.41	2982.40	650.00	8417	32929.76
1978-79	9422.03	9747.87	2547.82	3299.75	847.93	8417	34282.40
1979-80	9570.37	10677.93	2362.68	3219.77	953.73	8417	35201.42
1980-81	11207.65	10593.05	2598.16	3276.37	1096.74	8417	37188.97
1981-82	10986.15	12501.28	3073.88	3530.34	1182.94	8417	39691.59
1982-83	11288.56	11583.92	2338.38	3784.58	1211.55	8417	38624.00
1983-84	11297.43	11969.30	2048.94	4195.13	1362.22	8417	39290.02
1984-85	15760.53	11564.69	2363.02	4651.80	1556.32	8417	44313.36
1985-86	13626.94	11817.36	3627.63	4102.93	1727.61	8417	43319.48
1986-87	13855.91	12470.88	2582.77	3792.98	1829.50	8417	42949.03
1987-88	15157.59	12453.63	2557.05	4047.70	214.73	8417	42847.70
1988-89	15014.20	12627.10	2927.87	2876.67	2049.42	8417	43912.27
1989-90	18496.49	12298.59	5842.69	2733.20	524.27	8417	48312.26
1990-91	18099.52	13029.29	3047.40	3089.62	517.81	8417	46200.64
1991-92	17700.07	13813.38	3175.31	3490.40	517.00	8417	47113.16
1992-93	18722.69	15129.74	3403.61	3953.07	481.09	8417	50107.20
1993-94	19004.76	16382.97	4635.89	3475.39	1748.75	8417	53664.77
1994-95	19186.70	17168.40	5082.48	3047.41	1652.46	8417	54554.44

TABLE - III.10

PERCENTAGE SHARE OF EXPENDITURE OF GSRTC

[At Constant Price]

Year	Personnel Cost	Material Cost	All Other Expendi-ture	Deprecia-tion	Interest	Taxes
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1960-61	9.35	14.27	8.06	4.83	2.05	61.43
1965-66	14.47	21.83	5.69	6.58	3.34	48.10
1970-71	18.66	25.78	10.47	8.16	1.92	35.01
1975-76	23.28	30.60	7.21	7.67	1.70	29.54
1976-77	25.32	29.77	7.81	8.22	1.82	27.07
1977-78	26.69	29.23	7.49	9.06	1.97	25.56
1978-79	27.48	28.43	7.43	9.63	2.47	24.55
1979-80	27.19	30.33	6.71	9.15	2.71	23.91
1980-81	30.14	28.48	6.99	8.81	2.95	22.63
1981-82	27.68	31.50	7.74	8.89	2.98	21.21
1982-83	29.23	29.99	6.05	9.80	3.14	21.79
1983-84	28.75	30.46	5.21	10.68	3.47	21.42
1984-85	35.57	26.10	5.33	10.50	3.51	18.99
1985-86	31.46	27.28	8.37	9.47	3.99	19.43
1986-87	32.26	29.04	6.01	8.83	4.26	19.60
1987-88	35.38	29.06	5.97	9.45	0.50	19.64
1988-89	34.19	28.76	6.67	6.55	4.67	19.17
1989-90	38.29	25.46	12.09	5.66	1.09	17.42
1990-91	39.18	28.20	6.60	6.69	1.12	18.22
1991-92	37.57	29.32	6.74	7.41	1.10	17.87
1992-93	37.37	30.19	6.79	7.89	0.96	16.80
1993-94	35.41	30.53	8.64	6.48	3.26	15.68
1994-95	35.17	31.47	9.32	5.59	3.03	15.43

The Table - III.7 throws light on various types of expenditure incurred by GSRTC. It is found that the expenditure under each head has increased significantly over a period of time. The personnel expenditure has increased from Rs.142.85 lakhs in 1960-61 to Rs.28636.15 lakhs in 1994-95. The expenditure on fuel and lubricants have increased from Rs. 96.58 lakhs in 1960-61 to Rs.16481.13 lakhs in 1994-95, payment of taxes has increased significantly from Rs.88.58 lakhs during the period under consideration.

The important thing to be examined in this connection is whether the relative share of each type of expenditure in total expenditure has remained the same or has undergone a change over a period of time. The Table III.8 reveals that the share of personnel expenditure has increased from 21.83% in 1960-61 to 37.5% in 1994-95. The share of expenditure on fuel and lubricants has also increased from 14% to 21%. The share of personnel expenditure and expenditure on fuel and lubricants together accounts for nearly 60% of total expenditure. As far as the share of taxes is concerned, it gained importance during 1960-61 to 1983-84 and later on the declining trend is observed. The share of depreciation has declined from 11.55% to 5.25% where as the share of interest on capital has fluctuated between 0.49% to 5.26%. This tends to suggest that the structure of expenditure has undergone a change over a period time.

EXPENDITURE OF GSRTC AT CONSTANT PRICE :

The expenditure of GSRTC is estimated in real terms. In order to arrive at total expenditure of GSRTC at constant prices, various price indices have been used. It is already stated that the total expenditure of GSRTC consists of personnel expenditure, material expenditure, taxes, depreciation, interest on capital etc. The material expenditure mainly includes expenditure on diesel, engine oil, tyre and tube, auto part and others. The personnel expenditure at constant prices is arrived by using consumer price index. The material expenditure at constant price is arrived by applying material price index [The method of estimating material price index is explained in this chapter]. The price index of chassis is applied to arrive at depreciation in real terms. The actual incidence of taxes on STU is used for deriving taxes at constant price. The total of all represents expenditure at constant price [at 1990-91 price]. The expenditure of GSRTC in real terms have increased by significant amount. The expenditure under each head has increased in real terms. The personnel cost has increased from Rs.1281.16 lakhs in 1960-61 to Rs. 19186.70 lakhs in 1994-95. The material cost has also increased from Rs.1955.86 lakhs to 17168.40 lakhs during the period under consideration. Moreover depreciation in real term has increased by significant amount during the period under consideration. At the same time, interest on capital in real term has registered an increase.

Examining the percentage share of expenditure under various categories in total expenditure in real terms it is found that the share of personnel cost in total expenditure has increased significantly from 9.50% in 1960-61 to 36.68% in 1994-95. The share of material cost has also registered an increase from 14.27% in 1960-61 to 31.47% in 1994-95. The share of depreciation and interest in total expenditure has remained more or less constant over a period of time where as share of taxes paid by GSRTC in total expenditure has declined significantly from 62.35% in 1960-61 to 16.09% in 1994-95.

V. PROFIT BEFORE PASSENGER TAX :

One of the methods to examine financial performance of public sector undertakings is to concentrate on profit of the organization. The GSRTC incurred losses during majority of years under consideration.

The government of Gujarat has imposed high passenger tax which increases the cost and there by it affects the financial performance of GSRTC. In order to have the idea about financial performance of GSRTC, one can find out profit before passenger tax. GSRTC incurred losses for majority of years when all types of taxes are included in the expenditure. It is observed from Table III.11 that when profit before tax is estimated, losses are turned into profit by a significant amount.

TABLE - III.11

PROFIT BEFORE TAX

[Current Price]
[Rs. in Lakhs]

Year	Profit Before Passenger Tax	Profit Before Tax
1	2	3
1960-61	45.99	78.47
1961-62	83.21	120.83
1962-63	133.58	175.82
1963-64	167.60	217.95
1964-65	222.60	280.43
1965-66	235.58	298.08
1966-67	225.47	290.72
1967-68	405.54	477.88
1968-69	504.07	598.01
1969-70	589.77	684.21
1970-71	694.73	794.39
1971-72	782.17	891.30
1972-73	898.52	1023.72
1973-74	690.26	811.53
1974-75	736.41	937.24
1975-76	1412.78	1599.36
1976-77	1676.84	1874.32
1977-78	1748.19	1997.13
1978-79	2036.20	2307.20
1979-80	2251.05	2547.72
1980-81	491.84	815.58
1981-82	77.45	440.11
1982-83	4164.40	4523.02
1983-84	4483.43	4846.64
1984-85	1606.87	1995.12
1985-86	899.49	1331.10
1986-87	1340.06	1802.94
1987-88	3510.17	5499.45
1988-89	7814.80	7733.36
1989-90	9086.19	6460.13
1990-91	8279.14	8740.94
1991-92	7932.01	8248.50
1992-93	8497.64	9276.89
1993-94	7173.61	7799.36
1994-95	2294.57	2521.23

It has been revealed that the finance department of the State Government frequently conceives higher burden of taxes on the STUs to show losses as a measure to prevent transfer of a portion of the profit to the central government in the form of profit tax. This state policy converts the would-be-profitable STUs in to a losing one mainly by imposing passenger tax and motor vehicle tax on buses. This policy is treated as a good strategy for the financial management of the state government.[5] Not only that but it is believed that profit in the profit and loss account is likely to induce trade unions to demand higher rate of bonus than stipulated by laws. The deliberate curtailment in profit is to prevent such anticipated increase in expenditure on bonus. In the light of this profit/loss before passenger tax and motor vehicle tax is estimated and it is found that GSRTC is performing very well as both are positive. It is observed from Table - III.11 that when profit before passenger tax is estimated, losses are turned into profits by significant amount. It means that the financial performance of GSRTC is quite satisfactory when profit/loss before all types of taxes are estimated.

Examining profit before passenger tax at current prices, it is observed that it is positive for all the years during 1960-61 to 1994-95. Naturally profit before all taxes paid by GSRTC is positive and it has increased over a period of time.

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5. Pathak M.G. : "Alternative Evaluation Criterion For STUs As Public Enterprise" in Indian Transport System, Ed. by P. Jegadish Gandhi & G. John Gunnaseelan, Mittal Publication, New Delhi 1994, Pp. 94-108.

TABLE - III.12

TAX AND ITS SHARE IN TOTAL EXPENDITURE

[Rs. in lakhs]
[Current Price]

Year	Passenger Tax	Other Tax	Total Tax	% Share of Passenger Tax in Total Expenditure	% Share of other Tax in Total Expenditure	% Share of Total Tax in Total Expenditure
1	2	3	4	5	6	7
1960-61	56.10	32.48	88.58	8.57	4.96	13.53
1961-62	97.51	37.62	135.13	12.47	4.81	17.28
1962-63	124.18	42.60	166.78	13.32	4.57	17.89
1963-64	167.19	50.35	217.54	15.02	4.52	19.55
1964-65	207.38	57.51	265.21	15.93	4.44	20.37
1965-66	244.97	62.51	307.48	15.62	3.98	19.60
1966-67	330.44	65.26	395.70	17.00	3.36	20.35
1967-68	412.15	72.34	484.49	18.00	3.16	21.16
1968-69	498.96	93.94	592.90	18.23	3.43	21.67
1969-70	588.67	96.45	685.12	19.44	3.18	22.63
1970-71	733.13	99.47	832.60	20.35	2.76	23.12
1971-72	862.19	109.13	971.32	20.35	2.57	22.92
1972-73	998.62	125.20	1132.82	21.23	2.66	23.90
1973-74	1102.41	121.20	1223.68	20.69	2.27	22.96
1974-75	1516.35	191.43	1707.78	20.27	2.56	22.83
1975-76	1711.81	186.88	1898.69	21.46	2.34	23.80
1976-77	1933.42	209.50	2142.92	21.67	2.35	24.02
1977-78	2142.06	246.93	2388.99	21.28	2.45	23.74
1978-79	2427.88	270.82	2698.52	21.43	2.39	23.82
1979-80	2797.49	295.87	3093.56	21.35	2.26	23.61
1980-81	3050.88	324.02	3374.90	17.64	1.87	20.77
1981-82	3752.17	362.56	4114.83	18.35	1.77	20.13
1982-83	4719.31	358.52	5077.83	21.85	1.66	23.51
1983-84	5011.39	363.21	5374.60	21.83	1.58	23.41
1984-85	5249.62	388.25	5637.87	19.37	1.43	20.80
1985-86	5275.07	432.00	5707.07	18.71	1.53	20.25
1986-87	5780.09	460.88	6240.97	19.17	1.52	20.70
1987-88	7145.64	497.98	7643.62	20.36	1.42	22.75
1988-89	7648.40	471.62	8120.02	21.03	1.30	22.00
1989-90	8464.40	600.88	9065.28	20.56	1.45	20.44
1990-91	7849.95	567.05	8417.00	17.03	1.23	18.22
1991-92	7757.68	729.39	8487.07	15.08	1.41	16.38
1992-93	8105.04	779.25	8884.29	13.41	1.29	14.70
1993-94	9913.56	757.59	10671.15	14.12	1.08	15.17
1994-95	10050.78	764.11	10814.89	13.26	1.01	14.17

Estimating the growth rates in profit before passenger tax and profit before tax it is found that the same has increased at the rate of 12.12% and 13.62% per year respectively.

