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"A noble man's thoughts will never go in vain. -Mahatma Gandhi."

"I hold every person a debtor to his profession, from the which as men of course do seek to receive countenance and profit, so ought they of duty to endeavour themselves by way of amends to help and ornament thereunto -Francis Bacon"

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Leave Availment and Actuarial Valuations



“ In today’s competitive market, employee benefits plays major role for employee retentions, one of the benefit is different types of leave offered by the employer. Few of them are Casual Leave (CL); Privilege Leave (PL) or Earned leave (EL); Sick Leave (SL); Maternity Leave (ML); and may be other kind of leaves. Normally it is a tendency that employee would accumulate these leaves and encash on exit (Accounting and valuation of such leave is fairly simple and non-subjective), though there are employees who will also consume from accumulated leaves, we have tried to analyse this consumption pattern in this paper. ”

The question comes when some type of leaves (except which can’t be utilised in future period but can be encashed at time of exit) have a liability on availing the benefit of leave while in service for the employer. How to value such liability which arises due to employee availing the leaves is the main question? There is main assumption of leave availment rate (which needs to be decided by Company in consultation with Actuary based on some past data analysis and practical judgement across various industries). There are many other assumptions involved like future salary escalation, rate of discounting, attrition, probability of death, etc. The role of actuary can be defined to use the reasonable and justifiable assumptions which will be useful in actuarial valuation of leave availment liability.

This paper (*) deals with analysis of leave availment, i.e. leaves consumed by employees during the year in excess of leave credited during the year, the additional consumption is from their past accumulated leave balances.

There is not much guidance provided for leave availment under any of the accounting standards like USGAAP or IFRS or Indian GAAP. Here authority is unable to provide any guidance on measurement of such benefits which may have essential difference in nature of benefits and considering Indian scenario where even Revised AS 15 or Ind AS 19 of the Institute of Chartered

Accountants of India is part extension of IAS 19. International Companies forcing actuaries to comply with USGAAP and IFRS without realizing that the benefits offered in India are totally different in nature from other benefits.

Focusing on leave availment, we would first understand the issue of leave availment which is totally different from paying the lump sum benefit on exit. Leave availment occurs when employee is enjoying the benefit of being absent from service because of services provided in earlier periods, where no additional amount is paid but when employee enjoys the leave from the service still he/she is paid full salary, reason being the accumulated leaves from rendering services in prior years.

The accounting principle can be considered as under:

An employer accruing a liability for employees’ leave accumulated considering future absences with few conditions as below:

- Employees’ rights to avail the leave absences in future years is attributable to the employees’ by rendering services in prior years which result in employer’s liability,
- The liability is related to vesting or accumulations criteria,
- The amount can be estimated with reasonable assumptions.

The focus should be on measurement and recognition of such availment liability. Expected salary payable for availed leaves or will be availed in future before exit. One of the commonly used accounting term is mentioned below:

- **Accumulating compensatory absences**

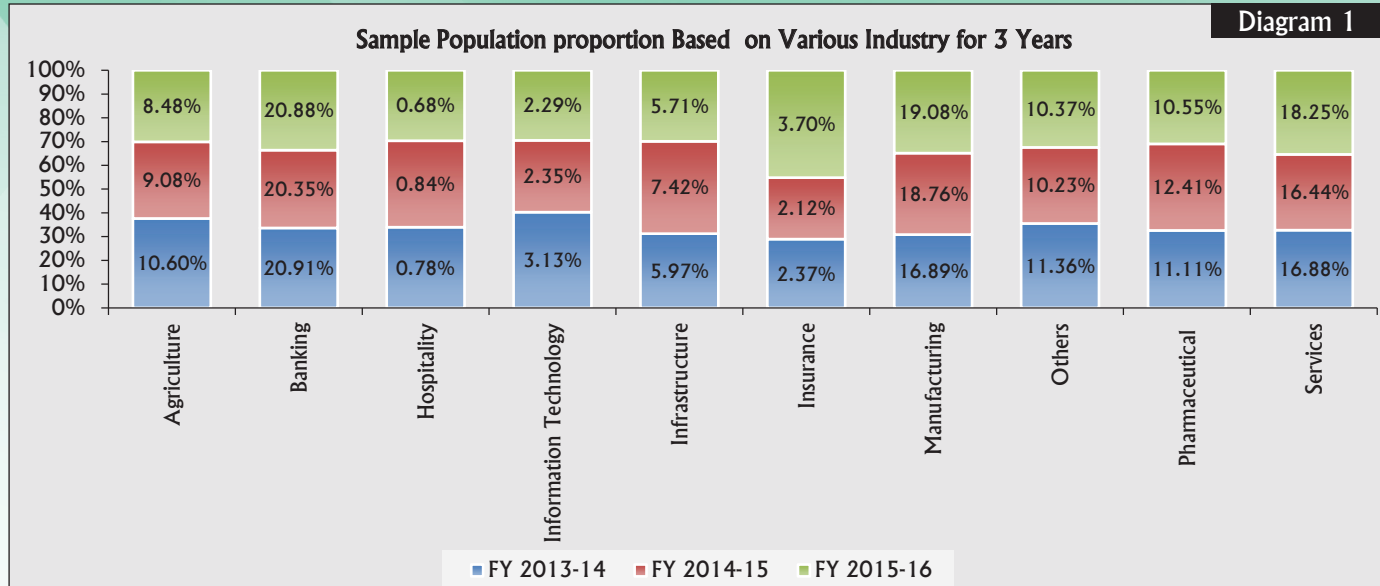
Accumulating compensatory absences may be vesting when the employees are entitled to a cash payment for unused entitlement on leaving the enterprise or non-vesting when employees are not entitled to a cash payment for unused entitlement on e he companies could have rules which make a leave remain in an accumulating status for a defined period and thereafter lapse so that from such point of time it would become non- accumulating but such leave balances can be used while in service.

