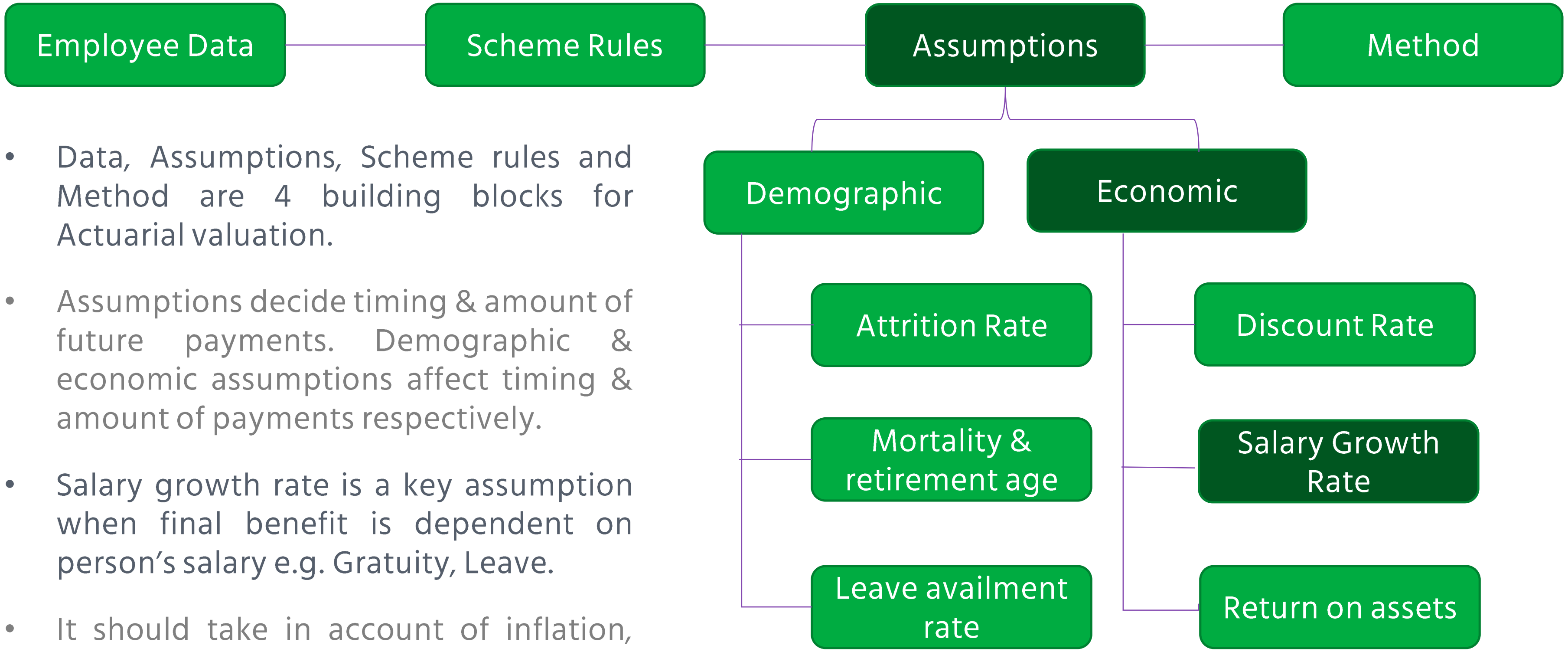
Imperatives for a smooth actuarial valuation process

Assumptions – Part I

Salary Growth Rate

Actuarial valuation process
Building blocks



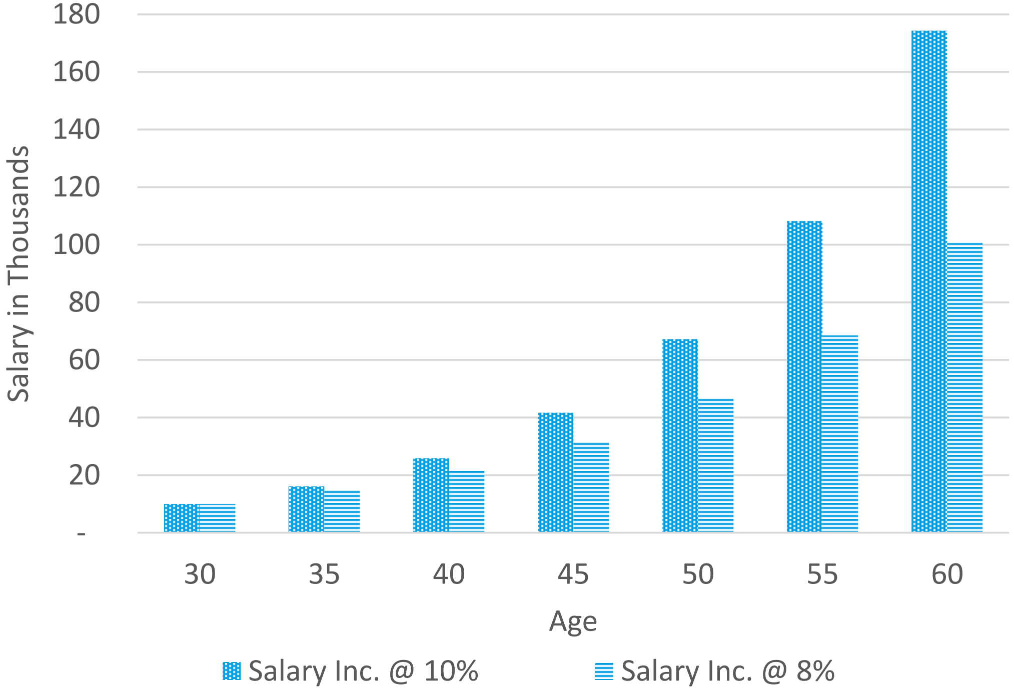
- Data, Assumptions, Scheme rules and Method are 4 building blocks for Actuarial valuation.
- Assumptions decide timing & amount of future payments. Demographic & economic assumptions affect timing & amount of payments respectively.
- Salary growth rate is a key assumption when final benefit is dependent on person's salary e.g. Gratuity, Leave.
- It should take in account of inflation, seniority, promotion & other relevant factors such as supply and demand in the employment market.

