

Institute of Actuaries of India

APS 15: Pension Fund Terminology

Classification: Practice Standard.

Legislation or Authority

1. Professional Conduct Standard (PCS, version 2.00)
2. IAA International Actuarial Standards of Practice: Currently there is no applicable IAA standard of Practice

Application

An Actuary (a Fellow member of IAI) preparing an actuarial report in respect of a retirement benefit scheme/fund in India.

Author:

Pensions and Social Security Board (PSB)

Compliance:

Members are reminded that they must always comply with the Professional Conduct Standards (PCS) and that Actuarial Practice Standards impose additional requirements under specific circumstances.

Status

This Actuarial Practice Standard shall constitute a practice standard on professional matters within the meaning of Rule 29 (ℓ) of the Rules of the Society and has been authorized to be issued by the Executive Committee in its meeting held on 14 02 2005.

Version:

1.00	Applicable for all actuarial reports carried out on and after 01 04 2005
1.01	Effective from 01 01 2012

1. INTRODUCTION

1. This is primarily intended to be a reference document to provide common understanding (both within and outside the actuarial profession) where titles of pension funding methods are quoted. The purpose of this Actuarial Practice Standard is to provide descriptions of funding

methods and not to provide guidance on the suitability of particular methods for particular circumstances.

2. It is emphasised that the publication of these descriptions in no way inhibits actuaries from exercising professional judgment as to the funding methods they use and that the descriptions are primarily to be regarded by members as a useful form of shorthand, avoiding the necessity of full definition in cases where the methods are used, while ensuring consistent use of terminology. However, there is nothing to prevent members explaining, in addition, the funding method in their own words.

3. Where one of the methods is used with modification, for example in the treatment of past service liabilities, reference should be made to the method adding a suitable description of the amendments. Where, however, alternative methods can be used as a reference point, the appropriate title should refer to the method which requires the least modification to achieve the desired result.

4. There is also included a description of the Projected Accrued Benefit Method.

2. GLOSSARY:

Eligible Service

Number of years of service required for eligibility of receiving benefit from the scheme.

Pensionable Service:

Actual service, subject to a limitation, which will count for calculation of pension. Such limitation may be an upper limit on the number of years to be counted or service below a certain age or service before a certain date partially counted/not counted at all.

Contributory Service

Period of service for which contribution is expected to have been paid.

Non-Contributory Service

Period of service for which no contribution is expected to be made. Such service does not normally count as pensionable service.

Credit Service

Number of years of service granted to member on joining a scheme, who has brought from his previous Employer's Fund equitable interest in respect of service rendered with such employer. Credit service will be added to Pensionable service under current employer.

Final Salary Scheme

Pension Scheme where Pension is a fraction of the notional salary and date of exit.

Final Average Salary Scheme

Pension Scheme where Pension is fraction of the notional salary averaged over few years or months prior to date of exits. Such period varies generally between 10 months and 5 years.

Career Average Salary Scheme

Pension Scheme where Pension is a fraction of total salary earned during the entire career.

Decrement

Actuarial bases which are taken into account to carry out actuarial exercises.

Present Value

Value of the benefit computed as per provision of the scheme and valued using actuarial methods based on Decrement and Expenses, if any.

Cash Flow

Projection of Income and Expenditure of fund over a period using Decrements.

Discounted Cash Flow

Aggregate of the present value of the cash flow over years.

Pre Scheme Liability

Pre Scheme liability refers to the liability for the period of the service prior to the inception of the present scheme, when the benefit may be on the same scale as present scheme or different.

Post Scheme Liability

Liability in respect of the service rendered after the inception of the scheme.

Past Service liability

Liability of the service rendered up to the beginning of the current period.

Current Service Liability

Liability arising due to the service rendered during the current period.

Future Service Liability

Liability arising due to the service rendered from the end of the current period till exit of employee.

Vested Pension Liability

Liability of the Pension already vested.

Deferred Pensioner

A pensioner in respect of whom the benefit is secured by way of Deferred Annuity.

Contingent Beneficiary Liability

Cost of Pension payable to Vested Pensioner is secured by Joint Life Annuity. Difference of Cost between Joint Life Annuity and Single Life Annuity of Pensioner, represent Contingent Beneficiary Liability.

Contingent Beneficiary Pension Liability

Liability arising out of the future beneficiaries of the current pensioners.

Deferred Pension Liability

Liability of the staff who have retired and left without being eligible for pension but the benefit has not vested so far.

Actuarial Value of Assets

The value, following actuarial practice, placed upon the assets for the purpose of the valuation. It could be an assessed value, the market value or Nominal value.

