

## CHAPTER - I

# INTRODUCTION

### I. Statement of the Problem :

The increasing rate of capital formation can be possible only through economic development. Fundmentally, transport is an important component of capital formation. Time and place utilities have been possible due to transportation and it has also removed the physical barriers of different regions of our country. Alfred Marshall, has pointed out, "The transport industries which undertake nothing more than the mere movement of persons and things from one place to another, have constituted one of the most important activities of men in every stage of advanced civilization" <sup>1</sup>. Wilfred Owen has found out that in advanced countries like the U.S.A., Canada, France, Italy and Western Europe, investment in transport has been to the tune of 10% to 14% of annual gross domestic capital <sup>2</sup>. William C. Hood and Antheny Scott in a report for Royal commission on Canada's economic prospects have put the warranted rate of investment in transport at about 17% of total gross capital <sup>3</sup>. In developing economics the investment as estimated by E.K.Hawkins generally ranges between 20% to 40% <sup>4</sup>. It should also, be noted that World Bank and other monetary agencies have given loans of huge amount for the development of roads and road transport to the developing countries like ours.

The scarcity of resources is one of the basic charecteristics of developing countries like ours. But indeed, transport is a great consumer of scarce resources. Investment in transport (irrespective of the mode like railways, road transport, air and water) being large, any ill-timed, misdirected or misplaced chunk will have a serious impact on the entire system of the underdeveloped economy since it can tie up vast amount of resources for long period of time. E.K. Harkins asserts, "the one sure generation that can be made about in the underdeveloped countries is that investment in transport and communication is a vital factor"<sup>5</sup>

Economic development implies that national income grows at a faster rate than population and benefits from growing the national income leading to improvement in the standard of living of lower income groups<sup>6</sup>. Hence, in transport policy not only income growth but also income distribution is involved. The share of income is a must to yield higher reward to the owners of poor resources and lower reward to the employed labour as per as over populated countries like India. The difference between personal income and wealth can be discussed geographically in the developing countries. The political system of developing countries like India has not been insensitive to these inequalities. India is physically a large country and the post-economic growth of our nation frequently involved the reinforcement of sizeable regional gaps in income and wealth. Short run consideration and the simple facts of political life in representative governments have led politicians to equalize incomes geographically. The form of transport investment and preferential rate of policies are often taken by them. So the pattern of investment in roads and road transport needs a closer look.

Historically viewing the remarkable progress, of the United States of America and the influence of transportation, Christopher I Savege points out, "can hardly be overemphasized agriculture and industrial development and the settlement of the west would scarcely have been possible without it"<sup>7</sup>. Again W.W.Rostow claims that rail road was "historically the most powerful single initiator of take off." and "the preparation of a visible base for a modern industrial structure requires that quite revolutionary changes be brought about in two non-industrial sectors; agriculture and social overhead capital, most notably in transport."<sup>8</sup> Economists have stressed the sequence that the process of development is one of increasing the size of the market.<sup>9</sup> The reduction cost for traversing the distance between the markets and place of food grain is an essential factor for unifying the markets. Reducing this cost, we may say, is the main reason for linking and enlarging markets. In this way, the procedure of growth can be initiated. So with a view to develop the economic procedure in market economics, transport becomes an initiator of development.

The production of one place can be sent to other places through

transportation. Industrial and some other economic activities can be called a two-way relationship with transportation. First the development of industrial and other economic activities can be developed with the provision of transport facilities and secondly, the increased transport facilities itself is caused by the development of industrial and other economic activities. The provision of transport facilities may be referred to as the power function of transport and the increase of transport facilities may be referred as the service function.

The extension of the market means the power function of transport and also increase industrial and economic development. Transport and communication can reduce the distance of markets and cost and also initiate the process of growth. An improvement in transportation, connecting the markets or an improvement in a product which makes it lighter and more readily transportable system becomes a part of the development process. So, in continuous development, transport becomes an integral part for economic and industrial development. According to Professor Kindleberger, transport and inadequate education are bottlenecks of an economy which hinder economic development of any country. Professor Kindleberger observes, " if economic growth is thought of as a self-sustaining process, there is little doubt that investment in transport , communication and education have most to do with changing people which is likely to be the critical ingredient in the growth process".<sup>10</sup>

Production, complementaries to induce additional investment and external economic all things happen on the growth of transportation and act as a driving force. If the growth of transportation will occur in a country then it will reduce the expenditure of all enterprises using the transport sector. The other sector of the economy is connected with the service function of transport. Transportation policies that make sense from this point of view have to be derived from how other sectors are supposed to grow. So, in a way economic growth of other sectors is possible due to transportation. In this way we can find out the demand of transportation, where the transportation is needed and how and what kind of transportation is required for a country.

Railway and industrialisation have gone hand in hand in all developed countries. In India, Railway carried mainly bulk of goods and huge passengers for long destination. Road transport has mainly carried small loads for short destination and also it is very useful for light density goods and agricultural products. So, transport is an important input for all production and distribution. According to P. P. Amita, for a developing economy, a precondition for sustained industrial advancement is adequate modern and efficient modes of transportation<sup>11</sup>

An efficient transport system is an essential input to the economic growth of the developing countries. The economic development of the developing country transport, communication and energy can play a very important role. Among these infrastructure ingredients, transport is a single most important factor on which economic, social and political activities of a nation completely depend. India is, mainly an agricultural country. About 70% people live in the villages. So it is very much essential to connect the various highways with the villages. And when all villages can be developed, our country will automatically develop. The transport system of India was not very good under the British rule, but after independence, the transport system has been improving gradually through the different Five year Plans. It plays a special role in achieving various national goals. Such as getting land into production, marketing agricultural commodities, making forest and natural wealth accessible for developing industry, expanding trade, planning and executing health and educational programmes and above all exchange of ideas. Without road transport, the mail and other means of communication can hardly reach many villages of remote areas.

It is important that helps human beings in removing this unwarranted barrier of physical flow of resources. Earlier, it was the general thinking that only manufacturing of industries, advanced agriculture and banking can develop the national economy irrespective of the growth of proper transport. Now the ideas have changed and the indispensability of transport has been realised in nearly all the countries of the world. Prof. Alfred Marshall wrote, "the growth of transport industries and not manufacturing industries is the dominant economic fact of our own age."<sup>12</sup> Mr. Callender observed in the context of development of the U. S. A.,

“ Historians have generally failed to appreciate the importance of this factor in American development. Much more attention has been given to the growth of manufacture, to currency and the banking system, but none of these matters has exerted the little of the influence upon our economic growth that has come from improvements in transportation.<sup>13</sup> In fact since 1815 our most conspicuous economic achievements have depended directly upon this factor. It is needless to say that the nations transportation system is both a major component of the national economy and an important factor in shaping our life style, community development and industrial location patterns.<sup>14</sup>

Of all the modes of transport i.e. Air, Shipping, Railways and Road transport, the road transport suits well to the Indian context because of its flexible operations, less capital investment and easy operation in the villages where the majority of the people live. It constitutes the essential infrastructure for the growth and development. The share of the road transportation, passenger traffic increased at a much faster rate than that of railways. The railways accounted for 74% of the total passenger traffic carried by rail in 1950-51, the respective share declined to 32% in 1997-98. The share of road transport increased from 26% in 1950-51 to about 68% in 1997-98.<sup>15</sup> The growth and relative share of rail and road transport in passenger traffic is enormous. The importance of road and rail transport is increasing day by day. The growth of India cannot be possible without good transport system. Transport can be divided as (1) land (2) water and (3) air transport. The advantage of road transport are many.

