

## Risk Based Supervision for Pension Funds

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### I. Introduction:

Pension funds represent a major percentage of the household wealth of the average consumer and reach more deeply than do other types of financial products. This is especially relevant in cases where participation in a privately managed compulsory pension schemes is made mandatory by the Governments. As a result, the regulatory framework for the pension industry has become the pivotal area to address for the Governments. These compulsory pension schemes are expected to provide a significant share of pension income and operate, generally, on a Defined Contribution basis. In this context, there is a growing interest to identify and assess:

- the risks that the pension industry is exposed to;
- whether the pension regulatory framework is prepared to cope with these risks;
- whether there is room for further improvements, as lessons to be learned from other areas of the financial sector;
- whether the pension industry will be able to fulfill its expected role;

The regulation of the pension industry, in most of the cases, functions on similar objectives of regulation as in other areas of the financial sector. However, pension industry has a special role to play in promoting and protecting the social policy objectives, such as the provision of retirement income. The regulatory framework for pension industry needs to consider this unique characteristic of these institutions. A major crisis in the pension industry could lead to major criticism of the Government Authorities, Regulatory bodies and the institutions and directly influence the living standards at old age. To avoid such crisis, it may involve unexpected calls for huge infusion of money into the system to safeguard the old age provisions and to retain the system confidence. This has led to the perceived need for greater security in the regulatory approach and the emergence of a strong motivation for the introduction of prudential regulation and supervision due to their critical role as an instrument of social policy.

For long, regulators in financial sector used to regulate on rule based system and more or less relied on financial analysis using ratios as a tool of supervision. Subsequently it was realized that relying on financial ratios alone may not be an effective tool for preventing financial crisis. This has led to the emergence of the risk-based approach to supervision which aimed at promoting transparency, providing early warning signals and encouraging the regulated entities to self evaluate their position at regular intervals.

Ideally, risk-based approach to supervision employed methods such as sensitivity analysis, stress testing and risk monitoring techniques to identify the likelihood of an (negative) event and its impact on the system in the process of the risk assessment and risk management. Extending this approach to pension industry, the lesson drawn from the implementation of risk based approach to insurance sector and bank sector may become an important source for pension supervisors because. In the light of these findings, contemplating the implementation of risk-management systems in the pension industry becomes important.

### II. Objectives of Risk Based Supervision:

Given the move by other players in the financial sector towards risk-based approach to supervision, it is worth noting that handful of pension supervisors have already paved way for risk-based approach. The paper aims at discussing briefly the existing practices in the risk-based approach implemented by the pension supervisors. The main objectives for the risk based pension supervision include:

- better understanding of institution's financial position and its possible development in the short and medium term by both the regulator and the regulated entity;
- vary the scope and intensity of supervision in relation to the level of risk they are exposed to;
- integrated supervisory regimes-efficient use of resources and time;
- large number of institutions-need to effective allocation of scarce resources;
- a more pro-active approach;
- promote confidence in the system as a whole;

The experiences and challenges confronted by pioneers in the risk based pension supervision has become a useful guide and tool for the other Governments Authorities and other Regulatory bodies in the process of adaptation of suitable models. Though it is difficult to discuss all the varieties of risk based approaches that have been followed by the pension supervisors, an attempt is being made to briefly discuss the different models that have emerged in the recent past which are of actuarial interest.

The purpose of this paper is to put before the rapid changes that are impending in the financial sector, in particular, the pension sector as most of the pension supervisors appear to be in the process of either reforming the pension system or restructuring the pension system to introduce risk based approach, which is of most relevance to the actuarial community.