Actuarial Surplus/Deficit

The difference between the Actuarial Value of Assets and the Actuarial Liability.

Funding Ratio: The ratio of the Actuarial Value of Assets to the Actuarial Liability.

Commutation

Commutation is the capital sum payable for foregoing a part of the monthly pension for life.

Return of Capital

It is an amount payable to nominee on death of a pensioner.

3. ACTUARIAL LIABILITY

3.1 Accrued Liability

Accrued Liability is the aggregate of Past Service Liability and Current Service Liability and Deferred Pension Liability and Vested Pension Liability.

3.2 Total Service Liability

This is an aggregate of the Past Service Liability and Current Service Liability and Future Service Liability and Deferred Pension Liability and, Vested Pension Liability and Contingent Pension Liability etc.

3.3 Whether or not allowance is to be made for discretionary payments, for example increases to be made to pensions after award, is not specified by the method and the treatment of such payments should be described in the valuation assumptions.

4. CONTRIBUTION RATE

4.1 Standard Contribution Rate

The contribution rate (employer and/or employee) appropriate to a particular funding method before taking into account any Actuarial Surplus. It is normally expressed as a percentage of pensionable pay.

4.2 Modified Contribution Rate

The contribution rate (employer and/or employee) obtained by adjusting the Standard Contribution Rate to allow for any Actuarial Surplus. It is normally expressed as a percentage of pensionable pay. There are various ways of amortising the Actuarial Surplus and hence of adjusting the Standard Contribution Rate. The method used should be appropriate for the purpose.

4.3 Control Period

The period over which the Standard Contribution Rate has been calculated to remain constant, assuming that the Funding Ratio at the beginning and end of the period is 100 per cent. The Control Period, which is normally one year or more but which could be less than one year, should be specified.

5. FUNDING METHODS

5.1 Accrued Benefits Funding Methods are a major category of funding methods in which the Actuarial Liability for active members is based on pensionable service accrued up to the valuation date or to the end of the Control Period, as appropriate. The treatment of benefits not directly linked to pensionable service is not specified but left to actuarial judgment, subject to the need for consistency between successive valuations. The Standard Contribution Rate is derived from the definition of the Actuarial Liability appropriate to the particular Accrued Benefits Funding Method being used. It is the rate sufficient, after taking into account the Actuarial Liability at the beginning of the Control Period and the benefits expected to be paid during the Control Period, to provide for the Actuarial Liability at the end of the Control Period.

5.2 Differences between the various Accrued Benefits Funding Methods arise from the treatment of decrements in membership and increases in pensionable pay when calculating the

Actuarial Liabilities for active members. This affects the value placed not only on the Actuarial Liability but also on the Standard Contribution Rate.

5.3 When projecting pay during the Control Period, or thereafter when required by the particular funding method, allowance is made for general increases in pay levels and also for career progression, where appropriate if any. Once the link with pensionable pay is deemed to be broken by the particular funding method, the amount of benefit could be assumed to continue to increase by other means, for example, at the statutory revaluation rate for preserved pensions.

5.4 Contributions and payments of benefits during the Control Period and numbers of members, amounts of pension and pensionable pay at the end of that period are projected using a common method for all Accrued Benefits Funding Methods. Normally allowance is made for all types of decrements, for example death in service, early withdrawal, early and normal retirement etc. Whether or not allowance is made for new entrants during the control period is not specified but left to actuarial judgment and should be stated in the actuarial assumptions.

5.5 Standard Contribution Rates are calculated for Accrued Benefits Funding Methods by a common methodology, expressed in the following formulae:

n = Control Period

AL_o = Actuarial Liability calculated as at the valuation date.

AL_n = Actuarial Liability calculated as at the end of the Control Period in respect of active members, where numbers of members, pay and pensions are projected to that date according to the actuarial assumptions.

$B(o,n)$ = Expected payments of benefits during the Control Period, projected according to the actuarial assumptions.

$S(o,n)$ = Expected pensionable pay during the Control Period, projected according to the actuarial assumptions.

$SCR(o,n)$ = Standard Contribution Rate payable during the Control Period.

Therefore,

$SCR(o,n) = [PV(AL_n) - AL_o + PV(B(o,n))]/PV(S(o,n))$ where $PV(***)$ stands for the present value of ***, as at the valuation date.

If future entrants are taken into account, both the numerator and denominator of the formula would make allowance for them.

