Chapter 5

Institutional Mechanisms in Pension Fund Management: Lessons from Three Indian Case Studies

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5.1 Introduction

Social security, and pensions in particular, have increasingly occupied centre stage in international policy debates over the last decade. Much of the discussion has been driven by rising fiscal strains that are being placed on publicly run pension systems by a combination of adverse demographics, generous benefits, and political opposition to increasing taxes. Today, much of the world is considering moving from pension systems where the government provides social security to current retirees using taxes paid by current workers to one where individuals provide for their own retirement through savings in the form of individual retirement accounts (IRAs) managed by private asset managers.

In terms of implementation, Latin America has been at the forefront of this global reform movement with ten countries in the region having introduced IRAs.[2] Chile led the world in 1981 and the other countries followed - each with a different version of a pension system but having IRAs as its core. Several countries in eastern Europe have also implemented reforms to their pension systems.

In much of the developed world, pension reform is still at a discussion stage. In the US, social security system reforms involve discussions about

[1]We are grateful to Nageswara Rao, S. N. Mathur, Ajay Shah, and participants of the Invest India Pensions Roundtable in New Delhi for comments and suggestions.

[2]Colombia and Peru (1993), Argentina (1994), Uruguay (1996), Mexico and El Salvador (1997), Bolivia (1998), Nicaragua (2000), and Costa Rica and Ecuador (2001).

moving from a fully publicly run system to one involving a greater role for the private sector. Although the debate is far from reaching a consensus, a recent Presidential Commission has recommended moving in such a direction. In Europe, with the possible exception of the UK and the Netherlands, almost all countries face pension crises, with Germany and Italy potentially facing the biggest problems.

In Asia – with the notable exception of Japan – the demographic problem is less severe since most countries have relatively young populations. Japan faces a pension crisis of immense proportions as adverse demographics combine with a poorly funded system and a weak economy. The problem in the other Asian countries is the small fraction of the population that has access to a formal social security system and the generally poor governance of retirement assets.

In India too, the pension system is very small. There is little formal retirement income security for the vast majority of old people in India. Current pension and provident fund systems cover less than 11 percent of the economically active labour force. The rest either rely on informal mechanisms such as children's support or personal savings to finance their old-age or are condemned to destitution. For those who are covered, both defined benefit and defined contribution retirement income systems are prevalent in India.

The recent sharpening of the Indian government's focus in reforming systems for retirement income security and pensions has been driven primarily by a growing fiscal problem. When the implementation of the recommendations of the Fifth Pay Commission resulted in much higher fiscal outlays to finance pension payouts to government employees, the government set up a several committees to examine different issues relating to pensions in India. The Old Age Social and Income Security (OASIS) project focused on the issue of extending the coverage of formal pension systems to the currently uncovered informal sector.[3] The OASIS report Dave (2000) has strongly recommended an IRA like structure for the Indian pension system. This aims not only at attempting to expand the reach of the pension system

[3]The Bhattacharya Committee examined issues relating to civil service pensions. A Working Group chaired by Mr. A. M. Sehgal assessed the Government of India's pension liabilities.

to a wider set of individuals, but also to address the problems of returns for retirement savings.

Retirement income schemes in India face one or more of three major issues. Defined benefit schemes - such as those available to central and state civil servants, certain other public sector employees, and the more recent Employees Pension Scheme (EPS) - are either unfunded or inadequately funded to take care of their liabilities. Defined contribution schemes such as the Employees Provident Fund (EPF) and other provident fund schemes under the EPF umbrella are poorly invested and have delivered poorer returns compared to the rest of the world. Finally, both types of scheme often face problems of poor governance. In this paper, we highlight these problems using three case studies. Each case draws attention to one of the above issues.

We use these cases to examine issues of retirement income security in India with the following focus - governance, funding, and investments. Our objectives in this paper are to:

1. Analyse why such problems arise and understand if the problems have their basis in policy about pension fund systems, or financial market infrastructure, or indeed, both, and

2. Propose some solutions to remedy these problems.

One of India's largest employers - the Indian Railways - faces a financial crisis in the funding of its defined benefit pension plan. If recent trends continue, the Indian Railways faces the prospect of having to payout almost half of its gross traffic receipts as pensions to its retirees by 2020.

The recent securities market scam in India, which involved the Seamen's Provident Fund (SPF), highlights the importance of good governance in a retirement income scheme. SPF has potentially lost one-third of its assets in the April 2002 gilt securities misconduct episode.

India's largest retirement income scheme, the Employees Provident Fund (EPF) suffers from a poorly designed investment regime. Its investment practices have ensured that the EPF has historically barely broken even in

terms of real returns. In addition, recent reports indicate that the EPF and the schemes under its umbrella suffer from poor governance as well.[4]

In the context of the Indian government's efforts at pension reform, it is important to ensure that the performance of these schemes is improved through better investment principles combined with better practices of fund management. If existing systems can be improved first, this could make social security systems more attractive to a larger audience which could, in turn, increase the coverage of social security. Therefore, a relook at pension fund management practices is worth the while. If India's pension system is to be viable, strong financial market institutions for regulation and monitoring to enforce principles of good governance have to be in place.

The paper is structured as follows. We begin by analysing each of the three pension funds mentioned above as highlighting a key area of concern – funding in the Indian Railway Pension Fund in Section 5.2, investments in the Employees Provident Fund in Section 5.3 and governance in the Seamen's Provident Fund in Section 5.4. In each case study we discuss the problem and its implications on investment of retirement assets. We examine the international evidence on how these problems have been addressed. At the end of each case study, we propose specific policy recommendations to address the weaknesses in the retirement income scheme . In Section 5.5, we draw general conclusions based on the above cases.

5.2 The Indian Railways Pension Fund - A Funding Crisis

The Indian Railways (IR) is India's single largest employer with over 1.6 million employees.[5] A non-contributory, defined benefit (DB) pension plan was established in 1957 for IR retirees. The scheme paid retirement benefits out of the current year's general revenues. In 1964, a pension fund was established to which contributions were to be made by IR every year to fund its accrued pension obligations, as well as to pay pensions to retirees on behalf of the IR.

