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INLAND TRANSPORT COSTS

—Influence on Economic Development

By

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PREFACE.

With the spread of modern industrial philosophy and its acceptance all over the world, the role of transport has assumed an increasing measure of recognition. There is naturally a difference between the importance assigned to it by the earlier economists and the later ones. Since with scientific progress, all the handicaps of nature are reducible to economic terms, the pivot round which the importance of transport centres now, is its cost and time. Much thought has therefore been devoted to the problem of transport charges, and in particular, railroad freights, in the advanced communities of the world and studies of a general nature establishing a *liaison* between such charges and economic development have been made. The attempt made here is more comprehensive in so far as it begins before the railway period. It is also in respect of a comparatively new country, – in a modern industrial sense. But what is most deserving of notice is that it is of a more precise character, statistical material having been employed to a large extent in clarifying the action and reaction of one upon the other. As far as the author's information goes, this has not hitherto been attempted. It was in the first instance planned to work out definite statistical correlations, in spite of the data involving a time element, but the idea was abandoned in view of authoritative pronouncements against the usefulness of such method, in favour of the graphical method.

An attempt has been made, so far as was possible, to reach original authoritative documentary sources, for the collection of material – in the Libraries and Record Departments of, the London School of Economics and Political Science, the High Commissioner for India, the British Museum, the East India section of the London Chamber of Commerce etc. The East India Company dispatches, reports, and their correspondence with the Government of India and with the provinces have all been drawn upon to throw light on conditions in the earlier period. Besides, there were found various tracts, written in support of one point of view against another, evidence from which was weighed and utilised on its worth having been proved, in the light of more authoritative documents. Treatises by Sir William Andrew, Ghose, E. Davidson, Thornton, MacGeorge, Bell, Huddleston, Mehta and others have also furnished a useful back-ground. For the later period, the correspondence between the trades associations, the railway authorities and the Government of India and the Provincial Governments have furnished evidence of their policy. The Reports made by the Government Directors to the Secretary of State, and later by the Railway Board, have also furnished a useful store of information, together with the periodical reports of individual railway companies and the addresses by their chairmen to shareholders. It may be pointed out that, wherever interested sources have been drawn upon, the evidence has been weighed in the light of more authoritative sources, and an endeavour made to allocate to it its due importance. Where figures from such sources have been made use of care has been taken to see that they have not been disputed in the course of subsequent controversy.

Special mention needs to be made of a very reliable source, viz. "Inquiry into the rise of Prices in India" conducted by S. K. Datta. The Government of India, though not accepting Datta's conclusions, pronounced the statistical material he had collected to be "a very valuable contribution to the economic and financial history of India"[1] Indeed the material at Datta's and his collaborators' command was so authoritative and so extensive and his experience in statistical works so mature, that the writer found no grounds for doubting its authenticity. Besides these, the official returns on, Prices and Wages, Rail and River-borne Trade, the market reports current of the Chambers of Commerce, the Sea-borne Trade and Navigation have all been drawn upon, and used in coordination. The minutes of evidence and Reports of various Royal Commissions and of Committees on Famine, Public Works, Railways, Industry, Fiscal Policy, Retrenchment etc., issued as command papers, have also been of great assistance. Mention should also be made of the numerous minutes of evidence and reports issued by the Tariff Board and the Rates Advisory Committee recently appointed.

There were numerous points however, on which none of these sources could throw sufficient light, and many officials past and present of the Government of India and the India Office were approached either with a request to furnish the necessary information or to assist to furnish it. The Railway Board, the individual railway administrations and the prominent trade associations and Chambers of Commerce were all

1. Resolution No. 1614 F. 24th October 1914.

approached, some successfully. The writer would like to express his thanks to those who supported his request for information, and to those who supplied it.

The book, originally a thesis, was prepared under the supervision of Mr. W. Tetley Stephenson, M. A. ; M. Inst. Tr.; Cassell Reader in Commerce and Head of the Department of Transport in the University of London. To his painstaking care and courtesy and to the kindness of the members of the London School of Economics are due, the good points, if any, about the book; and the writer would like to express his sense of gratitude to them. The writer would also like to acknowledge his indebtedness to the Government of His Highness the Maharaja Gaekwar of Baroda who made the publication of the book possible.

Baroda, F. P. A.
December 1932.

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AUTHOR'S NOTE.

The book was written as a thesis for the degree of Ph. D. (Econ.) of the London University and submitted to that body in June 1930. The author had at his command in London, between the London School of Economics & Political Science, the India Office, the British Museum and other institutions too numerous to detail, a wealth of material to furnish a mine of information. Later, however, when through the courtesy of His Highness the Maharaja Gaekwar's Government the book was ordered to be published, the author could not, on account of the absence of facilities to refer to the old sources of information, bring his material up to date in every instance. Hence it is that the figures in some of the tables have to omit reference to the more recent years.

MILEAGE INDEX.

		Miles.
Ahmedabad – Bombay	...	310
„ – Nagpore	...	597
Asansol – Bombay	...	1,154 *via* Nagpore.
„ – Howrah	...	132
„ – Cawnpore	...	500
Bilaspore – Bombay	...	779
„ – Shalimar	...	445
Cawnpore – Delhi	...	271
„ – Jubbulpore	...	349
„ – Karachi	...	1,178 *via* N. W. Rly.
„ – Howrah	...	631
„ – Bombay	...	839
Delhi – Bombay	...	957
„ – Karachi	...	907
Jherriah – Madras	...	1,095
„ – Bombay	...	1,196 *via* Nagpore.
„ – Lahore	...	1,012
„ – Ahmedabad	...	1,202 *via* Agra E.Bank.
Jubbulpore – Shalimar	...	699
„ – Bombay	...	616
Ludhiana – Karachi	...	806
„ – Delhi	...	194
Madras – Madura	...	348
Nagpore – Delhi	...	812
„ – Agra Fort	...	660

Raneegunge – Bombay	...	1,143
„ – Cawnpore	...	513
„ – Howrah	...	121
Raipore – Bombay	...	710
„ – Shalimar	...	514
Siartampur – Howrah	...	138
„ – Bombay	...	1,160
„ – Cawnpore	...	494

LIST OF ABBREVIATIONS.

The following abbreviations have been used as and when found convenient:—

Pies per ton mile	p. t. m.
Pies per maund mile.	p. m. m.
Maund.	md.
C. P.	Central Provinces.
U. P.	United Provinces.
N. W. Provinces.	North West Provinces.
N. A.	Not available.

RAILWAYS:—

G. I. P.	Great Indian Peninsula.
E. I.	East Indian.
S. P. D.	Sind, Punjab & Delhi.
N. W.	North Western.
E. B.	Eastern Bengal.
B. N.	Bengal Nagpore.
B. B.	Bombay Baroda & Central India.
R. M.	Rajputana Malwa.
O. R.	Oudh & Rohilkhand.
B. & N. W	Bengal & North Western.

CHAPTER I.

INTRODUCTORY.

THE desire for movement from place to place is so intimately bound up with the gratification of the prime necessities of life, that it could be called almost instinctive. Considerable thought has therefore been devoted to it ever since the appearance of human life upon earth. Even the primitive community has its canoe for the transportation of its men and its materials, and the wider the circle the canoe or other instruments of transport can command, the more secure it is likely to feel, because of the wider area drawn upon. This indeed has provided the main urge for the exploration sometimes of even the most remote corners of the world, for it cannot be doubted that without the desire for movement our world should have been confined to the semi-circle made by our own horizon, as was that of the earliest man, or as nearly is to-day that of our confreres in the thicknesses of the Amazon. The correlation between the growth of civilization and its spread and man's increasing desire and capacity for movement– of himself or his goods–is too apparent indeed to justify further elaboration.

It is of importance to analyse and note the motive that has been responsible for this human endeavour to develop and render more efficient the instrument wherewith man or material can be moved. In this respect the primitive man who heaves his bundle of

firewood on to his shoulder, because he finds it too strenuous to carry it in his hands without dividing it up into smaller stacks, is prompted by the same set of economic motives as the mountain woman in the Alpine fastnesses today, who obligingly deprives the tourist of his suit case, and accommodates it in her basket, slung by a strap from her head. They both wish to carry a larger load than otherwise possible, at the expenditure of a smaller amount of energy, or what could be described as a larger load per unit. Every single development in the means of transportation has the same objective in its background–whether it is the first disc hewn from the trunk of a tree, such as was used in the conveyance of the huge blocks of stone to build the Pyramids, or the latest piston designed for a 300 ton locomotive on the Santa Fé Railroad. The exigencies of a civilised or even a semi–civilised life later induced of course many stages of development where speed rather than mere conservation of energy was the ideal. But with the introduction of a money economy both these factors become describable under a single head viz: the cost entailed to the community for the necessary transport operations. It is to the end of minimising this cost that human endeavour is directed, first from the point of view of the inventor or the producer of the transport service, in each successive stage in the evolution of the different instruments of transport–on land, at sea or in the air–and then from the point of view of the consumers of that service, in their use. It is also noticeable that such effort has been particularly intense and deliberate within the last two centuries.

The reason of this recent intensified effort to reduce the cost of transport is again, in the new stage in social evolution, reached by the foremost countries. The great changes in the process of production brought about by the industrial revolution necessitated conveyance of raw materials to a central point of manufacture. So also, the manufactured article had to be transported to the consuming areas. A triangular type of transportation between the field, the factory and the consumer thus came to be ever more an important link for every member of the society. In the measure that it assumed this importance, the handicaps of time and space began to be felt more keenly, and the greater was the attention devoted to their removal. In economic terms, this meant a series of attempts to decrease the cost of transport. So far had this been successful even by the sixties of the last century i.e. within less than a hundred years of the advent of the industrial revolution–that Mill contesting Carey's thesis that the price of agricultural produce rises with an increase of population wrote, "Railways and canals are virtually a diminution of the cost of production of all things sent to market by them, and literally so of all those, the appliances and aids for producing which, they serve to transport. By their means land could be cultivated which could not otherwise have remunerated the cultivators without a rise of price."[1] In his opinion, technical advance in the art of navigation has a similar effect. One might indeed at the present day entertain doubts as to the possibility of the introduction of mechanical processes

1. Mill's Principles of Political Economy, Ashley's Edition 1926, p. 184.

of manufacture in a community, the transport system whereof has not attained a coeval stage of development.

With this decrease in the cost of transportation, the whole world is continually in a process of division as between the producing areas and the consuming areas with reference to each commodity of civilised life. For the slightest advantage in point of raw material or technique of production possessed by a locality, which would, in former days, have been offset by the expense of transportation beyond a very small circle, is now found of sufficient significance to concentrate industry in that region, giving rise to an exchange of goods to and from it. Although it might be contended that the advantages which the mechanical process of manufacture brought in their train as against those of the hand processes, were of a magnitude justifying the creation of factory centres even without the diminution in the cost of transport effected by railways and steamships, it is doubtful whether such centres would have developed to any stage farther than that of, what may be called, factory villages. Under such circumstances one can visualise a legion of them springing up all over the country or the world, minimising to that extent the advantages derivable from a broad division of labour.

So far as mining and metallurgical industries are concerned however, cheapening of transport appears to be even more essential than in manufactures, because of the unavoidably local nature of the industry. Although the claim of Great Britain to be the workshop of the world may have undergone considerable modification in recent years due to the development

of rival manufacturing interests in other regions, it might indeed be questioned if the economic interests of the world taken as a unit, would not suffer, if she gave up the heavy industries, for example, and took to cultivating the areas now concerned with coal mines, slag heaps or steel plants. The part played by a lowered cost of transport in this respect cannot certainly be overrated. Marshall, commenting upon the current trend of the foreign trade of England about 40 years ago, brings home the counterpart of this point in a very vivid manner. Referring to the pre-industrial era, he says, "Partly because the time was not yet ripe for carrying bulky goods great distances, her imports from the far east and the far west consisted chiefly of comforts and luxuries for the well-to-do.....But .....as the population of America spread westward from the Atlantic, richer and still richer soils have come under cultivation, and the economies of transport have increased so much, especially in recent years that the total cost of importing a quarter of wheat from the farms on the outskirts of cultivation has diminished rapidly, though the distance of that margin has been increasing. And thus England has been saved from the need of more and more intensive cultivation. The bleak hill sides up which the wheat fields were laboriously climbed in Ricardo's time have returned to pasture, and the ploughman now works only where land will yield plentiful returns to his labour....."[1]

A broad survey of scientific inventions in any industrial society illustrates the degree to which this aspect of its material life–the annihilation of the handi

1. Marshall : Principles of Economics, 1927 Edition p. 672.

caps of time and space–has occupied the attention of its technicians, with the object of perfecting a territorial division of labour, conducive to larger production in the interests of the whole of humanity. Pigou acknowledges, "During the later nineteenth century the dominant factor in the Englishman's increased capacity to obtain almost every important commodity was one and the same, namely improved transport, for a main part of what improvements in manufacture accomplished was to cheapen means of transport.[1]

Attempting to seek the cause of the rapid strides made by England in her industrial advance, Marshall comes to identical conclusions. "Probably more than three fourths of the whole benefit she has derived from the progress of manufacturing during the 19th century, has been through the indirect influences in lowering the cost of transport of men and goods, of water and light, of electricity and news; for the dominant economic fact of our own age is the development not of manufacturing, but of transport industries. It is these that are growing most rapidly in aggregate volume and individual power."[2] And the importance Nicholson attributes to the role, the cost factor in transport has played in the economic history of nations, though apparently exaggerated, on deeper consideration appears but too well deserved. "The history of prices of transport of all kinds of baggage (including men and beasts) forms one of the main strands in the history of commerce." Economists are thus unanimous in the importance they attach to the cost of transport in the building up of a society economically.

1. Pigou: Economics of Welfare, 2nd Edition 1926, p. 56.
2. Principles of Economics, 1907 Edition, p. 675.

The question immediately arises–what are the factors that determine the cost at which transportation service will be rendered to a society? Taking two centres of community life, A and B, the difference between the cost of production at A, and that at B, imposes automatically at least one limit beyond which it would, for obvious reasons, be futile to charge for the carriage of a commodity from A to B, granting of course, that it is possible to manufacture or produce, as the case may be, the particular article at both the points. This is subject to an exception–where the producer in A dumps his goods into B, regardless of their cost, giving the transport undertaking a wider scope for its charges. Ordinarily even, the position will not be quite bereft of complications. For in most cases there will be an alternative manufacturing centre C producing just a little less wastefully than A, or situated at a less distant or more easily approachable point than A, competing to supply B with its products. The maximum that the carrier could charge in that instance, will have to come down. And the greater the number of these competitors that attempt to supply B, under differing conditions of manufacturing or of transport, the lower will the upper limit, previously considered, be pressed down. A simple illustration of this will be the existence of different sources of power, e. g. coal and hydro-electricity, or that of different instruments of transport that make the commodity procurable at B, e. g. land and water.

But this fixes only the upper limit, and in practice it is seldom that transport services will be charged on this basis alone. The whole volume of traffic carried

by a transport undertaking brings to it its aggregate revenue and causes to it its total expenditure. The entrepreneur is interested in making his concern as a whole pay him a certain return, irrespective of what the carriage of each consignment costs him. This last item indeed is so impossible of definite calculation, that even the rules laid down by the efforts of the Inter-state Commerce Commission for its determination have not been claimed to be very successful, because of the impracticability of equitably distributing standing costs of a transport business between one consignment and another. The direct costs of actual carriage of a consignment can however be determined with a fair measure of accuracy. Obviously it will not pay the concern to carry any traffic at a charge less than this direct cost of carriage, involving as it will, a loss. Actually therefore, the direct cost of carriage will constitute the lower limit of the charges. Between this and the upper limit indicated above, the charges will vary, and the transport manager by a system of trial and error will find out what charge suits best the particular commodity, so as to make his business pay the desired return. There are of course exceptional cases in which he does transcend the lower limit, but only with the ultimate object to secure a better return on the whole undertaking. Thus raw material to a factory might be carried at even lower charges than the direct cost, so as to secure the carriage of the manufactured article, from which the resultant loss can be made up, and even a considerable profit in addition be earned. Also a set of special circumstances may enable carriage at a lower charge than the direct cost. A steamship line, aided by

subventions from the state, may charge less, on the whole to the community, directly, than the cost of the service, or an unregulated railway monopoly may charge appreciably higher than the cost. Where the state exercises control over its transport undertakings, as in many instances it does, it can however bring about the same results as competition would.

On a broad survey, either as result of competition or of control, the charge for transport throughout the world has been continuously on a decrease. In the case of railways for example, when they were first put to use, it was considered impossible to carry at 1½d. per ton mile without serious loss. In about 1875, most of the railways of the world carried at about 1d. per ton mile. By the end of the last century, the average rate in France was ¾d., in Germany ⅔d. in the United States less than ½d. per ton mile.[1] Running parallel with these reductions is noticeable a diminution to the railways in the cost of producing the service. So far back as in 1898 Hadley discovered this decrease to be even greater than that in the charges made to the public.[2] Wagon capacity, which used once to be not greater than dead weight, was then twice as great, enabling 2/3rd of the train load to be a paying load, in place of just half. Considering hauling costs on the line alone, exclusive of terminal charges and interest fund, Hadley worked out the direct haulage cost of a train of 900 tons gross load–600 of which would be paying load,–at only 2 shillings per mile or 1/25 d. per ton mile, additional haulage of a ton

1. Figures given by Hadley, Palgrave's Dictionary of Political Economy Vol. 3, p 574.

2. Contribution to Palgrave's Dictionary, p. 574.

for a 100 miles adding only 4d. to the direct hauling costs to the railway undertaking.[3] This actually obtained in about 1900 on some American wheat lines.

These in broad outlines then are the characteristics of the cost of transport. The investigation that follows sets itself out to examine how far the claims made for it can be substantiated by an intensive examination, within the limits of available material and space, with regard to a country whose economic development is recent and in a real sense in the stage of growth.

3. Hadley considers even this a high estimate. "The direct expenses per train mile on English roads are barely 15d. and on American roads about 20d."

CHAPTER II.

Pre-Railway Cost and Conditions.

Whatever the economic and political glories of the culminating periods of Indian history in Buddhistic and Moghal times, the beginning of the 19th century—marking the starting point of the period this study proposes to investigate—found the country in a state of paralysis, which had only too intimate reactions on the prevalent system of transport. Water transport being confined to limited regions, partly owing to its strictly local nature, and partly to the comparatively undeveloped state under which engineering science then laboured, the lack of any conscious effort on the part of the administration to foster land transport, brought into being a state of affairs completely representative of the lack of a system. This was due to obvious reasons. The strictly small scale on which an interchange of commodities then existed between India and England, had in the Ganges, a means of communication adequate for the purposes of a corporate body, whose primary concern was to buy at one spot and sell at another. With Calcutta as the port of shipment and the Gangetic plain as its hinterland, the East India Company did not need to betray an interest in any aspect of the transport question, except the one that concerned the carriage up and down of the small consignments, which constituted the com-

merce of those times. So that although McAdam and Telford's discoveries and the construction and use of canals had revolutionised, both in point of cost and conditions, the transport system of England and thus stimulated internal trade to a degree which enabled the cheese from Cheshire to be available on the dinner tables of Cornwall, and Kentish beer in Lancashire, the possibility of such a development in India was so far discounted, that before 1818, roads were never even dreamt of. The first effort in that year took the form of improving the native tracks by the employment of convict labour, financed by small ferry collections. But the enthusiasm with which the improvement was undertaken can be judged by an existent record of 1830 which, describing the state of affairs about the capital city, says. "Beyond 20 miles from Calcutta, roads communicating with the principal stations of the Upper Provinces were in no better condition than in the time of the Moghuls."[1] Until at least ten years later, State despatches were carried on " men's back " all the way to Agra and Delhi, at the rate of 4 miles an hour. But perhaps the spirit of the times could not be better expressed than in the words of a member of the council of Madras, who, commenting upon Elphinstone's project of what could a hudred years back be called a comprehensive system of roads, wrote home, "The silly young nobleman actually talks of making roads." In reply to a circular sent out to Districts collectors inviting them to set out their requirements in the way of district roads, a member of the administration expressed his conviction that " no roads were required in his district, because

1. Quoted by McGeorge: Ways and Works in India, p. 72.

the people there did not use carts but carried everything in panniers on the backs of bullocks." Indeed till the forties, the transport policy of the administration was actuated by the belief that roads were a luxury—even a superfluity—in India.

Under the circumstances, the mode of transport had of necessity to be very primitive, if any attempt at an economic life could be made at all. The resourceful nature of the Indian trader, though finding a more or less satisfactory outlet on the banks of the Ganges, urged him to adopt some means of conveyance, however crude, to convey his wares from the field to the river, and he recruited the bullock as his beast of burden. The domestic animal is indeed not quite unknown for this type of service rendered to mankind even to-day, e. g. in the mountainous regions of Bolivia and Peru where vehicular traffic is impossible; but the extent of trade carried on in this manner in India and its far reaching scope, stagger our imagination. A bulky raw material like cotton, which did not enter into the world's commerce to any appreciable extent before the advent of the railways, was at the expense of an incredible amount of money, time and energy, brought to Mirzapore, an entrepôt of importance in those times, and then floated down to Calcutta on the river. The traffic originated as far south as Hinghunghat in the Central Provinces, and was carried an average distance of 500 miles on backs of bullocks in panniers at an average speed of 7 miles a day. In the absence of a defined road, a herd of hundreds of cattle, "never so few as 100 and often exceeding 1000," was driven under constant watch, so as to prevent

straying on the march. This entailed cutting the nights out and travelling only by day, in temperatures varying between 100° and 130° F. according to the season. But this was not all. " Every morning after daylight each ox has to be laden, and before the operation is over, the sun is already high above the horizon. The cattle have then to proceed at the slow rate of two miles an hour, and seldom perform a journey of more than eight or nine miles a day. The herd generally halts one day in the seven."[1] This explains the daily speed put down at seven. There was again no protection from the inclemency of weather, the cotton becoming saturated if the caravan was overtaken by rain. This meant such an increase in weight as to make further carriage on bullock back nearly impossible. If the way lay through cotton trap, the rain caused men to sink in the mud up to their ankles, and cattle to their knees-and in effect such a calamity meant ruin to both the animal, the carrier and the merchant.

By far the greatest handicap of this mode of transit however lay in the cost it entailed. Each ox carried 160 lbs. at a price of five shillings per 100 miles. Taking the average distance at 500 miles there was a charge of 1·87d. per lb. for the distance.[2] This would work out at £17–8–9 per ton or about 8d. per ton mile. Besides this there was the charge for carriage from Mirzapore to Calcutta and the two added together constituted the total charge for inland trans-

1. Major General Briggs: Cotton trade of India (1840), p. 31.

2. Major Briggs works out this cost for some unknown reason at 2½d. per lb. Probably he makes allowance for all the risks involved. The calculated figure of 8d. per ton mile appears more reliable for our purposes, Sir William Andrew's cost figure approaching very near, viz: 6 d. to 1 sh. per ton mile.

port on every unit. Briggs only too correctly remarks, "The exportation of such cotton to England at a profit must be looked for in vain." The construction of the crudest road surface in these conditions enabling the employment of bullock-carts in place of oxen would indeed revolutionise the whole outlook of trade and transport costs. It was therefore looked up to with the highest expectations. "The goods once laden may be secured from rain, and are never touched during the whole journey. The attaching of the cattle to the yoke, does not literally occupy a minute."[1] Besides the cart could travel by day or by night, at least about 20 miles a day, and could transport a load of 1600 lbs. at $2\frac{1}{2}$ to 3 miles per hour. On a road recently constructed, Briggs expected his rather problematic figure of $2\frac{1}{2}$d. per lb. to come down to one farthing per lb. for the distance between the Central Provinces and Mirzapore upon the introduction of bullock-cart transport.

Conditions with regard to the next most important trading centre of Madras, did not differ materially. So late as 1840, there was no carrying system, as such, in existence, the nearest approach to it being found in the infrequent readiness of a man having a bullock, without an alternative occupation, to hire out the animal for such a purpose. Even then considerable trade was carried on between Madras on the coast and Wallajahnugger, through which all traffic from and to north and south passed. The seaboard, being the only satisfactory source of supply for salt, could not, despite all handicaps, be lost touch

1. Briggs: Cotton Trade of India, p. 32.

with by the hinterland; thus maintaining an exchange between the great cotton and indigo producing districts of Cuddapah and Bellary and the north west, on the one hand, and Madras on the other. In fact, such was the magnitude of this commerce, that the first improvement in the means of communication proposed to facilitate transport through these districts was not a cart road, as in other parts, but a railway line to run through to Bombay–as early as in 1832.[1] On the basis of the existing traffic, and that created by the railway, the line was expected to be self supporting.

Information as to the cost of this mode of transport is not available. We have no reason, however, to expect that it differed much from that in C. P. & U.P.[2] viz. 8d. per ton mile. It is noticeable that no distinction would ordinarily under such conditions be made between costly and bulky commodities, and that sugar and indigo would have to bear very nearly the same charge.

Coming west, Bombay found itself in the same primitive condition. "The soil is naturally rich and admirably adapted to the cultivation of cotton, the great staple of this portion of India. The people are most industrious, and only want efficient roads to enable them to send their goods to market to make the elevated region of Deccan vie with the rich plains of Bengal in productive power;" sums up the result of an investigation in the early forties. Mr. Williamson, the Revenue Commissioner, Bombay, in his letter to Lord Wharncliffe, referred to the construction of cart

1. Briggs: Cotton Trade of India, p. 88.
2. Central Provinces and United Provinces.

roads as the one mode of promoting internal improvement which was never known to fail. "As far as my experience in India goes no road has been constructed without an immediate, and almost magical effect on the prosperity of the town with which it communicates."[1] The commissioner regrets that, as a result of the non-existence of these roads, the cotton which might travel to the sea-board at the rate of a cart load drawn by 2 bullocks, 12 miles per day, "now creeps the greater part of the distance six loads on six separate pack bullocks only eight miles per diem." And his contention could be well borne out by the rough evidence furnished by figures of toll collection on the very few roads that had already come into use. The Bhore Ghaut Road, opened to traffic in 1828, did not pay as much as £500 a year in tolls, and was responsible for driving to the bankruptcy court a speculator who farmed it for £1000 in 1834. In 1846 the same road was farmed for about £4000, which besides providing for the expense of the annual repairs, went some way towards the repayment of the capital investment.

"It is to Lord William Bentick that the first inauguration of reform in the matter of public road construction is to be attributed."[2] In the course of time it came to be more generally recognised that the pivotal point in stimulating economic advance, was a decrease in the cost of transport. Strategic considerations had indeed quite as much to do with the zest with which the administration directed its energies to the construction of a system of trunk high-

1. Briggs, p. 98.
2. McGeorge: Ways and Works in India, p. 73.

ways, as economic ones. In 1836 was begun the Grand Trunk Road from Calcutta to Delhi and in 1842, those from Bombay to Calcutta and Bombay to Agra. By 1870 most of the important roadways that constitute the arterial system in India to-day had been completed and utilised by trade.

Trade—especially foreign trade—had by this time assumed some substantial proportions through the port of Calcutta, though the change in its nature was, of course, as might be expected from the comparatively primitive instruments of transport available, extremely slow. The Ganges came to be utilised in even greater measure, and river craft propelled by steam were gradually introduced. Up to Allahabad the conveyance of merchandise along the river was fairly inexpensive, but the Grand Trunk Road, running almost parallel to the water way as it did, could not have materially assisted in developing the interior. The Lower Provinces of Bengal nevertheless showed signs of considerable prosperity at the time. The rich alluvial soil on the Eastern side of the Ganges from Patna downwards was given to indigo and sugar, both crops of considerable export value at the time, financed by the business houses in Calcutta; the produce being brought down by country craft on the Ganges and other streams. Between Rajmahal at the head of the delta and Calcutta, however, this was hardly an easy or an inexpensive matter. The navigation at all times of the year, from causes varying with the seasons, being "tedious difficult and often dangerous."[1] Ths distance, ordinarily of 200 miles,

1. Old Indian Postmaster: Railways in India, p. 48.

during a greater part of the year was not traversible by craft drawing 5 feet of water, except by a circuit of 528 miles through a perilous labyrinth of creeks and wood covered straits, which constituted the wilderness known as the Sunderbunds.[1]

It is interesting to examine what the transport of merchandise cost in this-the second phase of the transport systems. Mr. G. Ashburner of Messrs, Macintyre & Co., Calcutta, in response to an enquiry stated, "It has been ascertained that the expense of conveyance by land is equal to between 3d. and 4d. per ton per mile."[2] The carriage by water, though causing this figure to be appreciably lowered by comparison, did not in itself give a figure so low as might be expected, chiefly on account of the very difficult passage between Rajamahal and Calcutta. "The expense of the river route, including insurance and interest during the time occupied in transit, amounted to about 2d. per ton mile on goods of the value of £40 per ton."[3] Taking the traversible distance

1. Gen. McLeod and Col. Forbes' Report on Rajmahal canal.
2. Mr. Ashburner's letter to SirWm. Andrew.
3. Mr. G. Ashburner to Sir Wm. Andrew. Ibid.

A better basis for comparison could perhaps be obtained by reducing this to terms of passenger transit. The Gangetic plain commanding the most efficient transport system in the whole country at the time, a passenger had several alternative instruments at his disposal. A wealthy merchant desiring to go from Calcutta to Benares-428 miles-could travel first by the Dak, i e. the Government postal van, which entailed an expenditure of one shilling per mile, besides one shilling per stage in tips, making in all about £ 25 for the single journey, involving 5 days of travelling, exclusive of halts. Or he could command a Palkee with 8 bearers, trudging about 15 miles every day, costing £ 12-10-0 plus £ 2-10-0 for the palanquin. This mode would consume about a month for the whole journey. Alternatively, he could commandeer his own horse into service and ride the distance, taking about 16 days to cover it. The cheapest mode of carriage was of course the bullock-cart, taking him about 12 miles further every day and costing £ 10. He had at the same time at his disposal the water route, with a choice between the Government

between Rajamahal and Calcutta roughly at 500 miles, the charge would be about £ 4 per ton, i. e. ten per cent on the value of goods.

But not even at this rate could merchandise be transported regularly. "The Bullock train is taken up by Government and the steamers of the India General Company are monopolised by Government for sending up stores and ammunition to Allahabad, so that at present there is no opportunity of sending up packages, excepting an occasional boat, put on by the Ganges Company in which they charge Rs. 3 per foot or Rs. 120 a ton of 40 c. ft., Rs. 3 a dozen for beer, Rs. 5

steam ferry introduced by Bentick in about the year 1840, and the indigenous craft. The steamer cost between £ 15 and £ 25, and involved about ten days for three months in the year and twenty for the remaining nine months. Transit by the latter mode cost much the same, and occupied at least 40 days *en route* if going up the river. The water route, due to reasons pointed out above, entailed a voyage of 620 miles for four months of the year, and 1000 miles for the remaining eight months, for the land route of 428 miles (Andrew: Letter to the Artisan, 20 June 1851). These compare with the present time and cost as follows.—

INSTRUMENT.	APPROX. NO. OF DAYS TAKEN.	DISTANCE PER Day.	FARE PER MILE. s.	d.
By Dak	7	60 miles	1.	0
Palkee	28	15 ,,	0.	8
Gharry	35	12 ,,	0.	5
Steamer	12 to 20	50 ,,	1.	6
Budgerow	31 to 50	20 ,,	2s. to	6d,
River Boats	25 to 40	25 ,,	0.	0½
Horse	28	15 ,,	0.	1-1/8
Hackeryaith goods	42	10 ,,	0.	1-3/4

RLY. FARES 1927-28.	NO. OF HOURS.	PER MILE RATES.
1st Class	About 12	18. 9 pies i. e. 0. 1-4/5
2nd ,,	,, ,,	8. 53 pies i. e. 0. 4/5
3rd ,,	,, ,,	3. 33 ,, ,, 0. 1/3

Average rate charged per passenger mile, Class I Railways. Table X, 1927-28 Report. The E. I. Rly. rates in 1930-31 are about 33 percent lower.

Not that all these means of transport were always available to the trader at his beck and call for the transport of himself or his commodities. The most powerful and wealthy merchants sometimes found themselves held up for want of a conveyance.

for wine and brandy and Rs. 6 a dozen for champagne i. e. to say £ 12 per ton, and 6 to 12 shillings a dozen for carrying beer and wines some 400 to 500 miles," complained the Bengal Chamber of Commerce, even when things had improved in 1858.[1]

Andrew sums up with the following rates figures for the transport of merchandise:-

By Steamer.[2]	2½d. per ton mile.
By Ferry Boats.[3]	1¾d. to½ d. „
By land.[4]	4d. per „

To impose a further handicap the crude carrying system which the trader in the North could command -the Government Dak-never appears to have been given a trial in Madras. Under the circumstances, the man who had a bandy and a pair of bullocks to spare, hired them out, along with himself, for a given distance. Petty traders, besides, invested in their carts and bullocks, using them for commercial as well as domestic purposes. Last came the ryot who, during the season his bullocks were not occupied in cultivation, employed them on carrying work so as to earn their keep.[5]

But even when some attempt at road construction ahd been made, so that carts could be substituted for pack bullocks, the quality of the roads left much to be desired, even for the standard of surface required for rough country carts. As late as in 1854, the state of roads in Cuddapah was described in very deplorable terms. The highway originating at Bellary and passing through

1. Report of the committee 1858, p. 18
2. Higher rate for shorter distances. Given rate for 428 miles.
3. Cargo boats are slower than passenger boats.
4. By bullock cart. Ponies, camels etc., more expensive.
5. Letter from Consulting Engineer Pears to Madras Government, 5th March 1851.

Cuddapah, on its way to Madras, was described as "the very worst". "When treasure parties are sent by this road to the Presidency," reported Lieut. Richard Roberts to Lieut. Col. Pears, "10 per cent of the bandies break down daily."[1] The prevalent conception of road construction appears to have been the marking out of a line of traffic by means of an avenue of trees. The carts used seem to have approached very near to the first vehicle hewn by man. A spoked wheel was seldom to be seen, and almost all the carts were mounted on solid discs of wood, with a very narrow tyre.[2]

The cost of transport under these conditions had necessarily to be at a disproportionately high level. The Government themselves paid at the rate of 5½d. per ton mile for the conveyance of their stores.[3] For commercial haulage a bandy carrying half a ton from Wallajahnugger to Madras–68 miles–cost Rs. 4–0–0 i. e. Rs. 1–10–0 per ton mile or 2·75d.[4] The rate from the interior was affected to a certain extent by the demand for live stock in Madras town and port. Col. Pears found it customary in those parts of the country where the requisite material was cheap, "for men to construct the common wadder bandy to bring down a load to Madras, and there dispose of bandy and

1. Lieut. Richard Roberts to Lieut. Col. Pears, 1st. October. 1854.
2. H. Forbes, collector of Cuddapah to Consulting Engineer Pears 22nd Sept. 1851.
3. Andrew : Indian Railways p. 91.
4. Cansulting Engineer Pears to Madras Government, 5th March 1851.

The great disparity between the price paid by the Madras Government and the Madras trader may be due to a more efficient service in point of speed, regularity etc , being demanded by the Government due to the exigencies of administration, compared with that demanded by the latter. The trader again would be capable of driving a keener bargain, and of availing himself of periodical fluctuation in charges as against the Government who would be bound to a contract.

bullocks to advantage." The journey to the interior on the other hand appears to have cost much less, viz: Rs. 2-12-0 for the cart.

The demand for carriage to the coast seems therefore to have been quite considerable from the cotton, indigo and sugar producing areas near by, not even the supply of carts induced by the availability of a market in Madras, causing the rate to be depressed. On the other hand, on the return journey with salt the quantity to be transported must have been far short of the space offered. Anyhow, a return journey between Madras and Wallajanugger, 136 miles, cost Rs. 6-12-0 i.e. Re. 0-1-6 or 2·25 d. per ton mile. This seems to have a rough correspondence with the figure submitted by Mr. Forbes, Collector of Cuddapah viz. 12 annas for 10 miles per cart.[1]

Coming to the central part of the country, no appreciable change was noticeable in the condition of roads provided by the Administration. Country tracks were "quite unpassable for any traffic" during certain soasons of the year.[2] The transit to the sea-board would last several weeks, which caused produce to be spoilt. The likely damage from rain, for example, in monsoon, to grain, would be so great as to suspend traffic for some months altogether. The Central Provinces which had kept up their tradition of a great cotton producing tract, still continued to suffer severe handicaps. The tracts were all situated around Hinganghat, the great centre and mart of cotton trade, extending to Nagpore on the one side and to Chandah

1. H. Forbes, Collector of Cuddapah to Pears, 22 Sept. 1851.
2. Evidence of L. Ashburner of the Indian Civil Service before the Select Committee on Indian Railways, para 6460, cmd. 284, 1884.

on the other. Qualitatively it was the longest stapled and most highly priced cotton in the country.[1] But in the course of transit, it hardly could be said to have met the treatment it deserved. The produce was conveyed by cart to Chuhmunder or Chandah to await the first rise of the river Wurdah, which used to come off periodically between about the 15th June and 15th July, involving a detention of as long as 8 weeks sometimes. After a river passage of about 50 to 80 miles, it was landed and carried by a tramway for a distance of 30 miles to avoid a barrier in the river. Then there followed a river passage again to Masulipatam. It thus took two months to convey the produce to the water front and necessitated three times a break of bulk. Under such conditions, Taylor aptly describes the rich provinces of Central India as being "hermetically sealed,"[2] for even such facilities for transport as were available had to bear the strain of a yearly rush. The Godavery, besides being dangerous for navigation, barred itself from being utilisable for export carriage because of the scarcity of water—the floods coming too late. The whole of the crop would be ready for export before March, and the necessity of moving the produce before the rains set in, caused a strenuous rush for carriage to the coast.

It is interesting, in view of the present competitive conditions to note the change that gradually came about in the route the C. P. cotton took. In the early years of the last century the produce found outlet to the sea via Bendara, Raepore and Masaliputum. But the route soon changed and Nagpore

1. Taylor: Papers relating to the River Godavery, p. 17
2. Taylor, p. 34.

and Mirzapore sprung into prominence as entrepôts for cotton from Hingunghat, the traffic obviously taking the line of least resistance. In the sixties eventually, Bombay and Mirzapore appear to have commanded an equal measure of the trader's attention as entrepôts, and the eastern route, partly through the road falling into a state of disrepair and partly through its comparatively uneconomic character, seems to have lost its traffic.

Cost again becomes a factor of considerable importance. Hingunghat commanded from 10 to 20 thousand "bojahs" of cotton every year according to the condition of the crop. A bojah consisted of two bales, making up in weight from 12 to 12½ maunds. But the cotton maund was only 24 lbs. and it took 5 bojahs to make up a cart load. The hire price of a cart, and consequently the cost of conveyance of these five bojahs, differed according to the route taken. No statistical data, unfortunately, is available about the cost by the eastern route. But as between Bombay and Mirzapore, there was a considerable difference, originating from the nature of the country to be traversed. With the opening of the Bombay route, the cost was Rs. 5 a bojah. It increased to Rs. 10 and in 1862, stood at Rs. 12 i. e. at Rs. 60 per cart load. The journey of 550 miles involved 60 days of rather hard going, chiefly on account of the Ghauts. Taking the average cart load at 1440 lbs., it works out at a penny per lb. and at the prevalent rate of exchange of 24d. to a Re. at 4·07d. per ton mile.

The Mirzapore route seems to have cost considerably less. The rate for the standard load of a bojah

varied between Rs. 9 and 9/8 per cart load, say Rs. 45 for the cart. It was desirable from the point of view also of the distance, which was a hundred miles less, and consequently the time involved viz : 40 days. Besides, the country was comparatively less difficult to negotiate. The rate worked out at 3 farthings per lb. or 2·75d. per ton mile.

Passing on to the Bombay presidency, with the initiation of the road building policy, things had undergone a change. In 1838 it had been reported; " over an area of 30,000 square miles in four of the collectorates adjacent to Bombay, there were little more than 400 miles of roads, of which only half were passable in rains."[1] But now the Ghauts had already been penetrated and a definite trade route established to Khandeish and Central India, traffic over which was large and continually increasing. The existence of a water route of considerable ease and cheapness to the large trading centres of Surat, Broach etc. did not necessitate a land route which would only duplicate the sea route. So that for the 190 miles between Bombay and Surat no land traffic existed at all; whilst farther north "through a large portion we should pass through a country in which at present, not even a foot track exists."[2] But the great centres of commerce, situated as they were on the seaboard, and trading only with each other, did not feel any material handicap in that stage of general economic backwardness.

The charge made for the conveyance of commodities seems to have been, by reason probably of

1. Andrew : Indian Rlys, P. XII.
2. J. H.G. Crawford, Superintending EngineerG, I.P. RLY., to sec. to Govt. 31 Jan. 1853.

the difficult nature of the region, higher than in any other part of the country at the time. Investigations instituted by the Government of Bombay in the Southern Mahratta country, for example, brought out the charge from a place 60 miles distant to the seaboard at Rs. 20 per ton, i. e. 5·33 annas or 8·11d. per ton mile. Another place about 100 miles from the seaboard, paid Rs. 30 i. e. about 4·75 annas or 7·13d. per ton mile. From another place 130 miles distant, the cartage was Rs. 40 i. e. just less than 5 annas or 7·50d. per ton mile. These, however, were not rates at which produce could be placed in the Bombay harbour, but rather to the nearest point on the seaboard, from which additional expenditure had to be incurred to transport commodities by country craft to the port of export.

One important locality entering largely in the present commercial fabric of the country remains to be taken notice of, viz. the Punjab and its entrepôt, Karachi. It will not be far from correct to say that for all practical purposes they did not exist. So little was Karachi known at the time, that freight could not be had, except with the greatest difficulty, when the Sind Railway was first projected. No facilities were available for landing stores, and boats and cranes had to be sent out. And finally, when the rails and rolling stock were landed, because of the lack of any alternaive means of transport, they had literally to be "dragged by camel over miles of sand."[1] Nor did the region support a fair population, because of the obdurate and difficult nature of the soil. So that when a labour force was found necessary, Persia, Afghanistan

1. Andrew, Indian Rlys. P. xivii.

and even China were drawn upon. In short, economic life was at its lowest ebb. And since transport in any recognisable state of development was not obtainable, the lack of material on the subject is not surprising. It will be relevant in this connection to note that navigation on the Indus was a more difficult proposition than on the Ganges because of the shallow channels, the rapids and the shifting nature of the sands.

Of course the unknown and consequently undeveloped state of Karachi had a good deal to do with the difference obtaining between the navigability of the Indus and the Ganges. In fact so much did Karachi and the Indus act and react on each other, that as a channel of trade the river could not be utilised to any appreciable extent, until the region had to some extent been "railroadised."

It is instructive to examine statistically within limits of the available data, the nature and magnitude of trade carried on with, or rather in spite of, this heavy levy that transport imposed upon it. So far as the Gangetic trade is concerned, only a very small part of the downward traffic of the Ganges originated above Mirzapore, that being the great entrepôt on the Ganges. It is quite likely that traffic from points beyond was unable to bear the cost of transport, thus cutting out a major portion of the N. W. Provinces and the Punjab from the possibility of supply for external markets altogether. This is evident by putting two available statements of traffic along the Ganges in juxtaposition, one showing traffic west of Mirzapore in 1841, the other

east of that point in 1844-45. As there is no indication of any undercurrent causing a radical change within the lapse of five years, the two may be compared.

STATEMENT 2.

TRAFFIC ON THE JUMNA DOWN STREAM.

Taken at Allahabad Bridge-25 Days of April 1841.

			Tons.
36,024	bags of salt	at 12 bags per ton	3,002.
52,080	bales of cotton	,, 8 bales ,, ,,	6,510.
828	bags of salt petre...	... ,, 12 bags ,, ,,	69.
2,000	hides	... ,, 50 hides ,, ,,	40.
	Add for 5 days ...	... ...	...1,924.
			11,545

UP STREAM.

31,119	bags of rice ...	... ,, 12 bages per ton	1,193
2,240	,, of cocoanut...	... ,, ,, ,, ,, ,,	170
2,347	,, Spices ...	... ,, ,, ,, ,, ,,	195
2,815	,, Miscellaneous	... ,, ,, ,, ,, ,,	234
	Add for 5 days. ...	... ...	... 358
			2,150

i.e. Adding the two
11,545 + 2,150 = 13,695.

STATEMENT 3.

TRAFFIC ON THE GANGES, DOWN STREAM.

Taken at Allahabad Bridge-April, 1841.

			Tons.
54,700	pieces of Kurwah Cloth	at 500 pieces per ton	109
1,004	bags mustard seed	,, 12 bags ,, ,,	84
6,305	,, salt petre	,, 12 ,, ,, ,,	525
7,162	bales cotton	,, 8 bales ,,	895
12,250	hides	,, 120 pieces*	102
4,450	miscellaneous	,, 12 ,,	371
13,700	horns	,, 120 ,,	114
			2,200

* Probably the difference was between cow or buffalo hides on the Jumna, and goat hides on the Ganges.

UP STREAM.

				TONS.
1,348	wine chests	at 12	pieces per ton	112
1,013	bags of cocoanut	,, 12	,, ,, ,,	84
7,394	,, of rice	,, 12	,, ,, ,,	616
4,189	,, spices	,, 12	,, ,, ,,	349
4,940	,, Iron and tin	,, 10	,, ,, ,,	494
				1,655

In addition 94 boats not counted with passengers and cargo-taken at 40 tons each. 3,760

Adding the three =7,615.

TOTAL TRAFFIC ON THE GANGES AND THE JUMNA IN APRIL 1841.

=13,695+7,615.
=21,310

In the month of April, however, traffic on the river would be fairly low in view of the comparative scarcity of water, making transport to the water channel comparatively difficult. On an average perhaps it will be safer to take the monthly traffic at 25,000 or even 30,000 tons, making the annual traffic 3,00,000 to 3,60,000 tons. As against this, the traffic on the Ganges in 1844–45 between Calcutta and Mirzapore reckoned as under:—

STATEMENT 4.

	TONS.
Traffic registered at toll office at Jungypore on the Bhageruttee River as per official statement of the collector 21,497,750 mds. i. e. at 27 mds. to the ton	796,213
Traffic deducible from the amount collected in tolls on Tolly's Nullah and circular canal at Calcutta from boats meeting vessels coming in, at 8 annas per 100 mds. Rs. 177, 791 i. e. 35,588, 200 mds....	1,316,970
Traffic carried on seven steamers making 39 trips upwards carrying 1,12,765 c. ft. and 11,56,909 lbs. calculating a c. ft. at 3 lbs.	2,027
Traffic by steamers downwards not ascertainable, but was usually found to be in proportion of 3 upwards to 1 downwards. Calculating at equal number of trips by seven steamers	675
	2,115,885

The traffic above Allahabad Bridge viz: 360,000 tons, assuming it to have increased to 500,000 tons in 1844–45, works out therefore at only 23 per cent of the traffic between Mirzapore and Calcutta.

The statement above,–traffic survey on the Allahabad Bridge–is also indicative of the nature of trade obtaining above Mirzapore. The commodities making up the trade east of that centre, up to Rajamehal, on the head of the Delta, are set out in the statement below :—

STATEMENT 5.

1846–IMPORTS INTO CALCUTTA FROM ABOVE RAJMEHAL.

Article.	*Tons.*
Indigo	3,214
Sugar	89,285
Salt Petre	21,428
Cotton	7,857
Wheet	12,500
Grain	16,071
Dholl and peas	16,071
Oats	1,785
Barley	71
Opium	628
Linseed	7,142
Mustard Seed	1,785
Teel Seed	178
Ghee	178
	178,199

Besides, various articles like Mirzapore carpets, cashmere shawls, scarfs, piece goods etc., more notable for their value than their bulk.[1]

The total of 2,115,885 tons of traffic between Mirzapore and Calcutta does not, however, represent the total trade of this area in so far as there was the carriage on the Mirzapore Road and the Damooda River to be accounted for. This measured out as under :—

1. Table from information gathered by Mr. R. M. Stephenson from the best informed Mahajauns in the trade.

This table may be compared with the following statement showing the import from internal centres to Calcutta of just two commodities, rice and jute, in the present times :—

INLAND IMPORTS INTO CALCUTTA.

000 Tons.

YEAR.	RICE.	JUTE.	TOTAL.
1906-7	615	1,019	1,634
1907-8	610	967	1,577
1908-9	735	1,081	1,816
1909-10	663	1,009	1,672
1910-11	602	936	1,538
1911-12	728	1,210	1,938
1912-13	717	1,243	1,960
1913-14	760	1,109	1,869
1914-15	817	871	1,688
1915-16	740	118	1,858
1916-17	565	968	1,533
1917-18	500	919	1,419
1918-19	642	876	1,518
1919-20	723	921	1,644
1920-21	451	946	1,397
1921-22	507	747	1,254

STATEMENT 6.

TRAFFIC ON THE MIRZAPORE ROAD AND THE DAMOODA 1844-5.

		Tons.
Coal between Calcutta and Burdwan		74,074
Traffic on road through Burdwan in 7,360 hackeries each of 12 maunds capacity, and 3,650 bullocks carrying about 2¼ maunds each. The hackeries may not all be fully laden. Taking them at 10 maunds each, they carried ...		2,726
And bullocks carried (12 to a ton)		304
Traffic along the road, besides this recorded as		
Sugar and goor ... ... 500,000 mds.		
Salt ... ... 350,000 ,,		
Cotton ... ... 1,000 ,,		
Rice ... ... 50,000 ,,		
901,000 i. e.		33,370
	Total ...	110,474

Total carried along the river and road between Mirzapore and Calcutta is therefore

2,115,885 - 110,474 i.e. 2,226,359 tons.[1]

Having noted the state of home trade, it is interesting to turn to foreign trade, and see how the total of it, measurable in monetary units,[2] has undergone a change in present days, compared with those times.

1. As against this, to show the vast increase made in the railway era, the total amount of traffic carried on the East Indian Railway alone, i. e, exclusive of river and road, comparable with the total of 500,000 tons plus 2,226,359 tons i. e. 2,726,359 tons was :—

	000 Tons.
1921-22	16,510
1922-23	18,456
1923-24	19,015
1924-25	21,357
1925-26	21,846
1926-27	21,976
1927-28	
1928-29	23,862
1929-30	24,432
1930-31	22,335

2. Quantity units not available in comparable form.

STATEMENT 8.

FOREIGN TRADE OF BENGAL INCLUDING BURMA IN MERCHANDISE.[1] THOUSAND £.

YEAR.	IMPORTS. £.	EXPORTS. £.	TOTAL. £.
1841	4,591	8,061	12,652
1842	4,263	8,066	12,329
1843	3,915	7,363	11,278
1844	4,474	9,891	14,365
1845	5,934	9,822	15,756
1846	5,233	9,815	15,048
1847	5,313	9,234	14,547
1848	4,671	7,962	12,633
1849	4,356	9,039	13,395
1850	5,283	10,148	15,431
1851	6,115	9,998	16,113
1852	7,087	10,424	17,511
1853	4,994	10,739	15,733
1854	5,673	10,133	15,806
1855	6,599	10,656	17,255
1856	7,859	12,936	20,795
1857	7,944	12,195	20,659
1858	7,774	13,374	21,148
1859	10,596	14,430	25,026
[2] 1860	12,947	12,508	25,455

1. Registered in sterling.
2. The present foreign Trade of Bengal excluding Burma:—

IN THOUSAND £.

YEAR.	IMPORTS. £.	EXPORTS. £.	TOTAL. £.
1921–22	77,047	67,846	144,893
1922–23	62,639	89,317	151,956
1923–24	59,721	98,700	158,421
1924–25	65,913	112,900	178,842
1925–26	60,070	114,200	174,270
1926–27	61,327	101,000	172,327
1927–28	64,836	100,983	165,789
1928–29	66,736	110,314	177,070
1929–30	62,502	108,684	171,216

Note. 1 sh./6d. to a Rupee.

The movements of shipping do provide at least a rough index to the quantitative side of the foreign trade of a port. The table given below, setting out the entrance and clearance of shipping, though inclusive of country craft presumably useful only for coastal trade, will not, it is hoped, have its worth vitiated to any material extent, so far as our purpose of correlating it with cost of transport is concerned.

STATEMENT 9.

MOVEMENTS OF SHIPPING IN BENGAL.

IN THOUSAND TONS.

YEAR ENDING 30TH APRIL.	ENTERED.	CLEARED.	TOTAL.
1841	235	233	468
1842	295	280	575
1843	232	263	495
1844	255	272	526
1845	252	267	520
1846	283	292	575
1847	275	290	564
1848	333	327	660
1849	308	301	610
1850	350	362	712
1851	357	358	714
1852	393	373	769
1853	434	415	848
1854	581	664	1,245
1155	697	657	1,353
1856	920	923	1,843
1857	759	847	1,607
1858	1,192	1,109	2,302
1859	1,000	1,031	2,031
1860[1]	877	920	1,796

1. The present movement of shipping in the port of Calcutta alone is .—

	000 TONS.
Pre-war average.	8,298
1924-25	7,706
1925-26	7,672
1926-27	8,371
1927-28	9,226
1928-29	9,486
1929-30	9,962

The stranglehold which the cost of moving commodities within the Gangetic valley imposed upon the economic advance of the region did not take long to be realised by those in charge of affairs, and indeed the question of removing such a handicap by the construction of railways was constantly before the authorities of the East India Company during the forties. That her existing commerce already stood in urgent need of cheaper means of locomotion can be proved by the fact that the expert committee of engineers appointed to investigate the question of the possibility of railway construction was referred primarily to the aspect of the alleged physical and climatic handicaps to the construction and operation of railways. The committee asked to report upon the "probable returns of merchandise and passengers" in the second paragraph of the minute of the Court of Directors, as a matter of fact found themselves "unable to give any opinion.....from an entire want of statistical information."[1] And yet the chairman of the East India Company at a meeting of the Court of Proprietors only a year later said, "As to cotton, in Bengal, it was more important to have Railways for that article than in any other part of India, because the cotton produced in the Nerbudda lost 12 months from the time it was gathered, until it was exported. It was liable during that period to great deterioration, to charge for warehousing and transport."[2] Sir Charles Wood announced the object of the first railways in India to be "to ascertain the adaptability of the

1. Report, 13 March 1846.

2. Speech before the Court of Proprietors, June 1847. Reported by Andrews, p. 227,

railroad and its appliances to the country and climate and not to the people and traffic."[1]

The administration had indeed quite strong grounds to be so confident and reassured on the score of the economic ability of the region to support a railway. For years they had themselves been maintaining a fleet of steamers on the Ganges which, besides being utilised to the fullest extent, yielded a return of 10 per cent. Mr. W. E. Baker, Consulting Engineer to the Government of India, reporting his survey in the Gangetic plain stated, "The quantity of merchandise passing up and down the Ganges Valley even now is enormous; and that the merchants both native and European, are willing to pay for a safer and more expeditious conveyance than is afforded by the native boats, is abundantly proved by the growing demand for freight on the river steamers and by the constant use of the great trunk road for the transport of goods between Calcutta and the provinces as far as Delhi."[2] Indeed so keenly did the commercial sense manifest itself amongst the members of the trading community that it was noticed on the eve of the introduction of railways that the stage of development reached was the same as in England viz. stage carriages drawn by horses and bullocks, wherewith trade utilised to the full the new constructed metalled roads.

It should at the same time be borne in mind that, through the instrumentality of the roads, but the smallest percentage of the enormous population of the plains could have been influenced in the slightest

1. Speech of Sir Charles Wood, reported in the Times, 4 June 1853. Andrew, p. 229.
2. Report to the Sec. to the Government of India, 15 March 1853, para 45.

degree. For even now the core of the country remained untouched. Thus prices varied materially from one village to another, and not only the prices but even the weights and measures. Within the same homogeneous economic tract, there would often be found six or seven different tables of capacity for as many items of merchandise. As late as in 1864 the villagers of Balaghat district, refused to accept copper money for purchases made, demanding "cowries" instead. "In one part of the country, grain was almost valueless, in another place not a hundred miles off, there might be scarcity, whilst still further beyond, but yet not very remote, famine raged."[1] So late as in 1866, whilst millions in Orissa were starving, Lahore citizens could purchase their grain at Rs. 1/6/- and even as little as Re. 1/-/- per maund, whilst beyond Peshawar wheat could be had at the rate of 2 to 2½ maunds per Rupee, i. e. at Rs. 0-6-0 to 0-8-0 per maund.[2]

Rightly indeed did Lord Dalhousie affirm in his historic minute that the Gangetic Valley railway would stand the most rigorous test imposed on it to examine its prospects, and that therefore in order of "value and importance" it had the premier claim upon the attention of the authorities, of all other lines projected.

Madras with its environs ranked next after Calcutta in the Company's days in point of commercial importance. "Along the eastern shore, from the northern extremity of the Bay of Bengal to Cape Comorin, we look in vain for a commodious harbour,"[3] wrote

1. Andrew, P. X.
2. Prices quoted by President of the Bengal Chamber of Commerce in his speech, 1st. December 1866.
3. Davidson: Railways of India, P. 12

Capt. Edward Davidson, R. E., Consulting Engineer for Railways to the Government of Bengal; and this—the straight unindented coast line along with the absence of waterways—must have been to a great extent responsible for its relegation to a subordinate place, as against Calcutta, in spite of the closer proximity to England. It was a "dangerous roadstead," and its anchorage was none too safe.

Nevertheless, Madras had attained a position of some commercial importance, and the port commanded a substantial trade. Imports by land into the port are shown in the table following:—

STATEMENT 9.

	Rs. 000s.	£ 000s.
1838-39	75,19	752
1839-40	85,51	855
1840-41	78,33	783
1841-42	94,25	942
1842-43	96,52	965

i. e. an average of Rs. 85,16,304.

