

## CHAPTER-2

### CONCEPTUAL ISSUES

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#### 2.1. Costing in Indian Railways

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The Indian Railways follows a system of fully distributed costing system to arrive at the unit costs for its activities. This system faces from severe lacunae in the sense that user charges do not get linked to the costs. Thus any complaints by the user regarding high charges, poor facilities etc. cannot be explained using the financial terms of cost and price.

From the point of view of pricing, certain characteristics of costs incurred by the Railway can be summarized below:

1. Sunk Cost: Once a Railway network has been created it cannot be put to any other use except transport. The capacity cannot be stored or transferred from one segment to another. Thus unutilized capacity has zero economic value.
2. Aggregated investment: Value of minimum investment is very large and there is not much scope for piecemeal investment. Even if one train is run initially, infrastructure is required to be created for full capacity. Therefore, till such time the full capacity is achieved the line will incur losses.

3. Joint Costs: Since most of the resources are used by heterogeneous services and cost of the resources is thus to be shared. The biggest challenge is thus apportionment of the total cost to the various user services. An efficient, scientific and transparent system of allocation of cost is thus required. The apportionment principles also need to be revisited time and again to factor in the technological and productivity related development. Unfortunately the existing costing cell is one of the most moribund sections of the setup.

## 2.2. Objectives of Pricing the Railway Service

An efficient pricing system ensures optimum distribution of services in such a manner so as to serve the needs of maximum number of people and supplying the demanded quantity of services in the most cost effective manner. Pricing is also a mechanism through which the cost of service or a product is recovered by the organization and thus is expected to be the main source of revenue for a commercial organization.

Generation of additional revenue in Indian Railways is achieved through the twin policies of growth in the traffic (tonnage and passengers) and by revision in freight rates and passenger fares.

The tariff policy on Indian Railways has traditionally been rather

conservative with regard to augmentation of revenues through increase in passenger fares but freight traffic has seen periodical increases. Over the years, the railways have by and large conformed to the principle of cross-subsidisation in order to offset the losses incurred in passenger and other coaching services through additional revenues generated by freight traffic. The main objectives of the Railways Tariff policy can be summarized as under:-

- i) Periodical adjustments in tariffs to recover the cost of operation,
- ii) Pricing of individual services on the principle of what the traffic can bear and what is the cost of service.
- iii) Giving due regard to the social benefits and social burden of providing transport service,
- iv) Cross-subsidisation between the freight and passenger segments and within the services of each segment,
- v) Making rail tariffs competitive with other modes of transport,
- vi) Optimisation of transport capacity – incentives for trainload traffic, wagon detention, etc.

- vii) Fares and freight rates are fixed on a telescopic basis which ensures that the tariff per kilometer reduces with increase in distance, This is also referred to as taper in Railway parlance.
- viii) Uniform charges on different gauges, and
- ix) Special tariffs for package deals.

### 2.3. Aspects of Tariff Calculation

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Under full cost pricing, the total costs are divided between all the users irrespective of the cost of resources used by them. Since a user of a congested and another user of uncongested line pay the same tariff, the former user is being undercharged and the latter is being overcharged.

Indian Railways uses two basic concepts of cost of service and value of service while arriving at the price for a service. While cost of service can be calculated by using different unit costs available with the Railways the idea of value of service is not very clear. The factors which affect the cost of service are:

- Loadability of the commodity.
- Empty haulage involved.

- Volume of traffic, i.e, whether movement is in train -load or less than trainload.
- Requirement of special type wagons.
- Susceptibility to loss or damage during transit.

The factors which are generally considered for assessing the value of service can be summarized as follows

- Increase in value of goods at destination.
- What the traffic can bear.
- Competition from other modes.
- Social benefits and social burden are to be taken into account.

Factors determining cost of service:

#### 2.4. Process of Tariff Adjustment

Tariff rates are adjusted not only to meet the changing needs of the economy but also to meet short-term financial requirements. However, these Ad-hoc changes in fares and freight rates lead to some anomalies and distortions in the fare/freight structure over a period of time, which are reviewed, corrected and modified by Expert Committees from time to time.

Fare and Freight structures are periodically examined by Independent High Level Expert Committees. The last three committees were; RFSE (1958), RTEC (1980) and RFFC (1993).

Based on the recommendations of the committees, corrections were applied to the tariff structure.

There is also a Tariff setting exercise undertaken on a continuous basis by a Committee of the Chief Commercial Managers of all Zonal Railways under the aegis of the age old organization called Indian Railways Conference Association (IRCA). The recommendations regarding classifications and other tariff related rules etc. are taken into account and the changes are affected accordingly.

Through the annual budgetary exercise, freight and fare rates are adjusted after taking into account increase/decrease in cost of operation, requirements of the various sectors of economy and social benefits.

Within the Railway setup there is a feeling that the existing tariff setting mechanism of the Railways is fully competent and adequate to meet the growing demand of the economy.