[4]There have been several media articles in the second quarter of 2002 which report mishaps and fraud in individuals receiving pension.

[5]This section draws heavily on Mathur (1998)

5.2.1 The Structure of IR Pension Payouts

The number of pensioners of the IR has increased from about 270,000 in 1981 to over a million at present. Over this period pension payments by IR have increased from about Rs.800 million (3.1 percent of gross traffic receipts) in 1980–81 to Rs.58 billion (15.4 percent of gross traffic receipts) in 2001–02. The compound growth rate of gross traffic receipts during 1990–91 and 2001–02 was 10.9 percent, while the compound growth of pension payouts was 17.7 percent over the same period. If these trends continue at the same rates of growth, pension payments by the IR will reach a quarter of gross traffic receipts by 2010 and will be almost 45 percent of gross traffic receipts by 2020. While this is obviously a simplistic projection and can be improved upon, it indicates the magnitude of the problem facing IR.[6]

How did this explosive growth of pension liabilities come about? One reason is that the large number of employees, hired during the employment boom of the sixties and seventies, are now reaching retirement age. Another is that the implementation of successive Central Pay Commission awards has increased wages at all levels. Lastly, improved career advancement possibilities have increased average wage at retirement. All these generated increased pension benefits given the existing benefit formulas.

This large number of retirees has a direct impact on the dependency ratio[7] which has increased from 0.17 in 1980–81 to 0.63 in 1997–98 and is soon expected to get close to 1. This implies that, in the near future, there will be one working railway employee for each retiree. The average annual pension paid per retiree has increased from about Rs.12,000 in 1990–91 to about Rs.46,000 in 2000–01 and increases are expected to continue into the future (see Table 5.1).

5.2.2 The Problem of Transparency of the IR Pension Fund

The IR pension fund was created as one to which contributions to fund pension liabilities were to be made on an actuarially sound basis. However,

[6]There is little data available in the public domain on the basis of which a more scientific assessment of IR's pension liabilities can be made. The analytical basis for concrete proposals for reform of IR's pension system will depend to a large extent on increased transparency on the part of IR regarding the financial status of its pension plan.

[7]The dependency ratio is the number of railway pensioners to number of working railway employees.

Table 5.1 Pension payments by IR

Year	Payments (Rs. million)	Retirees (million)	Average annual pension per retiree (Rs.)
1990–91	8660	0.70	12371
1991–92	10400	0.74	13999
1992–93	12510	0.79	15920
1993–94	14880	0.83	17956
1994–95	16860	0.87	19344
1995–96	21170	0.91	23149
1996–97	25090	0.96	26206
1997–98	35090	1.00	35079
1998–99	41440	1.04	39724
1999–00	40180	1.09	36995
2000–01	51670	1.13	45766
2001–02	58000	n.a	n.a.

Source: Ministry of Finance (2001), Mathur (1998), and authors' calculations.

adequate contributions have almost never been made by IR. The pension fund has no significant assets and liabilities are serviced out of general revenues.

At the inception of the pension fund in 1964, it was estimated that a contribution of about Rs.300 million per year would have to be made to keep the fund in actuarial balance (under the assumption of a closed group of about a million employees). During 1964–75, actual average annual contributions to the fund ranged between Rs.120-160 million. The fund revealed an actuarial shortfall of Rs.2.5 billion in 1970. While contributions were stepped up subsequently, they continued to be short of actuarially required amounts. By 1981, the fund showed a shortfall of Rs.2 billion.

Since then, actuarial assessments have been rarely carried out and if they have been, results have not been made public. In addition to the shortfall of actual contributions compared to the amounts required, many of the demographic assumptions made in the early actuarial assessments are no longer valid. Mortality and morbidity experiences have undergone significant changes, the number of employees and pensioners has increased far beyond initial expectations, wages have undergone dramatic upward revisions, and benefit formulas have been made more generous. All these point to the likelihood that an actuarial study, if undertaken in the near future, would most likely indicate that the IR's pension fund is drastically under-funded.

5.2.3 The Problem of Long–term Growth in Revenues for the Indian Railways

IR faces a major challenge in its ability to finance its pension obligations going forward (as can be seen in Table 5.2). In addition to the sheer growth in benefits already promised, IR also faces other challenges that will not make it any easier to service this pension debt.

Table 5.2 Indian Railways: Operating Revenues vs. Pension Expenditures

Year	Gross traffic receipts (GTR) (Rs.billion)	Pension payments (PP) (Rs.billion)	PP/GTR	Growth of GTR (yoy) (%)	Growth of PP (yoy) (%)
1980–81	26.2	0.8	3.1		
1990–91	121.0	9.7	8.0		
1991–92	137.3	11.8	8.6	13.5	21.6
1992–93	156.9	12.0	7.6	14.3	1.7
1993–94	179.5	15.0	8.4	14.4	25.0
1994–95	201.0	20.1	10.0	12.0	34.0
1995–96	224.2	20.9	9.3	11.5	4.0
1996–97	243.2	26.2	10.8	8.5	25.4
1997–98	286.6	33.7	11.8	17.8	28.6
1998–99	309.0	41.4	13.4	7.8	22.8
1999–00	331.3	40.2	12.1	7.2	-2.9
2000–01	354.3	51.7	14.6	6.9	28.6
2001–02	377.2	58.0	15.4	6.5	12.2
2002–03	418.3	68.2	16.3		
2003–04	463.8	80.3	17.3		
2004–05	514.3	94.5	18.4		
2009–10	862.4	212.9	24.7		
2019–20	2424.3	1082.2	44.6		

Source: `http://www.indiainfoline.com/econ/andb/infr/infr10.html` and authors' calculations

Operationally, IR is losing out to alternative modes of transport in both freight and passenger traffic - IR's share of freight traffic has declined from almost 90 percent in the early 1950s to about a third now, while its share of passenger traffic has declined from about three-fourths to less than a fifth over the same period. These trends show no signs of abating.

