CHAPTER-1

INTRODUCTION

1.1. Indian Railways – A Snapshot

Indian Railways is the third largest Railway system in the world under a single management (MOR, 2010). At the end of 2009-10 it had a total investment of Rs. 2,03,315 crore, owned 51,030 coaches, 2,19,931 wagons and 8,889 locomotives which were run over 63,974 Route KMs and 7083 stations for transporting 887.79 MT of freight and 7382.87 Million passengers that generated a total revenue of Rs. 89,229.79 crore with active participation of 1.4 Million employees in the year 2009-10. Some salient performance for last three years parameters are given in Table 1.1

Table 1.1 Some Salient Performance Parameters of Indian Railways			
Parameter	2009-10	2010-11 (RE)	2011-12 (BE)
Freight in MT	887.79	924.00	993.00
NTKM in Millions	6,00,548.00	6,12,028.00	6,58,543.00
Freight (Cr. of Rs.)	58,501.00	62489.00	68,620.00
Passengers in Millions	7,382.77	7,831.37	8,271.47
PKM in Millions	9,04,761.00	10,07,181.00	10,84,658.00
Pass. Earning Cr. of Rs.	23,488.00	26,126.00	30,456.00
Source : MOR, Explanatory Memorandum to the Budget 2011-2012			

This immense size of the organisation and its reach to the farthest part of the country has played an important role in the movement of goods and citizens alike thereby impacting the country's economy. Indian Railways has been described variously, sometimes rather poetically as the lifeblood of the nation (Karan Kumar, 2007) or lifeline of the nation (advertisements) and at other occasions as a 'critical infrastructure facilitator' by the then (preceding) Hon'ble MoR, Mamata Benarjee (MOR, 2010). Whatever the adjectives be used there is no denying its significant role in the overall scheme of freight logistics in the country.

The changing modal composition in transport sector since Independence has had adverse implications on the market share of the Railways. Whereas in 1950-51 Railways accounted for nearly 89% of total originating freight which by 2007-08 had reduced to 30%. Highways which accounted for a mere 11% in 1950-51, had become a dominant mode with market share of 61% in 2007-08 (Table 1.2).

Railways have not only lost their traffic but have also actually failed to capture the new traffic, the latter being the primary reason for its loss of market share as the economy has grown by leaps and bounds in the recent years.

Table1.2

Modal Share of Different Modes of Transport since 1950

Year	1950-51		1970-79		1986-87		2007-08	
	Million Tonnes	%age of total	Million Tonnes	%age of total	Million Tonnes	%age of total	Million Tonnes	%age of total
Railways	73.2	89%	184.7	65%	255.4	53%	768.7	30%
Highways	9	11%	95.6	34%	224	46%	1558.9	61%
Coastal Shipping			3.1	1%	5.5	1%	59.1	2%
Airlines							0.28	0%
Pipelines							113.5	4%
Inland water transport							54.9	2%
Total originating inter regional traffic	82.2		283.4		484.9		2555.38	

Source : Planning commission, RITES report on Total Systems Study

The chronically complex conundrum that Railway is, poses immense challenges to decipher the causes for its present state. Detailed research may give leads on various sources of the present afflictions of the Railways, each claiming to be more important than the others. This dissertation aims to study, understand and prescribe some solutions to the problem of arriving at the fair fare and freight structure or rating as it is called in the Railway to provide best value to its customers and ensure steady stream of revenue inflows for the Railways.

1.2. Objectives

This dissertation is primarily meant to analyse the pricing strategy followed by Indian Railways over the years, learn about pricing methodology in some other Railway systems and attempt to prescribe some solutions to the Indian Railways. With this aim in mind the following objectives can be delineated.

1. Review the pricing policy of IR with special reference to recent changes.

2. Discuss pricing methodology in some other Railway systems of the World.

3. Assimilate and fine-tune the learning from above (2) to provide some possible solutions for Indian Railway.

1.3. Justification

There are a number of financial indicators of the last couple of years which show that the financial health of IR is a cause for concern. These either have a direct bearing on the pricing strategy of the Railways or are an outcome of the skewed pricing. Some of the indicators which have a high bearing on Railway's overall financial health are mentioned below.