### **(1) Transport and production :**

Large scale production in India is an essential need of transport. Without transport, production can not move from one place to another. Further, production requires huge raw materials, many workers, huge scale of investment and then adequate market. Indian industry produce many finished goods, but an industry cannot run any more if the produced goods cannot be sold to the consumers and consumers are scattered in various parts of the country. For these reasons to reach goods to the consumers, a good transport system is essentially required.

Regular labour supply is essential for keeping and running the industrial production and it can only be possible by the cheap and good passenger transport system.

**(2) Passenger transport and distribution :**

Transport can increase the rental value of a land and satisfy the people's hope and aspirations for the development of the area in future. Transport can help the labour for better employment and for better payments.

The international flow of labour is possible due to good passenger transport system, Organisers can organise their programmes in better way by good transport system. Entrepreneurs find new opportunities to start new ventures in passenger transport.

**(3) Road Transport and Consumption :**

People now use different articles which are produced in different places in the world. But these articles cannot be used by the people if those are not reached to the consumers through the road transport.

**(4) Road Transport and Exchange :**

Road transport has great importance for exchange of goods and services. The world is becoming closer to the people due to transportation, Transportation breaks the monopolies of area and saves the people from exploitation.<sup>16</sup>

**(5) Road Transport and Geographical Specialisation :**

Some areas of our country enjoy some facilities like abundant raw materials, skilled labour, huge capital etc. over other areas. The geographical specialisations of our country can produce surplus goods which are not required in that area. But such goods are required in other areas of our country. A good transport system can play a vital role to meet the requirement of that area.

**(6) Road Transport and Utility :**

Public utility system can only be fruitful by the good transportation system of our country, It can be explained in the following way : such as huge

quantity of stone chips are located in the Pakur area of Bihar. But it has no utility there. But when it is brought to the city of our country for construction of buildings its utility increases and it is only possible due to adequate transport system. Transport also increases time utility of the commodities during emergency like flood, natural calamity of our country.

### **(7) Road Transport and Land Utilisation :**

The industry of road transport services opens new hopes for fulfilled development of the area. If there is no transport, land cannot be utilised properly.

### **(8) Transport Industry and Indian Agriculture :**

In the field of Indian agriculture, transport is an integral part. It helps to progress of agricultural production and productivity. It is our ill luck that till now the Bullock cart is the only means of transport in many parts of rural areas of our country. The agricultural production and productivity of our country are not good due to the poor condition of the roads. The development of handicraft and village industries may be facilitated through the efficient transport system.

### **(9) Road Transport and Industry :**

The development of transport and industrial development of India are inter connected. The industrialisation of India is supported by the good transport system. A factory's location depends upon the facilities of transportation, because the raw materials are scattered in various parts of our country. If any Indian factory is established without giving attention to the transport system, there will be serious problems for the factory. Road transport plays very important role for balancing regional development of our country.

### **(10) Road Transport Industry and Employment in India :**

Road transport industry generate huge employment scope in India. The manufacture of automobiles and the other passenger vehicle and their parts and accessories produce many big industries in India to generate huge employment and capital investment.<sup>17</sup>

**(11) Road transport and balanced development :**

Transport also helps to improve our defence, communication, tourism, improvement of rural and economically backward areas, better maintenance of administration, better distribution of products, district or blockwise planning and decentralisation.

**(12) Road Transport Industry as public utility concern :**

Public utility means the institution which has great importance to the public. There are many public utility institutions in India such as water supply, electric supply, post and telegraph etc. Road transport in India can play a very important role in serving the society. The salient features of the public utilities is to supply the goods or services to the society according the needs and demand of society. For this reason Government tries to regulate or control transport industry through the state legislation for better services and welfare to the people of our country.

**(13) Road Transport industry promotes national unity :**

Transport by its very nature is a unifying factor both in a national and an international forum. It carries messages to various parts of our country. The remote corner of our country can be linked by the transport system. India is a large country. It has many languages, many castes, many cultures and many creeds. But it can only be united to some extent by the road linkages.<sup>18</sup>

**(14) Transport strengthens national defence :**

Transport can play a very vital role for strengthening national defence. India has realised the need of road transport after Chinese and Pakistan aggressions. Motor vehicles can move rapidly from one place to another place. So road transport is essential for sending troops from one place to another place in India. Transportation is not merely a means of combat, it is the delegate through which the entire resources of our country can be mobilised and directed towards defence purposes.



International relations are growing rapidly. We are in the midst of new revolution known as information revolution is quick modes of transport. It gradually brings the whole world within our reach.

**(15) Transport and advancement of knowledge and culture :**

Road transport can help in spreading knowledge and culture in India. People go to distant places for education in colleges and universities. The books, notes, magazines, periodicals can reach every corner and every institution through the efficient transport system.<sup>19</sup>

**(16) Transport and Dispersion of population :**

Road transport can play a vital role for dispersion of population in India. Man can travel from one place to another within a short period of time. For this reason men are not crowding only in cities and urban areas. They now like to live in satellite towns/cities. In this way many problem can be solved. The concentration of population in urban areas and outflow of people from rural areas have created many socio-economic problems in India. City life attracts people due to modern civic amenities of living, but it creates some problems of housing, unemployment, slums, scarcity of goods etc.

**(17) Transport and tourism :**

Efficient, cheap, comfortable, fast and safe transport services have considerably increased national and international tourism. World tour is now not a fiction but a reality. In the past days Indian people used to go on pilgrimage only in their old age. They had no hope to come back alive due to slow and inconvenient system of transport. On the contrary the modern means of transport have facilitated the visitors to go on world tour abroad to see the places of historical, commercial, religious, science and natural beauty, cultural and educational importance and complete the journey in much less time and with more comfort and in this way India can make her economy better and better.

**(18) Transport and Monetisation of the Economy :**

Monetisation of the economy is possible due to transportation.

Previously exchange was made through the barter system. But after beginning of the road transportation exchange is made with the money. So we can say that the monetisation of the economy begins with the help of transportation.