Of this, the six districts of Cuddapah, N. Arcot, S. Arcot, Nellore, Salem and Chingleput made up by far the greater portion viz. 84·3 per cent of the total imports in 1842-43. The table under sets out the commodities entering into this trade:—[1]

STATEMENT 11.

YEARS.	THOUSAND RUPEES.							
	Piece Goods.	Grain.	Cotton	Indigo.	Ghee.	Sugar.	Oil.	Betels & nuts.
1838-39	27,60	14,34	2,33	10,85	1,30	1,11	3,33	2,67
1839-40	29,62	9,56	2,33	23,24	1,18	1,26	3,45	3,99
1840-41	27,92	5,98	2,21	15,87	1,19	1,65	3,32	4,11
1841-42	23,97	4,49	7,14	30,33	81	2,05	4,53	3,45
1842-43	23 92	6,53	6,41	32,54	77	2,61	3,21	3,61

1. Figures from Report by J. A. Huddleston, Collector of Madras to Major Pears.

Quantitatively, however, such a comparison can be more significant. The table given under gives the quantities of important commodities imported into Madras port in 1842-43, the last year of our reckoning:—[1]

STATEMENT 12.

1842-43

PIECE GOODS.	000 cwts.
Grain	163
Cotton	53
Indigo	9
Ghee	20
Sugar	10
Oil	28
Betels	

As against these imports, the exports by land fared rather badly. The statements of the trade of Madras furnished by the Collector of Madras to the Collector of sea-customs Madras, showed the following figures (excluding salt):—

STATEMENT 13.

	.000Rs.	000£
1836-37	19,73 ...	197
1840-41	13,67 ...	136
1841-42	12,45 ...	124

The insufficiency of the data in the collector's office, whilst supplying this figures, should of course here as elsewhere be taken inta account before deciding that the trade as indicated by these figures was really insignificant. For, as later figures show, Madras served as an entrepôt for what in those days should have been quite a prosperous import market.

The land export trade of Madras, such as it was, does not show any great variety in its composition:—

1. Compiled from Report by Major Pears, Commissioner to Government of Madras, 23 Dec. 1850.

STATEMENT 14.

In thousand Rs.

YEARS.	PIECE GOODS.	LIQUOR.	COTTON TWIST.
1836-37 ...	1,53	2,97	4,00
1840-41 ...	2,74	1,32	1,04
1841-42 ...	3,14	82	95

The table however leaves out of account an important commodity – salt – which above everything was responsible for the land export trade of Madras. The quantities conveyed stood as follows:—

STATEMENT 15.

YEARS.	000 MAUNDS.	000 TONS.
1847	274 ...	10
1848	181 ...	7
1849	315 ...	12
1850	305 ...	11

Taking the average as between 250,000 and 300,000 maunds, the figures of total value should be augmented by an equal number of rupees. This would bring the total land export trade of Madras in 1841-42 to about 16 lacs of rupees or £ 160,000.

The more satisfactory record of foreign trade maintained, however, again drives us to resort to it, as furnishing a better gauge of the extent of economic activity permissible under those charges by land transport.

STATEMENT 16.

Foreign Trade in Merchandise of Madras Presidency.

In thousand £.

YEAR.	IMPORT.	EXPORT.	TOTAL.
1841 ...	768	1,044	1,813
1842 ...	678	1,243	1,921
1843 ...	581	1,302	1,883
1844 ...	652	1,209	1,861
1845 ...	1,047	1,641	2,688
1846 ...	850	1,411	2,261
1847 ...	882	1,516	2,398
1848 ...	977	1,277	2,254
1849 ...	948	1,212	2,160
1850 ...	906	1,273	2,179
1851 ...	898	1,567	2,465
1852 ...	906	1,659	2,565
1853 ...	841	2,122	2,963
1854 ...	956	1,963	2,919
1855 ...	1,087	1,547	2,634
1856 ...	1,349	1,965	3,414
1857 ...	1,403	2,329	3,732
1858 ...	1,356	2,556	3,912
1859 ...	1,793	2,061	3,854
1860 ...	1,939	2,313	4,252

1. The present foreign trade of Madras may be compared with this to note the difference :——

THOUSAND £.

Year,	Imports.	Exports	Total.
1922-23	15,125	21,356	36,481
1923-24	14,359	26,650	41,009
1924-25	14,950	30,475	45,425
1925-26	14,065	32,910	46,975
1926-27	15,850	28,455	44,305
1927-28	18,423	33,204	51,627
1928-29	20,694	35,942	55,636
1929-30	20,158	33,753	53,911

The shipping movement figures subject to the same limitation as above in the case of Bengal, show the following position :-

STATEMENT 16 A.

	000 Tons.		
	Entered.	Cleared.	Total.
1841	372	428	800
1842	369	432	801
1843	401	441	842
1844	375	479	864
1845	430	491	921
1846	457	534	990
1847	475	534	1,010
1848	449	486	935
1849	442	529	971
1850	440	550	989
1851	489	620	1,109
1852	435	557	993
1853	490	621	1,111
1854	544	645	1,188
1855	511	586	1,097
1856	569	694	1,264
1857	652	789	1,442
1858	772	915	1,687
1859	661	743	1,404
1860	674	749	1,454

The total tonnage, it will be seen, compared with Bengal, starting with a figure nearly 75 per cent higher, rises at a rate steady but extremely slow. For whereas in the course of a couple of decades, the Bengal tonnage has risen by about 400 per cent, the tonnage frequenting Madras ports is far from a rise even of 100 per cent. An examination of the number of vessels entering and clearing the ports, shows the fact, however of Madras leading in the first instance and

keeping the lead till the sixties. This though is only significant of the very small size of the vessels visiting Madras, and hence its comparative scantiness of foreign trade, which again gives point to the advantage Bengal enjoyed by reason of its magnificent waterway, and later, construction of the railroad, affording it a much lower cost of transport. Briefly the position is :—

STATEMENT 17.

YEAR ENDING 30th APRIAL.	ENTERED.	CLEARED.	TOTAL.
MADRAS.			
1841...	5,879	6,727	12,606
1850...	5,876	7,693	13,569
1860...	6,810	7,622	14,432
BENGAL.			
1841...	686	689	1,375
1850...	1,020	1,046	2,066
1860...	1,766	1,874	3,640

The mercantile interests of Madras were not blind to the enormous capacity for improvement and expansion which lay dormant. Indeed, the first region ever conceived of in terms of railway transport was the stretch from Madras to Bangalore, so early as in 1832, when opinions were not agreed even on the advisability of providing India with cart roads. In 1836 even a survey had been directed, and the early construction of the line from Madras to Wallajahnugger urged upon the attention of the local Government further to facilitate the existing salt traffic in point of cost and convenience. The line was designed to extend from Wallajahnugger into the great cotton and indigo districts of Cuddapah and Bellary and towards Hyderabad, affording opportunities of transit to Mysore and North Arcot. These already produced sugar, coffee, oil, seeds, lac and grains, which trickled down to Madras in quantities as large as the exacting levy of the cost of tran-

sport would permit. The cold response it evoked from the authorities is not a matter of surprise to those who have an opportunity to examine the total absence of a vigorous transport policy which the East India Company had adopted at the time. Efforts of a more determined character came to be made much later.

The salt trade was again one of the earliest to arouse attention. The price fixed by the Government depots in Madras was Re. 1 per maund or Rs. 120 per garce of 120 maunds. The transport of a garce involved the hire of 10 bandies at Rs. 6 each – to Palaminar, where the ruling price averaging over a period of ten years in the forties, was Rs. 187-8-0, leaving Rs. 7-8 for profit per garce. Even if the maladjustment which obtained in the magnitude of trade caused the empty returning bandies to accept a lower rate of say Rs. 40 per garce, it was calculated that the advent of a railway line would reduce the freight by 62½ per cent to Rs. 15 per garce.[1] The likelihood of an increased consumption under those circumstances could not be discounted, especially in view of the extremely limited consumption per head which must necessarily obtain under the operation of a retail price of 3 lbs. to the anna,[2] which, at the rate of 20 lbs. per head per annum and taking four as the unit size of a family, amounted to approximately Rs. 2/- in the agricultural labourer's annual income of Rs. 20/- per head.[3] Even taking the essential consumption at 16 lbs. per head, the average labourer, excluding his family, would spend about 1/64 of his annual income on salt as against the English labourer, who did not spend more than 1/840 of his earnings in those times.

Sugar from N. Arcot to Madras, shipped to England, was another article which attracted early at-

1 Bourdillion, Collector of N. Arcot to Pears, 20th Dec. 1850.
2 Prevailing price in Chitoor, 1850.
3. Bourdillion's enquiries led him to believe it was only Rs. 15 or Rs. 16 a year.

tention in regard to the charge the crude instruments of transport laid on it. The freight from Palaminar to Madras was Rs. 15/-per ton i. e. Re. 0-12-0 per cwt. Taking English price at £35/-per ton, transport was responsible for 4.5 per cent of it. "Assuming that this cost might be reduced to $\frac{1}{4}$ by a railway", the saving would amount to 3 per cent of the price.[1] "This does not appear much, but the proportion of the saving to the net profit of the exporter would be much more considerable, and I cannot but think that the diminution of charge, small as it appears in comparison with the whole price of the commodity, would not be without considerable effect as an encouragement to trade," wrote Bourdillon to Pears.[2] The saving in the cost of transport, besides, would be one among the may advantages obtained, when it is realised that the normal journey of 10 days from Palaminer to Madras extended often into 30 days on account of bad roads or torrenrial streams and that the upset or break down of a bandy, with ruin to the produce, was not by any means a rare incident.

The same was the feeling with regard to the cotton produced in Cuddapah and Bellary. "The charge for the carriage to the coast independent of the loss arising from the difficult conditions of transport bears at present a high ratio to its market value," wrote Railway Commissioner Pears in his report to the Madras Government. [3] There was besides the possibility of developing the existing small trade in oil seeds, grain and oils from Salem, indigo from Cuddapah, and timber and salt petre. In the case of linseed, the cost of transport obtaining was no less than 29 per cent of the landing price in England. "If the increase in

1. Bourdillon for some unknown reason makes out on basis of these figures transport to cost 2 per cent. of the price, and the saving to amount ultimately to $1\frac{1}{2}$ %.
2. Letter to Pears, 20th. Dec. 1851.
3. Letter from Pears, 5th March 1851.

traffic in England," it was pointed out in this connection, "where the rails had to contend with a very perfect system of transport, has been in every case beyond all expectation, we are entitled to assume that under our circumstances, such increase would take place in a much higher ratio. We advance at once from roads of an inferior description, pack cattle and bullock bandies to the locomotive engine and its train of waggons."[1]

1 Report of Pears to Madras Government, 15th Dec. 1851.

The statement following shows the saving that was expected out of a change over from bullock cart to railway transport in those days:—

	From	Saving per ton Rs.	%on 1850 cost of carriage.	%on 1850 market value at Madras.	1 ton valued at Rs.
Indigo	Cuddapah W. Arcot Salem	3/5	16% 32% 15%	1%	3200
Grain	Bellary Cuddapah N. Arcot	3/5	8% 16% 32%	11%	30
Rice	Bellary Cuddapah N. Arcot.	3/5	8% 16% 32%	7·8%	45
Ghee	Cuddapah Salem	3/5	16% 15%	N. A.	N. A.
Oils	Salem	3/5	15%	1·6%	25
Redwood	Salem	3/5	15%	14%	25
Tanariand	Cuddapah Salem N. Arcot	3/5	16% 15% 32%	9%	35
Sugar	Palaminer Cuddapah Salem	3/5	22% 16% 15%	1·6%	200
Saltpetre	Coimbatore Salem	3/5	9% 15%	1·8%	180

N. A: not available.

Coming to Bombay, "from time immemorial droves of pack bullocks had struggled with the utmost difficulty and delay by two tracks, barely passable even for animals, from central India to Bombay carrying sacks of grain and other things in which a small and uncertain trade was maintained..."[1] This had undergone a pleasant transformation with the construction of the roadway through the Thull Ghat and later the Bhore Ghat, on which moved the Government dak and the trade. We have already seen above the great increase in traffic which must have followed the opening of the road to the pent up producers of the Deccan, as indicated by the increase in revenue obtained from the farming of the road tolls. This had a very hopeful reflection in the foreign trade of the presidency, which, though coming into commercial prominence considerably after Bengal and Madras did, commanded in monetary value, an interchange of commodities, on a fairly comparable level with the first, with all its available advantages in inland water transport, and far outstripping the second. The import trade in merchandise, compares as shown by the following table. The most notable feature is Bombay's superiority, despite its higher cost of transport.

1. Davidson: Railways of India, p. 231.

STATEMENT 19.

IMPORT TRADE. COMPARATIVE POSITION OF THE THREE PRESIDENCIES.

IN THOUSAND £.

YEARS.	BENGAL.	MADRAS.	BOMBAY.	TOTAL.
1841	4,591	768	3,056	8,416
1842	4,263	678	2,847	7.789
1843	3,915	581	3,107	7,604
1844	4,474	652	3,691	8,818
1845	5,933	1,047	3,773	10,754
1846	5,233	850	3,005	9,087
1847	5,313	882	2,701	8,897
1848	4,671	977	2,950	8,598
1849	4,356	948	3,041	8,345
1850	5,283	906	4,111	10,300
1851	6,115	898	4,546	11,559
1852	7,087	906	4,247	12,240
1853	4,994	841	4,237	10,071
1854	5,673	956	4,493	11,123
1855	6,599	1,087	5,056	12,743
1856	7,859	1,349	4,735	13,943
1857	7,744	1,403	5,047	14,195
1858	7,774	1,356	6,148	15,278
1859	10,596	1,793	9,340	21,729
1860	12,947	1,939	9,379	24,265

And the Export trade of the Presidency compared as follows :—

STATEMENT 20.

IN THOUSAND £.

YEARS.	BENGAL.	MADRAS.	BOMBAY.	TOTAL.
1841	8,061	1,044	4,351	13,456
1842	8,066	1,243	4,516	13,825
1843	7,363	1,302	4,886	13,55 :
1844	9,891	1,209	6,154	17,253
1845	9,822	1,641	5,127	16,590
1846	9,816	1,411	5,802	17,028
1847	9,234	1,516	4,605	15,355
1848	7,962	1,277	4,073	13,312
1849	9,039	1,212	5,837	16,089
1850	10,148	1,273	5,891	17,312

STATEMENT 20—(Contd.)

YEAR.	BENGAL.	MADRAS.	BOMBAY.	TOTAL.
1851	9,998	1,567	6,600	18,164
1852	10,424	1,659	7,797	19,879
1853	10,739	2,122	7,604	20,465
1854	10,133	1,963	7,199	19,295
1855	10,656	1,547	6,725	18,927
1856	12,937	1,964	8,137	23,038
1857	12,915	2,329	10,094	25,338
1858	13,374	2,556	11,526	27,456
1859	14,430	2,061	13,372	29,863
1860	12,508	2,313	13,139	27,960

The urgent need of cheaper and more convenient means of communication to accommodate this trade, ever on the upward trend, was indeed recognized by the commercial community as early as 1844, when a committee was formed with the object of establishing a company to construct a railroad from Bombay towards the Ghauts. One can excuse the narrow vision betrayed in the objective of a railway which would end nowhere and would not concern itself with the transport of commodities from the other side of the Ghauts, when the extremely discouraging attitude which the supreme authorities at home had systematically adopted towards all railway projects is considered. When, at last, the project had reached a definite shape with the more reasonable objective of reaching the heart of the region where produce was grown, the piercing of the Ghauts in the then not very advanced state of the science of railway engineering was found to interpose a great obstacle in the way of the construction of the line. Indeed a comprehensive memorandum submitted by Col. Kennedy of the Engineers, who had been appoint-

ed to survey the region, proposed the abandonment of this established trade route over the Ghauts altogether, in favour of a less exacting project of a line along the coast. [1] The discussion soon reached a point where the claims and counter–claims of trade requirements as against engineering exigencies were hurled against each other. Col. Crawford wrote, "The crowning argument in favour of the Thull Ghaut route into Khandeish over that by Surat is this, that by it we occupy a line of large present and yearly increasing traffic, the Thull Ghaut Road, bad as it is in many portions, being the great line of communication between Bombay and central India. It is a hazardous experiment to attempt to interfere with established commercial routes, and no sound reason exists for attempting to disarrange the route already adopted by the traffic of the country".[2]

The need for cheaper communication was soon realised by the Central Provinces and the Godavery tracts too. It was observed, for example, in the sixties, that in spite of there being no decrease in the population, and of a rise in prices of cotton amounting to four hundred per cent, there was no increase in the cultivated area. There were two plausible explanations for this. The rise in prices may not have permeated to

1. "The Thull Ghaut incline as originally built for two–standard broad gauge tracks was 9·326 miles in length, lifting the rails through a vertical distance of 972 feet. For 4·625 miles the climbing locomotive toiled continuously against a grade of 1 in 37, at no point was the incline easier than 1 in 148. The curvature was no less arduous; the sharpest was of 1,112 feet radius, while the flattest had a radius of 5,280 feet. So badly was the mountain face battered by nature that it was necessary to drive 13 tunnels with an aggregate length of 7,596 feet, the longest measuring 870 ft. from end to end".

   The above description enables one to look a little less questionably at Col. Kennedy's seemingly narrow minded recommendation.

2. Crawford's Report to the Govt. of India, 31st Jan. 1853, para 37.

the interior where it would affect the ryot, the middlemen pocketing the entire difference. On the other hand, "it may be that the quantity of cotton grown depends upon the quantity that can be conveyed to the coast. No doubt all the carriage available at present is annually taken up."[1]

There were, besides economic, so many other considerations that entered ino this awakening of the country's transport needs, and perhaps the strategic one went as far home as the economic. Lord Dalhousie's historical minute is but a sincere expression of the unanimous voice of the country throughout the forties and fifties :—"And if the political interests of the state would be promoted by the power which enlarged means of conveyance would confer upon it of increasing its military strength, even while it diminished the number and cost of its army, the commercial and social advantages which India would derive from their establishment are, I truly believe, beyond all present calculation. Great tracts are teeming with produce they cannot dispose of. Others are scantily bearing what they would carry in abundance, if only it could be conveyed where it is needed. England is calling aloud for the cotton which India does already produce in some degree and would produce sufficient in quality and plentiful in quantity, if only there were provided the fitting means of conveyance for it, from distant plains, to the several ports adopted for its shipment. Every increase of facilities for trade has been attended, as we have seen, with an increased demand for articles of European market . . . ships from every part of

1. Taylor on Bruce's Report on Godavery, p. 20.

the world, crowd our ports in search of produce which we have or could obtain in the interior, but at present we cannot profitably fetch to them . . . . New markets are opening to us on this side of the globe under circumstances which defy the foresight of the wisest to estimate their probable value, or calculate their future extent."[1]

RESUME OF COST OF TRANSPORT AND TRADE.

Period roughly divided.	Place.	Means.	Cost of Transport. per ton-mile.	Foreign Trade. 000 £
1800–40	Gangetic Valley	Pack-bullock	8d.	£ 12,652 (1848)
,,	Madras	,,	,,	£ 1,813
,,	India	,,	,,	£ 21,872
1840–60	Gangetic Valley	Cart	3·50d.	
,,	,,	Country boats	1·25d.	£ 15,431 (1850)
,,	,,	Steamer	2·50d.	
,,	Madras	Cart (Govt. Stores).	5·50d.	£ 2,171
,,	,,	Cart (Merchandise)	2·25d.	
,,	C. P. Bombay	Cart	4d.	
,,	C. P. Mirzapore	,,	2·75d.	
,,	Bombay	,,	7·13 to 8·16	£ 10,711
,,	India		say 4d.	28,871

1. Dalhousie : Minute 20 April, 1853, para 6.

CHAPTER III.

RAILWAYS–INITIAL PERIOD.

THE opinions of various administrators, with regard to the handicap the primitive system of transport imposed upon the country's economic advance, would point the way for any administration to only one course of action viz. the removal of such obstacle. The movement towards the acceptance of such a policy, however, was extremely slow. The East India Company, with their wings clipped on every successive occasion of renewing their charter, exhausted all their virility and enterprise by the beginning of the forties. So far as railway enterprise was concerned, the early policy of the administrators even on the spot was no more encouraging. Lord Ellenborough, Governor General–1842 to 1844–thus summarily disposed of the plea for construction of railways as " all moonshine. " The proposed line from Madras to Bangalore, the first railway project to attract attention, had already been shelved as impracticable despite a survey.

The prospects of endowing India with railway transport were seemingly hopeless in the beginning of the forties, when the tide received an unexpected turn through a paper submitted by a Fellow of the Royal Society in 1842,–"Report on proposed railway in

India."[1] Public enthusiasm was soon aroused, for the productive capacity of the country was acknowledged on all sides. By 1850, the East Indian and the Great Indian Peninsular railway companies had already been incorporated. Progress, however, was very slow and the sanctioned mileage in 1852 did not exceed 200.

The home authorities however could not for long withstand the avalanche of applications for railway concessions in India. The persistence of the agitation induced them to refer the matter to their representative in India—Lord Dalhousie—who, very fortunately for the progress of the country, was the Governor General. With the experience that he had gained as vice-president of the Board of Trade during Sir Robert Peel's administration, which covered the 1845/46 railway mania period in England, no more mature judgement could have been asked to pronounce upon this question. In his masterly minute of the 20th April 1853, Lord Dalhousie made out an incontestable case for the construction of railways in India in the interests, just as much of economic advance as of political stability, and backed it up with outlines of the routes to be followed. "I have the honour respectfully to submit these several recommendations to the Honourable Court of Directors," ran its concluding paragraph, "and to express my earnest hope that it will resolve at once to engage in the introduction of a system of railways into the Indian Empire upon a scale commensurate with the magnitude of the interests that are involved, and with the vast and various benefits, political, commercial and social which that great measure of public improvement would unquestionably produce."

1. 22nd September 1842. Paper by C. B. Vignoles Esq., F.R.S. past President of the Institute of Civil Engineers.

It is not necessary for the purposes of this investigation to discuss the merits or otherwise of the lines Lord Dalhousie proposed. With but few exceptions, they fructified into the trunk lines of the seventies. His pessimism concerning the impracticability of the Bombay–Khandeish and Bombay–Poona line over the Ghauts was not justified in view of their subsequent success, both in point of construction of the line and the operation of trains. It was a triumph of the economist over the engineer, when the railway was decided to be laid out in deference to the existent trade route, instead of making technical considerations so supreme as to leave the commerce of the country to fight its way out.

The crucial point about the development of trade by improving transport is, however, as much the level of rates as the proper alignment of railways. The home authorities, with the experience they had of the part the cost of railway transport played in relation to trade, sought to exercise control immediately the first railways were thought of. Thus a despatch from the Court of Directors to the Government of India dated so early as 7th May 1845, suggests that "the rate of profit shall not exceed a proportion to be fixed; and that the Government shall have power to reduce the rate of conveyance so that they may not exceed that proportion." In the agreement signed between the guaranteed companies and the East India Company it was expressly provided that the railway undertakings were entitled to " such rates and fares as are approved by the East India Company." Further, the contract imposed upon the railways an obligation not to increase them without the company's consent; also "when the net

receipts of the lines have exceeded ten per cent upon the outlay they (the rates) shall be reduced so as not to exceed ten per cent."

But though the authorities were quite definite as to the matter and manner of control, neither they nor the railway managers could decide upon the actual rates. And this was not surprising. It would be impossible to lay down even at the present day, without experiment, what constitutes the upper and what the lower limit of the rate to be charged, bringing the conflicting claims of the different rates theories into a reconcilable blend which would steer clear of both the bankruptcy of the line and the undue smothering of economic enterprise on the part of the public. Taking the Great Indian Peninsular Railway, which was the pioneer in the field, the following was the scale fixed to start with.[1]

STATEMENT 22.

	Pies per ton-mile	Pies per maund-mile.
1st Class	14	·51
2nd ,, ...	18	·66
3rd ,, ...	24	·88
4th ,, ...	30	1·11

The purely tentative nature of the 1853 schedule is proved by the fact th t, within three years, in 1856, the tariff was revised as under.[2]

STATEMENT 23

	Pies per ton-mile	Pies per maund-mile.
1st Class	10	·36
2nd ,, ...	14	·51
3rd ,, ...	18	·66
4th ,, ...	20	·73
5th ,, ...	30	1·11

1. Appendix to Juland Danvers' 1st. Report, p. 54.
2. Ibid.

This tariff continued in operation for some time, and was revised in 1860.[1] The scale at which it stood in the beginning of 1862 was as follows.[2]

STATEMENT 24.

	Pies per ton-mile.	Pies per maund-mile.
1st Class	8	·29
2nd ,, ...	10	·36
3rd ,, ...	16	·59
4th ,, ...	22	·81
5th ,, ...	30	1·11

The reduction, it will be observed, is specially directed to apply to the lower classes of merchandise, while the 4th class tariff is increased.

In 1865, the scale undergoes another revision and stands:[3]

STATEMENT 25.

	Pies per ton-mile.	Pies per maund-mile.
1st Class	12	·44
2nd ,, ...	18	·66
3rd ,, ...	24	·88
4th ,, ...	26	1·32
5th ,, ...	54	2·0

Cotton was raised from 2nd to 4th Class with "marked success." So far as can be ascertained, there was nothing in the nature of a graduated or telescopic scale of rates then obtaining.

While these fluctuations in rates went on with respect to the class scales, it is essential to notice what the classes actually comprised of. Like primary classifications in most other countries, the Indian rates schedule was an extremely simple document. It was

1. Bombay Administration Report, 1860-61.
2. Juland Danvers' Administration Report, 1861-62.
3. Juland Danvers' Report, 65-66. This scale does not agree with that given by Ghose: Monograph on Indian Railway Rates, which is on a lower scale.

certainly devoid of the complications initiated by the two schedules of authorised charges on English railways, and an examination proves that the whole of the experience gained in England during a quarter century of railway operation had been brought to bear upon its formulation, with the idea of the ability of a commodity to bear a charge in the background. Summarised, the classification stood as under:—

1st. CL :–Mineral goods, manures, firewood, salt, timber, pig iron, iron bars etc.,

2nd. CL:–Agricultural products, raw materials and food products.

3rd. CL:–Wines and spirits, tobacco, turmeric, machinery, raw silk.

4th. CL :–Books, cutlery, glassware, medicines, perfumery, tea etc.

5th. CL :–Valuables such as gold and jewellery.

The actual schedule printed in Juland Danvers' 1st Report does not exceed one quarto sheet. Whilst cotton and jute have a place in the second class, piece-goods cotton or woollen are left out of account altogether. Twist and yarn of both sorts are rated second class, and hosiery third. It is interesting to note these in light of subsequent changes, when textiles have come to occupy the most prominent position in Indian trade amongst manufactured articles.

Whilst the G. I. P. authorities were thus experimenting with rates, the Government adopted the policy of "wait and see." For in the initial stage of railway operation, they would feel just as much at a loss as regards the scale of rates in conformity with the

interests of trade, as the railway did. For the G. I. P. there was an even more formidable obstacle in the way of examining the influence of rates on traffic viz. the break at the Ghauts, the line whereon continued in the process of construction until 1866. Juland Danvers thus acknowledges in 1862, "The perplexing problem of rates and fares still remains to be solved. Experiments have been tried with varied success but the incomplete state of the undertakings adds to the difficulty of ascertaining the precise rates which are most suitable and remunerative."[1] As a result of these experiments one error, however, in the creed of the Government had been rectified, viz. the supposed apathy of the Indian to all forms of economic activity and consequently his poverty, which made him not only unable but unwilling to travel.[2] Seven years of trial and error policy led the railways, as well as the Government, to revise their decision. Writing in 1862, Danvers says, "One point, however, is unquestionably proved, and that is, that the people of India are similar to the people of every European country in their disposi-

1. Report on Railways in India 1861–62, p. 22.

2. This seems to have been the undercurrent of feeling throughout the forties when the home authorities were so reluctant to launch any enterprise which made a demand upon bold business policy. "The advantage of railroads is available only where proportionately large returns can be obtained to meet the great expense first of constructing and then of working them", reads a despatch from the Court of Directors to the Government of India in 1845. "According to the experience of this country by far the largest returns are procured from passengers, the least from the traffic of goods. The condition of India is in this respect directly the reverse of that of England. Instead of a dense and wealthy population, the people of India are poor, and in many parts thinly scattered over extensive tracts of country. But on the other hand, India abounds in valuable products of nature, which are in a great measure deprived of a profitable market by the want of a cheap and expeditious means of transport. It may, therefore be assumed that the remuneration for railroads in India must, for the present, be drawn chiefly from the conveyance of merchandise and not from passengers."—Despatch from the Legislative Department 7th May 1845.

tion to travel. The numbers using the rail are in proportion to the inducements offered. For instance when a fourth class, with reduced fares, was established on the G. I. P. with 350 miles open, the number of passengers increased nearly half a million in six months.[1] Apropos of this, it is noticeable that the reports to the Secretary of State during this experimental period seem to pay little attention to the development of freight traffic, whereas they abound in a penetrating analysis of passenger traffic.

It is impossible therefore to attempt to investigate a correlation of a statistical character between the cost of transport and development of trade at this period, except in a general way. So early as 1859, when not more than about 200 miles of the G. I. P. were open, with a break at the Thull Ghaut, Khandeish profited considerably by the reduction which the railway offered in the cost of conveyance. The cost of transport by bullock-cart appears to have risen 50% in that year in the Bombay Presidency. "More grain is produced than can be profitably conveyed to Bombay except in seasons of high prices,"[2] runs the Administration Report for the Presidency. " But for the assistance afforded by the portion of the railway already completed, the cultivation of Khandeish must have received a severe check."[3] The difference between the two scales of transport charges referred to is the difference between 32 pies per ton mile and 14 pies per ton mile—the rate on grain at second class introduced in 1856.

1. Report on Railways in India 1861–62, p. 22.
2. Obviously because of a scarce monsoon.
3. 1858–59 Report, para 13.

So far as the potential expansion of trade was concerned, the 1856 reduced scale was still a heavy handicap. This is evident from the note of satisfaction with which the Presidential Administration report for 1861 comments upon the new reduced scale. "The former high rates and other causes operated to prevent traffic from coming to the line in the Deccan, for not withstanding the facilities of transit offered by the rail, the amount of goods on the old high road has not diminished."[1] And at another place the report reads, "Since the tarriff rates were lowered last October, a considerable increase has arisen in the public merchandise carried.....On the North East Line, a great quantity of cotton and seeds have been brought on the line lately in consequence of the high prices ruling in Bombay; more in fact came to the stations than the amount of available stock could remove."[2] The Ghaut interruption had a good deal to do with the high rates and low traffic obtaining. The Ghaut section had to be worked by relays of carts and bullocks which involved "great expense." Furthermore, this system was "quite inadequate to carry to the railway the large quantities of cotton which were brought for conveyance to Bombay and which have consequently accumulated at the head of the Ghaut."[3] This was reported with regard to the Bhore Ghaut. But the delay in Thull Ghaut construction had been presenting as material a barrier. So much so that the incomplete state of communication between Bombay and the interior was, if not exactly defeating, at least not enabling the accomplishment of the objects for which the line was made.[4] But difficult

1. 1860-61 Report, para 46.
2. Ibid, para 54.
3. Report on Railways in India 1862-63, para 30.
4. Ibid, 1863-64, para 44.

and expensive as the negotiation of the Ghaut expanse between the two rail heads was, in monsoon it involved positive loss, both to the public and the railway by reason of the damage wrought to the commodity as well as the block to traffic.[1] Thus early in March 1864 the accumulation at the Ghaut end was so great as to take 37 days to clear it. On the other hand, immediately on the completion of the Ghaut line in 1865, traffic received an unusual stimulus and exceeded the most sanguine expectations of the railway executive. "Upon the completion of the Allahabad Bridge...and of the Ghaut incline the demand for conveyance of goods was so great, that the resources of the companies were according to the accounts from India, inadequate to meet it," reported Danvers in 1866.[2] The rolling stock was found insufficient and locomotive power was subjected to extreme strain. But so far as trading interests were concerned, this was only a shift to the other extreme, causing "inconvenience and disappointment to the public" and depriving the railway of much that could legitimately have been earned, if traffic had been provided for. The rush served however one good purpose from the view point of the railway administration. It demonstrated to them that the centre of gravity was to shift from the road to the railway. It gave them confidence by proving that a larger bulk of traffic was available than they could take charge of.

1. The Bombay traders made frequent representations to th Government of Bombay disputing the right of the Railway authorities to refuse to take charge of traffic over the Ghauts. In view of the heavy losses suffered by railway-3 lacs-in the 1864 monsoon, the Government justified their action. Vide Bombay Chamber of Commerce letters to Government of Bombay, 16th January, 1865 and 31st May 1865.
2. Report on Railways in India, para 37.

In the absence of statistical information of a definite character it is not possible to judge what effect this had on the movement of commodities. Indeed so many factors combined to influence the course of trade at this juncture that any generalization would be extremely hazardous. The intense stimulus which the Indian cotton trade had received during the American Civil War had by this time ceased to operate, the United States having resumed normal trade relations with Great Britain. The increased tariff of October 1865 appears to have brought in larger receipts for a period of six months—up to March 1866. With the fall in cotton prices, however, there came a depression spreading over many other branches of trade.

But there was a factor of quite as great importance working against the development of traffic on the railways throughout. Though the interior had been provided with an outlet, in the producing areas themselves communications did not keep pace. The necessary provision of roads was neglected for a considerable period, in spite of the recognition by the Home Government of their importance. Although in 1860 Sir Charles Wood in his despatch to the Government of India points out, not only their necessity but also their expediency and the small influence the railway line would have on the bordering district in their absence,[1] the position seven years later had not far improved. In 1867, "the deficiency of road feeders to minor railway stations" is found to drive traffic to the high road to Bombay, "which it would naturally be supposed could be carried much more cheaply by rail."[2] Partly, of course, this state of affairs must have been due to the detention at stations on account of an inadequate supply of rolling stock.

1 Report on Indian Railways, 1859-60, App. 5.

2. Bombay Administration Report, 1866-67, p. 267.

With regard to rates on cotton, there was also another factor involved. The question of portability was difficult to solve, intensifying the shortage of rolling stock if transport of unpressed cotton was allowed. The Bombay traders, on being asked to remedy matters, suggested the introduction of presses in Berar, to which Government not only readily agreed but also promised assistance. The G. I. P. in 1867, finding progress unsatisfactory, sought to impose a higher rate on half-pressed and unpressed cotton than on full-pressed. Though the Bombay traders agreed to a differential rating, the railway had a considerable time to wait before traffic in loose cotton stopped altogether, and the controversy on the issue of differential rates did not cease till 1870. But for the rigorous enforcement of the regulation with regard to pressing—10 lbs. per c. ft.—the objectionable practice would not have stopped even then.[1] The agreed rates were :—

Full pressed, i.e. 10 lbs. per c. ft.	18 to 20 pies t. m.
Half „	26 to 28 „ „
Docras i. e. bales of loose cotton	40 to 44 „ „

Apropos cotton rates, it is interesting to note the important part the commodity played in providing an inducement for the introduction and expansion of railways in India. Even in the primitive state of its transport, with the incredibly high transport charges noted in the last chapter, India provided no mean part of the requirements of England. Of the 886 million lbs. imported into England during the decade 1849–58, whilst 75½ per cent came from America, no less than 146 millions lbs. i.e. 18 percent came from India. Of this

1. Vide Reports of the Bombay Chamber of Commerce.

Bombay contributed 135 million lbs. and Madras and Bengal $9\frac{1}{2}$ and $1\frac{1}{2}$ millions respectively; and this in a period when the important cotton producing tracts of Broach, Surat and Berar had yet to labour under bullock-cart, pack-animal or coasting vessels costs of transport. The construction of railways in these districts, it was expected, would cheapen the price in Bombay by about a penny, or 8 pies, per pound, enabling "the greater supply to this country (England) of a better article at a cheaper rate."[1] This optimism was quite justified. For with the lowered cost of transport from $4\frac{1}{2}$d. (36 pies) to 1d.–$1\frac{1}{2}$d. (8 to 12 pies)[2] per ton mile marking the change from bullock cart to railway, the export of cotton from India into England went up as shown below :—

STATEMENT 26.

IMPORTS INTO UNITED KINGDOM, 000 CWTS.

From	1858	1859	1860	1861
U.S.A. ...	7,250 (approx)	8,587	9,963	7,317
INDIA ...	1,330	1,717	1,823	3,295

Following on the heels of this, came the American Civil War and the boom in the cotton trade, soon to be followed by a depression not only in cotton but in general business. May be the campaign against transport of loose cotton intensified the crash, and the increase in rates to keep traffic within dimensions of the available rolling stock exerted its influence to depress economic activity. But the relation between the two can be even more definitely established than in these vague terms, on a closer examination of the conflicting claims advanced by the railway authorities and the

1. Report on Railways in India 1858-59, para 170.
2. Juland Danvers' figures, 1861-62 Report.

Government from time to time. Although the period was wholly given to experimentation, the traffic departments seem to have learnt little from the results of those experiments. In 1862, for example, it was found that the addition of lower passenger fares by the introduction of a fourth class brought about an increase of half a million in the total number of passengers. Danvers commenting upon this says, "But low rates and remunerative rates are not always synonymous. Increase in numbers necessarily produces an increase in the working expenses, and it is doubtful whether it is possible to convey, with profit, passengers in any vehicle, safely constructed and properly fitted up, at the rate of less than one-fifth of a penny per mile, which was the fourth class fare on the line just referred to."[1] Leaving for the moment the validity of the claim made above, and admitting that low rates can go so low as to make railway operation unremunerative, it cannot be doubted that even the Government at this period were rather uncertain about the best course to be adopted. The basic policy at the time cannot perhaps be more explicitly put down than in Danvers' own words—"The object of the Government is the same, viz., to secure a remunerative return upon the outlay"[2] This seems contradictory to his own admission only in the previous year—"The former high rates and other causes operated to prevent traffic from coming to the line in the Deccan"[3]

In a later report, the rates policy is given in more explicit and unmistakable terms. "The object both of the Government and the Companies, *is so to regulate*

1. Report on Indian Railways 1861-62, para 50.
2. Ibid, para 51.
3. Ibid, 1860-61, para 46.

them as to produce the highest profits. There is a point at which the greatest amount of traffic can be produced at the smaller cost, and rates are too high or too low when they have the effect of reducing the traffic below or increasing it beyond that point. It will be observed, in some of the traffic returns hereafter given that the receipts have increased, although the traffic has diminished. If the traffic has not been reduced too much the object has been attained."[1] But here the writer seems to feel a little uncertain about the stand he has been taking all these years, and though not advancing any definite line of policy for the future in antagonism to the above, advances in his following statement what is perhaps the germ of the liberal policy urged in the next decade. "But it is possible," he says, "that the rates may have been raised a little too high, and that more traffic might have been taken at a less profit per passenger or per ton of goods, and yet so as to produce greater aggregate profits."[2] The pure interest earning motive that then dominated the official mind cannot be doubted. At the same time, the onus of the guaranteed interest, which during the decade 1853-63 had already amounted to about £ 8,100,000[3], cannot be overlooked.

It is after this that a cleavage appears to have arisen between the Government and the railways. Replying to allegations that the Government were likely, in enforcing their contractual privilege of regulating rates, to disregard the interests of the shareholders by

1. Report on Railways in India 1863-64, para 36.
2. Ibid.
3. The Government payments amounted to £ 10,592,725, payments by railways to the Government treasuries to £ 2,400,000.

insisting upon too low a scale of charges, Danvers urges that this was far from being the case. "It would in the first place, be contrary to the just principles of modern legislation to confer advantages on one class of the community at the expense of the whole. The people of India are now taxed to pay the guaranteed interest. For their protection, Government properly exercise a control over the Railway Companies, with the two-fold object of securing such a system of good management as shall provide all the legitimate advantages of railway communication to the country at large, as well as such profits as shall release the Government from the payment of the guaranteed interest. It must not be thought, however, that high fares and profits are synonymous; on the contrary, my belief is that low fares, that is to say low compared with those in Europe, are perfectly compatible with large and remunerative receipts."[1]

After the enunciation of this principle the explanation of the 1866 increase in rates, professedly with a view to check the growth in traffic, is frankly apologetic. "At present, the traffic on the principal lines is.....restricted by a scarcity of rolling stock. This has partly caused the rise in fares, but when there is a sufficient supply of rolling stock and a large and well-sustained traffic, lower rates may be found to be more profitable than higher."[2] This however is followed by an alternative suggestion, the significance of which is difficult to appreciate in the light of the above. "If however the traffic goes on increasing in the same ratio as it has done during the last two years, the rates will in some cases, have to be raised higher

1. Report on Railways in India, 1864–65, para 42.
2. Report on Railways in India 1865–66, Para 46.

than they are now to realize the profits which the railways could command," states the report to the Secretary of State, and follows up with an instance detailing how small profits on a larger number of units making a large aggregate, rather than large profits on a smaller number of units, should be the objective aimed at. The series of contradictory statements seem impossible of reconciliation. There is one point, however, that should not be left out of account. It was impossible yet, as it should be, to judge what actual scale of charges was most suitable, considering the imperfect state of the undertaking and the necessarily evolutionary character of a rate structure.

The Government had for some time been contemplating a more positive system of control over rates. Under the original contracts the rates were to be fixed by the railway companies and the Government coming to an understanding.[1] The preliminary scales were by mutual consent experimental. But gradually the Government woke up to the necessity of a closer control. Danvers proposed, what he called "a very judicious arrangement," whereby the Government

1. Thus the Government provided that "The said Railway Company shall be authorized and empowered to charge such fares for the carriage of passengers and goods, and such tolls for the use of the said railway, as shall have been approved by the Secretary of State in Council and shall not in any case charge any higher or different fares or tolls whatsoever without such approval being first obtained; but such fares or tolls shall, when such net receipts as are hereinafter mentioned shall in any year have exceeded ten per cent upon the outlay, be reduced in accordance with any requisition of the Secretary of State in Council in that behalf, but only with a view of limiting the said fares and tolls so far that the net receipt shall not exceed ten per cent, as aforesaid."
(Clause 8 of Deed of Contract between the Secretary of State and guaranteed Companies).

would avoid the necessity of being required to approve every change, and the railway authorities of awaiting the consent of Government. This was the approval by the Government of a scale of maxima charges, within the limits of which it would be legitimate for each railway manager to effect alterations. "The above plan," he said, "has obvious practical advantages; and while it relieves Government from any minute interference, it does not take from it that general supervision, it is desirable, for the interests of the public, that it should retain."[1]

The proposal appears to have met with general approval, for in 1864 maximum rates on the Great Indian Peninsula Railway were an accomplished fact, while the possibility of their application to other lines was being entertained. This because the Government Director had reported to the Secretary of State, "The system has worked well." And indeed, from the point of view of practical operation of rates, constant Governmental interference would not have been desirable if only a correct line of policy was once laid down. The Secretary of State subsequently adopted this course as a handle to exercise the right of control over rates appropriated under the contracts with the companies all round.[2] The Government of India in their turn delegated the right to fix the maxima scale to the local Governments, retaining in their own hands, however, the marking out of general lines of policy and the right to "regulate matters by which a railway company working within the territories of one local Government may affect a company working within the territories of another Government."[3] The

1. Report on Railways in India 1861-62, Para 51.
2. Despatch from the Secretary of State to Government of India, 16th May, 1867.
3. Railway Department Resolution 16th October 1867, Quoted by Bell : Railway Policy in India, P. 206.

Resolution adumbrating this principle further set itself out to announce the attitude to be adopted in the exercise of control, either by the local Government or by the Government of India, viz. to make them as generally useful to the mass of the people as was consistent with due profits to the companies, at the same time keeping in perspective the fact "that it can never be proper to insist on any fare or rate that shall not afford a reasonable profit with ordinarily filled trains, and that there are only a few cases in which the Government should interfere with the freedom of the companies to act according to their judgment on the ordinary system of trial of the relations of supply and demand."[1] For the stricter enforcement of this principle the Supreme Government reserved to themselves the control over low class passenger fares and coal and grain rates, making the prevailing rates, on the latter two their maximum rates. The G. I. P. maxima were fixed as under:–[2]

	Pies per ton mile.
1st Class	8
2nd ,,	10
3rd ,,	16
4th ,,	20
5th ,,	30.

These were exclusive of terminals.[3]

It was realised by eminent authorities that this control had been obtained none too soon. The railway had been becoming an integral part through a decade of its existence of the economic life of the regions affected

1. Bell, P. 207.
2. Ibid, P. 207.
3. Ghose: Monograph on Indian Railway Rates 1916, p, 10, gives a scale of maxima rates totally different from that given by Bell: Railway Policy in India 1874, p. 267–on a much higher scale.

and the total mileage had at this end of the decade exceeded three thousand. The companies, in absence of competition against which they were safeguarded by Governmental regulation, had begun to realise that they were in a monopolistic position. Added to this was the capital that could be made out of the inadequacy of rolling stock and the expanding traffic. Indeed the railway executive pointed out as a grievance the difference obtaining between the railway rates and the bullock-cart charges, the latter being seven times as high.

The Government of India were subjected subsequently to a severe test with regard to their broad policy towards trade, in the opposition they encountered from the Secretary of State, who insisted that they had gone too far in retaining in their own hands the control over grain and coal rates. Such a right reserved to them, in his opinion, left no scope for the companies to manipulate rates according to their requirements, and it was not likely that the companies would abuse the privilege given them; for the interests of the public, whom in this case the Government of India claimed to represent, and those of the railway companies, were identical, viz. so to fix their rates as to give the maximum of passengers the maximum of service. The Government of India, in defence of their position, pointed out that such was not necessarily the case and that the railway companies had been finding it more profitable to extract a maximum of profit out of a minimum of traffic. Although the secretary of State could not be convinced of the hostility of interests then obtaining between the railways and the public, it cannot be doubted that the Government of India emerged from the struggle as champions of the wider economic viewpoint.

This brings us down to one of the most epoch-making points in the economic history, not only of India, but of the whole world viz. the opening of the Suez Canal. The G. I. P. now gave a much shorter and quicker access to the markets of Europe and its traffic naturally increased. The subsequent developments appertain to a period which belongs more to the established era of railway rates and traffic than to the initial one, and will be treated hereafter.

The following table attempts to bring out the net annual growth of traffic on the G. I. P. The inherent weakness in any statistical data for purposes of comparison when the line is essentially in a state of leading to "nowhere" is admitted, and the table set out for what it is worth :—

STATEMENT 27.

YEAR.	MILES OPEN.	TRAFFIC INCL. RLY. MATERIALS.	TRAFFIC EXCL. RLY MATERIALS.	TRAFFIC PER MILE.	REMARKS RE RATES.
		Tons.	Tons.	Tons.	
1856	89	29,139	N. A.	...	Scale reduced.
1857	89	87,320	N. A.	...	
1858	112	133,484	N. A.	...	
1859	204	...	117,520	576	
1860	263	...	142,655	542	„ „
1861	368	...	211,189	574	
1862	451	...	250,222	554	
1863	531	...	388,070	730	
1863-64	531	...	388,070	730	
1864-65	580	...	139,408	208	„ Increased.

N. A. Not available.

While the G. I. P. was thus forging ahead, the East Indian had already, by the beginning of 1860, traversed the important trade section—Calcutta-Rajmehal. Beyond Allahabad construction had been progressing in

a second section, proceeding towards Delhi. The Calcutta–Raneejung section of 121 miles had already been in operation since 1855. As in the case of the G. I. P. two obstacles had presented themselves in the bridging of the Soane and the Jumna, though the immensity of the barriers was not half so great. For though the railway engineer was comparatively unacquainted with high and steep slopes he had considerable experience of bridge building.

The rates policy on the East Indian, as on other lines at the time, was the same as outlined for the G. I. P. As early as in 1849, the directors, in explaining the interpretation to be put upon clause 8 of the contract with the East Indian Railway said, "In the first instance, the rate of tolls will be proposed by the companies; but before they are adopted they must have your approval. This is a portion of the management of these novel undertakings, which will require great caution and consideration; and with reference to which the experience of this country can afford little or no assistance." [1] Regarding the policy underlying the Governmental control of rates, the directors sought to be quite definite: "The great object which you will have in view will be to arrive at that medium which will afford a fair remuneration to the railway company, and to enable the public to avail themselves of the advantages which these undertakings will afford to the greatest possible extent consistent with the first mentioned object."[2] The fair remuneration to the company was to be measured in the same terms as with the G. I. P. viz. the net receipts were not to exceed ten per cent. On the

1. Financial letter to India, No. 27 of 14th Nov. 1849, para 18.
2. Ibid.

other hand the mere fact that the dividends reached ten per cent was not to be an index to the justification of governmental interference, for, in the opinion of the directors, such a positive limitation upon profits was apt to stifle enterprise and promote laxity; so that the public would not only not be benefitted, but would have to put up with an inefficient service. The interference therefore, was called forth only in cases where, besides the profits exceeding ten per cent, other considerations led the authorities to consider "such a step required by a due regard to the interests of the public and of the Railway Company." Even then such reduction in rates as was effected was not to depress the profits below ten per cent, i. e. the government could not legitimately demand an alteration in rates until the dividend had reached the twelve or thirteen per cent mark. So far as the initial policy is concerned the point of utmost importance to the directors appears to be the net returns on the enterprise.

The first opening of the line to traffic, Calcutta–Raneegunj in 1855, was hailed by the trading interests with enthusiasm. The Bengal Chamber of Commerce recorded it as an event, "the importance of which can scarcely be over-estimated, and the effects of which upon the commerce and civilisation of this vast country will be progressively beneficial."[1] Looking back from this distance of time, it appears that the Bengal Chamber were a little cold in their reception, from the terminology they adopted. It will scarcely be an exaggeration to assert that the economic life, not only of Bengal but of the United Provinces[2] and the

1. Report, May 1855, p. 9.
2. Then North West Provinces

Punjab, has undergone an entire transformation before the unceasing advance of the Railway. It may also be asserted that the long drawn out controversy between the advocates of Calcutta–Rajmehal and the Calcutta Mirzapur routes was thoroughly futile, for by whichever route communication had been established between the United Provinces and Bengal, the transport of produce would have developed, quite apart from the fact that early establishment of communications in the region now traversed by the Calcutta–Benares line would have led to, not only an earlier but even a more intense development of its mineral wealth. As it was, Raneegunj was found in the words of Davidson to be "equally inconvenient to all collieries."[1]

The controversy over routes having subsided by the opening of the Calcutta–Raneegunj line, the problem of actual fixation of rates came up. These were again experimental. The following table sets them out in their phases of change :—

STATEMENT 28.

	1854		1862	
	PIES T. M.	PIES M. M	PIES T. M.	PIES M. M.
1st Class	9	1/3	9	1/3
2nd ,,	13½	½	13½	½
3rd ,,	18	2/3	18	2/3
4th ,,	27	1	30	1 1/10
5th ,,	54	2	54	2
Coal ,,	7	...	...	...

	1864		1865		1866	
	PIES T.M.	PIES M.M.	PIES T.M.	PIES M M.	PIES T.M.	PIES M.M.
1st Class	10	·37	8	·29	16	·59
2nd ,,	12	·44	14	·51	23	·88
3rd ,,	24	·88	18	·66	28	1·02
4th ,,	28	1·02	28	1·02	48	1·78
5th ,,	56	2·05	56	2·05	80	2·95

T. M.: ton-mile
M. M.: maund-mile

1. Davidson: Railways of India, p. 204.

The classification was the same as that for the G. I. P.

In the first instance, the goods traffic was so insignificant that it was considered futile to analyse it. Coal, however, was found to hold the dominant position, for, despite the special low rate that it was given, the receipts from that commodity accounted for the greater part of the total goods receipts. The carriage was mainly from Raneegunj to Calcutta.[1] Thus: —

STATEMENT 29.

YEAR EDING 30TH JUNE,	TOTAL RECEIPTS FROM GOODS TR	RECEIPTS FROM COAL	PERCENTAGE OF COAL TO TOTAL.
	£	£	
1855	6,037	1,949	32·3
1856	33,771	17,678	52·3
1857	52,564	29,869	56·5
1858	76,804	43,224	56·3
1859	1,18,889	71,736	60·0

Indeed as late as in 1865–the earliest year for which a traffic analysis is available–coal accounted for 6,616,000 maunds out of a total traffic of about 15,300,000 maunds,[2] i.e. slightly more than 43 per cent.

As in the case of the G.I.P. cotton again proved to be the principal inducement behind not only the extension of the E.I. system, but also its early rates policy—under pressure from the railway executive on the one hand and the Government and the trader on the other. In the case of the first, the reports of the political and administrative officers to the Government of India testify to the fostering care with which the

1. Report on Railways in India 1855–59, para 139.
2. Calculated from table, para 77, Report on Indian Railways, 1866–67.

administration regarded traffic in that commodity. Major Meade, Agent to the Governor General for Central India, in his report to the Political Department, thus draws pointed attention to the damage suffered by cotton in transit under the old system of transport. "It seems impossible to overestimate the injury that huge loose unsecured bales of cotton must meet with while in transit..."[1] The Bengal traders expressed equal solicitude that the commodity should be afforded safe and cheap passage on its way to Calcutta from the interior.[2] Nor was the administration unwilling to move. The Government of India, gauging the intensity of feeling on the point and anticipating an increased demand, took immediately the first step towards facilitating an early "increase of production, and towards improving the means of bringing the produce to port," by ordering a survey of the situation in co-operation with the business community of Bengal.[3] On the production side every encouragement was being offered, and the traffic on the line had grown to above 1,000,000 maunds in 1865 when the incapacity of the rolling stock to carry the traffic led to an increase in rates in the following year. This, however, was effected with great ingenuity by the E.I. Railway, who, under the guise of enforcing rigorous rules against transport of loose cotton, put up rates not only for loose but for baled cotton as well. The increase was to be from Rs. 2-6-2 per maund for well screwed,

1. Letter from Major Meade to Col. Durand, 18 Aug. 1862.
2. Letter from Bengal Chamber of Commerce to Govt of India, 25th Sept. 1862. An examination of the correspondence between the Chamber and the Government betrays the intense pressure the Bengal traders brought to bear upon the authorities at the time in this regard.
3. Report, Bengal Chamber of Commerce, 30th April, 1861, p, 31-2.

and Rs. 3–5–0 for half screwed, Delhi–Calcutta, to Rs. 59–6–0 per ton of 50 c. ft. i.e. Rs. 3–11–0 per maund on bales weighing $3\frac{1}{2}$ maunds each and measuring 11 c. ft. for well screwed and to Rs. 6–10–0 per maund on half screwed bales weighing $3\frac{1}{2}$ maunds each and measuring 20 c. ft. The net increase thus amounted to Rs. 1–4–10 on well screwed and Rs. 3–5–0 on half screwed. The bulk of cotton traffic at that time was however in half screwed bales which meant a hundred per cent increase in cotton rates. It was calculated that this was equivalent to a levy of 19 per cent on all cotton brought from Delhi to Calcutta. With evidence furnished of the shortage of rolling stock on the line, it was soon imputed that the "rate had been designedly adopted as a prohibitive one, in order to prevent thereby, if possible, more cotton being brought forward to the stations in the interior for transport to this city (Calcutta), than the line can provide accommodation for."[1] It was pointed out however that the mere rise in rates would not serve the desired end, for in case of high prices continuing, the rate would not be a burden to trade and the amount offering would not be diminished, whereas in the instance of a fall in price, the trade would simply be driven to the alternative means of transport viz. water. The E. I., however, were in fact following a policy all their own, and they cleared the air by some plain speaking. Although the stoppage of loose cotton being offered for conveyance was one of the motives, they confessed to their desire to fulfil their sense of duty towards the shareholders,

1. Letter from Bengal Chamber of Commerce to Chairman of the Board of Agency E. I Rly., 25th Sept. 1866.

who, in their opinion, were entitled to share in the profits of the cotton trade.[1] The line thus claimed, with the consciousness of its monopolistic position, the privileges of a private trader subjected to competitive conditions.

Contemporaneously, the Government had been attempting to initiate a convenient instrument of control of rates. The fixation of the maxima on the E. I. Railway, it appears, was provoked just as much by external circumstances as by the rates policy the railway had been following, as expressed in the case of cotton. That the scale fixed for the E. I. R. was generally higher than that for the G. I. P. seems anamolous in view of the E. I.'s easy gradients and proximity to fuel :—

	Pies per ton mile.
1st Class	9
2nd ,,	13½
3rd ,,	18
4th ,,	27
5th ,,	54

Not long after this the railway had a chance to experiment with low rates. The scarcity in the region during 1869–70 induced the railway to quote grain rates at ½d. i.e. 4 pies per ton mile. The results were most encouraging– "a large increase in the traffic and a fair profit." The Government Director in reporting to the Secretary of State hoped that this would inspire the future rates policy of the company, "of adopting low rates for the carriage of staple commodities of the country." The fact however that the river, with its expensive, slow and uneconomic concomittants was still used, proves the total inability of the railway to gauge what scale would accommodate traffic to an adequate extent.

1. Board of Agency to Bengal Chamber, 4th Oct. 1866.

The third locale of railway activity was Madras. The trend of the existent trade has already been noted in the previous chapter. In considering its claim to become one of the first railway centres, it should not be overlooked that the town itself had little in the way of a natural site to offer as Bombay or Calcutta did. "To a visitor, who looks at the long sandy beach without an inlet or even the pretence of a navigable creek, who sees the fearful breakers foaming on the shore and causing a surf varying from passable by Massulah boats, to impassable and dangerous, it seems most unsuited to be a commercial mart or the site of a city."[1] The shipping had to be in an open road-stead and the landing of the cargo was done in boats "tossing in the heavy swell of the Bay of Bengal." Ashore there was no particular advantage either in the way of water transport such as Calcutta or Karachi command. But its political and strategic importance was considerable. And these had already led to a fair amount of trading activity. Nevertheless the Home authorities were hardly sanguine about the prospects of the Madras Railway and when the Board of Directors recommended guarantees to be extended to the line on the same terms as to the E. I. and the G. I. P. they were refused, because they were not satisfied *inter alia* " as to the merits of the particular line proposed more especially as to its position in relation to the great political and commercial objects which a railway in Madras should possess as well as to any general system of railways of which it should become a part."[2]

1. Davidson; Railways of India, p. 32.
2. Reply of the Board of Commissioners to the directors' resolution, 17th April 1849.