Financially, IR faces at least two major challenges. First, budgetary support from the Central Government has been declining - from about three-

quarters of all outlays in the late 1970s to less than a quarter now. It is expected to decline further as the Central Government itself faces a severe resource crunch. Second, IR's borrowing costs have been increasing as its share of tax-free bonds decline under government policy, although recent declines in interest rates have offered some respite to IR. IR also faces significant debt management issues to ensure its continued financial viability.

The above analysis points to the fact that a pensions crisis looms at IR. IR will find it extremely difficult to service its pension obligations in future based either on funding from it's own revenues, or from the Government of India.

5.2.4 Principles for Funding for Pensions

At the root of the problem for the IR's pension fund is the fact that IR did not fund its pension obligations on an ongoing basis. IR is a classic case of a pensions crisis brought on by lack of funding. The IR has a defined benefit pension plan whose liabilities are not funded. Since IR has made a promise to its employees to pay their pensions after retirement, IR carries the entire risk of the plan being underfunded. The pension liabilities are being serviced out of current income and this is posing an increasing threat to the financial viability of IR.

Under the assumption that the benefit structure is defined (and cannot be changed), three issues are key to ensuring the viability of a defined benefit pension plan – *contribution policy*, *funding policy*, and *investment policy*.

- *Contribution policy* is the issue of how much employees pay into the pension plan in order to participate in its benefits. In the case of IR, the contribution rate i.e. percent of wages contributed to the pension plan, is zero. Employees do not contribute to the plan.
- *Funding policy* is how much IR puts aside (usually, from its revenues) on an ongoing basis in order to fund its obligations. Thus far, this has been insignificant.
- *Investment policy* determines how the contributions of the employees and funding by the employer are invested in the financial markets. Thus far, since IR's pension fund has few assets, investment policy has been largely irrelevant.

However, IR will have to tackle these issues if it proposes to run its pension plan on a sustainable basis. It is important to note that all three policies interact closely. A pension plan with a low contribution rate can have a high funding rate and an aggressive investment policy which together can make the plan financially sustainable. If investment returns are high enough, both employer and employees can gain by reducing both contribution and funding rates keeping the overall plan's ability to finance its liabilities unaffected. An extremely conservative investment policy will generally call for high contribution and/or funding rates in order to be financially sustainable at low rates of investment returns.

Of course, global experience shows that when pension plans are faced with financial crises, benefit structures almost invariably change, and almost always in the direction of lower benefits. Benefit reduction occurs in various ways. Increasing contribution rates, raising the mandatory retirement age, reducing accrual rates, increasing the minimum number of years of participation required before benefits vest, changes to survivorship benefits, removing indexation of pensions to cost of living increases, changing the index used for indexation from wage growth to price growth, and taxing pension benefits are all methods through which benefits are effectively reduced.

For instance, some combination of these measures has been forced upon many countries throughout Latin America where governments have often lowered DB pension plan benefits. In many cases such governments have also restructured the entire pension system by moving from a DB to a DC structure of pension provision. Reduction of so called guaranteed benefits is not restricted to developing countries alone. In the US, reforms to the social security system over the years have involved reduction of benefits as well as increases in contributions through higher tax rates. Many countries in Europe are also moving in similar directions.

5.2.5 Possible Solutions for the IR Pension Fund

IR will have to face the fact that it will have to implement some combination of fundamental systemic restructuring, benefit reduction, increased funding, and improved investment of pension assets to address its pension fund problems. Therefore, a major restructuring of IR's pension fund is called for if the finances of the IR and the retirement income security of

its current and future retirees is to be placed on a sustainable track. While several alternatives need to be considered, solutions could best work if the different stakeholders are taken into account separately.

Internationally, the range of responses to a crisis brought on by inadequate funding have included

- Default, in which the employer does not honour its obligations,
- A government bail-out
- Major restructuring of the pension system.

Given the role and importance of the IR in India, political reality implies that the first response is unlikely. Any acceptable strategy will have to focus on a combination of a government bail-out and a restructuring of the IR's pension system.

A government bail-out implies that pensions to current and future retired railway employees will have to financed by taxes of the general public. This is unlikely to be easily acceptable politically, given that the central government is itself cash-strapped. Thus, the extent of this support is likely to be limited.[8] Current railway employees will likely have to learn to accept the hard fact that the pensions from the IR are not necessarily guaranteed in future.

1. The first step in any restructuring exercise should focus on limiting the future pension obligations of IR.

   One way to achieve this would be to change the benefit structure for new employees of IR. A new pension plan should be applicable to all new employees of IR and this plan should be fully funded from inception. While there can be debate about whether such a new scheme should be a defined benefit or defined contribution, the key is that it should be fully funded. The plan should also be governed in a manner that going forward, its sustainability is ensured.

[8]The recently announced comprehensive bailout package for the Unit Trust of India, however, indicates that central government could very well provide unlimited support to IR to solve its pension problems. While this would have significant adverse fiscal implications, public opinion will also have to judge the fairness of continued bailouts by the general taxpayer.

It should also be politically palatable for such a strategy to be adopted for new employees of IR, since none of the current workers are being adversely affected. Work needs to be done on designing an appropriate plan for new recruits, which aligns the new plan with those available for the private sector employees so that constraints on labour mobility from the IR to the private sector and vice-versa are minimized.

2. The next step needs to be to look at the existing employees and identify ways to make it attractive for them to move to a more sustainable pension plan on a voluntary basis.[9]

   An independent assessment of the actuarial state of the pension plan needs to be carried out and made public in a manner than can be understood by workers. International experience has shown that admitting the poor funded status of the pension plan in combination with the overall weak financial position of the employer helps convince workers of the need for change.[10] Such information changes the mind set of workers from taking pension rights as guaranteed to one where at least some of them begin to question whether the benefits promised to them are realistically likely to be delivered. Along with such information, if incentives are provided to workers to move to a more sustainable pension plan with appropriate recognition of past accrued benefit rights, there is a possibility that at least the younger workers may voluntarily choose to switch.