The Table - III.12 shows trend in passenger tax and other taxes paid by GSRTC and its share in total expenditure. It is observed that the passenger tax has increased in absolute term over a period of time. It is to be noted that the share of passenger tax in total tax paid by GSRTC is very high. It is observed that the share of passenger tax in total expenditure of GSRTC has increased significantly from 8.57% in 1960-61 to 21.85% in 1982-83 and later on it has declined to 13.26% in 1994-95. The share of other taxes in total expenditure is not significantly high and it has declined from 4.98% in 1960-61 to 1.01% in 1994-95. Considering share of all taxes paid by GSRTC one can say that it has increased in the initial period from 13.53% in 1960-61 to 24.02% in 1976-77 and it had declined steadily to 14.27% in 1994-95. This permits one to conclude that the burden of tax in relation to total expenditure has declined over a period of time.

The Gujarat State Finance Commission[6] recommended that the passenger tax should be abolished and merged with existing fare structure in order to bring about greater degree of transparency in the fare charged for transportation services. This would help to improve the viability and the operating of the corporation in the short run.

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6. Government of Gujarat : Report of the Gujarat State Finance Commission, April 1994, p.72.

CONCESSIONS GRANTED BY GSRTC :

The corporation grants various types of concessions, for example :

[i] Concessions to the regular students of educations/vocational institutions recognised by the government. Such concession facilities are also available to these students for attending the N.C.C. parades.

[ii] Concessions are also given to the competitors participating in sports and tournaments organised by the state government while they are travelling from taluka places to the district head quarters and from the district and taluka places to the state head quarter and back.

[iii] Concession to blind persons and cancer patients are granted as well as person accompanying the blind person. When buses are hired by the Blind Person Association Council Contract, Concession in fare is given at the discretion of the Divisional Controller. The concession is also given to cancer patients as well as one attendant if recommended by the Medical Officer Concerned for travelling from their residence to the place of medical treatment.

[iv] Concession to persons carrying eye containers is also provided by GSRTC. The Kakwad Eye Hospital at Virnagar near Rajkot has branches in other parts of Gujarat. The eye containers

containing live eyes are required to be transported from branches with the least delay to this Base Hospital at Virnagar for transplantation. The corporation provides free transport facilities to the person carrying the eye containers to Virnagar and back from 1-6-1975. The same facility is extended to Eye bank of Dholaka, Santaram Eye Bank, Nadiad and to Shri Manibhai Jethabhai Desai Eye Bank at Palanpur.

[v] The corporation gives free passes to the accredited press correspondents, editor and press photographers for coverage of events relating to visit of Prime Minister, famine, flood and such other calamities, visit of foreign or national dignitaries and other bonafide work relating to the press.

[vi] Facility of free travelling to the freedom fighters is also provided by GSRTC. Not only that but this facility is extended to one attendant of old and disabled freedom fighters who may accompany him and the widow of a freedom fighter who was getting pension from the government. The facility of concession is also extended to the attendant of a widow of the freedom fighter.

This shows that various types of concessions are provided by GSRTC. In the light of this, it is attempted to examine the concessions granted and its share in total revenue of GSRTC because concession provided by GSRTC refers to loss of revenue to GSRTC.

TABLE - III.13

CONCESSIONS GRANTED BY GSRTC

Year	Concession given to Students	In Casual Contract Buses	Total Concession	Percentage Share in Total Revenue	Profit Before Concession
1	2	3	4	5	6
1960-61	N.A.	N.A.	N.A.	N.A.	-10.11
1961-62	N.A.	N.A.	N.A.	N.A.	-14.30
1962-63	N.A.	N.A.	N.A.	N.A.	9.40
1963-64	N.A.	N.A.	N.A.	N.A.	0.41
1964-65	7.45	N.A.	7.45	0.57	22.67
1965-66	11.38	N.A.	11.38	0.73	1.99
1966-67	17.21	N.A.	17.21	0.94	-87.76
1967-68	26.27	11.82	38.09	1.67	31.48
1968-69	34.52	10.77	45.29	1.65	50.40
1969-70	41.38	9.71	51.09	1.69	52.19
1970-71	52.15	16.67	68.82	1.93	30.42
1971-72	55.02	14.79	69.81	1.68	-10.21
1972-73	64.60	18.81	83.41	1.81	-16.69
1973-74	83.62	19.82	103.44	2.10	-308.71
1974-75	97.00	25.48	122.48	1.83	-658.46
1975-76	126.04	39.78	165.82	2.16	-133.21
1976-77	152.56	37.07	189.63	2.19	-66.95
1977-78	166.41	44.91	211.32	2.19	-182.55
1978-79	206.33	48.57	254.90	2.33	-136.78
1979-80	213.17	58.53	271.70	2.16	-274.74
1980-81	273.11	44.74	317.85	2.32	-2241.19
1981-82	410.14	78.27	488.41	2.91	-3186.31
1982-83	1069.21	87.65	1156.86	5.50	601.95
1983-84	1244.70	80.81	1325.51	5.91	797.55
1984-85	1294.87	85.80	1380.67	5.89	-2262.08
1985-86	1098.13	61.10	1159.23	4.87	-3216.35
1986-87	1374.12	70.37	1444.49	5.62	-2995.54
1987-88	2088.67	60.37	2149.04	6.83	-1486.43
1988-89	2337.77	149.87	2487.64	6.81	2654.04
1989-90	2487.32	149.15	2636.47	6.31	3258.26
1990-91	3600.79	28.41	3629.20	7.80	4058.39
1991-92	5763.86	36.23	5800.09	11.24	5974.42
1992-93	5713.23	36.63	5749.86	9.45	6142.46
1993-94	5200.00	17.82	5217.82	7.74	2477.87
1994-95	4600.00	13.88	4613.88	6.78	-3142.33

The Table - III.13 shows the total amount of concessions granted to students and casual contracts by GSRTC during the period under consideration. The information regarding concession provided in terms of free travelling and travelling at the concessional rate to persons under various categories is not available and therefore concessions granted to students and casual contracts are included in the table. It is obvious from the table that the amount of concessions granted by GSRTC has increased by significant amount i.e. from by 7.45 lakhs in 1964-65 to Rs.4613.88 lakhs in 1994-95. Looking at its share in total revenue it is observed that it has increased steadily from 0.53% in 1964-65 to 11.24% in 1991-92. However it has declined drastically to 6.78% in 1994-95. The estimation of profit before concession shows that losses of GSRTC have declined sufficiently and during 1989-90 to 1993-94 it incurred sizable profit.

In the light of this the commission[7] has rightly pointed out that various concessions offered by GSRTC as a result of Government direction such as student concession would like to reiterate the general principle that all subsidies should be given directly and only to those who deserve it. The commission recommended that the present general concession offered to all students should be discontinued. The subsidy should be provided directly out of the budget only to those

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7. Government of Gujarat : Report of the Gujarat State Finance Commission, April 1994, p.72.

students whose family income does not enable them to pay the fares. GSRTC or its successors should not be forced to subsidise fares indirectly. It is felt by the commission that such a decision will not be difficult to implement since such categories as income tax payers, big farmers etc. have already been excluded from the purview of the Public Distribution System. A monthly fixed amount could be paid to deserving students from poor families through educational institutions on the basis of attendance with eligibility being decided on the basis of ration card.

The report of the Tenth Finance Commission states that there was general agreement that there is considerable scope for improving the physical and financial performance of SRTUs. This would be facilitated if the SRTUs were compensated for the social obligations imposed on them as a matter of state policy.[8]

SOCIAL SURPLUS :

The estimation of social surplus is another indicator of examining the financial performance of GSRTC. It is defined as {Profit/loss + [Taxes + Depreciation + Interest]}.[9] If the social surplus is positive and increasing, it shows good

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8. Government of India : Report of Tenth Finance Commission [for 1995-2000] December 1994, P.12.

9. Pathak M.G. : "Alternative Evaluation Criterion for STUs as Public Enterprises" in Indian Transport System, ed. by Jegadish Gandhi & John Gunaseelan, Mittal Publication, 1994, Pp. 94 - 108.

TABLE - III.14

SOCIAL SURPLUS

[Current Price]

Year	Social Surplus [Rs. in lakhs]	Social Social Surplus Per Employee
1	2	3
1960-61	185.36	0.0161
1965-66	546.44	0.0300
1970-71	1231.50	0.0441
1975-76	2445.74	0.0633
1976-77	2878.60	0.0718
1977-78	3183.39	0.0750
1978-79	3772.97	0.0853
1979-80	4323.55	0.0914
1980-81	2885.18	0.0575
1981-82	2995.13	0.0576
1982-83	7281.89	0.1446
1983-84	7919.66	0.1609
1984-85	5353.50	0.1102
1985-86	4891.89	0.1021
1986-87	5614.05	0.1181
1987-88	7093.92	0.1467
1988-89	11937.76	0.2363
1989-90	11448.90	0.2162
1990-91	12348.40	0.2128
1991-92	12929.39	0.2315
1992-93	13496.32	0.2430
1993-94	14527.25	0.2437
1994-95	9529.79	0.1625

TABLE - III.15

SOCIAL SURPLUS

[Constant Price]

Year	Social Surplus [Rs. in Lakhs]	Social Social Surplus Per Employee
1	2	3
1975-76	1894.13	0.0490
1976-77	748.38	0.0186
1977-78	1776.33	0.0418
1978-79	3917.12	0.0885
1979-80	4829.01	0.1020
1980-81	5454.92	0.1086
1981-82	5984.88	0.1150
1982-83	7029.34	0.1396
1983-84	8588.00	0.1744
1984-85	5629.77	0.1158
1985-86	6436.92	0.1343
1986-87	9442.14	0.1986
1987-88	5999.62	0.1241
1988-89	11121.43	0.2201
1989-90	10664.04	0.2014
1990-91	12348.40	0.2266
1991-92	9130.25	0.1635
1992-93	14707.67	0.2545
1993-94	2135.12	0.0358
1994-95	1448.03	0.0247

Graph – III.10


Surplus Produce Per Employee [At Constant Price]
Surplus Produce Per Employee
0.3
0.25
0.2
0 15
0.1
0.05
0
1975
1980
1985
1990
1994
YEAR
T-10.CGM

financial performance of GSRTC. The same has increased from Rs.185.26 lakhs in 1960-61 to Rs.14527.25 lakhs in 1993-94, though it has declined substantially in 1994-95. This indirectly suggest that whether revenue is sufficient to meet the running expenditure of GSRTC or not. If the total earnings are not sufficient to meet these expenditure it is advisable on the part of the government to close down the unit i.e. to discontinue with the provision of services. In case of GSRTC, social surplus per employee is not only positive but it has increased from 0.0161 lakhs in 1960-61 to Rs.0.1625 lakhs in 1994-95.

Examining the social Surplus and social surplus per employee in real terms it is revealed that both have increased with the passage of time. The social surplus has increased from Rs.1894.13 lakhs in 1960-61 to Rs.14707 lakhs in 1992-93 in real term. During 1993-94 and 1994-95 the social surplus turned out to be negative which indicates that the revenue is not sufficient to meet the personnel expenditure and material expenditure. The social surplus per employee increased significantly from 0.05 lakhs in 1975-76 to 0.25 lakhs in 1992-93 but it was negative during 1993-94 & 1994-95.