The period of hesitation was soon superseded by the establishment of the Madras Railway Company in 1852 and its incorporation. In the actual alignment economic considerations were desired to be placed in the forefront, and the Chief Engineer was instructed accordingly. The orders ran: "In determining the direction of the line it is of much importance to take into consideration the courses of the existing road and traffic of the country and to follow them as far as can be done with safety and without sacrificing higher objects, even though by so doing the quantity of earthwork and number of small bridges may be increased. For the traffic will thereby accommodate itself the more readily to the new means of transport.....The shortest line between two points is not always the best for a railway."[1]

Lord Dalhousie, in his minute, recommended the Madras Cuddapah Bellary line, with subsequent extensions to Bombay, as the one most suited to commercial requirements, and from other considerations the "best trunk line" to take a place in the larger scheme of linking up the three presidencies.[2]

By 1859, important additions had been made to the project—lines to Bangalore and to the Nilgherries "chiefly with the view of developing the resources of this part of the country," and to secure to it political and social advantages," as set out by the Government Director in his first report.

With the experience gained elsewhere, the inability of the railway to influence trade without the provision of feeders was acknowledged and sought to be

1. Railway Board to Chief Engineer of the M. R. Co., 13th Dec. 1862.
2. Minute, 20th April, 1853.

remedied at the very outset. The construction of roads leading exclusively to railway stations was assumed strictly to be a railway charge and the expense was borne accordingly. It was agreed that a "road leading exclusively to a railway station is as strictly a part and parcel of the railway works as the steps leading up to the terminus door."[1] Roads on the other hand, of greater lengths–18 or 20 miles–could not lead exclusively to a railway station, and were not included in this category. The authorities seem to have proceeded with great caution and courage in bidding for appropriating the available trade to their line, and in developing it. This is significant as contrasted with Bombay and the Punjab where the line was handicapped at first for want of tributary roads.

The line having been opened, the first rates charged, together with changes over the 11 years were as follows:—

STATEMENT 30.

	1856.		1858.		1859.	
	pies t. m.	pies m. m.	pies t. m.	pies. m. m.	pies t. m.	pies m. m.
1st Cl.	8 with terminals.	·29	8	·29	8	·29
2nd ,,	15 ,,	·55	10	·36	10	·36
3rd ,,	24 ,,	·88	15	·55	12	·44
4th ,,	...	...	24	·88	...	...

	1863.		1865.		1866.	
	pies t. m.	pies m. m.	pies t. m.	pies m. m.	pies t. m.	pies m. m.
1st Cl.	9	·31	8&10	·29&·36	12	·44
2nd ,,	11	·41	16	·59	14	·51
3rd ,,	13	·48	18	·66	16	·59
4th ,,	...	...	26	·96	24	·88
5th ,,	...	...	24?	88?	36	1·32

(T. m.: Ton mile. M. m. : Maund mile.)

The classification applicable was the same as indicated previously with one important difference. Not before 1865 does a fifth class appear on the sche-

1. Government of India to Madras Government, No. 1210 of 22nd March 1856.

dule, whereas the fourth had only a years' existence before that. Ghose advances the plausible explanation that the region served being comparatively less prosperous the third class rates were the highest that the authorities thought traffic could bear. If so, this betrays laudable concern on the part of the railway to meet the requirements of traffic, but it is questionable if this was the means to achieve it, for the attempt thus made would be defeated by the policy of the executive in imposing rates on low class traffic not merely on a par with rates in other parts of the country, but even higher. Indeed the carriage of high class articles at third class rates otherwise chargeable under higher classes would burden unduly the low class traffic. From that point of view the schedule is liable to criticism. On closer analysis it is found the railway authorities could hardly develop vision enough to look beyond the current year. The first schedule proposed by the railway for approval to the Government had accordingly to be revised by the consulting Engineer, Col. Pears, who set himself the task of finding a basis of correspondence between the rates and the offering traffic. The point of view of the railway executive can be surmised from the following report made to the Chairman and Director of the company in the first year of its operation:—

"The rates as ordered by the Government for adoption upon the railway will have given the company less than one penny per ton per mile for the carriage of fully 75 per cent of the goods traffic, a rate which will render it doubtful whether this traffic can prove ultimately remunerative."[1] And again :—

1. Traffic Manager and Agent's Report to the Chairman and Directors, 1856.

"I have no doubt that a higher rate could have been obtained, although probably the development would have been less rapid ; but regarded as an experimental measure, it is to be deplored that a more equitable classification was not arranged and rates adopted more likely to prove satisfactory to the interests of the Railway Company."[1]

It is small wonder then that with the schedule of rates charged to traffic the railway was devoid of any attractive capacity. As a matter of fact the roads were used in the area covered by the line to a considerable extent and in 1857 carried 22,960 tons to the railway's 31,851 tons.[2] How far the sheer incomplete state of the line, which, according to the agent, drove the traders to use the road all the way instead of co-ordinating the road and railway, was responsible for this, it is difficult to judge. It seems, however, that if such co-ordination proved economic, a trader would avail himself of it. The traffic manager seems to be following the wrong scent in attributing this refusal on the part of the public to use his line to "the way in which native business is conducted." For whilst he concurs in the opinion of the Government of India that carriage by rail should be made " so much cheaper for goods and passengers than the previously existing means of conveyance, as to swallow up naturally the mass of the traffic,"[3] the desire to show a fair dividend at the end of the year does not give him scope for any experimentation. Even whilst in 1858 the classification is changed to place it upon an "intelligible footing" on

1. Traffic Manager's Report, 1856,
2. Ibid 1857.
3. Letter to Madras Railway, 23rd November 1858.

the "what the traffic will bear" principle, the quick-profit-making motive seems as much to have actuated the revision. For the second reason given is "to slightly increase the charge so as gradually to approach to such rates as were better calculated to prove remunerative to the company, than those originally suggested by and carried into effect under the orders of the Government."[1] It was impossible for the railway to attract traffic when an alternative means of communication was available which was more in demand. In one month, it was found that the average daily number of bandies loaded with merchandise passing Woochery was 1,596, carrying about 800 tons. On the railway the average daily tonnage passing between Madras and Arcot was no more than 55 tons, inclusive of railway material. "The attractive force of the railway even for traffic passing by its terminus was thus insignificant, while it could not create any great latteral traffic or exercise any influence over a wide extent of territory."[2] The carts actually carried cheaper than the railway, pressed by the railway competition. Between Vellore and Madras the rate for a vehicle of 15 maunds capacity was Rs. 3-8-0 to Rs. 4-0-0, whilst the return journey with salt was charged at Rs. 2 to Rs. 2-8 carrying 15 maunds 168 miles for Rs. 6-8 at the higher rate, i. e. at less than 14 pies per maund mile from door to door. In face of these facts the railway executive saw no remedy but to reduce the rates—a fact which is noted with satisfaction by the Government Director in his report for 1860-61.[3] The development of traffic

1. Manager and Agent's Report to Chairman and Directors, 21st February 1859.
2. Mehta: Indian Railways-Rates and Regulations, p. 85.
3. Report on Indian Railways, 1860-61, p. 21.

thence appears to be steady, and in 1867 it was reported that "there is every reason to be satisfied" with it. Besides during the scarcity in 1866–67, the line was instrumental in distributing 23,000 tons of food in the stricken area which, it was calculated would have employed 17,000 carts every day for three months. The increase in traffic in such articles of internal consumption as salt was a good sign of the development of inland trade.

It is surprising, in view of the principles professed by the Government throughout in their rates negotiations, that the maxima rates should have been fixed on so high a scale as they were. In fact, the maxima scale is by far the highest—not only for higher class articles but even for the lowest classes. This comparative aspect is brought out in the following table :—

STATEMENT 31,

MAXIMA FARES PER TON MILE IN PIES,

	E. I. Rly.	G. I. P. Rly.	B.B.C.I. Rly.	Madras Rly.
1st	9	8	8	14
2nd	13½	10	10	18
3rd	18	16	16	24
4th	27	20	20	36
5th	54	30	30	54

In broad outlines the policy of all the railways was therefore the same. They were run primarily to earn the dividend and the fact that this could be compatible with economic development was yet not realised. Even the Government was shaky about the relation subsisting between a railway's returns and its traffic. Their anxiety for immediate returns had, however, a

substantial basis. The guaranteed interest was a real burden which the National Exchequer had to bear and although the payments were advances to the companies, the taxpayer had to shoulder the load during each year irrespective of the accumulated benefits to the nation in the coming generations. During the 20 years ending 30th June 1869, the nation had thus paid £ 15,864,344 by way of net advances to the companies to make up the guaranteed percentage of interest, i. e. £ 793,000 a year on an average varying between £ 1,700, 474 in 1868–69, i. e. 3·4 per cent of revenue and £ 67,043 in 1865–66. The drain on the national finances was therefore considerable.

On the other hand it may be argued that the Government could have forced the hands of the companies to run their lines entirely from a developmental viewpoint and subsidised them to the extent of their interest charges–£ 29,778,757 for the 20 years, i. e. an annual average charge of £ 1,500,000. Looking to what the railways meant to the administration, the benefits were numerous. Referring to the free conveyance of mails and the lowest rates at which troops, horses, baggage, ammunition and equipment were carried, Danvers thought, "the saving thus effected must be considerable, and nearly, if not quite, equivalent to the amount of the annual average charge."[1] If so a subsidy of £ 13,914,413 by the Government during the initial 20 years may have stimulated trade by enabling lower rates to be quoted and absolving the companies from the responsibility of earning their interest. Of course

1. Report on Indian Rlys., 1869–70, para 43.

the capacity of the taxpayer to bear the burden when the budgets continued to show a state of chronic deficiency is the prime consideration. For though the increase in annual average charge would be about 1·2 per cent,[1] the full amount of interest charges would have to be met from year to year from the available revenue. The actual sums payable are not available, but at an annual average of £ 1,500,000 the charge would mean about 2·5 per cent on the average revenue. Could the taxpayer shoulder this additional burden ? It is difficult except for a Chancellor of the Exchequer then in office to answer this question with a categorical yes or no. That the country was very poor is, however, undeniable, and unless the taxable capacity increased the burden upon the ryot would have been intensified.

1. The revenue increased from £ 27,522,344 to £ 50,901,081, an average of £ 40 million a year for the twenty years.

CHAPTER IV.

1870-1880—Establishment of Railways.

The end of the sixties marked a turning point in the history, not only of Indian inland communications, but also of the economic development of other nations concerned in commerce with the East. Two events were responsible for this. The first was the opening of the Suez Canal. One need only examine the implications of trade with the East before 1840 to realise that the canal was an outstanding achievement. The navigation of the Cape route was dangerous, but more important than its danger was the handicap of distance and time. Traversing 12,000 miles at the mercy of wind and currents could not be made an expeditious affair. Mail and merchandise took at least five and often more than six months between England and India. As a writer tersely said, "what was news in England, had become historic matter in India."[1] Such a state of communications could not exactly conform to a rapid development of trade, and it is a marvel that business could be transacted when advices from Calcutta were not received by London houses until five months after the date of despatch. "Speculations with Indian produce" therefore was a dangerous game and commerce with India was limited.

Not until 1823 was serious consideration given to the shortening of the route. Members of the Bombay

1. Keeney: Gates of the East, p. 6.

Government then proposed the Red Sea route–involving 35 days. The home authorities however were not favourable to the suggestion. In 1829, Lieut. Waghorn undertook the carriage of despatches at his own risk and cost, to prove the practicability of the plan, but a Parliamentary Commission in 1834 condemned the route as unworkable in spite of several journies by Waghorn. The 1837 enquiry ended in a more favourable report. Still it took some time before the route was established. Even then its utility could not be extended beyond the carriage of mails and the highest class of passengers or merchandise; for the overland journey across Egypt, and the numerous handlings, involved an expenditure too high for ordinary traffic to bear. Even troops, ordnance and commissariat stores had to go round the Cape. Yet the shorter route was not without its influence on British trade, for, according to Keeney, between 1850 and 1855 the average annual net increase in shipping engaged in Indian and Australian trade, was 100,000 tons. Considering the very early stage of development of Australia, a major part of this increase must have catered for Indian trade.

This was the period when the steamship first entered ocean trade. With regard to the Cape route, however, serious doubts were entertained as to the possibility of evolving a vessel capable of carrying sufficient fuel for the whole distance—the coaling station being a subsequent innovation—at the same time accommodating enough passengers and merchandise to enable a voyage to be undertaken economically. In any case, not more than a small part of the 3,000,000 tons[1] transported in 1856 in sailing vessels under European flags

1. Figure from Keeney : Gates of the East, P. 13.

round the Africa route could under the then conditions have been taken by the steam vessel, leaving the bulk of the trade under the same handicaps as before.

Thus the attention of navigators and engineers came more and more to be concentrated upon a direct sea route through the Red Sea. Captain Allen, R. W. proposed to accomplish this by flooding a portion of Syria, by admitting the waters of the Red sea and the Mediterranean into the lower level of the Dead Sea, and the Sea of Galilee, i. e. by converting part of a continent into an ocean. Other projects of canalisation to eliminate the transhipment across Egypt followed. Hard upon the heels of these proposals came M. Lessep's project of cutting a canal through the Isthmus of Suez. It took considerable persuasion before the foreign offices of different nations were convinced that the project was not meant to set the French up on the Gates of the East as the exclusive beneficiaries, but rather was in the interests of international trade. Even Great Britain soon realised its importance. "The importance of securing our communications with India is by no means limited to insuring that letters and telegrams, or that passengers and commerce shall travel without interruption," said a writer. "To possess the power of providing at all times the best possible means for the transit of men and stores to be employed in recruiting our Indian establishment is of at least equal moment."[1]

The Canal, opened to traffic in 1869, has been subjected to frequent improvement so as to accommodate ships of larger capacity and greater speed. Its

1. Fitzgerald: The Suez Canal, the Eastern Question and Abbysynia (1867).

influence on Indian trade can be briefly described. By shortening the distance to the extent of between four and five thousand miles and correspondingly the time spent, and by providing a safer route, the canal eliminated from Indian trade much of the previous uncertainty. Trade with India and the East could now be looked upon in the same light as that with any European country approachable by sea. The canal also made available the benefits of steamship transport to India–Europe trade.

If the Suez Canal was a development in the interests of world trade, the Government of India accomplished a no less important advance in the field of inland communications in the junction of the E.I. and the G. I. P. at Jubbulpore. The whole breadth of the Peninsula was now spanned, and Bombay, Calcutta, Delhi and Lahore were brought into communication with each other. "By means of this line," reported Danvers, "a saving of three or four days in the journey between England and Calcutta has during the past year been effected. No greater time is now occupied in reaching Calcutta from London than it took twenty years ago to get from one end of India to another."[1] Incidentally the Bombay–Calcutta run, for all the enthusiastic reception it was given, involved a minimum of 70 hours, compared with the 40 taken at the present day. As regards traffic, the directors of the two railways had already decided upon "a free and unrestricted interchange," leaving to the agents on the spot to work out regulations. A couple of years later a considerable interchange of traffic had developed between the two systems.[2]

1. Report on Railways in India, 1869–70, para 3.
2. Report on Railways in India, 1871–72, para 61.

Side by side, there was progress in all parts of the country along trade routes outlined by Lord Dalhousie. The policy was to push construction on, and to this end, not only originally adopted principles of finance, but even sound principles of railway economics with regard to gauge were sacrificed. The total mileage had thus reached over 4,000, spread over different parts of the country as follows:—

STATEMENT 31.

MILES OF LINES OPEN AT END OF YEARS.

RAILWAYS.	1855	1860	1865	1st Oct. 1869.
E. I. (Incl. Jubbulpore)	120	368	1,129	1,354
G. I. P.	50	298	701	875
Madras.	...	136	611	707
B. B. & C. I.	...	...	305	305
Sind.	...	...	105	108
Punjab.	...	...	253	246
Delhi.	...	...	...	245
Gt. Southern	...	...	79	168
Eastern Bengal.	...	...	110	113
Oudh & Rohilkhund	...	...	...	42
Nalhutee Azimgunj.	...	...	27	28
Carnatic.	...	...	19	19
Calcutta & S. Eastern.	...	...	28	28
Total.	171	836	3,369	4,238

With the junction of the G. I. P. and the Madras lines at Raichore in 1870, two more presidencies of commercial importance had been linked up. "Thus may the system of trunk lines originally laid down by Dalhousie be regarded as completed," reported Danvers. Beginning with Negapatam and proceeding via Bombay, Jubbulpore, Allahabad, Lahore and Multan to the North West Frontier, men and merchandise could travel 2,800 miles by rail. Without a doubt its beginning of the seventies could be taken as marking a definite stage in the history of Indian transport and trade.

With such identification as the railway system had now obtained with the commerce of the country, the rates themselves came to be established on more definite lines. The great problem then was the insufficiency of traffic. Empty trains naturally resulted in a high unit cost to the railway. This was detected for the first time in 1872 when the operating statistics were minutely analysed by Mr. Rendel. His remedy was in mixed trains, so as to reduce the train mileage without curtailing traffic facilities—resulting in a diminution of working costs. His comments in this connection are of particular interest, in so far as they reveal the peculiar characteristics of Indian trade, the absence of which made previous comparisons in rates misleading. Commenting upon the causes of scarce traffic, he states, "This might be attributed in a great measure to the heavy rates charged. Taken at per mile, they are perhaps not extreme, but the peculiarity of Indian traffic is the low value of the bulk of the goods offered, and the great distances they are carried." The rates charged made such an addition to the price of those cheap bulky commodities "as either to exclude such goods from commerce altogether or to compel them to resort to other means of reaching their destination when such other means exist."[1]

It is obvious then that the railways still managed to drive traffic away and minimise the volume of trade, or compelled the trader to resort to the river. The average charge for carrying a ton-mile of goods on the G. I. P. compared with the actual cost to the railway was 1.59d. to 0·97d. giving an average profit of ·62d per t. m. Rendel suggested the possibility of reducing the costs

1. Rendel's Analysis, Appendix, Report on Rlys. in India, 1871–72.

to ·33d. per t. m. and the average charge to less than ·70d. assuming the volume of traffic to increase. "What traffic such a reduction might bring upon the railways is, of course a point, on which great differences of opinion may exist, but there is no prima facie reason why there should be found in India an exception to the general rule that low rates make traffic."[1]

The opinions of Mr. Rendel are fully borne out by Danvers when he acknowledges his disappointment at the results obtained, and suggests that the solution be approached from two ends—the reduction of expenditure and the attraction of traffic at suitable rates, taking into consideration the peculiar conditions of the district served and the traffic conveyed.

It seems incredible that with the experience the railway managers had gathered such complaints should have been made as regards the pushing aside of the two fundamental principles of rates management. Mehta is of the opinion that it was a system of granting guaranteed interest that was responsible for such lack of business acumen.[2] Development was, in the opinion of authorities, far ahead of the stage warranted by the growth of traffic.[3] Since for some time the railway earnings were not able to meet even the guaranteed interest, little incentive existed for them to economise in operation, or to adjust rates so as to attract a maximum of traffic. The whole basis of rate making could be best put in the words of a Director

1. Rendel's Analysis, Appendix, Report on Rlys. in India, 1871-72.
2. Indian Railways : Rates and Regulations, p. 97.
3. Rendel's investigation in 1866. Vide also Danvers' comments in Report for 1870-71 suggesting absence of strict economy or imperfect construction.

of the G.I.P. who suggested, "I think we have one object in view, and that is to create the best dividend we can,"[1] which their unsuitable rates would not enable them to do. The Government Director in his report for 1872–73 again emphasised the desirability of lower rates, "in a country like India, especially where the population is large and poor" In 1872, a normal year, the decline in grain traffic alone amounted to 24,080 tons—13·13 per cent over previous year,—no small decrease when the fact that grain was just then trying to establish itself as an exportable product, is taken into consideration. Danvers optimistically expressed his view a couple of years later that henceforth rates should depend upon well-ascertained results, now that the railways had already had an experience of several years upon which to draw.[2] The Government in fact, having fixed the maxima, could thus only hope and wait. The tone of the annual reports of the Government Director suggest considerable helplessness in this respect. The rates then charged, condemned as prohibitory on all hands, were not however anywhere near the maxima, thus leaving a further scope for increase to the railways.

But the economic forces released by railway development had begun to operate in other directions also. The junction of the two trunk lines at Jubbulpore revived the old competition to which the Central Provinces cotton trade had been subject two decades ago. Bombay and Calcutta found themselves for the

1. Evidence of Mr. Chapman, 1884 select committee, Q. 1030. Mr. Chapman was then being examined on the company's ability to raise rates after they had been lowered.

2. Report on Railways in India 1872--73, Para 51.

first time after the advent of railways in a position where their relative strength depended upon the attractive force provided by their railways. The prohibitive rates met with an obstacle from a very unexpected quarter, and to a certain extent, the necessary measure of control was secured.

It will be more consistent with the purpose of this investigation to take up a few important commodities and examine the extent to which the fluctuations of trade in them could be ascribed to rates. The region traversed by the G I. P. and the E. I. was commercially the most developed and raw materials and food stuffs dominated the volume of traffic, the most important being grain and seeds. Their rates as a matter of fact provided the basis of competitive rates.

An examination of the existing rates in 1875 brings out the desire of the E.I. to capture the grain and seeds trade from Jubbulpore—situated 784 miles from Calcutta, against 616 from Bombay. The figures stood :—

	J'Pore to B'bay.		J'Pore to Calcutta.	
	Per Ton	Per T. M.	Per Ton	Per T. M.
Wheat & Grain ...	... Rs. 24-0-0	7·4 pies	24-0-0	5·9 pies
Seeds	... 34-15-2	10·4 ,,	24-0-0	5·9 ,,

In the case of seeds the E.I. rate is approximately half that on the G I. P. The produce of C. P. at the time was unable to find an outlet. Tens of thousands of tons of wheat, it was alleged, were rotting in the interior in the area served by the G. I. P. for want of a market.[1] Even though this statement might be exaggerated, the report of the Chief Commissioner for

1. Mr. Lang's statement before the G. I. P. Committee. Vide letter from Bombay Chamber of Commerce to Chief Commissioner of C. P. 25th August, 1875.

C. P. showed a remarkable disparity between the total produce of the several districts and the amount exported by them, not attributable to the requirements of internal consumption. Nearer to Bombay, from non-competitive points, the rates were even higher compared not only with competitive points on the E. I. but even against non-competitive ones. Thus:—

STATEMENT 32.

G. I. P. RATES

	KHANDWA TO BOMBAY. (352)*		NAGPORE TO BOMBAY. (520)	
	PER TON.	PER T. M.	PER TON.	PER T. M.
Wheat & Grains	15-0-0	8·2 pies	Rs. 20-13-8	7·7 pies
Seeds	22-0-0	10·2 ,,	30-15-0	10·2 ,,

E. I. RATES.

	JUBULPORE TO CAWNPORE (348)		HOWRAH TO GEOPORA (521)	
	PER TON	PER T. M.	PER TON.	PER T. M.
Wheat & Grains	10-14-3	6 pies	16-5-4	5·9 pies
Seeds	10-14-3	6 ,,	16-5-4	5·9 ,,

*Figures in brackets represent distance in miles.

The higher level of rates for Bombay provoked vigorous protests from the Bombay traders.[1] The strength with which the Government had been pressing their views also seems to have borne fruit. In 1875 there was a general decrease. Through rates from beyond Jubbulpore and via Khandwa and from stations between Nagpore and Badneira to Bombay were reduced.[2] From other stations, a telescopic rate came into operation as under :—

Up to 400 miles, 7 pies per t. m.
400 to 600 ,, 6½ ,, ,,
and over 600 ,, 6 ,, ,,

plus terminals at 11 annas in Bombay and Rs. 1-2 at up country stations—exclusive of collection or delivery.

1. Bombay Chamber of Commerce to the Chief Commissioner of C. P. 25th August 1875,
2. Bombay Chamber of Commerce to Chief Commissioner of C. P. 13th September 1875.

The seeds rates from stations between Jubbulpore and Hursud and on the Nagpore branch, between Nagpore and Wurdah, were also reduced. From other stations on the branch first class rates continued to be charged as under :—

Up to 400 miles,	10	pies	t. m.
400 to 600 ,,	9	,,	,,
Above 600 ,,	9	,,	,,

plus terminals in Bombay at Re. 1–6–3 and up country at Re. 1–2–8.

"These reductions," commented the Bombay merchants, "bring down the G. I. P. Rly. Company's charges nearly to the level of those of the E. I. Rly. Company's for corresponding distances, and they will doubtless have a most beneficial effect on the district and on the trade in the articles to which they apply."[1] They regretted the fact however that reductions in seeds rates were confined to so few stations.

The views expressed by the Chief Commissioner of the Central Provinces and by Mr. Lang had the concurrence of the Government Director in his subsequent report, when he defined the significance he attached to the words "high" and "low" as applied to rates. "As applied to the circumstances of India," he states, "I would describe rates as high when they fail to secure the conveyance of the produce of the districts through which they pass or of the goods imported into those districts; when they prohibit or unduly check traffic, and thus restrict trade, when they discourage extended production and when they raise the cost of conveyance by diminishing the use of the carrying stock. This

1. Bombay Chamber of Commerce to Chief Commissioner of C. P., 13th September 1875.

has been too much the case hitherto, and therefore railways have not yet conferred upon the country the full benefits, nor yielded the profits which they might have done....."

Following the reductions which, according to Danvers, amounted to £ 40,000, the G I.P. even reported to its shareholders "the modifications of rates and charges which have been adopted are operating beneficially in aiding the development of traffic."[1]

Soon after, the grain rates of the G.I.P. were subjected to a severe test by the 1877 famine. Loveday considers it "the most extensive famine which India has experienced since the predominance of the British power,"[2] the drought extending to Madras, south east of Bombay, Mysore and the Nizams' Dominions affecting an area of 200,000 square miles and a population of 36 millions.[3] The policy of the Government in previous years had been to encourage the flow of grain to stricken areas by asking railways to quote reduced rates, Government making up the difference, as in 1868 any 1873 over the E. I. resulting in considerable increase in traffic. "But as it was not possible to distinguish the increase due to this reduction from that consequent on the natural operations of trade, the government had to pay compensation on the whole quantity carried and a large outlay was incurred which gave undue profits both to the railways and the traders." In 1877 however, it was found that the railways were carrying to their fullest capacity, hence any reduction, it was argued, would be ineffective.

1. Quoted by Danvers, 1875–76 Report, para 80.
2. History and Economics of Indian Famines, p. 56.
3. Report of the Famine Commission 1880, para 60, Part 1. cmd. 3086.

Nor did the Government consider a reduction necessary in the interests of the affected populace, since wages were claimed to be regulated everywhere on the basis of prices for the mass of the population employed on public works. Nevertheless already with the advent of the famine, the shortage of rolling stock had been felt by the railways. The carriage of grain up to full capacity therefore hardly amounts to maintaining that more grain could not have been despatched to stricken areas, if additional facilities had been available.

But though grain was quoted the normal rate, it was given preference to other traffic. Otherwise the whole supply was left to the ordinary economic forces of a difference in price between the northern regions which had an abundant harvest and the central and southern, which suffered from the want of one.[1] The traffic in grain resulted over the whole system in a gross receipt of £ 600,000. The preference given to grain, however, had been instrumental in excluding more remunerative traffic and the large volume as well as the large profits were simply a disturbing incident therefore. The Famine Commission attribute, of the total movement of grain amounting to $3\frac{1}{2}$ million tons, $1\frac{3}{4}$ million to the scarcity. The following figures indicate to what an extraordinary strain the transport system had been subjected to provide the stricken areas with food. The achievement in traffic management is most creditable indeed.

	Total Traffic Tons.	Increase on Previous Year. Per Cent.
1875	... 4,388,649	Dec. 6.
1876	... 5,871,690	25
1877	... 8 309,943	43
1878	... 7,296,325	Dec. 12
1879	... 7,876,766	8

1. Although Danvers maintains that there was "plenty in the North," Loveday considers the possible sources of supply within the country restricted; so that quantities of grain were imported from the Persian Gulf.

Another notable point is the long lead which this traffic involved. This was the first occasion on which, trade having been left uninterfered with, sheer scarcity of an article in one part of the country caused a movement from no less a distance than 2,000 miles. The effect on prices in the consuming areas after grain had paid for such a long lead at ordinary rates should deserve careful consideration at the hands of the administrators. The Famine Commission calculated the prevailing rate for full truck loads over leads longer than 300 miles at from $\frac{1}{4}$ to $\frac{1}{6}$ of a pie per maund i. e. from about 7 pies to $4\frac{1}{2}$ pies per ton-mile. "On grain carried 2000 miles, the highest of these rates would not add to the ultimate cost to the trader more than one anna per seer, or say $\frac{3}{4}$d. per lb., and assuming a cost price in the exporting district of 24 seers per rupee, or $\frac{1}{2}$d. per lb. and a maximum selling price of 8 seers per rupee or $1\frac{1}{2}$d. per lb. in the famine district," they argue, "there would be left after paying at this rate for 2000 miles of transport, a margin of 50 per cent on the cost price of the grain to cover profit and other charges." That for one reason or another, the populace lacked this assumed capacity to pay for its food at 8 seers per rupee cannot be doubted in view of thh high mortality. In Madras, where food would bear the charge for the longest lead, the mortality, apart from the decrease in birth-rate, approximated four millions. In some larger districts "half the population temporarily disappeared." It is quite probable that but a very small proportion of the population could be fed at the prices calculated by the famine commission to prevail. This is borne out by figures of the number in receipt of relief, varying from 400,000 in the first months of the famine to

1,185,488 in March, to a maximum of 2,218,000 in September, out of a total population of 31,281,177, i.e. 7·4 per cent at the highest.[1]

The continuance of the ordinary rates may be alleged perhaps as one of the causes contributory to the intensity of hardship which prevailed. For except for 7·4 per cent, the population had to depend upon the quantity of grain available for a certain amount of silver tendered to the village "Bania."

It is remarkable that even the Famine Commission should have felt rates were in many cases unduly high. "There is still considerable variation amongst the rates charged," they reported, "and it is probable that reduction is in many cases possible without causing loss of income."[2] They emphasized the need for closer control in the interests of development, pointing out, "in the interests of the public which however are not identical with those of the railway companies, the object to be aimed at should be to secure the largest remunerative traffic at the lowest possible rates." Profound confidence is placed, and justifiably, in the power of the railway to mobilise the food supply of the whole country and lay it at the service of every district as and when necessary.

The construction of the E. I. meanwhile had been proceeding apace. It was again found, however, that in many points the development was not sustainable by the growth in traffic, but was far in advance of it. This combined with the low load ratio of the trains, kept the cost of conveyance to the railway so high as to

1. Population figures, 1872 census.
2. Report of the Commission, para 23.

make a moderate scale of charges impossible. Even a couple of years after several suggestions for economy had been adopted,the cost of carriage per ton-mile stood at 3·2 pies and the average rate at 9·9 pies giving a profit of 6·7 pies.[1] On the Jubbulpore branch however, the average cost was 5·8 pies, but the average rate a little lower–9·2 pies–giving a profit of 3·4 pies. The larger amount of mineral traffic on the Jubbulpore branch may have caused the lower average rate.

With the beginning of the seventies, traffic figures showed a serious decline of 120,426 tons in the first half of 1871 against the corresponding period of 1870, the tonnage totalling 580,378 and 700,804 respectively. The Governments of the N. W. Provinces and of Bengal appointed committees of enquiry to investigate the causes of the fall. The findings show the inadequacy of terminal facilities and throw considerable light on the rates policy of the E. I. 1870 was indeed an abnormal year with a famine in the North West Provinces as against which 1871 witnessed a dull market which drove the traders to resort to cheaper mode of transit, viz. the river.[2] The margin of profit, it seems, was so fine that immediately the ratio of rates to prices experienced a slight alteration, the trader found it necessary to reduce his transport bill, and receive his merchandise by the water route, no matter what delay it involved. The committee found that the railway instead of adapting its charges to the circumstances, "administered the

1. Appendix, Report on Railways in India, 1871–72.

2. The Board of the E. I. explaining the decline in traffic said that whenever the market was dull, the trader "preferred the somewhat cheaper though more dilatory conveyance afforded by the river, which owing to a very heavy rainfall became navigable at an earlier period of the year than usual."–Vide Huddleston : History of the E. I. Rly., p. 64.

death blow by raising the rates enormously." There was another contributory cause also viz. the large imports of English coal at Calcutta, which made an inroad into the market for indigenous coal, diminishing the traffic from the fields to that extent. Huddleston however feels little doubt that "the rates charged at the time were excessive, or traffic would not have fluctuated as it did between the river and the rails." A machinery to adjust rates to the changing trend of prices was therefore a necessary requisite. Preliminary to this it was essential to direct attention to, reducing the working expenses, obtaining better train loads and diminishing unit haulage costs. Increased attention was devoted to these, and the operation ratio was reduced gradually to 38·6 in the first half of 1872 and to 37 in 1873. The ton-mile costs and the average rate, were reduced as under[1] :—

	Cost-Pies.		Rate-Pies.	
	Main	J'Pore.	Main	J'Pore.
2nd half of 1871	3·2	5·8	9·9	9·2
,, ,, ,, 1872	2·3	6	9·2	9·2
,, ,, ,, 1873	2·2	5	8	9
Whole year 1874	2	2·2	7·5	8

Soon after, a stimulus was given to the movement of food grains. In 1873 the rains failed in Bengal and the E. I. and the E. B. were commandeered into service for the relief of distress. The government concerned themselves directly with the supply of grain. The E. I. continued to receive its normal rate of 5 pies per ton-mile, "but the Government was sending the people provisions at a much less carriage charge than that, and made up the deficiency to the company."[2]

1. Rendel's analysis. Report on Railways in India, 1871-72.
2. Mr. Crawford's address to shareholders of the East Indian Railway.

The daily deliveries to the stricken districts amounted to as much as 4,000 tons by the E. I. alone. And whereas in 1872 the tonnage of grain conveyed on the E. I., the E. B and the Punjab and Delhi Railways amounted to 254,213, the 1873 total showed 477,528—an increase of nearly 100 per cent. The 1874 despatches were heavier still, and in the first five months of the year, exceeding the total even for the whole of 1873, amounted to 544,233 tons. The total despatches from Howrah alone averaged 22,000 tons daily and by the end of the year, the E. I. had carried 616,993 tons from Calcutta. The other railways transported :—

170,490 tons–Sind, Punjab & Delhi—from N. W. Provinces.
53,370 ,, –G. I. P. from C. P.
80,000 ,, –Eastern Bengal.

The extent to which Government interested themselves in directing the flow of traffic to the stricken areas, betrays a policy radically different from that pursued during the 1877 famine in Madras and Bombay in connection with grain rates on the G. I. P. The stimulus given by way of reduced rates, was only a part, and perhaps the less important part of their policy. Otherwise the Government themselves were responsible for handling 479,696 tons of the food grains as against 363,000 tons despatched by traders.

It only needs to be left to imagination to what extensive strain this sudden growth in traffic must have subjected the rolling stock and the staff. Thirty additional locomotives were brought into commission, an additional staff of drivers, firemen and guards was recruited and wagons were hired from the B B.—all with a rush.[1] "The E. I. had been the main instrument

1. Lord Dalhousie's insistence upon a uniform gauge for the whole country, though later disregarded in the interests of supposed economy thus stood the country in good stead, not only in this period but on every occasion of emergency.

by which a dire calamity had been prevented from attaining the proportions of a fearful catastrophe."[1] The appraisal though emanating from an official of the company was a correct representation of facts. The abnormal grain traffic, besides, had been allowed in no way to interfere with the ordinary course of trade.

The junction of the G. I. P. and E. I. at Jubbulpore, it was found, had not resulted in any great interchange of traffic though the Government Director was satisfied with its volume.[2] The chairman of the company desired in his address in 1874 that the Jubbulpore line should be considered more in the light of a political accomplishment, realising that it had "not done much" for the commerce of the country except for the facility to travellers. The useful purpose served by this centre of the Central Provinces being served by two railways and ports, in causing a reduction of rates on the G.I.P., has however already been noted. The same was now felt as regards the produce of the North West Provinces, which was also in a position to command two routes to two different ports. Indeed competition was expected not long after the junction had been effected, and the issue as to whether Calcutta or Bombay was going to cater for N. W. Provinces became articulate as early as in 1870.[3] By 1876, the grain rates on E.I. were found to range on a lower scale than on the G. I. P.[4]

1 Huddleston: History of E. I. Railway, p. 67.

2. Vide Ibid, p. 101.

3. Vide speech of the President of the Bengal Chamber of Commerce, 8th December 1870.

4. Figures from letter from the Under Secretary to the Dept. of Revenue and Agriculture and Commerce to the Secretary to the Govt. of India P. W. Dept., 24th Aug. 1876:—

SPECIAL GRAIN RATES PER T. M.

G. I. P.		E. I.	
Up to 200	Miles 7·0 pies.	Over 150 & under 301	Miles 6·81 pies
From 200 to 400	,, 7·0 ,,		
,, 400 ,, 600	,, 6·5 ,,	,, 300 ,, 501	,, 6·0 ,,
Above 500	,, 6·0 ,,	,, 500	,, 5·45 ,,

The consequence was, it was alleged, that wheat and rape seed from N. W. Provinces only struggled down to Bombay occasionally when the ocean freights from Bombay were eminently favourable. The slightest change of half a crown or a crown tilted the balance against Bombay directing the traffic through Calcutta. The comparison in rates given is however not to suggest that a phase of rate cutting had already set in. It certainly seems to indicate that there were strenuous times ahead for both the railways. Indeed Mr. Rendel so late as in 1875 declared that in his opinion the days of competition had not yet approached and that "the more railways you make, the more traffic you will bring to the rest."[1]

In 1876, an additional impetus was provided to traffic in the removal of export dues and at the same time silver began its headlong career of depreciation. In addition the E. I. made a bid for definitely capturing grain and seeds traffic from the N. W. Provinces by reductions in rates tantamount to putting down Cawnpore wheat and seeds in Calcutta—684 miles—for a sum not exceeding 6/4d. a quarter.[2] As regards the Punjab, the company concluded an agreement with the Sind, Punjab and Delhi, which enabled grain to be conveyed to Calcutta, 1,245 miles, at about 12/9d. per quarter, " a rate which was then considered remarkably low." [3] To the period of these simultaneous reductions is due the growth in the export trade in grain and seeds and the entry of India as a competitor in the world markets.

1. Question 3836. Evidence before the 1878 Select Committee on East India (Public Works) cmd. 333.
2. Chairman's speech to shareholders. A quarter equals 496 lbs.
3. Huddleston: History of the East Indian Railway, p. 75.

This was followed by a voracious demand for grain from inland centres, consequent upon the famine in Bombay and Madras. From October 1876 to the end of 1877 the E. I. carried food grains from the N. W. Provinces and the Punjab to Jubbulpore to be handed over to the G. I. P. Consignments were also sent via Howrah by sea to Madras. Unlike the previous occasion, the 1877 famine provoked no reduction in transport charges and moreover witnessed total abstinence on the part of the administrations with regard to the handling of any grain. Whatever the ability of grain consignments to famine areas to bear the ordinary rates, the reductions already affected brought the E. I. rates down to a remarkably low figure for those times. With regard to some leads, rates as low as 1/7 pie per md. mile or 4 pies per ton mile were charged. In this connection the famine commission hoped, "It will be found everywhere possible to reduce the grain rates for long distances to this low rate of ½d. per ton mile or lower."[1] The commission rank the existence of "a very large traffic on the E. I." as a .factor *pari passu* with others, making for the low rates. The home authorities were so far convinced of the success of low rates that they suggested to their agent—"It is now clear that the rates charged for the great staples of produce must be fixed at the lowest possible point."[2] The Government Director was definite that though other causes had contributed to it, the chief factor accountable for increased volume of traffic, was "the reduction in the rates of carriage."[3] He suggested that the policy of

1. Report. Cmd. 3086, 1880.
2. Report on Railways in India, 1875–76, Para 34.
3. Report on Railways in India, 1776–77, Para 80.

charging "moderately low rates for the staples of the country, may be regarded as one which has been generally accepted." It is significant that the famine and export traffic were growing simultaneously. The possibility of a grain supply to England was now urged as the principle argument not only for a reduction in transport charges, but also for the extension of railways.

The exigencies of famine traffic again strained the rolling stock and caused a block. Jubbulpore having been brought for the first time into use for an interchange of traffic on a large scale and famine traffic receiving preference, E. I. wagons had to travel all the way to Madras and to Bombay. About 1,200 of the 6,600, E. I. wagons were constantly running on foreign lines.[1] Though this was in accordance with agreements between the two companies and the best interests of the country, the Calcutta exporters, provoked by the delay caused to export traffic, questioned the propriety of the company in allowing its wagons to go beyond the home lines.[2] "As the E. I. railway was constructed," they suggested, "for the carrying to Calcutta of produce of the valley of the Ganges, and its rolling stock placed on a scale calculated for such produce, it is departure from the original intention and plan that wagons and engines imperatively demanded for the conveyance of our own traffic should be used to supplement the defi-

1. Figures from Huddleston: History of the East Indian Railway, p. 77.
2. Giving evidence before the 1878 Select Committee Lt. General Sir A. Cotton urged that the congestion on the E. I. was so terrific as to deserve the undertaking being condemned as an absolute failure. "It does not carry the quantity and it does not carry so cheaply as the country requires; that I call a failure. When the Chief Engineer himself says "Here is a railway which leaves 9/10 of the passengers and goods behind, if that is not a failure, what in the world is?" Q. 4315, cmd. 333.

ciencies of the G. I. P. Railway." They therefore strongly objected to what, they alleged, was a proposition to work the two railways as if they were but one concern.[1] Quite apart from the obvious selfishness of the position they took in demanding that grain should be transported for export in preference to being conveyed to the distressed areas, the regretable part of their argument is the extremely narrow provincial view point betrayed—as though artificial barriers of management imposed natural barriers to trade. It is possible, they would not have stood by their principle if Bengal was in the grips of a similar calamity, and Bombay supplied it with food necessitating the use of the G.I.P. rolling stock on E. I. lines. The rolling stock of the E. I. was however soon after augmented by 1,000 wagons and 50 locomotives.

The important role the Ganges played in bringing down the E. I. rates should not be overlooked. Its use in preference to the railway in the beginning of the seventies has been noted. The E.I.'s Consulting Engineer admitted that by lowering their rates, the line was "trying to bring the traffic off the river on to the railway."[2] The river and the railway even often served in co-ordination. A good deal of the wheat exported to Calcutta came by boat. But immediately a sale had been negotiated in the town, the boats were unloaded and the produce railed down.[3] Col. Hancock, R. E. Consulting Engineer and Under-Secretary to the Bombay Government, comparing the working of the

1. Bengal Chamber of Commerce to E. I. Rly., 20th April 1877.
2. Q 3941. Rendel's evidence before the 1878 Select Committee on E. India Public Works. Cmd. 333
3. Q. 3942, Ibid, Rendel's evidence.

E. I. and the G. I. P. emphasised the advantage which the former enjoyed because low rates had "been forced on the E. I. R. by water competition," whereupon its traffic had prospered. Even after the reductions the river proved an effective competitor, immediately it had begun to rise.[1] It is doubtful if this competition would take any serious proportions, for the bulk of the traffic would move before the monsoon broke. The Bengal traders found no reason at the time to suggest that the rates were high; and in response to a circular from the Government of India they expressed their opinion that the rates were "not excessive," though a reduction therein might stimulate export traffic.[2]

1. Bengal Chamber of Commerce to Government of India, 7th July 1879.
2. No. 253C–255C of 16th June 1879.

CHAPTER V.

1880–1890. Grain & Seeds.

At this stage yet a third line was soon to enter the field of grain traffic viz. the B. B. Matched against the G. I. P., its rates in 1875 were already lower by reason of water competition, though the E. I. rates could bear a favourable comparison with both :—

PER TON

	G.I.P. MURTzAPORE TO BOMBAY (386)	E.I.–J'PORE TO JEEJUCK (387)	B. B.–VADHWAN TO BOMBAY (389)
Wheat & Grains	Rs. 16– 2–9	12–3–6	15–0–7
Seeds	Rs. 23–10–0	12–4–0	15–0–7

By the end of the seventies the three lines discovered that they had no longer the old undisputed sway over their territories. The opening of the Rajputana Malwa State Railway was responsible for this disturbance, for it brought Bombay and Calcutta within a competitive distance from Northern India which the junction at Jubbulpore had failed to do. The distances now were:—

Agra to Bombay *via* R. M. & B. B.	847 miles.
,, ,, Calcutta—E. I.	841 ,,
,, ,, Bombay—G. I. P. *via* J'pore	1121 ,,
Delhi to Bombay—R. M. & B. B.	889 ,,
,, ,, Calcutta—E. I.	954 ,,
,, ,, Bombay—G. I. P. *via* J'pore	1234 ,,

The R. M. however had been constructed on a narrow gauge, involving a run of 579 miles from Delhi with heavy gradients and a break at Sabarmati. It had to get its fuel supply from sources under the influence of the E. I., so that, no matter whether the

latter did use its position to penalise the R. M. or not, the R. M. would have to pay for the transport of coal from the fields.

But the railways were not the only force to which the N. W. Provinces produce was subject. The relative attractions held by Bombay and Calcutta themselves as entrepôts had a good deal to do with the route chosen by the shipper for the export of his produce. Bombay undoubtedly held the trump card. The voyage to Europe took 10 days less than from Calcutta, and though ocean freights would primarily depend upon the available shipping at either port, a difference of 10 shillings a ton ordinarily obtained in Bombay's favour. Besides, Bombay found itself quite prepared, in respect of docks and handling facilities, to assail the monopoly of Calcutta. Again, she commanded connections with important European ports at least four of which Calcutta lacked, viz. Trieste, Genoa, Marseilles and Antwerp.[1] Calcutta had also the serious handicap of its situation—on a tidal river—involving an additional burden in respect of freight and insurance. In 1884, the construction of docks on a scale to accommodate large vessels had only recently been sanctioned. In fact as the chairman of the E. I. put it, when a parallel was suggested between the two centres of export, "You cannot compare the two things (Bombay and Calcutta), you can only contrast them."[2] Against these, Calcutta of course commanded a decided advantage in its inland water transport. The fuel supply of the E. I. was obtained at the cheapest

1. Evidence of Col. Crawford 1884 Select Committee. Q. 3683, cmd. 284.
2. Q. 3711, Evidence of Col. Crawford, Ibid.

prices and the grades were decidedly easier than those on the R. M. or the G. I. P; so that its unit working costs could bear a favourable comparison with either.

Before the opening of the R. M., the E. I. carried grain at Rs. 78 per 100 maunds from Delhi to Bombay i. e. at Rs. 0–12–6 a maund. In September 1881, this was reduced to Rs. 66 per 100 maunds or Rs. 0–10–6 a maund, whilst the Delhi Bombay rate by the B. B. and the R. M. stood at 0–12–0 a maund.[1] A review of the position immediately after the opening of the R. M. testifies to the Bombay route having exercised considerable attractive force over traffic from Northern India. The exports of wheat and seeds between April and October showed:—

STATEMENT 33.

IN THOUSAND RUPEES..

		1879		1880		1881	
		VALUE	PER CENT OF TRADE	VALUE	PER CENT OF TRADE	VALUE	PER CENT OF TRADE
Seeds	Bengal	18,640	78	23,935	67	16,476	47
	Bombay	5,212	22	11,766	33	18,761	54
Wheat	Bengal	4,9 0	87	9,493	55	16,464	38
	Bombay	730	13	7,787	45	26,717	62

Of course, not the whole of this increase enjoyed by Bombay could be at the expense of Calcutta for Bombay comprised within its hinterland areas which were served by the B. B. and the G. I. P. exclusively, over which the E. I. could not exert any influence.

The result was an uproar from Calcutta traders, who demanded that, since Bombay already enjoyed so many advantages over Calcutta, it was necessary to increase rates against it if Calcutta was to retain any business. They claimed that Bombay enjoyed

1. Letter from Government of Bombay to Government of India, 22nd July 1882.

actually lower rates, as a consequence of which Calcutta exporters were establishing agencies in Bombay or shipping produce through Bombay.[1] Rates on the E. I. were subsequently reduced so that the "cost of transit per 100 maunds of cotton grain and seeds from Agra and Delhi.....is less to Howrah, than over either of the Bombay lines".[2]

The first attempt at a settlement came from the Government of Bombay who proposed the principle of equal mileage rates for Delhi–Bombay and Delhi-Calcutta. In November 1881, however the Government raised the R. M. rate, Delhi–Sabarmati, to Rs. 0–10–0 per md. making the Delhi-Bombay rate 0-15-5 per md. as against the prevailing rate of 0–12–0 per md. The E. I. rate was also increased from 0-10-6 per md. to 0-12-8 raising the difference in favour of Calcutta to 0-2-9 from 0-1-6.

The Government of India who now owned the E.I. and who owned as well as managed the R. M. had defined their policy that "the equalisation of rates from Delhi and Agra to the ports of Bombay and Calcutta was to form the basis of charges for all through traffic between these two places."[3] A later resolution modified this policy and, in the words of Lord Hartington, came to mean putting "competing traffic on a fair and equal footing." Judged by all reasonable standards, traffic was not put on a fair footing for Bombay when,

1. Ghose and Mehta claim that the first challenge emanated from the R.M. in their reduction from 13 to 11 annas per maund. The document quoted above, furnishes conflicting evidence. There is a good deal of confusion as regards dates and a definite conclusion cannot be drawn.
2. Bengal Chamber of Commerce to Govt. of Bengal, 30th July 1881.
3. Government of India to Government of Bombay, 26th Sept. 1881.

in spite of a difference of 7 per cent in its favour with regard to distance, there was a difference of 25 per cent in rates against it. In their letter to the Bombay Government, the Government of India further changed their position and "while they did not intend that there should be an absolute equalisation of rates from Upper India to Bombay and Calcutta, under all circumstances, based only on mileage, they thought that this principle should be adopted if tempered with the proper commercial principle of an even return on the capital expended."[1] Their own attitude, the Government claimed, was of absolute impartiality as between the two ports. The result of this attitude though was to give lower rates to Calcutta in spite of its longer distance. This the Government justified on grounds of enabling each railway to make a fair and equal profit. Bombay on the other hand found it to its interests to demand an equal mileage rate on both the lines so that its closer proximity to Delhi might give it greater advantages. The Government of India found themselves unable to neglect the lower working costs of the E. I. "in fixing the charges for the carriage of the same commodity on different railways."[2]

Granting the logic of this theory, it is apparent that the advantage claimed by the E I. should be proportionate to its lower working expenses. The most important item that made a difference was the cost of the fuel, heavy gradients ultimately resolving themselves into high consumption. In the first half of 1881 the relative cost of coal to the three railways was as

1. Horace Bell, on the letter of 19th October 1881 from the Govt. of India.
2. Letter to Government of Bombay, 19th May 1882.

follows :—

	Cost Per Ton	Cost Per 1000 Ton Miles.
	Rs.	Rs.
E. I.	4·5	0·3
B. B.	17 6	1 1
R. M.	23·9	2·3

The haulage of a ton, Delhi to Calcutta (954) would therefore cost the railway Rs. 0·29, while Delhi–Bombay, would cost Rs. 1.34–R.M., plus ·34–B.B. i.e. Rs. 1·68, leaving a balance of 1·39 i.e. Rs. 1–6–3 in favour of Calcutta. It is found however that the balance of rates in favour of Calcutta was as much as Rs. 4–9–0 leaving Rs. 3–2–9 unaccounted for. On the other hand the cost of carriage per ton mile to the E. I. was $1\frac{3}{8}$ pies compared with over 4 pies on the R. M. and a little over $2\frac{1}{3}$ pies on the B. B. If the cost of carriage can be allowed to play a determining part in control of competitive rates, the E. I. would be justified in quoting rates lower than the R. M. and the B. B. On the other hand if each undertaking could cut its rates to a suitable point without undermining its own stability, the R.M. should have been allowed a free hand in quoting on a mileage basis equal to the E. I.'s giving cheaper rates to Bombay. The Bombay Government claimed that the superior line was to determine mileage rates at which the inferior line was to carry, satisfying itself with lower profits.[1] The Government of India, on the other hand, felt convinced that if the rates to Bombay and Calcutta were ruled to be the same, it would be distinctly favouring Bombay at the expense of Calcutta, and placing an artificial restriction on the E. I., thereby depriving the districts served of the "natural advanta-

1. Bombay Government to Government of India, 22nd July 1882.

ges of their position."[1] If so, the E. I. could make a fair profit out of much lower rates, and therefore as the historian of the E. I. put it, "had the whip hand."

The Bombay traders, finding the Government obdurate on the point, offered a compromise by proposing to agree to a rate not higher than 1 anna in favour of Calcutta, provided that the lowest rates were charged in the interests of trade.[2] The Government responded with a counter offer to fix a minimum for the R. M. and the B. B., lower than the prevailing rate without reference however to the E. I. charge, viz. a reduction from -/13/6 to -/11/- for wheat and -/11/6 for other grains and seeds, Delhi–Bombay. They further enunciated the principle that "the cost of carriage is one of the limits within which rates may vary, the tax which the trade will bear, being the other." Also that in consideration of the former limit, all circumstances of cost to a line should be given due place, it being not the function of the state to interfere with a view to neutralise the advantages of nature or construction between competing lines.[3] This view was inspired by the Secretary of State, who believed implicitly in the advantages to trade of allowing a free hand to competing lines, which he thought had the advantage of making the railway management more efficient and economical.[4] As regards the consequences arising from such competition under a system of guaranteed interest, the

1. Government of India despatch, 19th May 1882.
2. Bombay Chamber of Commerce to Government of Bombay, 19th Feb. 1883; also Government of Bombay to Government of India, 2nd March 1883.
3. Government of India to Bombay Government, 2nd March 1883.
4. Despatch of the Secretary of State, 19th October 1882.

Secretary of State agreed to interference in extreme cases where the rates had been fixed "below what would cover cost of transport with a margin of profit".[1] In their final and decisive memorandum, which was issued as a circular,[2] with this despatch of the Secretary of State as its basis, the Government completely changed their previous point of view and acknowledged that the governing factor was not to be the standard of profit, but the attractive influence exerted on traffic, and that the unit cost of carriage, the direction of empties etc. were also to have a place.[3] In the tug-of-war between the equal mileage principle and the even standard of profit test, a different principle altogether-of free competition-issued triumphant. The rates charged after this in July 1884 stood :—

	Per 100 Mds.	Per Md.	Per Md. Mile.
Delhi-Bombay	Rs. 68-12-0	0-11-0	1/7 pie.
Delhi-Calcutta	60- 0-0	-0 9-7	1/8 pie.

This makes clear the keenness of the Calcutta line to reduce rates.

It will be of interest to consider these rates in relation to the influence they could exert on the route, the price and the traffic in wheat. In the North West Provinces, taking a fair average price at 20 shillings a quarter, and the price in England at 40 shillings a quarter, there obtained a difference of 20 shillings. To this must be added the ocean freight, which averaged:—

Bombay-London [4]	30	Shillings per ton i. e. 0-6-8 per quarter.
Calcutta-London	35	,, ,, ,, i. e. 0-7-9 ,, ,,

1. Despatch of the Secretary of State, 19th Oct. 1882,
2. R. E. 2nd March 1883.
3. For an excellent analysis of the Government of India circular vide Ghose : Monograph on Indian Railway Rates, p. 27.
4. Figures from the Director of Agriculture N. W. Provinces' Report, 25th July 1884,

giving a difference of 5 shillings or Rs. 3 in favour of Bombay, i. e. 21 pies per maund,—in terms of railway mileage a proximity of 140 miles to Bombay from its source of supply. Presumably Bombay had so much the greater attractive force.[1]

On the other hand the grain producing tracts of the N. W. Provinces were spread from West to East, between Meerut, Rohilkhand and Oudh, the latter two of which would find Calcutta nearer to them. In the event of equal unit rates, all exports from Meerut and from stations west of Agra on the O. & R. would be sent to Bombay and from east of Chandausi to Howrah. The role of the E. I. would be that of a feeder to the Bombay line, between Delhi and Agra, and it would not come in as an active competitor except in so far as it exerted an attraction from its junction points at Benares and Patna through the O. R. and the B. N. W. respectively.

An analysis of the actual rail exports of wheat from the N. W. Provinces made at the time showed[2] :—

	Average for 3 years ending 1883-84. 000 Bushels.	Percentage of total U. I. Exports.
Meerut Dist,	2,612	33.
Rohilkhand Dist.	1,266	16.
Oudh Dist.	3,330	42.
	7,229	91.

Actually, it was found, roughly a third of the wheat shipped from N. W. Provinces took the Bombay route, and two thirds the Calcutta route. The territory it seems was quite finely divided between the two spheres of influence, Meerut exporting via Bombay

1. Vide above. The Delhi-Bombay rate works out at 1/7 pie m. m.
2. Report by Director of Agriculture of the N. W. Provinces, 25th July 1884.

and Oudh and Rohilkhand via Calcutta. The Bombay route at the rate of Rs. 68-12-0 per 100 maunds would cost Rs. 4–2–0 per quarter (six maunds) i. e. at the rupee at the prevailing rate of about 1/7d., 0.6 shillings. The difference of 20 shillings would be split up as:—

6/8 for ocean freight
6/6 „ railway freight
6/10 „ margin for insurance & profit.