[9] Voluntary shifts are important in the Indian context to ensure that legal challenges are minimized.

[10] Several countries have either already experienced this or are in the process of doing so. In Latin America, surveys have indicated that few people have confidence in their governments' abilities to honour their pension promises. When offered an alternative of moving to a privately run system, millions of workers have switched voluntarily. In the United States, the "baby-boom" generation is coming to grips with the hard fact that it will most likely have to pay twice for retirement - once through their social security taxes that will finance the retirement of current retirees and the second time to finance their own retirement through personal pensions as the "security" of the social security system is increasingly in question. In Europe too, publicity of the fiscal unsustainability of government promises is being widely debated with resultant doubts in the population of whether governments' promises will be honoured. Finally, in India, the recent scandals involving provident funds and the increasing credit risk of state governments and parastatal entities has raised doubts about the "safety" of retirement assets.

In any solution, there are two types of stakeholders who are unlikely to switch to any new plan:

- Current retirees are already receiving pensions under the existing scheme and these will have to continue to be paid.
- Relatively older workers among the current employees have little time to adjust to any new system and accrue rights in it. IR will have to continue to pay pensions to these workers under the existing system. In order to service obligations arising out of continuing pension payments to retirees under the current system, IR will have to identify assets that need to be invested in a sound manner.

In the absence of dramatic improvement in the financial position of IR and limited possibility of central government support, the most feasible option is for IR to consider privatising or disposing of some its existing assets to raise the funds to finance pension payments. Other alternatives are earmarking of funds from partial privatization or outsourcing of services or sale of real estate controlled by IR. Funds raised from these activities should then be invested to fund the IR's pension liabilities.

This is just a brief overview of the main issues facing IR. A large amount of work needs to be done prior to implementing any of these initiatives. The key is for the IR to accept that it has a serious problem that places its viability fundamentally at risk, conduct solid analytical work to identify the magnitude of the problem, and convey this to the public at large and the workers in particular, thereby improving the transparency of its fund management. It should then begin to explore alternatives that are economically viable and politically feasible.

The last aspect to emphasise is the need for urgency to implement changes: the longer the problem is put off, the larger will be it's size and magnitude (Table 5.2).

5.3 Employees Provident Fund - An Investment Crisis

The EPF is the largest retirement income system for formal, private sector employees in India. The EPF (and EPS) covers over 340,000 firms, has over 26 million employees as members, and received about Rs.100 billion as contributions during 2000–01. (Table 5.3). As of March 31, 2001, the EPF had assets of about Rs.887 billion, of which the EPFO managed Rs.544 billion directly, with the balance Rs.343 billion being managed by exempt institutions. As of the same date, the EPS had assets of Rs.332 billion.

The EPF as well as almost all other special provident funds are invested according to the guidelines of the EPF, and hence this section focuses solely on the EPF. The analysis applies equally to other provident funds in India.

Table 5.3 Employment Provident Fund (EPF) and Employee Pension Scheme (EPS)

	1996–97	1997–98	1998–99	1999–00	2000–01
Number of establishments	277,555	299,204	318,430	326,541	340,013
Exempt	2,970	2,948	3,123	2,805	2,624
Nonexempt	274,585	296,256	315,307	323,736	337,389
Members of EPF (in thousands)	20,289	21,219	23,119	24,537	26,301
Exempt	4,536	4,403	4,109	4,340	4,260
Nonexempt	15,753	16,816	19,010	20,197	21,041
Members of EPS (in thousands)	18,324	18,549	20,481	21,922	23,543
Exempt	3,425	2,384	1,889		
Nonexempt	14,899	16,165	18,592		
EPF annual contributions (Rs.billions)	59.7	68.2	78.0	75.2	85.9
Exempt	30.6	31.7	28.4	37.4	41.8
Nonexempt	29.2	36.4	49.5	37.8	44.1
EPS annual contributions (Rs.billions)	27.9	32.2	36.3	19.8	24.0
Employer/Employee contributions	24.5	28.5	32.0	16.1	19.7
Government contributions	3.5	3.7	4.4	3.7	4.3

Sources: Gillingham & Kanda (2001), EPFO

Table 5.4 Terminal wealth accumulated under different investment scenarios

Investment strategy	Equity premium	Terminal Wealth (in Rs.)	
		Real rate of return on GOI bonds	
		2%	4%
Only GOI bonds	0	152,000	215,000
Only equity	10%	507,254	737,654

Equity investment implies that the terminal wealth cannot be exactly forecasted. The numbers reported are the median value across 2,000 simulations.
Source: Authors' calculations

5.3.1 The Structure of the EPF

The guidelines that govern the asset allocation of the EPF have evolved over time (Table 5.5). Currently, the guidelines require that almost all the EPF assets be invested in government bonds (central or state government bonds or public sector firms). A maximum of 10 percent of the assets can be invested in corporate bonds, although actual investments in this asset class are negligible. No other investment in private securities is allowed.

These regulations in effect imply that over 90 percent of the funds of the EPF are invested in government securities. Only a small fraction of these funds is available for the private sector in the country. Actual investments by EPF reflect the regulations (Table 5.6).

5.3.2 The Problem of Investment Restrictions on EPF Returns

5.3.2.1 Administered Rates

Historically, returns paid on EPFO funds have been set annually by the government. Since 1989–90, the rate of return on EPF funds had been set at 12 percent per annum. This rate was largely independent of market rates. Since provident funds finance a significant portion of the government's budget deficits Gillingham & Kanda (2001), such an administratively determined rate was a convenient way for the government to obtain low-cost financing in an environment of high market interest rates. In an environment of low market interest rates however, such an administratively set rate created an unacceptably high floor on the government's cost of funds.