Accounting standards require company should take a long term view in selection of Salary assumption.

MERCER

Salary growth rate assumption
How it is used

- Final payments in most defined benefits schemes in India like Gratuity, Leave are based on final salary of employee with Company.
- Actuarial valuations involve future projection of employee working lifetime. It consider at different point of time in future likelihood of payment and use employee expected salary at that point of time.
- *This sample illustration consider employee with current age 30 years and current salary of INR 10,000.*
- *It illustrate how an employee salary is expected to grow in future at two different projection rates – 10% p.a. and 8.0% p.a.*
- *As shown with only 2% p.a. difference in projection rate, employee final salary in future will see a significant variation.*
- *E.g. at age 60 years, difference is almost 75%.*



Each future year employee salary is expected to grow with Salary rate assumption taken in valuation.

Salary growth rate assumption
Impact on financials

- Salary growth rate assumption mostly have a positive correlation with scheme obligation i.e. an increase in salary assumption leads to increase in obligation (all other assumptions remaining same).
- Some examples driving the impact on obligation include:

In Gratuity when benefit capped at INR 2M. For employees who have (or will) hit this limit, change in salary assumption will have a limited impact on obligation.

Employee working lifetime - the longer an employee is expected to stay with company, the larger is likely impact of change in salary assumption on obligation and vice versa.

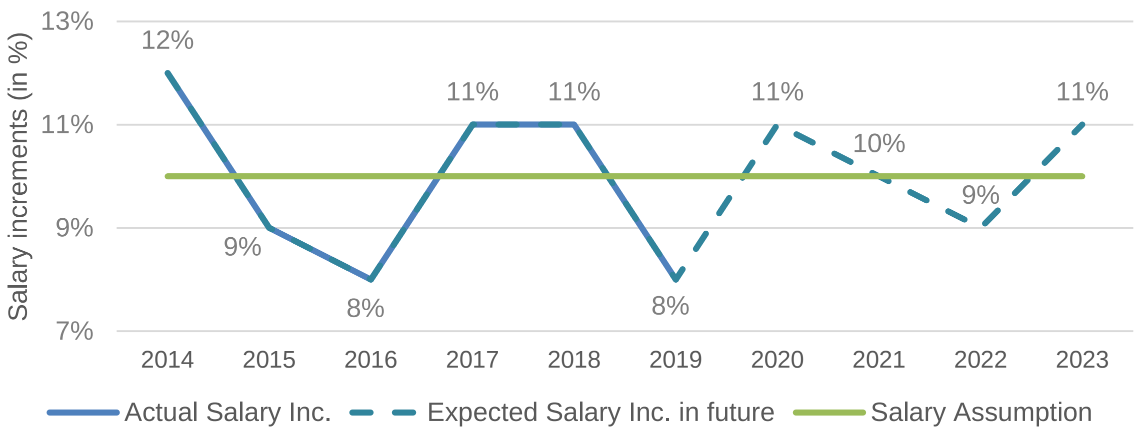
Discount rate – a change that increases gap between salary & discount rate assumption will have a larger impact on obligation and vice versa.

Scheme type – exempt Provident fund, Long service awards where benefits are not dependent on final salary of employee do not need a salary assumption.

Year over year change in assumption leads to volatility in reported financials.