20/–sh. total.

Nor would the Calcutta route provide any greater advantage. Taking Fyzabad midst the Oudh area as the point of origin for traffic moving eastwards,[1] a shipper would pay at Rs. 53/– per 100 maunds, Rs. 3-4-0 or £ 0–5–2 per quarter, and the difference of 20 sh. would be split up as:—

sh.	
7/9	ocean freight
5/2	railway „
7/1	margin for profit etc.
20/–	Total.

If shipped from Delhi via Calcutta the margin of profit would be reduced on account of the railway charge absorbing about 5/8d. leaving 6/7d. for the margin.

The N. W. Provinces now suddenly sprung into importance as an important wheat producing area. Within the six years from 1878–1879 to 1883–84, the exports therefrom increased by no less than 400 per cent, as the table under shows:—[2]

1. The E. I. and O. R. combined rates were 1/6 pie m. m. for 150 miles and 1/7 pie m. m. extra above 15 miles. This means 1/6 pie from Fyzabad but 1/7 pie from West of Fyzabad, taking Delhi for the basic point.
2. Report of the Director of Agri. N. W. Provinces, 25th July 1884.

STATEMENT 34.

IN THOUSAND BUSHELS.

1878-79	2,575
1879-80	3,897
1880-81	3,652
1881-82	7,094
1882-83	6,132
1883-84	10,664

Also within the 5 years, 1879 to 1883, the increase in the area under wheat represented nearly the whole of the increase in cultivated area in the province. Thus:—

ACRES.

	TOTAL CULTIVATED AREA	AREA UNDER WHEAT.
1879	20,402,718	5,365,517
1883	21,335,803	6,221,220
Increase.	933,085	855,703

The wide margin between the net cost of putting down the wheat in England and the prevailing price seems to have been responsible for this phenomenal increase. Even if the reduction in railway rates may not be an exclusive cause that produced this effect, it is highly significant that the two movements viz. competition in rates and increase in trade should have begun at the same time. The wheat exports for the country mounted up thus:—

	000 CWTS.
1880	2,202
1881	7,444
1882	19,901
1883	14,194
1884	21,001
1885	15,851

It will be interesting at this stage, when all eyes were turned towards India as a source of wheat supply for England in preference to the U. S. A., to examine how these rates compared with American rates. The

Chicago–New York rate worked out at $\frac{1}{8}$ pie m. m. at 30 to 35 cents a 100 lbs. The E. I. rate from Delhi was already 1/7 p. m. m. so that the unit difference was not great though its accumulated force along with ocean freights, handling charges etc., may eventually make itself felt against India. Again at least part of the very heavy demand on Indian supplies was due to the failure of American crops in the beginning of the eighties, though the persistence with which the exports maintained their strength signifies that India had established her position in the wheat markets of the world, helped by the lower rates.

At the same time as the N. W. Provinces were benefitting from this competition, the G. I. P. launched upon an increase in their monopolised territory—the Central Provinces. The following table shows the rates before and after 1st May 1881.[1]

STATEMENT 35.

RATES IN RS. PER MAUND,

TO BOMBAY FROM.	BEFORE 1ST MAY.	AFTER 1ST MAY.	INCREASE PER CENT.
Jubbulpore	0–10–5	0–11–0	5·6
Itarsi	0–8–7	0–10–4	20·4
Khandwa	0–6–6	0–7–11	21·8
Nagpore	0–9–8	10–0–0	3·4
Akola	0–8–10	10–0–0	13·2
Amraoti	0–9–11	10–3–0	3·4

This increase was much below the maxima fixed in 1868. The G. I. P. was therefore entirely within its rights in imposing the increased charges, and the Government could not interfere when approached.[2]

1. Figures from letter from Bombay Chamber of Commerce to G. I. P. Railway, 28th March 1881.
2. Government of India to Bombay Chamber of Commerce, 10th May 1881.

Indeed it seems as though the "reasonable margin for the exercise of a discretion" which the Government of India had desired should be left to the railways, was kept more than reasonably wide. Thus :—

STATEMENT 36.

PREVAILING RATES AND MAXIMA ON THE G. I. P.

TO BOMBAY FROM.	DISTANCE.	RATES AFTER 1ST MAY '81. PIES PER TON-MILE	MAXIMA PIES.
Jubbulpore	616	5·7	12
Itarsi	464	7·2	,,
Harda	417	7·3	,,
Khandwa	353	7·3	,,
Murtizapore ...	386	8·4	,,
Akola	363	8·9	,,
Paras	351	9·3	,,

The G. I. P. could therefore legitimately raise the Jubbulpore rate a hundred per cent, irrespective of the contracts pending between the producers and their Bombay constituents, and ruin the wheat trade. As will be proved later, their attitude towards the wheat trade was positively defeatist, this increase being only an expression thereof. The following table brings out the contribution of the Bombay lines towards the increase in the export trade of the port:—

STATEMENT 37.

GRAIN AND PULSE EXPORTS AND RAILWAY TRAFFIC.

IN THOUSAND TONS.

YEAR.	EXPORTS		TRAFFIC			
	INDIA.	B'BAY.	B B. & R.M.	B. B.	R. M. R.	G. I. P.
1879	1145	37	185	127	58	426
1880	1255	55	181	111	70	358
1881	1767	237	277	120	157	681x
1882	2469	634	210	107	113	606
1883	2331	402	259	176	183	605
1884	2500	488	320	139	181	559
1885	1962	503	398	N.A.	N,A.	662

X includes Dhond Mammad and Berar State Rlys., now on.

The G. I. P. carried the major part of the grain exported from Bombay. The territory exclusively under its influence, i. e. the Central Provinces, had long been groaning under the hardship arising out of excessive production without an outlet, leading to disasters similar to those arising from a deficit—if not as intense—despite the opening up of the district by the G.I.P., because of the high level of rates.[1] After the 1875 reductions the G. I. P. assumed increasing importance culminating in the heavy traffic of 1881 when English harvests failed and prices rose. With high prices the increased rates could not exercise any influence. In the middle of 1882, when prices began to fall,[2] Bombay exports got an aid from a glut of tonnage in the port and a fall in ocean freights from 32/6 d.–35/– to 22/6d.—25/– per ton. This over, in 1884 total exports having risen as well as those from Bombay, traffic on the G.I.P. decreased by 8 per cent. This coincidence again is notable and there is a probability of cause and effect. An analysis of the prevalent rates gives considerable support to the conclusion that rates were not adjusted to the requirements of the districts. They stood[3] :—

1. Vide Bombay Chamber of Commerce to the G.I.P., 28th March 1881. Also Q. 3337 1884 committee.
2. Between 1881–2 and 1884, prices of Bombay No. 1. Wheat had fallen 20 per cent in the Liverpool market i. e. from 10/6 d. per Cwt. to 8/–. Vide evidence of Henry Coxe of the P.W.D., Govt. of India, before the 1884, Select Committee Q. 1262 cmd. 284.,
3. Rates figures from letter from Bombay Chamber of Commerce to the G. I. P , 19th April 1883.

STATEMENT 37.

G. I. P. Rates to Bombay			B.B. & R.M. Rates to Bombay		
Miles.	From.	Ton mile rates in pies.	Miles.	From.	Pies T. M.
341	Khangaun.	9·4	888	Delhi.	4·9
363	Akola.	9·0	927	Meerut.	5·1
417	Hurda.	7·3	1,053	Ambala.	5·4
443	Sewnee.	7·3	1,119	Ludiana.	5·4
494	Sohagpore.	7·1	1,203	Amritsar.	5·5
520	Nagpore.	6·3	1,235	Lahore.	5·6
554	Kareli.	6·3	1,409	Rawalpindi.	5·8
616	Jubbulpore.	5·7	1,472	Attock.	5·8
...	...	...	1,516	Peshawar.	5·8

S. P. D.[1] Rates to Karachi

Miles.	From.	Pies T. M.
1,169	Delhi.	4·6
1,129	Meerut.	4·7
1,003	Ambala.	4·7
937	Ludiana.	4·8
853	Amritsar.	4·8
821	Lahore.	4·8
995	Rawalpindi.	4·8
1,058	Attock.	4·9
1,102	Peshawar.	5·3

The G. I. P. rates ruled very high except at Jubbulpore. In the interior of the Central Provinces, Khandesh and Berar the rates were practically double those on the S.P.D.[2] The G.I.P. expressly refused to participate in the enthusiasm for fostering the export trade in grain on the grounds of the inability of India to compete

1. Sind, Punjab and Delhi.
2. The Government of India report on wheat asserted that it was in Berar that the lowest yield of wheat was obtained, viz. 7 bushels per acre, and yet the G. I. P. monopoly enabled it to charge 9 pies per ton mile in that very district. Vide Q. 2625-7-8, evidence of Mr. Bythell before the 1884 Select Committee, cmd. 284.

because of the enormous demand on her crop by the indigenous population, her primitive farming, unscientific storage, lack of roads and exorbitant profits of the middle man.[1] On closer examination however it is found that the movement of wheat even from Jubbulpore to London failed to give the margin of profit available from N. W. Provinces produce. If the shipment originated from any other station the margin would be further narrowed because of the higher rates. This was the case even when prices in London ranged not less than about 10 per cent higher than in the previous calculation for the North West Provinces. Thus per quarter :—

[2]	s.	d.
Price at Jubbulpore	22	4
Railway freight J'pore-B'bay @10 annas 9 pies a md. ...	6	8
Ocean freight B'bay-London @35sh. per ton of 16 cwt....	9	9
	38	9
Price in London say	44	0
Margin ... [3]	5	3

Cf. N. W. Provinces margin 6/10 and 7/1 at prices at 40.

1. Letter from the Board of Directors of the G. I. P. to the Secretary of State for India, 20th April 1883. A similar defeatist argument recently forwarded by a writer, Mr. Chandrika Prasad-that the railways have drained the food supply of the people at the same time raising their prices,-may be noted here.
2. This quotation given by the Directors of the G. I. P. on basis of a pamphlet then published was adopted by the Bombay Chamber of Commerce. Nor is the ocean freights figure disputed in a rejoinder to this letter. Obviously it has moved in sympathy with the price during the two years.
3. Taking the price in London and the ocean freights on basis of figures taken for the N. W. Provinces, the margin goes still lower :-

	s.	d.
Price at Jubbulpore...	22	4
Railway freight J'pore-B'bay	6	8
Ocean freight @ 30/- sh.— per ton	6	8
	35	8
Price in London	40	0
	4	4 Margin

To induce a movement of wheat from the C. P. it was not only necessary to compete with far away America, but also with near at hand N. W. Provinces, the lines tapping which had, by their rates reductions coupled with lower initial cost, enabled their products to be put in London at a price affording a larger margin of profit. It can be stated in fact that, whilst the B.B. the S.P.D. and the E. I. R. had tried to suit themselves to the area which they served, the G. I. P. had made an attempt the other way about and failed therein.[1]

Apropos the competition between Indian and American wheat, prices were generally higher for the latter, standing in 1882 48/9d. per quarter for American and 43/1d. for Calcutta. Indian wheat could therefore bear a lower rate. A comparison, however, shows that, compared with the G.I.P., the American rates were much lower:—[2]

STATEMENT 40.

		MILES			
1876	Chicago–New York	960	£ 1	5	6
1878	,,	,,	0	18	4
1879	,,	,,	0	9	2
1881	,,	,,	1	0	0
1883	,,	,,	1	1	9
1883	Jubbulpore–Bombay @ at Rs. 0–10–5 per maund.	616	1	9	8½

1. William Birkmyre, questioned by the 1884 Select Committee, asserted on basis of official figures that the increase in the G. I. P. Rates had diminished the area served to the extent of about 10 miles on each side. The average distance from which wheat was carried to Nandgaon was 50 miles at 3/1d. a quarter. "The Deputy Commissioner of Hoshungabad gives the average distance from which wheat is brought to Hurda as 25 miles, with a cost of cartage of 2/6d. a quarter. The effect of a reduction on existing rates at Hurda would be that 10 more miles on each side of the railway would receive railway service. The advance was 1 sh. per quarter and that limits the service by 10 miles on each side. (The reference is to a letter from the Chief Commissioner C. P. to Bombay Chamber of Commerce, 12th Sept. 1883) Q. 3409. Cmd. 284.

2. Figures from "The influence of English Trade on American Protection by the Development of India." Anonymous.

Indeed the American railways reached these levels only through the operation of severe and unregulated competition which reduced the normal rate of 30 to 35 cents per lb. Chicago–New York, to 20 and even 14½ cents whilst the line continued to pay a dividend of 4·9 per cent.[1] The ruinous finances of the American competitive lines, are, however, a well known fact, and though a particular line may have survived this intensive rate cutting for a year it cannot be claimed that Indian lines should have done the same. Taking this normal rate of 30 to 35 cents the charges compared:—

STATEMENT 41.

MILES.		Per quarter per 100 miles.
Chicago–New York ...	... (960) 30–35 cents per 100 lbs.	Sh. ·60 to ·74.
E. I.[2] Delhi–Howrah	... (954) Rs. 78 per 100 maunds for not less than 270 maunds [3]	Sh. ·82
S. P. D. Ludhiana–Karachi	(937) Rs. 0-13-9 per maund.	Sh. ·92
,, Delhi–Karachi ...	(1169) Re. 1-0-9 per maund	Sh. ·90
G. I. P. Jubbulpore–Bombay.	(616) Rs. 0-10-9 per maund.	Sh. 1·09

The only line which had its rates comparable to the American rate was still the E. I. Sir James Caird acknowledged this before the 1884 Select Committee.[4] But higher rates than the American ones were not the only handicap. Indian wheat was subject to 5 per cent refraction i. e. freight had to be paid on 5 per cent of extra

1. Vide Influence of English Trade on American Protection by the Development of India. Anonymous
2. According to the Director of Agriculture N. W. P. the Delhi–Howrah rate was sometimes reduced to as low as 60 per 100 maunds.

   According to this pamphlet it was on the other hand as high as 98 per 100 maunds sometimes.
3. Considering that this was a wagon load for 270 maunds, the quarter rate would be even higher.
4. Q. 549–50. Cmd. 284.

weight. As against American export in bulk, it had to be bagged, involving expenditure in bagging, and freight on the weight of the bags. Besides there were the handlings occasioned by the absence of elevators.[1] Lastly, the product suffered from an inferior appearance, though of the same quality as American,[2] causing the difference in price against it.

Despite these handicaps, of the total imports of wheat in England—the Glasgow Chamber of Commerce and Manufactures found in 1883—no less than 33 per cent came from India,[3] although before 1875 there was hardly any grain trade from India. The coincidence between the rate reductions and the capture of a part of the English market are very noticeable. So great was the enthusiasm for promoting export of Indian wheat to England to oust the American producer out of the market that a possibility was entertained at the time of using it against the U S. A. as a lever for reduction of their tariff.[4] Such a predominantly agricultural country as Italy felt India's competition, so that there was a demand for protection against American and Indian produce, and an enquiry was instituted. "I might almost say" wrote the Minister of Agriculture at Rome to Sir James Caird, "that India is of greater interest to us, because we feel

1. Memorandum on wheat prepared by the Director of Agriculture of the N. W. Provinces, 14th January 1887.
2. Henry Coke of the P. W. D. wrote to the Secretary of State—"The wheat itself has gained much in the estimation of the English and Continental buyers on account of its improved condition and superior character. On the grounds of quality it has every chance of success." Quoted by Coke before the 1884 Select Committee, Q. 1264. Cmd. 284.
3. Memorial of Glassgow Chamber of Commerce, 10th December 1883.
4. Evidence of William Berkmyre, Q. 3337 Cmd. 284, 1884.

more the competition of her exports of wheat, rice and silk."[1]

At this stage a third line not long established, viz. the S. P. D. took the other railways by surprise with the rapidity of its progress in spreading its influence. Despite the difficulty in construction of the line, Karachi had been brought into communication with the Punjab, mainly through the Indus Flotilla between Shershah and Kotree, with rail lines at either end to the face of Delhi and to Karachi. In the face of this handicap Karachi could compete successfully in transport charges with Calcutta and Bombay, for product booked even from the eastern districts of the province. The charges from Ludhiana to Karachi and to Bombay compared:—[2]

STATEMENT 43.

Distance to Bombay	Route	1st Cl. goods.	Special Cl. and grain.	Railway.
232	Ludhiana–Delhi.	Rs. 0–6–9	0– 6–9	P. D
605	Delhi–Jubbulpore.	1–0–9	1– 0–9	E. I.
635	Jubbulpore–Bombay	1–4–5	0–14–0	G. I. P.
1,472	Ludhiana–Bombay.	2–11–11	2– 5–6	
To Karachi.				
335	Ludhiana–Sharshah	0– 9–6	0– 9–6	P. D.
575	Sharshah–Kotri.	0–12–3	0–10–3	Indus Flotilla
108	Kotri–Karachi.	0– 3–5	0– 3–5	Sind.
1,018	Ludhiana–Karachi.	1– 9–2	1– 7–2	

But cheapness of carriage can not be the only factor that decides the route taken by a commodity, and rapidity of movement has at least a secondary importance. Thus in 1871 though goods could be conveyed from Lahore Amritsar and beyond Amballa at a lower

1. Quoted by Sir James Caird in his evidence before the 1884 Select Committee., Q. 413.
2. Figures from letter from S. P. D. Railway to Karachi Chamber of Commerce, 6th March 1871.

rate than they could be carried from these parts to Calcutta, the time consumed by the Flotilla journey– "575 miles perhaps of the very worst navigation in the world."[1] together with transhipments, was hardly a recompense for the low rates, and there were complaints of a diversion of trade to Calcutta. The volume of business between the Punjab and Karachi would besides be limited by the capacity of the Flotilla, which did not exceed 16,800 tons per year of grain and cotton and wool—the latter two in loose condition. Apropos these it was calculated that pressing to normal density would increase the capacity 50 per cent. The productive capacity of the area and the supplies furnished to Bengal during the 1873 famine brought it soon to the attention of the E. I. who now attempted as a definite policy to attract this surplus to Calcutta by lower rates.[2]

The handicaps of the Flotilla were removed in 1878 by the Indus Valley Railway—establishing through rail communication between Karachi and Delhi and the Punjab with the exception of a ferry between Rohri and Sukkur. The Punjab now found: that it could take Karachi as its legitimate route to Europe, without hindrance in inland transit. Though connected with the Punjab however, and forming with it a homogeneous economic tract, politically, Sind was under the Bombay Government, and however keenly the Punjab administration felt the necessity for development of Karachi, they could not render any assistance towards

1. It was reported that in the beginning of 1871, not even the lightest draft craft could approach within 3 miles of the river terminus of the Punjab Railway.
2. Huddleston: History of the E. I. Railway. p. 68.

it.[1] Nevertheless the port was now connected with the river as well as the railway system of the Punjab. It had a harbour safe, easy of approach, outside the ambit of cyclones and the monsoon, and some 200 miles nearer to England than Bombay. Nature had therefore endowed it liberally enough. But human building up lagged behind. Cartage and agency charges were very heavy and the jetty and goods yard distant from each other. Goods arriving had to be stored up in godowns involving a cartage of over three miles at Rs. 0-8-0 per ton, plus Rs. 1–8–0 to the loading jetty,[2] an addition to the cost of inland transit. The most efficient business man could not get his merchandise from the rail head to the loading stage under Rs. 1–5–0 per ton. And even there the accommodation was wholly inadequate. Shipping from the small pier at Kiamari cost Rs. 2-12-0 against Rs. 1–11–0 from the native jetty,[3] the former being two miles from the principal anchorage and the latter five. The S. P. D. themselves initiated improvements by the provision of wharfage accommodation on their own property in 1883. Of the 1884 loan for improvements, however, only 3/10 was devoted to the pier at Merewether whereas 7/10 was appropriated to developing the inner part of the harbour, five miles from the anchorage. This according to Sir Wm. Andrew, Chairman of the S. P. D., was hardly likely to reduce the cartage and lighterage expenses, which was probable upon the removal of the deep water point and

1. This continues to be a standing source of grievance to the Karachi interests.
2. Figures from Report from Acting Agent of the S. P. D. Rly. to Sir Wm. Andrew, Chairman of the S. P. D., 31st August 1882.
3. Figures from Punjab Government Resolution No. 6,436 of 28th Nov. 1882.

building of wharves etc., near the anchorage.[1] The Punjab Government calculated a saving of Rs. 2/-per ton, if wheat could be taken directly from the railhead to the shipping wharf.

Karachi laboured under yet a third handicap in the small import trade to the port, necessitating the charter of ships. Home freights consequently ran high.[2] This had, besides, a reflection on railway freights, for wheat sent down to the port had to pay for the return of empty wagons. Added to these there was the ferry at Sukkur—costing about 3 pies per maund, equal to a railway journey of eighteen miles[3] — and the usual absence of feeder roads.[4] An import shipment of small iron, for example, paid the following charges in transit from Karachi to a Ferozpur village:—[5]

STATEMENT 44.	£. s. d.
Through Railway rate at 4/6 per ton mile for 830 miles	1-11- 8
Cartage etc., in-Karachi per ton	0- 2- 8
Intermediate Agency in Karachi	0- 4- 1
Ferry charge at Sukkur	0- 2- 9
Cartage to village over unmetalled roads-say 12 miles	0- 3- 4
Ferry and cartage at Ferozpur	0- 6-10
	2-11- 4

The Sind and Punjab railways were however under men of vision who immediately realised that the crux of development—of the lines as well as the district

1. Comments by Sir Wm. Andrew on Memorandum of Mr. Lightfoot of the S. P. D. on the improvement of trade in India.
2. It was therefore sought to attract mail and tourist traffic to Karachi, and the Government of India Stores Department were approached with a request to import stores through the port.
3. Vide Memorandum on Ferozpur and Sukkur ferry charges, 12th March 1884.
4. Punjab Government Resolution, 28th November 1882.
5. Memorandum by Lightfoot of the S. P. D.

—depended primarily upon adjusting the rates to the requirements of the region. They adopted the lowest scale of charges possible. With the advent of the competitive era, these lines challenged the E. I. and the B. B. and sought a share in the Punjab and the N. W. Provinces trade. As noted above, the S. P. D. had the lowest unit rates compared with the B. B. and the G. I. P. [1] In the course of just three years the following was their achievement:—

EXPORTS OF WHEAT IN THOUSAND CWTS.

	1881	1882	1883
Bombay.	3,315	11,329	6,958
Karachi.	169	1,852	2,740
Calcutta.	3,958	6,668	4,439

Irrespective of the trend of prices, ocean freights and overseas harvests, Karachi handled an increased volume. In 1883 when Bombay lost 38·5% on the previous year and Calcutta 33·5%, Karachi gained 48%.

In May 1883 rates were further reduced on the Punjab Northern Railway to $\frac{1}{6}$ pie per maund mile. The manager subsequently reported, "This low rate has been advantageous and that traffic had sprung up at stations which would not otherwise have exported grain."[2]

The N. W. Provinces and the Punjab were thus being divided into three spheres of influence. But it would be a misimpression to ascribe this division to spontaneous and accidental growth. Whether or not the

1. The table, Supra p. 129, reads at a glance—

G. I. P.	5	to 9·42 pies t. m.
R. M. and B. B.	4·95	to 5·84 ,, ,,
Punjab I. V. and Sind	4·68	to 5·26 ,, ,,

2. Report on Railways in India, 1883–84, para 99.

Government of India foresaw in the P. M. R. an instrument to force down the E. I. and the B. B. rates cannot be ascertained. They did, however, use the R. M., being under their own management, to that purpose. The maxima providing at best but a loose control, it seems they sought to remedy matters. The B. B. had on the opening of the R. M. consented to a rate of Rs. 0–5–5 per md. Sabarmati-Bombay for traffic from Delhi, but for traffic from intermediate R. M. stations they insisted upon Rs. 0–7–0 per md. The Government of India found a handle in this, and, when the R. M. requested permission to reduce their minimum rate Delhi-Sabarmati from Rs. 0–10–0 a maund, they deferred granting it until the B. B. consented to reduced rates for bookings from all stations on the R. M., with the excuse that they could " not permit differential competitive rates with reference to special stations served by other railways."[1] To what extent this profession was consistent with their future policy is hardly germane to the immediate issue. But the result of this keen bargain driving was very salutory. "We offered to make certain material reductions on the Rajputana line, if the B. B. would make a corresponding reduction on their line from Bombay to Ahmedabad, so that in this way we procured a reduction in the through rate from Delhi to Bombay," stated Major Conway Gordon [2]. The effect of that reduction was that if the E. I. had not made a corresponding reduction in their rates from Delhi to Calcutta they would have lost part of their traffic. Also the S. P. D. were obliged to reduce their rates in order to get a fair share of the traffic of Delhi and the neighbourhood. "[3]

1. Government of India to Government of Bombay, 19th May 1882.
2. Q. 4459. 1884 Select Committee. Cmd. 284.
3. Major Conway Gordon before the 1884 Select Cmt. Q. 4459.

The enormous potentialities of lhe N. W. Provinces attracted yet a third competitor. The G. I. P. applied for a line to traverse the Cawnpore–Bhopal territory. The Oudh & Rohilkhand with its network in the N. W. Provinces tapered down to a single line in crossing the Ganges at Cawnpore. A connection therefrom to Bombay would provide the O. R. territory with a straight run to the sea–board. According to Huddleston, the G. I. P. 's. only purpose was "to divert from the East India Railway as much as they could of the Cawnpore–Calcutta traffic." But the whole tract from Cawnpore to Itarsi and from Katni to Marwar lay untapped. "In the neighbourhood of Bhopal and Bhilsa, the production of wheat is so enormous in good years that it lies rotting on the ground because there are no means of exportation," said Sir Lepel Giffen in his address to the shareholders of the G. I. P.[1] The Government of Bombay felt keenly interested in this prospective hinterland for Bombay and recorded, " A better opportunity of enlisting private enterprise in the extension of the Indian Railway system is not likely to present itself, than is now offered by the scheme in question....." Huddleston's claim is therefore hardly warranted, in face of the vast railless territory in Central India, which the G. I. P. would tap.

It was however sometime before the Cawnpore–Bhopal line became an actuality, reducing the Bombay Cawnpore distance to 831 miles, enabling the G. I. P. to compete for N. W. Provinces traffic. Still Cawnpore remained close to Calcutta and as

1. Quoted by Mr. Chapman, of the civil service and several Indian Rlys. before the 1884 Select Commitee. Q. 870.

further attractions the E. I. planned to bridge the Hooghly, to enlarge accommodation at Howrah and to increase its rolling stock. It maintained besides its advantages in respect of fuel supply to the extent shown below:—

	USED IN ½ YEAR ENDED 30TH JUNE 1885.	COST RS	PRICE PER TON IN STERLING.
E. I.	100,175 tons	479,422	£ 0 7 11¾
G. I. P.	108,490 ,,	1,678.778	1 5 9½
B. B.	24,987 ,,	493,112	1 12 10½

The 1884–5 slump in wheat prices which followed, subjected the competing lines to a severe test in measuring how far rates formed only that proportion of the price which would leave a margin to the trader sufficient to induce him to do business. The S. P. D. adopted a rate lower than hitherto, upon opening its extension to Ferozpur—Re. 0–11–9 per md. i. e. 1/15 pie per m.m. The Consulting Engineer observed at the end of the official year, "The trade of Kiamari is advancing at a rate exceeding all anticipations, at the time of inspection 18,000 tons of grain were on the railway premises waiting shipment, and it is hardly too much to say that with wheat at its present price the exports from Karachi under the old system would have been practically nil. The trade is increasing faster than accommodation can be provided for it....." The Government Director stated that the development of the trade of Karachi was "of course mainly due to the low rates....."[1] Indeed the prosperity of the S. P. D. suggests a model of prudent management, for according to the Manager of the I. V., "while almost every line in the country has suffered from the depression in the wheat trade, this line is remarkable for its largely

1. Report on Railways in India, 1883–4, P. 73.

increased earnings during 1884–85." The wheat traffic, which was exceptionally heavy in 1883–84, fell by 25% while a large seed traffic and general increase in carriage of commodities enabled it to earn full 4½% even when weighed down by the strategic line—the Sind–Pishin

The decisions of the Government of India to accept "the legitimate consequences of competition" were therefore actually serving "the interests both of the railway and the trade generally." They were also stimulating "the introduction of improvements in the harbour arrangements....." But rates competition spread far and wide. The Oudh and Rohilkhand clashed with the E. I., to which it was a feeder. The E. I. were charging blanket rates from stations between Cawnpore and Delhi to Howrah drawing "to the E. I. Railway from the O. and R. Railway by the Northern Junctions instead of allowing it to flow its legitimate course by the shortest route, while at the same time causing the E. I. Railway to carry for nothing."[1] Similarly the B. & N. W. found itself in competition with the E. I. because the latter could by its low rates "draw the traffic from a portion of the district served by the B. N. W. on to the E. I. Railway via the O. & R. at Benares, instead of via the junction of the former railway at Digha, again causing the E. I. a longer lead for less charge." The attractive device of the E. I. was not the same in both cases, for whereas the E. I. grain rate of Rs. 60 per 100 mds. was applicable to the whole

1. Government of India despatch to the Secretary of State 7th Aug. 1885. The O.R. is connected to the E. I. at three points Aligarh, Cawnpore and Benares, and it was certainly in its interests to carry Howrah traffic to the southernmost point viz. Benares, rather than deliver it to the E. I. either at Aligarh or at Cawnpore.

Cawnpore–Delhi zone, in competition with the Bombay lines, the rate from Benares to Howrah was Rs. 37 per 100 mds. compared with Rs. 34 per 100 mds. from Digha. The difference was therefore between carrying 192 miles between Cawnpore and Delhi for nothing, and carrying 143 miles between Benares and Digha for Rs. 3 i. e. at about ·04 pies per m. m. Competition was thus developing under the privilege granted by the circular of 2nd March 1883, and with the gathering fear that under the safeguard of guaranteed interest it may be carried too far.

The Government at last devised a solution in their recommendation for the institution of a clearing House system on independent lines with "powers not merely to allocate the distribution of the receipts from through traffic, but to settle disputes as to routes for traffic, charged by rival routes and the simplifying of goods classification."[1] The railways and the Secretary of State both found this unacceptable and the latter proposed that the type of regulation the Government of India desired could only be instituted by the influence the Government exercised in their capacity as owners or guarantors.[2] Major Conway Gordon who at the time was the Government Director and was noted for his vigorous support of the idea of closer Governmental control,[3] prepared a note based on English and other experience. In their subsequent resolution the Government of India accepted his principles in regard to the cutting of rates to a non-remunerative point, and the division of rates on through traffic. The March 1883 Resolution had already laid down the principle that the Government would feel themselves justified in

1. Horace Bell: Railway Policy in India, p. 218.
2. Secretary of State to Government of India, 25th February 1886.
3. Vide evidence before the 1884 Select Committee.

interfering if rates were reduced below the standard covering the cost of transport and a reasonable margin of profit. The Resolution of 12th December 1887 was therefore but a corollary to it. It laid down a schedule of maxima and minima rates to be adopted by all railways:—

	PIES PER MAUND—MILE.	
	MAX.	MIN.
1st Class	1/3	1/10
2nd ,,	½	½
3rd ,,	2/3	2/3
4th ,,	5/6	5/6
5th ,,	1	1

Barring the first class, the railway manager had no scope for alteration and adjustment of rates to traffic except by a change in the classification—which would undo all the efforts at uniformization since 1884. To guard against this the Resolution had prescribed the acceptance of the existent E. I. classification by all railways. The desirability of allowing a scope for the alteration of rates was gradually acknowledged on all hands, and the Government Resolution of the 16th July 1891 brought forth another schedule of rates as under:—

	MAX.	MIN.
5th Class	1	1/6
4th ,,	5/6	
3rd ,,	2/3	
2nd ,,	½	
1st ,,	1/3	
Coal, edible grain and other low priced staples carried at special rates.	1/3	1/10

The lower limit was thus fixed at 1/10 pie per maund mile, and competition modified.

This brings us to the end of the period of uncontrolled competition when the governing consideration of quoting a rate was its ability to attract traffic. The extent to which each railway participated in the trade, alongside with the important alterations in rates is given below.[1] :—

1. Grain and seeds movements, in rates as well as traffic, are so much in sympathy as seen above, that it has been considered desirable to treat them together.

STATEMENT 45,
TRAFFIC IN THOUSAND TONS.

YEAR.	E. I.		G. I. P.		R.M.&B.B.[1]		S. P. D.		Rates Changes.	Remarks-
	Grain.	Seeds.	Grain.	Seeds,	Grain.	Seeds.	Grain.	Seeds.		
1870	86	167	x	x	78	4	27	6	7 pies t. m. over 300 miles.	
1871	30	88	192	8	41	5	56	15		River competition etc.
1872	48	84	168	18	36	8	67	8		
1873	188	115	134	37	27	9	139	23	Co. rate 5 pies t. m. but Govt.	Famine.
1874 a	404	140	232	64	32	2	246	30	giving special lower rates.	,,
1875	88	171	216	113	59	31	66	60		
1876	240	223	425	159	87	36	92	78	Large reductions.	Export dues abolished.
1877	552	334	736	161	158	50	358	66	Normal rates despite famine.	Silver depreciates.
1878	351	369	459	109	212	27	258	27		Famine in South India.
1879	477	272	429	88	185	23	200	63		
1880	282	285	358	140	181	38	177	36	Competitive rates with R. M.	
1881	760 b	307	681	192	277	111	224	27	G. I. P. increase.	European harvests fail
1882	636	394	606	278	220	138	337	58	,,	High prices.
1883	845	429	605	341	359	224	557	127	,,	
1884	518	388	559	315	320	244	435	129	,,	Wheat market dull.
1885	696	495	662	345	398	205	1032	147	,,	
1886	869	360	784	286	429	179	523	73	,,	
1887	894	486	738	234	358	149	415	93	,,	
1888	766	350	744	199	435	186	561	105	,,	
1889	690	368	496	211	xx	xx	642	78	,,	

1. From 1870 to '74, the figures are for B.B. alone. From 1875 to 1884 the figures are additions of traffic on R. M. and B. B. and it is possible the same consignment has been reckoned twice over. From 1885 the B. B. figures include R. M. in the accounts.

a. Figures for Jubbulpore line included. But at this stage they are not important.

x. Figures of doubtful varacity–nil for grain and 147 for seeds. xx. Figures confusing.

The general trend, in both the commodities, is towards an increase. This is reflected in the following table giving exports of wheat from the three provinces of Bengal, Bombay and Sind, and of wheat, grain and pulses and seeds from the whole country:—

STATEMENT 46.

In Thousand Tons

Year.	Wheat.				Grain & Pulse. India.	Seeds. India.
	Bengal.	Bombay.	Sind.	Total India.		
1869–70	N. A.	N. A.	N. A.	N. A.	535	219
1870–71	N. A.	N. A.	N. A.	N. A.	818	337
1871–72	N. A.	N. A.	N. A.	N. A.	904	256
1872–73	7	4	8	20	1,199	139
1873–74	26	22	40	88	1,113	222
1874–75	14	32	7	53	923	304
1875–76	67	42	15	125	1,179	525
1876–77	194	62	23	279	1,311	479
1877–78	227	58	30	317	1,284	609
1878–79	45	7	1	52	1,146	361
1879–80	79	17	14	110	1,255	362
1880–81	198	166	8	372	1,767	515
1881–82	333	566	93	993	2,499	524
1882–83	222	348	137	707	2,331	657
1883–84	381	449	219	1,048	2 463	868
1884–85	128	450	214	792	1,962	913
1885–86	209	530	312	1,053	2,464	866
1886–87	352	630	131	1,113	2,457	795
1887–88	218	427	33	677	2,104	804
1888–89	N. A.	N. A.	N. A.	880	2,038	779
1889–90	N. A.	N. A.	N. A	690	2,045	789

N. A.: Not available.

It is of importance to examine how far fluctuations in prices influenced the increase in the volume of trade, to that extent modifying the stimulus imparted by the reductions in the cost of transport. The cost of transport being a certain proportion of the price, it is obvious that a change in the price level would disturb that proportion. The same railway rate would bear a different ratio to the price of wheat when it rises from 40 shillings a quarter to 45 shillings a quarter, and, if at the previous price the rate constituted 5 per cent of the price, at the higher price it will constitute a smaller percentage. Conversely, if the price fell from 40 shillings a quarter to 35 shillings, the same rate would constitute a higher proportion of the price. Broadly speaking—other things being equal, and the prevalent cost of transport having been found eminently suitable to the traffic—the railway manager would feel justified in increasing his rate when the price rose and decreasing it when the price fell, so as to maintain the ratio at an even level. The basis of such justification is the same fundamental principle in which the classification of merchandise is rooted, viz. the ability of a commodity to bear a particular rate, the price at which it is sold furnishing an index to this ability. Whether the railway manager is capable of adjusting his rates with such finesse, taking into consideration the minuteness of the variations and the relatively short term over which they may be spread, is a question of practical administration. Every time, however, he

overlooks or deliberately permits a rise in prices to pass by without a rise in rates, he increases the margin which goes, among other things, towards the profits of the producer or the trader. On the other hand each fall in prices that he omits to adjust his rates to, by means of a decrease, contracts the margin for the business man, to that extent curtailing the inducement towards production or exchange of commodities. The stimulus imparted to trade by a reduction in rates, so repeatedly commented upon by the railways and the Government Director, may be essentially an operation of the ordinary law of supply and demand—the fall in prices urging movement of a larger volume—rather than a result of a reduction in rates of carriage, the latter only accommodating such fall. It is therefore relevant to investigate the movement of prices and bring it into juxtaposition with changes in rates and in the volume of trade as in the table under:—

STATEMENT 48.

Years.	Wheat. C'pore prices. Sers per Re.	C'pore prices. Annas per ser.	C'ta wholesale prices per md.[1]	London av. per Quarter. Bri Gaz.	E. I. Traffic. Grain 000 tons	Rly. Rate[2] C'pore-C'ta per 100 mds	Ocean freight sh. per ton. C'ta London.	Seeds C'ta Linseed per md. av. price.[3]	London price per quarter 4	E. I. Traffic Oil-seeds 000 Tons	Rly. Rates per 100 mds. C'pore-C'ta.	Linseed Ocean freight sh. per ton. C'ta-London.
			Rs.	SH		Rs.		Rs.	SH.		Rs.	
1871	24·1	0·66	2-0-0	56/6	30	83	65	4- 7- 4	61-3	88	87	5·. 9
1872	19·3	0·82	2- 8-0	57/-	48	77	58	4-11-11	61-6	84	80	75·0
1873	16·6	0·96	3- 6-0	58/-	188	78	55	4-11- 3	60-7	115	75	75·0
1874	17·4	0·91	3-10-0	55/8	404	78	62	4-14-10	55-2	140	75	70·0
1875	23·3	0·68	2-15-0	45/2	88	72	35	4- 1- 7	53-10	171	72	57·5
1876	25·1	0·63	2- 9-0	46/2	240	67	45	4- 3- 1	51-9	223	67	47·5
1877	16·0	1·0	2-15-0	56/9	552	67	62·5	4- 9- 3	54-2	334	67	60·0
1878	13·8	1·15	3- 9·0	46/5	351	67	25·0	4-12- 4	49-1	369	67	35·0
1879	14·2	1·12	3-11-0	43/10	477	59	32·5	4-15-11	49-10	272	59	30·0
1880	18·3	0·87	N. A.	44/4	282	63	47·5	4-10- 3	53-0	285	63	60·0
1881	20·5	0·78	3- 1-0	45/4	760	60	45·0	4- 4- 7	48-7	307	60	5 ·0
1882	18·7	0·85	3- 4-0	45/1	636	60	50·0	3-13- 2	42-11	394	60	55·0
1883	18·7	0·85	2-13-6	41/7	845	60	50·0	3-14- 6	41-6	429	60	55·0
1884	22·0	0·72	2- 8-6	35/3	518	60	22·5	4- 4- 5	43-1	388	60	30·0
1885	22·5	0·71	2- 6-9	32/10	696	53	32·5	4- 4- 6	43-10	395	60	40·0
1886	19·7	0·81	2- 8-0	31/-	869	53	25·0	4- 7- 6	41-10	460	53	30·0
1887	16·4	0·97	2-13-0	32/6	894	53	27·5	4- 4- 3	38-3	386	53	28·7
1888	16·2	0·99	2-15-6	21/1	766	53	30·0	4- 5-10	39-1	450	53	31·2
1889	16·7	0·95	3- 0-0	29/9	690	51	35·0	4-14- 3	42-1	368	51	42·5
1890	15·5	1·03	2-12-0	21/11	629	48	30·0	4-10- 2	42-9	293	48	33·7

1. March prices for 1873-74 and 75. Others are January quotations. The movement is sympathetic with that of the average for the year subsequently found
2. Figures for May, which seems to decide rates for subsequent months of June, July and August. No other figures are available.
3. Average of Maximum prices. 4. Black Sea, Russian Azov until 1885. Then Calcutta.

The tendency is towards a slow rise in prices, both up country and Calcutta, in face of the railway charges. The growing traffic cannot therefore be ascribed to increased demand consequent upon lower prices. On the other hand, the sympathetic movement between the growth of traffic and the falling rates is very suggestive. London prices, however, are falling. So are the ocean freights. To a certain extent the fall in charges of inland and overseas transit is absolutely necessary to cause movement of the commodity so as to give it a place in the competitive market, for India would be dictated to in the matter of prices. Indeed in this, the, pioneering period, it may be claimed that a market for Indian wheat in face of the movement of London prices, which the table represents, would have been impossible without a reduction in the freights, land and ocean. The fall in London prices, it seems, made the reduction in rates a condition precedent to, not only an increase in Indian wheat trade, but to any exports at all.[1]

1. The following is an actual invoice of a wheat consignment shipped in 1882–83:–

2184 bags No, 2 Club at a bazar maund = 2½ maunds	
= 5,460 mds. @ Rs. 2/12 per maund	Rs. 15,015– 0– 0
4368 gunny bags @ Rs. 16 per 100 bags	698– 0– 0
Coolie hire etc.	30– 0– 0
Shipping charges @ Rs. 8 per 100 bags	174– 0– 0
Expenses, Telegrams, bills, stamps etc.	75– 0– 0
Bill brokerage @ $\frac{1}{8}$%	20– 6– 6
at exchange 1/8d.	16,014– 0– 6
	1,334– 0– 0

Account Sales.

2184 bags = 5460 maunds = 911 quarters.	
Loss in weight and damages 3% i. e. 27 quarters.	
Sale of 884 quarters @ 40/8d per quarter	£1,797– 9– 4
Discount 2%	35–18–11
Net sale price	£1,761–10– 5
Charges.	
Landing and rent on sampling	£ 5– 0– 0
Brokerage @ 1%	17–19– 6
Freight on 194¼ tons @ 40/–per ton	388–10– 0
Insurance on £ 1470 @ 20/–less 10 % and stamp	13– 8– 4
Telegrams, stamps, pettie	2– 0– 0
£1334–0–0 *plus* £426–17–10 = 1760–17–10	426–17–10

Unless therefore there is a reduction in ocean freight, or rise in British prices, it just pays to export at 40/8d. London price—without any profit. Port prices should therefore be lower.

In the case of seeds, whilst Calcutta prices are fairly steady. London again registers a fall. At the same time both land and ocean freights are falling. In the ultimate market India being dictated to in the matter of prices, the reduction in railway and ocean freights appears to be a necessary requisite for the product to be able to compete. With the falling prices in the world market, if the producer or the intermediary is to continue in business at all, some one of the items constituting the ultimate price has to shrink in size. In this case, the costs of transit on both land and water seem to have accomplished this.

What was the result of these reductions and the increase in traffic? The capacity of India to supply Gt. Britain with her requirements of wheat had always been a contentious point. But it was urged as the main argument for reduced grain rates throughout these twenty years. To what extent India actually did supplyt he United Kingdom is shown in the following table. The total imports of wheat into U.K. rose from 43 million cwt. in 1871 to 89 million cwt. in 1890, an increase of over 100%, or an annual average increase of about 5%. That the food requirements of a community should increase at this rate, appears at first sight incredible. But there are two important factors to account for it—the increase in the population of U. K. averaging 1½% annually and the diminution in the average area under wheat of 38%. A third factor is the continuous rise in the standard of living of the population—causing a rapid change to consumption of white bread.

STATEMENT 49.

SUPPLIES OF WHEAT TO THE U. K.

In Thousand Cwts.

YEAR.	TOTAL EXPORTS FROM INDIA.	TOTAL IMPORTS INTO U.K. CALENDER YEARS	IMPORTS FROM INDIA TO U.K.	PERCENTAGE OF TOTAL IMPORTED FROM INDIA.	IMPORTS FROM U. S. A	IMPORTS FROM RUSSIA.	OUTTURN IN U. S. A. MILN. BUSHELS.[1]
1871-72	637	43,368	220	·5	15,177	15,683	231
1872-73	394	46,516	162	·3	9,451	17,122	250
1873-74	1,756	50,078	741	1·5	21,379	9,674	281
1874-75	1,069	47,764	1,074	2·3	26,383	5,784	308
1875-76	2,498	58,013	1,334	2·3	25,802	10,127	292
1876-77	5,583	50,414	3,295	6·3	21,643	8,885	290
1877-78	6,340	61,647	6,166	10	22,153	10,969	364
1878-79	1,045	57,735	1,821	3·1	32,683	9,121	420
1879-80	2,196	70,320	889	1·2	42,904	8,095	449
1880-81	7,444	65,820	3,230	4·9	43,065	2,947	499
1881-82	19,864	68,505	7,338	10·7	43,771	4,089	383
1882-83	14,144	77,298	8,463	10·9	42,938	9,659	504
1883-84	20,956	80,468	11,249	13·9	37,399	13,398	421
1884-85	15,831	62,401	7,981	12·6	32,977	5.497	513
1885-86	21,061	77,289	12,102	15·7	36,007	11,986	357
1886-87	22,264	80,212	8,512	10·5	50,612	5,558	457
1887-88	13,538	80,426	8,165	10·0	31,847	21,368	456
1888-89	17,611	78,929	9,218	11·7	30,958	21,768	416
1889-90	13,802	82,381	9,112	11·0	33 903	19,636	491
1890-91	14,320	89,539	13,011	14·5	43,227	14,658	399

India, though confidently establishing herself, with her periodic droughts and her large population proved but a poor competitor to the U. S. A. The conclusions drawn by many a witness before the 1884 committee as regards India's ability to oust U. S. A. from the English market were therefore too hasty.

1. It is not found possible to convert the bushels into cwts., the available equivalent for the Br. Imperial as well as the Winchester Bushels being in terms of distilled water at 62⁰ F. with the barometer at 30, and the specific gravity of wheat being so different from that of water.

CHAPTER VI.

1890–1912, GRAIN & SEEDS (Contd.)

The period above dealt with was essentially transitory. With the beginning of the nineties, the shock of a new system had been absorbed, and the country thence became amenable to influences of the world market. Not until the Great War did any event of importance disturb India's economic balance.

This term was characterised by a rapid expansion of railways—the mileage doubling between 1890 and 1912—to that extent securing the country against famine. The grain and seed lines contributed a good deal to the all round increase. Indeed the N. W. doubled its mileage. The position statistically was :—

STATEMENT 50.

INCREASE OF RAILWAY MILEAGE.

YEAR.	E. I.	G. I. P.	B. B	N. W.	O. R.	B. N. W.	TOTAL INDIA MILEAGE.	INDEX NO. OF MILEAGE 1890-94 —100.
1890	1,633	2,232	2,245	2,565	684	719	15,865	93
1891	1,795	2,480	2,316	2,480	684	736	16,696	97
1892	1,795	2,605	2,316	2,605	684	748	17,148	100
1893	1,795	2,605	2,359	2,605	732	748	17,826	104
1894	1,841	2,605	2,249	2,605	788	748	18,188	106
1895	1,877	2,642	2,449	2,642	788	748	18,756	109
1896	1,877	2,880	2,509	2,880	838	766	19,365	113
1897	1,885	3,370	2,590	3,370	883	779	20,251	118
1898	1,893	3,370	2,590	3,370	1,021	872	21,046	123
1899	1,972	3,569	2,764	3,569	1,023	1,089	22,606	132
1900	2,101	3,626	2,755	3,626	1,142	1,141	23,640	138
1901	2,101	3,756	2,755	3,756	1,142	1,168	22,082	140
1902	2,187	3,786	2,782	3,786	1,144	1,168	24,573	143
1903	2,199	3,894	2,837	3,894	1,205	1,258	25,452	148
1904	2,199	3,956	2,921	3,956	1,263	1,294	25,956	151
1905	2,229	4,116	3,054	4,116	1,272	1,362	26,805	156
1906	2,282	4,325	3,045	4,325	1,320	1,490	27,504	161
1907	2,473	4,441	3,136	4,441	1,330	1,658	28,345	165
1908	2,480	4,441	3,209	4,441	1,330	1.750	28,953	169
1909	2,480	4 545	3,475	4,545	1,338	1,851	29,962	175
1910	2,511	4,782	3,475	4,782	1,433	1,878	30,542	178
1911	2.559	4,880	3,509	4,880	1,543	1,934	31,268	182
1912	2,624	4,942	3,560	4,942	1,638	1,937	31,981	186

At the same time the mileage of metalled roads to feed the lines also increased. The following table shows the rapidity of their growth. In the Punjab colonies the mileage of metalled roads even doubled. Thus:—

STATEMENT 51.

YEAR.	AGRA PROVINCES EAST.	BURDELKHAND	AGRA N. & E. & OUDH.	PUNJAB EAST.	PUNJAB WEST.	C. P.	TOTAL INDIA.	INDEX NO. OF TOTAL MILEAGE 1890-94 =100
1890	1,171	536	4,085	1,986	632	1,337	36,459	97
1891	1,192	539	4,085	1,983	644	1,349	36,833	98
1892	1,196	540	4,154	2,000	647	1,355	37,704	101
1893	1,204	587	4,195	2,000	647	1,357	37,965	101
1894	1,208	613	4,212	2,000	647	1,382	38,432	103
1895	1,216	640	4,234	1,999	648	1,397	38 841	104
1896	1,276	640	4,303	1,996	651	1,420	39,540	106
1897	1,293	656	4,337	1,995	651	1,441	38,846	106
1898	1,300	666	4,356	1,961	645	1,501	39,529	105
1899	1,302	675	4,393	1,870	645	1,581	39,776	106
1900	1,311	684	4,506	1,932	668	1,761	40,583	108
1901	1,325	698	4,558	1,954	670	1,837	41,119	110
1902	1,336	715	4,670	1,983	702	1,982	41,860	112
1903	1,340	716	4,767	2,007	736	2,092	41 888	112
1904	1,365	759	4,774	2,031	1,118	2,118	43,092	115
1905	1,384	772	4,964	2,101	1,132	2,222	44,072	118
1906	1,445	785	5,059	2,190	1,143	2,345	45,510	121
1907	1,432	803	5,145	2,190	1,148	2,360	46,292	123
1908	1,462	847	5,204	2,233	1,227	2,439	47,500	127
1909	1,466	856	5,291	2,261	1,245	2,583	48,586	120
1910	1,458	861	5,380	2,599	1,240	2,850	49,821	133
1911	1,472	863	5,465	2 670	1,219	3,080	51,264	137
1912	1,486	865	5,659	2,697	1,221	3,099	51,952	139

This was not all. During the period the mileage of unmetalled roads increased from 118,745 in 1890 to 141,764, i. e. about 19·5per cent. This period therefore

witnessed to a certain extent the removal of the old state of complete rural isolation.

Meanwhile, a fourth line had started competing for the N. W. provinces grain traffic, viz. the Indian-Midland running between Cawnpore and Itarsi. It opened out an alternative route on broad gauge between Northern India and Bombay *via* Itarsi. The connection of Jhansi with Agra brought the G. I. P. closer to that grain centre too; Agra and Cawnpore both finding themselves equidistant from Bombay—840 miles. Against this was the B. B.—the R. M. already having been leased to it, and the two working as a single system, separating Delhi by 888 and Agra by 847 miles from Bombay. The two were therefore in an ideal position to compete for Bombay traffic—in itself a new development; for hitherto, although the lines had been competing in up-country centres, each was interested in a different port. The same producer could now command two lines to a single port, intensifying competition and forcing down rates. Also Calcutta and Bombay emphasized their competitive character with the efforts of the G. I. P. to secure traffic from districts around Cawnpore, comprising centres on the E. I. between Etawah and Khaga and further north on the O. R. When the I. M. and the G. I. P. therefore reduced their wheat rate Cawnpore–Bombay, 840 miles, from Rs. 0/12/8 per maund to Rs. 0/10/9, the E. I. responded with a reduction from Rs. 0/9/9 to Rs. 0/7/8,

Cawnpore–Calcutta. The E. I. besides resorted to the indirect though more effective means of blocking traffic against Bombay, by imposing prohibitive rates for the short distance on its own line from Etawah or from Khaga for traffic to Bombay. In 1896 the position was:–[1]

STATEMENT 52.

PIES PER TON MILE.

	E. I.		G. I. P.
From	To Calcutta	To Bombay	To Bombay.
Etawah	3·93	8·38	4·25
Khurja	3·17	9·10	4·25
Hathras	3·21	10·67	4·21
Delhi	2·89	7·71	4·24
O. R. via Cawnpore	3·87	...	3·54

The O. R also found it advisable to block traffic against Bombay. The I. M. and the G. I. P., in 1896, tried to attract produce from their territory by reducing maund rates from Rs. 0–11–0 to Rs. 0–9–2. But this gave such a short lead to the O. R. as against the lead to Moghal Sarai for the E. I. that they declined to quote the same mileage rates from their stations for Bombay, as to Moghal Sarai.[2] Instances of this nature could be multiplied—all pointing to the fact that the country had already passed "beyond the first and simple stages of railway development into the later and more complex".[3]

1. Figures from letter from the G. I. P. to Bombay Chamber of Commerce, 13th March, 1896.

2. Letter from Upper India Chamber of Commerce to Govt. of N. W. Provinces, 27th March 1896.

3. Quoted by Ghose: Monograph, as expression of the views of Government of India.

The opening up of South Punjab by the Rewari Ferozpur intensified competition between Bombay and Karachi. The Government of India expressly claimed Karachi as the natural outlet for the Punjab, so that it was only fair that rates from stations nearer to Karachi than to Bombay should be lower on the N. W. This affected the monopoly of the B. B. in North Eastern Rajputana and Southern Punjab and the division of traffic with a competitor presented so undesirable a prospect to the latter that in spite of junction points being established, through booking was held up for a while, whilst the managements attempted to solve the deadlock between themselves.

The rates cutting policy then followed can best be illustrated by the table following, illustrating charges from selected grain centres to ports. It will be noticed that the changes come about at nearly the same time—after the first five years and then after a period of ten years.[1] The index numbers, 1890-94 base, bring out the reductions more prominently :—

1. Figures from Enquiry into the Rise of Prices in India. Vol. III pp. 498-501. Tariffs of principal lines were examined and figures culled or calculated therefrom.

STATEMENT 53.

PER MAUND GRAIN & SEED RATES TO PORTS.

YEAR.	C'PORE-HOWRAH		VIA C'PORE-KARACHI		VIA C'PORE-BOMBAY		DELHI & VIA TO BOMBAY.		VIA DELHI-KARACHI		L'NA-KARACHI		L'NA VIA DELHI FOR BOMBAY	
	RATES	INDEX NO.	RATES	INDEX NO.	RATES	INDEX NO.	RATES	INDEX NO.	RATES	INDEX NO.	RATES	INDEX NO.	RATES	INDEX NO.
1890	0-8-2	102	1- 2-11	105	0-11-0	100	0-11-0	100	0-14-3	100	0-11-6	100	0- 5- 1	105
1891	,,	101	1- 0- 8	92	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,
1892	,,	,,	1- 1- 8	98	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,
1893	,,	,,	1- 2- 6	102	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,
1894	0-7-8	95	1- 2- 8	103	,,	,,	,,	,,	,,	,,	,,	,,	0- 3-11	80
1895	,,	,,	1- 2- 7	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,
1896	,,	,,	,,	,,	0-10-9	98	,,	,,	,,	,,	,,	,,	,,	,,
1897	,,	,,	,,	,,	0-11-9	100	0-10-9	98	,,	,,	,,	,,	,,	,,
1898	,,	,,	0-14- 1	78	0-10-9	86	,,	,,	0-10-9	75	0-11-3	98	0- 3-10	79
1899	,,	,,	0-13- 4	74	,,	,,	0-10-0	91	0-10-0	70	,,	,,	,,	,,
1900	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,
1901	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	0-11-0	96	,,	,,
1902	,,	,,	0-12- 8	70	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,
1903	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,
1904	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,
1905	,,	,,	,,	65	0-10-0	,,	,,	,,	,,	,,	,,	,,	,,	,,
1906	,,	70	0-11- 9	49	0- 7-6	64	0- 9-6	86	,,	,,	,,	,,	,,	,,
1907	,,	65	0-11- 7	,,	0- 8-6	,,	0- 7-1	64	0- 7-7	53	,,	,,	0- 3- 8	76
1908	0-5-8	,,	,,	,,	0- 7-1	,,	,,	,,	,,	,,	0- 9-8	84	,,	,,
1909	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,
1910	,,	,,	,,	46	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,
1911	,,	,,	,,	47	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,
1912	,,	,,	0-10- 4	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,

Whilst rates continued stable for the first five years, traffic continued to increase. The quinquennium 1890–94 is indeed the most normal term during the period under review "unaffected by such circumstances as famine and unseasonal rainfall."[1] The spurt shown in Tables to follow, in 1891–92, appears attributable rather to a brisk demand upon India by the world market due to a shortage outside, increasing her exports from 14 million to 30 million cwts., whilst prices in London for British wheat rose from 31/11d. to 37/– sh. per quarter.