Table 5.5 Investment regime of provident funds in India (in %)

Investments in	1993–94	1994–95	1995–96	1996–97	1997–98
Central Government Securities	Nil	25	25	25	25
State Government Securities and other Negotiable Instruments guaranteed by Central or State Government	15	15	15	15	15
Special Deposit Schemes	70	55	30	20	20*
Bonds of PSUs and PSFIs, Certificates of Deposit of Banks	15	30	30	40	40

*10 percent investment in private sector bonds has been permitted.
Source: Employees' Provident Fund Organisation, Annual Reports.

Table 5.6 Investments by EPFO

	(Rs.billion)		(% to total)	
	1994–95	1995–96	1994–95	1995–96
1. Central govt. securities	0	1139	0.0	15.0
2. State govt. securities and govt. guaranteed securities	644	912	11.1	12.0
3. Special deposit scheme	4887	4531	84.7	59.7
4. Bonds/securities of public financial institutions and public sector enterprises and certificates of deposits of public sector banks	242	1008	4.2	13.3
Total	5773	7590	100.0	100.0
Less: redemptions, etc.	380	1158	n.a.	n.a.
Net investment	5413	6432	n.a.	n.a.

Includes both unexempted and exempted schemes.
Source: Employees' Provident Fund Organisation, Annual Reports.

Since July 2000, the government has been progressively lowering the interest payable to EPF contributions and the rates are now at about 9.5 percent. Recent moves by the government to lower these further have met with stiff political opposition. The main issue is however, that these returns have little to do with the market returns of the portfolio of assets held by EPF. It is the above structure of investments and method of declaring returns on the funds that has resulted in low real returns to EPF contributors.

5.3.2.2 Investments Restricted to Government Bonds

Dave (1999) estimates that real returns on provident funds in India has been 1 percent. This is a low return by almost any comparison. Thomas (1999) estimates that long-run real rate of return on government bonds had been about 4 percent. Therefore, administratively determined interest rates on provident funds have been a fourth of the returns that would have been realised even with a portfolio consisting entirely of government bonds yielding market rates of interest. Administrative determination of provident fund returns has thus been costly to contributors.

If the universe of asset classes is expanded to include domestic equities, the cost borne by EPF participants is even greater. The equity market index shows returns of around 18-20 percent for a period over two decades. This is inclusive of the dividend yield. This implies an equity premium of around 10 percent (assuming that the return on government bonds was around 10 percent in the same period). If even a small fraction of EPF contributions had been invested in the domestic equity market, provident fund contributors could have gained significantly.

We see this from Table 5.4. This table reports the terminal wealth obtained if an individual started pension saving from age 25 till age 60. The table assumes that contributions start at Rs.10 per day and grows at 3 percent per year.

We find that even in the first strategy of investing only in GOI bonds, a difference of a mere 2 percent in the real rate of return has a significant impact on the terminal wealth. When the investment is done purely in the equity index, we find that the median terminal wealth is significantly higher than the pure GOI bond investment. Therefore, these numbers are an indicator of the cost of restrictions on pension investments.

Further expanding the universe of investable assets to include international investments would show that EPF contributors have paid an even higher price in terms of lost returns. In the context of Latin American pension funds – which have historically had much higher real returns than the EPF – Srinivas & Yermo (2002) provide evidence that international diversification would have added further to the returns without adding more than proportionately to risk. Similar conclusions would apply to the EPF.

These examples mean that the current investment regulations of the EPF severely limit the ability of contributors to accumulate significant retirement savings. If alleviating poverty in old age is an important objective of mandatory retirement savings programs such as the EPF, then investment restrictions have an adverse impact on achieving this objective. The crisis that is likely to be brought on by the investment restrictions is one of significantly lower retirement savings than that obtainable through an improved investment regime.

5.3.2.3 Credit Risk of Government Bonds

An additional and important aspect of the EPF investment regulations is that they concentrate credit risk for contributors largely in one entity – the government. History provides evidence that governments, the world over, have experienced episodes of deteriorating credit worthiness. Central governments can, and have, expropriated long term savings through outright default or through inflation, which erodes the real value of savings. India has largely not faced such situations in the past. However, there is no assurance that such an eventuality will not come to pass in future, especially given the continuing large central government fiscal deficits. That state governments and parastatals are not immune to default has been highlighted by recent experience in which some state government debt as well as debt issued by parastatals has been downgraded to default status. EPF (and several exempt funds) have invested in paper issued by these entities. While the true magnitude of the problem is not certain, it clear that the investment policy of the EPF has not made the funds immune from default risk.

Fiscally strapped governments pose credit risks for long term investors which need to be taken into account. It would be prudent investment policy to diversify the sources of credit risk. Including an variety of investment

avenues – domestic and international equities as well as domestic and international bonds for example – would diversify risk.

5.3.2.4 Restrictions on Sales

Some other aspects of the investment process of EPF also raise concerns. EPF, and the exempt funds under the purview of the EPF, rarely sell any of the securities they own. While good fund management is quite possible with low turnover of assets, a near prohibition on asset sales can be costly to contributors. As an example, it is very likely that significant capital gains on government bond holdings of the EPF could have been realized by selling high yielding government bonds held by the EPF in the current lower interest rate environment. By not being permitted to trade, EPF loses an opportunity to cash in its gains.

Another issue is the valuation methodology for assets adopted by the EPF. All assets are valued at cost and not marked to market. This creates a situation where the true value of the holdings of EPF are rarely known. Gains in value of bond holdings in an environment of falling interest rates are not reported. However, neither are losses on holdings on state government and public sector bonds that may have been downgraded in their credit ratings or be in default of their debt service. A professionally managed EPF would need to upgrade its valuation methodology.

5.3.3 Principles for Sound Pension Investments

Among several issues that need to be addressed to improve the overall performance of the EPF (and exempt funds under its regulation), the issue that is the focus of this paper is its investment regime. Finance theory calls for a well diversified portfolio of assets in several different asset classes to ensure an optimal combination of risk and return for contributors.[11]

The fundamental principle of sound asset management is that of a diversified portfolio of assets. Such a portfolio would be most able to help investors get the best risk-return trade-off. As discussed above, current

[11] An issue that is equally critical in this process is that of providing contributors the choice of structuring their portfolio to suit their stage of life, income, and risk preferences. This would call for several different investment options to be provided by the EPF from among which different contributors can choose the portfolio that best suits them. We do not deal with this issue and its policy implications in this paper.

investment regulations of the EPF mandate investments largely in government bonds.