ELASTICITY OF EARNINGS :

The estimation of the elasticity of earning is also useful in examining the financial performance of GSRTC. It is defined as a ratio of change in earning per km. to change in

TABLE - III.16

ELASTICITY OF EARNINGS

Year	Elasticity of Earning
1	2
1961-62	0.956146
1962-63	-1.828280
1963-64	0.756614
1964-65	1.323450
1965-66	0.599581
1966-67	0.416667
1967-68	2.036913
1968-69	1.081579
1969-70	0.975875
1970-71	0.556164
1971-72	0.800595
1972-73	1.090625
1973-74	0.515942
1974-75	0.735540
1975-76	2.164260
1976-77	1.083758
1977-78	0.720149
1978-79	1.151923
1979-80	0.812554
1980-81	0.203978
1981-82	0.645806
1982-83	2.894934
1983-84	1.033082
1984-85	-0.181360
1985-86	0.276247
1986-87	1.203476
1987-88	1.381480
1988-89	10.931300
1989-90	1.148244
1990-91	0.967411
1991-92	0.887198
1992-93	1.031050
1993-94	0.324975
1994-95	0.113127

cost per km. It shows whether with the change in cost per km. do we observe any change in earnings per km. or not. If the ratio exceeds one, it necessarily implies that increase in earnings per km. exceeds increase in cost per km. and in that case GSRTC is performing very well. The Table III.16 shows elasticity of earnings from 1961-62 to 1994-95. It is to be noted that during 1962-63 and 1984-85 the ratio turned out to be negative which indicates a delicate situation on the part of GSRTC. For majority of years the elasticity of earning was less than one which indicates that the increase in earnings per km was less than increase in cost per km. It was positive only during 1964-65, 1967-68, 1968-69, 1972-73, 1975-76, 1976-77, 1978-79, 1982-83, 1983-84, 1986-87 to 1989-90 and 1992-93. Out of 34 years, the elasticity of earning exceeded one, only for fourteen years. This implies that it requires either increase in earning per km. or fall in cost per km. The Chapter - II makes it clear that the physical performance of GSRTC is quite satisfactory and it has improved over a period of time, at least upto 1987-88 though one cannot deny the scope for further improvement in physical performance. It means that it requires improvement in earning per km. also. The earning of GSRTC consists of operating revenue and non-operating revenue and share of operating revenue is very high. The operating revenue depends on fare rate also. This indirectly suggests revision in fare. The year 1988-89 shows a very rosy picture because increase in earning per km. was ten times higher than increase in cost per km.

In order to examine the trend in elasticity of earning, it is regressed on time and following results are obtained.

$$Y = 0.510515 + \underset{[1.196816]}{0.039194}\ t \qquad R^2 = 0.042844$$

It is seen that though trend coefficient is positive, it is not statistically significant. Not only that but the value of R^2 is very low. On the basis o this, it can be said that the elasticity of earning did not experience any trend.

VALUE ADDED AS AN ALTERNATIVE EVALUATION CRITERION :

The profitability of the SRTCs as the measurement of the performance of SRTC is subject to criticisms. The performance of business enterprise is usually judged on the basis of profit earned in terms of rate of return on investment etc. because STRC is not free to take its own decisions. The public sector undertakings like SRTCs are particularly suffering from the dichotomy of the competing claim. While on the one hand, social responsibilities were being imposed on these undertakings, both in legislature and elsewhere, they were being subjected to trenchant criticism for the accumulation of losses. It is more often forgotten that the very purpose of state participation through process of nationalisation is to strengthen the economy by looking beyond the narrow boundaries of profit and loss and to gear up the economy towards the national goal of elimination

of poverty for ensuring social justice[10]. Various problems are associated with the profitability criterion because it is affected by factors like passenger tax, motor vehicle tax, role of government in fixing the fare rate etc.

One should examine the performance of SRTCs from a macro economic angle rather than from a micro economic angle. The micro economic criterion refers to net profit earned by the enterprises where as macro economic criterion mainly refers to the contribution made by the enterprises to the country's gross national product. Such total benefit to the economy as a whole from any productive process is represented by Gross Value Added generated out of it. This contribution is generally represented by the sum of wages and salaries, interest, rent, taxes and internal resources comprising of realised depreciation and plus or minus profit. The conventional profitability criterion takes into account only one of these items viz. "Profit". It not only ignores the other types of income flow but they are treated as costs rather than benefit. In the light of this, it can be said that the value added approach to evaluate the performance of STU should be adopted.

Value added is technically applicable to situations where manufacturing activities are involved. The theoretical justification for defining value added restricting its domain to

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10. Pathak M.G. : "Alternative Evaluation Criterion for STUs as Public Enterprises" in Indian Transport System, ed. by Jegadish Gandhi & John Gunaseelan, Mittal Publication, 1994. Pp. 94-108.

the manufacturing is on the ground that the material inputs are transformed into a tangible final output which has physical dimentions. However logically speaking it refers to the difference between the input price of raw materials and other purchased services and that of the sales value of the final output. Though the transport sector does not produce a tangible physical output, there is a difference between the costs of purchased materials and services and the revenue realised which could be defined as value added.[11]

The adoption of value added concept in transport sector is supported by many earlier works Deakin and Seward[12] used the value added concept as measure of output in their study on productivity in transport. Further Misra and Misra,[13] Pathak[14]

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11. Krishna R.R.: "Analysis of Labour Productivity - A Study of Selected State Transport Corporations of Tamil Nadu", Indian Journal of Transport Management, Vol. 20, No.5, May 1996. Pp.345-355.

12. Deakin and Seward : Productivity in Transport : A Study of Employment, Capital, Output, Productivity and Technical Change, Cambridge University Press, London, 1969.

13. Misra K.K. and Srikant Misra : "Value Added Accounting in Public Enterprises [A Case Study of State Road Transport Undertakings]", The Management Accountant, November 1990, Pp. 553 - 563.

14. Pathak M.G. : "Alternative Evaluation Criterion for STUs as Public Enterprises" in Indian Transport System, ed. by Jegadish Gandhi & John Gunaseelan, Mittal Publication, 1994. Pp.94-108.

and Srinivasan & Mohan[15] utilized the value added concept in evaluating the performance of State Road Transport Undertakings in India.

With a given fare level, value added can be increased mainly by raising revenue level as a result of improving output or productivity and reducing material cost. Value added is, therefore, the difference between the total revenue at constant fare and the total expenditure on the material and services purchased at constant price by the enterprise[16]

Value Added = Total Revenue - [Material Cost + Cost on services]

In order to estimate the value added by SRTCs, some modification is required in the above formula. The expenditure on services by STUs is normally included as a part of miscellaneous and others. Following M.G. Pathak the value added is the difference between total revenue and total cost on material inputs, which include fuel, lubricants, tyres tubes, spares and reconditioning materials.

Therefore

Value Added = Total Revenue - [Total Material Cost + Miscellaneous Expenditure]

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15. Srinivasan G. and Mohan K. : "Value Added Concept as Tool for Evaluation of Financial Performance of SRTUS - A Case Study of Tamil Nadu State Owned Road Transport Corporation" in Transport and Economic Development, Ed. by J.S. Mathuews, Chough Publication, Allahabad, 1992, Pp. 111-133.

16. Pathak M.G. : "Alternative Evaluation Criterion for STUs as Public Enterprises" in Indian Transport System, ed. by Jegadish Gandhi & John Gunaseelan, Mittal Publication, 1994. Pp. 94-108.

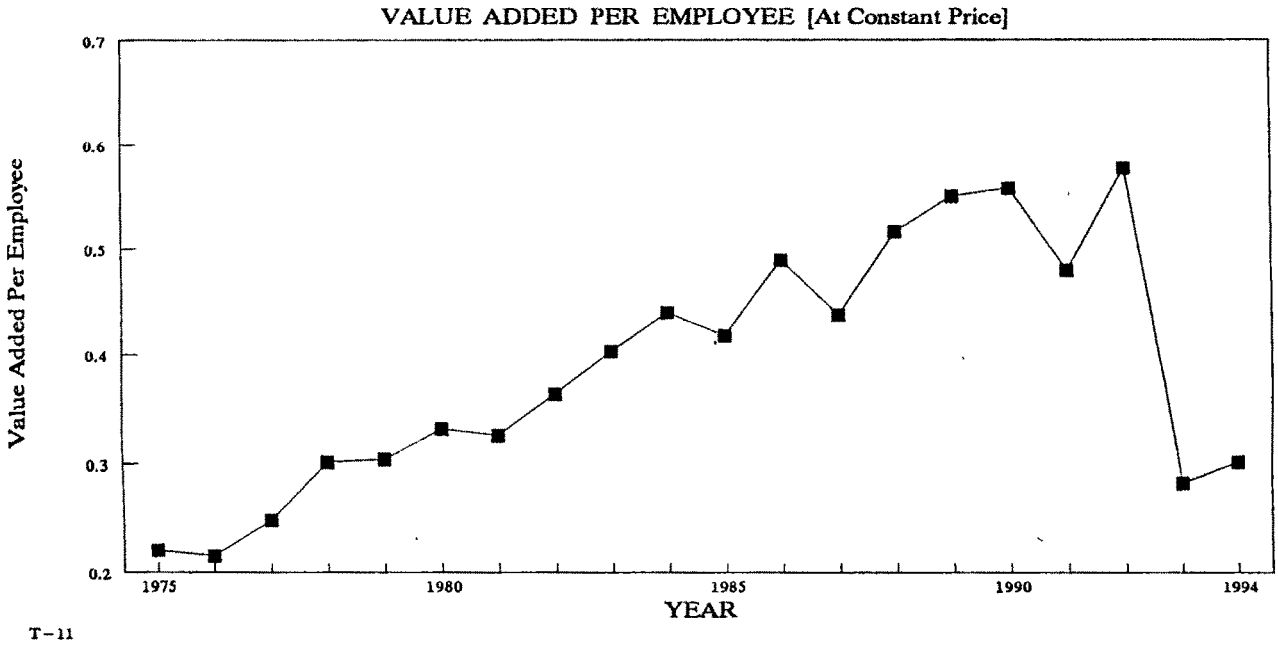
TABLE - III.17

VALUE ADDED AT CONSTANT PRICE

[Rs. lakhs]

Year	Value Added at Constant Price	Value Added at Constant Price Per Employee
1	2	3
1975-76	8526.64	0.22060
1976-77	8621.56	0.21517
1977-78	10565.08	0.24889
1978-79	13339.15	0.30143
1979-80	14399.37	0.30426
1980-81	16662.57	0.33180
1981-82	16971.03	0.32611
1982-83	18371.91	0.36383
1983-84	19885.44	0.40390
1984-85	21390.30	0.44016
1985-86	20063.87	0.41870
1986-87	23298.05	0.49005
1987-88	21157.21	0.43761
1988-89	26135.63	0.51724
1989-90	29160.53	0.55078
1990-91	30447.92	0.55887
1991-92	26830.32	0.48043
1992-93	33430.36	0.57843
1993-94	16869.65	0.28300
1994-95	17738.67	0.30252

Graph – III.11



T-11

Following the above formula, the value added at constant price of 1990-91 is estimated for the years 1975-76 to 1994-95.

It is to be noted from Table - III.17 that the value added has increased from Rs.8526.64 lakhs in 1975-76 to Rs.33430.36 lakhs in 1992-93 though the same has declined during 1993-94 and 1994-95. Not only that but value added per employee has also increased significantly from Rs.0.2206 lakhs in 1975-76 to Rs. 0.57843 lakhs in 1992-93 but decline is observed during 1993-94 and 1994-95.

AVERAGE COST CURVE :

Peculiar to business and with a relatively heavy investment in fixed capital as the public utilities generally are, the AC curve has a continuous declining tendency though at a diminishing rate, points to a decreasing cost industry.