STATEMENT 54.
TRAFFIC IN GRAIN AND SEEDS.
In thousand Tons.

YEAR.	E. I.		N. W.[2]		G. I. P.		B. B.	
	GRAIN.	SEEDS.	GRAIN.	SEEDS.	GRAIN.	SEEDS.	GRAIN.	SEEDS.
1889	690	368	642	78	496	211	199	122
1890	629	293	710	55	551	250	122	56
1891	969	396	1,069	69	911	381	319	62
1892	922	368	654	67	761	345	244	111
1893	660	441	778	193	600	462	197	217
1894	870	362	1,013	180	439	447	223	238
1895	873	264	1,080	141	412	280	258	167

The foreign trade except for 1891–1892 also increased steadily :–

Thousand Cwts.

	WHEAT.	SEEDS.
1889–90	13,802	15,798
189 -91	14,320	14,802
1891–92	30,307	19,166
1892 -93	14,973	16,511
1893–94	12,157	24,239
1894–95	16,890	20,890

1. Enquiry into the Rise of Prices in India, Para 25, p. 14. Mr. Datta, who conducted the enquiry, in fact took this period for the basis of his index numbers in connection with the investigation.

2. Formerly Sindh Punjab and Delhi.

It becomes possible to examine the effect of rates upon internal trade also, for this period. Although the trade figures do not exactly correspond in every instance to rail-borne traffic, the river borne trade disturbing accuracy, it is yet possible, taking for granted an alert spirit of competition against the river on the part of the railway, and the river-borne trade to maintain itself at a constant proportion, to investigate the relative influence exercised upon producing areas by each of the largest seaport towns and its feeding railways. From the N. W. Provinces wheat exports into Bombay and Calcutta show:—

STATEMENT 55.

WHEAT EXPORTS FROM N. W. PROVINCES.

In thousand Maunds.

YEAR.	TO BOMBAY.		TO CALCUTTA	
	EXPORTS.	PERCENTAGE OF TOTAL EXPORTS.	EXPORTS.	PERCENTAGE OF TOTAL EXPORTS.
1888-89	1,261	36	2,225	64
1889-90	649	25	1,900	75
1890-91	217	16	1,142	84
1891-92	4,356	47	4,866	53
1892-93	2,543	35	4,862	65
1893-94	225	8	2,552	92
1894-95	186	7	2,202	93
1895-96	770	22	2,214	78

The variation in the attractive force exerted by the two ports from year to year is very remarkable,[1] and corresponds with the position with regard to the exports of seeds :—

1. Karachi exerted little influence yet in the N. W. Provinces, her imports of wheat by rail and river amounting to 14,188 mds. in 1892-93.

STATEMENT 56.
SEED EXPORT FROM N. W. PROVINCES.
In thousand mounds.

YEAR.	TO BOMBAY.		TO CALCUTTA.		PERCENTAGES.			
					LINSEED.		RAPE AND MUSTARD.	
	LINSEED.	RAPE AND MUSTARD.	LINSEED.	RAPE AND MUSTARD.	B'BAY	C'TA.	B'BAY.	C'TA.
1888-89	442	1,096	2,033	837	18	82	56	44
1889-90	247	921	1,974	427	11	89	68	32
1890-91	70	343	1,850	206	3	97	62	38
1891-92	306	400	2,541	374	10	90	52	48
1892-93	160	1,114	2,469	753	6	94	60	40
1893-94	268	1,845	2,312	653	10	90	78	22
1894-95	287	418	1,754	290	13	87	59	41
1895-96	50	102	1,118	261	4	96	28	72

For all practical purposes the N. W. Provinces adopted Calcutta as their outlet—the heaviest traffic being in wheat, with Linseed to follow. Though Bombay took the larger share of rape and mustard, their volume being smaller, on the whole Calcutta lines exerted greater attractive force than Bombay lines did. It is relevant to inquire how far the rates quoted by the E. I. and reinforced by the B. N. W. and the O. & R. were responsible for this. From the long east to west stretch of the N. W. Provinces, part of the territory would certainly be exclusively tributary to the E. I., aided by the O. R. and the B. N. W., and no reasonable reduction on the part of the B. B. and G. I. P. would draw away traffic therefrom, just as no reasonable reduction on the part of the E. I. would draw to her Gujarat and Khandesh traffic from the B. B. and the G. I. P. The rates for wheat and seeds to Calcutta and to Bombay compared in 1895 :—[1]

1. Figures from letter from Bombay Port Trust to Bombay Chamber of Commerce, 9th July 1895.

RATES PER TON.

From	To Calcutta		To Bombay		
	Miles.	Rates	Miles.	B. B. Rates.	G. I. P. Rates.
Delhi	954	14- 7-4	890	18- 4- 7	23-12- 3
Aligarh	876	15- 7-0	903	19-15-10	21- 8- 3
Hathras City[1]	...	...	879	19- 2- 2	...
Hathras Road	857	14-11-0	884	...	19- 6- 6
Agra	841	15- 0-5	848	18- 4- 7	18- 2- 3

The G. I. P. competing *via* the E. I. the I. M. and the O. R. was under severe handicaps. Besides its mileage to Bombay from centres was greater than by the B. B. except at Agra. The struggle was therefore between the E. I. and the B B. and the lower rates on the former may have induced traffic to take the Calcutta route even in areas roughly equidistant from the two centres. Comparing the prices in the Calcutta and Bombay markets for identical qualities of wheat and linseed viz. "Delhi No. 1" and "bold" the quotations for 12 months ending November 1895 were found to be :—[2]

	WHEAT PER Md.	LINSEED PER Md.
Bombay	Rs. 4-1-8 per Cwt. i. e. 3-0-1	Rs. 7-11-11 per Cwt. i.e. Rs.5-10-9.
Calcutta	Rs. 2-14-5 per Md.	Rs. 5- 7- 9 per Md,

Could the higher price in Bombay be a reflection of the higher B. B. and G.I.P. rates? For wheat, the Bombay price exceeds the Calcutta price by 3·6 per cent, for linseed, by 3·4 per cent. The conversion

1. Hathras City not on the E. I. and the G. I. P. Hathras Road not on the B. B.

2. Figures from letter from Bombay Chamber of Commerce to the B. B. C I Rly., 25th Nov. 1895. The official i e. Govt. of India figures available are for a different quality at Bombay and at Calcutta hence it was considered inadvisable to compare these here.

from tonnage to maundage figures of rates from Delhi shows:—

To Bombay		To Calcutta.	
Wheat	Linseed.	Wheat	Linseed.
0-10-9	0-11-0	0-8-6	0-8-6

The following is the percentage, freight forms of the selling price :—

Bombay		Calcutta.	
Wheat	Linseed.	Wheat	Linseed.
22%	12·1%	18·3%	9·7%

Bombay was handicapped therefore to the extent of 4 % and 2·4%. But this could not be the sole consideration governing the direction of the traffic. In the first place a portion of traffic would have to go to Bombay and Calcutta, whatever the rate, so long as it was not so high as to make local consumption in those large centres prohibitively expensive. Thus for the first five years of the nineties, the position was :—

STATEMENT 57.

CONSUMPTION OF WHEAT IN BOMBAY AND CALCUTTA.

In thousand Maunds.

YEAR.	IMPORTS INTO CALCUTTA.	EXPORTS FROM BENGAL.	BALANCE FOR LOCAL CONSUMPTION.	IMPORTS INTO BOMBAY.	EXPORTS FROM BOMBAY.	BALANCE FOR LOCAL CONSUMPTION.
1890-91	3468	1824	1644	9255	8455	800
1891-92	8147	6461	1685	20373	19642	731
1892-93	6545	4526	2019	12422	11126	1316
1893-94	3805	1413	2392	8812	6397	2415
1894-95	2914	327	2587	5296	1423	1873
		TOTAL	10327		TOTAL	7135

Calcutta therefore needed a larger quantity for her own consumption, and naturally drew upon the N. W.

Provinces for her requirements. Bombay could not expect to divert this traffic by any reasonable adjustment of rates. Again with regard to seeds :—

STATEMENT 58.

CONSUMPTION OF SEEDS IN BOMBAY AND CALCUTTA.

In thousand Maunds.

YEAR.	CALCUTTA AND BENGAL.			BOMBAY PRES. AND TOWN.		
	IMPORTS INTO CALCUTTA.	EXPORTS BY SEA FROM BENGAL PRES.	BALANCE FOR LOCAL CONSUMPTION.	IMPORTS INTO BOMBAY.	EXPORTS BY SEA FROM BOMBAY PRES.	BALANCE FOR LOCAL CONSUMPTION.
			LINSEED.			
1890–91	7,119	6,841	278	4,448	4,153	295
1891–92	8,238	8,030	208	6,078	6,658	–580
1892–93	5,725	5,579	146	5,017	5,062	–45
1893–94	7,874	7,435	439	7,609	6,491	1,118
1894–95	5,497	6,060	536	5,820	6,181	–361
			RAPE AND MUSTARD			
1890–91	2,487	613	1,844	859	1,041	–182
1891–92	2,820	941	1,879	1,244	1,886	–642
1992–93	2,845	615	2,230	2,780	3,048	268
1893–94	3,745	1,042	2,703	5,867	5,993	126
1894–95	2,399	184	2,215	4,377	4,387	–10

Calcutta's consumption was thus larger, and so was its capacity to attract produce. Figures of bookings, available from the B. B., from stations in the thick of competition show, that within the territory not outside Bombay's sphere of influence as measured by mileage distances, there is a definite bias towards Bombay :—

	Wheat	*000 Tons.*				
From Delhi	*1890*	*1891*	*1892*	*1893*	*1894*	*1895*
To Bombay	160	1,509	680	54	60	232
,, Howrah	149	143	76	186	334	197
From Agra						
To Bombay	N. A.	72	131	40	N. A.	N. A.
,, Howrah	N. A.	5	35	13	N. A.	N. A.
From Hathras City and Junction						
To Bombay	5	504	436	40	2	28
,, Howrah	47	158	280	216	62	94

Taking total exports to be divided between Bombay and Howrah, every time the total figure goes low, Howrah gets a larger percentage. Immediately however the exports are brisk Bombay comes into prominence. Thus the Delhi figures for 1891 can be contrasted with those for 1894 or the Hathras 1891 with 1892 to show, that irrespective of the attractive force of railway charges, there is some influence making a certain volume of traffic necessarily flow to Calcutta. In fact, with regard to wheat a *status quo* seems to have been maintained uninfluenced by rate cutting, the upper reaches being divided by a line roughly drawn from Sahranpur to Agra, presumably the feeder lines on the east thereof being interested in Calcutta more than in Bombay.

Bookings of seeds show :—

	Seeds 000 Tons.					
	1890	*1891*	*1892*	*1893*	*1894*	*1895*
From Delhi						
To Bombay	4	2	254	655	261	28
,, Howrah	35	24	24	90	170	126
From Agra						
To Bombay	8	12	43	49	41	5
,, Howrah	39	34	34	46	51	25
From Hathras						
To Bombay	76	15	164	275	129	9
,, Howrah	7	13	25	28	35	19

It has been noticed above that Calcutta attracts the bulk of linseed to itself, but Bombay scores in rape and mustard. The lump figures in the table above cannot bring out that fact. It is found, however, on further investigation that the Agra and Meerut areas were not primarily interested in linseed and only Bundelkhand would come within reach of Bombay for that commodity. The *locale* of bulk of growth

being nearer to Calcutta than Bombay, Calcutta naturally attracted traffic without reference to small differences in rates. On the other hand, rape and mustard are cultivated in Agra, Meerut and Rohilkhand; so Bombay can, and does, get a bulk of them. In spite of adverse railway rates the advantages of the port continue to operate in its favour. It remains, however, a moot point as to what proportion of wheat and rape seed going to Calcutta would have been attracted to Bombay under equal railway rates. The advantages of the E. I. in respect of lower unit costs of working did of course enable it to quote lower rates, but the Director of Agriculture and Land Records, N. W. Provinces, opined that the difference maintained was "even more considerable than might have been expected from this advantage."[1] The difference between rates to Bombay and to Calcutta reinforced by block rates was :—

STATEMENT 59

RATES TO HOWRAH AND TO BOMBAY.[2]

	WHEAT AND SEEDS. TO HOWRAH.			WHEAT TO BOMBAY		OIL SEEDS. TO BOMBAY	
From	Distance	PER 100 mds.	PER m.m.	Distance	PER 100 mds.	PER m.m	PER 100 mds.	PER m.m.
Jhansi.	821	Rs. 77	·18	752	81	·21	81	·21
Agra.	841	55	·13	841	67	·15	69	·16
Hathras.	857	53	·12	883	75	·16	75	·16
Gaziabad.	942	55	·11	901	71	·15	72	·15
Muzafar-nagar.	1005	63	·12	964	81	·16	82	·61
Sahran-pur.	1015	68	·13	1000	85	·16	86	·17

Bombay's handicap really obtains irrespective of short distances. At Delhi the position is:—

	TO BOMBAY.	TO HOWRAH.
Wheat per maund	0-10-9	0-8-6
Linseed ,, ,, ...	0-11-0	0-8-6

1. Letter to the Secretary to the Govt., N. W. P., 6th April 1896.
2. Figures from letter from Bombay Chamber of Commerce to the Agent B. B. C. I. Rly., 25th July 1896.

i. e. a charge of about 21per cent against Bombay. The Bombay traders maintained that, whereas the difference in working costs between the B. B. R. M. and the E. I. was only about 7 percent as per the following table, the difference in rates in favour of Calcutta was about 15 per cent higher, which was according to them unwarranted. Thus :—

OPERATING RATIOS.

	1894	1895	MEAN.
E. I.	30·87	31·07	30·97
B. B.	36·85	37·69	37·27
R. M.	38·19	40·29	39·24

Section 43 of the Indian Railways Act, 1890, provides for a railway commission which could be appointed by the Governor General to investigate into complaints of undue preference. The Bombay traders applied for its appointment.[1] It was, however, pointed out that mere attempts to draw produce from a competitive district to one line by quotation of lower rates, could not amount to undue preference, and that governmental interference could not be justified so long as the rates ranged within the maxima and the minima. " Undue preference" it was stated, "must be the act of one railway administration, and the independent action of railway A could not render railway B, which had no control over the working of A, liable."[2] The Bombay traders meant to make the E. I. answerable for so manipulating their rates as to prevent produce from coming to Bombay[3] This was true, as has been

1. Bombay Chamber of Commerce to the Government of Bombay, July 1896.
2. Bombay Government to Bombay Chamber of Commerce, 20th Aug. 1896.
3. Bombay Chamber of Commerce to Bombay Government, 27th Aug. 1896.

noted above from the figures; and though of doubtful success, the E. I. openly acknowledged that their aim "has hitherto been to maintain at competitive points, where distances from Calcutta and Bombay are approximately equal, a certain difference in favour of exports from Calcutta, assumed roughly to compensate for the more expensive shipping and freight charges from Calcutta."[1] This she was capable of, the working costs and earnings comparing :—

STATEMENT 60.

IN PIES PER TON-MILE.

YEAR.	E. I.		B. B.		G. I P.	
	"HAULING"[2] COSTS.	EARNINGS	"HAULING" COSTS.	EARNINGS.	"HAULING" COSTS.	EARNINGS.
1891	1·68	5·75	3·30	7·61	4·05	8·38
1892	1·62	5·34	3·40	7·75	3·93	8·14
1893	1·69	5·28	2·91	7·77	4·06	8·02
1894	1·67	5·02	2·93	7·77	3·95	8·36
1895	1·63	4·87	2·99	7·86	4·38	8·56

As to whether the blocking rates against Bombay were within jurisdiction of a railway commission remained however a moot point, for a settlement was arrived at between the rival lines early in 1898, whereby decisions were reached regarding equalisation of rates and pooling of traffic, on principles agreeable to them, and found satisfactory by the Bombay traders.

1. Agent to the Bengal Chamber of Commerce, 18th February 1896.
2. The term "hauling" seems to have been used in the sense of working costs including depreciation, renewals, replacements etc., but excluding interest on capital.
3. Vide Government of India to Government of Bombay, 30th March 1898; also minutes of the meeting on 7th February 1898.

It is necessary to note in justice to the Bombay lines that their rates, higher in comparison with Calcutta, were no longer so maintained because the lines continued to believe in squeezing as much out of a small traffic as possible. The large accretions to trade, due on their own admission to reduction in rates, being principally confined to raw materials and food-grains, the necessity for the lowest charges was recognised by them. It was, however, the certainty of a counter reduction by the Calcutta line that deterred them from quoting the same rates as to Calcutta; for the reduction would leave the relative position of the two centres unaltered, though of course, the lower rate might create new traffic. An examination of the correspondence between the railways and the Bombay traders makes this point clear —particularly with regard to the B. B. and the R. M. Besides, there was the limited capacity of the R. M. In 1896, for example, when it was urged that Bombay had lost its advantage in ocean freights, making lower rates necessary to enable Bombay to hold her markets, the directors felt "apprehensive that if Bombay secures considerable increase to its trade.....it would be practically impossible for the existing line to carry the additional produce over the section of the R. M. Rly., between Baudikui and Ajmere."[1] They however gave an assurance of their anxiety to "draw fresh traffic to their system by reducing rates."

The G. I. P. had, ere this, in conjunction with the I. M. made a bid to obtain traffic from Cawnpore and the N. W. Provinces by quoting competitive rates. In

1. Directors of the B. B. Railway to Bombay Chamber of Commerce, 7th Feb. 1896. This again brings home the undesirable character of the break of gauge.

non-competitive tracts, however, its policy continued on the same old lines, and the management seems to have missed the lessons learnt by other lines, of the beneficial results of lower rates. It was not, however, long before its hands were forced by a rival line connecting the Central Provinces with Calcutta, which threatened to deprive both the G.I.P. and Bombay of a considerable proportion of their trade.

Public interest had for long been aroused in the sealed tract, at present traversed by the Bengal Nagpore. As early as in 1876, we find Bombay traders betraying a keen interest in the construction of the line contemplated to shorten the distance between Bombay and Calcutta by 300 miles to open up agricultural and mineral tracts and to provide access to Orissa.[1] As to whether the railroad was desired to open up a producing area waiting for an outlet, or was designed to pioneer progress, there is considerable conflict of opinions. Mr. Bullen-Smith of the Bengal Legislative Council characterised the country as very wild, with the "wildest of aborigines," so that the Nagpur-Calcutta line would deal, "not only with what you find existing at the moment," but also what the railway would develop.[1] Colonel Crawford of the E. I. could not even recommend the line, because of the relatively unexplored and undeveloped nature of the country.[2] Mr. Bythell, a Bombay merchant, on the other hand quoted the Commissioner of the Central Provinces, stating in 1874, that there were scores of thousands of tons,.....lying rotting in the district for want of faci-

1. Q. 2355 and 2357, 1884 Select Committee. Cmd. 284.
2. Q. 3768-69. Ibid.

lities. The people dreaded a good crop more than a bad one, because if they had a good crop, they could not raise the money to pay their assessments."[1] It seems that, though not conceived entirely in the pioneering spirit, the line did come as advance guard to production to a large extent.

By the end of 1891–92, the B. N. had reached Asansol, placing C. P. produce within the reach of Calcutta, and was able and willing, by reason of the larger lead available, to divert trade from Bombay.[2]

The G. I. P. was carrying grain, Nagpore–Bombay, at 5·92 pies per t. m. The B. N. went so far as to quote 1/9 pie m. m. i. e. 3 pies t. m. The Bombay line had to reduce to 4·7 pies t. m. and—to attract produce from the areas opened by the B. N.—to 3·4 to 4·4 pies t. m. *via* Nagpore–Bombay.[3] The following figures show how the G. I. P. felt the B. N. competition[4] :—

1. Q. 2611. Ibid.
2. A comparison of the distances shows :—

	To Calcutta *via* Asansol.			To Bombay *via* Nagpore.		
From	B. N. R.	E. I. R.	Total.	B. N. R.	G. I. P.	Total.
Nagpore.	632	132	765	...	520	520
Drug.	467	132	599	165	520	685
Rajnangaon.	486	132	618	146	520	666
Raipur.	444	132	576	188	520	708
Bilaspur.	376	132	508	257	520	777
Akaltara.	359	132	491	273	520	793
Raigarh.	293	132	425	339	520	850

3. Figures from Ghose: Monograph, P. 58.
4. These figures from Datta do not agree with Ghose's. Probably the former include terminals.

STATEMENT 61.

RATES PER MAUND N'PORE–BOMBAY AGAINST THE B. N.

YEAR.	NAGPORE TO BOMBAY.		VIA NAGPORE TO BOMBAY.	
	RATES.	INDEX NOS.	RATES.	INDEX NOS.
1890	0-9-6	114	0-9-6	100
1891	0-9-6	113	0-9-6	100
1892	0-7-7	91	0-9-6	100
1893	0-7-7	91	0-9-6	100
1894	0-7-7	91	0-9-6	100
1895	0-6-1	73	0-9-6	100
1896	0-6-1	73	0-5-5	57
1897	0-6-7	79	0-5-5	57
1898	0-6-7	79	0-5-5	57
1899	0-5-5	65	0-5-5	57
1900	0-5-5	65	0-5-5	57
1901	0-5-5	65	0-5-5	57
1902	0-5-5	65	0-5-4	57
1903	0-5-5	65	0-5-5	57
1904	0-5-5	65	0-5-5	57
1905	0-5-5	65	0-5-5	57
1906	0-5-5	65	0-5-5	57
1907	0-5-5	65	0-5-5	57
1908	0-5-5	65	0-5-5	57
1909	0-5-5	65	0-5-5	57
1910	0-5-5	65	0 5-5	57
1911	0-5-5	65	0-5-5	57
1912	0-5-5	65	0-5-5	57

The vigour with which the B. N. competed for C. P. traffic can be judged from an example. In April 1896, a fluctuation in ocean freights in favour of Calcutta reduced the margin between the freights from the two ports to Europe to Re. 1–8–0 per maund, with the result that in Akola, a grain and seeds centre 916 miles from Calcutta and 363 from Bombay, large purchases of seeds were made for shipment via Calcutta. "Were the rates on your line," (the G. I. P.) contended the

irate Bombay traders, "based on even an approximately level scale for the respective mileages, it would be absolutely impossible for buyers of linseed on the Calcutta side to touch the markets within something like 250 miles on the Calcutta side of Akola."[1] The argument appears to be true, for on basis of equal mileage rates, the Calcutta sphere of influence would begin about 640 miles away from Bombay beyond Gondia on the B. N. Granting this to be impossible because the B. N. would block traffic against Bombay, the competitive point should be Nagpore. Ghose, however, states that bookings were small from Nagpore before the opening of the B. N. and the B. N. "gave new traffic to the G. I. P. Railway." So far, therefore, the attempts of the G. I. P. to attract traffic from the B. N. stations met with success. The traffic figures on the G. I. P. and the B. N. show :—

STATEMENT 62.

TRAFFIC ON THE G I. P. & THE B. N.

In Thousand Tons.

YEAR	G. I. P.		B. N.	
	GRAIN	SEEDS	GRAIN	SEEDS
1889	496	211	105	32
1890	551	250	136	45
1891	911	381	275	19
1892	761	345	244	36
1893	600	462	202	73
1894	439	447	222	55
1895	412	280	250	48
1896	447	343	184	18
1897	391	170	158	37
1898	553	388	185	13

1. Bombay Chamber of Commerce to the G.I.P. Railway, 14th April 1896.

The last three of these years could hardly be called normal because of the prevalence of famine. Judging from figures from 1889 to 1895, both the lines had a spurt in 1891—when the B. N. reached Asansol and got connection with Calcutta. The prevalence of high prices in the world market must also have exerted its influence here. The B. N. reached its maximum in that year, but the G. I. P. retained a higher level for a few years to come. The G. I. P. therefore did attract traffic from the B. N., either due to the advantages Bombay offered as a port or to the reductions in rates, probably due to both.

It is interesting to compare the rates from a few important centres to the two ports. In each case the Bombay line keeps its rates a little higher, probably as much because the Calcutta line holds the key position in respect of lower working costs as of the superior advantages of Bombay. Very suggestive is the reduction to Bombay immediately the B. N. reached Calcutta, a healthy development :—

STATEMENT 63

PORT COMPETITION FOR C. P. PRODUCE

Rates in Rs. per Maund.

FROM	JUBBULPORE.				RAIPORE				BILASPORE			
YEAR.	TO BOMBAY.		TO SHALIMAR.		TO BOMBAY.		TO SHALIMAR		TO BOMBAY		TO SHALIMAR	
	RATES.	INDEX NO.	RATES.	INDEX NO.	RATES	INDEX NO.	RATES.	INDEX NO. 1892-94=100	RATES.	INDEX NO.	RATES	INDEX NO. 1892-94=100
1890	0- 9- 6	100	0- 7- 6	100	0-14- 9	112	Line not opened.		1- 0- 7	110	Line not opened.	
1891	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,
1892	,,	,,	,,	,,	,,	,,	0-10- 4	100	,,	,,	0-12 3	100
1893	,,	,,	,,	,,	0-10- 8	82	,,	,,	0-12-10	85	,,	,,
1894	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,
1895	,,	,,	,,	,,	,,	,,	0- 9-10	95	,,	,,	0-11- 9	96
1896	,,	,,	,,	,,	,,	,,	0- 8- 9	85	,,	,,	0-10- 6	86
1897	0- 7- 3	76	0- 6- 9	90	0-10- 4	79	,,	,,	0-12- 3	81	,,	,,
1898	0- 6- 7	69	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,
1899	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,
1900	,,	,,	,,	,,	0-11-10	90	,,	,,	0-13- 8	91	,,	,,
1901	,,	,,	,,	,,	0-11- 3	86	0- 8- 4	81	0-13- 2	87	0- 8-11	73
1902	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,
1903	,,	,,	,,	,,	,,	,,	0- 8- 3	80	0-12- 7	83	0- 9- 1	74
1904	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,
1905	,,	,,	0- 7- 8	102	,,	,,	,,	,,	,,	,,	,,	,,
1906	0- 6- 5	68	0- 7- 6	100	,,	,,	,,	,,	,,	,,	,,	,,
1907	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,
1908	0- 6- 0	63	0- 6- 4	84	,,	,,	,,	,,	,,	,,	,,	,,
1909	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,
1910	,,	67	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,
1911	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,
1912	0- 6- 4	,,	0- 6- 5	86	,,	,,	,,	,,	,,	,,	,,	,,

The reductions in rates from Raipore and Bilaspore on the B N. in 1901 are coincident with the entry of the B. N. into Howrah in 1900. This promoting the B. N. from a mere feeder to the E. I. to a trunk line seems to have given the management a wider scope for manipulation of the rates without having to seek the consent of the E. I. Besides the distance was reduced by 61 miles.

The table above gives special rates. The class rates on the G. I. P. from 1884 to 1898 were:—[1]

RATES EXCLUSIVE OF TERMINALS.

For distances up to 400 miles.	About 8 pies per 27 mds. per mile (i. e. per ton mile).
For distances beyond the first 400 and up to 600 miles.	About 7½ pies per 27 mds. per mile added to the rate of the first 400 miles.
For distances beyond the first 600 miles.	About 7 pies per 27 maunds per mile added to the rate for the first 600 miles as calculated above.

Commenting upon this schedule, Ghose says, "Prior to 1898 the policy of the G. I. P. R. was to charge high rates which not only had the effect of making that railway lose traffic at competitive points, but retarded, the development of its local traffic as well."[2] In 1898, however, charges were reduced and quoted in maund mile units so as to cater for the small consignments in rural areas, which had to pay first class rates hitherto:—[3]

1. Figures kindly furnished by the Chief Traffic Manager G. I. P. Railway, 16th January 1930.
2. Monograph on Indian Railway Rates, P. 104.
3. Figures kindly furnished by the Chief Traffic Manager G. I. P. Rly., 16th Jan. 1930.

1899–1902.

	pies per md. mile.	Converted into pies per ton mile.
1 to 100 miles	·44	11·9
plus 101 to 425 miles	·33	8·9
,, 426 to 700 ,,	·25	6·7
,, 701 and over ,,	·15	4·0

It is necessary to take into account factors in the general economic life of the country that caused very grave disturbance at this time. In 1897 occurred "one of the most extensive failure of crops of which history makes mention,"[1] spreading over the N. W. Provinces, Bengal, Central Provinces, the Punjab, and parts of Bombay and Madras,—in some cases the culminating point of several years of continuous distress. The drought affected altogether an area of 225,000 sq. miles and a population of 62 millions, of which about $2\frac{1}{4}$ million were taken under the protection of the Government. This was followed by a drought in 1899—nearly as intense and more extensive in scope. The area affected being 4,75,000 sq. miles with a population of $59\frac{1}{2}$ millions. On both occasions trade was again left to private dealers, but the railways afforded large reductions in grain rates. The maximum reduction thus granted was calculated at 60 per cent[2], the lines having adopted widely varying scales over different sections. The production being so low, however, and famine spread over so extensive an area, the reductions could not stimulate movement to any great extent. On the G. I. P. it was:—

1. Loveday: History and Economics of Indian Famines, P. 65.
2. Report of the Famine Commission, Para 890. Cmd. 9178, 1898.

In Thousand Tons.

	GRAIN	SEEDS
1896	447	343
1897	391	170
1898	553	388
1899	711	341
1900	857	246
1901xx	794	466
1902	742	573

xx. Includes Indian Midland Rly. figures, which was amalgamated with the G.I.P. in 1901, now on.

Although the disturbing elements are too numerous to enable a precise judgment, the normal upward trend suggests that the 1898 reductions were stimulative to traffic—or at any rate that the reductions were coincident with the rise in traffic.

The efforts made by the G.I.P. to give facilities to the smaller producer within a hundred miles of the market by the adoption of an easy rate schedule were so far successful that a further reduction was made on short leads in 1903 :—

1898 to 1902	pies per md. mile	1903 to 1912	pies per md. mile
1 to 100 miles	·44	1 to 425 miles	·33
plus 101 to 426	·33		
,, 426 to 700	·25	426 to 700	·25
,, 701 and over	·15	701 and beyond	·15

Both were exclusive of terminals, which also were reduced in 1903.

The traffic was :—

	GRAIN 000 TONS	SEEDS 000 TONS
1903	760	636
1904	872	620
1905	911	503
1906	917	468
1907	925	619
1908	713	378
1909	735	586
1910	739	737
1911	1,051	800
1912	1,503	659

The traffic on other lines is shown below :—

STATEMENT 64.

TRAFFIC AND RATES.

In Thousand Tons.

YEAR.	EAST INDIAN.		N. WESTERN.		BOMBAY BARODA.		TOTAL TRAFFIC		INDEX NO. OF ALL RATES 1890-1894=100.
	GRAIN	SEEDS	GRAIN	SEEDS	GRAIN	SEEDS	GRAIN and PULSES	SEEDS	
1890	629	293	710	78	122	56	4,209	1,246	103
1891	969	396	1,069	55	319	62	6,266	1,628	102
1892	922	368	654	69	244	111	5,423	1,585	100
1893	600	441	778	67	197	277	5,153	2,342	98
1894	870	362	1,013	193	223	238	5,994	2,332	97
1895	873	264	1,080	180	258	167	6,141	1,779	98
1896	820	296	654	141	160	118	5,701	1,702	96
1897	1,128	330	740	113	164	96	6,103	1,422	92
1898	897	519	972	106	358	128	6,491	2,218	91
1899	1,282	477	891	169	372	111	8,356	2,089	89
1900	1,527	376	964	133	744	45	10,297	1,640	90
1901	993	534	1,360	362	357	156	8,027	2,447	88
1902	940	511	1,286	178	374	88	7,540	2,356	87
1903	1,032	597	1,503	180	227	137	7,756	2,761	85
1904	1,322	638	2,080	232	298	140	9,435	2,926	84
1905	1,032	372	1,959	231	360	98	9,980	2,170	84
1906	1,121	396	2,215	303	283	105	10,66)	2,290	84
1907	1,067	515	2,707	204	357	144	11,278	2,910	82
1908	1,204	354	1,479	126	311	162	9,115	2,095	81
1909	1,313	411	1,714	254	429	202	9,801	2,688	80
1910	1,075	545	1,954	350	437	275	9,788	3,511	80
1911	1,419	586	2,403	256	507	207	12,226	3,673	80
1912	1,868	509	3,162	252	631	145	15,207	3,160	80

The growth in traffic has been as high as about 500 per cent in the case of grain on the B.B., and even the lowest increase is nearly hundred per cent in the case of seeds on the E. I. Compared with the normal movement during the last quinquennium, the traffic in the beginning of the nineties appears insignificant. In the case of grain the effect of the 1896-7 famine is different to that of the 1899-1900 famine, a decrease in

the former case, but an increase in the latter. An increase is again noticeable during 1906–7 which was a scarcity year, though of less severity. The important point seems to be whether it is a large surplus producing area that has been affected or one that normally has no considerable exportable surplus. In the former case, as during the 1896–7 famine, the traffic will decrease for obvious reasons. In the second instance the traffic increases because the vigorous demand in the scarcity area can be satisfied. A shortage of equal intensity in both, necessitating imports from abroad, would again depress traffic because of the very narrow lines on which it would be carried to provide the meagrest quantity for local consumption.

Although there is a temporary lull in grain traffic after the activity ending with the 1906–7 scarcity, which, incidentally, affected only the United Provinces, the trade picks up an increasing trend again in 1911 and 1912. The 1908 slackness affects seeds also, and can therefore be directly attributable to the U. P. famine.[1]

How did this advance in traffic affect the foreign trade? The dream of making the country a large scale supplier of wheat for England was far from realisation in 1889-90. Nor was it likely to come true in the immediate future, considering that the United States went in for wheat cultivation with the definite purpose of feeding the industrial communities of Europe, whereas India only exported what she

1, In 1901, the designation of the North West Provinces was changed to United Provinces of Agra and Oudh, a new sub-province having been created out of the separated frontier districts formerly attached to the Punjab and named North West Frontier Provinces

could spare. The 1890–91 exports, for example, show that she did not send out more than 12 or 13 per cent of her production. Nevertheless in the succeeding two decades, her exports increased rapidly, and she came into greater prominence as one of the world's principal producers :—

STATEMENT 65.

GRAIN AND PULSE EXPORTS.

In Thousand Cwts.

YEAR.	KARACHI.	BOMBAY.	CALCUTTA.	TOTAL INDIA INCLUDING BURMA.[1]
1889-90	4,400	6,892	7,200	40,901
1890-91	7,400	7,848	9,800	49,284
1891-92	11,586	16,607	14,000	63,474
1892-93	3,773	9,999	11,200	42,912
1893-94	7,145	5,968	8,400	39,669
1894-95	6,274	3,283	8,600	44,010
1895-96	6,635	4,840	9,800	48,345
1896-97	1,576	3,336	5,800 xx	32,434
1897-98	2,312	2,048	5,400	30,985
1898-99	10,433	10,138	12,900	61,431
1899-00	5,323	3,942	11,500	44,650
1900-01	329	1,124	8,800	32,921
1901-02	8,238	1,613	6,500	43,740
1902-03	9,561	3,285	9,300	63,120
1903-04	18,074	7,736	12,400	87,180
1904-05	30,262	10,556	18,700	102,000
1905-06	13,569	6,783	12,000	67,180
1906-07	19,407	2,470	4,600	58,760
1907-08	35,223	2,484	3,200	61,500
1908-09	21,373	1,490	3,500	34,680
1909-10	41,006	4,347	9,000	65,860
1910-11	48,139	4,354	12,200	78,640
1911-12	32,511	5,892	20,900	102,400

1. Rangoon is a large rice port, and exports most of that commodity.

xx. From 1897 to 1901 figures relate to the Presidency of Bengal and not only to Calcutta. There are however no other important grain ports in the Presidency.

The most striking feature, apart from the rapidity of growth, is the increase in the handling by Karachi. The average for the first quinquennium is about 5 million cwt., that for the last is more than 35 millions, an increase of over 600 per cent. As regards the total exports, the approximate averages for the first and last quinquenniums are 45 and 70,–an increase of about 55 per cent. Except for occasional spurts Bombay and Calcutta have not registered large increases. The growth in the volume of traffic on the E. I., the G. I. P. and the B. B. therefore appears mainly to have catered for local needs of Bombay and Calcutta themselves. The N. W. on the other hand devoted itself mainly to catering for the export market developing and tapping the new Punjab irrigation colonies.

The same areas that were concerned with wheat, produced, with the addition of Madras, oil seeds of different varieties. At the end of the period under review, thus, the Central Provinces were growing linseed, the United Provinces rape and mustard, whilst Madras was chiefly interested in other seeds like jinjili, til and earth–nuts. The principal ports handled:–

STATEMENT 66.
EXPORTS OF SEEDS,
In Thousand Cwts.

YEAR	BOMBAY	CALCUTTA	KARACHI	TOTAL-INDIA.
1889-90	6,815	6,000	946	15,798
1890-91	6,905	7,000	654	14,802
1891-92	9,951	7,000	975	19,166
1892-93	9,944	4,800	793	16,511
1893-94	13,412	6,700	2,857	24,240
1894-95	12,209	4,900	2,337	20,880
1895-96	8,592	3,100	1,152	13,660
1896-97	6,257	3,400	941	11,400
1897-98	6,632	4,700	716	12,460
1898-99	9,208	7,200	2,181	19,280
1899-00	6,927	6,700	1,517	15,780
1900-01	5,141	4,800	608	11,100
1901-02	11,497	5,800	4,181	23,000
1902-03	13,708	5 600	1,080	22,180
1903-04	13,886	6,900	1,538	24,680
1904-05	13,431	8,300	2,628	26,860
1905-06	10,777	3,300	1,755	17,760
1906-07	11,041	3,000	3,396	19,860
1907-08	12,371	5,100	3,078	22,300
1908-09	9,082	3,000	1,687	16,620
1909-10	13,974	4,400	5,165	27,680
1910-11	17,019	5,900	4,812	31,420
1911-12	15,575	6,200	3,670	30,000

The most noticeable increases are for Bombay and Karachi, the former an annual average of about 9 million cwt. in the first quinquennium against over 13 millions in the last, an increase of about 50 per cent and the latter, about one million cwts. as against over 3 millions, i. e. an increase of about 200 per cent. The total exports have increased from an annual average of 17 millions to one of 25 millions—an increase of about 50 per cent. Calcutta's position remains not only static, but in the last quinquennium it even loses considerable ground. The increased traffic on the E. I. seems mainly to have satisfied local demand in the up country centres of consumption or in Calcutta itself.

This brings us to a contentious point round which much argument has centred. We have examined above, the very rapid decrease in the rates for grain and seeds. Did the reductions benefit foreign trade alone or did they also promote home trade? The discrepancy noticed above between the tendencies of the volume of traffic and of exports furnish definite evidence of an increase in home trade, though in the absence of precise booking figures its extent can not be gauged. How for could this increase be attributed to the adjustment of charges?

An examination of actual rates between some important inland centres indicates that it is possible to answer the question with a certain degree of definiteness. The following statement shows the result:—

STATEMENT 67.

PER MAUND RATES IN RS. BETWEEN INLAND CENTRES.

1.	Cawnpore to Hathras City and vice versa			
		1890	0– 1–11	
	changed to	1894	0– 1– 9	
	,, ,,	1899	0– 1– 8	
	,, ,,	1906	0– 3– 0	
				i. e. increase.
2.	Cawnpore to Agra and vice versa			
		1890	0– 3–10	
	continued up to	1912		
				i. e. no change.
3.	Cawnpore to Delhi and vice versa			
		1890	0– 7– 5	
	changed to	1907	0– 5–11	
				i. e. eventual decrease.
4.	Delhi to *via* Khandwa for *via* Raichur			
		1890	0–10– 0	
	changed to	1901	0– 9– 9	
	,, ,,	1902	0– 8– 5	
	,, ,,	1903	0– 6– 3	
				i. e. eventual decrease.
5.	Delhi to *via* Khandwa for Madras[1]			
		1890	0–10– 0	
	changed to	1901	0– 9– 9	
	,, ,,	1904	0– 6– 3	
		1906	0– 5– 3	
				i. e. eventual decrease.

1. Madras is included here because it is only traffic for local consumption which would normally go there, export traffic normally adopting nearer ports *en route*.

STATEMENT 67.—(Continued).

6. Cawnpore to Bazwada

1890	1-12- 4	1901	1- 1-11
1891	1-11- 7	1908	0-15- 9
1894	1-11- 9	1912	0-13- 7
1898	1-11- 3		

i. e. eventual decrease.

7. Kamptee to Cawnpore

1890	1- 0-10	1899	0- 8- 6
1892	0-14- 5	1901	0- 8- 4
1893	0-12- 1		
1896	0-10- 0		
1897	0- 9- 7		

i. e. decrease.

8. Nagpore to Agra

1890	1- 2- 9
1892	1- 0- 4
1895	0-13- 7
1898	0-10- 9
1901	0-10- 3

i. e. decrease.

9. Nagpore to Cawnpore

1890	1- 2- 9
1892	0-11- 7
1896	0- 9- 6
1899	0- 9- 0

i. e. decrease.

10. Nagpore to Jubbulpore

1890	0-15- 0
1893	0-10- 3
1895	0- 7- 9
1896	0- 6-10
1898	0- 5- 6

i. e. decrease.

11. Cawnpore to Jubbulpore

1890	0- 6- 3
Continued up to 1912	

i. e. no change.

12. Murzaffanagar to Meerut

1890	0- 1- 3
Continued up to 1912	

i. e. no change.

13. Sahranpur to Lahore

1890	0- 4-10
1895	0- 5- 3
Continued up to 1912	

i. e. increase.

14. Chandausi to Cawnpore

1890	0- 3-11
1910	0- 4- 5

i. e. increase.

Although most of these centres represent competitive points there is no reason to conclude that there were increases generally between non-competitive centres. We had definite evidence against such a surmise in the lowering of class rates on the G. I. P. in 1898 and 1902—a line which, it seems, remained unique in its faith in high rates, even to the sea ports, up to 1898. Besides, the competitive centres are at the same time large consuming centres. On the whole, therefore, the internal centres profited from the lowering of rates also and a part at least of the increase in the volume of traffic was attributable to their stimulus. With the unique wealth of material at his command, Datta found in 1915, "The ordinary trade during the last two decades in millets, pulses and other minor food products has not been less brisk than that in articles of international trade, such as wheat, cotton and oilseeds.....the advent of the railway has been of special advantage to the peasantry," in respect of contact with central markets.[1] Earlier, the 1898 Famine Commission, after detailed investigation, had reported, "In 1880 according to the famine commissioners, the charge for transport between the most distant parts of India connected by rail was about 1 anna per seer, and grain could be bought costing 24 seers per rupee in Northern India and sold with fair profit in Southern India at 8 seers the rupee. At the present time, grain would be carried 1000 miles for a little over 10 annas per maund of 40 seers and wheat selling in the Punjab at 12 seers the rupee could, if on the line of rail, be placed off 1000 miles and sold at 10 seers the rupee."[2]

1. Report on Inquiry into the Rise of Prices in India, vol. 1, p. 21.
2. Report, para 589, cmd. 9178, 1898.

The calculation of course bars out the largest section of the population because of the scanty development of railways then, relatively to the area and population. It also probably takes at a discount the exacting capacity of the Bania. The argument that, comparatively to 1880, the cost of transport between inland centres had gone down considerably retains its force, in spite of these reservations. The index numbers of railway freight for the whole country are applicable as much to traffic for export as for inland consumption, as particular care has been taken in their compilation not only in the calculation of actual rates from published good tariffs but also in the selection "typical distances."[1]

How did the development in India compare with that in other countries? Competition had forced the rates in America to an extremely low level landing several lines into bankruptcy. In the beginning of the century the problem was to restore them to solvency, but "it was not possible to put up the rates even if this had been desirable," so that they were forced to devise methods of working at existing low rates.[2] A comparative study of the rates on the two systems disclosed the general level in India and America at 5.68 pies and 5.08 pies per ton of 2240 lbs (12 pies = 1 d. = 2 cents.). The U. S. A. rate was found lower "than in any other country in the world". The 5.08 pies rate obtained on lines paying at least as high a dividend as Indian lines viz. 4.92 per cent. It may be argued that

1. Vide, Inquiry into the Rise of Prices in India, Vol. 1. App. 2, p. 250.
2. Neville Priestly: Report on Organisation and working of American Railways, 1903, para 133. Mr. Priestly was appointed to conduct an investigation into the subject by the Government, the above report being the result.

American capitalisation at this period was hardly equivalent to the actual outlay in construction. In most cases, however, Mr. Priestly found that the value of stocks, bonds and other securities on the books of the several railways represented a good deal more than such outlay. On this basis the U. S. A. lines open in 1902 represented $ 59,930 per mile i. e. ,Rs. 179,790, whereas the Indian lines open reckoned in respect of construction costs and premiums paid by the State on acquisition, at Rs. 135,058 per mile. Also the American lines charged " large—very large sums " to operating expenses, which in India would be charged to capital. Besides, they were handicapped by the higher rate of interest, between 5 and 10 per cent, on 56.3 per cent of their capital. The progress in the railway position of the two countries stood as per the following statement :—

STATEMENT 68.

RAILROAD DEVELOPMENT IN U.S.A. AND INDIA.

YEAR.	MILEAGE OPERATED.	POPULATION 000s.	TONS CARRIED MILLIONS.	TON MILES CARRIED MILLIONS.	AVERAGE RATE PER T.M. IN PS.	AVERAGE CARRIED PER CENT OF POPULATION.	
						TONS	TON MILES.
U. S. A. 1890	157,796	62,948	617	70,986	6·23	937	111,100
,, 1900	191,862	75,995	957	123,399	5·04	1,259	162,300
India. 1891	17,564	287,342	26	4,438	6·72	9	1,544
,, 1901	25,332	294,361	43	7,062	5·76	15	2,399

The more urgent need for a lower scale was therefore essentially in India with the vast scope for expansion this picture represents. Mr. Priestly indeed opined that the prosperity of the U. S. A. was "to no small extent due to the low rates charged for transportation."[1] The only line that could compare with American roads was, as in the eighties, again the E. I., with its average earning per ton mile of 4 03 pies. But even there the Chesapeake & Ohio and the

1. Report, para 135.

Pennsylvania had lower figures to show viz. 3.186 and 3.942.[1]

Another comparison in rates made at the time was by Mr. Robertson—who was appointed special commissioner for Railways—with the English tariff. Taking the rates absolutely, the ratio was overwhelmingly in favour of India 6.72: 23.76 per t. m. But he opined that the special circumstances of the country's economic condition could not be ignored. "Taking the cost of construction and working in England and comparing them with the cost of construction and and working in India, and in every other respect if like is compared with like, I think it will be found that the fares and rates in India should broadly speaking be only about 1/6 of those charged in England." To reach any basis of equalisation even with English rates, he suggested a reduction of from 30 to 60 per cent, which, though likely to disturb the finances of the lines seriously, if carried out at once, was not impossible of accomplishment if the American rates of two pies per ton mile for grain and less than two pies for maize, were taken into account. A very useful suggestion he made in this connection was the introduction of a sliding scale, not only for local consignments, but for

1. A detailed comparison shows the position as under :—

	American Roads 1901, 1902, 1903 figures.			Indian Roads 1901 figures.	
	Average earnings.	Mileage.		Average earnings.	Mileage.
Chesapeake and Ohio	3·186	1,638	East Indian	4·03	2,188
Pennsylvania Rlrd.	3·942	3,638	Bengal Nagpur	4·82	1,548
,, Co.	4·104	1,427	Oudh and Rohilkhand	5·06	1,070
Illinois Central	4·182	4,276	North Western	5·16	3,771
New York Central	4·242	3,423	Bengal and N. W.	5·85	1,344
Pittsburg Cincinatti	4·482	1,416	Great Indian Pen.	5·87	2,717
Philadelphia Reading	5·208	1,003	Madras	6·22	1,387
Great Northern	5·850	4,829	Rajputana	6·48	1,824
Chicago and N. West	5·880	6,332	Southern Mahratta	6·76	1,646
Central New Jersey	5·946	639	Eastern Bengal	7·86	274
Southern	6·420	7,130	Bombay Baroda	7·96	766
Chicago St. Paul	6·474	1,605			

through distances—a suggestion which yet remains to be adopted,[1] except in the case of a few articles.

It is interesting to enquire into the extent to which the growth in trade could be attributed to a demand stimulated by a fall in prices, or the extent to which the influence of reduced rates could be said to have been neutralised by such a fall, the ratio between the charge for carriage, and the market price having to be maintained at an even level. The following table attempts to clarify the relation :—

STATEMENT 69.

GRAIN AND PULSES—RATES, TRAFFIC AND PRICES.

YEAR.	INDEX NUMBER OF RATES. GRAIN AND PULSES.	TOTAL TRAFFIC 000 TONS.	INDEX NUMBER OF PRICES. GRAIN.	INDEX NUMBER OF PRICES. PULSES.
1890	103	4,209	93	97
1891	102	6,266	99	100
1892	100	5,423	110	107
1893	98	5,153	103	101
1894	97	5,994	95	95
1895	98	6,141	94	102
1896	96	5,701	109	114
1897	92	6,103	148	159
1898	91	6,491	109	115
1899	89	8,356	100	102
1900	90	10,293	134	139
1901	88	8,027	116	130
1902	87	7,540	109	116
1903	85	7,756	101	106
1904	84	9,435	97	99
1905	84	9,980	112	115
1906	84	10,660	132	140
1907	82	11,278	139	147
1908	81	9,115	168	179
1909	80	9,801	146	148
1910	80	9,788	127	124
1911	80	12,226	126	122
1912	80	15,207	143	141

1. "It is the practice that prevails in India of calculating rates to the distance to the junction only, which is to some extent responsible for the high rates now obtaining....." Para 195. Cmd. 1713 ,1930.

The tendency of the rates generally is to fall and of the prices to rise. The reduction in rates was not therefore to accommodate a fall in prices. On the other hand, with the rise in prices the volume of trade generally has increased, coincidentally with a fall in rates. An increase in the volume of trade over long periods is indeed a normal economic phenomenon, impelled by the growth of population and a rising standard of life however slow its pace. So has there been a rise in prices all over the world during the period. The noticeable point here, however, is the fact that a rising trend of prices with a falling trend in the cost of transport leaves a progressively wider margin for the producer or the intermediary, urging him on to greater activity. During periods of scarcity this is remarkably the case, as the peaks in 1900 and 1907 show. The later growth in traffic is in face of a steady level of rates. The fall in rates is in sympathy with the fall in prices during the period 1907–10, so that the margin has been more or less constant. But in so far as the rates begin to decline in 1906, and prices after 1908, it can hardly be the result of a conscious policy on the part of the railway executives to keep rates in a constant ratio with the prices. To the traffic manager whose line caters for a competitive territory, the prime consideration is to secure a larger volume of traffic, both absolutely and as against his competitor, from the area served, and the fluctuation in prices would come in, if at all, for secondary consideration. In this case, by the accidental accommodation the transport charges gave to falling prices a little later, the traffic has been maintained at its normal rate of growth. As regards oilseeds the following table and chart illustrate the position :—

STATEMENT 70.

OIL SEEDS—RATES TRAFFIC AND PRICES.

YEAR.	INDEX NO. OF RATES-OILSEEDS.	TRAFFIC 000 TONS.	INDEX NO. OF PRICES.[1]
1890	103	1,246	97
1891	102	1,628	98
1892	102	1,585	101
1893	98	2,342	104
1894	97	2,332	100
1895	98	1,779	104
1896	96	1,702	109
1897	92	1,422	114
1898	91	2,218	101
1899	89	2,089	101
1900	90	1,640	122
1901	88	2,447	118
1902	87	2,356	114
1903	85	2,761	100
1904	84	2,926	95
1905	84	2,170	112
1906	84	2,290	132
1907	82	2,910	141
1908	81	2,095	145
1909	80	2,688	131
1910	80	3,511	143
1911	80	3,673	149
1912	80	3,160	156

1. Base—1890-94=100.

Whilst rates are again falling the increase in traffic is more modest. At the same time prices keep rising. The falling rates seem to have accomplished less by way of stimulating traffic. The market value of seeds being higher than that of grains and pulses, transport charges obviously form a less important part of the price, and a reduction in rates whilst prices are on an upward grade suggests that the proportion grows progressively less significant. It seems that the policy of treating grain and seeds on the same basis is not very successful. Not only does the railway earn less than what it

is entitled to, from a more valuable commodity, but also the response to reduction in rates is much less encouraging, although, as in the case of grain, the rising prices and falling rates again leave a wider margin for the producer or the intermediary.

It is necessary to examine if the trade of the competitive area with the seaport towns has undergone any change. The following table shows the trade between the United Provinces and the ports :—

STATEMENT 71.

EXPORTS TO SEA PORTS FROM U. P.

In Thousand Maunds.

YEAR.	WHEAT,			LINSEED.		RAPE & MUSTARD	
	KARACHI.	BOMBAY	CALCUTTA.	BOMBAY	CALCUTTA.	BOMBAY	CALCUTTA.
1889-90	...	699	1,900	247	1,974	921	427
1890-91	...	217	1,142	70	1,850	343	206
1891-92	...	4,356	4,866	306	2,541	400	374
1892-93	...	2,543	4,862	160	2,469	1,114	753
1893-94	...	225	2,552	268	2,312	1,845	653
1894-95	...	186	2,202	287	1,754	418	290
1895-96	...	770	2,214	50	1,118	102	261
1896-97	...	12	8-1	34	743	789	639
1897-98	...	2,134	2,479	69	1,039	1,216	624
1898-99	...	3,421	6,406	319	2,292	1,575	1,550
1899-00	...	1,070	3,877	442	2,163	1,286	909
1900-01	...	233	1,234	659	1,401	690	1,080
1901-02	5	117	1,959	596	2,552	2,099	1,660
1902-03	607	706	3,879	633	1,899	2,121	1,589
1903-04	2,187	1,314	9,094	679	2,469	2,595	1,861
1904-05	3,864	4,221	12,915	911	3,087	2,104	1,624
1905-06	519	160	2,850	77	535	132	966
1906-07	17	105	2,541	51	1,211	616	1,575
1907-08	70	49	945	231	1,414	427	1.232
1908-09		18	2,030	203	595	427	1,106
1909-10	721	833	6,629	231	1,141	504	1,764
1910-11	2,905	826	7,336	777	2,128	686	1,841
1911-12	4,900	835	6,195	896	2,548	322	2,296

Similarly the following tables present an analysis with regard to the Punjab :—

STATEMENT 72,

EXPORTS TO SEA PORTS FROM THE PUNJAB.

In Thousand Maunds.

YEAR	WHEAT.			RAPE AND MUSTARD		
	BOMBAY.	KARACHI.	CALCUTTA	CALCUTTA.	BOMBAY	KARACHI.
1889–90	916	7,009	402	23	905	664
1890–91	387	7,290	195	...	23	121
1891–92	2,791	11,767	174	1	142	220
1892–93	970	3,302	120	6	675	91
1893–94	725	5,743	444	158	2,179	1,721
1894–95	792	7,044	475	696	1,756	1,385
1895–96	882	6,908	203	1,031	910	384
1896–97	15	1,685	122	24	189	334
1897–98	83	3,566	128	4	132	562
1898–99	1,610	11,199	165	22	456	1,511
1899–00	562	6,137	104	10	147	1,151
1900–01	223	2,310	20	127	125	343
1901–02	580	11,570	496	748	1,607	3,024
1902–03	736	11,563	24	30	66	129
1903–04	562	22,554	8	8	78	119
1904–05	973	21,850	33	77	238	1,912
1905–06	1,554	17,143	554	630	56	147
1906–07	1,435	21,035	1,561	357	105	672
1907–08	1,246	23,156	1,330	133	93	1,001
1908–09	273	4,816	1,071	11	3	49
1909–10	1,072	22,463	217	8	70	525
1910–11	987	24,507	25	763	203	3,801
1911–12	511	24,990	5	760	6	3,129

The prominent feature with regard to United Provinces wheat is the sympathetic fluctuations in the traffic to all the three ports. Karachi gradually asserts itself after 1905, as Bombay recedes into the back ground. Calcutta continues to take the largest portion, obviously because of the growing areas being closer. With the advent of Karachi, however, it has

lost ground and the proportion which was 33:66 between Bombay and Calcutta, becomes 49:51 between Karachi and Bombay on the one hand and Calcutta on the other, in the last quinquennium.

As regards linseed, the position remains unchanged, Calcutta taking much the larger portion with its producing areas in Rohilkhand and Oudh. With regard to rape and mustard on the other hand, Bombay retains its greater attractive force until about 1905, when Calcutta takes the lead. The explanation is suggested by the relatively more steadily increasing demand for the commodity throughout, whereas Bombay's demand undergoes violent fluctuations. Calcutta, it seems, has a steady demand for the town population, which it retains even after Bombay suffers a set back through a lull in exports.

The predominant position occupied by Karachi in exports from the Punjab in regard to wheat, rape and mustard is too conspicuous, and self-explanatory to need elaboration. It is notable, however, that up to 1895 at least, Bombay succeeded in drawing a larger portion of rape and mustard to itself. Lately, however, it has been losing ground presumably to Calcutta, which registers a gain after 1905, corresponding to the year in which U. P. sends down a larger quantity to Calcutta. The greater steadiness of Calcutta's demand upon the Punjab again points to the same conclusion—the large internal consumption.

Taking the Central Provinces as a producing area, Bombay has an overwhelming advantage with regard to both the commodities. The more highly developed

character of the region through which the G. I. P. runs, compared with that of the B. N., may be responsible for this. Wheat goes to Bombay and to Calcutta in the ratio of about 25:3 and linseed of 19:2. Thus:—

STATEMENT 73.

EXPORTS TO THE SEA PORTS FROM C. P.

In Thousand Maunds.

