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Indian Railway Pension Fund: Adversities of a Defined Benefit Plan

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The incredible increase achieved in the life expectancy is one of the greatest triumphs of the mankind that also poses one of the toughest challenges for the modern society. This situation is mainly due to the successful implementation of the public health policies vis-à-vis social and economic developments. However, the requirements of a healthy life style during the old age cannot be just ruled out. The elderly people should choose their needs and aspirations based on their individual capacities. This can be achieved only with the adequate and equitable income protection schemes during the post-retirement days through a suitable social security system.

The viability of a social security system is critically dependent on two factors. Firstly, the willingness of the working people to save a significant part of their incomes to meet the income requirements during the post-retirement period. Secondly, the necessary economic, financial and regulatory framework must be available as per the expectations of the savers. It not only results in higher economic efficiency and better fiscal balance but also offers satisfactory incentives to work and save with flexibility. This will ultimately improve the efficiency of the labor force in the greater interest of the businesses and the nation. Such a system should be designed and implemented through the joint approaches and strategies by the public and private sectors.

But, the old age income security is an ***alien*** term to ***89 percent*** working Indians, although the percentage of older people is increasing at a higher pace compared to the growth of population. Moreover, the available schemes suffer from many deficiencies. e.g. civil servants' pension scheme is unfunded while Employees' Pension Schemes 1995 are under-funded that may constrain the fiscal position in future. The funds mobilized under the Employees' Provident Fund (1952) are poorly invested and the amount of real return generated is far lower than the similar funds in the other countries. The Public Provident Fund (1968) was started to enable the working class from the unorganized sector to accumulate sufficient funds for their old age income requirements. But people from the organized sector use it mostly for the purpose of investment and tax planning.

In this paper, the under funding problem of the Indian Railway Pension Fund (IRPF), a defined benefit pension plan for the employees of the Indian Railways (IR), is being studied. Several events that resulted in the present crisis are discussed. The ability of the railways to bear the incremental burden of pension expenses is also examined and probable remedial measures are suggested. Based on the above studies, general conclusions are drawn.

Indian Railway Pension Fund:

Indian Railway Pension Fund is a bright example of the adversities presently being experienced by the unfunded defined benefit schemes. In the year 1957, a defined benefit but non-contributory pension plan was designed for the employees of the Indian Railways (IR). The benefit structures are similar to those of the civil servants' pension plan. During the initial years, the pension payments were made from the gross traffic receipts (GTRs) of the IR i.e. Pay-As-You-Go method was followed. But it has been perceived that with the rise in the number of pensioners, the pension expenses concerned would go up manifold, as also the variations in the amount of pension payments are likely to increase. With the above perceptions, the IR decided to set up a pension fund, IRPF, in the year 1964, where regular contributions was decided to be made annually in order to build up a significant amount of corpus to meet the future liabilities. Simultaneously, IRPF was also required to pay monthly pensions to the retirees, retired on or before its establishment at that time.

A Journey to the Crisis:

With the setting up of IRPF, the Controller of Insurance worked out that an amount of about Rs.30 crore was required to be credited to the pension fund every year. This amount was estimated to meet the pension costs including family pensions for a stationary population of 10 lakh employees, who were expected to avail the pension benefits. But the IR actually credited a far less amount ranging between Rs.12 to 16 crore every year during the period 1964-65 to 1974-75 to the pension fund. As on March 1970, an actuarial examination revealed a shortfall of Rs.252.32 crore in IRPF. The amount of outstanding liability was estimated as Rs.332.34 crore as against an outstanding balance amount of Rs.80.02 crore. As a first blow to this pension fund, IRPF did not take any corrective measure till 1978 – 79. Thereafter, the IR increased the amount of annual contribution. But by that time, the stark realities started occurring. The actual pension expenses outweighed the actuarial assumptions and the level of contributions made by the IR. In 1981, an in house assessment revealed that the IRPF was under-funded to the tune of Rs.203 crore by the IR and the latter did not take any action to build up the same to the desired level. On the other hand, the accrued pension liabilities were increasing exponentially and hence the objective of setting up the fund was totally lost. During the '60s and '70s, a major fraction of the total employees was hired who are getting retired during the present days. But the requirement of any subsequent actuarial audit was not considered necessity.