In the light of this the expenditure of GSRTC is estimated at constant prices and Average Cost per passenger Km. is derived. The Table III.18 represents cost per passenger km. in real term. It is observed from the Table-III.18 that it has fluctuated between 0.195753 and 0.143947. In order to get the true picture AC in real term is regressed on passenger km. and following results are obtained.

$$Y = 0.176042 - 0.00149\ P \qquad R^2 = 0.282507 \quad \ldots\ \ldots [1]$$
$$[-2.66221]$$

Where Y is AC in real term and P is passenger Km.

$$Y = 0.219824 - 0.0000002\ t \qquad R^2 = 0.57318 \quad \ldots\ \ldots . [2]$$
$$[-5.16724]$$

Where Y is AC in real term and t is time.

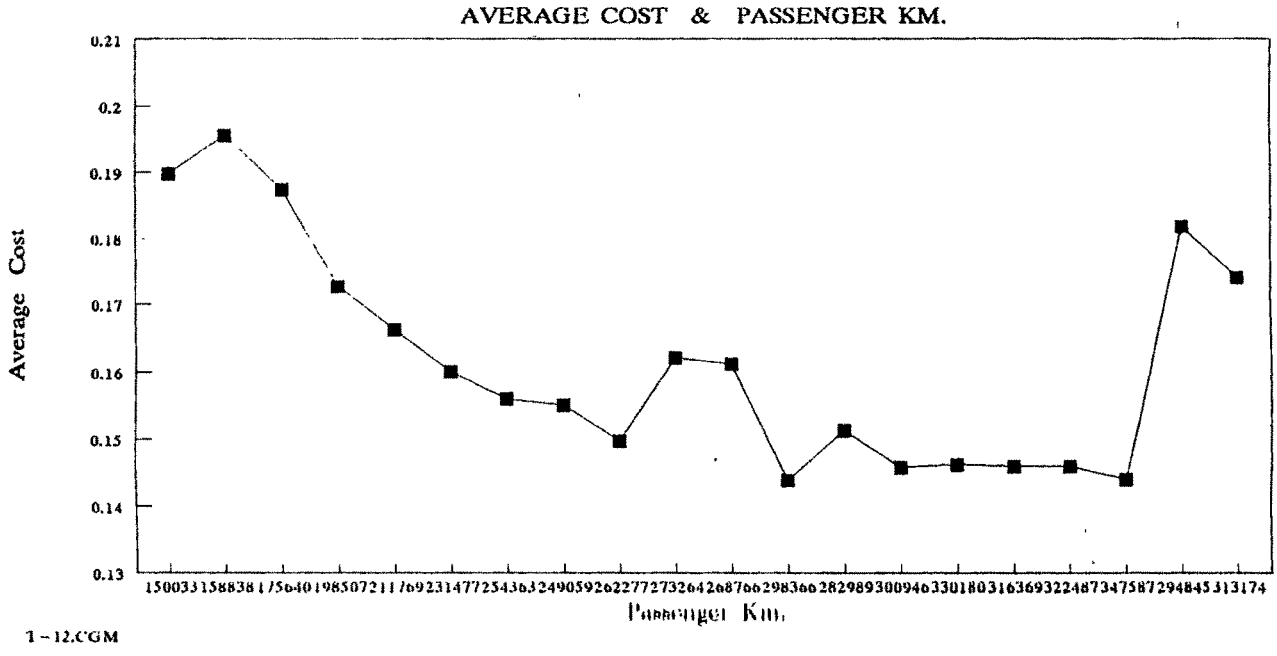
TABLE - III.18

COST PER PASSENGER KM.

[Constant Price]

Year	Cost Per Passenger Km.
1	2
1975-76	0.189884
1976-77	0.195753
1977-78	0.187484
1978-79	0.172701
1979-80	0.166226
1980-81	0.160660
1981-82	0.156043
1982-83	0.155080
1983-84	0.149804
1984-85	0.162163
1985-86	0.161179
1986-87	0.143947
1987-88	0.151411
1988-89	0.145914
1989-90	0.146321
1990-91	0.146034
1991-92	0.146093
1992-93	0.144157
1993-94	0.182010
1994-95	0.174198

Graph – III.12


AVERAGE COST & PASSENGER KM.
Average Cost
0.21
0.2
0.19
0.18
0.17
0.16
0.15
0.14
0.13
Passenger Km.
1-12.CGM

The AC is regressed on passenger kms. and it is observed that AC has declined with increase in the passenger kms. It is obvious from equation - 1 that with the increase in the passenger kms. average cost has declined. The coefficient associated with P is negative and statistical significant. The second equation shows that AC has a significant negative trend coefficient.This shows that GSRTC is decreasing cost industry. Moreover Graph - III.6 explains trend in AC with increase in passenger kms. Thus our study supports the argument that public utility industries are decreasing cost industries.

DEMAND FOR PASSENGER TRANSPORT :

It is the popular belief that the demand for utility service is more or less inelastic. The experience of many public utilities in the market for public utility service will therefore enable the management to predict and plan the utilization of the level of its production capacity in the event of price change. If the study reveals that the demand is relatively inelastic, the aggregate expenditure of the customer class on the given utility service may be reasonably expected to increase in the event of price rise. In such a case, the price scheduled may be structured at a comparatively higher level. If on the otherhand the demand for services is found to be elastic due to the availability of closer substitutes, it would be indicative of

necessity to design price schedule for the relevant customer class at a relatively low level.[17]

In the light of this, the present study attempts to examine the elasticity of demand for passenger transport. The elasticity of demand for passenger transport with respect to fare can be estimated mainly through two different models.

[1] $$Y = a + bx + u$$

Where Y is the index of passenger km. and X is the ratio of fare Index to consumer price index x 100.

[2] $$\log Y = \log a + b \log x + u$$

The first equation assumes that the elasticity keeps on changing with the change in X where as the second equation assumes that the elasticity of demand remains constant over a period of time.

The present study estimates both these equations for the period 1975-76 to 1994-95 and the results are as follows.

$$Y = 207.4873 - \underset{(-3.27527)}{1.336X} \qquad R^2 = 0.3734$$

$$\log Y = 11.85108 - \underset{(-3.252)}{1.6463 \log X} \qquad R^2 = 0.3703$$

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17. R.K. Choudhary : Economics of Public Utility, Himalaya Publishing House, Delhi, 1986, Pp.43.

Looking at both these equations, it is to found that the slope coefficients are negative which supports inverse relationship between index of passenger km. and fare index. The elasticity of demand for passenger transport in the first equation keeps on changing where as in the second equation elasticity remain constant. In order to decide the correct functional form R^2 of the first equation has been converted into comparable R^2 of the second equation.[18] and it comes to 0.45763. This suggest that the first equation is better than the second equation. It implies that the elasticity of demand for passenger transport with respect to fare index keeps on changing.

The coefficient associated with x in the first equation shows change in index of passenger km. with the unit change in the fare index. The coefficient is negative and therefore it explains negative impact of fare index on index of passenger km.. This equation shows that the elasticity of demand for passenger transport changes with the change in the fare index.

The increase in the fare becomes essential with the increase in the cost of GSRTC with the passage of time. In order to examine how the elasticity of demand has undergone a change on not the simple formula is applied to estimate it.

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18. Damodar Gujarati : Basic Economics, Mc Graw Hill International Edition 1988, P.183.

$$\text{i.e.} \quad \frac{\text{Percentage Change in Passenger Km.}}{\text{Percentage Change in F.C. Index}}$$

The Table - III.19 gives estimated elasticity of demand for the period 1976-77 to 1994-95.

Looking at the table, following observations are made :

[a] Contrary to the expectations of negative elasticity of demand, the positive elasticity is observed for the years 1976-77, 1981-82, 1985-86 and 1989-90. These are the exceptional years during which increase in fare index has resulted into increase in the demand for passenger transport.

[b] The elastic demand is observed only for the years 1977-78, 1978-79, 1979-80, 1980-81, 1983-84 and 1985-86. After 1985-86, the elasticity turns out to be less than one. This tends to suggest that the demand for passenger transport was elastic upto 1985-86 and after that it has become inelastic. This permits one to suggest that the increase in the fare in time with increase in costs will have positive impact on the total revenue of the GSRTC and this may lead to fall in loss of GSRTC.

TABLE - III.19

ELASTICITY OF DEMAND FOR PASSENGER TRANSPORT WITH RESPECT TO FARE

Year	Estimated Elasticity of Demand
1	2
1976-77	8.64
1977-78	-1.68
1978-79	-6.05
1979-80	-2.35
1980-81	-1.17
1981-82	2.48
1982-83	-0.12
1983-84	-0.52
1984-85	-1.02
1985-86	0.35
1986-87	-1.19
1987-88	-0.25
1988-89	-0.71
1989-90	-2.15
1990-91	-0.26
1991-92	-0.14
1992-93	-0.82
1993-94	-0.47
1994-95	-0.74

PRICING POLICIES IN PASSENGER TRANSPORT :

The earlier pages show that the physical performance of GSRTC is quite satisfactory and has been improving with the passage of time where as financial performance measured in terms of profit/loss, gives the gloomy picture.

This tends to suggest that the earning of GSRTC is not increasing at the rate at which expenditure is increasing. This requires to examine the fare rate of GSRTC and to find out whether fare rate fixed by GSRTC is sufficient to meet the expenditure or not. In the light of this at attempts is made to examine pricing of GSRTC.

Various forms of transport like the Railways, Roads and Road transport and Air transport have their own technical and economic characteristics which have implications for their pricing policy. The Railways are a mass transport mode capable of hauling large volume of traffic over short, medium and long distances economically i.e. at low cost. The provision of railway facilities, however, involves high capital investments and unless there is enough volume of traffic, the railways will not be able to manifest its inherent merit of low cost operation in terms of low prices for their services. Thus they will require high rate of capacity utilisation otherwise their fares and freight rates will have to be kept at a higher level than their inherent low cost, if their financial solvency or viability

as defined earlier, is to be secured. Because of their scale of capacity, even at the minimum level, extending to the entire market, the Railways have always been treated as a natural monopoly. As a result, there is a risk of possible abuse of its monopoly power/position unless regulated. Some kind of control of its operations including the pricing of their services had, therefore, been felt to be desirable in the past as may be necessary in the future also. However under the impact of the economic reform measures and competition from other modes of transport, it is possible that Railways may get organised more and more as commercial undertaking or enterprise with freedom to decide, among other things, the pricing of their services and held accountable for results. Achieving its financial viability should be more easy in such a situation.

Air transport also, to a certain extent, partake the features of a monopoly, where the air craft capacity at the minimum scale itself is large and involving high capital investment. Capacity utilisation in this case also has to be high to realise the economies of scale. Here to the winds of economic reform might introduce a more commercially viable operation of air line services to permit some degree of flexibility in the choice of air crafts and in the pricing of their services to achieve financial solvency. On the other hand, road transport facilities are capable of being provided in much smaller unit capacities and therefore their initial capital costs and the subsequent running costs are much more easily manageable

and affordable. In the case of road transport services, there is thus more scope for easy entry and competitive condition to be present and the prices for such services can be expected to be determined by market forces rather than by any outside authority. In such a competitive milieu the road transport operators will have to necessarily ensure their financial viability if they have to survive and grow. Thus in terms of their technical and economic characteristics, road transport services are more favourably placed to earn financial solvency, for the railways and airways to some extent safeguards against abuse of their monopoly position, may be necessary.[19]

The passenger transport is one of the most important activity, providing for the carriage of persons from one place to the other. The State Road Transport Corporations play an important role in passenger transport and therefore it is essential to formulate pricing policy which will increase the effective use of the existing transport system. The transportation is an inescapable aspect of our everyday environment. It should therefore try to maximize utility to the consumer. This maximization of utility is to be obtained subject to a number of political and economic constraints.

Fare fixation in State Transport Undertakings is a difficult exercise since there are no clear cut guidelines with

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19. Gopalswami T.V. : "Pricing of Transport Services", Journal of Transport Management, Vol. 20, No.12, December 1996. Pp. 721-728.

regard to fare pricing mechanism. The STUs which bear the burden of operating uneconomic routes and socially obligatory services should atleast get the fare which should meet their cost of operations.

A.C. Pigou was the first economist who discussed the cost of service and value of service principles to serve as the basic guidelines for the pricing of public utilities. Later on the principle of what traffic can bear came to be recognised to supplement the other two in constructing rate structure of transport utilities.