### III. Models on Risk Based Approach-An Overview:

#### 1. Identification and Assessment of risk:

As with any type of financial institution, the regulation of pension funds originates with the identification and assessment of risks particular to the pension sector. In general, the major risks that a pension industry faces are:

- (i) Portfolio risk;
  - a. Interest rate risk;
  - b. Market risk;
  - c. Foreign risk;
  - d. Commodity risk;
  - e. Concentration risk;
  - f. Credit or counterparty risk;
  - g. Investment risk;
  - h. Liquidity risk;
  - i. Mismatch risk etc
- (ii) Agency risks;
  - a. Operational risk;
  - b. Fraud risk;
  - c. Expenses risk;

- d. Legal and regulatory risk;
  - e. Strategic risk;
  - f. Contagion and related party risk etc
- (iii) Systemic risks;
- a. Risk of negative spillover effects from other industries;
  - b. Risk of economic downturn

All the regulatory regimes attempt to address the various risks identified above; however, there is extensive variation in the manner through which this is achieved. It may be due to a number of factors, like historical evolution of the system, the particular legal structure of the pension funds, economic development in general, political and cultural environments. However, it is possible to identify the main components of regulation in most countries. The most common form of regulation includes:

- i. Licensing Criteria;
- ii. Governance Rules;
- iii. Investment Rules;
- iv. Independent Custodian;
- v. External Audit/Actuary;
- vi. Disclosure Requirements;
- vii. Guarantees;
- viii. Minimum Capital and Reserves;
- ix. Regulations on Costs and Fees;
- x. Winding up provisions;
- xi. Sanctions;

In most of the risk based models the institutions are required to maintain the minimum framework for the risk management system, like:

- (i) Risk models for identification, quantification and control of the risk;
- (ii) Measurement of the volatility of the portfolio;
- (iii) Stress testing requirements;
- (iv) Assessment of model risk;
- (v) Review of all the risks at regular intervals;
- (vi) Possible risk mitigation measures;
- (vii) Compliance with corporate governance;
- (viii) Compliance with fit and proper criteria;
- (ix) Internal control systems;
- (x) System security requirements;
- (xi) Confidentiality of information;
- (xii) Independence and enhanced role of actuaries and auditors;
- (xiii) Code of conduct for employees;
- (xiv) Compliance culture and procedures;

The approach for risk based supervision, in general, emphasizes the identification, classification and categorization of the risks the institutions are exposed to and the risk management capacity in the overall assessment of the risk along with the determination of the probability and weighting of the major risks for each institution. The results of the overall risk assessment along with probability are used to assign an overall risk rating or risk scoring for each institution which includes both pension funds and the fund management & administration. In general, the risk rating is determined as

Impact x Probability. While Impact rating depends on the size and the total assets of the institution, probability generally depends on the risk factors and the associated weights.

The purpose of the overall assessment is to measure the solvency of the Defined Benefit schemes and the investment risk of the Defined contribution schemes. The institutions identified with high level of risk are dealt closely and at greater length. In the process of risk assessment a number of risk mitigants are identified like Fit and Proper test of the Board, of the principal officer, actuary, auditor; effectiveness of operational management; system & infrastructure capabilities; adequacy of risk management strategies; compliance culture and procedures etc.

In addition to the qualitative and quantitative measures developed in the assessment of risk rating, supervisors have prescribed the methods to value the liabilities, minimum funding requirement, enhanced solvency, cost-effective contribution rate, and also developed methodologies for scenario calculations for forecasts, stress testing or value at risk measure along with standard procedures for applying interventions.

### **2. Technical provisions:**

Most of the models require technical provisions to be determined in a prudent way which involve the foreseeable mortality trends and expected developments of a demographic, legal, social, financial and economic nature. Currently a large diversity is observed in the discount rates. As a principle, technical provisions are required to be fully funded. Institutions are required to have sufficient and appropriate assets to cover the technical provisions.

In some models, insufficient assets may be allowed for a limited period under the condition of an appropriate recovery plan, where pension scheme and pension institution are located in the same place. However, for schemes where the pension institution is located in one country dealing with the pension scheme of another country the technical provisions are required to be fully funded at all times. For pension institutions which bears a biometric risk or guarantees a minimum return, an additional margin is required over and above the mere technical provisions.