Salary growth rate assumption
Best practices

A. Sample Illustration - Salary Inc. change over years

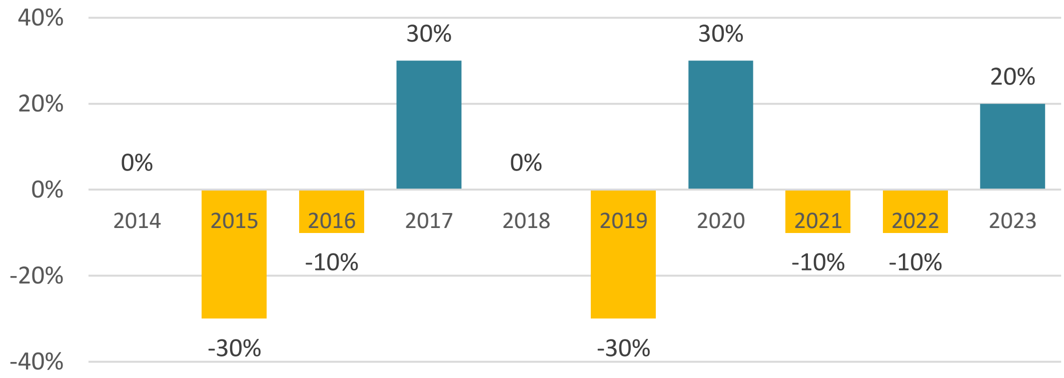


- To set Salary assumption, Company should look at both past trends of actual increments and expectation of future business plans.
- It should be kept stable unless business expects a significant shift in plans to raise or reduce future salary increment YOY for long term.

Study of past trends blended with future expectation is the right way to decide on Salary assumption

- *Illustration aside show likely impact on obligation if company decides to change its long term salary growth rate assumption each year with actual increments (above).*
- *It assumes sensitivity of 10% for obligation for every % change in salary assumption.*

B. Sample Illustration - Likely impact on Obligation



Salary growth rate assumption
Best practices

7.86% p.a.

Spurious accuracy – considering it as a long term assumption, company should look to round it to say nearest 25, 50 or 100 BP. This will help keep the assumption more stable for long period of time.

Salary assumption is used for each employee for all future years. At the end of the day, it is still only an assumption!

Assumption varying by year – if company has a different expectation of near term salary increase but still believe long term salary assumption is intact, it is possible to implement assumption this way. E.g.

Short Term

Long Term

Salary assumption - 10% p.a. for next 3 years and 8.0% p.a. thereafter.

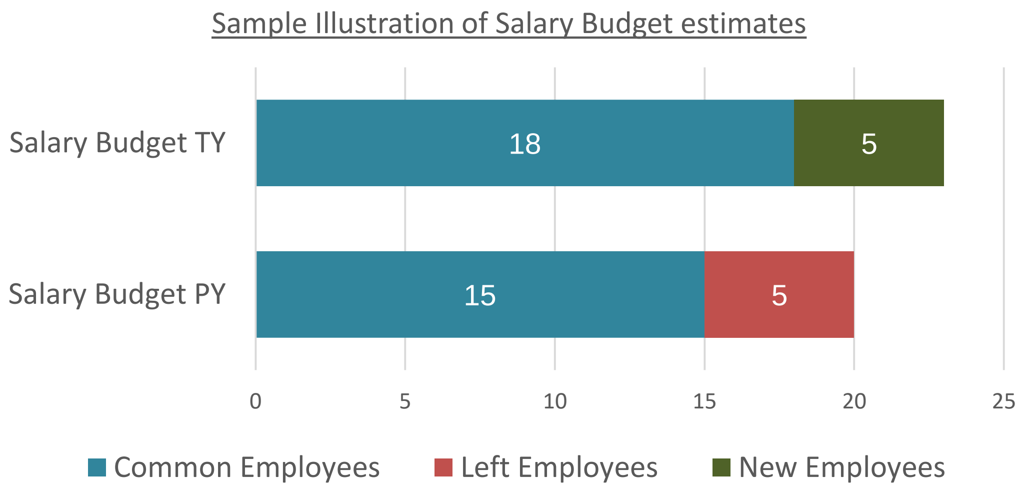
Workers vs. Management

Assumption varying by type of business\employee – assumption can also be varied based on nature of business, employee level, cadre etc.. Attempt should be to segregate heterogeneous groups for whom company looks to follow different increment practice in future. E.g.

Salary assumption – 8.0% p.a. for staff, 7.0% for workers

Salary growth rate assumption
Experience analysis

- An actuarial analysis on past salary increment experience can also be done to set future assumptions. Typical steps involved include:
  - Collect historical data (4-5 years at least) & remove anomalies due to significant events like M&A.
  - Determine YOY increase in salary for continuing employees
  - Form homogenous groups where actual salary increase move concurrently over years.
  - Iterate process above to see if any alternate assumptions gives better match to actual experience.
  - Estimate impact of proposed assumptions on obligation.



Overall Inc. in Salary budget	15 % {= (18+5)/(15+5)}
Inc. in Salary budget for continuing EE's	20 % {= 18/15}

Above illustrates an example where company views Salary increase assumption as total increment in salary budget. In actual what should considered for actuarial assumption is the increments given to continuing employees.

Company should also involve auditors viewpoint in decision for assumptions

Employee Benefits
Leverage Mercer expertise

Assumption Setting

We actively discuss approach used by client teams in setting assumptions & share our viewpoint. We also assist such discussions with auditors & facilitate agreement b\w all stakeholders.

Experience analysis

Mercer Actuaries can help to perform a detailed experience study analysis. We advice companies to look to get such analysis performed at least once in 5-6 years as a part of assumption setting process.

Contact Us

Hemanshu Jain, F.I.A.I
Hemanshu.Jain@mercer.com

Kunal Bansal
Kunal.Bansal@mercer.com

MERCER

welcome to brighter