In the case of EPF, the main argument for such a mandate is most likely that EPF funds are a captive source of government financing. However, other countries have imposed similar mandates on retirement funds using the argument that government bonds are a safe investment and would provide risk-free returns to the contributors.

While there is obviously some substance to the safety argument, it is a fallacy that government bonds are free from all risk in a pension investment context. Their low-risk often implies low-returns. Low returns over long investment horizons as in pension investment expose investors to the risk that they will have inadequate savings at the end of their working lives from which to finance their retirement.

Bonds are also exposed to risks of inflation, changes in interest rates, and the deterioration in credit-worthiness of governments. Therefore, finance theory would argue that while government bonds should be a part of an investment portfolio, it would be hard to justify them being the whole of the portfolio.

Research has also shown that over long investment horizons, the risk of equities comes close to the risk of government bonds, while at the same time offering higher return. This differential, the equity premium, provides a valuable source of added returns to pension fund contributors with little addition of risk. Equities also provide an opportunity to contributors to participate in the growth of the economy.

In a study that looked at the question of pension investments in India, Thomas (1999) simulated the shortfall probability of a pension fund invested in a pure Indian equity portfolio compared to pure Indian bond portfolio.[12] The paper finds that the equity portfolio (invested solely in the

[12]Here the shortfall probability is defined as the probability that the investment in equity will accumulate wealth that is less than the wealth accumulated in a pure bond portfolio, over a 35 year horizon. This is done by simulating the returns on an equity portfolio and a bond portfolio over a million different possibilities, and asking in what fraction of these did the equity portfolio fall short of the bond portfolio. The paper does the simulation for four scenarios: equity premia of 10 percent and 12 percent, bond or risk–free returns of 2 percent and 4 percent. The numbers mentioned in this paper are for the scenario of equity premium of 12 percent and bond returns of 4 percent.

Indian stock market index) outperforms the returns on the bond portfolio 92.5 percent of the time, or a shortfall probability of 7.5 percent.

While domestic bonds and domestic equities are the obvious candidates for a diversified portfolio, it is important to note that in a fully integrated and efficient financial market, modern finance theory has established that the world market portfolio is the optimal risky asset to hold. Theory would argue that an investor only exposed to domestic investments should perceive that international diversification reduces risk per unit of return, achieved by investing in asset classes that are not perfectly correlated with his existing portfolio. This arguments holds even with markets that are less than fully integrated and less than fully informationally efficient. Therefore international diversification is an important consideration for a pension fund.

Much literature is available on the benefits of international diversification from the perspective of an investor in developed countries. Srinivas & Yermo (2002) focus on international investment by investors in developing countries looking to developed markets as the source of diversification benefits. They focus on Latin American pension funds, which as in much of the developing world, do not invest a significant portion of their assets internationally. They argue that restricting international investments imposes costs on pension contributors in terms of lost returns and higher levels of risk per unit of realized return and provide empirical evidence of improvement in risk-adjusted returns through international investments.

Thomas (1999) provides similar evidence for India. She shows that the shortfall probability of an equity portfolio which includes international investment[13] and finds that the shortfall probability then drops to 0.2 percent! Therefore, evidence suggests that there is a strong case to be made for pension funds to invest in equity in India as well as internationally.

5.3.4 Possible Solutions for the EPF

The EPF needs to modernize its investment regime to ensure that its contributors have the opportunity to invest in a diversified portfolio of assets. An integral part of this process is for the government to wean itself away

These are numbers that have been historically observed for equity and bond markets in India, and need not necessarily hold for the future.

[13]The equity premium with international diversification is taken to be 8 percent.

from its dependence on EPF assets as a source of funding. This is likely to prove the most challenging part of the modernization process. Once this political will exists, there is a substantial amount of guidance available from principles of modern financial practice as well as international experience on the options in designing a new investment regime.

The redesign of the investment regime should also be a part of a more comprehensive restructuring of the EPF and its role in the management of assets. A key issue is the separation of the roles of the EPFO as collection agency, fund manager, benefits distributor, and regulator of exempt funds. In the context of the ongoing debate regarding private pensions in India, an obvious reform of the role of the EPFO is to retain all of its current functions except that of fund management. The EPFO has the infrastructure to exploit the economies of scale and scope in the other functions. However, it has no comparative advantage in the asset management function. It could very well outsource this function to private asset management firms that will invest these funds under its overall investment guidelines. The private managers could be selected using competitive bidding and held accountable by establishing transparent performance benchmarks.

The EPFO's role would then be one of monitoring these managers. The return provided to contributors to the EPF could be an average of the returns provided by these private managers. Such a move would have the added advantage of providing a significant boost to the private pension fund industry by providing a core of funds that they can manage which would, in turn, provide them economies of scale when offering new products. Transferring responsibility for fund management to the private sector would also assist in improving the transparency of the EPF. The government and the public would be informed of what the market value of the assets in the EPF's portfolio is and the size of the "hole" in it, if any, due to poor investments. The government will have to make up any deficits on a one-time basis, but going forward, the scheme would be placed on a more sustainable basis. While there are major issues in supervision and regulation of such a structure, there exists significant international experience in such models which can be brought to bear on the Indian situation. Several models exist around the globe which the EPF and the government can examine to determine what is best suited for India.

Apart from its role in the fund management process, the EPFO also needs to modernize the investment regime under which retirement assets are invested in India. Improving investment diversification will first have to begin with permitting the EPF to invest in a broader range of private sector instruments taking into account the realities of the Indian capital markets. Investments in corporate bonds have been permitted, but the actual investments are few in India due to the shallowness of the poorly developed state of the market. Equities would be a more promising avenue. This needs to be followed up with permitting international investments – potentially starting with foreign government bonds, and moving on to corporate bonds and equities. The final step in the evolutionary process would be free up the investment regime subject to prudential regulation on the overall investment process as opposed to asset-class specific allocation limits.

