



RAILWAYS AND CANALS IN THE NINETEENTH CENTURY

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ABSTRACT

I am going to present my paper on the much debated railways and canals system during the beginning of our colonial period. We will try and look back at the work that has been done in the following colonial period we should then claim this with detailed data. We'll try to emulate the ways in which railways and canals had their impact on economy and see their significant contribution and see whether due to incumbency it leads to destruction of our railways and canals system which had great run before that. I'll try and develop step by step talks about canals and railways and their positive impact on Indian economy looking the pre colonial period and try to compare it with the colonial period. We'll study turn by turn and bring the analogies between the two. We are talking about that century when India was colonized by the British and India was going through his own transformation. Let's talk about canals construction in India it has been widely assumed that the canal system were not so good but actually India have the best constructions of canals they have been one of the finest over the years. In terms of dimension they were pretty big and the cross sectional were huge, the throwing capacity of canals were better, the mileage it gives the average were pretty good and they were good in numbers. The canals of India were one of the greatest it has ever been come across though their structures were permanent in the nature. Now talking about railways, the rails ran first time on Indian track in 1853. Railways plays the spectacular role in the progress of country, the beginning of the railways as we have said started in 19th century. The expansion seen with the railways were huge making it to one of the largest railways in the world. The network drawn between the railways were vast in terms of connecting it. The speed with which the railways construction has happened were enormous and marvellous. The best thing that happened with railways was the expansion of trade expansion that has come simultaneously with it which India has enjoyed in the nineteenth century. The cost cutting role the railways had helped Indian entrepreneurs to earn maximum profit with the lower time interval. Railways together with canals we had brief introduction about both of them. Now we'll talk about them in more explained way and see their role.

INTRODUCTION

Railways

Let's look at the essential what railways did for the economy. The lines were drawn every year was in huge number in every successive period more than 1000 kilometres of railway lines spread in succession. The growth of railways comes in the early 60s of nineteenth century and the late 10s of the twentieth century. The consignments were sent in the bulk numbers through the railways and much of which was thankful to the long distance connection between the railway lines. The network system grew rapidly in terms of consignment. The share of railways in terms of expansion it had was grown rapidly over more than 50 percent in the nineteenth century and it can be seen that in the early 20th century it grew to more than 75 percent in it. Like we said the nature of the goods sent through railways were extraordinary in size, it helps to reach the good in shorter span of time and the cost incurred through the railways were very low in number, that's the cost effective nature of the railways that the price of the freight were not raised because of the high transportation cost and simultaneously to high production cost, It was cheap mode of transportation the sense. The bulk transportation of goods was the nature of this transportation and the foremost thing in that regard was the nature of speed it carries. This shaken the transportation in the India which give every region to grow in a bigger sense and in some way specialisation of it . In the following times trade expanded extraordinary, momentarily the trade expansion was fruitful for both the British and the local as well as regional producer of bulk goods and they try to specialise in that sense so a form of regional specialisation can be seen. Through the railways India have become the centre of connecting the merchants of every states and let them grow at a smother pace. This also gave them the opportunity to connect with the rest of the world, which soon give rise to the exports situation in India. Before transposition through railways exist in India. The transportation was way more costly in terms of sending goods from my place to another . Previously the valleys through which goods were send was not very much reliable in the sense. Not just it was unreliable it was strenuous in existence, the roads were terrible in the nature, one cannot be sure about the true



nature of it. The other problems that were faced by the merchants were the very slow nature of the transportation through railways and the amount of deterioration of goods was very high through roads. The positive of the railways was that no restriction was imposed upon the size of the products a manufacturer can produce. Industries grew bigger in size, especially the small scale and help in expansion of it. There were few exception as the river were used in sending food. Their export of rice was the example of it. The rice was exported in the sense, that it was also a cost effective in the sense. It's even cost less in the truest sense. Bengal was one of the passage in which this was used. The civil war in America also ignited the price in the market of textile, which gave Indian manufacturer to grow at a better pace. These were the economic situation faced by the Indian economy in general. It was impossible for the manufacturer to produce goods at the same level of world that such a price, this is where the railways steps in, it provided the glitch which was required to push the scenario of Indian manufacturers. The political reasons were the one that was responsible for the expansion of railways in India by the British investor so that it was going simultaneously in hand with the western countries, as their construction was not going long before so the economic opportunities it gave was one of the reasons why the railways were built at the first hand. Much of the reason of these railways was attributed because it helps them in army expansion from one region to another. The commercial nature of the railways had helped them in expansion. So that the borrowing by the potential investor of the private nature was not so much possible, as it amounts to big investment and no private will be willing to step in because of the risky nature of the investment. British investor find their place in that where in collaboration with the Government of India they started work together. They loaned a amount of money to the government of India. Much to the western and other parts same amount loan system was applied. The government give the investors an incentive to invest their money in railways that was called guarantee every investor was assured to get that guarantee with the loan amount and if that is not received they will give them subsidies in return. This gives British investor an opportunity in a way that they were willing to invest in the railways. This investment helped the private investor to build railways in India. So all this development was build on the assurance of guarantee.