Initially, a reasonable number of employees were covered under the State Railway Provident Fund (SRPF), where the scope and content were same as that of the Contributory Provident Fund (CPF) of the civil servants. But the Fourth Central Pay Commission recommended that the individuals covered under the SRPF scheme as also in service as on January 1, 1986 were deemed to have switched over to the pension plan, unless anyone opted to continue personally. Presently, all the IR employees are covered under the pension scheme.

Thereafter, the implementation of the Fifth Pay Commission recommendations has thrown the situation out of gear. The IRPF was required to shell out Rs.4832 crore in order to clear the pension bill as well as the backlog arrear payments, leading to the depletion of its reserves to a worrisome level of Rs.76 crore by the year 2000 – 01. Lastly, the Rakesh Mohan Committee estimated the liabilities of the IR towards the accrued pension benefits of the retired employees and the existing employees at Rs.40,000 crore in the year 2000-01. These developments are clearly indicating that the trains are presently heading towards a financial mishap. But who will suffer? **Tax Payers** or **the Fare-Paying Passengers?**

Wrong Signal :

The life span of an individual pension account comprises of two stages – accretion and attrition. During the accretion stage, the employees and/or the employer is required to make regular periodical contributions. These are invested in suitable instruments of a diversified portfolio in order to build up a substantial amount. The accrued amount is to be invested in a suitable annuity plan so as to meet the income needs of a pensioner during the attrition stage. Adequacy of a pension fund depends on the level of contribution and the extent of return generated during the accretion stage against a certain level of liabilities during the attrition stage. Hence, these four policies - contribution policy, funding policy, investment policy and the pension disbursement policy are to be designed carefully.

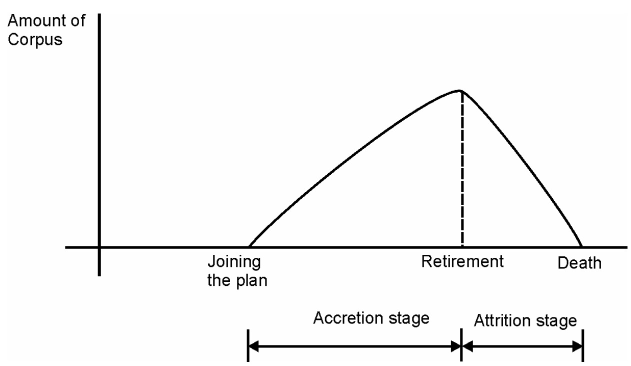

Figure 1: Life Cycle of an Individual Pension Account

Regarding contribution policy, the employees were not required to make any contribution while the employer IR did not transfer the required amount, as actuarially assessed, from time to time. In order to have a sound investment policy neither a suitable return generating portfolio was designed nor the professional fund managers were appointed. Rather than taking a little trouble for framing the provisions for investment, IRPF preferred to hold the outstanding amount as cash balance. Moreover, the amount of interest earned on the outstanding amount was significantly lower than the market rate. For example, would the entire amount of Rs.713 crore have been invested in the 364–days T-bills at a price of Rs.88.40, IRPF would have earned Rs.94.15 crore at 13.20 percent. But actually, it earned Rs.51 crore as interest that gives a yield of 7.15 percent. Irrespective of the effectiveness of the above four policy measures, IRPF has adopted a very liberal pension disbursement policy. Following the Fourth Pay Commission the benefits were extended to the personnel covered under the SRPF scheme. While, the Fifth Pay Commission recommended to link the pension benefits to the salaries of the existing employees of same rank and to facilitate the benefits of indexation against inflation. But the amount of corpus under IRPF and the rate at which the interest accumulated were not taken into account. Hence, the adoption of wrong policies as discussed above may be considered as the main reasons for this crisis.

