
The economics of Bullet Train in India

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Abstract

Bullet Train or High Speed Rail (HSR) are now the symbol of pride and prestige for the nations. India has always a dream of having such networks since 2009 but Budget was always a constraint for it as these projects are highly capital intensive. Recently Japan has offered Loan for starting bullet train from Mumbai to Ahmedabad. Which many people feel, is financially and economically inviable. In this paper, the need and the economics of the announced Bullet train project has been discussed.

Objective

- To find why we need a High Speed Rail
- To test is the bullet train project between Mumbai to Ahmedabad is financially viable

Research Methodology

Being an explanatory research it is based on secondary data newspaper and articles considering the objective of study descriptive type research design is adopted. The analysis is performed by the author on the available data.

Introduction

The very mention of high speed rail or bullet train often compared with exorbitantly expensive infrastructure projects. High speed rail or HSR, basically means trains running on dedicated lines at 250 km/h or higher. India has third largest railway network in the world, in terms of kilometers of track and the number of passengers who travel, It is unfortunate that it does not have a single high-speed network of Rails (HSR). Till now there are 15 countries worldwide which tried and operates in HSR. Some of them are epitome like Japan's Shinkansen bullet train and some of them became bankrupt like that of Taiwan's. Looking at these cases of success and failures at the same go one thing is sure that there is surely some relation in the Income of the passenger and demography of the cities and the success of the HSR projects, let us try to analyze the economics of the bullet train in Indian context.

The Beginning of the Story

The credit for crystallizing the high-speed rail (HSR) project goes to Prime Minister Modi and his NDA government. Before the National Democratic Alliance government, the United Progressive Alliance-led government had also committed itself to the bullet train, as was evident in the Railway Budget speeches of 2009, 2010 and 2012. Former Railway Minister Lalu Parsad Yadav owns the crown of putting this requirement for the first time in Indian Railway Budget. The 'Vision 2020' document presented by former Railway Minister Mamata Banerjee to Parliament also speaks of HSR. In 2012, the High-Speed Rail Corporation was set up. In May 2013, during former Prime Minister Manmohan Singh's visit to Japan, it was decided that the two countries would co-finance a joint feasibility study for the

Mumbai-Ahmedabad high-speed corridor. In 2014, NDA in its manifesto talked about Bullet train and projected it as key infrastructure required for the development, Political parties in India often promise before looking at the economics of its implementation and Bullet train's case is no different. But this time they are lucky to get Cheap loan from Japan.

why Bullet Train is an opportunity in India

- McKinsey report suggests, by 2025, the number of households earning ₹2,00,000-₹10,00,000 annually will have risen to 583 million from the current 50 million. More intensive urbanization as well as rising incomes would lead to people looking for fast and comfortable travel.
- HSR technology is alternative to the issues of depleting fossil fuel reserves, climate change, overcrowded airports, delayed flights and congested roads.
- Bullet Trains are Energy-efficient and environmentally clean (Powered by electricity), a high-speed electric train emits an eighth and a fifth of carbon dioxide as against automobiles and airplanes per passenger km, respectively. A double-track rail line has more than thrice the passenger carrying capacity of a six-lane highway while requiring less than half the land.
- With the average operating speeds of around 250 km/h, HSR helps bring settlements 500 km apart within two hours of each other, It can act stimulus for the development of satellite towns, helping alleviate migration to metropolises and will help developing the En-route tier ii and tier iii cities.
- HSR is excellent in safety record; with a 2,500-km network, providing high frequency, up to 14 trains per hour, the

Shinkansen ever since its inception in 1964 has maintained a unique record of no fatal accident. The TGV has been running without any accidents for the last 30 years, and more.

- It will increase investment in infrastructure, and create jobs. The project will strengthen the Make in India initiative as large number of employment opportunities will be created in the country
- It will Bring down the transportation time and cost to lowest in the world as of now it is thrice of China. The latter will bring-in massive efficiency in Indian economy.
- Massive saving of foreign exchange for the country as trains will use the electricity rather than the costly air-grade fossil fuel used in aircraft which has to be imported.
- For high density routes of 200-800 km, airlines cannot match HSR in terms of total journey time inclusive of first/last-mile connectivity with airports/stations and ancillary security checks, etc. Upto 200 km, road transport has an edge; beyond 800 km, air travel is best.
- Bullet trains if designed and constructed well could be a demonstration of liberty, expertise, prosperity, and development. Owning a HSR network has become a status symbol for nations. Past researches have also suggested that such symbols of progress also possess emotive qualities that can motivate the population to commit to national goals and augment nationalism.