In one particular model, the institutions are required to value the technical liabilities using the market interest rate i.e. term structure of risk-free discount rates.

Minimum funding requirement, in most of the cases is prescribed as an percentage of the technical liabilities during the period of reporting.

### **3. Variations in stress testing:**

In one particular model, the scenario calculations for forecasts are required to be submitted several times a year to assess the current financial situation and future trends in case of expected adverse deviations. The stress test requirement is aimed to study the effects on the next balance sheet date on whether the fund will be able to oblige its liabilities at all times and comply with the required regulatory capital without counter measures in case of expected adverse scenarios taking into account the longevity risk.

The stress tests include a wide range of scenarios like decrease in market value of shares, decrease in value of fixed-income bonds, simultaneous decrease in value in shares and bonds at various levels allowing for the credit risk. If the stress test ultimately implies insolvency, it is treated as reduces risk-bearing capacity of the institutions. As a result, the institution has to consider the

potential measures to improve the financial situation which includes acquisition of additional capital, reviewing the investment strategy, hedging the investments, reductions of profit distribution.

The institutions are also required to carry out at least quarterly internal stress tests on a set of minimum scenarios and also required to furnish realistic forecasts on fixed dates. The purpose is to forecast the surplus on the next balance sheet date considering the holistic picture of the institution.

In one particular model the institutions are required to do a continuity analysis, in addition to the solvency test requirement, every three years which is expected to provide insights in to the financial position of the fund for the next 15 years against the background of various long-term scenarios. The method of analysis follows the stochastic approach allowing for prescribed minimum expected inflation and the maximum expected returns on assets and attempts to assess whether, on the basis of its present financial position, the institution's strategy is in line with foreseen internal and external developments. In addition to the minimum funding requirement, the solvency test introduces an innovative risk-based capital framework for pension funds. The risk parameters are to be set so as to guarantee at a 97.5 percent confidence level that the funding ratio will stay at or above 100 percent over one year. The solvency requirement increases in line with the fund's exposure to risk.

#### **IV. Regulatory Framework-A Major Challenge:**

While it is desirable to have such sophisticated models to supervise the industry, it is a matter for discussion as to whether the regulatory framework is ready to cope with such structures. From the pioneering countries it is obvious to note that it is very difficult to move to risk based supervision without proper understanding of the expected change as it may need an entire reorganization of the prevailing regulatory framework and may also involve getting the right set of skills.

Given that the risk based supervision requires an all together different approach moving from box-ticking to making qualitative judgments, different countries have adopted different structuring methodologies and rearrangement of the existing staff to suit to the new supervisory approach. Some countries created specialist divisions like risk based supervision & enforcement division and research & policy division, whilst others introduced teams like environmental scanning team, clearance team, lead teams; units like specialized pension units, specialized ALM units, specialized risk units and specialized operational and financial risk units.

In addition to this, supervisory authorities are expected to put in place adequate internal control systems and corporate governance processes along with adherence to fit and proper test. Implementing new methodology may also require the acquiring the required set of resource persons as well as huge investment in training the existing staff. In the process of successful implementation of the new regime, it is also expected that the regulatory authorities to provide training for the trustees, and other stakeholders in the industry. The expected cost in the implementation of the risk based supervisions is expected to be the main barrier for few pension supervisors to immediately introduce the new regime.

The other major factors to be considered by the regulators is, making the industry understand the philosophy of risk-based approach. The purpose of the risk-based approach is to promote a risk culture in the industry with the pension funds conducting their own risk controls and monitoring, so that the supervisor only steps in where necessary. It is also very important for the regulator to be clear about the data requirements and its ultimate use so as to make the industry understand the approach.

The more vital area of implementation of the risk based approach is how efficiently the concepts are communicated to the public. The responsibility lies with the regulator to make it clear that though it is proactive and has in built preventive measures, it is not possible to build a system that covers all the risks and prevents problems and failures.