Where the Wheels are Destined To?

Indian Railways is one of the most important entities in our social, political and economic life. Its widespread network has not only integrated the markets but also the people from every part of the country, thereby playing an important role in national integration. But the IR is on the verge of a severe financial crisis.

With the process of economic reforms, the Indian companies became very much cost conscious to protect their bottom lines. In order to reduce the transport expenses, presently, the companies are in search for other modes of transportation like, road transport by using larger trucks on the newly developed highways and pipelines for the petroleum products, etc. As a result, the share of freight traffic has come down from 89 percent in 1950-51 to 35 percent in 1997-98 while the share of passenger traffic has been reduced drastically from 68 percent to 20 percent during the same time span. It is also observed that its annual growth rate as measured in 'net tonne kilometers' has dropped from 5.33 percent during the period 1984-91 to 1.86 percent during the period 1992-99. Moreover, the completion of the golden quadrilateral as well as the east-west and north-south corridors and the development of more inland waterways with the completion of the inland river connection projects, are all likely to have severe impact on the GTRs of the IR.

The large investments made in the several projects during the last decade can be said to have caused irreparable damage to the financial health of the IR. Most of these projects were socially desirable although economically unviable, solely for political reasons. In addition to that rising employee costs and poor productivity have added to the difficulties further. During the period 1981-82 to 1998-99, the average real wage per employee of IR has gone up by 108 percent in comparison to the increase in outputs in terms of 'Traffic Units' by 82 percent. In order to study the problem of rising staff cost, a diagnostic study was carried out by RITES and worked out that excessive manpower could be more than 25 percent, while the similar outflow in terms of pension payments is in a more dismal condition. Presently, the wheels of IR are rolling at an operating ratio of about 95 percent. Although, it is desperately trying to bring down the same in order to have a smoother way, the increasing wage bill and pension expenses (about 50 percent of the GTRs at present) are strongly resisting the same.

Apart from the above factors, two other developments have thrown the financials of IR to a tighter position. The first one is due to constrained fiscal position as the budgetary support from the government has come down from 75 percent during the Fifth Plan to 23 percent in the Eighth Plan while the Ninth Plan allocated even less than 20 percent. A good source of fund for the IR is gradually drying up when the IR is in dire need of funds in order to run its wheels smoothly. The second one is the incremental cost of borrowing as the share of the tax-free bonds has declined following government policy. While a general decline in interest rate has provided some cushion by reducing the cost of borrowing but this also decreased the demand for the tax-free bonds. However, the IR is required to address the debt management issues carefully, else there is an inherent danger that IR may fall into a debt trap.

The above analysis points out the possibilities of a tough financial position in relation to the operations of the IR. Loss of market share in the profitable freight business, commercially unviable investments, poor employee productivity and declining government support will make the regular operations tougher. Hence, IR will find it extremely difficult to bear the increasing burden of pension obligations. However, the recent government policy measure regarding the withdrawal of pension facilities to the newly joined IR employees from January 2, 2004 is definitely appreciable. It is expected to bring some relief by reducing growth rate of the pension liabilities towards the existing employees.

Incremental Pension Expenses:

During the last three decades, the number of employees of the IR hovered around 15 to 16 lakh, the single largest employer in the world. But the number of pensioners is rapidly increasing from one lakh in 1975 to seven lakh in 1990 and thirteen lakh by 2002 against the staff strength of 15.4 lakh (2002 est.). Consequently, the dependency ratio has increased sharply from 17 percent in 1980-81 to 63 percent in 1997-98 to 84 percent in 2001-02. Simultaneously, the amount of pension bill has also increased from Rs.84 crore (3.20 percent of GTRs) in 1980-81 to Rs.5590 crore (14.77 percent of GTRs) in the year 2001-02. It has been estimated that the GTRs are growing at a rate of 10.92 percent per annum whereas the pension expenses are increasing annually at a rate of 17.26 percent. These figures are indicating how alarmingly the pension expenses are increasing as against the growth in revenues.