The following methods can be applied by the transport operator for fixing up this prices.

[1] Cost of Service

[2] Value of Service

[3] Charging what the traffic will bear.

[1] Cost of Service : The transport industry can fix its price based on its cost of service. Under cost of service approach different criteria of costs of service can be applied. The cost per unit of traffic tend to decline with the increase in the volume of traffic. There is a limit beyond which we find increase in the cost per unit of traffic.

The cost of service in passenger transport can be determined through various methods.

[1] Marginal Cost

[2] Average Cost

[3] No Profit No Loss

[4] Cost Plus Pricing

MARGINAL COST PRICING :

This principle of pricing is applicable not only to various sectors of trade and industry but also to the transport sector. Here given operating and transport area structure, undertaking size and cost, the maximum revenue is achieved at the fare where marginal cost and marginal revenue are equal. This ensures maximum utilization of resources and leads to optimum output.

The concept of marginal cost pricing in public transport was elaborately discussed in the 40th Annual Congress of International Commission on Economic Policies in Transport[20] which concluded as under.

"Neither the marginal cost nor marginal revenue are dependent on the fixed cost and provided the latter are covered do not affect the fixing of the optimum fare. Only the additional costs resulting for an increase in the service are decisive. Hence the cost should be taken into account only to

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20. International Commission on Transport Economics Report of 40th International Congress, 1973.

the extent that they are important for the relationship between marginal cost and marginal revenue, when calculating the price for the improved service. Moreover, estimates for marginal cost can not be obtained unless the different types of cost are broken into fixed and variable cost. If the marginal cost were to vary over a wide range, fare graduation based on marginal cost would be possible. As the difference in the marginal cost are very small, this procedure is impossible when fixing a fare structure which is generally based on small fare graduation. Hence marginal cost do not play an important part in the fare structure of passenger road transport undertaking".

Application of the marginal cost pricing rule in decreasing cost industries will result in budgetary deficits. Durpit[21] suggested that the deficits which would occur in decreasing cost industries, due to application of a system of pricing based on margin cost should be made up out of the public treasury! "Many official documents dealing with pricing policy for public sector products e.g. the U.K. white paper, Government of India's Discussion paper on Administered Pricing and many economists have recommended adoption of the marginal cost pricing rule".[22] The intuitive rationale for the rule is that long run marginal cost represents the cost of producing an additional unit

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21. Durpat J. : "On the Measurement of the Utility of Public Works " in K.J. Arrow and T. Scitovsky [ed.] Readings in Welfare Economics, Irwin 1969, P.50.

22. U. Sankar : Public sector Pricing: Theory & Applications, Indian Economic Association Trust for Research & Development, Delhi, 1992, P.17.

of output while the price reflects consumer's marginal valuation of one unit of the commodity..

Kulkarni[23] states that in the context of India, the marginal cost principle is less applicable because its determination is uncertain and is bound to be arbitrary. Moreover, marginal cost under conditions of varying cost such as in India as where operations are expanding does not depend on technical considerations. Viewed thus average cost as the basis of prices should find favour.

AVERAGE COST : The marginal cost is difficult to determinate administratively where as average cost helps to cover full cost and thus gives proper definition to cost.

Average cost is determined on the basis of total cost incurred by the transport undertaking for its operations during a specific period divided by the total product kms. generated during the same period.

The cost of service principle says that prices should be of such magnitude as to collect revenue which were sufficient to cover the cost of providing service to consumers. Every use

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23. Kulkarni S.D. : "Pricing Policies in Passenger Transport", Journal of Transport Management, August 1980, also in Fare Policies : A Book of Readings, ed. by CIRT, Pune, 1995, Pp.121-126.

of the services of public utility should be paid for at a price which would cover the average cost of production. It implies that pricing in a public utility according to the cost of service principle resembles pricing in a competitive economy under average cost pricing theory. The rates are to be find in such a way that it would provide a fair return on fair valuation of utility properly. It means that investors are entitled to a reasonable rate of interest on their investment, but not to pure profit. This means that price should equal to average cost.

NO PROFIT NO LOSS : This naturally leads to the concept of "No profit no loss" when prices are so fixed that they just cover the total cost, including the interest and depreciation of the assets.

The pricing policy of the passenger road transport should be derived by the important consideration of providing not only an adequate depreciation and return on capital but also the necessary surplus for further expansion. Thus the alternation left is "Cost Plus Pricing".

COST PLUS PRICING : In this situation, the price of the product or service not only covers the cost but also some margin desirable and necessary to reward the efforts of entrepreneur.

The "Cost Plus" formula does not penalise inefficiency for whatever the cost, the price is sufficient to meet them. If

the cost shoot up due to work stoppage, material wastage etc. the "Plus" rises too. Within the limits of limited applicability of this technique an adjustment factor in respect of the plus percentage should be designed in such a way that neither an inflated cost at once raised the surplus nor the investment gets over-remunerated for that reason.

VALUE OF SERVICE : Under this principle the rates are charged as per the value attached by the passenger to the service offered. The higher the value attached by the passenger to the services the higher the rate charged and vice versa. The value of service determine the maximum rates that can be charged for the service of the transport. The value of service sets the upper limit beyond which the traffic will not move.

CHARGING WHAT THE TRAFFIC CAN BEAR : Charging what the traffic will bear in the monopoly sense signifies rate that will provide the largest net returns. This principle by the monopolist calls for the best paying rates, not the rates that will produce a fair return.

Economical pricing calls for charging what the traffic will bear on the different services. This means minimum prices that will maximize the margin between relevant cost of performance of a particular service and the marginal revenue it will yield.

Since there are no clear cut spell - out policies on pricing essential services of public enterprises, the guidelines on UN study team on "Financing of Public Enterprise in Developing Countries", suggest the following :

[i] Prices should cover necessary operating cost and replacement of asset plus contribution to the cost of public service and to the expansion of public sector enterprise.

[ii] They should so set that surplus generation is maximum in respect of amenity goods and lowest in respect of basic consumption goods and key investment inputs.

[iii] Cross-subsidisation between higher and low surplus generation products should be organized in such a way as to ensure minimum distortion in production and investment and also undersigned shift in consumption.

ECONOMIC FARE BASED ON BREAK EVEN COST :

Few studies are available on pricing of SRTCs in India. A study by P.G. Patnkar[24] is based on break even cost of operation. It is argued that bus fare increases may be linked up with price hikes in major inputs required for operation of buses, so as to operate on business principles. His study tries to explain fixation of fare with the help of break even cost. The break even cost index is regressed on combined price index and

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24. Patnakar P.G. : "Economic Fare Based on Break Even Cost of Operation" in Fare Policies - A Book of Reading, 1995, CIRT, Pune, 1995, Pp.3-7.

it shows that with the increase in price index break even cost index increases and this requires revision in fare. His study is based on Maharashtra State Road Transport Corporation for the period 1976-77 to 1982-83. Following the same methodology a study by A.V. Raman & M.V. Bagade[25] examines fixation of fare for Maharashtra State Road Transport Corporation.

The Section 22 of the Road Transport Corporation Act 1950 states that SRTC should operate on business principles. In order to decide the fare which should cover the cost so that the SRTC can operate on business principle one should link it with break even cost[26]. In order to estimate the break even cost Patankar and others have suggested the following method. While deriving at the break even cost, one should find out the elements of cost which show high susceptibility to price level changes. There are costs on personnel, oil, tyres and automobile parts and also depreciation provisions. Taxes, the incidence of which is high and vary from time to time could be included. In case of diesel and oil, the Central Government regulates their prices and they are beyond the control of STUs. In the case of personnel cost, STU can offer very little resistance indeed as D.A. is linked with cost of living index. In case of chassis and automobiles spare parts sellers market conditions as well as over

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25. A.V. Raman & M.V. Bagade : "Formula For a Cost Based Fare Structure", Journal of Transport Management, August 1994,P. also in Fare Policies - A Book of Reading, 1995, CIRT, Pune, 1995, Pp.20-25.

26. Patankar P.G. : "Economic Fare Based on Break Even Cost of Operation" in Fare Policies - A Book of Reading GSRTC, Pune, 1995, Pp.3-7.

all inflationary conditions rule out the possibility of intervention by STUs.

These costs were reckoned on a per seat km. basis using average seating capacity in STU buses from time to time. The average cost per seat km. each year was used to determine the break even cost per seat km. The Table - III.20 represents estimation of break even cost, with and without passenger tax, as part of break even cost.

$$\text{Break Even Cost Per Seat Km.} = \frac{\text{Total Cost Per Km.}}{\text{Seating Capacity} \times \text{Occupation Ratio}}$$

Table III.20 gives break even cost per seat km. excluding and including passenger fare.

The price hike index has been worked out as follows. The price index is the combination of material price index, personnel cost index, taxes and depreciation. The material price index is estimated in the following way.

The Material Price Index =

Share of Diesel Expenditure in material cost x Diesel Price Index

\+ Share of Expenditure on Engine Oil x Price Index of Engine Oil

\+ Share of Expenditure on Tyre & Tubes x Price Index of Tyre & Tubes

\+ Share of Expenditure on Auto spares & Others x Price Index of Chassis

In respect of wages the consumer price index is used. The actual incidence of taxes in STUs has been used in respects of taxes. The price index of chassis is applied to depreciation. On the basis of these four price indices the combined price index has been derived assigning weights to each index as per their share in expenditure. Following the same methodology the price hike index is estimated with respect to GSRTC for the period 1975-76 to 1994-95. The break even cost [both excluding passenger tax and including passenger tax] index with 1990-91 as base year is regressed on price hike index and the following result are obtained.

BEC = - 57.998 + 1.659527 Price hike R^2 = 0.9596
[Excluding (18.61060) Index
Passenger Tax]

The value of R^2 is very high and the coefficient associated with price index is positive and statistically significant. This tends to suggest that break even fare corresponds to every change in price index. The break even cost including passenger tax is also regressed on combined price index and the following result are observed.

BEC = - 60.339 + 1.643397 Price hike R^2 = 0.9495
[Including (18.3966) Index
Passenger Tax]

Here also it is observed that impact of price hike index on index of BEC is positive and statistically significant.

GSRTC can compare the break even cost per seat km. from time to time with prevailing fare allowed by the Government to decide whether any case for revision of fare is indicated.

TABLE - III.20

BREAK EVEN COST PER SEAT KM.