YEAR.	WHEAT.		LINSEED.	
	BOMBAY.	CALCUTTA.	BOMBAY.	CALCUTTA.
1889-90	4,431	87	676	23
1890-91	5,897	53	1,354	97
1891-92	8,522	59	1,916	167
1892-93	5,493	105	1,174	278
1893-94	4,953	142	2,276	449
1894-95	795	19	837	155
1895-96	1,055	53	428	163
1896-97	731	208	379	29
1897-98	108	...	293	32
1898-99	2,112	4	1,026	77
1899-00	1,172	1	446	6
1900-01	26	...	135	...
1901-02	73	8	642	37
1902-03	752	16	543	9
1903-04	3,524	...	621	...
1904-05	3,624	65	1,229	54
1905-06	3,163	1,316	914	343
1906-07	693	420	602	261
1907-08	798	1,904	553	140
1908-09	77	189	385	77
1909-10	1,344	616	910	168
1910-11	2,961	623	1,456	280
1911-22	4,102	1,120	1,379	70

CHAPTER VII.

GRAIN AND SEEDS–1913 ONWARDS.

THE War introduced a disturbing element in rates and in trade at this stage. Not only was railway development postponed[1], but even "some of the existing lines were actually dismantled and the materials sent to Mesopotamia"[2]. For the sake of continuity however, it is desirable to take account of some features during the period.

As early as in 1905, it had been felt that the rate war could, to the mutual advantage of all lines, be displaced by combinations and pools. The 1909 session of the Indian Railway Conference Association had the question before them, but no definite action was taken. The lines may have become conscious of the continued rise in prices in India wherefrom they had been deriving a progressively lower percentage—though prices were steadily falling in the world market. The

1. The Mackay Committee 1908, found that no definite limit could be assigned to the development of the system. "More than one witness looks forward to a time when the 30,000 miles of railway now open will have been increased to 100,000. We believe that even this estimate of mileage is short of that which will ultimately be found to be necessary in India, and we are convinced that there will be fruitful fields for large productive expenditure on railways in the country for many years to come. It is therefore in our opinion, very desirable that the steady, and even rapid, development of the railway system of India should be regarded by the Government as one of its most important duties." — Vide Report. Cmd. 1411, 1908, para 12.
2. V. Anstey: Economic Development of India, P. 135, Footnote.

table below indicates the situation as between the railway, the trader and the maritime carrier :—

STATEMENT 74.

YEAR.	Index No. of grain prices Punjab East	Index No Railway. freight Ludhiana to Karachi.	Index No. of grain prices in Karachi.	Index No. of maritime freight. Karachi-L'pool.	London prices 1873=100.
1890	117	100	102	103	58
1891	111	100	101	131	67
1892	101	100	103	84	56
1893	92	100	100	90	46
1894	79	100	94	92	38
1895	85	100	96	87	41
1196	107	100	106	50	47
1897	130	100	152	46	55
1898	112	98	134	96	59
1899	114	98	126	94	47
1900	137	98	135	84	49
1901	119	96	133	79	48
1902	116	96	121	71	50
1903	113	96	124	77	50
1904	110	96	99	83	54
1905	122	96	121	77	56
1906	135	96	136	74	53
1907	139	84	134	82	60
1908	161	84	158	48	61
1909	143	84	126	74	69
1910	136	84	106	79	64
1911	143	84	116	84	59
1912	157	84	131	109	66

Index Nos. Base 1890-94=100.

It will be seen that, though prices in India had risen, those in London had maintained a steady level and even gone down occasionally. The reduction in the inland and maritime freights seem therefore to have maintained the Indian product in a position to compete and the margin that appeared wider in India did no longer maintain those dimensions on a change of *locale* to the consuming centres proper.

In his "Memorandum on wheat for the British market," however, Sir James Wilson of the Punjab

Government maintained that a difference of 11 shillings per quarter between the Punjab and the London prices was sufficient to cause an export of wheat *via* Karachi. Taking the Amritsar–Karachi rate at 10½ annas per maund, the transport charges absorbed 5s. 3d. per quarter by rail, and at 16/–sh. per ton of 18 cwt., 3/10d. per quarter by sea, i. e. 9sh. 1d. per quarter, the margin of 1sh. 11d. paying for insurance profit etc. The railway rates at the same time stood as under, indicating the scope for increase :—

Rates to Karachi from	per maund.
Delhi	Rs. 0–7– 7
Muzzafarnagar	0-7-10
Bhatinda	0–7–11
Ludhiana	0–9– 8
Hissar	0–9– 0
Ferozepur	0–9– 0
Lyallpur	0–9– 3

In October 1916, impelled by these considerations as well as by those of the rising working expenses during the war, a general rise in rates to the ports was decided upon as under :—

STATEMENT 75.

From	Up to 1st October 1916.	After Oct. 1st 1916
	Rates to Bombay	
	Rs.	Rs.
Delhi	0–7– 1	0– 8–11
Agra	0–7– 0	0– 8– 7
Cawnpore	0–7– 0	0– 8– 7
Jubbulpore	0–6– 5	6– 7– 5
Nagpore	0–5– 5	0– 7– 0
	Rates to Karachi.	
Delhi	0–7– 7	0– 9– 5
Muzzafarnagar	0–7–10	0–10– 0
Bhatinda	0–7–11	0– 8– 6
Ludhiana	0–9– 8	0–10–10
Hissar	0–9– 0	0–10– 2
Ferozepur	0–9– 0	0–10– 3
Lyallpur	0–9– 3	0–10– 4
	Rates to Calcutta.	
Delhi	0–7– 6	0– 9– 4
Hathras	0–6– 9	0– 8– 9
Aligarh	0–6–11	0– 8–11
Agra	0–6– 7	0– 8– 7
Etawah	0–6– 0	0– 8– 7
Cawnpore	0–5– 3	0– 6–10
Allahabad	0–5– 3	0– 6– 8
Katui	0–5–11	0– 7– 4
Jubbulpore	0–6– 5	0– 8– 0

It would be treacherous to examine the effect of these increases in the abnormal conditions then prevailing. The Government of India actually allocated the quota of wheat to be handled by each of the open ports, Calcutta, Bombay and Karachi, which were to export to U. K. and the British Empire only. [1] The strain of war finance, besides, impelled the Exchequer to levy a tax on trade in 1917—a surcharge of one pie per maund on coal coke and firewood and 2 pies per maund on all other goods carried by railway or inland steam vessels, except on consignments of less than 1 maund or of a lead less than 10 miles.[2] This was done partly to curtail traffic to the minimum. Further, 1918–1919 brought about a scarcity in many areas, straining the resources of the lines. In 1921 the tax scale of 1917 was increased. In April 1922, under strain of higher working costs, the railways were granted an increase in their maxima limits of 15 to 25 per cent so that they could increase their rates if they wished to. Not many railways however found an increase to this extent necessary. Also the classification was expanded so as to divide commodities into 10 classes in place of the previous five.[3]

1. G. R. 2192-W, 28th December 1914.
2. Freight Tax Act. XIII of 1917.
3. The new classification and statutory limitations compare with the old as follows:—

	Before April 1922.		After April 1922.	
	Max.	Min.	Max.	Min.
1	·33	·10	·38	·100
2	·50		·42	
3	·66		·58	
4	·83	·16	·62	
5	1·0		·77	
6	1·5		·88	
7			·96	·16
8			1·04	
9			1·25	
10			1·87	

The following table sets out the result of changes affected from time to time on the N. W.[1] :–

RATES EXCLUSIVE OF TERMINALS FOR WHEAT & SEEDS,

1st April 1914 to 31st May 1917.	
To Karachi	·10 to ·23 pies m. m.
To other stations :–	
For the 1st 150 miles	·25
plus for 150 to 300 ,,	·20
,, ,, 300 to 450 ,,	·16
,, ,, above 450 ,,	·12
1st June 1917 to 31st March 1922.	
All bookings :–	
For the 1st 150 miles	·25
plus for 150 to 200 ,,	·20
,, ,, 300 to 450 ,,	·16
,, ,, above 450 ,,	·12
1st April 1922 to 30th September 1925.	
All bookings :–	
For 1st 100 Miles	·33
plus for 100 to 200 miles	·25
,, ,, 200 to 300 ,,	·20
,, ,, 300 to 500 ,,	·17
,, ,, above 500 ,,	·12

During the financial year 1928–29, reductions were affected over all state-managed and several company–managed lines, affecting commodities like kerosene, petrol and jagree. Re grain, pulse and seeds, "the rates on the East Indian Railway, which for distances upto 97 miles, and on the North Western Railway upto 232 miles were higher than on the Great Indian Peninsula Railway, were brought down to the level of the latter railway."[2]

The class rate for wheat and seeds on the B. N. was similarly raised to ·38 pies per m.m. from ·33 pies m. m. The class rates on the G.I.P. continued at the old level of 1912 with some changes in terminals initiated in 1913. In 1920 the scale was reduced, as seen from the statement below :–

1. Figures kindly supplied by the Agent N. W. Railway, 12th November 1929
2. Report of the Railway Board, 1928–29, para 36.
3. Figures kindly furnished by the Chief Traffic Manager, G. I. P. Railway, 15th January 1930.

1913 to 1919	pies m. m.	1920 to 1922	pies m. m.
1 to 425 miles	·33	Up to 300 miles	·33
plus for 426 to 700 miles	·25	plus for above 300 miles	·10
,, ,, above 700 ,,	·15		

This scale was however raised for longer leads, with the increase granted under the maxima in 1922, but lowered for shorter ones :–

	pies m. m.
For the first 300 miles	·30
plus for 300 to 500 miles	·20
,, ,, above 700 ,,	·10

The traffic on the grain and seed lines under the operation of these rates fluctuated thus :—

STATEMENT 75.

TRAFFIC IN GRAIN AND SEEDS.

In Thousand Tons.

Year.	G. I. P.		B. N.		N. W.	
	Grain and Pulses.	Seeds.	Grain and Pulses.	Seeds.	Grain and Pulses.	Seeds.
1913–14	1,208	808	596	165	2,568	279
1914–15	1,151	450	480	110	2,371	125
1915–16	1,428	669	603	137	2,375	166
1916–17	1,283	598	627	170	2,443	171
1917–18	1,525	330	758	133	3,268	152
1918–19	1,819	469	798	114	2,887	312
1919–20	1,488	487	704	109	1,770	181
1920–21	1,557	439	497	104	2,449	194
1921–22	1,338	227	570	74	1 803	172
1922–23	1,071	644	679	102	1,862	348
1923–24	1,305	601	857	134	2,492	500
1924–25	1,499	694	914	170	3,384	487
1925–26	1,294	641	755	126	1,801	418
1926–27	1,329	561	739	108	2,016	377
1927–28	1,147	810	835	109	1,994	362
1928–29	1,413	855	771	138	2,052	347
1929–30	1,005	635	730	165	1,883	337
1930–31	934	699	740	168	2,169	336

The unsettled state of traffic is reflected most on the N. W., an export line. The peak attained by the B. N. in 1918–19 appears mainly due to the shortage. The 1922 increases seem not to have affected the volume

of traffic, and in so far were quite justified. The fact that the N. W. shows the increase more definitely than any other line, lends greater weight to this point, for the increases were mainly in rates to the ports.

After the peak in 1924–25, the decline in traffic is a general phenomenon. It may be suggested that the 1928–29 decreases were initiated primarily to arrest the fall. The prevalent slackness in trade activity appears however to have taken little cognisance of the intended stimulus to trade, and the decline continues.

It is possible to follow the course of rates and of traffic more closely and hence with greater precision, though for a shorter period, on the E. I. In the following table the rates quoted are the lowest in force during the year, river competition between the months of May and August forcing the railway rates down to a scale lower than that otherwise maintained :—

STATEMENT 76.

RATES AND TRAFFIC ON THE E. I.

YEAR.	Rates per 100 maunds Cawnpore–Calcutta May June July Aug.	TRAFFIC	
		Grain & Pulse 000 Tons.	Oil seeds 000 Tons.
1912–13	Rs. 41–10–0	1,868	509
1913–14	32–13–0	1,381	541
1914–15	32–13–0	1,455	492
1915–16	32–13–0	1,284	421
1916–17	42–11–4	1,029	432
1917–18	42–11–4	1,285	308
1918–19	43–12–3	1,598	451
1919–20	42–11–4	1,436	344
1920–21	49– 7–8	1,346	393
1921–22	55–11–8	1,317	328
1922–23	55–11–8	1,205	459
1923–24	55–11–8	1,303	568
1924–25	55 11–8	1,542	497
1925–26	55–11–8	1,484	474

The E. I. has failed to reach the pre-war volume of traffic in grain and pulse and has only just reached it in seeds. At the same time, the rates are continually increasing. In the midst of disturbed trade conditions, however, it is risky to connect the two. The course of prices was naturally in as disturbed a state, the trend being towards an increase as the table below shows:-

STATEMENT 77.

PRICES, RAILWAY RATES AND MARITIME FREIGHTS.

YEAR.	Wholesale price, C'pore per 100 maunds.	Railway rate, C'pore C'tta per 100 maunds.	Calcutta price1 per maund.	Ocean freight[2] C'tta London per ton.	London prices per 100 lbs.	Index No. London prices. 1873=100.
	Rs.	Rs.	Rs.	£ s. d.	s. d.	
1912	32·97	41-10-0	3- 9-0	N. A.	8- 8¼	66
1913	37	32-13-0	3-11-6	N. A.	7- 5	61
1914	43·9	32-13-0	4- 6-6	N. A.	8- 1	66
1915	49·6	32-13-0	5- 8-0	N. A.	12- 2⅔	100
1916	41·7	42-11-4	4-13-0	7- 5-0	13- 1	107
1917	42·3	42-11-4	4-12-6	14-10-0b	16- 8⅔	137
1918	56·0	43-12-3	5- 9-6	14-10-0	16- 3	133
1919	68·5	42-11-4	8- 3-6	4-15-0	15- 7	128
1920	62·3	49- 7-8	7- 0-0	5-12-0	19-10¾	163
1921	73·8	55-11-8	7- 4-0	2- 4-0	16- 7¼	136
1922	N. A.	55-11-8	9- 4-0a	1-16-0	N. A.	N. A.
1923	N. A.	55-11-8	N. A.	1-15-0	N. A.	N. A.

N. A. : Not available.

As between producing centres and export towns the railway rate rises roughly in conformity with the prices. Ocean freights cause the most violent distur-

1. Mean of January & July prices.
2. Average of May, June, July, August.

a. January price.

b. May figures. Tonnage in June, July & August not available.

bance. On the whole however, whilst prices more than doubled in all the three markets, railway rates advanced not more than about 70 per cent. Here again the railways did afford the producers and *entrepreneurs* a larger share than before. The close sympathy between London prices and ocean freights is very suggestive.

It remains now to examine the direction taken by the traffic in wheat and seeds from different competitive areas. This is brought out in the following series of tables :–

STATEMENT 78.

EXPORTS OF WHEAT AND SEEDS FROM U. P.

In Thousand Cwts.

YEAR.	WHEAT.			LINSEED.			RAPE & MUSTARD.		
	Bombay.	Calcutta.	Karachi.	Bombay.	Calcutta.	Karachi.	Bombay.	Calcutta.	Karachi.
1911–12	595	4,422	3,501	938	1,821	6	562	1,640	235
1912–13	1,855	5,313	7,506	802	1,372	47	893	1,963	486
1913–14	427	3,158	3,103	761	1,371	8	507	2,084	888
1914–15	117	1,320	207	189	1,051	1	116	1,414	52
1915–16	562	2,976	1,533	540	616	142	391	2,146	121
1916–17	170	2,539	558	1,602	465	159	334	2,345	407
1917–18	1,560	3,333	3,734	867	123	139	11	932	1
1918–19	1,970	1,748	3,081	891	738	329	49	326	8
1919–20	449	1,365	25	230	707	127	147	926	140
1920–21	596	1,735	606	667	522	200	523	1,618	930

As regards wheat, Calcutta's hold is being further assailed by Karachi. The ratio of exports to Calcutta to exports to Karachi in fact come so close as 27:23.

Calcutta retains its superiority in attracting linseed but even there Bombay runs as close as 7 to 8. With regard to rape and mustard, Calcutta retains the higher proportion it had gained since 1905. The explanation is in the large local demand, as will be seen later.

The position as regards the Punjab was :–

STATEMENT 79.

EXPORTS OF WHEAT AND SEEDS FROM THE PUNJAB.

In Thousand Cwts.

YEAR.	WHEAT.			RAPE AND MUSTARD.		
	Bombay.	Calcutta.	Karachi.	Bombay.	Calcutta.	Karachi.
1911–12	366	4	16,868	6	546	2,237
1912–13	212	5	20,949	19	372	2,300
1913–14	107	482	15,054	6	40	3,807
1914–15	788	769	14,346	6	132	413
1915–16	626	869	9,500	3	46	1,130
1916–17	533	108	13,806	...	19	1,383
1917–18	699	14	16,499	2	614	345
1918–19	1,504	298	6,070	19	1,369	772
1919–20	1,867	812	1,532	9	158	1,199
1920–21	1,060	1,538	8,707	1	12	837

Punjab has grown wholly dependent upon Karachi, its close proximity and the direct broad gauge access to the port, affording little scope to Bombay and Calcutta. Bombay however continues to draw upon Punjab wheat to a small extent. It will be noticed however that it has completely lost its hold upon Punjab rape and mustard, Calcutta by reason of its larger consumption retaining the position it had gained.

As regards the Central Provinces & Berar the direction of trade was :–

STATEMENT 80.

EXPORTS OF WHEAT AND SEEDS FROM C. P. AND BERAR.

In Thousand Cwts.

YEAR.	WHEAT.		LINSEED.	
	Bombay.	Calcutta.	Bombay.	Calcutta.
1911-12	2,928	801	985	51
1912-13	2,664	249	912	46
1913-14	2,643	1,312	1,135	193
1914-15	223	453	319	37
1915-16	644	808	494	32
1916-17	1,808	1,384	890	14
1917-18	3,332	1,301	262	12
1 18-19	600	49	691	50
1919-20	179	1	189	74
1920-21	402	18	202	30

Bombay's hold upon the Central Provinces continues but is not as strong as during the previous period. The ratio with regard to wheat works out at 5:2 compared with 25:3. On the other hand the exports of linseed to Calcutta are insignificant, and the previous ratio of 19:2, dwindles almost to nothing.

But when the United Provinces find it profitable to send their products to Calcutta, the Punjab to Karachi and the Central Provinces to Bombay without much regard to the levy of competitive rates, it is of importance to investigate if the carriage to these ports implies essentially the superiority of one port over another, by reason either of lower rates, cheaper handling or other facilities in respect of finance and general management, or whether it is only the local demand of the seaport, which would have to be satisfied irrespective of small differences in railway rates and other

factors. The following series of tables analyses the position :–

STATEMENT 81,

CONSUMPTION OF WHEAT BY PORT TOWNS.

In Thousand Cwts.

YEAR.	BOMBAY.			KARACHI.			CALCUTTA.		
	Imports by rail.	Exports by sea.	Balance for cons.	Imports by rail and river.	Exports by sea.	Balance for cons.	Imports by rail and river.	Exports by sea.	Balance for cons.
1910–11	4,299	2,579	1,720	20,402	19,312	1,090	6,386	3,432	2,954
1911–12	5,222	2,969	2,353	21,079	20,812	267	6,575	3,442	3,133
1912–13	6,510	3,977	2,633	28,570	26,428	2,142	6 644	2,799	3,845
1913–14	6,497	4,713	1,784	19,059	17,866	1,193	5,329	1,464	3,565
1914–15	1,896	231	1,665	15,425	13,865	1 560	3,173	32	3,141
1915–16	3,424	1,572	1,852	12,088	10,523	1,565	4,812	962	3,850
1916–17	4,597	1,240	3,357	15,441	13,584	1,857	4,584	158	4,426
1917–18	8,723	4,854	3,869	22,084	21,684	400	6,350	2,520	3,830
1918–19	4,492	792	3,700	9,405	10,002	597	3,810	500	3,310
1919–20	2,709	48	2,661	1,607	110	1,497	2,671	1	2,659
1920–21	2,343	40	2,303	9,872	4,700	5.172	3,858	13	3,845
Total for 11 years'	50,812	23,015	27,897	1,75,032	1,58,886	16,934	54,192	15,334	38.558

Calcutta has a large steady demand for internal consumption, and more than 72 per cent of its imports are for that purpose. Bombay in later years also imports more for her own consumption, than for exports, though also for the whole of that period, her demand to that end exceeds that for exports, being 54 to 46. On the other hand Karachi exports a large bulk of her imports from inland centres retaining only 9.7 per cent for her own consumption.

The table also brings out the fact that Karachi has practically monopolised the export trade for wheat, taking it gradually off Calcutta and Bombay. Its influence spreads over the western parts of the United Provinces also. Could this be ascribed to the operation of railway rates alone? The tendency to raise rates has been general. In the absence of exact rates figures, it is impossible to draw definite conclusions. The unusual conditions of trade during the war and its aftermath, together with the high handling charges and want of other facilities at the ports, have possibly quite as much to do with the diversion of the export trade to Karachi, which has been taking the primary position with regard to wheat trade.

With regard to linseed, the position was :—

STATEMENT 82.

CONSUMPTION OF LINSEED BY PORT TOWNS.

In Thousand Cwts.

YEAR.	BOMBAY.			CALCUTTA.			KARACHI.		
	Imports by rail.	Exports by sea.	Balance for cons.	Imports by rail and river.	Exports by sea.	Balance for cons.	Imports by rail and river.	Exports by sea.	Balance for cons.
1910-11	3,403	2,820	583	4,701	4,545	156	47	46	1
1911-12	3,874	4,839	965	5,256	5,582	326	15	19	4
1912-13	3,250	3,569	410	3,222	3,293	71	120	127	7
1913-14	4,612	4,228	384	4,540	4,010	530	33	39	6
1914-15	1,445	2,230	785	3,962	4,141	179	50	59	9
1915-16	2,434	1,719	715	2,001	1,974	27	158	167	9
1916-17	4,858	5,637	779	2,188	2,016	172	232	229	4
1917-18	2,170	2,228	58	910	572	338	157	118	39
1918-19	3,345	2,842	503	3,002	2,504	498	394	460	66
1919-20	1,441	2,064	623	2,595	2,700	105	151	218	67
1920-21	1,601	1,408	193	2,208	2,102	106	255	256	1

Although the analysis is vitiated by reason of the too frequent excess of exports over imports, suggesting that large quantities carried down to the ports went unrecorded, the conclusion can be drawn that the trade in linseed at all the three ports is mainly for export. In this respect, it differs materially from the position with regard to wheat and rape and mustard.[1] At Calcutta the demand in both is primarily for local consumption, only linseed being imported mainly for export. Neither of the two, Karachi or Bombay could hope to draw this traffic away, the *locale* of production being so close to Calcutta. Nor, it seems, can Bombay deprive Karachi of its wheat or rape and mustard, an increasing proportion of which it has been handling at the expense of Bombay. So far as the three competitive areas of the United Provinces, the Punjab and the Central Provinces are concerned, the channels of trade, it appears, have grown to be well defined, after attempts by rate cutting were found not to benefit the lines materially. In future, it seems, developing along normal lines, trade will continue in these channels. Although during the initial period of trade, the policy of cutting rates may sway traffic to and fro from one line or route to another, with more settled conditions, it appears that each commodity carves out the route and the market most profitable to itself. Thus it is that wheat concentrates more upon Karachi, and cotton upon Bombay, as these become the marts where the trader can get the benefit of the most competitive conditions. Thereafter to effect any divergence, the difference in railway rates, must be so wide as to overwhelm the advantage expected from the most competitive market.

1. Statements 81 and 83.

STATEMENT 83.

CONSUMPTION OF RAPE AND MUSTARD BY PORT TOWNS.

In Thousand Cwts.

YEAR.	BOMBAY.			CALCUTTA.			KARACHI.		
	Imports by rail.	Exports by sea.	Balance for cons.	Imports by rail & river.	Exports by sea.	Balance for cons.	Imports by rail & river.	Exports by sea.	Balance for cons.
1910-11	2,160	2,250	90	3,579	606	2,973	3,075	3,768	693
1911-12	994	1,300	306	3,307	225	3,082	2,627	3,249	622
1912-13	1,251	1,115	136	3,146	16	3,030	2,838	3,288	450
1913-14	1,071	1,121	56	3,590	157	3,433	4,775	3,789	986
1914-15	507	694	187	2,653	119	2,534	595	1,167	572
1915-16	766	640	126	2,521	...	2,521	1,392	1,323	69
1916-17	552	620	68	2,929	68	2,861	1,846	1,874	28
1917-18	245	322	77	2,250	316	1,934	405	550	145
1918-19	351	256	95	2,323	186	2,137	973	1,184	211
1919-20	491	410	81	1,843	64	1,779	1,404	2,032	628
1920-21	696	704	8	2,137	74	2,063	1,848	2,118	1,070

CHAPTER VIII.

COAL.

So intimately is the development of coal trade wrapt up with the growth of railways that the earlier railways were mostly all prompted by the necessity of efficient coal haulage. "It is really a result of our coal deposits that to Great Britain belongs the honour of first running the railway", says Sherrington. [1]

The existence of coal deposits in India—especially of the Gondwana field—was not unknown in the beginning of the 19th century. Dr. C. Brown, Superintendent of the Geological Survey of India, found evidence of the surface working of the Raneegunge field as early as in 1812[2] . Though coal did not, as in Great Britain, "beget" railways in India, the expert committee of 1846 had recommended the alignment of the E. I. so as to pass through the "Raneegunge collieries." [3] The contrast nevertheless between the English position and the Indian is very remarkable; for before the first systematic survey of the field had been undertaken by Oldham in 1864, at the instance of the Secretary of State, mainly because of the existence of the line, the exploitation of the Raneegunge field had begun in the

1. Economics of all Rail Transport in Gt. Britain, Vol. 1, p. 11.
2. Vide Brown: India's Mineral Wealth 1923, p. 33. Sir George Watt testifies to coal being "regularly conveyed by boat down the Damuda river to Calcutta" in 1814.-Vide Commercial Products of India 1908, p. 333.
3. Report, para 26.

fifties. We thus find the E. I. progressively dependent upon the coal traffic from that field to Calcutta for a major part of its income,[1] and in 1865 coal made up 43 per cent of its total traffic. Until 1867, however, the surface alone was worked, and the greatest depth reached was only 75 yards.

Fuel costs were found at this period one of the main obstacles to making the lines paying propositions, being an extraordinarily heavy charge compared with those on the European lines. Correspondingly strong was the inducement to the development of the Bengal fields. The price of coal to the E. I. in 1865–66 at the pit's mouth was no more than 10 shillings a ton, whilst the Bombay and Madras railways paid between 40/-and 70/-sh. a ton for delivery at the ports. Danvers remarks in this connection, "The high price is, at the present time, caused by the rise in freights from this country to India, but the cost, at the most favourable times, will not be less than 40/-sh. "[2] With such a handicap it was inevitable that local fuel supply, however inefficient, would be drawn upon, and the Madras railway

1. Income from coal in percentages of total income :—

1855	32·3	1858	56·3
1856	52·3	1859	60·3
1857	56·5		

2 Report on Railways in India, 1865–66, para 42. Danvers' normal figure was rather too high. About 12 years later, the Madras lines had their coal delivered at 32/-to34/-sh. a ton, whilst even five years later this high level had come down. Still the difference in favour of the E. I. continued to be overwhelming, more so because it consumed the largest quantity—all local coal. For half the year ending 31st Dec. 1872, for example, the position was:—

RAILWAY.	TOTAL QUANTITY.	TOTAL COST.	AV. COST PER TON
E. I. (Main)	60,311 tons	£21,108	£0- 7-0
G. I. P.	32,537	59,239	1-16-5
Madras.	30,227	20,771	0-13-9
B. B.	7,894	15,191	1-18-6
S. P. D.	25,330	26,720	1- 1-1
E. B.	7,431	5,022	0-13-6

The Madras and the S. P. D. largely consumed wood.

found that the use of wood fuel reduced its bill to less than half. The statement given below shows how the carriage of fuel over 6,000 miles of sea route, increased its cost to the railways.[1] It appears more profitable for the railways to buy good quality coal and pay freight on it as the G. I. P. did, rather than pay it on inferior coal as the Madras did.

	Coal and Coke sent in 1865 tons.	Cost in England.	Freight etc.	Cost per ton in India.
G. I. P.	26,799	£ 24,104	£ 30,557	Sh. 41/8d.
Madras.	7,638	3,976	10,667	38/4
Great Southern	2,580	1,431	3,471	38/-

The E. I. had therefore a duel interest in the development of the Bengal fields—first because they provided the line with a large traffic, but second and what appeared to them more important and direct, because it enabled them to operate their line so much less expensively. With later development, of course, traffic must have assumed its proper importance. Indeed Danvers went so far as to report, "cheap and dear fuel may, in some cases, be almost equivalent to success or failure of the lines."[2]

Coal transport charges however assumed the greater significance because of this reason. Mr. R. Oldham's Survey of 1864 proved that of the areas sufficiently well known then,—which left out of account a tract comprising of parts of Central Provinces, Chhota Nagpore

1, Report on Railways in India, 1865-66, para 43. In the following year, the cost on arrival in India went higher still, ranging between 42/-sh, for the G. I. P. to 52/-sh. for the Great Southern. Danvers calculated that along with carriage,the cost at coaling places on the line was as high as 60/-sh. per ton.

2, Report, 1866-67. para 60,

and Northern Circars,—the deposits were located only between 20° and 25° N. latitude, although longitudinally the field stretched from 78° to 88° E[1]. Considering the fact that the country then stretched from 8° N. lat. to about 36° N. i. e. through 28° , the very concentrated nature of the deposits becomes evident. The leads to other parts of the country were therefore bound to be very long, and in fact, whether the Gondwana coal could or could not be used outside of the local area, became then, and still remains, largely dependent upon carriage charges.[2] Even when fields other than Bengal and Bihar began to be opened up after further surveys—in Central India, Central Provinces, Hyderabad and Assam—not only were the deposits found to be much smaller, but to this day Bengal and Bihar produce over 90% of the total Indian output.[3] The importance of coal rates on the E. I. which was interested in coal ever since its opening, and on the B. N., when it became one

1. Coal Resources and Production of India.
2. Sir John Hewett, Commerce and Industries Member of the H. E. the Viceroy's Council said in 1908, after the recent reductions, "Cheap coal is essential for any real progress in the industrial development of the Country...Cheap coal is again bound up in the question of cheap railway carriage on the long lead between the collenes and the consuming market..."Sir Charles Innes, the commerce member of H. E. the Viceroy's Council said in the same vein at the 1924 meeting of the associated Chambers, "It (coal) is of course the life-blood of the country, and we do realise on the railways that it is our business to carry that coal as cheaply as we can."
3. The following table shows the distribution of production in the country:-

In Thousand Tons.

	Bihar and Orisa	Bengal	C. P.	Hyderabad	Assam	C. India	Total
1916	10,767	4,992	287	615	287	200	17,254
1921	12,990	4,260	713	689	312	192	19,303
1926	13,956	5,138	635	638	301	217	20,999

U. P. and Bombay have no coal at all, whilst Punjab and Baluchistan produce very small quantities,

of the trunk lines tapping the Bihar fields, can therefore hardly be exaggerated. For even apart from the prospective aid to be rendered to the industrial development of the non-coal producing areas, the question of the supply to the existing transport industry was of supreme importance. Thus, when the project of developing the Central India fields was broached, the possibility of the G. I. P. obtaining its fuel without paying for a long haul evoked great enthusiasm, and Danvers expected from the reduction in the working expenses of the company's locomotives "more favourable results to be produced."[1]

The early policy of the East Indian in regard to coal rates is characterised by vision, for in the very first classification of 1854 it has been given a special rate of 7 pies per ton mile, as against coke and firewood which paid 9 pies in the first class.[2] It may be noted that no other railway had this special low rate, presumably because they did not carry coal except the quantity imported for their own use. In the absence of specific evidence of any change in this rate it may safely be assumed that the rate was maintained for the next decade, for in 1865 it is found that the E. I. was again the only line quoting a special coal rate of 7 pies per ton mile. This rate appears to have the approval of the authorities; for even after the fixation of the maxima for coal, which on the E. I. was put at the same rate as the first class viz. $\frac{1}{3}$ pie per m.m. or 9 pies per t.m.—with a reservation, however, that the Government of India had retained control in their own

1. Report on Railways in India 1870-71, para 55.
2. Vide "Classification of Goods," Report on Railways in India, 1854-59, pp. 54 and 55.

hands[1] —the rates table for 1870 shows its continuance at the same level, though the first class rate is reduced by a pie to 8 pies per t.m. On other railways the maxima for coal was fixed higher, though on one line it was even lower[2] :—

	Maxima–1868	Actual rate 1870.
G. I. P.	10 pies t.m.	...
B. B.	10 „	7[a]
Sind.	10 „	...
E. B.	9 „	6
Punjab.	9 „	...
Delhi.	$6\frac{3}{4}$ „	...

The O.R. having a classification of "high", "medium" and "low" also had a special rate of 7 pies per t.m. Other railways possibly did not see the necessity of a special classification, the traffic continuing to be meagre and being carried at first class rates.

It is not possible to follow the course of traffic offering at these rates on any railway, for no analysis of goods traffic was then made. It is of interest, however, to note that as early as in 1859, the increase in the mineral traffic was so remarkable that it was decided to extend "what was then known as the branch to the collieries," from Raneegunge to Barrakur.[3] The opening of the chord line in 1871 further facilitated the transport of coal. Previously the alignment of the line with reference to the coal field had involved the conveyance of the coal for the N.W. Provinces, first in a southward direction for 50 miles, and then northwards by the main line. The opening of the chord meant a saving of 146 miles between Raneegunge and Benares. The possibility of the earlier development of the coal fields, if a

1. Government of India circular, 16th October 1868.
2. Figures from Ghose: Monograph, p. 10.
a. "Many articles are carried on this line at special rates below the ordinary" – Danvers' Report, 1869–70.
3. Huddleston: History of the E. I. Railway, p. 26.

more direct route had been taken to the N. W. Provinces, has already been commented upon.

The beneficial results expected of the chord were, however, temporarily neutralised by Indian coal being ousted out of the market by the English product, which, presumably coming as an alternative to ballast at very low freights, competed successfully in the Calcutta market. Traffic from the fields fell considerably, and in fact contributed towards the general slump in traffic in 1871.[1] But the disturbance was so momentary that only a couple of years later, the industry had a great success to report. For the first time, a line other than the E. I. used Raneegunge coal—the Madras. Again for the first time, the E. I. carried down coal to Calcutta for exports to Bombay and to Singapore.[2] The coal taken by Bombay was of great significance for the possibility of using Bengal coal in Bombay had hitherto been held at absolute discount. Moreover, this was the first instance of a large scale industry other than the railways, viz. the Bombay textile, using indigenous coal. The E. I. had thus through the direct chord to the coal-field placed the commodity at the disposal, not only of the neighbouring lines, but generally of the whole railway system of the country, and of its

1. The Board of Directors of the E. I. thus accounted for the decrease :— "The importations of English coal at Calcutta, as compared with any previous period since the railway has been opened have been so large as to have successfully competed in price with native coal, and have unquestionably very seriously interfered with the market for the latter"—Vide Huddleston : History of the E. I. Rly., p. 64.

2. In 1874, the Bengal Chamber of Commerce refer in their report to the hindrance to coal export trade, because of the railway jetties at Howrah being silted up, causing great inconvenience in discharging coal waggons and loading boats.—Vide Report May-October 1874, p. 4.

industry—and as developed later, of other countries bordering on the Indian ocean and thus of all shipping concerned in trade east of Suez. This of course is not to say that a coal export trade had already been established at the time. As will be seen later, it required much larger home production and many adjustments in rates before that stage was reached.

As regards Madras, the impediment to export was found in the sea freight, which did not permit Bengal coal to be placed in Madras for less than Rs.21/- per ton, whereas English coal could be obtained for Rs. 18/-. "It will be necessary to wait," reported Danvers, " until some arrangement can be made by which the cost of bringing the coal by sea from Calcutta can be reduced."[1] In 1877-78 the Madras line found it economic to use coal delivered from England and Australia at 32/-sh to 34/- sh. a ton, whilst the Kurhurballi and Serampore mines produced at 6/- sh. per ton at the pit's mouth. It cannot be argued however that the E. I. could have enabled the Madras market to be captured, for in any case the railway lead would not exceed about 150 miles. It was largely a matter of economising in sea freight. In 1874, besides—perhaps before that year—the coal rates had already been put on a basis graduated according to distance from 4·54 to 9·07 pies per ton mile.[2]

Meanwhile the E. I. had been developing more than a mere carrying interest in Bengal coal. Its contribution to the exploitation of the first pits in Raneegunge,

1. Report on Railways in India, 1876-77.
2. Vide table p. 39, Report. It is possible the graduated scale had been granted before this, but coal rates are for the first time definitely mentioned here.

so early as 1854, has already been noted. Since then, it had progressively acquired a proprietary interest in the Bengal coal mines, and was the largest producer in those days. In the measure that the magnitude of its undertakings increased, did it become interested in the use of Indian coal by other lines in the country. To a large extent this explains the reductions made available in 1874. The construction of the chord, besides, suggests that the company meant to work their railway and their collieries as complementary concerns. Addressing the shareholders in 1875 Mr. Crawford, the chairman of the E. I. referring to the chord stated that "it had placed at their (the company's) command that ample and abundant supply of fuel, which had enabled them to carry on their operations without any fear whatever of being brought into difficulty for want of it."[1] The Giridih coalfield discovered in the early years of the E. I. had thus already been acquired by the company. In January 1871 the E. I. leased the Kurhurballi fields for 82 years, and later the Serampore mines on a perpetual lease[2]. The favourable terms obtained enabled production at 9/8½d. per ton during the first five years, coming down to 6/10¾d. in the later part of the decade.[3] Not that the company needed all this coal for its own operation. The surplus was therefore placed at the disposal of the Government and of other lines, for which "cost price was charged in addition to railway freight". Mr. Crawford, the chairman of the E. I. thus described the motive of the successive leases :—

1. The E. I. can be credited in this regard with foreseeing the modern tendencies of vertical combination.
2. Report on Railways in India, 1877–78, p. 25.
3. Prices at pit's mouth. Figures from Danvers.

"Our purpose in relation to coal is this: to use as much as we require for our own purposes at the smallest cost, having done this we wish to supply our neighbours with as much coal as we can, they paying us merely profits of carriage. There is the Oudh and Rohilkhand, which is comparatively speaking our nearest neighbour in one direction, and I hope we shall be able to keep them continually supplied with the coal they require, on terms satisfactory to them, and the same with the Great Indian Peninsular."[1]

How far did the forward policy of the E. I. meet with success? The following figures show the position:—

	Tons carried.	Revenue.
1871	295,852	£124,781
1876	520,262	£295,852

Whilst the tonnage increased about 76 per cent, the revenue increased 136 per cent. The explanation is in longer leads, for a large part of this increase supplied lines in the N. W. Provinces, the Punjab and Oudh, no doubt assisted in doing so by reductions noted in 1874. The G. I. P. was supplied in 1876 at Jubbulpore at Rs. 19/- per ton, the English coal being delivered in Bombay at 33/-sh. to which would have to be added transport charges to Jubbulpore.[2] In 1878 Danvers reported, "now that the rates for transport have been reduced, the Great Indian Peninsular Railway find it advantageous to use the Bengal coal on the Jubbulpore section of their line."[3]

1. Extracted from quotation of speech by Huddleston: History of the E. I. Rly., p. 84.
2. At 2sh. a rupee the price at Bombay is Rs. 16-8-0, at 1/10d. Rs. 18, at 1/9d. Rs. 19-12-0. The rupee has begun falling by this time.
3. Para 75.

The company's policy of owning mines was however not without its contentious side. The private colliery owners addressed a memorial to the Government of India, protesting against the policy of the E. I. in embarking upon coal mining business for the open market.[1] The Secretary of State found himself unable to allow the employment of capital guaranteed for a transport business to be used in coal mining to do business as a dealer, and ruled that the railway" cannot lawfully work their collieries except for the purposes of their own undertakings and for any branch line of railway that may be worked by them."[2] The company do not seem, however, to have adhered to this ruling, and continued competing with the private proprietors under one pretext or another—of exchange of coal with other collieries, or working subsidiary companies—claiming to conform to the Government of India's orders, issued later on, directing that for the safety of the private proprietors, all sales by the company should be of genuine surplus and not below market price.[3]

1. Vide Bengal Chamber of Commerce to Government of India, 23rd March, 1881.
2. Government of India to Bengal Chamber, 16th Aug. 1881.
3. Vide correspondence between the Bengal Chamber and the Government of India 1881 and 1885. The State management of collieries after the transference of the E. I.'s. management to State, continues to annoy the private coal interests. Vide recent Reports of the Indian Mining Federation and the Indian Mining Association. The attitude of the private owners can hardly be justified if the modern tendencies in rationalisation are to prevail. During the coal shortage that followed the war, the E. I. experienced "much less" difficulty than other railways because of their owning mines—Vide Chairman's speech, 25th Jan. 1922 and 26th July 1922.

The traffic on the principal lines at this period, is shown in the table below :—

STATEMENT 84.

COAL TRAFFIC.

In Thousand Tons.

Year.	*E.I.*	*G..I. P.*
1870	283	2
1871	266	2
1872	392	1
1873	418	2*
1874	509	1*
1875	516	2*
1876	526	1
1877	649	6
1878	700	10
1879	764	17
1880	910	22

* including coke.

It is unfortunate that no data is available with regard to the average length of leads. The fact that the Government Director reported supplies to provinces as distant as the Punjab, is evidence, however, of the rates enabling the product to reach that province. On examining the shipments of fuel for the lines from England, it is found that in 1877 two railways besides the E. I. obtained their coal entirely from local sources, —transported, wholly or partly, by the E. I.—viz. the Eastern Bengal and the Oudh and Rohilkhand. Figures available from Danvers' reports do not, however, enable a comparative study to be made of the relative consumption from English and local sources on other lines, so that the success of the E. I.'s rates policy could be more accurately judged.[1] Nor do statistics of total imports of coal at each port help a very accurate appreciation of the position, the demand in

1. The Reports of the individual companies do not throw any light on the subject, of a definite or statistical character.

Bombay especially being on the increase because of the expanding local industry. Some indication however of the competing force of the E. I. can be had from the relatively steady position of the imports of foreign coal at Calcutta in spite of the increasing local demand :—

STATEMENT 85.

IMPORTS OF COAL AT PORTS.

In Thousand Tons.

Year.	Bombay.	Calcutta.	Karachi.
1870–1871	167	61	2
1871–1872	213	63	2
1872–1873	220	66	1
1873–1874	218	84	3
1874–1875	241	50	2
1875–1876	243	91	10
1876–1877	361	77	8
1877–1878	398	81	6
1878–1879	339	34	8
1879–1880	383	65	17

At Bombay the E. I.'s coal rates appear to have had no effect as yet, and the position at Karachi is the same. Regarding Madras, the possibility of putting down Bengal coal by a reduction of the sea freight by chartering vessels had only just been entertained in 1879. It was calculated that if tonnage could be had and expenses covered by Rs. 4/12/- per ton and coal delivered at calcutta at Rs. 9/8/—it was possible to compete with English coal at Rs. 14/4/-.

The E. I. scale in force at the time, could not by the present standards be called moderate. " Giridih coal worth Rs. 3/-a ton in wagons at the collieries, cost Rs. 30/-a ton by the time it reached Lahore, while to Calcutta the freight charge from Sitarampur was no

less than Rs. 3/13/- a ton." This, in the opinion of Huddleston was the reason why Bengal coal could not wholly capture the Calcutta market. Large imports of English coals coming at very low freights as alternative to ballast into Calcutta in 1880 induced the E. I., in seeking new markets, to fresh efforts to establish the article in up country mills and on Indian Railways in the north, so that the rate for leads over 300 miles was reduced from 1/5th to 1/6th pie per m. m., i. e., from 5·4 to 4·5 pies per t. m. The graduated scale in 1880 stood at 2·7 to 9·0 pies per ton mile in place of 4·5 to 9·0, though the 2·7 pies must have applied only to coal for distant Government lines.

But though traffic northwards was thus sought to be fostered, the trade at Calcutta continued in its old position, and Madras and Rangoon continued to import fuel from abroad for their railways. The European coal owners in Bengal were all agreed "that the high rates of freight charged by the E. I. on coal to Calcutta, almost preclude the competition of Bengal coal with English coal, even in Calcutta, and consequently render competition with English coal at other Indian ports quite out of the question."[1] The E. I. rate from Raneegunge to Howrah, (122 miles) at this time was Rs. 3/9/- per ton i. e. about 5·5 pies per t. m. At the same time the average cost of "hauling" a ton mile was 2·15 pies and the average sum received per ton mile was 5·98 pies[2].

1. Bengal Chamber of Commerce to Government of India, April 17th 1885.
2. On the Indian lines, more recently, this term "hauling" has the meaning of operating expenses including interest charges. It is arrived at by dividing the total working expenses by the ton-mileage—Vide Srinivasan: Railroad Freight Rates, p. 76. The total working expenses include depreciation and renewals and replacements.—Vide Tables 7 and 3, 1928-29 Report, Vol, II.

A couple of years later, Bengal coal was faced with a competitor in the Assam product. For some time past, Bengal coal had been used for bunkering, though the total consumption by shipping did not exceed 15,000 tons in 1887. With Assam coal appearing in the market, its superior quality caused a definite swing away from Bengal, and the Peninsular and Oriental as well as the India General Steam Navigation Companies contracted for supplies from Assam. It was felt that a reduction in rates, to enable the offer of an inducement to the shipping companies by way of reduced prices, was the only chance of maintaining the Bengal production. The meagre despatches to Patna, Agra, Allahabad, Delhi etc., were also attributed to the "present prohibitory freight rates", and the mine owners felt convinced that a reduction in charges would enable them to increase upcountry sales, resulting in increased traffic to the E. I. In 1887, the ton-mile "haulage" cost to the E. I. was 1·90 pies and the receipt 5·83 pies. Of course the railway would have to consider if a reduction could bring about an increase in traffic so large as to wipe out the decreased earnings from lower rates and pay the extra expenses of increased traffic besides, which, though lower per unit, would mount up in the aggregate.

At the same time, pressure was brought to bear upon the E. I. from consuming interests. The Government of India claimed a concession rate of 1/10 pie m. m. (2. 7 p. t. m.) for all coal carried for State railways. Besides, the possibility of supplying other Indian ports from Bengal instead of importing from Wales was

entertained by the shipping interests.[1] Mills and factories began realising what immense obstacles high transport charges constituted.[2] The British India Steam Navigation Company and the Cawnpore manufacturers agitated for reduced rates all round.[3] These resulted in a few concessions. Export coal was granted a 16 per cent rebate and rubble or slack 10 per cent. The Government's claim to the minima of 1/10 p.m.m. was, however, strongly opposed by the Company who declared themselves "unable to find sufficient grounds for treating railways worked by State Agency differently from those worked by companies."[4] Gen. Strachey found "the actual cost of transport" to be between 1/5th and 1/6th p.m.m.i.e. 5. 4 and 4.5 pies t.m.,[5] but acknowledging the claim of the article to low rates proposed a graduated scale of 1/3 to 1/8 p.m.m. [6] —9 to 3.3 pies t. m. But as the discussions continued, the position became very grave and called for prompt action, for according to the representations of the Bengal business interests, "facilities given on the other side of India (Bombay) brought competition with Bombay as near

1. Representatiou made by Liners' Conference, 28th April 1890.
2. Representations by Jute Manufacturers, 30th April 1890, by cotton mills, 17th April 1890, by coal owners, 23rd April 1890.
3. Upper India Chamber of Commerce to the Lt. Governor of the N. W. Provinces, 11th June 1889. Also Upper India Ch. to the E. I., 24th Oct. 1889.
4. Words of General Strachey, Chairman E. I. Rly., quoted by Huddleston P. 152.
5. Apparently inclusive of interest charges.
6. With reference to the Upper India Chamber's representation with regard to the grave effect of coal rates on, N. W. Provinces industry, Gen. Strachey wrote, "The general expediency of reducing the coal rates as much as possible is not open to question, the real point is how far they can properly be reduced ".—Letter to Agent of the E. I., 9th March 1890.

our doors as Mirzapore only 500 miles by the E. I."[1] In the actual overhauling of the rates no distinction was made between carriage on state or private account, and a vigorous bid was made to capture the upcountry markets—both railway and industry—for Bengal coal. Besides, an attempt was made to assist the export trade by grant of export rebates. It was even sought to make up for the relative disadvantage of Calcutta against Bombay by the offer of cheaper coal to shipping.[2] The actual scale finally agreed upon by the Company and the Government was as per statement below:—

	P. t. m.	P. m. m.
1. *For less than 3,000 mds. or 110 tons*		
Upto 400 miles inclusive	4·49	·16
Over 400 miles—		
1st 400.	4·49	·16
Extra above 400	2·99	·11
2. *For 3,000 mds. or 110 tons and over*		
Up to 400 miles inclusive	4·08	·15
Over 400 miles—		
1st 400.	4·08	·15
Extra above 400	2·72	·10

In addition various rebates were granted on a graduated scale on large consignments.

The shortage of rolling stock which had, in periods of normal activity, always been handicapping the development of the coal trade, brought matters at the time to a grave state. The consumers had to work on such low

1. Bengal Chamber of Commerce to the E. I., 31st Jan. 1888.
2. "If steamship owners find that they can get their coal supplies at Rs. 5/- per ton in Calcutta as against Rs. 15/-per ton in Bombay, the difference of Rs. 10/-per ton on a steamer's consumption to Port Said will form no unimportant factor when considering the relative advantage of Calcutta and Bombay freights,"–President's speech at the annual meeting of the Bengal Chamber of Commerce, 9th Feb. 1891.

stocks that it was felt that a stoppage was imminent.[1] The N. W. Railway announced their intention of importing coal from abroad if supplies were not available at Ghaziabad. [2] At the same time the demand for export was increasing and the commercial opinion of Calcutta deplored the shortage. The deeper was their grievance later on when in the stimulated demand by the Royal Navy and the transports due to the Boer War, and in the deficiency of colliery labour in Great Britain and strikes in France, "a combination of circumstances has occurred favourable in an extraordinary degree to the development of Indian coal trade."[3] The demand for famine traffic must obviously have contributed to this shortage. The situation on the whole, as revealed by figures of traffic and of the E. I.'s carrying capacity, was indeed a serious one:—[4]

	Capacity 000 Tons.	Traffic 000 Tons.
1890	99	1,458
1897	135	3,353
percent average increase	36	130

The matter developed so far that the congress of Chambers of Commerce of the Empire held in London in June 1900 decided to approach the Secretary of State with a request for the appointment of a commission to recommend means by which the existing scarcity of rolling stock could be overcome. It should be noted that the defence of the E. I. verged round the question of finance—the Government of India according to them having withheld funds, in spite of the

1. Indian Mining Association to Bengal Chamber, 13th Dec. 1897.
2. Speech of President, Indian Mining Assocn, 30th March 1898.
3. Speech of H'ble Allan Arthur, President, to the Bengal Chamber, 20th Feb. 1900.
4. Figures from speech of Mr. Gennell, President, before the Indian Mining Assocn. Vide Bengal Chamber to the Government of Bengal, 23rd March 1898.

increase in rolling stock having been sanctioned. The suggestion seems to point to a separation of railway finance from general finance.[1] The point was emphatically urged before Mr. Robertson by producers as well as consumers of coal. His recommendations, however, were more for an increase in the circulating velocity of wagons by acceleration of freight trains, than for an increase in the rolling stock.[2]

Whilst the shortage of wagons continued to occur henceforth at intervals, with the close of the century, it was felt that even the 1895 scale was no longer low enough to maintain Bengal in a competitive position. Markets had been secured between the Suez and Singapore, but Japan was already threatening them, and in Bombay Japanese coal was actually offered at Rs. 10/-per ton as against the lowest quality Bengal at Rs. 12/4 per ton.[3] In 1902, Welsh coal was already largely taken in Bombay, and was in increasing demand at Colombo and Aden, whilst at Singapore, Japan had almost captured the market, and even in Rangoon, English patent fuel was imported.[4] The general reduction in the level of ocean freights must have given greater advantage to coal carried over longer distances than over shorter, so that Japan and Wales were able to compete in spite of reductions on the same scale from Calcutta. Greater facilities for export coal were therefore vigorously urged.

1. Vide Bengal Chamber to Govt. of India, 22nd Dec. 1900.
2. Report on Administration and working of Indian Railways. Cmd. 1713, 1903.
3. Mr. McKinon of the Indian Mining Assocn. before a meeting to meet Mr. Robertson.
4. Speech of Mr. Cable, Vice President, to Bengal Chamber at annual meeting, 25th Feb. 1902.

At the same time the Bengal Nagpore Railway had obtained access to the Jherriah fields, presenting the E.I. with a competitor in respect of export as well as up country traffic. It is credible that this alone might have urged the E.I. to grant a reduction. In his address to the shareholders for the first half year of 1903 Sir Richard Strachey, however, vigorously repudiated the suggestion that the 1902 reductions were projected as a defensive measure against the B. N. Huddleston states that a reduction had been long in the contemplation of the company, since 1896--the management continually watching with interest the growth in traffic, but action having to be deferred because of the wagon shortage.[1] Anyhow, in 1902, the Board of Directors proposed the following scale for full wagon loads which was adopted:--

Up to 75 miles inclusive	0·14 p. m. m.
Plus for above 75 up to 200	0·12 ,,
,, ,, ,, 200 ,, 450	0·10 ,,
,, ,, ,, 450 ,, 1,000	0·09 ,,

1. Whilst on the subject of wagon shortage, it will not be too much to say that the coal trade has ever since the low rates and the expansion of traffic, except when business is depressed found this achronic handicap, ascribed to insufficient funds. The principal Chambers of Commerce and mining organisations complain of it year after year, and not until after the separation of Railway Finance from General Finance does the situation promise to ease comparatively. The Commerce Department and the Railway Board officers openly admitted this before the Acworth Committee, describing the situation as "absence of adequate transport facilities" or "incapacity to handle traffic", etc. Vide Report East India Railway. cmt. Cmd. 1512, 1921.

Export rebates were to be allowed at 20 per cent, all other rebates having been withdrawn.

The results of these reductions were so promising that in 1905, the Government of India authorised a lowering of the minima rates, so as to afford further scope to the railways to supply the growing demand of indigenous industries. The new minima announced were:—

Up to 300 miles	1/10 p. m. m. i. e.	·10 p. m. m.
Plus for 301 to 500	1/15 ,,	·06 ,, ,,
,, 501 and above	1/20 ,,	·05 ,, ,,

The reduced scale adopted by the E. I. and the B. N. in November 1906 was :—

Up to 75 miles	0·14 p. m. m.
Plus for 76 to 200	0·12 ,,
,, for 201 to 500	0·06 ,,
,, for 501 and above	0·05 ,,

The desire to carry to the distant centres is too obvious to need comment.

We shall now examine the effect of these reductions on some selected leads, so as to realise to what extent the consuming centres profited from the reductions. Every time the E. I. initiated reductions they were responded to by connecting railways. In fact in the matter of coal rates the whole of the Indian railway mileage has responded to the needs of the trade as one single organisation. As regards the quotation of through rates, coal is at present the only

commodity whereon the arbitrary and artificial obstacles of difference in management do not reflect themselves in the calculation of rates.

STATEMENT 85.

COAL RATES TO CONSUMING CENTRES[1]

In Rupees per Maund.

RATES TO HOWRAH.

YEAR.	FROM RANEEGUNGE		FROM ASANSOL		FROM SITARAMPUR	
	Rates.	Index No.	Rates.	Index No.	Rates.	Index No.
1890	0-2-1	121	0-2-2	116	0-2-3	115
1891	,,	,,	,,	,,	,,	,,
1892	0-1-6	86	0-1-8	90	0-1-9	90
1893	,,	,,	,,	,,	,,	,,
1894	,,	,,	,,	,,	,,	,,
1895	,,	,,	,,	,,	,,	,,
1896	,,	,,	,,	,,	,,	,,
1897	,,	,,	,,	,,	,,	,,
1898	,,	,,	,,	,,	,,	,,
1899	,,	,,	,,	,,	,,	,,
1900	,,	,,	,,	,,	,,	,,
1901	,,	,,	,,	,,	,,	,,
1902	0-1-4	77	0-1-5	76	0-1-6	77
1903	,,	,,	,,	,,	,,	,,
1904	,,	,,	,,	,,	,,	,,
1905	,,	,,	,,	,,	,,	,,
1906	,,	,,	,,	,,	,,	,,
1907	,,	,,	,,	,,	,,	,,
1908	,,	,,	,,	,,	,,	,,
1909	,,	,,	,,	,,	,,	,,
1910	,,	,,	,,	,,	,,	,,
1911	,,	,,	,,	,,	,,	,,
1912	,,	,,	,,	,,	,,	,,

1. Index Nos, base 1890-94=100

STATEMENT 85—contd.