### **A Historical Review :**

The mechanised road transport in India actually started during the beginning of the century. In India, the first car was imported during the year 1898. During the beginning of the present century, the vehicles were running and governed by the provincial law. The Motor Vehicles Act was enacted during the year 1914 first time in India for operation and controlling the motor vehicles. After world war I, the growth of motor vehicles in India began due to diversion of surplus army vehicles to civilian markets. This also led to unhealthy competition and even a war of rate-cutting amongst operators. For the control and operations of motor vehicle in India, the motor vehicles act 1914 was enacted. But after 1920 the problem of unhealthy competition has become so acute, that the regulation of motor vehicles is essential in India. Healthy competition within the industry itself and with the railways, the Motor Vehicles Act, 1939 was passed on the basis of recommendation made by the Wedge Wood Committee. The act of 1939, even today, provides for the creation and regional and provincial transport authorities to control motor vehicle operations, standards of maintenance etc. During 1947-48 different state Governments took permission from the central Government for the amendment of the M.V. Act. 1939, to nationalise the passenger transport industry and cancelling the stage carriage permit, took policy to ply vehicle as state run enterprises. Over the years, the Act has undergone several changes by way of amendments. In 1988, after the Motor Vehicle Bill was passed by both Houses of Parliament, it became operational throughout the country. The various state Governments of India enforced the amended Act of 1989. The state Governments are now empowered to amend the Act according to their local needs and circumstances with the concurrence of central Government. After 1947, the central Government enacted Road Transport Corporation Act, 1950 and special attention was given for the development of passenger road transport.

The road transport industry in India is developed after the 1st world war. The number of motor vehicles, of all kinds imported into India was only 4419 in 1913-14. The majority of these were cars and taxis. It was the end of the war which made available for civilian use, the spare Military vehicles gave an opportunity to road transport industry to develop. The industry took this opportunity and developed so rapidly that in no time it posed serious financial problems to the railways which were owned and operated mainly by the Government. The number of buses and trucks in the year 1951-52 were about 34,000 and 82,000 respectively, and in the year 1997-98. 5,12,000 and 22,65,000 respectively.

In 1932, the Government of India appointed the first committee in respect of passenger traffic due to competition between railways and road transport. The remedy as was suggested by the committee, was operation of road transport services by the railways. In 1933, the conference on road/rail competition discussed in detail the unfair condition in which the competition between road and rail was taking place and recommended a system of routewise licensing for bus service operation, after considering the public need or convenience and the existing transport services including transport by rail. This recommendation was incorporated in the Motor Vehicles Act 1939. The suggestions regarding railways developing closer co-operation with road passenger transport and acquiring commanding interest was subsequently also made by technical sub-committee of the post war policy committee on road transport, 1943. Transport advisory council, 1945 and Government of India's white paper of 1946 consequently the policy of setting up tripartite companies with the participation of railways, State Governments and private operations was incorporated in road transport corporation Act. 1948 which was later on ammended in 1950.

Nationalisation of road passenger transport services and the road transport corporation Act. 1950 did not have any compulsion in the Act. It only enabled the State Governments to establish road transport corporations for the whole or in part of a state. The notable feature of the Act. is that it provides considerable scope for the corporation to function as a commercial enterprise. The clause 22 of the Act. lays down. 'It shall be general principle of a corporation

that carrying on its undertaking it shall act on business principle.'

### **Organisation and structure in Road Transport.**

The analysis of passenger road transport services provided in different states shows that there is no uniform practice in regard to the organisation and management. The pattern of management varies from state to state. Some of them are managed through state road transport corporation, some are managed through departmental undertaking, some are managed through joint stock company and some are managed by Municipal Corporation which provide passenger road transport services in cities and towns.

The main objectives of the state participation in public road transport is to achieve greater efficiency and economy in operation and management. The large organisations comparatively have fewer financial problems and therefore, can provide the workshop and other facilities. The major forms of organisation and management from the point of view of their suitability for the internal organisation and management of nationalised road transport is as follows :

#### **(1) Public Corporation :**

A public corporation has been described as "a combination of public accountability and business management".<sup>20</sup> Being accountable to parliament, it may ensure the responsible functioning of the undertaking along with ensuring the fulfilment of various economic and social objectives, public corporation is free of the bureaucratic rigidity of the departmental form and thus may also facilitate the business like functioning of the undertaking. The state Transport undertaking under the corporation form not only speedy and correct decisions are ensured but the morale of the employees and consumers may also receive due attention. Due to the necessary flexibility, functional authority and responsibility may well be provided. It also provides ample scope for features like committees and conferences and representatives and parliamentary accountable Board of Directors in the internal organisation and management of nationalised road transport. Accountability to parliament ensures that no injustice is done to any interest and that various economic and social objectives are properly cared for.<sup>21</sup> In other works, proper functioning

of representative board of directorate is ensured. This being the case, naturally public corporation form of organisation is capable of giving better expression to various features of internal organisation of nationalised road transport.

### **(2) Departmental form of organisation and management :**

A Government department is a strictly hierarchial institution at whose head is a ministry answerable to cabinet and parliament for its activities. Thus whereas public accountability is complete in this form of organisation, this results only in partial delegation of authority and responsibility vested in each official of the department is such that none feels that he can independently take the decisions. The result is that even minor decision may not be taken by the officials without references to their superiors. With such a nature of authority and responsibility, the departmental form of organisation can hardly give an effective expression to the functional authority and responsibility in the internal organisation and management of nationalised road transport. In fact, a Government department is a highly bureaucratic institution loaded with all types of rules and procedures meant for safeguarding the correctness and secrecy of Government decisions. This may be highly useful in ordinary Government activity, but in all other cases it is bound to become synonymous with red tape, inadequate service and insensitivity to consumer needs. Joint consultation with various interest may not be feasible in this form of organisation at all as any compromise on the part of Government directly hits its prestige.

### **(3) Joint stock company or company form of organisation :**

A joint stock company or company form of State Transport undertaking is basically, a device to increase the participation of more and more persons so as to utilise savings and judgement of a multitude of people representing different walks of life. The basic advantage of this form of organisation lies in enlisting the co-operation of different individuals either on the financial front or on the managerial front. In the case of nationalised road transport in India, no financial co-operation from any quarter is intended. The state provides full capital, otherwise too, in fact, in a Government/ state company, the state is the only or controlling

shareholder. In such a position joint stock company form is hardly of any special value. As regards the co-operation on the managerial front, no co-operation in the shape of associating the non officials with the managerial functions and responsibility, is needed, simply because the very basic advantage of cross-feeding of experience and knowledge. <sup>22</sup> Which is said to follow from this, is not going to materialise in the case of nationalised road transport. In the private road transport in India most of the operators in the field are small men, lacking a high degree of education or managerial training, without adequate financial resources, subject to a lot of harassments and a certain degree of squeeze from police and other authorities, constantly driven from pillar to post in persuit of permits and facilities, and functioning generally in a some-what disorganised manner. <sup>23</sup> What advantage can there be from the cross-feeding of experience and knowledge with such people ?

Joint stock company, no doubt, provides ample scope for functional authority and responsibility and also for committee and conference form of management. It also provides scope for a representative board of directors. This is because it is the most flexible form of organisation as the changes in its organisation can be made early. However, this very utmost flexibility may become a source of trouble in this form of organisation as it may make the organisation irresponsible, a thing which can hardly be allowed to prevail in a public utility service like nationlised road transport. Again public accountability is greatly lacking in this organisation. In fact, Joint stock company form of organisation is not intended for this purpose at all. In such a case, naturally this form can hardly be said to be the best from efficiency point view of as irresponsibility and lack of public accountability are hardly conducive to efficiency, for those may adversely affect the correctness of the decisions as also impair the morale of the employees and consumers.