Year	Break even cost Including Passenger Tax	Break even cost excluding Passenger Tax	Fare Per Passenger Km. Including Passenger Tax
1	2	3	4
1960-61	3.396173	3.105063	3.11
1961-62	3.426214	2.998836	3.11
1962-63	3.300622	2.861117	3.11
1963-64	3.471382	2.949797	3.33
1964-65	3.486987	2.931532	3.33
1965-66	3.549857	2.995551	3.33
1966-67	3.716275	3.084643	3.33
1967-68	3.802123	3.117454	3.89
1968-69	4.004502	3.274441	3.89
1969-70	4.054930	3.266432	3.89
1970-71	4.104239	3.268967	3.89
1971-72	4.096648	3.263124	3.89
1972-73	4.110165	3.237226	3.89
1973-74	4.313687	3.421139	3.89
1974-75	4.983160	3.974752	4.82
1975-76	5.316699	4.175785	5.20
1976-77	5.617203	4.399954	5.20
1977-78	5.729544	4.510209	5.20
1978-79	5.706153	4.483046	5.58
1979-80	6.173401	4.855408	5.58
1980-81	7.018544	5.700438	6.71
1981-82	8.036673	6.561517	8.44
1982-83	8.671181	6.776361	8.44
1983-84	8.752700	6.842046	8.44
1984-85	9.916736	7.995730	8.44
1985-86	10.48731	8.524635	8.44
1986-87	10.10427	8.167020	8.44
1987-88	12.39854	9.873402	11.11
1988-89	12.08255	9.541168	11.11
1989-90	12.46988	9.906159	11.11
1990-91	14.57064	12.089330	15.15
1991-92	15.94994	13.544390	15.15
1992-93	17.38825	15.056510	15.15
1993-94	23.80796	20.445810	21.40
1994-95	24.20162	21.021940	21.40

TABLE - III.21

FARE, AVERAGE COST AND MARGINAL COST

[In Paise]

Year	Fare Per Passenger Km.	Average Cost Per Passenger Km.	Marginal Cost Per. Km.
1	2	3	4
1960-61	3.11	3.07	-
1961-62	3.11	3.43	8.36
1962-63	3.11	3.30	2.77
1963-64	3.33	3.47	4.74
1964-65	3.33	3.49	3.58
1965-66	3.33	3.55	3.89
1966-67	3.33	3.72	4.63
1967-68	3.89	3.80	4.37
1968-69	3.89	4.00	5.50
1969-70	3.89	4.06	4.60
1970-71	3.89	4.10	4.39
1971-72	3.89	4.10	4.05
1972-73	3.89	4.11	4.24
1973-74	3.89	4.31	6.88
1974-75	4.82	4.98	8.03
1975-76	5.20	5.32	9.77
1976-77	5.20	5.62	10.74
1977-78	5.20	5.73	6.80
1978-79	5.20	5.71	5.52
1979-80	5.58	6.19	13.39
1980-81	5.58	7.47	21.28
1981-82	6.71	8.04	13.75
1982-83	8.44	8.67	-21.76
1983-84	8.44	8.75	10.29
1984-85	8.44	9.92	37.70
1985-86	8.44	10.49	-24.17
1986-87	8.44	10.10	6.63
1987-88	11.11	12.40	-32.12
1988-89	11.11	12.08	7.10
1989-90	11.11	12.47	16.46
1990-91	15.15	14.57	-35.64
1991-92	15.15	15.95	87.30
1992-93	15.15	17.39	35.87
1993-94	21.40	23.81	-18.50
1994-95	21.40	24.20	30.53

When we compare fare per passenger km. with cost per passenger km. including passenger tax, it is observed that fare is low as compared to cost. This strongly recommends upward revision of fare. It is rightly pointed out by the report of the Tenth Finance Commission that it should be possible to achieve higher rate of return on investment subject to fares being cost based and fare revisions being done promptly.[27]

COMPARISON OF FARE PER PASSENGER KM. WITH AVERAGE COST AND MARGINAL COST :

It is already pointed out on earlier pages that SRTC can follow AC pricing or MC pricing. The average cost is estimated by dividing total expenditure of GSRTC by passenger km. where as marginal cost is estimated as the ratio of change in total expenditure of GSRTC to change in passenger km.. It is observed from the table that during all the years AC exceeded the fare charged by GSRTC. As far as the marginal cost is concerned it turned out to be negative during 1975-76, 1982-83, 1985-86, 1987-88, 1990-91 and 1993-94. This negative marginal cost is due to fall in passenger km. and not fall in expenditure. It may be stated that the linking fare per passenger km. with AC may improve the financial performance of GSRTC.

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27. Government of India : Report of the Tenth Finance Commission, [For 1995-2000], December 1994, Pp.12.

MODELS FOR A RATIONAL FARE POLICY :

The rational fare policies is explained to ensure financial viability of GSRTC at the same time an economic fare which should not affect the travel demand.

According to Bagade[28] the financial viability of STUs is based on revenue earned and cost of bus operation. The revenue earned is a function of passenger carried [or technically passenger km.] and fare where as cost incurred will depend on productivity and prices of inputs.

The effects of fare rise on travel demand should be considered so as to earn sufficient revenue to cover cost. Thus fare charged should able to balance cost of bus operations vis-a-vis travel demand. The methodology to estimate the fare takes in account [i] cost model which can predict the rise in cost of operation [ii] cost estimates to lead to break even and rational fare [iii] Travel demand forecast model which can estimate travel demand as an effect of rise in population, economic and social environment and effect of rise in fare.

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28. M.V. Bagade : "A Model for Economic Fare Policy for State Transport Undertakings" in Fare Policies, A Book of Reading by CIRT, Pune 1995, Pp. 66-75.

[A] Development Cost Model

The total cost of GSRTC can be divided into three parts:

[i] Personnel cost

[ii] Material cost

[iii] Other cost

The model developed by Bagade assumes that

[i] Personnel cost depends upon personnel productivity and consumer price index which is linked to wage level.

[ii] Material cost depends upon material productivity and material price index. In the material inputs - diesel, lubricants, tyres and auto parts are included and overall material price index is developed.

[iii] In case of other costs, the taxes interest and depreciation depend upon policy and non controllable factors. The time series growth in other costs can be used for estimation.

[B] To ensure financial viability, revenue should cover total cost. The margin between revenue and cost will vary according to the policy of the Government or State Transport. Knowing the capacity of bus and average occupancy the expected fare per passenger km. can be derived.

[c] Travel Demand Forecast Model : Travel activity [or travel demand realised] is measured in terms of passenger km. It depends on growth in population, economic and social environment and fare level.

FORMULATION OF MODEL :

[A] Cost Model :

$$TCK = PCK + MCK + OCK$$

[i] $$PCK = f\left(\frac{1}{PPd}, CPI\right)$$

[ii] $$MCK = f\left(\frac{1}{MPd}, [MPI]\right)$$

[iii] $$OCK = f\,[Time]$$

Where : TCK = Total Cost Per Km.

PCK = Personnel Cost Per Km.

MCK = Material Cost Per Km.

OCK = Other Cost Per Km.

PPd = Personnel Productivity [Km. per employee per day]

MPd = Material Productivity [Kms. per unit of of material consumed]

CPI = Consumer Price Index

T = Time

[B] Expected Fare Level [EFL]

$$TCK + f = ERK$$

f = Surplus or contribution over and above cost

ERK = Expected Revenue Per Km.

$$EFL = \frac{ERK}{SC \times OR}$$

SC = Average Seating Capacity of Buses

OR = Occupancy Ratio

[C] Travel Demand Forecast Model :

$$PKS = f(P)$$

$$PKS/P = f(PCI)$$

$$PKS = (FR)$$

Where PKS = Passenger Km.

P = Population

PCI = Per Capita Income in Real teem.

FR = Fare rise

$$PKS = a + bp + CPCI + dFR + U$$

The consolidation should be effected on the basis of improvement in coefficient of correlation.

[D] Having known expected fare level and corresponding travel activity, the revenue can be estimated. Knowing cost from the cost model and revenue financial viability can be examined.

VALIDATION OF THE MODEL :

The above model is applied to GSRTC considering the period 1975-76 to 1994-95 and the following results are obtained. The personnel cost per km. (Y) is regressed on inverse of personnel productivity (X1) and consumer price index (X2) and following results are obtained.

$$Y = -0.02913 + \underset{(3.230694)}{0.000246\ X1} + \underset{(10.23234)}{0.000692\ X2}$$

$$R^2 = 0.986803$$

The model shows that both the coefficients are statistically significant and value of R^2 is very high. This implies that significant changes in personnel cost per km. are explained through changes in personnel productivity and consumer price index.

The material cost per km. is regressed on inverse of material productivity and material price index and following results are obtained.

$$Y = 0.102565 + \underset{(0.727859)}{0.001205\ X_1} + \underset{(25.46230)}{0.016151\ X_2}$$

$$R^2 = 0.978409$$

This shows that with the increase in the material price index, material cost per km. has increased by significant amount.

Where as the other cost per km. i.e. total cost - personnel cost - material cost has been regressed on time and the strong upward trend is observed.

$$Y = 0.83158 + \underset{(20.21789)}{0.086852\ t}$$

$$R^2 = 0.957822$$

These three equations reveal that improvement in productivity has resulted into fall in cost where as increase in price has result into increase in cost per km.

Moreover passenger km. has been regressed on population, per capita income in real terms and fare index and following result are obtained.

$$Y = -367973 + \underset{[2.90613]}{13.15431}\ PCI + \underset{[7.090111]}{1732.824}\ Popu - \underset{[-4.82789]}{1186.13}\ FI$$

$$R^2 = 0.952103$$

It is obvious from the results that the passenger km. is significantly positively affected by PCI and population where as negative significant impact of fare index on passenger km. is observed. The value of R^2 is also very high. This suggest that with increase in per capita income and population demand for services provided by GSRTC is bound to increase over a period of time.

The expenditure per effective km. in real term is regressed on vehicle productivity, employee productivity and energy productivity. The vehicle productivity refers to kms. per vehicle per day, employee productivity to kms. per employee per day and energy productivity to kms. per litre of oil and following results are obtained.

$$Y = 10.98103 - \underset{(-0.93923)}{0.00268}\ V - \underset{(-2.56438)}{21.8223}\ E - \underset{(-0.28234)}{0.2031}\ L$$

$$R^2 = 0.86409$$

This shows that the coefficients associated with V, E and L are negative indicating negative impact of these variables

on Y. In other words it can be said that with the improvement in productivity expenditure per effective kms. in real terms falls. However it is to be noted that the impact of vehicle productivity and energy productivity is not statistically significance. In this case, the value of R^2 is high, but two coefficients are not statistically significant. This suspects the problem of multicollinearity in the model. It is, therefore, the expenditure per effective km. in real term is regressed separately each on vehicle productivity, employee productivity and energy productivity and following results are obtain.

$$Y = 10.95425 - \underset{(-4.80728)}{0.01522\ V} \qquad R^2 = 0.562149$$

$$Y = 9.832943 - \underset{(-10.3607)}{26.6832\ E} \qquad R^2 = 0.856396$$

$$Y = 17.75401 - \underset{(-7.51177)}{2.38217\ L} \qquad R^2 = 0.758151$$

In all these equations, slope coefficients are negative and statistically significant. On the basis of this, it can be concluded that the improvement in vehicle productivity employee productivity and energy productivity has resulted into fall in cost per effective kms. in real term.

Following Sriraman, Raman and Bagade[29], Cost and Financial Model is fitted for GSRTC considering the period 1975-76 to 1994-95.

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29. S. Sriraman, A.V. Raman and M.V. Bagade : "Cost and Financial Models For STUs in Fare Policies, A Book of Reading by CIRT Pune, 1995, Pp. 76-83.

The cost model explains the relationship between cost incurred and output produced.

In continuation of this, a financial model is developed which explains the relationship between revenue and cost in terms of profit or loss.

Profit/Loss = Total Revenue - Total Cost

It is stated that the total revenue is a function of volume of operations i.e. passenger km. and the fare rate per passenger km.. However, it should be noted that the fare rate is fixed by the government and the STUs are not authorized to change the fare rate and therefore it depends on the volume of operation i.e. passenger km.. The passenger km. is likely to be influenced by occupancy ratio. The total cost is influenced by the vehicle productivity, energy productivity and employee productivity. In the light of this, the effects of occupation ratio, vehicle productivity and employee productivity on profit per km. is examined. The profit per km. in real term is regressed on occupation ratio, employee productivity and vehicle productivity considering the period 1975-76 to 1994-95 and following results are obtained.

$$Y = -13.4225 + \underset{(3.986611)}{0.083184\ O} + \underset{(4.286557)}{43.3966\ E} + \underset{(0.493186)}{0.002751\ V}$$

$$R^2 = 0.673508$$

This reveals that occupancy ratio, employee productivity and vehicle productivity play an important role in determining profit per km. in real term. About 68% variations in profit per km. are explained through variations in these variable. However it is to be noted that the vehicle productivity does not turn out to be significant factor. This suggests that the improvement in the financial performance requires not only revision in fare but also improvement in occupation ratio and productivity of inputs.

TYPES OF SERVICES PROVIDED BY SRTCS :

The SRTCs provide different types of services such as express, local, luxury, semi-luxury etc. and differential pricing for these types of services is suggested. The differential pricing is required to recover the additional cost of vehicle that is needed in procurement of superior class of vehicles, higher depreciation amount to be recovered, higher interest on cost payable besides loss of capacity owing to superior class of service and reduction in the seating capacity since the superior class clientele is expected to cross subsidies the other types of loss making services and average 10% plus margin is also suggested to built into pricing mechanism.