Table # 1 Incremental Pension Load

Year	Gross Traffic Receipts (in Rs. Crore)	Pension Payments (in Rs. Crore)	Retirees** (in lakh)	PP/GTRs (as percentage)	PP/Retirees (in Rs.)
1980 - 81	2624	84	2.71	3.2	3100
1990 - 91	12096	970	7	8.02	13857
1991 – 92*	13730	1180	7.4	8.59	15946
1992 – 93*	15690	1200	7.9	7.65	15190
1993 - 94	17946	1500	8.3	8.36	18072
1994 - 95	20101	2005	8.7	9.97	23046
1995 - 96	22418	2090	9.1	9.32	22967
1996 - 97	24319	2615	9.6	10.75	23240
1997 - 98	28589	3367	10	11.78	33670
1998 - 99	29619	3425	10.4@	11.56	32933
1999 - 00	32939	3529	10.9@	10.71	32376
2000 - 01	34880	4832	11.3@	13.85	42761
2001 - 02	37837	5590	13#	14.77	43000
2002 – 03$	41538	5990	NA	14.42	-

$ Budgeted Estimate
Source: Economic Survey 2002-03 and 2000-01
*www.indiainfoline.com,
**Mathur (1998), @ Srinivas and Thomas, # Business Line and author's calculation

Projections of Future GTRs and Pension Expenses:

Assumptions:

a. The present benefit structure as recommended by the Fifth Pay Commission will continue.
b. The life expectancy for the retirees will be gradually increasing.
c. The number of pensioners will increase at the same pace as experienced earlier.
d. The railways have to compete with the civil aviation industry and the bus operators in the passenger traffic segment as also with other alternative modes of transportation in the goods segment.
e. The railways will continue to provide the social services as it offers presently.

Based on the above assumptions, the pension expenses are feared to increase at a compound rate of 17.26 percent per annum while the annual growth of gross traffic receipts is expected to be 10.92 percent as it was experienced during 1990-91 to 2001-02. This period primarily comprised of the first decade of economic reforms. Moreover, the period not only experienced economic boom but also witnessed a recessionary phase while recording a rapid growth of the service sector, which outperformed the manufacturing sector. Hence, the same rate is expected to continue during the next two decades for the operations of the IR.

Table # 2 **Projected Pension Load**

Year	2003-04	2004-05	2009-10	2014-15	2019-20	2024-25
a. Gross Traffic Receipts	46556	51640	86703	145,574	244,418	410,376
b. Pension Payments	7686	9013	19981	44,296	98,201	217703
(b) as percentage of (a)	16.51	17.45	23.05	30.43	30.43	53.05

The above projections indicate that the railways will spend about one-fourth of its earnings to meet the pension bill by the end of this decade, while by the year 2024-25, the IR may have to spend more than half of its earnings as pensions.

Proposed Tracks:

The IR is required to take proper corrective measures in order to honor its accrued pension obligations. It must be noted that all the four policies, discussed earlier, are closely interrelated. A pension fund with no contribution or low contribution needs high level of funding requirements as well as aggressive investment policy in order to make the requisite amount towards pension payments. If there is any deficiency in any of the above policies, others are to be altered accordingly. Global experience suggests that whenever any pension plan faces any financial crisis, benefit level has been changed accordingly. It may be done through several ways, like, increasing contributions, increasing retirement age, withdrawal of indexation benefits, etc. The IR is also required to undertake major systematic restructuring programs – benefit reduction, incremental contribution or the modification of the investment norms in order to address the crisis properly.

Internationally, as previous experience suggests, under-funding of any pension plan has led to the following results:

- Default: This occurs when no other option is available. But in India, being a politically sensitive issue, it cannot be allowed to occur.

- Bailing out by the government: This is done at the cost of the general public welfare. But the acceptability of this factor is to be considered in the light of the mounting fiscal deficit on the government. However, the recent bail out packages for Unit Trust of India and the weaker banks indicate that the government may proceed for this option in future. Except for the critics' writings in newspapers and magazines as well as a tighter fiscal position, the government need not have to face any dire consequences. But placing the costs of inefficiencies and irregularities frequently on the general taxpayers should be examined carefully.
- Restructuring the benefit plans presently given to the retirees and those to be offered to the future retirees.