Early 1870s it was seen that the proper construction of railways was executed. Through the usage of districts communities lines were built. The East Indian railway one of the private owner was the key player in building railway lines. The central government also steps in the process in construction of these lines. The projects were also leased to the private lender and later on that time it was eventually owned by the government of India. It has also seen in the later period the acquiring of these entities by the authorities which was centrally governed. The management was held in the hands of private entities but the ownership was governed by the central authorities. The management had their own view of doing stuff and the owners had their own. No one was coming in the other person of doing work. The private company, the district governing authority all the different entities come together to build the largest network of transportation seen. Under the old contracts, totally thirty three entities working on Indian railways. These entities consist of twenty four private entities the largest of them all, not more than four government companies were part of it and lastly the state.

Indian economy sees the stretch of the network grow in number as the data provides it. In a decade it was seen that the 7678 km of stretch was increased to 25,484 km, the per km stretch and after that period there growth can only be seen rising. The Bombay, Calcutta, Madras these were the initial network where the railways lines were built. Their progress can be seen collecting the independence period data every region in the country was served by the railways just few exceptions. It rose to 56,980 km stretch till the 1920s. Till independence almost 78% of the region was covered in that period. The highlight of the point as compared to other forms of transportations was not just the cost effective. The cost per ton kilometre was reduced substantially in size, which gives the benefit over other forms of transportation. The railways were bigger, faster in transportation it was reduced to less than 94 percent which was a huge dip. The benefits accrued to the Indian economy were overwhelming for every interested party in the economy. There was a better trade-off available now, as resources unused by the railways were used by other sector and gives them more benefit over other. The Investors confidence also boosted as the first instalment of the loan they were momentous in sum. The other sectors of the economy also bear the fruits of railways they grown rapidly in size. People used the railway in broader part also. There was a ten fold increase in the usage of railways from the nineteenth to the twentieth century as was not expected that much of the focus was that to the manufacturer, but people also used extensively. In early 1870s from 19 million passengers that was changed to 183 million and exponentially in the later decades manifold.

**Railways: Length of Track, Area Served, Freight carried**

Year	A Lines open (KM)	B Line Length (KM) per 10,000 Sq Km	C Hypothetical area served as % of total area of India	D Freight '000 Metric	E Freight million ton-km
1853	32	0.08	0.0005	-	-
1859	1006	2.45	1.47	-	-
1869	6,848	16.64	9.98	3,396	-
1879	13,639	33.35	19.89	8,967	-
1889	25,589	59.76	35.85	22,606	5,591
1899	37,831	87.81	52.25	40,386	10,084
Early	50,678	117.87	70.72	61,879	15,273 1900s