1. IR uses a large number of products for its construction, maintenance and operational activities. These products account

for nearly 45% of the cost and the balance 55% is on staff cost. WPI of these commodities used by IR was about 130% in 07-08 with base year in 2004-05. The increase in costs calls for increase in prices, however no change has been done.

2. The financing of Railways Plans has undergone a major change in the last couple of years (Table 1.1). Whereas in 2004-05, the share of Budgetary Support, Internal Resource and Extra Budgetary Support was 53%, 23% and 24% respectively, the same has changed to 22%, 23% and 55% respectively in 2011-12. The total plan size has increased by 374% and the quantum of market borrowings have increased by 736% between these

Source : Explanatory Memorandum to Railway Budget for Various Years.
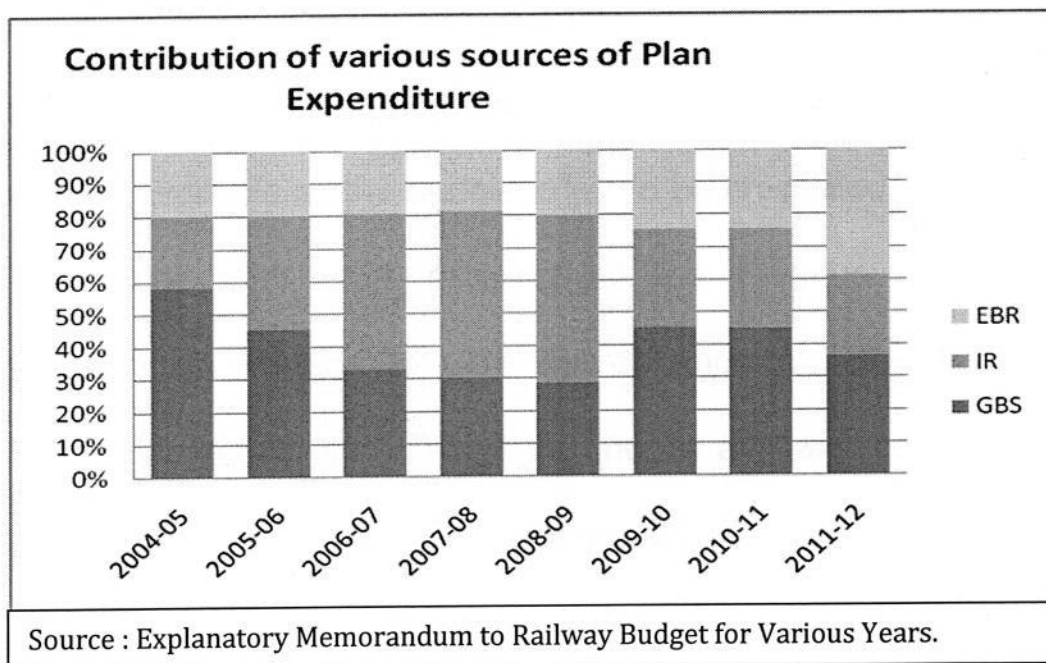
years. In absolute terms market borrowings of Rs.5364 in 2007-2008 have increased to Rs.20594 in 2011-2012. This has long

term implications for IR as the lease charges would be substantial which would have to be met from the revenues. Revenue generation and surplus after meeting the revenue expenditure would thus become all the more important in the coming years. An important aspect of this is optimal pricing to enhance yield management.

3. IR maintains five funds in which money is deposited after meeting all the revenue and capital expenses. These funds are important source for capital expenditure especially for those years when sufficient surplus is not generated. Whereas the Fund balance was Rs. 15654 Cr in 2008-09 the same has reduced to Rs. 1367 Cr. in 2010-11. It is understood that the same has further deteriorated in 2011-12 though exact figures are not available as the budget is yet to be presented.

4. The money left after meeting all the revenue expenses, payment of dividend to GoI, appropriation to DRF, Pension Fund is called surplus. This is the money available for credit to the Funds to be used for capital expenditure for the current year or if the surplus is more than extra money gets saved for use in subsequent years. Surplus was Rs.4456 cr in 2008-09 and has got reduced to Rs. O.75 Cr in 2009-10. This should be major

area of concern for Railways as this means that nothing is available for credit to the Funds and this may hamper the financing of capital expenditure.

