Current Issues in Retirement Benefit
29 November 2018

Managing and Valuation of Exempt Provident Funds: Valuation issues and challenges

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Theoretical Aspects of Exempt Provident Fund Valuations and GN 29

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MANAGING AND VALUATION OF EXEMPT PF
THE BACKGROUND

- Section 17 of the Employees' Provident Funds and Miscellaneous Provisions Act (EPFMP) Act, 1952 empowers the Government to exempt any establishment from the provisions of the Employees Provident Fund Scheme 1952 provided the rules of the provident fund set up by the establishment are not less favourable than those specified in section 6 of the EPFMP Act.
- The rules of the provident funds set up by such establishments generally provide for the deficiency, if any in the rate of interest on the contributions based on its return on investment as compared to the rate declared for Employees' Provident Fund by the Government under paragraph 60 of the Employees' Provident Fund Scheme, 1952 to be met by the employer.
- This results in an inherent interest rate guarantee resulting in a need for actuarial valuations for such exempt provident funds.
- GN29 lays out guidance to actuaries in performing actuarial valuations.

MANAGING AND VALUATION OF EXEMPT PF GN29 – KEY ASPECTS

Methodologies recommended in this guidance notes are:

- **Deterministic approach** – This approach computes the present value of the interest rate guarantee under three interest rate scenarios:
  - Base Case Scenario,
  - Rising Interest Rate Scenario and
  - Falling Interest Rate Scenario.

  The present value obligation [PVO] of the interest rate guarantee is set equal to the average of the present values determined under these scenarios.

- **Option pricing approach** – This approach uses the modified version of the Black Scholes Option Pricing Model for determining PVO of the interest rate guarantee. This approach provides for the stochastic behaviour of future interest rates by assuming that the future interest rates follow a log-normal probability distribution.

- **Stochastic Modelling approach** – involve stochastic projection of gilt rates over future & determining probable years of shortfall to arrive at PVO of interest guarantee.

MANAGING AND VALUATION OF EXEMPT PF
ACTUARIAL VALUATION

Input Requirements and Valuation Assumptions

All the above approaches will require following inputs for valuing the interest rate guarantee.

- Plan Rules of the Exempt Provident Fund
- Demographic - Normal Retirement Age, Date of birth, Date of joining
- PF Accumulation for each employee as on the valuation date
- Aggregate PF Accumulation as on the valuation date
- Three to five years data on the investment returns pertaining to the PF investment portfolio

Asset Data

- Fair value of Plan Assets as on the Valuation Date
- Maturity Profile of the Plan Assets

Valuations Assumptions

- Attrition Rate, Discount rate, Mortality.
- Expected future return on the PF investment Portfolio.

Valuation Issues and Challenges

MANAGING AND VALUATION OF EXEMPT PF VALUATION ISSUES

A. Companies with significant mismatching duration of assets and liabilities

- Companies hold short duration assets to manage long duration liabilities or vice versa
- Re-investment risk on assets portfolio, when assets duration is less than liabilities.
- Deterministic approach consider constant return on asset portfolio.

B. Credit risk for asset portfolio – recent downgrading of Corporate bonds

- How is client determining fair market value of assets?
- Should bond portfolio be determined using Discounted cash-flow model & discount rate used should include credit risk premium.

MANAGING AND VALUATION OF EXEMPT PF SURPLUS REPORTING

Treatment of surplus identified in Provident fund scheme is an area of different practices among Actuarial fraternity.

If Fair Value of Assets is Greater than the Total Liability – varied approaches

A. Set FV of Assets equal to Total liability resulting in net balance sheet value to be zero.

B. To report a surplus with a note that due to surplus company net liability is NIL.

C. Using asset ceiling in INDAS19 provisions, when preparing full disclosures.

- Asset ceiling is present value of any economic benefits available in form of refunds from the plan or reductions in future contributions to the plan.
- Employers can not take refund from the scheme nor can reduce their regular contributions towards the scheme. But they can use the surplus to accommodate future shortfalls.
- An Actuary can apply appropriate asset ceiling in preparation of full disclosures for PF scheme.

MANAGING AND VALUATION OF EXEMPT PF REPORTING SENSITIVITIES

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- INDAS19 accounting standards require reporting sensitivities on key assumptions for Defined benefit plan.
- Provident fund being a hybrid scheme with reporting under Defined Benefits would also need to report sensitivities.
- Some remarks from this reporting:
  - Discount rate sensitivities – usually interest guarantee form less than 5% of overall liability for scheme. Reporting sensitivities on overall liability usually show significantly small impact.
  - Demographic assumptions (attrition rate) – again shows significantly small impact on overall liability.
  - Yield spread – difference in asset portfolio yield and interest rates declared by EPFO. Usually guarantee value is most sensitive on this assumption for future. And usually it is not used in reporting.