## 2.5. Legal Framework For Fixing Tariff

The authority to fix the fare and freight is derived from the Indian Railway Act 1989. Chapter VI of this act deals with Fixation of Rates. The relevant sections are reproduced below:

Section 30 (1) : The Central Government may from time to time, by general or special order fix, for the carriage of passengers and goods, rates for the whole or any part of the railway, and different rates may be fixed for different classes of goods, and specify in such order the conditions subject to which such rates shall apply.

Section 30 (2) : The Central Government may by a like order, fix the rates of any other charges incidental to or connected with such carriage, including demurrage and wharfage, for the whole or any part of the railway, and specify in the order the conditions, subject to which such rates shall apply.

Section 31: The Central Government\* shall have power to (a) classify or reclassify any commodity for the purpose of determining the rates to be charged for the carriage of such commodities; (b) increase or reduce the class rates and other charges.

Section 32 : Notwithstanding anything said in this Chapter, a railway administration\* may, in respect of the carriage of any commodity, and subject to such conditions as may be specified; (a) quote a station to station rate, (b) increase or reduce or cancel a station to station rate, (c) withdraw, alter or amend the conditions attached to a station to station rate, and (d) charge any lump sum rate.

Section 70 : A railway administration shall not make any or give any undue or unreasonable preference or advantage to, in favour of any particular person or any particular description of traffic in the carriage of goods.

Section 71 (1) : The Central Government may if it is of the opinion that it is necessary in the public interest to do so, by general or special order, direct any railway administration (a) to give special facilities for, or preference to, carriage of such goods or class of goods consigned by or to the Central Government or the Government of any State, or of such other goods or class of goods, (b) to carry such goods or class of goods by such route or routes and at such rates; (c) to restrict or refuse acceptance of such goods or class of goods at or to such station of carriage, as may be specified in that order.

Section 71 (2): Any order made under sub-section (1) shall cease to have effect after the expiration of a period of one year from the date of such order, but may, by a like order, be renewed from time to time for such period not exceeding one year at a time as may be specified in the order.

(3) Every railway administration shall be bound to comply with any order given under sub-section (1), and any action taken by a

railway administration in pursuance of any such order shall not be deemed to be a contravention of section 70.\*

Section 72 : (1) The gross weight of every wagon when loaded to its maximum carrying capacity, shall not exceed such limit as may be fixed by the Central Government, (2) Subject to the limit fixed under sub – section (1), every railway administration shall determine the normal carrying capacity for every wagon.

Section 73 : Where a person loads goods in a wagon beyond its permissible carrying capacity as exhibited, a railway administration may, in addition to the freight and other charges, recover from the consignor, the consignee or the endorsee, as the case may be, charges by way of penalty at such rates, as may be prescribed, before the delivery of the goods.

Section 78 : Notwithstanding anything contained in the railway receipt, the railway administration may, before the delivery of the consignment, have the right to Re-measure, re-weigh or re-classify any consignment; re-calculate the freight and other charges; and correct any other error or collect any amount that may have been omitted to be charged.

The decision regarding finalisation and fixation of freight and fare for the various transport services rendered by the Indian Railways is a centralized function and the powers are vested in Railway Board.

As discussed above by virtue of the Indian Railway Act having been passed by the Indian Parliament this power vests with Ministry of Railways and is Independent of Ministry of Finance, Planning Commission or any other Authority. In fact there is no need for the Railway minister or the Railway Board to even go to Parliament for effecting changes in the fare and freight structure.

Independence for fixing the fare and fare structure has been given to the Railway ministry in order to ensure that there is uniformity of freight rates throughout the country. Please see chapter-3 where a brief Historical background of company railways has been given which shows how the rates were different across the country. Moreover this provides for better seamless operations as far as realization of freight charges are concerned. The first exception is in case of giving station to station rates by zonal railways. The second exception is in case of giving of rebates under specified laid down schemes, where powers have been delegated to Zonal Railways.

## 2.6. Regulatory Mechanism for Railways' Tariff

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Railway Rates Tribunal set up under section 30 of Railways Act, 1989 is legally empowered to look into representations regarding unreasonable charge for haulage of goods, levy of any other unreasonable charge and contraventions of Section 70 (Undue or unreasonable preference or advantage to any particular person or any particular description of traffic). This tribunal has power of a Civil Court under the Code of Civil Procedure and Code of Criminal Procedure. This Tribunal has powers to pass such interim and final orders as the circumstances may require.

Proposals made in the Railway Budget are discussed in detail in the Parliament and are implemented only after approval of the Parliament. Standing Committee of Parliament on Railways also carries out a detailed scrutiny of the Railway Budget proposals. Railway Convention Committee deliberates upon the rate of dividend to be paid by the Railway to the General Revenue.

## 2.7. Differential Pricing

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Most firms have two kinds of costs: fixed and variable. Fixed costs don't change with the level of output. Rent, for example, has to be paid even if output is zero. Variable costs vary with a firm's output. labor and raw materials usually are variable costs – the higher the

input, the greater these costs. To stay in business, firms must earn enough revenue to cover fixed costs and variable costs.