5. In 2008-09, coaching services incurred loss of Rs.19080.58 crore. Despite this, there was surplus Rs. 4456 core. This is a cause for serious concern and clearly brings out the fact that freight traffic is subsidizing passenger traffic. For short run or as a predatory pricing for short duration to capture traffic may be all right but a sustained imbalance has deleterious impact on the competitiveness of the various freight services.

6. Despite immense economies of scale IR has lost market share from 89% in 1950-51 to 30% in 2007-08. It is possible that overpricing of freight traffic has impacted this and may be responsible for loss of market share. However, this needs to be examined and established.

Despite all the above negative indicators there has been no increase of passenger fares for the past 8 years. Not only this, number of concessions granted by Railways has increased and in some cases fares have been reduced. Freight rates have also been just tinkered for some commodities. This has resulted in further skewing the price structure. IR plays crucial and strategic

role in transport system of India and financial well being is therefore of paramount importance. Proper pricing strategy is an important factor in determining competitive advantage and financial health. The above raises an intriguing question as to what is the pricing and revenue generation strategy of IR. It is therefore important to study the pricing strategy of the organization.

1.4. Research Questions

1. How have the pricing attributes like freight classification, taper, spread, base rate, MWC, dynamic pricing, etc. varied over a period of time especially in the last 10 years?

2. What is the extent of cross-subsidy to passenger traffic?

3. What are the learning points from international experiences in rail pricing?

4. What are the possible pricing solutions for realistic pricing leading to improved revenue generation and better yield management?

1.5. Limitations

1. Pricing is an organizationally sensitive issue. Hence the exact details of the various parameters used to arrive at the final price are not available to people other than the decision makers.

2. The study is based upon the data available in public domain.

3. The dissertation will aim to provide theoretical solutions and not claim to produce any model due to above limitations.

4. The implementation of various policy options may be constrained by the existing organizational structure hence wherever it is felt so the same would be mentioned.

1.6. Literature Review

Expert Group on Indian Railways headed by eminent economist Rakesh Mohan in its report (2001) said that "Indian Railways is one of the most studied institutions on the planet" and that "For almost every conceivable question that can be asked there already exists a comprehensive and rigorous report that lays out facts and indicates the answers" (Expert Group, 2001). While the statement may have been exaggerated to create an impact there is no doubt that there exist a number of recommendations on various issues which are begging for implementation. However, one must hasten to add that from time to time these issues need to be revisited because the maladies and the solutions that existed at the time of previous reports may have undergone major changes due to changing nature of industry, economy, technology,

customer preference etc. It is in this light that the present dissertation has been undertaken.

The historical perspective on various issues, concerns and strategy on Rail pricing can be gained from well researched book by R.N. Saxena (1985) which details these issues since the beginning of the train operations in India upto the freight rationalization done with effect from 1.4.1983. Subsequent developments upto 1992 have been recorded in the Railway Fare and Freight Committee Report (1993). Changes that have taken place since then have not been recorded systematically or comprehensively and effort needs to be made to do the same. In the book Readings in Railway Finance (Verma, K.B., Ed. 1998) the author talks about different costing techniques including the one followed in Indian Railways. Proper costing is a sin-qua-non for arriving at the true cost of service and consequently helps to price the product appropriately. The information in these books would be referred to in the chapter-3 on Railway pricing theory and practice.

Expert on Indian Railway in its report (2001) analyses the lack of flexible pricing as one of the causes due to which the rate of growth of revenues on IR has been less than the growth of expenditure. The other reasons are loss of market share in the

profitable freight business, high cost of internally sourced products and services together with investments in unremunerative projects. In a report prepared by ADB (ADB, 2002) it has been observed that Indian Railways has followed a policy of sustained under pricing of passenger services to the detriment of the freight services which have cross- subsidized the passenger services. It has been commented that sustained tariff imbalance is one of the main factors due to which the Passenger revenues contribute only third of the revenue though they account for nearly two thirds of the services. It has further been observed that over-pricing of freight has made the freight traffic uncompetitive resulting in diversion of traffic to road. It has been prescribed that Railways will need to rationalize fare and freight structure to make freight rates competitive.

Taking the issue of rationalization and application of economic principles forward, Raghuram (2007) remarks that IR has used the concept of differential pricing for differential services like tatkal and superfast were leveraged for revenue generation. This contention does not appear to be correct as tatkal services cannot be strictly termed as a new or differential service and it was more in the nature of rent seeking by exploiting the demand supply

gap rather than a differential service. Moreover, superfast charges, mail express charges etc. are old concepts and IR has been using these concepts for very long time.