Should Actuary additionally report sensitivities only on interest rate guarantee.

Sample PF Disclosures

MANAGING AND VALUATION OF EXEMPT PF SAMPLE DISCLOSURE

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Summary of Results

	01-Apr-16 To 31-Mar-17	01-Apr-17 To 31-Mar-18
Accumulated PF Balances (A)	13,960,521,528	16,250,725,292
Cost of Interest Rate Guarantee (B)	499,588,807	604,680,245
Total liability (A + B)	14,460,110,335	16,855,405,537
Fair Value of Plan Assets	14,460,110,335	16,855,405,537
Deficit / (Surplus)	-	-
Effect of Asset Ceiling	-	-
(Asset)/Liability Recognised in the Balance Sheet	-	-
Discount Rate	8.00%	7.91%

The FV of assets in this scenario is greater than the total liabilities, hence assets are set equal to the liabilities

MANAGING AND VALUATION OF EXEMPT PF SAMPLE DISCLOSURE

Change in Defined Benefit Obligation

	01-Apr-16 to 31-Mar-17	01-Apr-17 to 31-Mar-18
Defined Benefit Obligation as of Prior Year end	11,982,390,878	14,460,110,335
Current service cost	908,946,395	1,009,100,918
Interest Cost	892,953,859	1,060,322,018
Benefit payments from plan assets	(1,187,723,581)	(1,336,018,771)
Transfer In/Out	456,080,757	348,989,915
Employee contributions	1,161,260,572	1,273,481,839
Actuarial (Gain) / Loss - Financial Assumptions		
Actuarial (Gain) / Loss - Experience	246,201,455	39,419,282
Defined Benefit Obligation as of Current Year end	**14,460,110,335**	**16,855,405,537**

MANAGING AND VALUATION OF EXEMPT PF SAMPLE DISCLOSURE

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Change in Fair Value of Assets

	01-Apr-16 to 31-Mar-17	01-Apr-17 to 31-Mar-18
Fair value of plan assets at end of prior year	11,982,390,878	14,460,110,335
Expected Return on Plan Assets	892,953,859	1,060,322,018
Employer contributions	908,946,395	1,009,100,918
Employee contributions	1,161,260,572	1,273,481,839
Benefit payments from plan assets	(1,187,723,581)	(1,336,018,771)
Transfer in/Out	456,080,757	348,989,915
Acquisition / Divestiture	-	-
Actuarial Gain/(Loss) on Plan Assets	246,201,455	39,419,282
Fair value of plan assets at end of year	**14,460,110,335**	**16,855,405,537**

MANAGING AND VALUATION OF EXEMPT PF
SAMPLE DISCLOSURE

Total Expense Recognised in the Statement of Profit & Loss Account

	01-Apr-16 to 31-Mar-17	01-Apr-17 to 31-Mar-18
Service cost		
a. Current service cost	908,946,395	1,009,100,918
b. Past service cost	-	-
c. (Gain) / loss on settlements	-	-
d. Total service cost	908,946,395	1,009,100,918
Net interest cost		
a. Interest expense on DBO	892,953,859	1,060,322,018
b. Interest (income) on plan assets	(892,953,859)	(1,060,322,018)
c. Interest expense on effect of (asset ceiling)	-	-
e. Total net interest cost	-	-
Other Adjustments	-	-
Defined benefit cost included in P&L	**908,946,395**	**1,009,100,918**

MANAGING AND VALUATION OF EXEMPT PF
SAMPLE DISCLOSURE

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Total Cost Recognised in Comprehensive Income

	01-Apr-16 to 31-Mar-17	01-Apr-17 to 31-Mar-18
a. Actuarial (Gain) / Loss due to Demographic Assumption changes	-	-
b. Actuarial (Gain) / Loss due to Financial Assumption changes	-	-
c. Actuarial (Gain) / Loss due to Experience Changes	246,201,454	39,419,283
d. Return on Plan Assets (Gain) / Loss	(246,201,455)	(39,419,282)
e. Changes in asset ceiling/onerous liability (excluding interest income)	-	-
F. Total Actuarial (Gain)/Loss included in OCI	0	0

Questions