#### **4. Municipal transport services in various cities and towns and control by the Municipal corporation :**

Some of the municipal corporations in India like Delhi, Mumbai, Pune, Sholapur, Kolhapur, Ahemedabad, Jamnagar, Bhabnagar, Junagarh, Veraval, Porbandar, Surrendranagar, Limbdinagar and Chuda are plying their own Buses

within the cities and towns. For this purpose every municipal corporation have their own management for running their transport services. The organisation of the undertakings are managed by the Municipals corporations. Only limited powers are delegated to the general manager who is the Chief Executive of the city undertaking. He is not a full fledged member of the Municipal Transport committee which takes all major decisions regarding procurements of buses and opening of new routes. Moreover, the budget of the undertaking is a part of the total budget of the corporation, no budget commitment can, therefore, be made for more than one year without reference to the Municipal corporation. So, normally we get four forms of organisations under the omni-bus name of State Transport undertaking. These are — (i) Departmental undertaking directly under the State Government; (ii) Municipal undertakings owned and controlled by the Municipal Corporations; (iii) Companies or corporations formed under the Indian companies Act, 1956 and (iv) Road Transport Corporation formed under the Road Transport Corporation Act of 1950.

It is therefore, necessary to investigate the position objectively with facts and figures and with utmost care.

## **II. Objectives of the study :**

Our main purpose of the study is to look into performance of the NBSTC. In order to understand its problems in broader perspective we have compared with other State Transport Corporation.

The following are the objectives of the present study :

1. To study the organisational structure of other corporations, with special emphasis on NBSTC.
2. To evaluate the physical and financial performance of the corporations and study the financial problems of NBSTC.
3. To attempt to find out whether any change in the organisation structure of NBSTC can be made.

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4. To study the important area of weakness in NBSTC as compared to other profit making corporations, like Maharashtra SRTC, Cherran, TCL and ST Punjab.

5. To study what steps are to be taken by State Government to improve its performance.

6. To see how far the claim of loss incurred by the NBSTC can be economically justified.

### **III. Period of study :**

Our study covers a period of about 18 years (i.e. from 1980 to 1998) with a hope that it would represent the current picture of the corporation and would help to formulate policy for making the profit making organisations more viable and the loss making undertaking to make profitable.

### **IV. Sources of Data :**

As the study relates a number of State Transport undertakings, the published report and Annual administrative report of the stated undertakings form the main sources, for comparative analysis regarding performance with other stated undertakings. The performance reports compiled by the CIRT, Pune has been consulted. Further discussions are also made with the officials of the NBSTC and other selected State Transport undertakings. The various official reports, News paper, Books, Seminer paper and articles in journal would be consulted. In addition, the road transport act, motor vechicles act and the official records of the undertakings form available sources of information.

### **V. Plan of study :**

The frame work of this study will be incomplete without mention of comprehensive scheme of chapters to be followed in presenting this dissertation. The study comprises eight chapters in all.

**Chapter I** is introductory in nature, and present the strategic importance of road transport industry in India's development context.

**Chapter II** would deal with the infrastructure and development of road transport in



India. It includes national scene, socio-cultural aspect of urban people, nature and scenario of urban transport, significance of urban transport and effect of congestion in urban areas. This chapter also deals with the socio-cultural aspect of rural people and scenario of rural transport. It would also deal with the growth of transport in different plan periods and in this context we shall emphasis on the problems of the NBSTC.

*Chapter III* deals with transport infrastructure in North Bengal. It includes regional importance of North Bengal, present state transport facilities. This chapter is made purely on summary basis.

*Chapter IV* deals with the NBSTC. It is established under the Corporation Act, 1950. It is one of the undertakings among 71. STU's, which is running with loss (before tax) during the study period (1980 to 1998).

*Chapter V* deals with Maharashtra state transport corporation. It is one of the state transport undertakings in India which is running with profit (before tax) during our study period. In this chapter, we have discussed the geographical scenario of the state of Maharashtra, Maharashtra state transport corporation, its management pattern and organisation structure, composition of MSRTC board, its jurisdiction, organisation of division level and depots level, number of depots, number of buses, controlling system at different levels and the performance appraisal of MSRTC during the period 1980-1998. It also deals the comparison with NBSTC on various variables to identify the cause of losses in NBSTC.

*Chapter VI* deals with Cheran transport corporation limited. It is established under the Company's Act 1956. It is also one of the state undertakings which is running with profit (before tax) during our study period (1980 - 1998). In this chapter we have discussed geographical scenario of the state of Tamilnadu and specially the district of Coimbatore, historical background of Cheran TCL, its management pattern and organisation structure, compositions of the Cheran TCL board, its jurisdiction, organisation at head office level, divisional offices, depot level, number of depots, number of buses, controlling system at divisions and depot level, and performance appraisal of the Cheran TCL during the period 1980- 1998. It also

deal with comparison with NorthBengal State Transport corporation on the various parameters and to find out the causes of losses in NBSTC.

*Chapter VII* deals with state Transport of Punjab. It is one of the departmental forms of State Transport undertakings. It is also one of the undertaking among 71 STU's in India, which is running with profit (before tax) during our study period (1980- 1998).In this chapter we have discussed the geographical scenario of the state of Punjab, histroical background of Punjab road ways, its management pattern and organisational structure, compositions of the S.T.Punjab board, its jurisdiction, organisation of head office level, divisional offices and depot management, number of depots, number of buses, controlling system at divisions and depot management level and performance appraisal of the S.T.Punjab during the period 1980 - 1998. It also deals comparison with North Bengal State Transport corporation on various parameters and there efforts have been taken to to find out the causes of losses in NBSTC.

*Chapter VIII* would be made in the light of the discussions in the foregoing chapters. It would make a comparative study among the stated STU's and would find out the major reasons for making loss year after year by NBSTC.

### **VI. Research Methodology :**

The methodology of the present study is an empirical investigation of a micro-nature. Thus it is not a sample study. Secondly, both primary and secondary sources of data are utilised. Thirdly, the broad inference is drawn from analysis of discussions and interviews with the conerned officials.

The performence of a State Transport undertaking is dependent on numerous factors and quite a few of them fall out side the control of the organisation. As there is no accepted norms on which public sector road transport can be compared, the generally aaccepted methods of analysis is suitably modified. For the purpose of this study, various account and statistical techniques like comparative statements, time series analysis, would be used. The variables would be identified. The forecasts would be made on the basis of analysis of data.

Three types of performance evaluation has been attempted in the study:

- 1) Operational performance.
- 2) Financial performance.
- 3) Statistical Techniques.