### **V. Lessons to be learnt in the Introduction of Risk-Based Supervision:**

While most of the risk based approaches vary by country, the lessons drawn from their experience appears to be similar, like:

- i. One model or structure cannot be taken from another country and applied unaltered to another pension system. Look for different models across.
- ii. Few countries are successful in adapting the risk based approach and stress test models which have already been applied to the banking and insurance sectors, especially for defined benefit and hybrid schemes. Attempt can be made to adapt models from other players of the financial sector.
- iii. The model, once built, should not to be considered as static. The model needs to be dynamic and rigorous to the changing environment. Flexibility to upgrade models and systems on a regular basis to be allowed.
- iv. One regulatory authority admits that the staff was fairly negative for the first six months and it took a full 18 months or so to be accepted. It is important to consider the capabilities of the staff.
- v. It is required to be clear regarding the terminology and clarity of what risk-based actually means.
- vi. To run a pilot project with a few funds to test data collection and other administrative issues, as well as internal staff capabilities etc

### **VI. Whether the Industry will be able to fulfill its Expected Role:**

As most of the regimes are fairly new and are in the process of learning and upgrading, it is too early to assess the outcomes and the long term objectives. It is expected that the greater understanding and management of the risks by the institutions will enhance the efficiency in the management of funds for both defined benefit and defined contribution schemes.

However, one criticism that is being heard is that pension supervisors and the accounting standards are prompting pension funds to look into the short term to meet the short term test.

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**About the Author:**

**Qualifications:**

- Bachelor of Science (Mathematics, Physics & Chemistry) Year 1992
- Fellow of Actuarial Society of India, Mumbai.-Year 2005
- Diploma in Actuarial Techniques, Institute of Actuaries, London.
- Certificate in Finance and Investments, Institute of Actuaries, London

**Awards & Achievements**

1. Academic Excellence award for subject 304 “Pensions and Other benefits” from Actuarial Society of India, Mumbai in year 2004.
2. Academic Excellence award for subject 302 “Life Insurance” from Actuarial Society of India, Mumbai in year 2002.
3. Academic Excellence award in Intermediate and Graduation.

**Experience:**

S.No	Period	Designation	Organization	Place
1	September, 2007 to present	Advisor on Insurance Matters	Financial Services Commission, Mauritius	Mauritius
2	December, 2002 to September, 2007	Deputy Director (Actuarial)	Insurance Regulatory and Development Authority	Hyderabad
3	July, 1993 to December 2002	Various positions held	Life Insurance Corporation of India	Hyderabad

**Financial Services Commission (FSC):**

- Advise the Regulator on all the concerned areas of regulation and supervision;
- Strengthening the department-training imparted on the required skills, knowledge etc ;
- Entrusted with the responsibility to frame the pensions bill;
- Framing of regulations, rules, and guidelines with regard to the new Insurance Act;
- Providing the required inputs on other areas like refocusing strategy etc;

**Insurance Regulatory and Development Authority (IRDA):**

- Entrusted with the responsibility to examine and analyze the design, pricing, and profit testing of life insurance products from actuarial perspective for the Regulator’s clearance. Discharged this duty effectively and efficiently in the case of four hundred life insurance products over the last four years
- Contributed significantly to framing of Regulations and proactively identifying need for modifications on a continuing basis.
- Advise the Regulator on the capital adequacy and other financial aspects with respect to business plans of insurers through scrutiny of financial statements and sensitivity analyses.
- Regular examination of on-going supervision.

**Life Insurance Corporation of India**

1. Underwriting up to a certain limit and suggestive underwriting for higher limits.
2. Consolidation of valuation returns submitted to the Zonal Office.
3. Monitoring the day to day functions of the departments.

### **Other Activities:**

1. Delivered lectures on Pensions and other benefits to guide the students of financial institutions.
2. Assisted in the valuation of pension, gratuity and leave encashment benefits.
3. Provided services to Institute of Actuaries with respect to examinations.