The first step of the restructuring program should be to reduce the rate of accrual of pension benefits in future. In this regard, the IR should withdraw the pension benefits for the new recruits. Rather these personnel should be encouraged to join the defined contributory schemes to be designed under the regulations of the Pension Fund Regulatory and Development Authority (PFRDA). The IR should be responsible only to meet the funding requirements as an employer. However, the administration and management of the fund should be independent of the railways, while the deficiencies of the existing schemes like, the constraints on labor mobility, design of a diversified investment portfolio in order to maximize the returns at an acceptable level of risk, etc. must be taken care of.

The second step is to address the problems of the existing retirees and the current employees by setting up a separate fund, jointly by the government and the railways. An autonomous board of trustees, independent of the IR, should look after the operations of the fund, by duly setting the rules governing the investments and the level of benefits, if possible. In this context, the services of the professional fund managers may be hired in order to ensure a reasonable growth while a life insurer may be assigned to design the benefit plans (if any alteration is possible) and to examine periodically regarding the adequacy of the fund to meet the objective. The operation of the fund should be flexible enough to allow changes like, the transfer of pension rights, etc. from time to time. The government may also explore the possibilities of partly privatizing the operations of the Indian Railways in order to raise funds, by divesting the locomotive works and coach factories as independent entities. Private companies should operate these plants to meet the diverse requirements of the domestic and international markets, by using the facilities more efficiently. Simultaneously, the pension liability for the employees working in these entities will also be sold. The IR will be benefited not only with the reduced pension liability but also with the cheaper supplies with the incremental market efficiency due to the forces of competition.

Anticipated Destination:

The non-contributory defined benefit plans are overwhelmingly welfare oriented. But there is an urgent need to examine the trade-offs explicitly between the needs of the employee welfare on the one hand and its financial consequences on the other. The welfare nature of any plan seriously neglects the administration and management of the same through high degree of professionalism and effective governance. These characteristics indicate the dire necessity to modify the plan. The modified scheme should incorporate the required level of professionalism with regard to the management of the pension fund and the administration of the pension benefits. The governance of the plan must address issues like, the composition of the board of trustees, periodical examination of the actuarial soundness, fiduciary responsibility of the trustees and the investment managers towards the members of the fund, setting suitable investment standards, etc.

However, the IRPF is required to carry out a lot of groundwork, before making any move towards the modifying the plan. The existence of the problem must be considered and the stern reality that the growth of its size will ruin the IR financially should be accepted. Accordingly, right signal should be intimated to the general public at large and to the railways employees, in particular. After all, the IR has maintained enviable and healthy labor relations and this fact must not be ignored or compromised. Therefore, the relevant issues must be discussed openly among the stakeholders. Simultaneously, the employees should also consider carefully and accept the change owing to incremental burden on pension expenses, diminishing governmental support and lower operating efficiency. Thereafter, financially suitable and socially feasible solutions must be obtained. The right solution should enable the railway employees to have a happy and peaceful retirement life and should also ensure that it must not be an unbearable burden to the taxpayers' and the fare-paying passengers.

References:

1. Reforming India's Social Security System by Mukul G. Asher, May 2003
2. Institutional Mechanism in Pension Fund Management: Lessons from Three Indian Case Studies by P.S.Srinivas (Indian School of Business – Hyderabad) and Sushan Thomas (IGIDR – Bombay), December 2002.
3. Greying of the Indian Ralways by S.N. Mathur (1998), Technical Report, Asian Institute of Transport Development, New Delhi.
4. Railway Ministry keen on Viability, Business Line, May 17, 2001
5. Rakesh Mohan Panel for new Railway Pension Fund by Hema Ramakrishnan, Business Line, June 25, 2001
6. The Indian Railways Report, 2001

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