### **1) Operational Performance :**

Operational performance in the case of a road passenger transport undertaking can be viewed in terms of physical performance which throws light on the state of physical productivity. <sup>24</sup> Performance is normally interpreted as “efficiency in production” to be measured by some relationship between outputs and inputs. Inputs which are taken for judging productivity are :

1. Labour employed.
2. Buses used in operation and
3. Diesel, lubricants etc; consumed.

### **i) Fleet Utilisation :**

Fleet utilisation, also termed as vehicular utilisation is the ratio of the number of vehicles on road to the fleet held by the organisation. A corporation’s ability to provide services is dependent on the number of vehicles, their average age, condition, seating capacity among other things. The vehicles owned by an organisation can not always be put on roads for routine maintenance/repairs besides the need to maintain traffic spares.

According to the recommendation of the study group set up by the association of the state road transport undertakings, “The fleet utilisation should be as follows :

i)	Vehicle in operation	—	90 %
ii)	Road worthy vehicles but not in operation	—	2 %
iii)	Off road vehicles	—	8 % <sup>25</sup>
			100 %

Thus, at any point of time the number of fleet in scheduled services is

likely to be less than the total number of fleet held by the corporation.

Percentage of fleet utilisation is calculated as follows :

$$\frac{\text{No. of vehicles on road}}{\text{No. of vehicles held.}} \times 100$$

The higher the percentage of vehicles on road to the number of vehicles held by the organisation, the better is the performance. This is, also rightly regarded as the “acid test of efficiency of the state road transport Undertakings”.<sup>26</sup>

Thus, the higher the vehicular utilisation (Fleet utilisation) the higher the percentage of vehicles available, requiring low/no cancellations in services and lower break-downs. So it reflects the efficiency of the maintenance department of the corporations.<sup>27</sup>

### **ii) Vehicle Utilisation :**

It refers to the number of kilometers done per vehicle on the road per day. It indicates the extent of use (in kms.) of the vehicles on road. It indirectly reveals the efficiency of the traffic department. Higher vehicle utilisation helps in allocating the fixed costs like the cost of personnel, motor vehicle taxes, and on interest on capital over a large number of kilometer thereby reducing the unit cost of operation and leads to better margin.<sup>28</sup>

There have been no agreed and uniform standards about the vehicle utilisation. P. Sundarsaram<sup>29</sup> has pointed out “It is one of the unsolved riddles of the nationalised transport in the country that on such an important factor like vehicle utilisation, there have been no agreed standards. In rural transport, the vehicle utilisation or effective kilometres per bus per day varies between 200 kilometres to 300 kilometres. It is true that peculiar operating conditions like city operations, ghat roads , hill roads/tracks, narrow canal roads etc, limit vehicle utilisation. But there must be a suitable standard. It requires a closer scrutiny. Standards of vehicle utilisation will be fixed separately for passenger service and express service and inter-district and inter-state routes. Subhas Vaidya<sup>30</sup> has shown that vehicle utilisation in express services on inter-state routes is higher than in

passenger services on inter-districts routes with the increase in speed limits and better road conditions specially in the plains. Any passenger road transport undertakings, must be able to achieve a vehicle utilisation of 400 kilometres a day on an average. <sup>31</sup>

Vehicle utilisation is worked out as follows :

Gross/effective kms. done per day

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No. of vehicles on road per day.

But utilisation of buses on road<sup>32</sup> kilometers done per bus on road per day is bus utilisation.

Averages Bus utilisation =  $\frac{\text{Total eff. kms. done on a day.}}{\text{Total Buses on road on that day.}}$

Bus utilisation on buses held :

Kilometers done per bus held =  $\frac{\text{Average eff. km. done per day}}{\text{Avg. no. of buses held per day.}}$

### iii. Consumption of Diesels, Lubricants and Oils : L

Operational performance of a road transport undertaking can be evaluated in terms of the effective use of major inputs viz. diesel lubricants and other oils. A higher number of kilometers per litre will mean lower cost of production and therefore shall be termed as a higher level of efficiency.

### iv. Total Passenger Carried :

One of the outputs of a road transport undertaking is the number of passengers carried per bus during the year. The higher the number of passengers carried by per bus, the higher will be the efficiency of the undertaking, other things remaining same. An increase in the total number of passengers carried becomes a doubtful criteria because it is possible that this increase in the number of buses may be more than the percent increase in the number of total passengers. Therefore, number of passengers carried by per bus per day is a better criteria for judging the

efficiency of the undertaking.

### v. Occupation Ratio :

Occupation ratio is the percentage of seat kms. Occupied to seat kms. offered. It is also termed as "load factor". If the "Load factor" is low, it means that there are a number of vacant/unoccupied seats and consequent loss of revenues. Again if the load factor is high and beyond hundred it represents a situation of overcrowding which, of course, is financially profitable, but as regards quality of service, reveals that there is considerable scope of augmentation of number of buses. <sup>33</sup>

Percentage of occupation ratio is calculated as follows :

$$\text{Percentage of occupation ratio} = \frac{\text{Seat kms. occupied}}{\text{Seat kms. offered}} \times 100$$

If the ratio is between 70% to 100%, it is generally considered as suggesting some scope for improvement and if it is more than hundred it is not generally acceptable.

### vi. Staff - bus ratio :

Staff-bus ratio is the ratio of total number of employees to the total number of buses in operation or total number of schedules in operation. The ratio should be exactly equal to the norm. The lower staff Bus ratio, however, is not indicative of a higher level of efficiency as pointed out by P. Suhdarsanam. <sup>34</sup>

Yet it does show that personnel cost as a proportion of total cost has not assumed alarming proportions. Another implications of this phenomenon is that it has not generated much primary employment as transport industry considered to be a labour intensive <sup>35</sup> industry should have.

It is generally assumed that an organisation or a unit operating with more number of persons employed per bus is to that extent less efficient.

This can be further checked efficiently by using the following formula

and taking the vehicle utilisation ratio into consideration. The formula for judging the comparative economics is.

$$\frac{S \times 100}{K}$$

Where S stands for ratio of staff employed per bus, K stands for average vehicle utilisation in terms of kilometres. This when calculated gives the staff employed per unit of 100 kilometres and a lower ratio means a more efficient undertaking. <sup>36</sup> Staff bus ratio is worked out as follows :

$$\frac{\text{Total Staff}}{\text{Average number of buses on road}} \times 100$$

**vii. Capacity :**

The term capacity in the road transport service which is measured by the strength of the fleet or the number of vehicles and their seating capacity. While its sustenance and development reflect the efficiency of the undertaking. Part of the fleet has to be kept in reserve for emergency and substitution duty and invariably another part of it is in the workshop of the undertaking repairs. On this account, therefore the fleet can be divided into three categories.

- a) Buses on operational duty (i.e. on scheduled services)
- b) Buses in reserve (or fleet in spare)
- c) Buses in workshop (or fleet under repairs)

D. N. Chester <sup>37</sup> has stated, "There is a number of ways by which the size of a concern might be measured vehicle owned, passenger carried, area covered, route miles operated or capital invested".

The fleet may increase without proportionate increase in the scheduled services thereby reducing the capacity of the undertaking to produce transport services rather than increase it. It will therefore be relevant to have a look at the distribution of fleet strength between scheduled services on the one hand and buses in reserve and in repairs on the other.