RATES TO BOMBAY

YEAR.	FROM ASANSOL.		FROM SITARAMPUR.		FROM RANEEGUNGE.	
	Rates.	Index No.	Rates.	Index No.	Rates.	Index No.
1890	1- 1- 4	101	1- 1- 2	101	1- 1- 7	103
1891	1- 1- 6	102	1- 1- 5	102	1- 1- 8	,,
1892	1- 0-10	99	1- 0-10	99	1- 0-11	98
1893	,,	,,	,,	,,	,,	,,
1894	,,	,,	,,	,,	,,	,,
1895	0-14- 9	86	0-14- 9	87	0-14-10	86
1896	,,	,,	,,	,,	,,	,,
1897	,,		,,	,,	,,	,,
1898	,,		,,	,,	,,	,,
1899	0-12-3	72	0-12- 2	71	0-12- 4	72
1900	,,	,,	,,	,,	,,	
1901	,,	,,	,,	,,	,,	,,
1902	,,	,,	,,	,,	,,	
1903	,,	,,	,,	,,	,,	,,
1904	0-10-7	62	0-10-7	62	0-11- 5	66
1905	,,	,,	,,	,,	,,	,,
1906	,,	,,	,,	,,	,,	,,
1907	0- 6-8	39	0- 6- 8	39	0- 6- 8	39
1908	,,	,,	,,	,,	,,	,,
1909	,,	,,	,,	,,	,,	,,
1910	,,	,,	,,	,,	,,	,,
1911	,,	,,	,,	,,	,,	,,
1912	,,	,,	,,	,,	,,	,,

STATEMENT 85—contd.

RATES TO CAWNPORE.

YEAR.	FROM ASANSOL.		FROM RANEEGUNGE.		FROM SITARAMPUR.	
	Rates.	Index No.	Rates.	Index No.	Rates.	Index No.
1890	0-7-2	109	0-7-2	108	0-7- 2	109
1891	,,	,,	,,	107	,,	,,
1892	0-6-3	94	0-6-4	95	0-6- 3	94
1893	,,	,,	,,	,,	,,	,,
1894	,,	,,	,,	,,	,,	,,
1895	,,	,,	,,	,,	,,	,,
1896	,,	,,	,,	,,	,,	,,
1897	0-7-2	109	0-7-2	109	0-7- 2	109
1898	,,	,,	,,	,,	,,	,,
1899	,,	,,	,,	,,	,,	,,
1900	,,	,,	,,	,,	,,	,,
1901	,,	,,	,,	,,	,,	,,
1902	0-5-0	76	0-5-1	76	0-4-11	74
1903	,,	,,	,,	,,	,,	,,
1904	,,	,,	,,	,,	,,	,,
1905	,,	,,	,,	,,	,,	,,
1906	,,	,,	,,	,,	,,	,,
1907	0-3-8	55	0-3-8	55	0-3- 8	55
1908	,,	,,	,,	,,	,,	,,
1909	,,	,,	,,	,,	,,	,,
1910	,,	,,	,,	,,	,,	,,
1911	,,	,,	,,	,,	,,	,,
1912	,,	,,	,,	,,	,,	,,

The most distant consuming centre, of which Bombay is an example, has therefore benefitted the most. And indeed the attempt throughout, was to capture these industrial markets, which had been drawing their supplies from overseas. The following table brings out the trend of coal traffic on some of the lines connecting important consuming centres.[1]

1. Sir F. Upcott, the Chairman of the E. I. after just four years' experience with the 1906 scale, characterised the coal traffic as one of the "most profitable" ones, and said, "It is satisfactory to note that the policy of the Government in 1906 in lowering the long distance coal rates has proved right"–Address to shareholders, 14th June 1911.

STATEMENT 86.

COAL TRAFFIC.

In Thousand Tons.

YEAR.	E. I.	B. N.	G.I.P.	N.W.	B.B	Madras	Rates Fluctuations.
1880	910	...	22	50	8	1	
1881	795	...	33	43	8	2	
1882	911	...	41	31	16	2	
1883	975	...	62	66	12	2	
1884	1,042	...	63	42	21	21(?)	
1885	1,000	...	52	16	42	2	
1886	1,000	...	60	15	39	4	
1887	1,151	25	65	10	35	7	
1888	1,316	44	71	10	42	6	Reductions.
1889	1,045	124	77	10	40	15	
1890	1,553	338	88	39	24	15	
1891	1,696	362	87	17	36	34	General reductions.
1892	1,786	400	84	11	47	52	
1893	1,920	512	90	26	42	71	
1894	2,144	519	100	23	47	118	
1895	2,554	528	124	22	74	187	Reductions.
1896	2,879	571	172	30	53	95	
1897	3,359	794	197	39	47	128	
1898	3,745	708	230	41	49	171	
1899	3,898	652	138	34	64	189	
1900	4,658	755	138	27	96	367	
1901	4,294	805	160	35	70	542	
1902	5,042	906	163	42	42	494	General reductions.
1903	5,368	1,177	155	65	37	400	
1904	5,972	1,283	148	92	28	581	
1905	6,142	1,529	216	149	42	356	
1906	6,485	2,022	220	154	77	362	" "
1907	6,872	2,066	395	252	134	407	
1908	7,706	2,286	444	323	150	206x	
1909	6,730	1,973	499	327	159	132	
1910	7,810	2,283	567	386	184	180	
1911	7,548	2,767	753	457	217	178	
1912	9,008	3,034	872	483	222	223	

x. The sudden fall and subsequent low level, appear due to fall in production.

In the absence of coal leads, the following table of coal imports by rail and river [1] into different provinces and seaports, indicates the result of the policy of reducing rates through more than two decades. Bombay and Punjab have been selected as provinces farthest away from the fields, and imports from seaports are matched against those from producing centres. In the case of Bombay, the Central Provinces exports alone are shown, for the Nizam's territories exports have, throughout the early period, been to Bombay Presidency. It is noticeable that as the level of rates sinks lower, Bengal's reach increases in both the areas, the Nizam's territories gradually finding a market in Madras:-

STATEMENT 87.

INTERNAL IMPORTS OF INDIAN COAL.

In Thousand Tons.

Year.	Imports into Bombay Presidency.			Imports into Punjab.		Remarks.
	From C. P	From Bengal.	From Bombay port.	From internal centres.	From Karachi.	
1889-90	41	...	200	34	...	
1890-91	49	...	119	46	...	Scale reduced.
1891-92	40	...	151	66	...	
1892-93	40	2	118	53	...	
1893-94	46	7	8	56	...	
1894-95	38	6	95	101	...	Reductions
1895-96	44	...	135	122	2	
1896-97	45	...	104	70	...	
1897-98	46	...	116	77	...	
1898-99	51	5	91	103	8	
1899-00	51	9	101	99	21	
1900-01	52	16	93	115	5	
1901-02	46	9	114	230	7	Reductions
1902-03	83	20	135	369	18	
1903-04	39	17	128	231	7	
1904-05	26	35	147	166	127	
1905-06	17	19	253	185	195	Reductions
1906-07	5	46	141	129	116	
1907-08	5	137	189	222	229	
1908-09	6	167	175	296	195	
1909-10	7	126	214	391	166	
1910-11	9	315	250	600	106	
1911-12	10	300	175	900	41	
1912-13	20	605	250	1,300	81	

1. River traffic figures appertain to the Ganges, the Brahmaputra the Meghna and the Indus. It is assumed that the bulk of the coal traffic is by rail, and in any case, the river could bear a more or less constant ratio to rail traffic,

The imports into the rest of presidency from Bombay port, though part of imports by sea, may represent to a large extent, Bengal coal brought down by sea to Bombay, involving a railway lead from the fields to Calcutta, and therefore also influenced by rates. The following table analyses the sources of coal imports into Bombay port. The same remarks apply to the exports from Karachi into the Punjab.

STATEMENT 88.

IMPORTS BY SEA FROM VARIOUS SOURCES INTO BOMBAY PORTS.

In Thousand Tons.

Year.	Europe	Australia.	Japan.	Others.	Calcutta.	Total by sea	Total direct by Rail.
1896	393	18	58		252	720	39
1897	116	11	25		430	581	88
1898	194	4	17		381	596	110
1899	305	7	75		343	730	41
1900	59	...	24		592	675	74
1901	82	1	57		741	882	33
1902	177	5	7		464	653	N. A.
1903	169	16	11		661	856	7
1904	149	18	25		593	786	2
1905	121	6	28		773	928	22
1906	174	14	3	1	805	997	21
1907	178	16	3	9	963	1.178	29
1908	138	107	...	65	854	1,163	11
1909	266	44	...	68	681	1,060	30
1910	213	20	7	15	851	1,106	45
1911	212	34	7	18	804	1,076	39
1912	161	74	78	166	786	1,264	87
1913	201	40	71	218	631	1,160	96

To a large extent the effect of the reductions appears to have been towards a direct import into internal centres by rail, instead of using Bombay as an entrepôt;

N. A. Not available.

1. Imports for 1901–02—27,000 tons, for 1902–03—15,000 tons. The trend to is decline at this stage.

for although imports into the rest of the presidency have increased considerably e.g. from Bengal, imports through the port may be described as steady. From both points of view, either as direct importers by rail or as importers *via* Bombay, the consuming centres have drawn upon Bengal for progressively larger quantities.[1]

It is interesting to compare the fluctuations in the rates with those in the price of the commodity when this expansion was in progress:—

STATEMENT 89
COAL PRICES, RATES AND TRAFFIC.

Year.	Calcutta prices per ton[2].	Index no, Calcutta prices Base 1890–1894 = 100	Index No, of Rly, rates. 1890–94=100	Total movement of coal 000 Tons.
1890	£ 0–15– 0	119	109	2,477
1891	0–13–11	110	109	2,703
1892	0–12– 5	98	95	2,881
1893	0–11– 7	92	94	3,374
1894	0–10– 2	81	93	3,804
1895	0–12– 1	96	93	4,417
1896	0–12– 4	98	92	4,506
1897	0 12–10	102	91	5,383
1898	0–13– 7	108	91	5,876
1899	0–14– 5	114	90	6,044
1900	0–14– 6	115	89	7,284
1901	0–14– 4	114	89	8,245
1902	0–11–11	94	83	8,027
1903	0–10– 4	82	77	8,563
1904	0–10– 5	83	76	9,397
1905	0–10– 6	83	74	10,203
1906	0–10– 8	85	74	11,187
1907	0–10–10	86	59	12,191
1908	0–11– 9	93	59	13,243
1909	0–11–10	94	59	12,158
1910	0–11– 7	92	59	13,908
1911	0–11– 8	93	60	14,517
1912	0–13– 4	106	60	16,552

1 Addressing the shareholders of the E. I. on 14th June 1911 Sir F. Upcott, the Chairman, thus divided the E. I. 's total traffic of about 8 millions :—

2 1/3 Mln. tons – upcountry
5½ ,, ,, –to sea-board.

of the latter 2⅔ mln. tons were for shipment.

2. From Enquiry into Rise of Prices in India Vol. II, P. 527. Govt. of India figures not available before 1899.

The reductions in rates are certainly more definite than those in the prices, the latter curve being more subject to fluctuations, but on the whole tending downwards. The reductions in rates are therefore in conformity with reductions in prices, though the exact degree to which rates reductions were necessary to accommodate prices cannot be ascertained. It may on the whole be concluded that the three have acted and reacted on each other to their mutual advantage, the lower rates enabling a wider market to be covered on the one hand, and inducing larger production on the other so as to bring down prices everywhere.

With the declaration of the war, the coal trade met with violent disturbances. British supplies were cut off, indigenous industries stimulated by the war increased their demand, and other foreign sources were drawn upon. Also Government themselves controlled the distribution of coal so as to ensure supplies for war purposes. In 1916 the export rebate was abolished. The aftermath saw a more severe control, for in July 1920 export was prohibited except under license. All throughout, the strain on the lines was very severe because of the diversion of coal traffic from sea to land route due to shortage of shipping. As late as in July 1920, the Chairman of the E. I. could see no prospect of a re-transference to sea route.[1]

Coal rates were increased slightly in 1916 for some distances. In 1920 however, there was a general increase in rates, of 5 per cent for long, and 7½ per cent for short distances over all lines. This was to provide for increased working expenses.[2] In 1921, there was

1. Speech of Sir David Barbour to shareholders, 28th July 1920.
2. Railway Board to Bombay Chamber of Commerce, 12th Nov. 1919.

another increase in rates for the same reason. The three scales compare:—[1]

Before April 1920	p. m. m.	April 1920.	p. m. m.	April 1921	p. m. m.
Up to 75 miles.	0·14	Up to 100 miles	0·15	Up to 200 miles	0·15
Plus from 76 to 200.	0·12	Plus from 100 to 200.	0·125	Plus from 201 to 300	0·13
Plus from 201 to 500.	0·06	Plus from 201 to 700.	0·06	Plus from 301 to 700	0·07
Plus from 501 upward.	0·05	Plus from 701 upward.	0·05	Plus from 701 upward.	0·06

The following statement shows actual rates obtaining from Jherriah to some consuming centres:—[2]

STATEMENT 90

COAL RATES TO CONSUMING CENTRES.

In Rupees per Ton.

	Miles.	Before April 1920.	April 1920	April 1921.
Howrah	173	3- 4-0	3- 8-0	3-13-0
Cawnpore	469	6- 1-0	6- 6-0	7-15-0
Delhi	739	7-15-0	8- 8-0	10- 8-0
Amritsar	978	9-10-0	10- 3-0	12-10-0
Karachi City ...	1,407	13- 5-0	13-14-0	16-11-0
Ahmedabad ...			11- 5-0	14- 0-0
Bombay		11- 4-0	12-12-0	15-10-0
Madras			11- 7-0	13-13-0
Lahore	1,011	9-15-0	10- 8-0	12-14-0

1. The Coal Committee, 1925, with the command it had over the figures, calculated, that with regard to traffic to the docks, the increase in rates as obtaining in 1922 compared with 1912 was 29 per cent from Jherriah, 33 per cent from Asansol and 34 per cent from Raneegunge. As against this, the increase in the working expenses of the E. I. was 61 per cent and of the B. N. 45 per cent. At the same time the cost of hauling a ton-mile increased on the E I. from 2·29 pies in 1912 to 4·06 pies in 1924, i. e. by 77 per cent; and on B. N. from 3·57 pies in 1912 to 4·72 pies in 1924, i.e by 32 per cent. Even if the cost of hauling a coal unit may be taken at a lower figure, the discrepancy on the E. I. between the rates increase and the cost increase will remain glaring, while on the B. N. the two have increased more or less in sympathy.

2. Railway Board to Bombay Chamber of Commerce, 12th Nov. 1919, and 23rd Nov. 1920.

The aftermath of the war brought a serious shortage of coal, entailing prohibition of exports from time to time. In 1922 and 1923, restrictions were gradually removed, but it was found that the export markets could not be recaptured, whilst even in Rangoon and Madras, Bengal coal was subjected to severe competition by overseas producers. The coal owners therefore agitated for a reintroduction of the export rebate and a general decrease in rates over long distances.[1] It was however, the rebate that they were most keen upon and in January 1924, the railways did find their way, in spite of difficulties, to grant a rupee per ton on coast-wise despatches. At the same time wagon shortage again began to be experienced and in Delhi only one out of four flour mills could work on available supplies.[2] The up country industries found the maintenance of the rate at 1921 level severely handicapping their operations.[3] It was again pointed out that the starting point of the depression in industry was the high inland rate, which was responsible for the loss of up country markets, the Central Provinces being a keen competitor.[4] That was why the

1. Address presented to H. E. the Viceroy by the Indian Mining Federation 1923. Also resolution passed by the Associated Chambers of Commerce 1923.

2. Resolution moved by the Punjab Chamber at the Associated Chamber of Commerce meeting, 1924.

3. Representation by the Ahmedabad Millowners, Oct. 1925. Also resolution of Lala Ram Saran Das in the legislative Assembly, Sept. 15th 1925.

4. Vide Bombay Chamber of Commerce to B.N. Rly. 24th Jan. 1924. The Pench Valley Collieries displaced Bengal coal in Ahmedabad aided by the G. I. P. and B.B. reductions. Also speech of Mr. Mackenzie, to Associated Chambers Meeting, 1924.

coal owners felt the necessity of capturing export markets [1].

The coal committee which examined the question minutely, though finding no justification for a decrease from the point of view of the railway operating costs recommended an increase in the export rebate by 50 per cent—solely with the purpose of retaining the export markets. Their recommendation was indeed in agreement with the desire of the consumers, for it was found that the exports were mainly to coast-wise ports. The export traffic was an important one to the railways, and the committee found that unless it revived, the railways "might lose in freight more than they stand to lose by an increase in the rebate, whilst on the other hand if the export trade revives, the freight on the increased exports should more than compensate for the increased rebate.[2]

The committee recommended a decrease for another, and to them, substantial reason. "It is an axiom of railway economics," they stated, "that railway charges should not be more than the traffic can (sic) bear, and the present depression in the coal export trade

1. It is interesting to note the difference in outlook between the Bengal producers and the up country consumers in this respect. The former insisted above everything upon a stimulus to their export trade by rebates. The Punjab, Upper India and Karachi interests were more keen upon reduction in long distance rates, so as to retain the fuel within the country. A compromise was later arrived at on a resolution in the Associated Chamber meeting, demanding rebate on coast-wise despatches, which as said above, was granted. Re Punjab's demand for reduction, Karachi found itself in opposition, demanding no reduction beyond an economic level, lest other commodities may have to make up for the loss on coal.-Vide speech of Mr. Heighton, 1924 Assoct. Ch. meeting.

2. Report, Vol. 1, p.56 et seq.

may justly be urged as a proof that the charges now levied are more than this traffic can bear in the present conditions."

In April 1926 a general reduction of 10 per cent was granted. The commerce member claimed that this brought the long distance rates down to a level, " not very much higher than the pre-war rates".[1] It is found though on examination of actual rates for some leads, that there was much lee-way to be made up before reaching the " pre-war " level.[2]

The year 1929-30, however, brought about another reduction, confined to long distance traffic. The scale of rates for distances exceeding 400 miles was brought down so as to compare with the one hitherto prevalent as under :-

For distances above 400 miles :—

PREVAILING SCALE.	PIES PER M. M.	NEW SCALE.	PIES PER M. M.
For 1st. 200 miles.	0·15	For 1st 200 miles.	0·15
Plus for 2 1-500 ,,	0 07	Plus for 201-400 ,,	0 06
,, over 500 ,,	0·06	,, over 400 ,,	0·05

1. Speech before Associated Chambers Meeting, 1928.
2. Rates before April 1920-that is obviously what Sir Charles Innes meant by " pre-war" rates-compared as follows with the reduced rates introduced in April 1926:—

Lead.	RATES PER TON. Before April 1920.	After April 1926.
	Rs.	Rs.
300	4- 9-0	6- 4-0
400	5- 6-0	6- 4-0
450	5-13-0	6-13-0
500	6- 4-0	7- 4-0
550	6- 8-0	7-11-0
600	6-15-0	8- 1-0
700	7-11-0	8-15-0
800	8- 6-0	9-13-0
900	9- 1-0	10-10-0
1,000	9-13-0	11- 8-0
1,100	10- 8-0	12- 5-0
1,200	11- 3-0	13- 5-0
1,300	11-15-0	14- 1-0
1,400	12-10-0	14-14-0

It will be realised that the period following 1913 has therefore been one of unusual disturbances to the normal expansive course of trade and traffic. The actual carriage over principal lines and the movement in the whole country are shown in the following statement. The worst of the post-war years, 1922, shows a larger volume than the pre-war years. At the same time the productive capacity of the industry had increased, stimulated by war-time demand, and the fall in trade from 23 million to 18 million, between 1921 and 1922, i. e. 21. 3 per cent, must have hit the trade hard.

STATEMENT 91.

QUANTITY OF COAL CARRIED.

In Thousand Tons.

Year.	E. I.	B. N.	G.I P	N. W.	B. B.	Madras and S. Maratha.	Total India.
1912	9,008	3,034	872	483	222	223	16,557
1913-14	9,380	3,049	895	483	244	230	17,168
1914-15	9,841	3,342	1,016	508	293	259	18,438
1915-16	9,723	3,352	1,647	565	318	281	19,064
1916-17	11,000	3,674	2,079	776	519	458	22,387
1917-18	10,236	3,506	1,787	1,122	688	537	21,824
1918-19	11,225	3,533	2,078	1,127	532	449	23,252
1919-20	10,596	3,545	1,915	726	512	442	21,399
1920-21	11,174	3,770	1,627	649	497	409	21,861
1921-22	8,962	3,593	1 379	551	493	285	18,786
1922-23	10,260	3,853	1,230	538	@705	336	19,896*
1923-24	10,610	3,858	957	581	614	317	19,851*
1924-25	12,082	4,414	1,115	873	757	328	22,851*
1925-26	11,133$	4,985	1,148	893	809	314	22,013*
1926-27	11,763	5,716	1,307	1,082	735	278	23,910*
§§1927-28	12,455	6,526	1,344	1,026	465	330	25,780*
§§1928-29	12,455	6,327	1,270	1,048	427	304	25,413*
§§1929-30	13,348	6,799	1,404	1,024	389	324	27,187*
§§1930-31	12,226	6,228	1,346	997	363	325	25,097*

*. Total for Class I. Railways only. Consignments passing over two or more separate gauges or railways, considered as so many separate consignments.

$. Combined with O. R. now on.

§§. Incl. for home line const uctions.

@. Combined with R. M. now on.

The temporary increase during the war period is noticeable on all lines, The principal explanations are the scarcity of tonnage for transport by sea and the requirements for the Royal Navy at different ports. In the case of arrivals in Bombay Port, the extent to which the normal course of trade was disturbed, is shown by the following table:—[1]

STATEMENT 92.
COAL IMPORTS INTO BOMBAY.
In Thousand Tons

Year.	By sea from.					Total	Total
	Europe.	Australia	Japan.	Other Countries.	Calcutta.	By Sea.	By rai .
1912	161	74	78	166	786	1,264	87
1913	201	40	71	218	631	1,160	96
1914	173	15	26	125	633	973	xx
1915	23	18	11	95	231	376	640
1916	...	9	...	14	1	25	1,563
				S. Africa.			
1917	2	7	...	12	...	22	2,481
1918	1	...	1	36	...	38	1,365
1919	2	2	1	33	9	46	1,354
1920	...	6	3	15	295	319	963
1921	366	62	24	394	486	1,334	413
1922	528	18	48	192	70	858	207
1923	94	26	1	295	97	512	211
1924	58	12	2	212	210	496	186
1925	53	9	7	228	196	492	91
1926	5	7	7	122	325	467	102
1927	33	7	6	146	356	548	124
1928	22	5	...	119	259	415	67

xx. Figures not available. The Government returns however, show 93,000 for 1913–14 and 295,000 for 1913–14.

It is interesting to examine the fluctuations in the price of coal during this period. It will be observed

1. Figures from the Bombay Chamber of Commerce. Government returns discontinued after 1921.

from the following table that following a violent disturbance during and after the war period, there are signs of a return to normalcy.

STATEMENT 93.

PRICES, RATES AND TRAFFIC.

Year.	Total Traffic[3] ... Tons.	Prices at pits mouth per ton.[1]	Rates Bengal-Bombay.[2]
1912	16,551	Rs. 6- 3- 7	11-4-0
1913	17,168	6- 8- 0	,,
1914	18,438	7- 5- 0	,,
1915	19,064	5- 5- 8	,,
1916	22,387	5- 1- 4	,,
1917	21.824	6- 0- 0a	,,
1918	23,252	5- 4- 3b	,,
1919	21,399	6- 9- 0c	,,
1920	21,861	8-12-10	12-12-0
1921	18,786	18-12- 8	15-10-0
1922	19,896	14-10- 7	,,
1923	19,851	12- 4- 7	,,
1924	22,851	10- 9- 3	,,
1925	22,013	7- 9- 0	,,
1926	23,910	6- 5-10	14-1-0
1927	25,780	5-12- 0	,,

The increases in rates appear generally to be in conformity with the rise in prices, although the 1921 increase appears to have been maintained longer than justified by the prices. This of course is a one sided view, for the ability of the line to bring down a rate in face of increasing working costs due to war conditions is quite as important a consideration as the fall in prices, and requires being investigated. The following statement brings out the relevant points:—

1. Indian Mining Assocn. figures, "Deshagur" at pit's mouth.
2. Rate shown as typical of others.
3. Official year from 1913-14 ending with 1927-28.
a. Selected Jherriah for March only.
b. Jherriah for March only.
c. Average for June-Dec.

STATEMENT 94.

HAULAGE COSTS AND AVERAGE RATES CHARGED.

Year.	Cost of "hauling" a t. m.			Cost of "hauling" t. m. with interest @ 5 per cent.			Average rate charged per t. m.			Actual rate Bengal-Bombay per ton in Rupees.
	B. N.	E. I.	G. I. P.	B. N.	E. I.	G. I. P.	B. N.	E. I.	G. I. P.	
1913–14	1·81	1·32	2·71	3·49	2·45	4·28	3·70	3·18	4·76	11– 4– 0
1914–15	1·72	1·24	2·94	3·40	2·33	4·78	3·41	2·96	4·89	
1915–16	1·58	1·20	2·51	3·12	2·28	4·07	3·27	2·83	4·47	
1916–17	1·51	1·07	2·26	2·79	2·04	3·70	3·14	2·20	4·06	
1917–18	1·58	1·15	2·52	2·83	2·20	4·03	3·25	2·71	4·37	
1918–19	1·86	1·24	2·84	3·11	2·25	4·25	3·50	2·94	4·60	
1919–20	2·37	1·59	3·51	3·65	2·66	4·86	3·67	2·88	5·02	12–12– 0
1920–21	2·62	1·98	4·26	4·05	3·10	5·85	3·57	3·12	5·20	15–10– 0
1921–22	3·01	2·71	5·48	4·71	4·11	7·23	3·90	3·65	6·01	
1922–23	2·85	2·93	5·01	4·44	4·25	6·82	4·18	3·99	6·72	
1923–24	3·02	2·75	4·57	4·72	4·06	6·49	4·38	3·95	6·80	
1924–25	3·01	2·59	3·96	x4·88	x 4·34	5·98x	4·40	3·84	6·43	
1925–26	2·82	2·73	4·73	4·72	4·22	7·49	4·32	4·06	6·60	14– 1– 0
1926–27	2·52	2·63	4·30	4·46	4·10	6·92	4·21	4·04	6·60	
1927–28	2·66	2·50	3·78	4·50	3 94	6·26	4·27	4·01	6·42	
1928–29	3·20	2·48	3·97	4·98	3·92	6·46	4·18	4·01	7·26	Reduction
1929–30	3·47	2·46	4·06	5·19	3·91	6·82	3·96	3·80	7·13	in rate.
1930 31	3·16	2·49	4·18	5·25	4·07	6·66	4·06	3·74	7·14	

x Interest at 5½ per cent for 1924-25 and the following years

These figures have obvious limitations to their utility. The cost of carriage to the railway would certainly be lower for coal alone than for all commodities. So would be the coal rate. Taking these figures in the absence of those appertaining precisely to coal, the first few years up to 1920 showing a profit on traffic are misguiding, because of the frenzied war finance, which left the system with a swollen repair bill as a legacy. From 1920–21 to 1926–27, the average rate, except in a few cases, gives a loss, and even in 1927–28, and 1928–29, the B. N. continues to lose. A reduction in coal rates was therefore, with the most liberal spirit on the part of the railways, difficult to grant until 1926–27.

For a few years, 1922–23 onwards, it is possible to give average rate charged to coal traffic alone, though the cost of carriage is not available. This compares as follows with the general cost of carriage:—

Year.	Cost of carrying t m. excl. interest.			Cost of carrying t m. with 5 per cent interest.			Average rate charged per t. m of coal.		
	B.N.	E.I.	G.I.P.	B N.	E I.	G I P.	B.N.	E.I.	G.I.P.
1922–23	2·85	2·93	5·01	4·44	4·25	6·82	2·54	2·90	2·68
1923–24	3·02	2·75	4·57	4·72	4·06	6·49	2·67	2·86	2·62
1924–25	3·01	2·59	3·96	x4·88	x4·34	x5·88	2·69	2·78	2·58
1925–26	2 82	2·73	4·73	4·72	4·22	7·49	2·76	2·90	2·56
1926–27	2·52	2 63	4·30	4·46	4·10	6·92	2·59	2·89	2·35
1927–28	2·66	2·50	3·78	4·50	3·94	6·26	2·58	2·81	2·37
1928–29	3·20	2·48	3·97	4·98	3·92	6·56	2·56	2·80	2·58
1929–30	3·47	2·46	4·06	5·19	3·91	6·82	2·38	2·67	2·35
1930–31	3·16	2·49	4·18	5·25	4·07	6·66	2·32	2·61	2·32

x Interest at 5½ for 1924–25 and the following years.

As against the carriage cost with interest, coal traffic fails, uniformly to pay for itself. Even taking carriage costs exclusive of interest, the B.N. loses, except in 1926–27. On the other hand, the E. I. profits on it, except in 1922–23. The G. I. P. loses without exception, and it seems, would lose even if the rate was matched against cost of carriage of coal alone. It is possible that the B. N., in that instance, its margin of loss being small, would manage to make the rate pay for its own carriage—though it is doubtful if that would be possible for 1928–29 and following years. For the last two years the position is all the more alarming. Neither comparison, unsatisfactory as each is, therefore gives ground for a reduction in rates from the railway point of view. Not till the operating costs are substantially reduced does a material reduction appear possible.

It remains necessary to inquire, however, in what direction these rates are pulling with reference to the requirements of consumers, particularly in view of the unanimous expression of opinion from them recently, to the effect that industry was incapable of bearing the rates prevailing, or in other words that higher rates are imposed than what the traffic can bear. The figures of coal leads show:—

	Miles.			
	B. N.	E. I.	G. I. P.	All Class I Railways.
1922–23	271·5	299·1	391·0	279·2
1923–24	230·4	304·4	380·6	271·5
1924–25	199·5	316·6	361·4	270·4
1925–26	204·9	395·6	353·2	270·2
1926–27	187·0	303·0	412·0	252·0
1927–28	180·0	307·0	387·0	249·9
1928–29	209·8	303·3	331·2	251·1
1929–30x	206·0	296·0	334·7	253·7
1930–31x	197·0	313·0	328·5	260·2

x. Excluding carriage for Home line.

There is a severe decline noticeable on the B. N. though the rise after 1927–28 is promising. On the E. I. there is on the whole a slight increase. The G. I. P. has reached its lowest mark in 1930–31, after reaching a peak in 1926-27. May be, the decline is of more than a purely temporary character. The lead figures for all class I Railways however decline steadily until 1927–28 when they pick up an increasing trend. The absence of figures before 1922–23 makes it impossible to judge the character of these fluctuations and pronounce definitely upon them. It seems however, that until 1927–28 there was cause for alarm, unless the low level then reached could be proved to be a new mark higher than the previous lowest one, suggesting only a trough of the wave.

CHAPTER IX.

COTTON MANUFACTURES.

COTTON Manufactures—piece goods, twist and yarn—have played an important role in India's foreign trade even in the early times. Within the country however, with the high transport charges, it had to be a luxury trade confined to the expensive grades. Attempts made to establish large scale factories in Bombay before the fifties of the last century did not meet with success, "due mainly to the high cost of transport before the railway era".[1]

Later also, although the product was not capable of penetrating far into the country, even the earliest returns available give a fair amount of foreign trade in the article. Indeed cotton goods constituted the largest single item in the import schedule of the country, even when with the construction of railways, large quantities of railway store and material began to pour in. On a broad survey, it appears that they have not yielded this premier position to any commodity so far. With the construction of the first lines, it will be seen from the table below, the imports rose considerably, indicating the change from an expensive means of transport to a cheaper one:—

1. Anstey: Economic Development of India, p. 260.

STATEMENT 94.

IMPORTS OF COTTON MANUFACTURES IN INDIA.

In Thousand pounds Sterling.

Year.	Imports of Cotton Twist and Yarn.	Imports of Cotton Goods.	Total of Cotton manufactures.	Total of all merchandise.	Percentage of cottons to total.
1849	909	2,222	3,131	8,345	37·5
1850	1,132	3,372	4,504	10,300	43·7
1851	1,038	3,642	4,681	11,559	40·6
1852	1,391	4,771	6,162	12,240	49·8
1853	1,131	3,667	4,798	10,071	47·6
1854	1,307	4,433	5,740	11,123	54·8
1855	1,274	5,403	6,677	12,743	52·3
1856	1,414	4,948	6,362	13,943	45·6
1857	1,192	4,941	6,133	14,195	43·2
1858	944	4,783	5,727	15,278	37·5
1859	1,714	8,089	9,803	21,729	45·1
1860	2,047	9,652	11,699	24,265	48·2
1861	1,748	9,310	11,058	23,494	47·7
1862	1,472	8,773	10,245	22,320	45·9
1863	1,270	8,360	9,630	22,632	42·5
1864	1,529	10,417	11,946	27,146	42·1
1865	2,191	11,036	13,227	28,151	46·9

Unless it be assumed that the whole of the £6½ million worth of piece goods[1] were consumed by the ports—which on the face of it sounds impossible considering the then size of their populations—it is strange that they found no place in the first classification at all, although twist and yarn were rated second class and hosiery third. Until 1859 at least, when the current "classification of goods" was published in the first administration report, cotton goods rates do not seem to have aroused much attention. It is possible that the movement was confined to the imported commodity of the highest class only, the rates for which were not of much consequence because of the low proportion the cost of transport would bear to the price.

1. Average of 1856–60.

With the junction of the G. I. P. and the E. I. at Jubbulpore, however, piece goods rates aroused more interest on the part of the trader. The Bombay importers in fact felt considerably alarmed at the possibility of the E. I. being able to supply the Central Provinces from Calcutta. This was actually the first instance known of traders in the ports focussing attention upon possibility of competition by means of adjustment of transport charges over railways.

To start with, the E. I. again began with a considerable difference in its favour. The rating, as can be surmised from available records, was second class on the E. I. at $\frac{1}{2}$pie m. m. or $13\frac{1}{2}$ pies t. m. compared with fourth or fifth class on the G. I. P. at the $1\frac{2}{5}$ p. m. m. or 40 p. t. m.[1] With regard to the supplies to the North West Provinces,—the chief consuming area—the position was as follows:—

	Per ton of 27 mds. Rs.
E. I.	
Calcutta–Allahabad–630 miles at $\frac{1}{2}$ p.m.m. or $13\frac{1}{2}$ p.t.m.	44– 4–9
G. I. P.	
Bombay–Allahabad–850 miles	
1. Bombay Jubbulpore–615 miles 5th Class at 40 pies t. m.	129–11–0
2. Jubbulpore–Allahabad at E. I. Rates.	15–15–4
3. G. I. P. extra charge beyond Khandwa–288 miles at 8 pies t.m.	11–14–8
	157– 9–0

The Bombay Allahabad rate, on the other hand, at E. I. rating, works out at Rs. 59/18/3.

1. Bombay Chamber of Commerce to the G. I. P., 16th Feb. 1870.

As regards the Central Provinces, the G. I. P.'s quotation Bombay–Jubbulpore was at 5th class rating Rs. 6/–/3 per maund, i. e. 15·02 pies per lb.[1] The E. I. were at the same time quoting Rs. 3/1/3 per md. Calcutta Jubbulpore–849 miles–i. e. 7·68 pies per lb. The ability of the G. I. P. rate to attract traffic even say Bombay manufactures to Jubbulpore, can be gauged by the charges of the alternative sea route. This worked out as under:—

		PIES PER LB.
1.	Sea-Freight at Rs 25 per ton of 40 cft.–Bombay Calcutta i. e. per lb.	3·47
2.	Shipping charges at Bombay.	0·48
3.	Landing charges at Calcutta and forwarding to E. I. R. Station.	0·80
4.	Marine Insurance and interest on capital for extra time involved say at 1 per cent.	1·44
5.	Freight by railway Calcutta–Jubbulpore 849 miles at Rs. 3–1–3 per maund or 7·68 pies per lb.	7·68
		13·87

To equalise, if carriage charges to railway station are also taken into account at 0·32 pies per lb., railway transport cost 15·34 pies per lb., i.e. 1·47 pies per lb. more for 636 miles of rail carriage than the sea carriage of 3,050 miles plus rail haulage of 849 miles.

1. There is some dispute as to the exact quotation given by the G. I. P., but within very narrow margins. The Rs. 6–0–3 rate was quoted to Messrs. Peel Cassels and Co. by the G. I. P. in their letter of 3rd May 1870 (Peel Cassels to Bombay Chamber of Commerce 13th May 1870). The Bombay Chamber however claimed that the exact rate was Rs. 5–11–4 (Letter to Messrs. Peel Cassels 12th May 1870). At 40 pies p. t. m., taking Messrs. Cassel's mileage at 636, Rs. 6–0–3 appears more correct. Taking the mileage at 616, the 40 pies rate works out at Rs. 5–12–1. In so far as the Rs. 6–0–3 rate was actually claimed to have been quoted in writing by the G. I. P., it appears the correct one to assume. From subsequent correspondence it appears that the Ghat haulage was acknowledged to add 20 miles to the G. I. P. mileage of 616. Vide Bombay Chamber to the G. I. P., 27th February 1873.

It seems however that the G. I. P. soon realised the need of a revision of this rate which made piece goods stand very nearly in the same category as jewels and bullion. In June 1871, they reduced it from the 5th to the 3rd class,[1] which according to Danvers, was rated at 24 pies t.m.[2] or 0.88 pies m.m.

The conclusion is, nevertheless, that the reduction was only to the competitive points, Jubbulpore and Allahabad; for in 1871, according to an actual quotation on a consignment, the rate to Bhusaval, 275 miles, was Rs. 2/6/11 per maund i. e. 1·73 p. m. m. What the company actually did was to quote special rates to competitive points and to continue the 5th class rates 1·8 pies m. m. —or nearly 5th class rates 1·73 pies m. m.—for all other centres. In February 1871, the rates to Jubbulpore (615) and Allahabad (842) stood at Rs. 3/5/–and Rs. 3/8/8 per maund, or 1·2 and 0·8 pies m. m. Against these the reductions effected by the E. I. were Rs. 1/10/3 to Allahabad (632) and Rs. 2/3/3 to Jubbulpore (847) or ·5 pies m. m.[3] Their rate to Sultangunge (280),–a non-competitive point, was Rs.–/11/9 per maund i. e. ·5 p. m. m. also. On an actual consignment, of shirtings, grey English packed and hooped, of 10 bales, weighing 39 cwts. 5 lbs. or 53 1/3 maunds, valued at Rs. 2875/–in Bombay, the cost of transport in proportions of price at the above rates works out as follows on the two lines:—

G. I. P.				
To Bhusaval (275)	Rs. 129–11–7	i. e.	4·51%	of value.
,, Jubbulpore (615)	,, 176–10–8	,,	6·14%	,,
,, Allahabad (842)	,, 188–14–3	,,	6·57%	,,
E. I.				
To Sultangunge (280)	,, 39– 2–8	,,	1·30%	,,
,, Allahabad (632)	,, 87– 8–0	,,	3·04%	,,
,, Jubbulpore (847)	,, 117– 8–0	,,	4·08%	,,

1. Bombay Chamber to Peel Cassels and Co. 12th May 1870.
2. Vide Rates and fares table, Para 54, Administration Report 1870–71.
3. Bombay Chamber to Agent, G. I. P., 23rd Feb. 1871.

Calcutta's advantage because of lower rates at competitive as well as non-competitive points is therefore very pronounced, so that in spite of Bombay's superior advantages in respect of ocean freight and port facilities, Calcutta could spread its influence up to 850 miles towards Bombay. In fact Mr. Bythell, the spokesman of the Bombay traders, complained in the provincial Legislature, that goods could not only be sent to Jubbulpore but also "some considerable distance on the G. I. P. from Calcutta"[1] On the other hand, if the G. I. P. charged the same rate as the E. I. did, at least at competitive points, i. e. ·5 p. m. m., the G. I. P. would not only completely capture the Jubbulpore market, but even influence Allahabad, for the percentage against it would then reckon only at 1·03 in place of the 3·10, and this her lower shipping charges would more than make up.

The G. I. P. later granted reduced rates, abolishing the difference in favour of the E. I. at Jubbulpore. As a result, the rates from both the centres stood at Rs. 2/2/10 per md. This would not however abolish the advantage of the E. I. in mileage rate. The reduction again did not affect the non-competitive points, where the rates appear to continue at the same level-40 p. t. m. The rate to Nagpore (541) for example is recorded at Rs. 5/1/0 per maund. On the other hand Delhi, on the E. I. (1006) paid Rs. 2/8 per maund from Howrah, i. e. continued at the same rate of ·5 pies m. m.

On account of the quotation of lower rates to Jubbulpore than to Nagpore on the G. I. P., it is

1. Speech of Hon. Mr. Bythell, 14th Feb. 1873.

obvious that Nagpore must have suffered as a distributing centre for piece goods as against Jubbulpore. The latter received an inducement towards a development of its trade from both the ports, whereas Nagpore in spite of its closer proximity to Bombay found the cost of transport against itself. In the absence of price statistics for cotton goods in inland centres, it is impossible to define strictly to what extent Nagpore would actually be affected. Taking however the 1875 Bombay price for T cloth 44 inch, 24 yards, 8lbs.—the first quotation available—at Rs. 0/9/3 per lb.[1] i. e. Rs. 46/5/- per maund, as an index, the market price plus the cost of transport would enable delivery in Jubbulpore at Rs. 48/7/10 and in Nagpore at Rs. 51/6/-, giving Jubulpore an advantage of Rs. 2/14/2 per maund, which it could utilise in paying transport charges to outlying disticts of C.P. Mr. Bythell, in fact calculated the Bombay-Nagpore rate for carrying 8¼ lbs. shirtings at 8 annas per piece—"more than 10 per cent of the value of goods in Manchester,"[2] where the price was 9s. 6d. per piece. This meant that 10% of the producer's price had to be paid for Bombay–C. P. transport alone.

The G. I. P. executive appear to have realised how necessary it was to lower their rates to enable traffic to be drawn to them, and their areas being supplied by them, instead of by a competitor. In this regard the lower ocean freight to Bombay appears hitherto to have been neutralised by their 40 pies per ton mile rate. Announcing their proposal for reduction, the

1 Prices and Wages Returns.
2 Letter to Mr. Conder, Agent, G. I, P. Railway, 1st May 1873.

Company hoped that they would be found to be "such as will satisfy the merchants, and secure to Bombay, in the course of time, the bulk of the piece-goods traffic for India."[1] The Agent's decision appears to have been very opportune, for in the Bombay Legislature it had been stated that the "enormous difference" in railway charges had effected a steady increase in Calcutta's trade in Manchester goods, and a steady decline in Bombay's turnover.[2] It should be admitted that the G. I. P.'s capacity to quote the same mileage rates as the E. I. was strictly limited by its higher costs of working. There is nevertheless something to be said for accommodating the circumstances of trade, so long as working costs are recouped and even a surplus earned.

But though the G. I. P. thus recognised the necessity for adjusting their rates to commercial needs when accosted by a competitor, they failed to show the same breadth of outlook when a proposal of a pioneering nature was put before them. The Madras Railway aiming to divert traffic in cotton goods from the sea route from Bombay to Madras, proposed to the G. I. P. a through rate of 11 pies t. m. Bombay Madras–to be divided in proportion of mileage.[3] The G. I. P. turned down the proposal, on grounds of their sacrifice being higher on account of the carriage over longer mileage, and suggested instead haulage over own line at at 12.4 pies t. m., if the Madras reduced its share to 9 pies t. m. It appears, however, from a perusal of the minutes of a meeting of the G. I. P. officers that the traffic carried by the sea route being 171 tons in 1873,

1 G. I. P. Rly. to Bombay Chamber of Commerce, 18th June 1873.
2 Speech of the Hon. Mr. Bythell, 14th February 1873.
3 Government of Madras to Government of Bombay, 10th March 1875

445 tons in 1874 and 731 tons in 1875, they hardly considered it expedient to alter their rates "with a view to the possible attraction of this small quantity at the risk of disturbing the present intermediate rates."[1] It must be pointed out that they failed to take into account the trade in yarn and twist, which included, nearly doubled the volume viz. 698 tons in 1873, 769 tons in 1874 and 992 tons in 1875. The Government of India's attitude in this regard was very encouraging to the development of trade. They deprecated the trend of the G.I.P.'s demand, and thought it desirable that "the rate for through traffic of any particular description of goods should upon contiguous railways, be the same."[2] The Government of Bombay were also anxious to encourage inland exchange between the two presidencies and in their letter to the agent deplored the fact, that although the rate of 11 pies was a profitable one to the company, such "nice difference" as to its apportionment should have been allowed to obstruct its introduction.[3] The acceptance of the proposal would have resulted in a considerable benefit to the G. I. P. in so far as they had to send down empty wagons to stations around Raichore for produce to Bombay. But even apart from these special circumstances, it appears that on purely theoretical grounds, in a competitive position, a railway executive has a better opportunity and wider scope for constant adjustment of its rates on such a high priced commodity as cotton manufactures—as against grain, seeds or coal.

It is rather difficult to draw definite conclusions as regards the success or otherwise of the rate cutting

1. Minutes of Meetings, 5th and 27th April 1876.
2. Government of India's letter, 31st. May 1875.
3. Letter to Bombay Chamber of Commerce, 14th September 1876.

policy of the two lines. It would require a scrutiny of import figures into each competitive centre to investigate the relative influence of each line upon it,—figures which are not available. Neither can a definite conclusion be drawn from figures of traffic, for the location of the industry in Bombay would give the G. I. P. an advantage in neighbouring areas. In every case again, there will be a certain area exclusively dependent upon one line or the other. The volume of imports into Bombay would also be influenced by the local production. It will nevertheless be noticed that both in point of foreign trade, as well as inland distribution, Calcutta handled a quantity far surpassing Bombay. How far exactly it is traceable to E. I's. rates—in many instances as low as a third of the G. I. P. rates—it is impossible to judge, particularly so, because the area exclusively served by the G.I.P. was less populous than Bengal and U.P. This would naturally swell Calcutta's imports, independently of rates.

STATEMENT 95.

TRADE IN COTTON MANUFACTURES AT BOMBAY AND CALCUTTA.

Year	Imports into Bombay. Million yards.	Traffic by G.I.P. 000 Tons Calendar years from 1870	Rates Bombay Jubulpore. Per md. in Rs.	Imports into C'tta million yards.	Traffic by E.I. 000 Tons. Calender years from 1870,	Rates C'tta-J'pore. Per md. in Rs.
1868-69	308	...	...	574	...	...
1869-70	301	...	6-0- 3	540	...	3-1-3
1870-71	270	16	3-5- 0	722	41	2-3-3
1871-72	295	15	2-2-10	637	53	2-3-3
1872-73	269	14	,,	566	47	,,
1873-74	318	13	,,	525	46	,,
1874-75	278	16	,,	671	50	,,
1875-76	301	13	,,	608	52	,,
1876-77	349	17	,,	734	55	,,
1877-78	345	19	,,	931	59	,,
1878-79	319	21	,,	720	62	,,
1879-80	383	26	,,	846	76	,,
1880-81	...	1880/29	,,	...	1880/71	,,

With the beginning of the eighties, the G.I.P. seem to have taken a bolder course in their effort to compete in the U. P. in spite of the longer distance—even in centres like Delhi and Agra not directly served by the line. The opening of the R. M. also helped to assail the position of the E. I in the western districts of the U. P. and the R. M. found itself in a better situation because of the shorter distance of U. P. centres from Bombay than from Howrah. The following statement compares the distances and rates by each route :—

To Agra from	Distance	Rate per 100 mds,	Rate per mile per maund.
E. I. -Howrah	843	Rs 222- 0-0	50 0 pies
G.I.P.- Bombay *via* J'pore	1,123	263- 4-0	45 { 40 G I.P. 50 E I.R.
B.B.-R.M -Bombay *via* Sabarmati	847	221-14-0	50·3
To Delhi from			
E. I -Howrah	954	250- 0-0	50·0
G. I. P.-Bombay *via* J'pore	1,234	292- 4-0	45·8 { 40 G.I.P. 50 E.I.R.
B.B.-R.M.-Bombay *via* S'mati	890		50·2

Not satisfied with this, the Bombay lines made further reductions in April 1881, bringing not only the unit rate, but also the total rate to a lower level than on the E. I. The charges to Delhi then compared :—

	Per 100 mds.	Per mile per 100 mds
From Howrah (954)	Rs. 250- 0-0	50·0 pies
„ Bombay via J'pore (1234)	232-13-0	36·22 „
„ Bombay via S'mati (890)	213- 8-6	46·0 „

The E. I. in spite of their low costs found themselves beaten this time, and had to initiate negotiations for a settlement with the B. B. and the R. M. Explaining their inability to reduce their own rate to a level competitive with them, the Agent wrote, "Any isolated

action of the company would have been useless, as the shorter mileage of the principal upcountry piece goods markets would have enabled the B.B. and the R.M. to meet each alteration in rate on the E. I. by a still further reduction."[1] With the beginning of 1882, the R.M. had already started influencing even the Punjab markets. In respect of piece goods, the situation appears to be quite the reverse of what obtained with regard to grain and seeds in the beginning of the competitive period, when the E. I. could always have their final say, the R.M. not having as great a scope for reduction on a low class article. During the first six months of 1882, according to the President of the Bengal Chamber, the R.M. carried 66,000 maunds to Delhi, and 28,000 maunds *via* Delhi, i.e. 94,000 maunds as against the carriage from Calcutta to Delhi of 120,000 maunds, during the same period—a great increase for the R. M. over previous years. "Not only has Calccutta lost those markets, scattered throughout Rajputana which formerly derived their supplies from Delhi, but also a very large share in the supply of Delhi itself." According to him, Calcutta had lost 40 per cent of its Delhi trade to Bombay.[2] This, it should be noted, in spite of reductions by the E.I., bringing down the Howrah–Delhi rate to the same level as to Ghaziabad, viz. Rs. 245/- per 100 mds. from January 1882. The latest figures of piece-goods booking available from the railways on 31st Jan. 1883 show how Calcutta had been losing ground in the U.P.:—

1. Letter to Bengal Chamber of Commerce, 26th July 1881.
2. Chairman's speech, 31st July, 1882.

STATEMENT 96.

SUPPLIES OF PIECE-GOODS TO U. P. FROM BOMBAY AND CALCUTTA

In Thousand Maunds.

6 months ending	30th June 1881	31st Dec. 1881	30th June 1882	1st, July to 25thNov,1882
From Bombay to				
Delhi	54	46	70	N. A.
via Delhi	6	13	26	17
Agra	1	1	2	...
Cawnpore	53	45	75	53
Stations above Allahabad	21	20	26	17
Total	138	125	199	87
From Calcutta to				
Delhi	90	86	83	65
Agra	3	7	3	2
Cawnpore	94	88	96	81
Stations above Allahabad	85	68	72	62
Total	273	350	253	210

Later during the eighties, the E.I. appear to have adjusted their rates on a more attractive basis. In 1889: for example, on 22 per cent of the total despatches from Howrah, i. e. to Cawnpore, the E.I. had a difference of 7 annas per maund in their favour, which at the rate of 7 maunds a bale of 70 pieces worth Rs. 300/–amounts to Rs. 3/1/–i.e. about 1 per cent of the price or 8.8 pies per piece. On the other hand Bombay enjoyed a greater advantage in ocean freight, which Mr. Ashworth of the Bengal Chamber of Commerce calculated at 12·25 pies per piece.[1] Bombay therefore continued to enjoy an advantage of 3·4 pies per piece.

Before proceeding to an examination of the traffic and import figures, it is necessary to note, that besides the Bombay and Calcutta lines, the Karachi line was

1. Speech at annual general meeting for 1890.

also by this time trying to establish itself in the Punjab market, taking part of the traffic otherwise available to the former two. The traffic on the four competing railways was as follows:—

STATEMENT 97.

TRAFFIC IN PIECE GOODS.

In Thousand Tons.

Year.	E. I.	G. I. P.	B. B.	& R. M.	N. W.
1879	76	26	7	3	17
1880	71	29	9	6	21
1881	70	36	14	13	21
1882	73	37	21	20	21
1883	74	35	23	21	23
1884	71	33	24	21	23
1885	78	41	38[x]		30
1886	84	41	37[x]		31
1887	80	41	38[x]		30
1888	82	41	40[x]		31
1889	75	41	28	28[a]	32

x. R. M. figures included in B. B. up to 1888. Through consignments would be reckoned only once during these 4 years.

a. It seems from the drop of 7000 tons in 1885 and the rise of 16,000 tons in 1889 that the through traffic was 50 per cent of the R. M. traffic.

Not till the R. M. was opened for Bombay–Delhi traffic in 1881, it will be seen, did the B. B. carry any considerable traffic. The growth of traffic on the B. B. and the temporary fall on the E. I. are coincidental. At the same time there is a slow growth and then stagnation on the G. I. P. and a growth on the N. W. That the E. I. suffered from the competition of the Bombay and Karachi lines seems certain. The import figures, given below, also show a sudden increase on the opening of the R. M. followed by a steady

growth, resulting in an increase of 100 per cent by the end of the decade. In the case of Karachi, the increase is very striking although the 1880 figures are more normal than the 1879 ones. At Calcutta again the 1798 figures are abnormally low. The increase is very slow comparatively to Bombay or Karachi. In the case of Karachi the more incomplete stage of the line in the seventies has to be taken into consideration. Thus :—

STATEMENT 98.

IMPORTS OF COTTON MANUFACTURES AT PORTS.

Year.	CALCUTTA.		BOMBAY.		KARACHI.		TOTAL INDIA.	
	Piece goods million yds.	Yarn & twist million lbs.	Piece goods million yds.	Yarn & twist million lbs	Piece goods million yds.	Yarn & twist million lbs.	Piece goods million yds.	Yarn & twist million lbs.
1878–79	719	13	319	7	1	...	1,128	33
1879–80	846	12	383	9	3	...	1,334	33
1880–81	1,071	17	561	12	6	...	1,777	46
1881–82	942	14	534	13	16	...	1,624	41
1882–83	934	13	539	11	15	5	1,643	45
1883–84	961	15	588	15	22	1·5	1,724	45
1884–85	963	15	573	13	42	1	1,734	45
1885–86	939	14	605	15	56	1·4	1,734	46
1886–87	1,191	15	679	16	103	1·8	2,156	49
1887–88	1,033	15	555	15	75	1·7	1,839	52
1888–89	1,155	15	656	15	135	2·7	2,127	53

With the nineties, the reduction in charges were effected generally over all the lines and to most centres. It appears, however, that the Calcutta lines now took the lead and forced reductions on the Bombay lines.

In February 1897, the rates from Bombay and Calcutta, stood as per table below :—[1]

To	Distances.		Rates per maund.	
	From Bombay.	From Calcutta.	From Bombay.	From Calcutta.
Nagpore	520	759	Rs. 2- 1- 5	Rs. 1- 7- 9
Jubbulpore	616	784	1- 4- 7	1- 4- 7
Cawnpore	839	684	2- 3- 1	1-12- 8
Cawnpore (B. B.) ...	1,071	684	2- 3- 1	1-12- 8
Delhi	981	954	2- 6- 4	2- 6- 4
Delhi (B. B.)... ...	888	954	2- 6- 4	2- 6- 4

The Bombay lines, it will be observed, were trying their best to carry to the U. P. as well as to the C. P., although at some points the handicap of distance was too great to be overcome. At Cawnpore a calculation shows the G.I.P. maund-mile rate to be the same as that of the E. I. and in any case the E. I. insisted upon maintaining a difference, even if the G. I. P. reduced their charges to a competitive level. To the points where the G. I. P. hoped to foster traffic, however, they did reduce their rates—e. g. Nagpore, Kamptee, Tamsar Road etc.—to the same level as the B. N. rates *via* Asansol.[2] Later, some reductions were also made on through rates *via* Jubbulpore, *via* Nagpore, and *via* Wadi to stations to the south.[3]

1. Figures from Bombay Chamber's letter to the G. I. P., 18th February 1897.
2. G. I. P. Railway to Bombay Chamber, 4th May 1897.
3. G. I. P. circular, 19th June 1897.

It is certain however, that to the Western districts of the U. P., Bombay despatched a much larger quantity of piece goods than Calcutta did. The traffic from Bombay and Howrah to Delhi, for example, for the five years ending 1901, was as follows :—

In Thousand Tons.

	From Bombay.	From Howrah.
1897	5,303	4,430
1898	8,032	4,696
1899	7,674	4,925
1900	6,190	2,430
1901	9,939	3,878
Total for the quinquennium.	37,138	20,359

i e. Bombay's despatches were about 85 per cent larger than those of Howrah.

Could this be wholly the result of rates? Bombay had by this time built up a considerable local industry itself and the cheaper home product may have been in greater demand in upcountry centres. An examination of the imports into Delhi shows that the local merchant imported a larger quantity of overseas goods from Calcutta than from Bombay.[1] In 1901, the figures were:—

	From Bombay.	From Calcutta.
Overseas Piece goods.	43,058 mds.	102,311 mds,
Indian " "	196,651	2,411
Total.	239,709	104,752

1. An attempt made to ivestigate the reason for this preference given to Calcutta in imported piece goods by Delhi merchants, by tracing it to prices, proved fruitless. The Government of India returns omit quotations of piece goods at Bombay for some inexplicable reason. The Chamber of Commerce returns available from Datta on the other hand refer to different categories of piece goods with a marked difference in prices and therefore are not comparable.

As between the two lines carrying to Delhi, the B. B. seems to have been more favoured. Indeed the despatches by the G. I. P., insignificant as they were, were confined to the overseas product. Thus in 1901:—[1]

In Maunds.

	Piece goods		Twist.	
	Overseas.	Home.	Overseas.	Home.
B. B.	77,401	216,933	467	2,170
G. I. P.	212	...	9	...
	77,613	216,933	476	2,170

The explanation perhaps lies in the B.B.'s ability to quote lower rates on account of its shorter distance between Bombay and Delhi.