Understanding the Economics of the Game

There are dimensions of economic viability and financial viability to start a mammoth project. Bullet Train is no exception. Opposite to the Financial viability; The economic viability is a larger dimension comprising revenue and expenditure on financial terms and quantify all other external costs and benefits that arise from the project such as savings in time, fuel and money of the travelers, reduction in accident, savings in vehicle operating and maintenance costs, reduction in emission, air pollution and waste generation, kick off in the form of economic development and employment and Social connect and its up-liftment, etc. If a project is economically viable but financially unviable, the agency (Here Government of India) can still bear the burden to take the project's finances. So, the conservative approach of just looking at the financial viability should be the yardstick for the Ahmedabad – Mumbai bullet train project.

The estimates of the total cost of the project by Japan International Cooperation Agency (JICA) is about Rs 1.10 lakh crore, excluding provision of another 40,000 Cr. Let us discard the additional provisions for this time. Out of this 1.10 Lakh crore about 80% (Rs 88000 Cr) comes as a loan with an interest rate of 0.1% per annum, a moratorium of 15 years and the repayment period of 50 years. The remaining 20% is borne by the Union and state governments of Gujarat and Maharashtra. Do not get surprised with such minimal interest rates this is a good deal for Japan too as the Bank of Japan lends in rates very close to zero on either side of it.

Around 10 Lakh people travel Between the two selected cities, it is estimated that at least 50,000 will travel by the proposed train. This is not an over-estimate; the actual numbers will be quite high. The average flying time by the airline is 1.2 hours. In addition to the flying time extra 3 hours are required in ground/Security clearances considering the

congestion and load at the airports. This will attract more and more people to the Bullet trains. Just for the comparison and logical estimate Blue line and yellow line of Delhi Metro has a daily ridership of 9 lakh passengers each day.

50,000 passengers per day will account 1.82 Cr passengers for the year, Airfare in this route is Rs 1500 to Rs 3000, The saving of time and safety gives bullet train an advantage to price one ticket @ Rs 2700 per passenger, which comes to whopping 4900 Cr for the year. This calculation is done only for the revenue from fare, these days if managed properly such projects can earn considerably large non-fare revenues. The three costs in the first year of operation will be operation and maintenance (O&M), Interest and part of Principal spread in 50 years to be paid to Japan. This project has the terms which enable it to start paying the principal after 15 years but for the simplicity let's assume it has to payback right from the first year of operation i.e. 2023. The O&M expenses in 2023 (first year of operation) is estimated to be about Rs 1,226 crore. The interest payment for the loan will be about Rs 88 crore and the repayment of principal spread over 50 years of payback period will be about Rs 1,760 for 2023. All cost sums to 3074 crores and leads to 1826 Crores of surplus in the first year of operation. If the project is this good why the opposition objecting it.

The Bird Eye View Problem

Many people believe that India has various other issues to focus first and spend their money judiciously they often link Bullet train to the Riches. They often claim that the capital required for the inception of the first HSR should be utilized for the betterment of existing rail network which is doing its duty of moving 90% of the passengers or completing its dream project such as “golden quadrilateral” and Sagar Mala. Past experiences have showed that all the developments should go parallel,

Some People of this country are travelling in bullocks and others in airlines at the same time. Comments such as “bullet trains like demonetization will kill everything” are politically motivated rhetoric to score points with the electorate.

Points Government should consider

- Transfer of Technology from Japan to India and Local manufacturing industrial base to be built in India, this way Government can substantially bring the cost down for the future extension for HSR network.
- Indian Railway has poor safety records, Little accident at such high speed will be catastrophic, the responsible authority should perform more frequent inspection to ensure high confidence of safety.
- The tracks can be used for both passenger and cargo.
- Human resource to be developed on the technology and in-house expertise to be built.
- Should take initiatives to garner more ridership into HSR.
- Inflation Rate fluctuation in the repayment of the loan should be kept in mind while deciding the cost of the ticket.
- Cost of the Project should not go Higher than the estimated cost due to corruption and any other unforeseen events.

- Land acquisition should be proper, at times it is the culprit for delay in the completion of the projects.

Conclusion

HSR is a growth multiplier as it leads to greater mobility. Unlike air travel, which is expensive and less energy-efficient, bullet trains will make the stations en-route hubs for economic and industrial growth. The people of India need a high-speed rail network to give wings to trade and commerce. Besides after attaining nuclear arsenal, a formidable missile programme, and creditable developments in the field of space exploration; it is the dream of our country to join the club of nations having HSR network. It will increase investment in infrastructure, ignite the economy, and create jobs with good return on investment by its margin from fare and non fare revenue. The project is financially and Economically viable and we as the citizen of India should welcome it.

References

- [1] IIM report on Bullet Train project
- [2] Newspaper articles
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