Higher percentage of buses on scheduled service does show a higher degree of efficiency and lower percentage of buses on scheduled service does show a lower degree of efficiency.<sup>38</sup>

### **viii. Breakdown :**

Another test of operational performance is the number of breakdowns a transport undertaking has. Breakdown is defined as stoppage of bus due to mechanical defects or other failures rendering the bus unable to operate irrespective of time involved.

#### **(a) Mechanical Breakdown :**

Stoppage of a bus on road due to mechanical defects irrespective of the time involved.

#### **(b) Other Breakdowns :**

All breakdowns due to non-mechanical causes like fuel shortage, engine oil shortage, tyre puncture or burst etc. Stoppage of bus due to accidents should be counted as breakdown.

The relationship between efficiency and number of breakdowns is inverse. A smaller number of breakdowns per 10,000 kms. means less discomfort to the passenger, a better quality of service and on lower loss to the revenue besides higher productivity.

### **ix. Accidents :**

Accident is one of the tests of operational performance of state transport undertakings. It is the number of accidents suffered by it during a period. Other things being equal, higher the number of total accidents or the accidents per lakh kilometre of operations, lower the quality of the service. Accidents add to an undertaking in respect of repairs, premature amortisation of the fleet and reduced or gripped services. However, the nature of terrain being altogether different in plain and hill areas, the later are more prone to accidents and therefore, the performance of the two are not comparable.



### x. Volume of operation :<sup>39</sup>

The % of the operating cost to the total traffic revenue.

$$\% \text{ of operating ratio} = \frac{\text{Total cost} - (\text{interest} + \text{taxes})}{\text{Traffic Revenue}} \times 100$$

It reflects the relationship between operating cost and traffic revenue. Lower the percentage indicates the higher the efficiency and vice versa.

### xi. Vehicle productivity :

The vehicle productivity indicates the average number of effective kms. performed by bus held per day. The vehicle productivity is the real and recent to adjudge the fleet performance. In fact without achieving reasonable level of vehicle productivity, no STU can attain financial viability.

### xii. Man power productivity/ staff productivity :

Man power productivity is the total effective kilometres operated for a period divided by total man days paid for.<sup>40</sup>

Staff productivity refers to the productivity of entire manpower engaged in keeping the bus services going on. The staff productivity is defined both in terms of kilometres produced per worker per day and the average number of passengers carried per worker per day. If the staff productivity in terms of kilometres produced per worker per day is upswing, then we can say that the performance of STU's is good.

### xiii. Load factor :

Load factor is the percentage of passenger kilometres to capacity kilometres. It is also defined as the % of actual passenger earning to expected passenger earning at full load including standees allowed.

### xiv. Crew Productivity :<sup>41</sup>

A driver and a conductor is termed as crew. Crew productivity is defined as

Effective kms. operated per day during the period

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Total number of crew days paid for.

The higher the kms. operated the better the efficiency and the better the productivity of crew.

**xv. Punctuality :**<sup>42</sup>

a) *Punctuality in arrivals* : This is the percentage ratio of scheduled trips arrived on time to total number of scheduled trips actually arrived and is calculated as :

$$= \frac{\text{Total number of scheduled trips actually arrived - all late arrivals}}{\text{Total number of scheduled trips actually arrived.}} \times 100$$

b) *Punctuality in departures* : This is the % ratio of scheduled trips departed on time to the total no. of scheduled trips actually departed.

$$= \frac{\text{Total number of scheduled trips actually departed - all late departures}}{\text{Total number of scheduled trips actually departed.}} \times 100$$

Scheduled trips cancelled should not be included for calculation of percentage of late departures or percentage regularly in departures.

The higher the rate of punctuality the higher the confidence of general public with the corporation and in turn will increase the turnover.

**xvi Spread over duty :**<sup>43</sup>

Spread over means the period between the commencement of duty on any day and the termination of duty on that day. This also measures the physical performance of a corporation.

**xvii. Steering duty :**<sup>44</sup>

Steering duty is the time spent on active duty at the wheel plus any terminal lay over time ( i.e. the halting time at any handing over, not exceeding or

fixed limit to be prescribed). It also includes time spent on attendance to the bus and attendance to work related to the operation of the bus. The more the steering duty in the operation the higher will be the fleet utilisation, vehicle utilisation, and the better will be turnover.

### **xviii. Reliability and safety :**

Reliability and safety are crucial aspects to the operation of bus service. The customers will patronage the bus service, provided the reliability and safety is assured. Rate of breakdown, regularity and punctuality are the important parameters to judge reliability of the bus service. Rate of accident per lakh kilometre is one of the important parameters to be considered to judge safety of the bus service.

### **xix. Tyre and tube performance :**

It is one of the criteria for measuring the physical or operational performance of State Transport undertakings. It is the total kilometre operated by tyre and tubes in a period. If the higher kilometres operated per tyre and tube, then it can be said that the performance of State Transport undertaking is good. But if the lower kilometres operated per tyre and tube then it can be said that the performance of State Transport undertakings is lower. It can be measured in the following way.

Total kms. operated in a given period

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Number of tyres and tubes.

## **2. Financial Performance :**

The main criteria to measure the financial performance are listed below with their explanation.

### **a. Earning per kilometre (Revenue) :**

The earnings per vehicle km. measures the earning of the undertakings. It can be improved by increasing load factor, reducing revenue leakage, using buses of different capacity depending on traffic demand and selecting appropriate fare structure.

### **b. Cost per vehicle kilometre :**

The cost per vehicle kilometre (cpkm) measures the economy achieved in operation. It means the operation or providing services to the public per effective kilometre.

The cost per vehicle kilometre can be increased with the passage of time due to staff cost, fuel cost and motor vehicle taxes and the general inflationary trend. The impact of such steep rise in the cost can be considered as resulting in the erosion of the margin with resultant consequences on the finances of the organisation.

### **c. The net profit/loss per km .**

Net profits in road transport undertakings is the difference between revenue per km. and cost per km.

The aim of every transport operator is to maximise the returns from the services offered. The returns are essential for its growth as well as operating some surplus for other sectors of the economy. J. M. Thomson is of the opinion that "under certain conditions, the ability to make profit is a reasonable indication of the community value of an enterprise whether it is publicly or privately owned.

### **d. Total revenue and total cost per vehicle per day (on road) :**

It is one of the tests to measure the financial performance of any transport undertaking.

This can be calculated in the following way.

Total revenue per vehicle per day (Rs) — Total cost per vehicle per day (Rs) = Result.

### **e. Cost revenue ratio :**

It measured the extent to which cost incurred are covered by the revenue. A ratio more than 100 indicates that the undertaking has increased a loss.

The ratio can be calculated in the following way :

$$\text{Cost revenue ratio} = \frac{\text{Cost}}{\text{Revenue}} \times 100$$

**f. Revenue capital ratio :**

It measures the level of capital turnover. Higher the capital turnover ratio, better are the asset utilisation and financial performance. Undertaking with low investment in productive assets will have low capital turnover.

This ratio can be calculated in the following way :

$$\text{Revenue capital ratio} = \frac{\text{Total revenue}}{\text{Total capital}} \times 100$$

**g. Net profit :**

Net profit, is the difference between the total revenue and the total cost including interest payments, depreciation and taxes.