The following table shows with index numbers the actual rates obtaining to some principal centres from the ports. It will be noticed that the effort is towards equalising charges from import or shipment points, irrespective of distance :—[2]

1. Figures furnished by Upper India Chamber to Bombay Chamber, 11th March 1902.
2. In some cases rates were even slightly raised. Thus the rates obtaining from Karachi to Delhi *via* Ambala and *via* Ferozepore were raised to a competitive level in 1891 from the following rates :—

Karachi—Delhi.

a.	Via N. W. Railway direct	Rs. 2- 6-9
b.	Via Ambala—	
	N. W. Rly.	1-12-3
	Delhi Ambala Kalka Rly.	0- 5-5
		2- 1-8
c.	Via Ferozepore—	
	N. W. Rly.	1- 7-3
	R. M. Rly.	0-13-1
		2- 4-4

These were all equalised @ Rs. 2-6-4.
Vide N. W. Rly. to Karachi chamber 12th Nov. 1881.

STATEMENT 99.

RATES PER MAUND TO CONSUMING CENTRES FROM PORTS.

Year.	To Delhi.						To Cawnpore.					
	From Bombay.		From Howrah.		From Karachi.		From Bombay.		From Howrah.		From Karachi.	
	Rate.	Index No.	Rate.	Index No.	Rate.	Index No.	Rate.	Index No.	Rate.	Index No.	Rate.	Index No.
1890	2- 6-4	100	2- 6-4	100	2- 6-9	100	2- 3- 6	100	1-12- 8	100	2-11-1	100
1891	,,	,,	,,	,,	,,	,,	2- 3- 1	,,	,,	,,	,,	,,
1892	,,	,,	,,	,,	2- 6-4	,,	,,	,,	,,	,,	,,	,,
1893	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,
1894	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,
1895	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,
1896	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,
1897	2- 6-3	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,
1898	,,	,,	2- 6-3	,,	2- 6-3	99	,,	,,	,,	,,	2- 4-9	85
1899	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,
1900	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,
1901	2- 4-2	94	,,	,,	2- 4-2	94	2- 1-1	96	,,	,,	,,	,,
1902	,,	,,	,,	,,	,,	,,	2- 1- 0	94	1-10-11	94	2- 3-1	81
1903	,,	,,	2- 4-2	94	,,	,,	,,	,,	,,	,,	,,	,,
1904	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,
1905	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,
1906	2- 2-5	90	2- 2-6	90	2- 2-6	90	1- 4- 8	59	,,	,,	2- 2-0	79
1907	1-15-7	82	1-15-7	82	1-15-7	82	1-13- 1	83	1-10- 3	92	1-14-1	70
1908	2- 0-7	85	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,
1909	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,
1910	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,
1911	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,
1912	1-15-7	82	,,	,,	,,	,,	,,	,,	,,	,,	1- 3-1	68

Nor were these reductions confined to rates from the sea-ports only. From inland manufacturing centres like Ahmedabad and Nagpore, there were reductions also. On the other hand between some places there were increases. The following table sets out the rates between some of them:—

STATEMENT 100.

RATES PER MAUND BETWEEN INLAND CENTRES.

Year	Ahm'bad to B'bay.		Ahm'bd to Nagpore.		C'pore to Delhi.		C'pore to Jubbulpure		Madras to Madura.		Nagpore to via Delhi.		Nagpore to Agra Fort.	
	Rates.	Index No.	Rates.	Index No.	Rates.	Index No	Rates.	Index No	Rates	Index No.	Rates.	Index No.	Rates.	Index No.
1890	1-0-1	100	3-0-0	100	0-11-3	100	0-14-7	100	0-14-5	100	2-5-9	102	1-15-11	100
1891	,,	,,	,,	,,	0-11-4	,,	0-14-6	,,	,,	,,	2-4-8	101	,,	,,
1892	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	99	2-0-0	,,
1893	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,
1894	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,
1895	,,	,,	,,	,,	,,	,,	,,	,,	0-14-11	103	,,	,,	,,	,,
1896	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,
1897	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,
1898	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,
1899	,,	,,	2-1-5	70	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,
1900	0-11-1	69	,,	,,	,,	,,	,,	,,	0-11-3	78	,,	,,	,,	,,
1901	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	2-0-2	101
1902	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,
1903	,,	,,	2-1-11	71	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,
1904	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,
1905	,,	,,	1-13-6	61	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,
1906	,,	,,	,,	,,	0-9-6	84	0-15-0	105	,,	,,	,,	,,	,,	,,
1907	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,
1908	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,
1909	,,	,,	,,	,,	,,	C	,,	,,	,,	,,	,,	,,	,,	,,
1910	,,	,,	1-7-9	49	,,	,,	,,	,,	,,	,,	1-15-4	84	,,	,,
1911	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,	,,
1912	,,	,,	,,	,,	,,	,,	,,	,,	0-11-5	79	,,	,,	,,	,,

These reductions were accompanied by a slow but steady growth of traffic on all the important lines, as set out in the table below:—

STATEMENT 101.
TRAFFIC IN COTTON MANUFACTURES.
In Thousand Tons.

YEAR.	E I.	G. I. P.	B. B.	R. M. R.	N. W.	MADRAS.
1889	75	41	28	28	32	16
1890	75	45	27	28	32	17
1891	81	49	28	30	36	15
1892	80	49	26	31	35	17
1893	80	50	27	36	37	17
1894	82	46	30	39	41	18
1895	80	43	32	37	41	18
1896	79	42	32	32	39	18
1897	86	38	35	34	42	19
1898	95	49	40	43	48	18
1899	90	43	39	36	46	21
1900	81	44	30	32	46	23
1901	91	64x	41	47	57	45
1902	96	61	46	47	56	36
1903	90	68	44	48	54	33
1904	77	74	45	47	60	36
1905	87	81	53	47	166	36
1906	93	83	55	47	68	40
1907	89	96	52	47	170	45
1908	86	98	50	43	64	66
1909	88	106	53	52	71	60
1910	91	113	55	61	73	65
1911	89	111	60	73	72	57
1912xx	142	129	59	61	80	64
1913–14xx	92	159	72	57	84	58

x. Combined with the Indian Midland, now on.
xx. Includes 3' 3/8" and 2' 6" Railways.

It is necessary to examine what relation the downward rates curve bore to the fluctuations in prices. The following table shows prices at Bombay, Karachi and Calcutta alongside with rates from them. With so many varieties of piece goods and yarn in the markets, it has been considered desirable to quote a general index number (1890–94 base) of the average annual

prices of them all, instead of selecting one particular brand[1].

STATEMENT 102

TREND OF PRICES, RAILWAY RATES AND TRAFFIC.

Year.	Prices Index No. C'tta.	Rates I. N. C'tta-C'pore.	Prices I. N. B'bay.	Rates I. N. B'bay-Delhi.	Prices I. N. Karachi.	Rates I. N. Karachi-Lahore.	Prices I. N. India Cotton Textiles.	Rates I. N. India.	Total Traffic India 000 Tons.
1890	102	100	102	100	97	100	102	103	359
1891	98	,,	98	,,	98	,,	96	103	388
1892	95	,,	97	,,	96	,,	95	99	395
1893	103	,,	101	,,	104	,,	105	98	420
1894	102	,,	102	,,	105	,,	102	97	429
1895	102	,,	104	,,	107	,,	102	96	453
1896	103	,,	105	,,	104	,,	102	96	442
1897	98	,,	103	,,	101	,,	98	94	456
1898	93	,,	96	,,	99	,,	91	96	520
1899	91	,,	89	,,	99	,,	87	89	503
1900	105	,,	101	,,	107	,,	108	87	461
1901	115	,,	102	94	106	96	104	85	548
1902	107	,,	100	,,	104	,,	102	83	542
1903	114	,,	100	,,	107	,,	106	82	559
1904	117	,,	116	,,	114	,,	121	82	559
1905	119	,,	117	,,	114	,,	113	81	596
1906	129	,,	118	90	115	,,	121	79	609
1907	134	92	123	82	124	,,	123	78	649
1908	127	,,	120	85	120	,,	121	76	640
1909	120	,,	114	,,	110	,,	119	76	665
1910	134	,,	128	,,	126	,,	141	75	682
1911	138	,,	130	,,	126	,,	145	75	695
1912	130	,,	128	82	123	,,	137	75	773

1. The following were among actual prices of cotton manufactures and rates on them.

Calcutta–Imports.

Grey shirting 8½ lb. piece at Rs. 4/5/0 i. e. Rs. 43/3/0 per md

Yarn Orange Nos. 40 to 60 per lb. at Rs. 0/12/4 per lb. i. e. Rs. 36/6/5 per md.

Rate Calcutta-Cawnpore—Rs. 1/12/8 per md. i. e. rate was 4 percent of the price of cloth and 5 percent of the price of yarn.

Bombay and Karachi-Exports.

T Cloth 4" 24 yds. 8 lb. @ Rs. 0/7/2 per lb. i. e. Rs. 36/11 8 per md.

Yarn 20s. Rs. 0/6/2 per lb.

Rate Bombay-Delhi—Rs. 2/6/4 per md. i. e. rate was 6·5 percent of price of cloth and 7·7 per cent of price of yarn.

Rate Karachi-Lahore.—Rs. 1/7/1 i. e. 3·9 percent of the price of cloth and 4·6 of the price of yarn.

Though the magnitude of reductions between centres of trade differs, it is evident that the trend for the whole railway system was towards lower rates. Over the whole country, the rates have been reduced 25 per cent during the period, whilst prices increased 33 per cent—average of quinquennium 1908–12—taking 1890–94 as 100. The increase in annual traffic is 70 per cent, being 396,000 tons in the first quinquennium and 677,000 tons in the last. This points to the rates having left a progressively wider margin for the trader. It may also be suggested that in a high priced commodity like cotton manufactures, small fluctuations in rates would go quite unnoticed. Reduction in rates would certainly have less to do with growth of traffic in their case than with coal and grain, and it is credible that but for the possibility of securing a larger share of the existing traffic, rather than creating new traffic, large reductions would not have been brought about. The reductions between inland centres can, however, be looked at in a different light; for they would, by enabling the product from the new manufacturing centres to compete in the market, create new trade. Even if they do so in case of rates from the ports and old established manufacturing areas there will be a difference of degree when an inland centre is involved.

It is also questionable if, considering the wide variety of piece-goods that entered into trade, it was desirable from the point of view, both of the railway and the consumers, to class all the piece-goods under a single rating. An examination of

the piece-goods prices current in Calcutta shows a wide range of prices beginning with mulls 44″ wide 10 yards long at Rs. -/14/9 per piece i. e. Rs. -/1/6 a yard to shirtings 35″ wide 40 yards long at Rs. 7/7/5 a piece, i. e. Rs. -/3/- per yard or 100 per cent higher.[1] For the same width as the shirting, the mull would be quoted a still lower price than Rs. -/1/6 per yard. In 1910 the quotations were Rs. -/2/8 and Rs. -/5/- per yard respectively, i. e. at the same ratio. The railways carried them both for the same charge, and even kept the rating for yarn and twist the same as for finished piece-goods. They would probably have found it more advantageous to take a little off the coarse goods and yarn and twist and add a little to the charge for the finer grades.

The steady and slow growth in traffic corresponds to the growth in the import trade in the article. The total annual average imports of piece goods have risen from 1964 million yards in the first to 2634 million yards in the last quinquennium, i. e. about 37 per cent, whilst yarn and twist have even fallen—from an annual average of 46 million lbs. to that of 41. There is reason to believe therefore that at least half of the increase of 70 per cent in the traffic carried by railways was in home products from Bombay Ahmedabad, Cawnpore, Nagpore and Madras etc.

1. 1890 Quotations.

STATEMENT 103.
IMPORTS OF COTTON MANUFACTURES.

Year.	Bombay.[1]		Calcutta.[1]		Karachi.[1]		Madras.[1]		India.	
	Piece Goods mln. yds.	Yarn & Twist. mln. lbs.	Piece Goods mln. yds.	Yarn & Twist. mln. lbs.	Piece Goods mln. yds.	Yarn & Twist. mln. lbs.	Piece Goods mln. yds.	Yarn & Twist. mln. lbs.	Piece Goods mln. yds.	Yarn & Twist. mln. lbs.
1889-90	626	14	1,042	11	138	2	...	...	1,997	46
1890-91	631	15	1,068	14	126	3	...	...	2,014	51
1891-92	572	14	1,007	14	129	3	...	...	1,883	50
1892-93	547	11	996	10	122	2	...	...	1,808	38
1893-94	635	11	1,167	13	155	2	...	...	2,130	43
1894-95	704	10	1,149	10	201	2	...	...	2,259	41
1895-96	455	10	1,005	13	107	3	...	...	1,718	46
1896-97	519	10	1,156	13	160	4	...	...	1,999	50
1897-98	496	12	996	15	169	5	...	...	1,862	58
1898-99	549	10	1,206	14	154	3	...	...	2,071	46
1899-1900	591	10	1,254	12	176	2	105	13	2,194	43
1900-01	489	6	1,155	11	141	2	121	10	2,004	35
1901-02	591	8	1,147	12	243	3	135	10	2,191	38
1902-03	496	6	1,215	9	187	2	134	11	2,110	34
1903-04	553	6	1,118	7	161	2	126	8	2,033	28
1904-05	574	7	1,222	8	252	3	145	10	2,288	31
1905-06	639	12	1,216	14	278	3	113	10	2,466	38
1906-07	614	10	1,160	10	299	2	135	10	2,320	46
1907-08	640	11	1,340	12	308	2	135	8	2,534	37
1908-09	426	13	978	9	282	3	182	9	1,994	42
1909-10	520	16	1,255	11	213	2	104	7	2,195	40
1910-11	634	10	1,139	9	310	2	121	7	2,311	33
1911-12	601	13	1,238	12	331	3	142	9	2,440	42
1912-13	762	15	1,569	15	384	3	163	9	3,025	50
1913-14	823	15	1,582	11	414	2	219	10	3,199	44

1. From 1890 to 1905 figures relate to Presidencies i.e. include minor ports with very small trade.

It is interesting to examine how the competitive centres fared as regards their supply to the consuming provinces. The following table puts in juxtaposition the source of imports into each circle. It also indicates the extent to which the home produced piece-goods extended their markets :—

STATEMENT 104.

SUPPLIES TO CONSUMING AREAS FROM COMPETITIVE CENTRES.

In Thousand Maunds.

Year.	To N. W. Provinces from						To Punjab from						To C.P.[x] from				To Nizam's territory from			
	Bombay.		Calcutta.		Karachi.		Bombay		Calcutta.		Karachi.		Bombay.		Calcutta.		Bombay.		Madras Ports.	
	Over-seas.	Home.	Over-seas.	Home.	Over-seas.	Home.	Over-seas.	Home.	Over-seas.	Home.	Over-seas.	Home.	Over-seas.	Home,	Over-seas.	Home.	Over-seas.	Home.	Over-seas.	Home.
1889-90	110	31	523	...	...	...	129	39	157	...	185	40	77	...	5	...	33	...	6	...
1890-91	108	32	494	...	...	...	126	27	116	...	179	92	92	...	7	...	39	...	7	...
1891-92	106	29	568	...	...	...	152	31	128	...	202	85	106	...	21	...	38	...	8	...
1892-93	107	31	555	...	...	...	129	35	120	...	179	71	92	...	22	...	38	...	8	...
1893-94	130	46	522	6	...	...	130	60	120	...	202	100	89	...	24	...	35	...	7	...
1894-95	89	27	509	2	...	...	107	56	144	...	221	106	58	...	31	...	38	...	6	...
1895-96	88	24	441	4	...	...	97	59	115	...	198	119	59	...	21	...	38	...	7	...
1896-97	73	19	419	4	...	...	77	39	102	...	179	89	38	...	18	...	34	...	6	...
1897-98	107	27	522	4	...	...	117	42	126	...	215	94	57	...	29	...	31	...	6	...
1898-99	152	34	593	10	...	...	177	58	120	4	270	67	100	...	30	...	39	...	...	...
1899-1900	152	34	560	8	...	...	83	118	89	4	253	77	120	...	15	...	35	...	...	...
1900-01	167	31	404	12	...	...	68	117	76	2	250	170	150	...	17	1	39	4	5	1
1901-02	196	52	549	9	1	...	58	205	124	3	332	152	174	...	15	...	49	4	9	1
1902-03	140	47	598	3	1	...	63	152	105	1	306	161	179	...	14	...	52	4	9	1
1903-04	161	35	555	3	2	...	57	145	103	3	262	184	207	...	16	...	54	3	8	1

STATEMENT 104.—*Concld.*

Year.	To N. W. Provinces from						To Punjab from						To C.P.[x] from.				To Nizam's territory from			
	Bombay.		Calcutta.		Karachi.		Bombay.		Calcutta.		Karachi.		Bombay.		Calcut a.		Bombay.		Madras Ports.	
	Over-seas.	Home.	Over-seas.	Home.	Over-seas.	Home.	Over-seas.	Home.	Over-seas.	Home.	Over-seas.	Home.	Over-seas.	Home.	Over-seas.	Home.	Over-ssas.	Home.	Over-seas.	Home.
1904-05	189	23	543	8	2	...	148	80	102	3	268	228	240	...	18	1	55	2	12	1
1905-06	181	15	509	18	2	...	182	75	104	8	255	316	261	...	20	...	71	5	13	1
1906-07	175	28	595	10	6	...	161	91	105	7	266	427	259	7	21	...	77	3	15	...
1907-08	196	17	504	10	6	...	280	31	84	1	287	350	231	4	15	...	77	...	10	...
1908-09	182	18	595	...	3	...	238	22	98	...	301	273	182	...	14	...	70	...	...	...
1909-10	252	24	518	...	5	...	273	40	112	...	294	322	266	...	18	...	73	...	...	...
1910-11	336	19	532	...	8	...	308	32	98	...	287	329	259	...	17	...	74	...	...	...
1911-12	378	14	525	...	8	...	350	9	100	...	336	301	308	...	18	...	79	...	...	...
1912-13	434	15	595	...	18	...	392	13	91	...	357	343	308	...	17	...	94	...	...	...

x. Berar included from 1898-99. Berar would in any case be influenced by Bombay and it has not been considered desirable to vitiate an analysis for the C. P. when figures were separately available before 1898-99. Hence the previous figures for Berar have not been added to those for the C. P.

It will be observed that whereas the North West Provinces found it more profitable throughout to import their overseas goods from Calcutta, Bombay's share was steadily growing, and catching up with the stable curve from Calcutta. In the Punjab, Bombay had in later years quite as great an influence as Karachi, Calcutta losing to the new port and to Bombay. In the Central Provinces, Bombay again holds the market against Calcutta, whereas in the Nizam's territories its influence against Madras is no less effective. To a great extent Bombay's supremacy in the supply of overseas piece-goods to up country centres must be due to its advantage in ocean freights, and its superiority in port and financial facilities. Karachi could hardly be called successful in capturing the Punjab market for overseas goods, for although it was the principal supplier formerly, Bombay sends an equal quantity to it in later years. But for home produce Karachi's advantage is apparent, it being less expensive to carry the Bombay product by coasting vessels and despatch it upcountry by the North Western. In the C. P. and the Nizam's territories the closer proximity of the large consuming centres to Bombay than to Calcutta and Madras would also be responsible for Bombay's predominating position in those areas. With the growth of the textile industry in the up country centres like Ahmedabad, Cawnpore and Nagpore, it will be noticed that the quantity conveyed by rail from Bombay is declining, the local

product exploiting the more adjacent markets. [1] The temporary decline in 1895–98 appears to be due to the famines. The expansion of the home industry during the period has been phenomenally rapid. The following table shows the figures for Bombay as well as for the whole country, to enable a judgment of the more rapid expansion in the rest of the country compared with Bombay. It is credible that the necessity of maintaining the product of the original manufacturing or importing centres in face of competition by up country manufacturers also induced the railways to make reductions in their rates especially where centres

1. The following statement shows the extent to which the textile industry spread in the country during the period.—

Year ending 30th June.		No. of mills working.	No of spindles 000s.	No of looms 000s.	Prod. of yarn[a] mln. lbs.	Prod. of cloth[a] mln. yds.
1898–99	Bombay	74	2,339	22		
	Rest of India	93	2,211	16		
	Total.	167	5,550	38	514[x]	102[x]
	Percentage Bombay to India.	44·3	51·4	58·2		
1903–04	Bombay	76	2,472	24	333	93
	Rest of India	107	2,532	21	245	66
	Total.	183	5,004	45	578	159
	Percentage Bombay to India.	41·5	49·4	53·6	57·6	58·5
1907–08	Bombay	79	2,654	35	358	107
	Rest of India	139	3,008	32	300	86
	Total.	218	5,662	67	658	192
	Percentage Bombay to India.	36·2	46·8	52·1	54·4	55·8
1912–13	Bombay	77	2,807	45	355	138
	Rest of India	159	3,513	48	328	136
	Total.	236	6,320	92	683	274
	Percentage Bombay to India.	32·6	44·4	48·4	52·0	50·3

a. Years ending 31st March
x Figures not available separately.
—Vide Report of Tariff Board (1927) Vol. 1, p. 5.

untouched by competing lines were concerned. Thus the G. I. P. would be induced to lower its rates to Bhusaval, so as to enable Bombay mills to compete with Nagpore mills and retain its traffic:—

STATEMENT 105.

DECENTRALISATION OF COTTON TEXTILE INDUSTRY.

Year ending 30 June.	Spindles 000s.		Looms 000s.		Total quantity of cotton consumed 000 bales of 392 lbs.	
	Bombay.	India.	Bombay.	India.	Bombay.	India.
1883-84	1,227	2,002	12	16	348	531
1884-85	1,347	2,146	12	17	392	597
1885-86	1,389	2,455	12	17	391	643
1886-87	1,447	2,421	12	19	454	726
1887-88	1,538	2,640	13	19	500	787
1888-89	1,811	2,969	13	22	563	889
1889-90	2,025	3,403	14	25	636	1,008
1890-91	1,989	3,432	15	25	763	1,179
1891-92	2,066	3,534	17	27	729	1,166
1892-93	2,064	3,598	17	28	724	1,171
1893-94	2,076	3,699	19	31	721	1,223
1894-95	2,155	3,841	20	35	815	1 342
1895-96	2,111	4,043	21	37	850	1 409
1896-97	2,181	4,270	21	38	703	1,301
1897-98	2,348	4,381	22	38	817	1,481
1898-99	2,503	4,933	22	40	957	1,675
1899-1900	2,605	4,942	22	41	745	1,453
1900-01	2,571	5,037	22	41	696	1,352
1901-02	2,524	5,032	23	43	987	1,765
1902-03	2,369	5,043	23	44	986	1,739
1903-04	2,534	5,136	24	45	972	1,745
1904-05	2,590	5,214	28	50	1,072	1,879
1905-06	2,614	5,456	29	54	1,141	2,024
1906-07	2,646	5,570	33	63	1,116	1,980
1907-08	2,735	5,895	33	70	1,079	1,992
1908-09	2,800	6,170	39	78	1,099	2,109
1909-10	2,824	6,363	42	85	884	1,935
1910-11	2,891	6,393	42	87	953	1,906
1911-12	2,885	6,500	43	91	1,078	2,050
1912-13	2,955	6,626	46	95	1,072	2,096

In the years following this general expansion, the trade in piece-goods as in other commodities was seriously disturbed by the war and its aftermath. The Government appointed the Indian Cotton Contracts Board to control trade in cotton and cotton goods so as to make an efficient supply possible for war purposes. The factories were under contract to the Government to supply goods at prices fixed on an agreed basis of profits.

The railway charges on cotton goods followed the tendency in all other commodities and there were periodical increases—in 1916, 1920 and 1922. On the North Western for example, the general classification rates, 2nd class at 0·50 pies m. m. Railway Risk continued in force until the end of March 1920, whereas the special station to station rates working out at 0·35 p. m. m. R. R. from Karachi were abolished at the end of September 1916. From April 1920 to March 1922, the charge was 0·66 pies m. m. R. R. and 0·50 pies m. m. Owner's Risk. With the new classification, cotton goods were put in the 6th class R. R. at 0·83 pies m. m. and 4th class O. R. at 0·62 pies m. m. from April 1922.[1] Compared with the 1914 minimum class rate, the 1922 minimum rate registers an increase of about 25 per cent—assuming that the trader avails himself of the lowest rate, irrespective of conditions as regards risk. This increase corresponds with

1. Figures kindly furnished by the Agent N. W. Rly., 12th Nov. 1929. It may be that the special rates were abolished on the N. W. in 1916, for they do not appear on the schedule furnished by the Agent In view of the fact however, that there is evidence available—vide infra—of the continuance of special rates on the B. B. and the G. I. P., such a step does not appear probable on the part of the N W.

that in the B. B. class rates, as the statement below shows. It should be taken into account that compared with 1913–14, the 1925–26 t. m. working cost on the B. B. was 97 per cent higher, the figures being 4·55 pies and 8·97 pies.

		Prewar	1922 & after.	Increase Per cent,
Yarn and piece-goods in bales.	R. R.	0.67	0.83	24
Do.	O. R.	0.50	0.62	24

The increase in the B. B's special rates differed from place to place. Thus :—[1]

	Prewar.	1922 & after.	Increase per cent.
Bombay–Delhi	Rs. 1-15-7 per md.	2/ 9/ 3 per md.	28
,, –C'pore... ...	1–14–1 ,, ,,	2/ 5/ 2 ,, ,,	23
,, Amritsar ...	2– 6–5 ,, ,,	2/14/10 ,, ,,	26
Ahmedabad–Bombay ...	0–11–1 ,, ,,	1/ 1/ 1 ,, ,,	55

The G. I. P. also increased their class rates. Considering the minimum rates in 1914 and in 1926 (the 1922 rate) the increase was 24 per cent plus extra risk to the public, which the railway used to undertake in 1914. On the other hand the increase in special rates was as follows :—

	Prewar.	1922 & after.	Inc. per cent.
Bombay–Calcutta ...	Rs. 1/ 1/ 1 per md.	1/ 8/ 0 per md.	41
,, –Cawnpore ...	1/13/ 1 ,,	2/ 4/ 2 ,,	24

On the G. I. P's own admission, "the railway charges on piece goods, yarn and twist on the G. I. P. have increased 50·4 per cent."[2] The unit working cost of the G. I. P. on the other hand, increased 188 per cent being 2.57 in 1912 and 7.49 in 1925–26. Taking the latter for an abnormally high figure, the G. I. P. themselves put their increase in working costs at 68·6 per cent.

1. Rates figures from statement furnished by the B. B. to the Tariff Board, 6th Sept. 1926.
2. Statement submitted to the Tariff Board, 25th Sept. 1926, para 16.

Apropos of these rates on the G. I. P. and connected railways, it is interesting to examine the extent to which these special rates were influenced by competition. In the case of the Bombay–Calcutta rate, the rate of Rs. 1/8/1 for 1333 miles is too obviously competitive to need comment. Against it the others stand :—

		Rates per md.	Rates per m.m.
Bombay–Calcutta ...	1,333	Rs. 1/ 8/1	·22 pies.
Sholapur–Calcutta—via N'pore...	1,323	" 4/ 7/2*	·64 „
„ „ —via B'bay ...	1,500	„ 3/ 0/1	·38 „
Bombay–Delhi	957	" 2/10/3	·53 „
Sholapur–Delhi	1,056	" 4/ 0/7	·74 „
Madras–Delhi	1,569	„ 4/ -/-	·48 „
Ahmedabad–Delhi...	537	" 1/12/9	·64 „

* In April 1926 Sholapur–Calcutta via Nagpore rate was reduced to 2/15/5 and via Naini to 3/1/1.

The Bombay–Calcutta rate is wholly fixed by sea competition. The Bombay–Delhi rate is again governed by the E. I. Howrah–Delhi rate and the N. W. Karachi–Delhi rate. So is the Madras–Delhi, where traffic can take the sea soute *via* Calcutta. Sholapur being an inland centre fails to derive the same advantage as Madras does.

Increases on the other lines in class rates were the same viz. about 25 per cent. It will not be far from correct to put the increase in special rates at 50 per cent over pre-war figures. On the other hand, the price of cotton goods rose to an extent which can only indicate a complete severance between the value of this commodity and the transport rate charged on it. The following table gives the actual prices of standard Longcloth and 20s. yarn in Bombay in January of each year. It will be observed that even when heavy fluctuations are disregarded and 1914 prices are compared with the falling ones of 1926, the increase is

70% in the case of cloth and about 50% in the case of yarn. The increase in class rates has therefore been far behind that in prices. The special rates, also behind hand, have risen to a greater extent.

STATEMENT 106.

BOMBAY MARKET QUOTATIONS OF COTTON MANUFACTURES.

	Longcloth per lb.	20s yarn per lb.
1912	10¼ annas.	7 5/8 annas.
1913	N. A.[X]	N. A.
1914	10 ,,	7¾ ,,
1915	8½ ,,	5¾ ,,
1916	10¼ ,,	7 3/16 ,,
1917	14½ ,,	10⅜ ,,
1918	25 ,,	18½ ,,
1919	29 ,,	19⅜ ,,
1920	31 ,,	26 7/8 ,,
1921	27¾ ,,	17⅜ ,,
1922	26 ,,	18 1/16 ,,
1923	22½ ,,	15 11/16 ,,
1924	22⅝ ,,	16 5/8 ,,
1925	20¾ ,,	15⅜ ,,
1926	17¼ ,,	12¼ ,,

N. A. not available.

It is indeed hazardous to attempt to establish any correlation between the transport charges and the volume of traffic when the normal trend of trade was so disturbed. Where transport charges form such a small proportion of the price of the article, their influence is even more difficult to trace. The table

below shows that the traffic was of a fluctuating character, making impossible a definite judgment as to its tendency. The main carrying lines register small increases, whereas over the whole railway system, the last quinquennium registers a fall of 4·1 per cent as against the first, the amounts being 775,000 tons and 743,000 tons.

STATEMENT 107.

TRAFFIC IN COTTON MANUFACTURES.

In Thousand Tons.

Year.	E. I.	G. I. P.	B. B.	R. M	N. W.	Madras.	India.
1913–14	92	159	72	57	84	58	734
1914–15	89	120	63	59	85	65	750
1915–16	91	143	70	62	93	73	803
1916–17	88	147	72	61	82	74	805
1917–18	74	154	76	62	73	80	786
1918–19	60	138	73	54	58	67	631
1919–20	73	129	76	61	77	59	731
1920–21	68	122	70	51	71	57	647
1921–22	55	144	74	59	61	66	696
1922–23	65	130	120	...	83	64	721
1923–24	63	123	122		81	60	670[xx]
1924–25	65	133	132		85	65	715[xx]
1925–26	83[a]	158	111		89	80	[b]852[xx]
1926–27	108	181	132		101	87	[b]969[xx]
1927–28	107	169	126		99	88	[b]940[xx]
1928–29	102	172	130		96	96	[b]927[xx]
1929–30	109	172	202		100	89	[b]950[xx]
1930–31	98	161	206		91	81	[b]923[xx]

xx. Class I Railways only.

a. Combined with O. R.

b. Consignments passing over more than one line or gauge reckoned as so many separate consignments. This seems to have been the case in previous years too, though mentioned here for the first time.

It is desirable to take these figures in connection with the feature of further decentralisation which obtained in the industry, making carriage from the large producing and importing centres increasingly unnecessary except in the case of special grades. The following statement shows the extent to which the consuming centres could become independent of the large producers and entrepôts. The Tariff Board – Cotton Textile Industry Inquiry – found that in 1925 of the 275 mills working in the country, i. e. exclusive of those idle and in the course of erection, only 77 were in Bombay and 58 in Ahmedabad, whereas in the large consuming centres like U. P., local factoreis catered for local requirements.[1] Pronouncing upon the causes of the recent depression in Bombay's textile industry, the Tariff Board said, " We cannot but regard the increasing competition of the up-country mills as one of the most important factors which have contributed to the present depression in Bombay." In the post-war period the up-country mills increased their production of yarn 115 mln. lbs. and of cloth 93 mln. lbs. i. e. 400 mln. yards. Thus:—

1. The following statement shows the distribution of mills working :—

Bombay.	77
Ahmedabad.	58
Rest of B'bay Presy.–Sholapur 5, Surat 5, Broach 5.	24
Madras 4, Madura 5, Coimbatore 5.	16
United Provinces–Cawnpore 10.	20
Central Provinces–Nagpore 2, Wardha 3.	7
Bengal–Calcutta 8, Dacca 3.	14
Baroda–Baroda 3, Sidhpur 3, Kalol 4.	12
Mysore–Bangalore 5.	6
Indore.	6

STATEMENT 108.

FURTHER DECENTRALISATION OF COTTON TEXTILE INDUSTRY.

Year ending 31st. August.	No. of mills working.	No. of spindles 000s.	No. of Looms 000s.	Prod. Yarn mln. lbs.	Prod. Cloth mln. lbs.
1912-13					
P. C. B'bay to India	326	444	484	520	503
				1918-19 31st March.	
1917-18					
Bombay	86	2,883	59	306	177
Rest of India	163	3,680	57	309	172
Total...	249	6,563	116	615	349
P. C. B'bay to India	33·8	44·1	50·7	50·3	51·3
				1924-25 31st March.	
1923-24					
Bombay	79	3,330	70	327	220
Rest of India	195	4,531	76	392	239
Total...	274	7,861	146	719	459
P. C. B'bay to India	28·8	42·3	47	45·5	47·9
				1925-26 31st March.	
1924-25					
Bombay	79	3,378	71	262	200
Rest of India	196	4,715	78	424	265
Total...	275	8,094	149	686	465
P. C. B'bay to India	28·8	41·7	48	38·2	43

The increasing production all over the country had its reaction also on the import trade. Not all the decrease in imports, indeed, could be attributed to this cause, for the war had a more disturbing influence on external trade than on the internal. But the inability of the imports to rise to pre-war figures even after the restoration of comparatively normal conditions suggests, as also the table above does, that the enterprise of what Ripley calls the next to stump manufacturer, rendered unnecessary the transport of goods from the manufacturer located further away from the source of raw materials. Thus:—

STATEMENT 109.

IMPORTS OF COTTON MANUFACTURES.

Year.	Bombay.		Calcutta.		Karachi.		Madras.		India.	
	Piece Goods mln. yds.	Yarn & Twist mln. lbs.	Piece Goods mln. yds.	Yarn & Twist mln. lbs.	Piece Goods mln. yds.	Yarn & Twist mln. lbs.	Piece Goods mln. yds.	Yarn & Twist mln. lbs.	Piece Goods mln. yds.	Yarn & Twist mln. lbs.
1912–13	762	15	1,569	15	384	3	163	9	3,025	50
1913–14	823	16	1,582	11	414	2	219	10	3,199	44
1914–15	573	15	1,361	13	274	2	147	9	2,448	43
1915–16	408	15	1,177	9	350	2	108	11	2,152	40
1916–17	483	10	988	8	273	1	89	8	1,942	30
1917–18	397	6	772	6	252	1	71	5	1,561	19
1918–19	383	23	513	9	146	...	37	4	1,124	38
1919–20	252	7	587	4	149	1	41	3	1,088	15
1920–21	437	25	638	13	277	2	62	6	1,519	47
1921–22	209	31	652	14	129	1	41	8	1,091	57
1922–23	291	34	933	15	218	1	65	7	1,595	59
1923–24	368	24	733	12	221	1	70	6	1,494	45
1924–25	411	27	905	16	324	1	78	8	1,840	56
1925–26	376	28	767	14	250	1	52	7	1,579	52
1926–27	347	29	885	10	339	1	82	8	1,830	49
1927–28	464	29	989	14	321	1	64	7	2,026	52
1928–29	521	21	842	12	371	...	78	9	1,986	44
1929–30	518	19	855	12	292	...	96	10	1,976	44
1930–31	181	10	344	11	184	...	69	6	890	29

The figures of traffic bookings of home goods from Bombay, available for the period 1914-1923, show what an enormous increase there was in the volume of trade even with the successive increases in rates, and dispel any suspicion that the lack of increase of traffic on the railways or of imports into ports, reflects the obstructive character of railway rates.[1] The figures in

1. The Indian Millowners pressed for a reduction of rates on cotton and cotton goods before the Tariff Board-Cotton Textile Enquiry-in 1926, claiming a reduction in rates simultaneously with reduction in unit working costs. In the case of a high priced manufactured article like cotton goods, the attempt at establishing a relation between working costs and rates as with grain and coal, appears unjustifiable.

the table below refer only to home produced goods – other figures not being available – and lead to the conclusion that the expansion in the spread of home product was at the expense of the overseas product:—

STATEMENT 110.

BOOKINGS OF COTTON MANUFACTURES FROM BOMBAY.

Year.	B. B. & connected Rlys.			G. I. P. & connected Rlys.			Total Rail exports from B'bay.		
	Piece-goods.		Yarn & Twist bales.	Piece-goods.		Yarn & Twist bales.	Piece-goods.		Yarn & Twist bales.
	Bales,	Boxes.		Bales.	Boxes		Bales.	Boxes.	
1914	5,812	451	24,044	12,033	231	7,059	17,845	682	31,103
1915	3,856	181	29,720	19,322	644	15,672	23,178	825	45,392
1916	4,924	104	20,418	25,663	448	19,479	30,587	552	39,897
1917	8,006	137	30,818	26,370	390	19,223	34,376	527	50,041
1918	12,980	21	43,888	68,007	2,502	45,973	80,987	2,523	89,861
1919	20,070	7	30,363	216,971	1,484	61,919	237,041	1,491	91,554
1920	75,589	160	37,648	173,134	5,414	93,076	248,703	5,574	130,724
1921	117,311	243	53,725	206,658	2,012	111,289	323,969	2,255	165,124
1922	136,533	651	56,710	193,445	3,698	121,533	329,978	4,349	178,243
1923	161,305	2,808	69,914	190,399	7,634	108,193	351,704	10,442	178,107

CHAPTER X.

CONCLUSION.

The cost of inland transport, as of all other transport, has during the last century undergone a change as radical as the means of locomotion themselves. But a century ago the country's trade groaned under the handicaps of a system dependent solely upon the pack-bullock carrying 100 lbs. To day the heavy goods type locomotive on the N. W. actually hauls 2,000 tons gross or about 1,300 tons net freight – wheat – from the producing areas to consuming or exporting centres, and is capable of carrying 2,200 gross and 1,500 tons net. The difference in charge to the community lies between 8d. and ·56d. per t. m.[1] Taking the index number in 1830 at 100, in 1930–31 the charge was under 6. Later when the bullock-cart was used, the index number had come down to 50, the cost being 4d. per t. m. Taking the country's inland trade, in the absence of the ton-mileage figures at an estimate of 5 million tons in 1850, the increase to-day, judging by railway traffic alone, is 2000 per cent, being 105 mln. tons on class I Railways in 1930–31,[2] with a diminution

1. Average rate charged for carrying a ton of goods one mile in 1930–31 over all class I Railways was 5·96 pies.

2. Traffic passing over one or more separate lines or gauges taken as so many separate consignments. Even if one consignment is taken to have performed only one journey on each system, the total comes to 100 mln. tons in 1930–31.

in the charge of transport of about 87 per cent[1] . The whole of the inland trade may thus be characterised as coincident with the fall in transport charges.

The increase in foreign trade is no less striking. Keeping for a moment the change in price levels apart, imports have increased from £ 8 millions in 1841 to £198 mlns. in 1928–29, an increase of 2375 per cent and exports from £ 13 mlns. to £ 254 mlns., an increase of 1854 per cent, the total foreign trade increasing from £21 mlns. to £452 mlns. i.e. 2052 per cent, during the 90 years that the index number of transport charges came down from 100 to 6.[2] Compared with 1850, the bullock cart transport era, imports increased from £10 mlns. and exports from £17 mlns. i.e. 1880 and 1394 per cent whilst the total foreign trade increased from £27 mlns. i. e. 1574 per cent.

More important for our purposes is the change in the cost of transport within the railway era itself. Taking 1871 for a base, when railways had already worked for 18 years and to a certain extent got identified with the country's trade, the average ton–mile receipt on the E. I. was 1. 24d., say 100, against 5. 35 pies.or ·50d., say 40, in 1930–31[3] . During the same period, the total traffic on the E. I. increased from 1,129,626 to 22,335,000 tons, an increase of 1870 per cent, and the total traffic originating, from 3,356,058

1. Expressed in terms of increase, the 1830 charge was about 1,280 per cent higher and the 1850 about 600 per cent higher than for 1930–31.
2. Figures for 1928–29 have been taken advisedly as showing a more normal state of business activity than what those for later years do,
3. Converted at 1/6d. to the Re., 1871 figures were worked in sterling. The 1930–31 figure consists of cost of hauling (which really means operating) a t. m. plus interest at 5½% plus average profit on a t. m.

tons over all lines to 79,658,400 tons over class I Railways—an increase of 2500 per cent.[1]

The following table analyses the constituents of these totals with the 1912 figures in addition. The 1928–29 figures are taken here by way of abundant precaution, to show the normal state of affairs. They are for Class I Railways only, those for Classes II and III not being available.

	1871.		1912.		1928–1929.	
	Total Traffic 3,356,058 Tons		Total Traffic 61,064,187 Tons		Total Traffic 94,577,200 Tons	
	Tr. In Thousand Tons.	per cent of Total.	Tr. In Thousand Tons.	per cent of Total.	Tr. In Thousand Tons.	per cent of Total.
Coal.	285	8·6	16,552	27·1	25,413	26·8
Grain & Pulse.	373	11·3	15,207	24·9	13,817	14·6
Salt.	216	6·5	2,126	3·4	2,448	2·5
Seeds.	133	4·0	3,160	5·1	4,517	4·7
Jagree & Sugar.	168	5·1	2,211	3·6	2,450	2·6
Metallic Ores.	...	...	1,478	2·3	3,324	3·5
Iron wrought.	90[a]	2·7	936	1·5	958	2·0
Cotton raw.	243	7·4	1,169	1·9	1,501	1·6
Cotton manufactures.[b]	113	3·4	773	1·2	940	1·0[c]

a. Metals included.

b. Total of cloth, piece goods and twist.

c. Of the remaining articles 8,742,100 tons were Railway materials (not on Revenue Account) and 12,717,300 tons "Other Commodities." The last accounting for 13·3% of total would justify further splitting up. Indeed it seems as though the reduction in heads from 105 in 1921-22, to 54 in 1922–23, to only 25 in 1925–26—on the recommendation of a Government of India Cmt.—has gone too far to enable a clear analysis.

1. Total of traffic passing over two or more lines or gauges taken for as many separate consignments was 105,106,000 tons.

The importance to which coal traffic has risen can easily be perceived. The whole problem of the development of the mining industry was, as noticed previously, dependent upon coal rates; and the concentrated source of supply was to a great extent responsible for the importance assumed by them, greater than elsewhere. It was primarily the reductions made therein in 1890, 1896, 1902 and 1906 that enabled the distribution of the commodity to industrial centres as far distant as 1,200 miles. As regards the grain trade, which though suffering a comparative decline against 1912, still stands second in point of bulk, the fall in Mark Lane prices and the necessity of reduction in transport charges when the producer's prices were continuously rising, has already been noted. It is doubtful if in the absence of these reductions in grain rates brought about by the rate wars between 1880 and 1910, India could have entered the world market as a supplier. It is likely that a contraction in the dealer's margin in the absence of such a reduction in rates, would have induced him to look elsewhere for his source of supply, and so leave Indian grain without a contact with the world. Indeed the constant rise in Indian prices accompanied by a fall in world prices illustrates the extent to which the produce of the country suffered previously with the high cost of transport operating as a barrier between India and the world, before the advent of the railroad. The same was the situation with regard to oil seeds prices, where the product was maintained in a competitive position, despite rising prices demanded by producers and falling ones in the world market.[1] The three most important items of

1. The oil-seed rates nevertheless lend themselves to criticism because of their classification on the same basis as grain despite higher value.

trade today, making up about half the total bulk, have thus been examined and found directly attributable in the growth of their trade to the reduction in transport charges. Another large item, salt, has been rated on a special basis ever since the institution of special rates for coal and grain,[1] and the low rates quoted after the acquisition of Sambhar, Didwana and Pachbadra to the United Provinces in 1876 have been largely instrumental in providing the Gangetic valley with Rajputana salt. Similar were the steps taken to extend the market for indigenous salt to Bengal, e. g. between 1890 and 1912 the Bombay–Shalimar rates were reduced from Rs. 1/8/3 to Rs.–/10/2, bringing down the index number from 100 in 1890–94 to 45 in 1912. Reductions between other centres brought down the general index number for the whole country to 79.

The traffic in metallic ores, is wholly the result of the reduced cost of transport, and indeed a mining, mineral or base metals industry would be totally impossible without the modern instrument of the railroad. The reduction in rates on manganese ore amounted between 1890 and 1912 to 34 per cent being Rs.–/10– and Rs.–/6/7 per ton for Jubbulpore—Howrah. The

1. Although salt was quoted special rates, they were not the same ones as for coal. In 1906, when attempts were made by the Government to bring both to a common rate basis it was alleged that this would involve a loss, as there was no likelihood of a corresponding rise in traffic. In the absence of industrial and agricultural consumption of the commodity, the argument was quite sound, for the demand for salt for table would always be inelastic as against that for coal. Besides salt is a higher priced commodity, in 1905 selling in Bombay at Rs. 87/– per ton whilst coal–Powell's Dufferyn–was about Rs. 16/2/– per ton.

index number for iron ore rates came down from 100 in 1890–94 to 43 in 1911, though it went up in 1912 to 62. The carriage of ores to the rising iron and steel industry has been charged for at 1/15 p.m.m. or 1.8 pies per t.m.[1]

The traffic in the finished product was similarly facilitated, and in fact the ores and the manufactured commodity carried for shipment to Calcutta were quoted the same rate.[2] There were reductions in the rates on wrought iron and steel and machinery before this, most of them from the ports to inland centres due to port competition, the index number coming down from 100 in 1890–94 to 80 in 1912. The reduced rates to the local industry appear to have been to enable the product to establish itself in the market, though the fact that they obtain only on shipments to Calcutta would to that extent detract from their advantages.[3]

Sugar, refined and unrefined, also experienced a reduction of rates. Between 1890 and 1912, from 100 in 1890–94, sugar charges came down to 69, jagree charges to 75 and molasses to 69. The policy of quoting special competitive rates from ports for refined

1. Rate quoted to Tata Iron and Steel Works. The same was the rate quoted to The Bengal Iron and Steel Co. Ltd., subject to conditions with regard to minimum traffic.
2. This may be difficult to justify except on the grounds of rendering assistance to new industry to establish itself.
3. The prospect of the railways assisting in the development of the country's mineral resources had always been before Danvers, and so early as in 1877–78, he recommended that the matter be given "serious consideration," so as to fulfil the expectations Lord Dalhousie had aroused as regards India's "material improvement." In 1882–83, Danvers expresses his conviction that the demand for railway materials alone would justify such development.—Vide Reports to the Secretary of State, 1874–75, 1875–76, 1877–78, 1881–82, 1882–83, 1884–85.

sugar lower than the inland rates on jagree has of late been sought to be remedied, so as to enable the indigenous product to compete with the imported one. But the charging of the same–or nearly the same–rates for jagree and sugar continued for long, and has only recently been discontinued by a general reduction in rates for jagree.[1] By giving an opportunity for the development of industry in areas was possible enabling a higher extraction of sugar from jagree than was possible in the cane producing areas, through reduction in transport charges, the railway will give the new producer an opportunity to compete. Though the facility for bringing such technical facts to the notice of the Government of India and having cases examined from a thorough equitable and economic viewpoint has been made only recently available by the creation of the Rates Advisory Committee—a stepping stone one may hope, to a full fledged Rates Tribunal—these steps are but a belated reflection of the feelings of the Railway Board expressed as early as in 1915 when the Railway executives were instructed that "no opportunity should be lost of considering the quotation of special rates when it was possible that this might result in the development of new industries to the advantage of the Railway concerned."[2]

1. Vide application of the Amritsar Sugar Mills Co. Ltd., to the Railway Board 29th March 1927 and proceedings thereon by the Rates Advisory Committee. Also Report of the Cmt to the Railway Board, 18th January 1928, and orders of the Government of India in letter from Rly. Board to Amritsar Sugar Mills Co. Ltd , 30th April 1928.
2. An instance in point may here be quoted reflecting the change in the policy of the Government. In 1913 Messrs. Martin & Co., of the Bengal Iron & Steel Co., were refused a special rate from Kulti to Karachi, which would have enabled them to supply their own cast iron pipes to Karachi municipality, in spite of the fact that special rates were quoted for many other commodities from the interior to the port. The case closed with Martin & Co. not being able to tender for the pipes. Such a complaint would now be properly investigated and if the committee were satisfied, the commodity may be quoted a special rate on its recommendation to the Government of India.—Vide correspondence between Martin & Co., Bengal Chamber of Commerce, N. W. Railway and Railway Board, 1912, 1913.

It is in the light of these facts that the great and rapid reduction in the transport bill of the country should be looked at. It has been urged that in this reduction itself lies the causes of the insecurity of its economic structure. The foreign trade in grain, for example, is sometimes regarded as a drain, leaving the country open to the ravages of drought, unprovided for in the absence of a reserve. But it is forgotten that in the very contact with the world market, has developed the strongest germ of its security. For although in normal times, grain is exported, the possibility of an import in abnormal seasons renders unnecessary the ancient institution of small communal reserves, which in any case would be less reliable than the surplus available to every little village from the whole world. The large imports of wheat from Australia in 1918–19 lend point to this contention. It is not to be forgotten that it is the same reduced cost of transport which makes Punjab grain available in Travancore in times of scarcity, as enables the export of the surplus, and that in all probability, without a normal outlet for the surplus produce, the irrigation Colonies of the Punjab would never have been developed, and little could in that event be spared for Madras.

But besides the accretion of these advantages in abnormal times, the normal position itself bears a more favourable comparison than under higher transport costs. The inability of some districts in the Central Provinces to pay their taxes because of a too plentiful harvest, has already been noted. Even after the advent of railways, whilst rice could be had in Nagpore in 1861, at 20 sers to the Rupee, in 1868 not more than 8.9

sers were purchasable for the same coin, and this at the same time as the price in Chindwara, about 70 miles distant, was about 100 per cent lower–16·07 sers to the Rupee. In 1862, the Bijapur price for rice was 23·3 sers to the Rupee, the Karwar price 8·74 sers whilst in Bijapur itself, in 1877, the Rupee could purchase no more than 5·22 sers. Neither the annual nor the local variation would be so pronounced these days and it would be fair to say that prices hardly differ today except by the charge for transport.

In the investigations here made, lack of space has made it impossible to go into problems of industrial development in further details. The reduced transport costs have been held responsible for the decay of the country's industries. But it is obvious that such decay must necessarily occur before development in the modern sense can take place. It cannot be denied though and it will stand as a damaging accusation against the railways that the reduced cost of transport has hitherto assisted the movement of agricultural and mineral produce only, and this seems principally accountable for the tardy industrial growth of the interior which was not only neglected but even hampered.[1] The grievance therefore arises not so much because of the demolition of the old, as

1. Sir F. S. P. Lely, C. S. I., K. C. I. E., of the Indian Civil Service stated, "The traffic manager wields an irresponsible power over the country commanded by his railways, which should not be entrusted to any man,.....By a slight readjustment of rates, he can and sometimes does crush a rising home manufacturer...An amended code of civil procedure occupies for days and months the wisest of the land, but is of less practical consequence to the people of a district, than the local goods tariff book. Vide speech of Sir Vithal Dass Thakersy in the Imperial Legislative Council, 1st March 1912. Many examples are available also in the evidence submitted to the Industrial Commission, the Fiscal Commission and the enquiries of the Tariff Board.

because of the indifference to the advent of the new. With the recent developments after the report of the Acworth Committee, a better policy towards industry may confidently be looked forward to. Just as the eighties of the last century began with a rate war for the development of Commerce, it is possible that the thirties of this century may see the advent of another phase of rates reductions for the products, raw and finished, of industry. To a certain extent the cotton textile industry: seems already to have reached this stage.

This of course means a reshuffling of the present schedules. But a more popular and as essential course would be that of reductions in rates. Is there such a scope for reductions? Under the convention of 1924, the Railways are required by the Government of India to provide them with a net revenue year by year, after the interest and depreciation charges have been met.[1] The contribution from the railways to the general finances of the country upto 1928–29 taken as the last normal year, has totalled up as follows since the date when the Acworth Committee computed the net loss suffered by the Government of India at £6,785,031, i. e. Rs.10.18 crores up to 1918–19.[2]

1. Under this convention accepted by the Assembly on 20th Sept. 1924, the Rly. revenues have to meet interest charges on commercial lines, and in addition to contribute 1 per cent on the capital, plus 1/5 of the surplus profits of the penultimate year, plus 1/3 of the excess over 3 crores of any surplus after meeting these. The surplus goes to a Railway Reserve Fund, on which the first charge is again the contribution to general revenues.

2. The total profits were computed by the committee to amount to £ 44,742,276, the total loss to £ 51,527,327, leaving an adverse balance of £ 6,785,031. – Vide Appendix 3, Acworth Report. Cmd. 1512, 1921. The rupee exchange was very unsettled then but the rate on the statute book was 1/4d. to the Re. at which the above figure has been converted.

	Profit or loss.
Upto 1918-19	— 10·18 crores
1919-20	+ 9·84 ,,
1920-21	+ 4·78 ,,
1921-22	— 9·27 ,,
1922-23	+ 1·22 ,,
1923-24	+ 6·47 ,,
1924 25	+ 6·78 ,,
1925-26	+ 5·49 ,,
1926-27	+ 6·01 ,,
1927-28	+ 6·28 ,,
1928-29	+ 5·23 ,,

It will perhaps be more accurate to measure the quantum of profit to the Government beginning with 1922–23, and leave out of account the results of the hectic legacy of war finance. The gain to the State then amounts to Rs. 37·48 crores, as against the previous adverse balance up to 1921–22 of 4·83 crores i. e. a net gain of Rs. 32·65 crores on working the railways between 1858 and 1928–29. In other words the State has imposed upon Indian trade and industry through railway rates and fares, a dead weight burden of Rs. 32½ crores, utilising the amount for its general financial purposes.

Is this sound policy? Granting that such revenue was utilised for the most beneficial purposes conducive to social development, it would be difficult to justify an indirect impost upon economic activity, such as is caused by the maintenance of a rate schedule on a scale higher than the one enabling the undertaking to be run on a thoroughly self-sufficient basis. The system of indirect taxation is being progressively questioned by advanced communities as unsatisfactory in point of incidence as against more direct methods of taxation. It may be urged that the Government of India would

find it of greater commual advantage to utilise the annual surplus they appropriate to the national revenue in the reduction of rates with a view to a more rapid development of large scale industries. The increased prosperity of the community will then give the Government broader backs to impose burdens upon. The State will then be fully justified in increasing its scale of income and super taxes, so as to demand a share of the national income after it has accrued. At present the transport rates, to the extent that they range higher than those necessary to enable the system to be worked on business lines, hamper the accretion of this national income. The railways will then have entered upon a second phase in the economic vitalisation of the country, by promoting its industries, after having promoted trade—or having practically created it. Even those who today regret the advent of the railway as having caused the decay of the old indigenous industry, will hail it as one of the most potent factors in the development of the country.

The implications of the 1925 convention can best be realised by the financial results of the more recent years of working. The economic depression made made its force really felt in India only after the 1929 Wall Street crash, and the 1929-30 accounts reflect the situation by showing a diminution in the net gain on Railway account of 3·77 crores, from 7·81 crores in 1928-29 to 4·04 crores in 1929-30. The contribution to general revenues—the indirect taxation upon business activity—on the other hand increased from 5·23 crores to 6·12 crores, and instead of an amount being paid to the Railway Reserve fund as was hither-

to the case, the fund was actually depleted to the extent of 2·08 crores to make up the amount of this contribution. The year 1930–31 even showed a loss on working of Rs. 5·19 crores. The contribution to the general revenues though lower than in the year 1929-30, was however higher than in 1928–29—Rs. 5·74 crores as against Rs. 5·23 crores. The amount transferred from the Railway Reserve Fund to liquidate the loss and pay the contribution amounted in this year to Rs. 10·92 crores.

From the point of view of the general revenues, the railways have been employed as an instrument to tax the country's trade and industry to the extent shown by figures below:—

Upto 1928–29	32·65 crores
1929–30	6·12 „
1930–31	5·74 „
Total	44·51 crores.

It is impossible to establish a statistical correlation between the reduced scale of rates that would have been possible without this additional levy of 44·5 crores, and the probable rapidity industrial development would have attained thereunder much though one should like to do so. Railways have however been worked ere this strictly in the interests of national economic policy. There is ample evidence available, to prove that this has been done elsewhere. The German, Austrian and Hungarian tariffs, before the war, were strictly directed towards economic development.[1] South Africa is becoming, increasingly through this means,

1. For an excellent exposition of the "Ausnahme" tariffs as well as the rates policy of these countries, vide Report made to H. M. Government in 1909.

dependent upon her own resources for industrial products. In Argentine, "the development of railways has been the largest single factor in the progress of the Argentine Republic,"[1] and industry has developed *pari passu* with trade, so that " almost every article is now produced in the factories of the city,[2] with the exception of complicated mechanisms".[3] As Ripley describes, by intensifying competition, not with a purpose to handicap the established manufacturer, so much as to put his rival on the same footing in the same market, the railroad can make for a healthy social growth. The "wide range of choice in fixing that margin of value created which it reserves for itself"[4] puts it in a particularly fit position to do it. By enabling such competition railways have practically created industry. They have made, in the words of Acworth, two blades of grass grow, where one grew before. This part has been accomplished in Indian trade. It has to be accomplished still in industry.

1. Brady G. S., American Trade Commissioner in Argentine: Railways of South America Part 1, Argentine, P. 1.
2. Brady means the city in general.
3. Brady mentions amongst industries in the highest stage of development, shoes, glass, cement, knitted wear, radio apparatus and automobile accessories. It is noteworthy that though Argentine also suffers from a variety of gauges, "no great inconvenience arises from this because of the well organised grouping of the different gauges and the fact that each group has complete access to the chief ports and commercial centres—Vide P. 13.
4. Ripley: Railroads, P. 118.

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