There is a significant amount of work on the overall design of EPF reform that is needed before changes in investment regulation can be implemented. However, the process needs to begin soon. Current investment regulations of the EPF are costing contributors significantly in terms of lost returns on alternate investment opportunities. The earlier reforms are implemented, the more secure and adequate the retirement income of contributors is likely to be.

5.4 Seamen's Provident Fund - A Crisis of Governance

The Seamen's Provident Fund Organisation (SPFO) was set up by an Act in 1966, with the mandate to provide social security to seamen upon retirement, either at superannuation age or due to work related stress or injury.[14] The scheme was also extended to cover their families upon the death of the seamen. The scheme itself was deemed to have come into existence in 1964.

[14]The term seamen and it's definition is established in the Merchant Shipping Act, first enacted in 1924 along the lines of the U.K. Merchant Shipping Act, and last amended in 1958.

5.4.1 The Structure of the SPF

It is a mandatory, defined contribution scheme: all employers who were eligible under the Merchant Shipping Act, 1958, have had to contribute to the SPFO, where the total contribution on their part had to match the contribution of their employees. When the Act was first set up, it fixed the rate of contribution to 8 percent. It was later amended to 10 percent and then to 12 percent, or any higher rate that the *employer* deemed appropriate. This allowed the employer the flexibility to put aside a higher amount for the retirement benefit of the seamen. The contribution was deposited with the SPFO at the termination of every voyage. At the time of this amendment, the Merchant Navy Association was also brought under this scheme. As of year end of 1999, SPFO covered 33,708 accounts with a total accumulation of Rs.3.05 billion.

Like all pension funds in India, fund investments have to follow a defined pattern that is set by the Ministry of Finance. The pattern for the SPFO is as follows:

1. The largest amount of 55 percent is to be invested in a *Special Deposit Scheme* introduced by the Ministry of Finance in 1975.
2. 15 percent could be invested in Central or State Government securities.
3. 30 percent could be invested in PSU bonds or equities.

It was initially set up so that the collection and the investment of funds could be done at a single bank (the State Bank of India, SBI). This was later amended to allow for the funds to be deposited at any nationalised bank to allow for a wider distribution channel that would be available to seamen.

5.4.2 Aspects of Governance and Regulation

The SPF is vested in and administered by a Board of Trustees. The membership of this board consists of four members, a Chairman and a representative each of the Government, the Ship owners and the Seamen. The ex-officio chairman is typically the Director General of Shipping.[15] The Commissioner of the SPFO acts as Secretary to the Trust.

[15]There are a series of funds that have been established for the welfare of seamen under various associations such as the Seafarer's Welfare Fund Society, the National Shipping

All the appointments of the top levels of management at the SPFO is done by the Government of India. The Chairman of the Board of Trustees is also a Government appointee. Thus, there is a strong state control on the management of the SPFO. The original Act awarded the state control on appointments of even lower level positions in the SPFO.[16] However, this was changed in the amendment of 1996, where control of the fund management was shifted to be the responsibility of the Chairman of the SPFO.[17]

Lastly, the Act also defines the upper bound on the fines that are to be imposed in case the management indulges in fraudulent practices. The original Act specified an amount of Rs.1000 in case such instances were uncovered. It has been amended to Rs.50,000.

All of these point to the regulation of the SPFO being defined rigorously down to the level of specific amounts of wages and fines. However, a rigid structure of regulation and governance often precludes the fact that criminal offences undergo innovations, and that governing the SPF under a very rigid set of rules and regulation leaves it vulnerable to offences that the Act has not covered.

5.4.3 The Problem of Poor Governance in the Management of Funds

In April 2002, it was discovered that a sum of nearly Rs.930 million had been placed with a debt market broker (`Home Trade`) to purchase Govt. of India bonds for the SPF. The broker defaulted on delivering the bonds. The trade showed up several disparities between the manner in which the SPF carried out its investments, and gilt bond investments practices that are the norm in the country today:

1. The Reserve Bank of India (RBI) had announced in an announcement in November 2001 that all fresh purchases of bonds should be dematerialised.[18]

Board, etc. There is a huge overlap between the governance of all of these bodies and the funds that they run.

[16]The control went all the way to defining a maximum salary that could be paid to officers.

[17]http://www.blonnet.com/bline/2002/05/13/stories/2002051301920100.htm

[18]This is the note "IDMC. PDRS. No. 1382 /03.64.00/2000–01", dated 18^{th} September 2001. The full text of this can be accessed at `http://www.rbi.org.in`

The SPF transaction was to purchase physical units of the bonds.

2. Almost all gilt securities transactions are bilateral transactions, settled by the end of the day. The transaction is supposed to be done only after the funds and the securities are verified to be in the accounts of the counter parties.

   In this case, the funds were transfered but the securities were not delivered. This almost certainly points to some attempt to deliberately defraud the SPF of funds.

This implied that of a total asset base of about Rs.3 billion, SPF had lost about Rs.930 million – almost a third of its fund. Thus far, appeals of the SPF for a bailout by the government have not been received favourably. It is unclear how the SPF will honour its obligations to its contributors.

What is most troubling about this story is that the default to the SPF was not reported immediately. It was only after `Home Trade` defaulted on delivering gilt securities to a co-operative bank (Nagpur Co-operative Bank) that this problem of a similar default at the SPF was uncovered. This points to either problems of deliberate non-disclosure on the part of the SPF management, or a lack of awareness at the management of the status of its investment portfolio.[19]

5.4.4 Principles for Management and Regulation of Pension Funds

Even with tightly defined rules of investment, pension funds are vulnerable to gaps in regulation and problems of governance. This can be clearly seen from the example of India's SPF. Since pension funds in India, are typically locked into the same management for long periods of time, the management has to be especially careful and alert to poor decision making or any misconduct by employees.