In the light of this an attempt is made here to examine the contribution of different types of services in terms of effective kms. operated, passenger carried and revenue of GSRTCs.

TABLE - III.22

EFFECTIVE KMS. OPERATED BY

DIFFERENT TYPES OF SERVICES

[Kms. in Lakhs]

Year	Express	Luxury	Ordinary	Casual Contract	City	Total
1	2	3	4	5	6	7
1976-77	1177.44	54.67	2429.98	92.65	218.64	3973.38
	[29.63]	[1.37]	[61.16]	[2.33]	[5.50]	
1977-78	1277.07	56.86	2633.13	120.11	237.63	4324.80
	[29.52]	[1.31]	[60.88]	[2.77]	[5.49]	
1978-79	1398.89	49.68	2918.18	143.28	253.46	4763.49
	[29.36]	[1.04]	[61.26]	[3.01]	[5.32]	
1979-80	1591.77	44.97	3186.90	163.34	266.44	5253.42
	[30.30]	[0.86]	[60.66]	[3.11]	[5.07]	
1980-81	1689.81	40.80	3348.27	159.89	274.61	5513.38
	[30.64]	[0.74]	[60.73]	[2.90]	[4.98]	
1981-82	1981.14	47.08	3648.82	183.52	292.68	6153.24
	[32.19]	[0.76]	[59.30]	[2.98]	[4.76]	
1982-83	1947.75	56.85	3579.25	143.16	290.86	6017.87
	[32.37]	[0.94]	[59.48]	[2.38]	[4.83]	
1983-84	1972.61	52.48	3651.81	139.92	286.96	6103.78
	[32.32]	[0.86]	[59.82]	[2.29]	[4.70]	
1984-85	2233.40	50.50	3825.62	122.54	280.05	6512.11
	[34.29]	[0.77]	[58.75]	[1.88]	[4.30]	
1985-86	2257.39	39.74	3893.70	81.84	261.47	6534.14
	[34.55]	[0.60]	[59.59]	[1.25]	[4.00]	
1986-87	2400.33	44.87	4006.06	112.58	270.06	6833.90
	[35.12]	[0.66]	[58.62]	[1.64]	[3.95]	
1987-88	2554.13	74.56	4305.57	77.79	284.12	7296.16
	[35.01]	[1.02]	[59.01]	[1.07]	[3.89]	
1988-89	2663.31	72.55	4351.83	114.47	298.48	7500.64
	[35.51]	[0.97]	[58.02]	[1.52]	[3.97]	
1989-90	2818.26	92.44	4459.14	178.06	300.86	7848.76
	[35.91]	[1.17]	[56.81]	[2.26]	[3.83]	
1990-91	2795.29	82.54	4427.12	106.65	301.75	7713.55
	[36.24]	[1.07]	[57.39]	[1.38]	[3.91]	
1991-92	2953.12	69.87	4790.68	84.71	294.43	8192.81
	[36.04]	[0.85]	[58.47]	[1.03]	[3.59]	
1992-93	3037.68	73.77	5106.98	75.98	303.78	8598.19
	[35.33]	[0.86]	[59.39]	[0.88]	[3.53]	
1993-94	3301.37	13.94	5551.64	57.31	336.02	9260.28
	[35.61]	[0.15]	[59.95]	[0.62]	[3.62]	
1994-95	3347.19	8.02	5766.89	87.85	342.04	9551.99
	[35.04]	[0.08]	[60.37]	[0.92]	[3.58]	

Source : Administrative Reports of GSRTC and Statistics of GSRTC.

TABLE - III.23

PASSENGER CARRIED BY DIFFERENT TYPES OF SERVICES

[In Lakhs]

Year	Express	Luxury	Ordinary	Casual Contract	City	Total
1	2	3	4	5	6	7
1976-77	838.32	5.60	6016.29	23.66	1773.51	8657.38
	[9.68]	[0.06]	[69.49]	[0.27]	[20.49]	
1977-78	956.13	6.65	6477.35	31.70	2018.78	9490.61
	[10.07]	[0.07]	[68.25]	[0.33]	[21.27]	
1978-79	1112.25	10.48	7250.50	37.88	2210.10	10617.66
	[10.48]	[0.07]	[68.29]	[0.36]	[20.82	
1979-80	1144.97	5.33	7920.48	44.33	2317.28	11432.39
	[10.02]	[0.05]	[69.28]	[0.39]	[20.27]	
1980-81	1182.81	5.19	8541.03	46.40	2358.53	12133.96
	[9.75]	[0.04]	[70.39]	[0.38]	[19.44]	
1981-82	1324.61	6.13	9559.60	48.54	2405.77	13344.65
	[9.93]	[0.05]	[71.64]	[0.36]	[18.03]	
1982-83	1369.77	8.75	8891.09	40.02	2172.32	12481.95
	[10.97]	[0.07]	[71.23]	[0.32]	[17.04]	
1983-84	1404.80	6.81	9149.79	41.39	2049.49	12652.28
	[11.10]	[0.05]	[72.32]	[0.33]	[16.20]	
1984-85	1564.55	6.22	8981.59	44.38	1873.94	12470.68
	[12.55]	[0.05]	[72.02]	[0.36]	[15.03]	
1985-86	1740.15	5.00	8724.59	32.98	1648.16	12150.88
	[14.32]	[0.04]	[71.80]	[0.27]	[13.56]	
1986-87	1801.30	6.62	9847.03	44.07	1812.18	13511.06
	[13.33]	[0.05]	[72.88]	[0.33]	[13.41]	
1987-88	1669.82	11.93	9428.34	35.97	1591.18	12737.24
	[13.11]	[0.09]	[74.02]	[0.28]	[12.49]	
1988-89	1705.40	16.27	10057.20	39.02	1546.11	13364.00
	[12.76]	[0.12]	[75.26]	[0.29]	[11.57]	
1989-90	1923.77	17.06	10521.80	61.40	1577.62	14101.65
	[13.64]	[0.12]	[74.61]	[0.44]	[11.19]	
1990-91	1772.36	13.93	9787.68	44.17	1505.59	13123.73
	[13.51]	[0.11]	[74.50]	[0.34]	[11.47]	
1991-92	1688.36	8.39	10482.78	29.40	1406.19	13615.12
	[12.40]	[0.06]	[76.99]	[0.22]	[10.33]	
1992-93	1768.38	2.25	11570.64	26.80	1488.70	14856.77
	[11.90]	[0.02]	[77.88]	[0.18]	[10.02]	
1993-94	1397.01	1.42	10426.94	23.06	1342.02	13190.45
	[10.59]	[0.01]	[79.05]	[0.17]	[10.17]	
1994-95	1321.58	1.12	10704.86	27.27	1326.57	13381.40
	[9.88]	[0.01]	[80.00]	[0.20]	[9.91]	

Source : Administrative Reports of GSRTC and Statistics of GSRTC.

The Table - III.22 reveals effective kms. operated by various types of services provided by GSRTC. The services provided by GSRTC are broadly divided into five categories [i] Express [ii] Luxury [iii] Ordinary [iv] Casual Contract [v] City Service. It is very obvious that the effective kms. operated by ordinary services are very high and its share in total effective kms. operated by GSRTC is very high through out the period under consideration. The share of ordinary services has remained more or less constant around 60% over a period of time, where as the share of express services in total effective kms. operated by GSRTC has increased from 29.63% in 1976-77 to 35.04% in 1994-95. It is very surprising that with the growth of the economy, not only the share of luxury services in total effective kms. have declined, but effective kms. operated in absolute term by luxury services have also declined.

The Table - III.23 provides the information regarding number of passenger travelled by different types of services. The number of passenger travelled by ordinary service and express service have increased in the absolute term over a period of time. The share of ordinary services in total passenger travelled has registered an increase from 69.49% in 1976-77 to 80.00% in 1994-95. The share of express services in total passenger travelled has increased from 9.68% in 1976-77 to 14.32% in 1985-86 but later on it has declined to 9.88% 1994-95.

However, the number of passenger travelled by luxury service, casual contract and city service has declined over a period of time and naturally their shares have declined with the passage of time.

The Table - III.24 explains the revenue earned by different types of services and their shares in total revenue of GSRTC. It is obvious that the revenue earned by express services and ordinary services has increased in absolute term over a period of time, but the share of ordinary services in total revenue of GSRTC has marginally increased from 59.42% in 1976-77 to 61.17% in 1993-94 and registered a decline to 59.85% in 1994-95. It is important to note that the share of express services in total revenue has increased from 32.22% in 1976-77 to 41.14% in 1990-91 but it has declined dramatically to 34.53% in 1994-95. The revenue from the luxury service has declined in the absolute term as well as in relative term. On the basis of this one may conclude that with the growth of economy, we expect increase in per capita income and there by increase in demand for better services but it has not resulted into increase in passenger travelled by luxury services, effective kms. operated by luxury services and revenue earned by luxury services. The ordinary services and express services played a dominant role. It may be said that the cross subsidisation cannot be effectively implemented as the share of luxury service is very low and is declining with the passage of time.

TABLE - III.24

REVENUE OF GSRTC BY DIFFERENT TYPES OF SERVICES

TRAFFIC REVENUE

[Rs. in Lakhs]

Year	Express	Luxury	Ordinary	Casual Contract	City	Total Revenue
1	2	3	4	5	6	7
1976-77	2717.77	90.05	5011.95	198.70	416.11	8434.58
	[32.22]	[1.07]	[59.42]	[2.36]	[4.93]	
1977-78	3138.84	100.81	5361.53	266.28	473.67	9341.13
	[33.60]	[1.08]	[57.40]	[2.85]	[5.07]	
1978-79	3515.78	93.33	6098.50	322.26	515.64	10545.51
	[33.34]	[0.89]	[57.83]	[3.06]	[4.89]	
1979-80	3947.13	89.43	7101.98	380.37	542.19	12061.10
	[32.73]	[0.74]	[58.88]	[3.15]	[4.50]	
1980-81	4306.06	88.11	7781.88	422.26	559.67	13157.98
	[32.73]	[0.64]	[59.14]	[3.21]	[4.25]	
1981-82	5514.14	115.27	9246.14	654.28	692.11	16221.94
	[33.99]	[0.71]	[57.00]	[4.03]	[4.27]	
1982-83	6897.86	149.35	11769.08	610.50	842.28	20269.07
	[34.03]	[0.74]	[58.06]	[3.01]	[4.16]	
1983-84	7476.95	186.80	12434.29	651.48	820.06	21551.58
	[34.69]	[0.87]	[57.70]	[3.02]	[3.81]	
1984-85	8394.38	154.91	12648.94	517.99	791.26	22506.58
	[37.30]	[0.69]	[56.20]	[2.30]	[3.52]	
1985-86	8559.02	117.43	12508.29	438.99	701.07	22324.80
	[38.34]	[0.53]	[56.03]	[1.97]	[3.14]	
1986-87	9689.03	150.33	13425.24	622.80	770.96	24658.36
	[39.29]	[0.61]	[54.44]	[2.53]	[3.13]	
1987-88	11859.73	275.35	16720.33	510.29	1159.22	30524.92
	[38.85]	[0.91]	[54.78]	[1.67]	[3.80]	
1988-89	12900.02	382.51	17500.52	692.16	1230.93	32706.14
	[39.44]	[1.17]	[53.51]	[2.12]	[3.76]	
1989-90	14565.96	406.48	18538.29	1178.79	1324.72	36014.24
	[40.45]	[1.13]	[51.47]	[3.27]	[3.68]	
1990-91	16084.58	380.59	20044.61	946.92	1639.19	39095.89
	[41.14]	[0.97]	[51.27]	[2.42]	[4.19]	
1991-92	18669.93	337.67	25086.50	1040.71	1880.54	47015.35
	[39.71]	[0.72]	[53.36]	[2.21]	[4.00]	
1992-93	19190.20	104.84	27100.59	1050.24	1885.26	49331.13
	[38.90]	[0.21]	[54.94]	[2.13]	[3.82]	
1993-94	22147.45	59.85	40048.25	949.83	2265.80	65471.18
	[33.83]	[0.09]	[61.17]	[1.45]	[3.46]	
1994-95	22825.82	44.33	39567.43	1035.23	2640.87	66113.68
	[34.53]	[0.07]	[59.85]	[1.57]	[3.99]	

Source : Administrative Reports of GSRTC and Statistics of GSRTC.