Canals

India presented one of the best establishment canals in the world. They were momentous in size and not so based on temporary things. In the British India the bigger construction of canals were done. Till the late 19th century 43,800 miles of construction of canals had done which were extra ordinary in size. The cost incurred by the construction of the canals was in millions almost amounting to Rs.382.6 million. Though the return on investment was also quite good in that sense that almost 4 to 5 percent at the net return of the market. However the north and south placed a crucial role in the expansion. Irrigation was very much helpful in the sense that earlier there was the issue of drought with the help of canal system much of it was removed. The very much the returns that were on the irrigation through the public sectors were not higher and it didn't pay-off. The development didn't happen much. As well much of the restrictions were imposed on the irrigations and the raised their hands in this regard. It was majorly seen in the late 1890s, it was weather which came to the aid of farmer and peasant as well. In the same era drought after drought was seen that was the time at which the demand for the irrigations were skyrocketed. In the early 19th century, the kingdoms of Delhi and Tanjore the East Indian company showing the enthusiasm for the construction of irrigation was happening. The north as well as south both witnessing the construction of dams that were built to control the movement of water., the Cauvery delta was the one where the detailed network were created in the north as well west and east of the river were connecting. But the disrepair in both the system was evident in the early nineteenth century. It was later on addressed by the central government as the system of irrigation was pretty much ancient so the Government comes at the rescue and the revival of this lagging sector was appreciated by the both the parties. The military board was set up for much of the development of the public works. This board was responsible for the cost analysis that was strictly watched by them. The government data was strictly scrutinised. The state government was the one that was overseeing the Cauvery works. After the Cauvery work it was necessary for new Government to repairs the work and simultaneously the survey were taken in that manner. In the initial 1830s, the Grand Anicut repair was stepped up. In the year 1838, Arthur cotton re-establishes Grand Anicut which cost around Rs. 83401 to the Raja Veeraman and the permanent form of dam was constructed. The success of which was widespread, the Cauvery delta was where the Grand Anicut was attaining. Later on in the northern India, it was seen that newly restored work of the canals were seen this also made the irrigation avenue much more practical in nature. The levy of water rates was also the part of it. The distributive handle of the networks by the canals was not only handled by the Bengal Engineer but also the maintenance and the management of the entire work. In the year 1836-38 there was the reconstruction and development of the grand Anicut which was inaugurated in the Madras Presidency. The jurisdiction of madras government showed that the record of data calculated by them was 781,306 acres of mere land after that the presidency had climbed over 8 million which was tantamount to 70 percent of irrigation.



The real problem that was faced was the equitable distribution of canal water that could be efficient and equitable. In the other half of the nineteenth century the Public Works Department now working with The Crown, as it was acquired by the later. When this transfer of power was occurring the committee was headed by General Sir Richard Strachey, This committee classified the public work into two categories which was called 'The work of internal improvement' as well as the 'State Work'. By the year 1895-96 there was a 33 percent increase over the figure to Rs 38.3 million, the British India' irrigation capacity almost doubled the investment as compare to the last decade of 1885-86. The revenue on the other hand was almost raised by 47 percent, 62 percent was the net revenue. Madras, North Western provinces and lastly Punjab where the net profits were registered whereas there were also regions that were making Net losses which are Bengal as well as Bombay where they were able to counterbalance each other. The revenue was brought by the old works 'of native origin'. The top earning brackets of the provinces were seeing the real change. Madras was seeing overtaken by the Punjab while the third place has been relegated to North Western Provinces. We let the data to explain it in the following manner where the irrigation sector will show how much that sector that has evolve and the amount spent on the it. Intended to irrigate 1,50,000 acres of land by the 'Orissa undertaking' company annually leading to the profit between 9 and 21 percent. Almost 1,200,000 pound sterling was spent much of it belongs to the government. The following results were short of expectations. In 1867, the mere land of 10,000 was irrigated. The following instruction were given after falling of expectations (1) with public money they won't be constructing anything from now onwards unless the capital expended by them earned them some interest (2) the annual will be used on the ordinary public works expenditure. With regards to the English money market the borrowing at the prevailing rates of exchange added additional risk. Like money amount borrowed in the Indian currency added with the previous loans should be borrowed in India.

India's PWD. Estimated capital value of works completed

Works completed and in operation	Proportion of total Total estimated value	(%)
Canals and other works of Agriculture (irrigation & drainage)	11,000,000	29
Railways	2,750,000	7

CONCLUSION

Through both the analysis we try to bring the analogy and debated on railways and canals and system in general. Exactly for the railways, it played a spectacular in the development of Indian economy in the colonial period. The shipment through freights would have been on a higher side, if that won't have been the case. It would have been used more and more resources for sending of our goods. The international market would not have received such a high supply of Indian goods, as well as the Indian market internally could not able to receive diner goods. Agricultural output was increased due to the help of railways. As well the new jobs that were created because of that can't be underestimated, the populations also received higher amount of income, as well as the numerous other changes that were observed. But in the long run, much of the changes were almost lost and not led to a formal structure of the economy.

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