Differential pricing is used by businesses throughout the economy, from car rentals (rates for the same car can vary dramatically from city to city and by the time of the year) and airlines (a business traveler who buys a ticket at the last minute pays more than a vacationer who buys a ticket in advance) to movie theaters (matinees are cheaper than evening shows) and utilities (large factories typically pay lower rates than homeowners).

In order to cover their fixed and variable costs, some railroads use "differential pricing." Under differential pricing, railroads price their services so that they cover variable costs and realize different contributions to fixed costs from different customers.

In a world in which customers differ widely in their willingness to pay for rail service, differential pricing is the most efficient way for railroads to cover the full costs of providing safe, reliable service across their systems. Differential pricing benefits all customers because lower prices to some customers generate revenue that otherwise would have to be raised from those with the highest demand for rail service.

A hypothetical example is discussed below which has been taken from the website of American Railroads shows why Railroads use Differential Pricing.

Imagine a railroad that has total fixed costs of \$200 and serves three shippers: a package company, a grain elevator, and a coal-fired power plant. For simplicity, assume the railroad's variable cost to serve each shipper is \$100. Assume the package company will pay no more than \$130 for rail service — any more and it will switch to truck. The grain elevator will pay no more than \$170 — at a higher rate it will lose its sales to grain grown elsewhere. The power plant is willing to pay \$200 — for rail service. The railroad prices differentially by charging the package company and the grain elevator less than the power plant, Table 2.1.

<b>Table 2.1</b>			
<b>Differential Pricing of Rail Services and Cost Recovery</b>			
	<b>Differential Shipper Rail Rate</b>	<b>Variable Costs</b>	<b>Contribution to Fixed Costs</b>
<b>Package company</b>	\$130	\$100	\$30
<b>Grain elevator</b>	\$170	\$100	\$70
<b>Power plant</b>	\$200	\$100	\$100
<b>Total</b>	\$500	\$300	\$200

The railroad covers its total costs, and each shipper makes a different contribution to the railroad's fixed costs.

The purpose of differential pricing for railroads becomes clearer in the context of "revenue to variable cost" (R/VC) ratios. An R/VC ratio of 100 percent implies that the rate (revenue) for a given rail shipment covers all of a railroad's variable costs for that shipment, but contributes nothing to the railroad's fixed costs; an R/VC ratio of 120 percent means the rate covers all variable costs and 20 percent is available to help pay for fixed costs; and so on.

For the most competitive traffic, a railroad would price itself out of the market if it charged much more than the variable costs it incurred in moving that traffic. In these cases, the R/VC ratio might be only slightly higher than 100 percent. For traffic with fewer competitive options, the R/VC ratio might be much higher.

According to Surface Transportation Board (STB) data of USA, in order for railroads to cover all of their variable and fixed costs on a system-wide basis, rail traffic must move at rates that, on average, generate an R/VC ratio of approximately 140 percent. In other words, if all rail traffic moved at that level, railroads would break even, with revenue sufficient to maintain the infrastructure and equipment in place today.

However, if railroads tried to charge their highly-competitive traffic rates that generated an R/VC ratio of 140 percent, that traffic would divert from rail — like the package company in the earlier example. A substantial majority of total rail carloads are carried at rates yielding an R/VC ratio of less than 180 percent, according to STB data, and the average R/VC ratio of all traffic with an R/VC ratio under 180 percent is only around 112 percent.

In the context of Indian Railways the concept has been applied in the creation of Goods Classification. Under this system the Goods are classified into different Classes and the freight is charged according to the Class in which the commodity belongs to. This has been discussed in greater detail in Chapter-3.

The various freight incentive schemes, system of station to station rates, dynamic pricing etc. are the outcomes of the application of the principles of differential pricing. Since marginal costing is not done in Indian Railways it is difficult to assess as to what is the contribution of the price in recovery of fixed and variable cost. Due to the same reason the R/VC percentage also cannot be calculated.

## 2.8. Conclusion

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The organization recognizes the importance of well established and time tested principles of cost of service and value of service. The concept of differential pricing has also been applied in the formulation of certain schemes for freight traffic. The Railway Ministry enjoys complete independence in matters related to fixing of tariff, which is a great advantage if the power is used judiciously. There exists an organization (RCT) which is empowered to examine any rate related issue which is brought to its notice however, its offices have not been used very often by the Railway's customers.

Despite all these empowering and enabling systems, organization and understanding of the principles of costing and pricing there hardly any scientific calculation and fixation of tariff as has been discussed in Chapter-3. Obviously existence of these systems is not enough and they have either not been allowed to function or not efficiently used by the organization.

The understanding of various issues discussed in this chapter and the observations thereon have been used in formulating the recommendations at Sr. No.1, 2,3,4,5 and in Chapter 5.