PREVALENT FARE SYSTEM :

There are a number of fare systems in stage carriages through out the world such as straight line scale method of fare fixation is one where in successive stages bear an unvarying rate of charge. Tapered scale of fare provides a decreasing rate of charge as the distance travelled increases. Normally in this fare method, the first few kilometres would have straight line type of fare which would then progressively taper off. In the zonal fare method, the fare for any journey within a specified area is the same, while in the flat fare system the fare is same for journey of any route length.[30]

FARE STRUCTURE AND FARE REVISION : Most of the undertakings have a uniform fare rate per kilometre of distance travelled for their mofussil services. Only a few have two scales of fares the lower rate applying to journeys beyond a certain distance. Journeys in hilly areas are universally charged higher fares than in plains. Some states have different rates for different types of routes - generally based on the nature of road surface. Most states charge higher rates for express, limited stop and deluxe services. Many undertaking charge minimum rates irrespective of the distance travelled.[31]

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30. N. Ramaswamy : "Bus Transport Fare Structure At a Glance" in Journal of Transport Managements November 1993, also in Fare Policies: A Book of Readings by CIRT, Pune 1995, Pp.55-61.

31. B.B. Mahajan : Fare Structure and Fare Revision in Fare Policies : A Book of Reading, ed. by CIRT Pune, 1995, P. 107 to 120.

DIFFERENTIAL FARES FOR DIFFERENT ROUTS :

It is neither feasible nor desirable to fix different fares for different routes on the basis of marginal cost of operation on each routes. However different levels of fare for different broad classification of routes are quite feasible. Thus in states like Haryana, Madhya Pradesh and Punjab higher rates are charged on buses plying on unmetalled roads, in Kattabomman and Pandiyan Corporations higher rates are charged on Ghat roads and in Rajasthan and U.P. on B Class and C Class routes. It is possible to classify routes on the basis of nature of road viz. metalled and unmettaled. The cost of operation on unmetalled Kutcha road is significantly higher than on Pacca road due to lower speed, higher fuel consumption and greater wear and tear of the vehicle, there is economic justification for such differentiation.

Higher fares on unmetalled roads can be criticised on grounds of equity. It is not the fault of village which have not been connected with metalled roads. It is therefore unfair to penalise their inhabitants for failure of State Government to provide them with a metalled road.

DIFFERENTIAL TARIFF FOR EXPRESS AND LUXURY SERVICES :

The STUs are offering different types of bus services such as Ordinary, Express, Luxury, Semi-luxury etc. to suit the

requirement and affordability of the travelling public at large. The concept of differential pricing is prevalent in most of the states for bus service operation according to the type of bus service provided. However, more than 90% of bus operation is of ordinary type. The prevalent fare structure for each type of bus service in different states of our country is the combination of one or more fare system such as [i] straight line fare method [ii] tapered scale method [iii] flat fare method.

A large number of undertakings charge higher rates for Express Services, for example Andhra Pradesh, Haryana, Karnatak, Madhya Pradesh, Nagaland, Orissa and Rajasthan where as MSRTC & UPSRTC charge the same fare for express as well as ordinary services.[32]

Cost of operations on express or limited stop services is not higher than that on ordinary services. It would be somewhat lower on account of larger kilometre per day and less fuel consumption on account of fewer stops. However, the passenger over value their time and are willing to pay higher fare for speedier travel.

Operation of luxury and deluxe services involve higher investment per seat kilometre. A study by Shivaji Singh[33] with respect to Assam state Road Transport Corporation indicates that

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32. B.B. Mahajan : Opcit. P.109

33. Shivaji Singh M. : "Luxury Services in Retrospect" Journal of Transport Management, April 1980.

while the cost of bus body on luxury bus was Rs. 1.52 lakhs against 0.30 lakhs for ordinary bus [Cost of chassis was the same] Seating capacity of luxury bus was only 32 against 55 of the ordinary bus. In the situation of inadequacy of finance and shortage of chassis, operation of luxury bus is not justified. It is justified provided operation of luxury bus helps to subsidise the other operations of the undertakings and there by help to keep general fare low.

DIFFERENTIAL FARES RELATED TO DISTANCE :

Most undertakings charge fares on their mofussil services at uniform rates per kilometre of distance travel. The cost of operation per km. do not vary significantly with the distance travelled by the commuter. The only small economy in cost from a long distance passenger is in the cost of ticket and accounting of tickets, as only one ticket is required for a journey for which otherwise a number of tickets may have to be issued. A more significant advantage would be by way of better load factor as risk of the seat remaining unoccupied for part of the journey is obviated. It is, therefore, some concessions in fare for long distance commuters is justified. However cost is associated with graduated fare system. It may exceed the gains. Not only that but one should take into account inter model distribution of traffic between road transport and railways and buses should be encouraged to carry short distance traffic while

railways would be more economical for long distance traffic. A lower rate of bus fare for longer distance is not in over all interest of the economy.

In the light of above discussion, the fare structure of GSRTC is examined with reference to types of services, routes, distance etc. Before we discuss the fare structure of GSRTC with respect to above said indicators, it should be noted here that the fare revision took place in 1960-61, 1963-64, 1967-68, 1974-75, 1975-76, 1979-80, 1981-82, 1982-83, 1987-88, 1990-91 and 1993-94. The fare structure of GSRTC is examined for the above said years.

As far as GSRTC is concerned, it is observed that upto 1993-94 some concession in fare for long distance comuters was given, for example as per the fare structure of 1979-80, 35 paise per passenger per stage upto two stages was charged and beyond two stages, it was 30 paise. Similarly as per the revised fare structure of 1981-82, 40 paise per stage per passenger was charged upto five stages and beyond it the fare was 33.33 paise.

As per the fare structure of 14-4-87 the fare for ordinary service was 50 paise per passenger per stage for a journey upto 10 stages. Where as 40 paise per passenger per stage was charged beyond 10 stages. With the revision in fare on 1-11-90, the fare was 80 paise and 70 paise per passenger per stage respectively. However this system was discontinued with

effect from 8-4-1993 and the same rate is applicable irrespective of the distance travel.

Looking at the fare for luxury service and express services in relation to ordinary service, one observes that the relative fare of luxury service to ordinary service has remained more or less same, i.e. 1 1/2 times fare of ordinary service during 1979-80 to 1992-93. However the additional fare per passenger has increased from 90 paise in 1979-80 to Rs.2.00 in 1987-88. Moreover the additional fare on express service has increased from 30 paise in 1979-80 to Rs.1.00 in 1987-88. This implies that relative fare of different types of services provided by GSRTC has undergone a change over a period of time.

FARE STRUCTURE OF GSRTC

1979-80

Ordinary	:	35 paise per passenger per stage upto two and 30 paise per passenger per stage beyond two stages Minimum fare 35 paise.
Express	:	Same as ordinary service plus additional fare of 30 paise per passenger upto 5 stages and 60 paise for a journey exceeding five stages. Minimum fare 65 paise.
Luxury	:	1, 1/2 times the fare for ordinary service plus 90 paise per passenger upto 5 stages and 1.80 per passenger beyond 5 stages. Minimum fare Rs. 1.45. [Each Stage consists of 6 kms.]

1981-82

Ordinary : 40 paise per stage upto five stages and 33.33 paise beyond five stages

Minimum fare 25 paise for first 3 kms.

Express : Same as ordinary service plus 40 paise per passenger upto 4 stages and one Rupee per passenger beyond four stages.

Minimum fare 65 paise for first 3 kms.

Luxury : 1, 1/2 times of ordinary service plus Rs. 1.20 per passenger upto 5 stages and 2.40 beyond 5 stages.

1987-88

Ordinary : 50 paise per passenger per stage upto first 10 stage 40 paise per passenger per stage beyond 10 stages

Minimum fare 75 paise.

Express : Same as ordinary service plus additional fare of Rs.1.00 per passenger upto 9 stages and Rs.2.00 for a journey exceeding 9 stages.

Semi Luxury : 1, 1/4 times the fare for ordinary services plus Rs. 1.50 per passenger for a journey upto first 9 stages.

Luxury : 1, 1/2 times the fare for ordinary service plus an additional fare of Rs.2.00 per passenger for journey upto 5 stages and Rs.4.00 beyond 5 stages.

1993-94

Ordinary : Rs.1.15 per passenger per stage upto first 10 stage of 6 kms. or part there of but 57.5 paise per sub stage of 6. kms. or part there of chargeable for a journey upto 3 stages.

Minimum fare Rs.1.25
No sub stage beyond 3 stages.

Express : Rs. 1.25 per passenger per stage but 62.5 per sub stage of 3 kms. for journey upto 3 stages plus an additional fare of Rs.3.00 per passenger. The minimum fare Rs.5.00 per passenger and no sub stage beyond 3 stages.

Semi Luxury : Rs. 1.60 per passenger per stage of 6 kms. or part there of shall be chargeable. The minimum fare Rs.6.00, no sub-stage.

Luxury : Rs.2.00 per passenger per stage of 6 kms. The Minimum fare shall be 7.00 no sub-stage.

Minimum fare Rs.7.00

CONCLUSION :

This chapter has examined financial performance of GSRTC for the period 1960-61 to 1994-95 in terms of trends in revenue, expenditure and profit/loss of GSRTC in money terms as well as in real terms. Though revenue and expenditure in the absolute term have increased both in real terms and money terms, losses of GSRTC has increased over a period of time. The operating revenue constituted a larger share in total revenue of GSRTC through out the period under consideration. Not only that

but the structure of expenditure has also under gone a change over a period of time. It is found that the burden of passenger tax is very high. When profit before passenger tax is estimated, the losses have turned into profits. Similarly the various types of concessions granted by GSRTC has resulted into loss of revenue by significant amount. The financial performance is examined in terms of social surplus per employee and value added per employee at constant prices. It is to be noted that value added has increased by significant amount upto 1992-93 and has declined significantly during 1993-94 and 1994-95. Similarly social surplus per employee has increased upto 1992-93 and turned out to be negative in 1993-94 and 1994-95. The fare structure of GSRTC is examined and the study suggests that the revision in fare rate has not kept pace with increase in cost and this has resulted into deteriorating financial position of GSRTC. This strongly recommends upward revision in fare. However it is noted here that pricing of GSRTC with respect different types of services and the problem of cross - subsidisation could not be discussed because of non-availability of required data.

Most of the Road Transport undertakings have been set up under the Road Transport Corporation Act 1950. The Section 22 of the Act stipulated that the corporation should carry on their activities on "business principles". This requirement has not been fulfilled barrying states like Andhra Pradesh and Haryana which have made sustained surpluses and the corporation of Maharashtra, Rajasthan and U.P. which have shown profits in 1987-88, in other undertaking have shown dismal results. Reasons

for the losses have been identified as increased cost of inputs, unrealised fare structure, growing burden of interest on load, socially oriented concession and greater wear and tear to rolling stock and higher operating cost in hill areas[34]

Dr. Shankar Acharya has rightly pointed out that "though studies of individual enterprises and sectors/sub-sectors abound, it is difficult to come by rigorous appraisals of the efficiency of resource use by public sector enterprises as a whole. As a matter of research priority it is very important to address lacunas since purely financial indicators are obviously inadequate yardstick of performance when enterprises are especially charged with objectives other than the maximization of commercial profit".[35]

Thus the present study recommends upward revision in fare charged by GSRTC. The fare structure of GSRTC show that the relative fare of different types of services has undergone a change over a period of time and from April 1993, the fare rate charged by GSRTC is same irrespective of the distance travelled.

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34. B.P. Mathur : Public Enterprise Management, MacMillian India Ltd., Bombay, 1993, P.165.

35. Dr. Shankar Acharya : "India's Fiscal Policy", in The Indian R.C. Dutt Economy, published by Oxford University Press, New Delhi, 1990, P.111.