Similar views have been expressed by D. Gupta and M. Sathye (2007) who have observed that IR used economic principles wherein they increased the prices where it had competitive advantage and reduced the prices where it was facing tough competition. Though no examples have been given for either but it is difficult to recollect any facts for the latter situation. An important market driven measure for revenue management was regarding increase of 'export iron-ore' prices has been favorably commented upon.

Information about manner of fixing fare in Japan Railways is rather scarce. In a significant article published in JRTR, Kazhushige Terada (2001) has outlined the mechanism followed in Japan Railways since 1949. It has been mentioned that from 1949 to 1977 the fares of JNR were fixed by debate in Parliament, however the Private Railways were allowed to fix fares by applying the principle that all costs should be covered. From 1977 JNR were permitted to use the same principle of fare fixation as private Railways. In 1986, the rules were made same for both private

Railways and JNR. The prices are regulated in Chinese Railway as it is a Government enterprise (Jian Hong Wu and Chris Nash, 1998). However, the new joint-venture railways in China are permitted to fix the prices as per market conditions to recover costs and also make profits.

Thomas Sauter and Andrew Nash (2007) have documented the application of pricing strategy followed by Low Cost Airlines by some of the European Railways namely Germany, France and Italy. Martland Carl D. (2006) has brought out that in US railroad, lack of capacity and increasing marginal costs during the period 2004-06 resulted in higher prices. This situation is similar to what exists in Indian Railways as of today. Examination of comparative international freight rates published by AAR (2011) shows that freight rates of American railroads are the lowest in the world. In a concept paper published by AAR (2010a) it has been brought out how and why American Railroads use differential pricing. This concept along with pricing policies in Japan, China, USA and experiments in European Railways would be further elaborated in chapter-4.

Most of the writers agree that pricing in Indian Railways has been inappropriate and requires to be rationalized but many solutions have not been offered.

1.7. Data collection and Methodology

The choice of methodology depends upon the type of research question. Research questions at serial no. 1 and 3 are based upon review and analysis of the published work and data and aim to understand the pricing story till now, both in India and in some other countries of the world. Question no. 2 is analytical in nature, data has been collected from published sources as well as from some websites of the organizations which have been analysed and various statistical tools like correlation, central tendency, spread, comparison etc. have been used. The same are mentioned below:

1. For question nos. 1 and 3

    a. Assimilation from books, reports, articles, discussions etc.

2. For question no. 2 data analysis for:

    a. Analysis of Railways financial status.

    b. Correlation of Freight rates and Cost as measured by WPI.

c. Correlation of Truck Freight Rates with lead.

d. Freight classification analysis

e. Analysis of Passenger segments by classes and suburban/non-suburban.

f. Fare-Freight ratio analysis.

g. Issue of subsidies and cross-subsidies.

3. For question no. 3 synthesis of the above would be done to arrive at some solutions that Indian Railways may like to consider.

1.8. Chapterisation scheme

1. Introduction

This chapter includes an introduction of Indian Railways. It also includes an analysis of recent (5 years) Financial Status. This is followed by details of the dissertation namely, Objective, Justification, Research Questions, Literature Review, Methodology and Chapterisation scheme.

2. Pricing Policy of Indian Railway and Market analysis

This chapter traces the historical evolution of various attributes like freight classification, taper, spread, base freight rate, unit of charging, MWC etc. of the pricing policy adopted

by Indian Railways. Traffic Data Analysis of various parameters like, Contribution of various classes of passenger to revenue, WPI-Freight Price Analysis, Road Rate comparison is carried out here. Similarly Passenger Traffic Data Analysis of contribution of various segments to revenue. The analysis is followed by inferences and conclusions

3. *Learning from International Experience in Rail Pricing*

In order to learn from some international pricing practices, study has conducted an analysis of certain railway systems like Japan Railways, European Railways, and American Railroads.

4. *Conclusions and Suggestions*

The final chapter attempts to summarise the learning from the above study and attempts to frame possible initiatives for Indian Railways.

5. *Bibliography*

This chapter will include an indicative list of the resources that have been used in the preparation of this dissertation.