6. ACCRUED BENEFITS FUNDING METHODS

6.1 Projected Unit Method

The Actuarial Liability for active members either as at the valuation date or as at the end of the Control Period is calculated taking into account all types of decrement. In such calculations pensionable pay is projected from the relevant date up to the assumed date of retirement, date of leaving service or date of death as appropriate. This method is also known as the Projected Unit Credit Method.

6.2 Current Unit Method

The Actuarial Liability for active members is calculated taking into account all types of decrement. In calculating the Actuarial Liability as at the valuation date pensionable pay is not projected. In calculating it as at the end of the Control Period, pensionable pay is projected to that date. In such calculations, allowance is made for increases in the benefits between the relevant date and the assumed date of retirement, date of leaving service or date of death as appropriate. The increases to be included are those applicable to preserved pensions as required by legislation or by the rules.

6.3 Partly Projected Unit Method

The Actuarial Liability for active members is calculated as for the Current Unit Method except that, where pensionable pay is not projected in that method, some but not full allowance is made in the Partly Projected Unit Method.

6.4 Defined Accrued Benefit Method

The Actuarial Liability for active members either as at the valuation date or as at the end of the Control Period is calculated on the assumption that the scheme will be discontinued on those dates. As with the other methods, the Actuarial Liability is normally assessed on the basis of actuarial assumptions consistent with those used for long term funding. It is assumed that members will be entitled to the discontinuance benefits which are defined in the rules of the scheme before reduction of benefits under the application of any priority rules in a fund with a shortfall in assets. Additionally (but not alternatively) calculations may be made which assume that members will receive higher discontinuance benefits, by exercise of discretion, and both the Actuarial Liability and the Standard Contribution Rate would then be calculated by reference to those higher benefits. The Funding Ratio, however, will always be certified by reference to the discontinuance benefits defined in the rules.

7. PROSPECTIVE BENEFITS FUNDING METHODS

7.1 Prospective Benefits Funding Methods are a further major category of funding methods. The Actuarial Liability for active members is based on the total benefits expected to be awarded, taking into account both the pensionable service accrued up to the valuation date and potential service after that date. Allowance is made for contributions to be paid after the valuation date at the level of the Standard Contribution Rate.

7.2 When calculating the present value of benefits, pay is always projected up to the assumed date of retirement, date of leaving service or date of death as appropriate. When valuing future pensionable pay on which contributions will be charged, pay is always projected over the period for which contributions will be paid. Allowance is made both for general increases in pay levels and also for career progression, where appropriate.

7.3 Under all Prospective Benefits Funding Methods allowance is normally made for all types of decrement when calculating both the Actuarial Liability and the Standard Contribution Rate.

7.4 The Actuarial Liabilities are calculated for Prospective Benefits Funding Methods by a common methodology, expressed in the following formulae:

$$AL_0 = \text{Actuarial Liability calculated as at the valuation date.}$$

TB_0 = Total benefits expected to fall due for payment after the valuation date.

S_0 = Expected future pensionable pay in respect of active members.

SCR_0 = Standard Contribution Rate payable from the valuation date.

Therefore, $AL_0 = PV(TB_0) - SCR_0 \cdot PV(S_0)$

where $PV(***)$ stands for the present value as at the valuation date of ***.

7.5 Differences between the various Prospective Benefits Funding Methods arise from the method used to calculate the Standard Contribution Rate. This affects the value placed not only on the Standard Contribution Rate but also on the Actuarial Liability.

7.6 Specific types of Prospective Benefits Funding Methods are described below:

7.7 Entry Age Method

The Standard Contribution Rate is determined as the contribution rate which, if payable over the expected future membership of a group of new entrants, would provide for the total expected benefits payable in respect of that group. The method does not define the group. For example, it could be the group consisting of current entrants to the scheme or the entrants who gave rise to the current active members. A single average age of entry or a distribution of entry ages could be used. Alternatively the Actuarial Liability could be calculated individually for each active member.

7.8 Attained Age Method

The Standard Contribution Rate is determined as the contribution rate which, if paid over the expected future membership of the active members, would provide for the expected benefits payable in respect of them arising from their future service. The value of the future service benefits is taken as the difference between the value of total benefits and the value of the past service benefits calculated as for the Projected Unit Method. This results in the Attained Age Method and the Projected Unit Method having the same Actuarial Liability but different Standard Contribution Rates.

7.9 Aggregate Method

No Standard Contribution Rate is determined. A Modified Contribution Rate is calculated directly as the contribution rate which, if paid over the expected future membership of the active members, would be sufficient, taking into account the Actuarial Value of Assets, to provide for the benefits.