This can be calculated in the following way :

$$\text{Net profit} = \text{Total revenue} - \text{Total cost (interest payments + depreciation + taxes)}$$

It will help to know how much of the cost is covered by revenue and how much is the margin. The higher the margin the better for the corporation.

**h. Return on Investment :**

Return on investment is a single comprehensive measure that condenses everything happening within an organisation. It is regarded as the basic measure of the firms overall efficiency not merely or profit ability as Lal Nigam <sup>46</sup> points out "it is an indicator of the fundamental ability of the management to extract the most out of men, materials and money." All managerial decisions get ultimately translated into financial terms and are presented in this summary expression. The ratio further has the merit of reminding one that the goal of business is to maximise returns from the capital employed. Return on investment indicates the extent and scope of the

final reward to the owners (i.e. State Government) for investing capital. Using return on investment criteria for calculation of profitability. Earnings either before or after interest and taxes i.e. EBIT or EAT or Earnings before taxes (EBT).<sup>47</sup>

$$\text{ROI}^{48} = \frac{\text{Earnings after tax}}{\text{Net Block + Working capital}}$$

or.

$$\text{ROI} = \frac{\text{Earnings before tax}}{\text{Net investment}}$$

or simply

$$\text{ROI}^{49} = \frac{\text{Profit}}{\text{Capital employed}} = \frac{\text{Profit}}{\text{Sales}} \times \frac{\text{Sales}}{\text{Capital employed}}$$

Since ROI is the percentage of profit to capital employed and is the product of two ratios.

- 1) % of profit to sales.
- 2) Sales in capital employed i.e. ratio of asset turnover.

Therefore it is obvious that a low or negative return on investment is due to either falling profit margin and or a low state of asset turnover or both.

So if profit margins can not be improved due to either price being varied and cost constraints, the only other way to improve the ROI is to increase the rate of asset turnover i.e. to increase productivity. Internal rate of return criterion could not give us this result, therefore, ROI has been preferred to IRR criterion for calculating the profitability of undertaking in this study.<sup>50</sup>

### **i. Break even analysis :**

In a bus transport undertaking, break-even analysis is a study of relationship between profit/loss on the one hand and fixed cost, variable operating cost, Bus kilometres and earning per bus kilometre on the other. By profit we mean operating profits before taxes but after interest on capital and loans. Managers in road transport industry are required to take decisions affecting each of the above

factors almost everyday.

An undertaking employs assets with fixed costs in the hope that volume of operations will produce revenue more than sufficient to cover all fixed costs and variable costs. The break-even analysis must be in relation to a period of time.

The intersection of the total cost line and the total revenue line represents the break even point. At this point the revenue from passengers etc., after deduction of variable costs for the volume of operations indicated at that point are equal to the total fixed cost for the period. This is the no profit no loss volume of operation. In other words, at this point

$EPKM \times BEKMS - NVCPKM \times BEKMS = \text{Fixed costs}$ . Rearrange the equation, the breakeven point is <sup>51</sup>

$BEKMS (EPKM - NVCPKM) = \text{FIXED COSTS}$ .

$$BEKMS = \frac{\text{FIXED COST}}{EPKM - NVCPKM}$$

For each additional increment of bus kilometre above break even point, there is an increasing profit, but if Bus kilometres fall below breakeven point, there is increasing loss.

Here,  $EPKM = \text{Earning per kilometre}$ .

$BEKMS = \text{Breakeven kilometres}$ .

$NVCPKM = \text{Net variable cost per kilometre (excludes passenger tax)}$

J. We can also analyse the following cost to measure the financial performance. It is grouped on the basis of nature of expenses because functional classification has certain limitations. According to nature of expenses it is grouped as follows :

a) Cost of personnel, b) Cost of material, c) Depreciation, d) Other overheads and e) Taxes.

The cost are analysed in absolute because it enables to understand various items of costs in terms of actual amounts spent and in analysing the size of

increases that took place during the period.

### **K. Value added accounting :**

It is the development of a new kind of accounting for judging the performance of STU's.

While in many of the western countries an increasing number of companies are presenting the value added statement in their annual reports, it is yet to pick up momentum in India. Its presentation in annual reports is neither statutory nor obligatory for companies in our country. Never the-less, some companies have started presenting value added statement in their annual reports. With this milieu in perspective, this paper intends to examine the concept of value added accounting and suggest value added as an effective alternative tool that can be applied for measuring the performance of public enterprise.

The value added is the excess of turnover plus income from services over the cost of bought in goods and services. The term 'turnover' means the **gross sales of goods plus duties minus the amount of returns, rebates, commissions and discounts.** The term income from other sources includes receipts from sources such as dividend, rent etc. The term 'cost of bought in materials' includes the cost of materials consumed and other stores and spare parts consumed during the process of manufacture. The term 'cost of services' includes the cost of procuring services, power, fuel, repairs and maintenance, bank charges, insurance premium, advertising, publicity, postage and telephone, printing, auditing, legal charges etc.

value added statement is prepared in two parts, The first part deals with the 'generation' of value added representing the total of three main components viz. Turnover, Bought in (including materials and services) and income from other sources. The second part deals with the application of value added comprising the following main components.

(a) Workers (b) Providers of capitals (c) Government and (d) Owners.

The share available to the workers includes, payment made to them during the period in form of wages and salaries, loans, contribution to provident fund, gratuity etc.

The Governments share of value added is in the form of income tax, excise



duty, sales tax, octroi duty, custom duty, rate and taxes. This amount will be reduced by the amount of export incentives, tax credit, subsidies and refund of duty granted by the Government.

The share available to provide of capital includes interest on debentures, long term deposits and public deposits.

A share to owner is paid in the form of dividends. It also includes the amount transferred to various types of reserves statutory and non- statutory.

The remainder of the value added is deemed to be reinvested in the business in the form of depreciation and retained earnings.

The value added statement will be a more suitable measure, in the present day context, to throw better light on the financial performance.<sup>52</sup>

### **3. Statistical Techniques :**

Time series analysis would be used for the financial variables. Comparative analysis would be made between NBSTC and other selected State Transport undertaking in this study.

Besides the above methodology, it is to be noted that to judge the performance of the respective Transport corporation, the average results calculated by CIRT (Training and Research), Pune India is taken as instrument for our work.