For example, a common problem with financial investment management is the temptation to throw good money after bad investments in the hope that the bad investment will eventually "turn around". This has been a

[19] Recent newspaper reports indicate that the SPF may not be alone in such irregularities and that it may have company. Several exempt funds seem to be facing similar problems. SPF may therefore be only the tip of the proverbial iceberg.

vulnerability with asset management in all financial sectors: the common practice of ever-greening of bad loans at banks, the cascading of losses in equity markets,[20] etc. These problems are even more pervasive if the investment horizon is long; ie, returns have only to be delivered at a point far away from the funds being received.

The optimal governance structure would be one that makes the attempt to tie in management incentives with that of the goals of pension funds. The best performance of securities industries professionals are typically seen in competitive market structures, where the clientele has the freedom to move from one service provider to another with as small a transaction cost as possible. Such as market structure was followed in the case of the Chilean pension system with multiple pension fund managers, who had to be authorized by the Chilean pension supervisory authority. The supervisor also established norms of transparency in fund management that the funds were obligated to follow.

This is very much like the structure that is followed by any well–regulated mutual fund industry. For instance, the Indian mutual fund industry is one of the most transparent and well–regulated of the financial service providers in India today. The same supervisory and fund management principles, and, arguably, providers also can be used to provide pension fund management services at marginal cost.

Therefore, the principles based on which pension fund investment regulation can be structured can be as follows:

- Define the principles and goals of the investment.
- Define the processes through which the investment should be done and monitored.
- Mandate full disclosure of the investment portfolio.
- While the government has a role in the regulation and supervision of these schemes, care should be taken to clearly highlight the risks investors take while investing in these funds. Clear statements that the government does not guarantee financial returns should assist in

[20]One such example is the positions in derivatives taken at Barings Bank, which ultimately caused the bank to go bankrupt and shut down.

removing the implicit belief that investors may have that an industry regulated by the government will also be bailed out the government.

- It is important to build walls between the government and the pension funds to ensure that the government is not tempted to misuse these funds in times of crisis or need.

There are two paths to implementing the above system:

1. The first is to build an independent institution that acts as the pension fund industry regulator, with powers to quickly take quick action once fraud is detected. This could involve setting up special courts to try cases that concern the regulatory aspects of pension fund investments and/or management.

2. The second is to simulate the structure of the mutual fund management industry, and allow full disclosure and competitive forces to take care of the majority of misconduct episodes.

5.4.5 Possible Solutions for the SPF

The case of the SPF shows the lack of regulatory control and transparency in pension fund investment. This stands out in stark contrast to the recent improvements in the mutual fund industry. It is interesting to note that no mutual fund was found to be a victim to `Home Trade`, whereas cooperative banks and the SPF were. Over the last decade, there have been a series of reforms to the regulation of the mutual fund industry. A lot of the changes and improvements in the mutual fund regulation were sparked off by episodes of misconduct. However, at the end of this period, the mutual fund industry is much more transparent and better regulated compared to the situation in 1994.

Improving governance at SPF would call for increasing the role of private asset managers under a system of sound regulation. The SPFO has no comparative advantage in asset management, although it may be good at collecting contributions and distributing benefits. Therefore, it should exit the fund management business. The SPFO could set out the broad objectives of the provident fund and outsource the management of the funds to a group of professional fund managers - who will most likely be from the

mutual fund industry.[21] The SPFO could then supervise and monitor these fund managers to ensure that their performance is in line with the objectives established by the SPFO. Requiring full disclosure from the private fund managers on their investments and making this information public would significantly improve transparency of the SPF. The SPFO should re-evaluate the performance of the fund, both in terms of absolute and relative returns as well as costs. The SPFO should have the right to allocate funds among managers on the basis of their performance.

The SPFO should also be required to hire professionals who are knowledgeable about the industry to advise the Board of Trustees regarding investment decisions. Making transparent the technical recommendations to the Board as well as decisions taken by the Board to the contributors of SPF would go a long way towards improving the governance of the SPF.

The Board should also be held legally accountable for its fiduciary responsibilities towards its contributors. Trustees of provident funds are agents of the contributors and are making investment decisions on behalf of the contributors. They should therefore ensure that the decisions that they make are in the best interests of the contributors; and they should be held to high standards of care and loyalty towards contributors. One model for such standards is that of the Employees Retirement Income Security Act (ERISA) of the United States. ERISA requires trustees of pension plans to use the "prudent investor" standard in managing a plan and in making investment decisions. Under this standard, a fiduciary of a pension plan is required to "exercise the judgement and care, under the circumstances then prevailing, which men of prudence, discretion, and intelligence exercise in the management of their own funds, considering the probable outcome as well as safety of their capital" Logue & Rader (1998).

5.5 Conclusion

Formal systems of retirement income provision in India suffer from three major weaknesses – problems of funding, problems of investment restrictions and administered rates, and problems of mismanagement of funds. Each of these problems are present to varying degrees in many of the the

[21] A group of fund managers is preferable to a single manager to promote competition to ensure best practices are adhered to.

pension and provident funds in India. The ultimate impact of these problems will be to place greater demands for taxpayer-financed bailouts of these funds - a solution that is not sustainable in an already difficult fiscal situation.

For those plans that are of a defined benefit type, as in the case of the Indian Railways pension fund, the problem is one of lack of adequate funding. Pension liabilities are placing increasing stress on the financial condition of the entities that have promised pension benefits. Unless solutions are found soon, these liabilities will threaten the viability of entities involved.

For defined contribution plans – such as the EPF – a poorly structured investment regime imposes costs on contributors in terms of lost returns. Small increases in returns will significantly enhance total asset accumulations of contributors and will improve the security of their retirement income.

Finally, irrespective of the type of plan, good governance is critical. As the case of the SPF demonstrates, passive regulation, such as defining the class of investments that pension funds can invest in to the extent of defining what fraction of the funds can be invested in which class, is not a sufficient condition to ensure that the fund is invulnerable to theft and fraud. Close supervision, monitoring, and accountability has to be built into the very processes of investment.