### **(VII) Review of Methodology :**

In this study the performance of transport corporations are measured. The techniques and methodologies used in this study are also used by different authority in this sector namely Sri S. K. Arora in his book "Economics of Management in Road Transport Industry"; Sri Indrajit Sing in his book "Transport Economy"; J. S. Mathur in his book "Transport and Economic Development" S. K. Srivastava in his book "Economics of Transport with special reference to transport development in India"; R. R. Khan in his book "Transport Management"; A. J. Harrison in his book "Economics of Transport Appraisal"; A. N. Batlibai in his book "Road Transport in India and Abroad"; K. Bhatnagar in his book "Transport in Modern India"; Sri Nabagopal Das in his book "The public Sector in India"; D. Dunt in his book "Transport problems in India"; V. V. Ramanadhan in

his book "Road Transport in India"; Sri N. N. Chatterjee in his book "Performance Appraisal Systems in public Enterprise-An Evaluation"; Sri Pradip Khandwala in his book "Management of Public Sector performance"; M. O. Mathew in his book "Rail and Road Transport in India"; T. Ramaswami in his book "Public Enterprises in India objectives and performance"; E. K. Verghese in his book "Development and Significance of Transport In India"; Sri R. Agarkar in his book "Regional Transport Development in India"; Sri D. P. Rao in his book "Trends in Indian Transport system"; S. P. S. Pruthi in his book "Punjab Roadways- A Management Study"; Sri S. Vaidya in his book "The Inter State Performance of Passenger Buses"; are other authorities in support of this methodologies and P. Sunarsanam, M. K. G. Nair, Bagade, Patankar, Kulkarni, Sastry, CIRT, Pune and CRRI, New Delhi have also recognised the methods and techniques used in this study.

### **(VIII) Limitation of the study :**

The present study is limited to the appraisal of physical and financial performance, quality of service, impact of taxation and contribution to the State exchequer by NBSTC and other three selected State Transport undertakings. The data was mainly collected from Annual Administrative report. As the study covered a period of eighteen years, certain details regarding the earlier period were also not readily available. The personnel in the statistical section were not well equipped with the transport accounting systems and as such lot of troubles were faced in collecting the data. An important point to be noted here is that although NBSTC, MSRTC, Cheran TCL and S.T. Punjab has become a member of the association as required by the association of state road transport undertakings, yet they do not send information as required by the Association regularly. This practical difficulty actually limited the greater scope of the present study. The present study has not covered the Railway Transport though railways are considered the life-line of a nation. It occupies the most premier place amongst all the means of transport. For non availability of data, we have mainly studied on passenger road transport. So we have not discussed the railway in the present study. The study has not covered the inventory control aspect. Depot-wise comparative study of NBSTC and other 3 selected state transport undertakings has also been left out of its scope because

of heterogeneity in demand of transport services in various depots.

## NOTES AND REFERENCES

1. Alfred Marshall, "Industry and Trade", (1921), P.421.
2. Wilfred owen, "Strategy for mobility (Brookings) institution (1964), P. 37
3. Willam C. Hood and Anthony Scott, out put, "Labour and capital in the canadian economy", A study for the Royal commission on canada's Economic Prospects (ottawa, Fele, 1957)
4. E.K. Hawkins, "Roads and Road Transport in an underdeveloped country", (London, colonial office, 1962), P. 26
5. E.K. Hawkins, "Roads and Road Transport in an underdeveloped country", (London, colonial office, 1962), P. 37
6. Amartya Sen, "On Economic inequenity", (Oxford University press, delhi, 1975)
7. Ibid - 5
8. Ibid - 10
9. Bidhi chand, "Transport Facilities and Industrialisation", Punjab University, Department of commerce and business Management, conference paper at GND. 1988, P. 2
10. C. P. Kindleberger "Economic Development", The Megraw Hill Book company, INC, Tokyo, 1958, P. 161
11. F. P. Amita, "Transport Facilities for Industrial Development" in C.N. Vakil (ed) Industrial development of India policy and problems. Orient lingman november 1973, P. 265.
12. S. S. Khera, "Management and Control in Public Enterprise" 1964, P. 96.
13. Report of the "Road Transport Reorganisation Committee", 1959, P.6.
14. Ibid, P. 6.
15. Basic road statistics of India, Transport Research Division, Ministry of Shipping and Transport, New Delhi.
16. Chrstopher I Savage, "An economic History of Transport" (London

Hutehinson, 1959), P. 221.

17. Raghavan, S.V.S. "Road Transport in India" Eastern economist", vol. 73 no. 19 november 1979.
18. Mahajan V. S. "Transport and India's Economic Development". AICC Economic Review, september 22, 1981
19. Iqbal, B A. "Roads and Road Transport" Eastern Economist, volume 66 no. 21 May 1976.
20. A Sankarnath, "Management control in Road Transport Services", management. Lokudyog, Feb. 1978, P. 25.
21. Prakash and Dr. J. K. Irani some issues in "Public Road Transport management". Lokudyog, Feb. 1978, P. 25
22. V. Ramanadhan, "Finance of Public Enterprises". P. 248.
23. Ibid., P. 319.
24. Singh, Inderjit. "Transport Economy." P.54
25. Report on City Transport Services, Reviewed in State Transport News, Asrtu study Group, vol. VI. No. 2, Aug. 71, P. 25.
26. Gupta, J. N. In Defence of Publle Sector Road Transport State Transport News, Vol. VI, No. 7 P. 7
27. Viswanadhan, V. Op. cit., P. 305
28. Viswanadhan, V. Op. cit., P. 311
29. The Alchemy of Scheduling, A managementcontract system Approach, CIRT, Pune, may, 1981.
30. Arora, S. K. Op. cit., P. 72
31. Ibid., PP. 72 - 73
32. Performance Statistics of State Transport Undertakings. Published by CIRT, Pune, Glossary.
33. Bavoja, G. C., Growth and inadequacies.
34. Sundarsanam, P., The Alchemy of Schduling - A. Management Control System Approach (CIRT, Pune, May - 1981)
35. Employment in Road Transport Industry, National Council of Applied Economic Research, New Delhi.
36. Arora. S. K. "Economic Management in Road Transport Industry"

37. Chester. D. N. "Public Control of Road, Passenger, Transport."
38. Arora. S. K. "Economic Management in Road Transport Industry"  
P. P. 66 - 67.
39. Performance Statistics of State Transport Undertakings. Published by CIRT,  
Pune, Glossary.
40. Performance Statistics of State Transport Undertakings. Published by CIRT,  
Pune, Glossary.
41. Performance Statistics of State Transport Undertakings. Published by CIRT,  
Pune, Glossary.
42. Performance Statistics of State Transport Undertakings. Published by CIRT,  
Pune, Glossary.
43. Performance Statistics of State Transport Undertakings. Published by CIRT,  
Pune, Glossary.
44. Performance Statistics of State Transport Undertakings. Published by CIRT,  
Pune, Glossary. 1994 - 95 and 1995 - 96.
45. Arora. S. K. "Economic Management in Road Transport Industry"  
P. 97.
46. Ibid. PP. 92 - 93
47. Gupta and Radhaswamy, Financial Statement Analysis (New Delhi, Sultan  
Chand and Company, 1984)
48. B. M. Lall Nigam, Op. cit., P. 93
49. Gupta and Radhaswamy, Op. cit., P. 40
50. Arora. S. K. "Economic Management in Road Transport Industry"  
P. 24.
51. Agashe. L.G. "Break Even Analysis for Improving Profitability in  
State Transport Undertaking", Published in Journal of Transport  
Management, CIRT, Pune, September - 1978.
52. Sahay, S. S., "Financial management of Public Enterprises", S. Chand  
& Co. Ltd., New Delhi, 1984, P. 67.