(*) Paper was discussed in 12th Seminar Current Issues in Retirement Benefits held on 29-07-2016, in Mumbai.

Such Accumulating compensatory absences can be classified as under:

- Long-term Compensatory absences (accumulating) which can be availed and also expected to be availed for any future period over and above twelve months from end of the period but before exit e.g. Privilege Leave / Earned leave / Sick Leave.

Diagram 1



- Compensatory absence that can be availed during the service and can be encashed;
- Compensatory absence that can be availed while in service and any unutilized leave that can be availed before separation (or may lapse).

Long-term Compensatory absence:

- For example in many organisation normally Privilege Leave / Earned leave (accumulating and encashable) falls in to first category where it can be availed during the service at any point of time or encashed at time of exit depending on the rules of the company.
- Sick Leave (accumulating but non-encashable) falls in to second category where it can only be availed during the service at any point of time subject to the rules of the company.

Measurement:

Long-term Compensatory Absences require Measurement of availment on Actuarial basis which should consider the following points:-

- Credit of Leaves and maximum accumulation limit (if any);
- Cost to Company (CTC) or Gross Salary and
- Probability of leave availed which will give rise to any Liability.

For valuing availment liability for Long-term Compensatory Absences we

need to consider the probability that an employee will avail leave while in service. To arrive at the assumption of availment rate past experience of the company / Industry can be considered and marginal allowances can be made based on professional judgement.

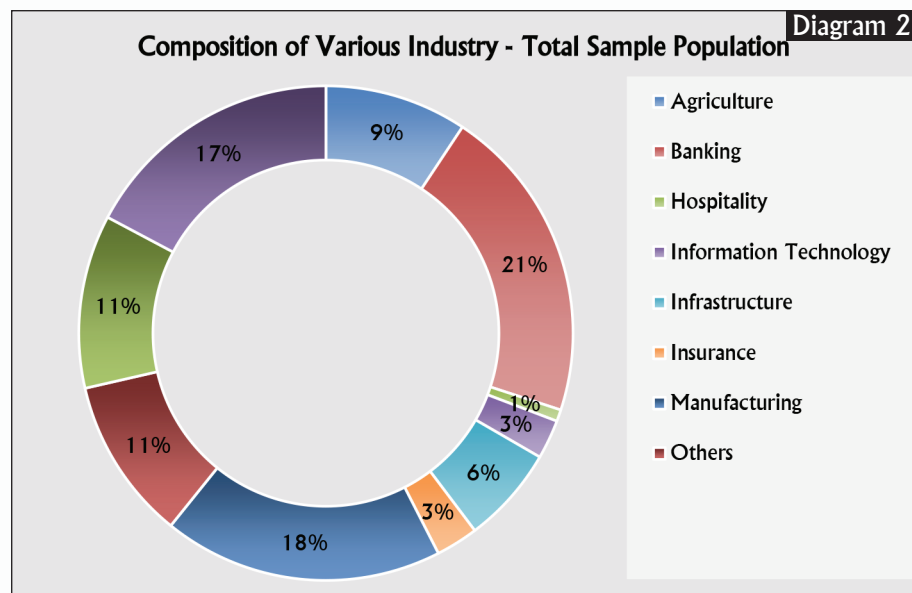
We have made few analysis to arrive at availment rate pattern of accumulated leave balances industry wise as well as age related based on some sample data. Considering Indian scenario (industries as well as various ages of employees), we have collected some base leave data from past 3 years for approximately 1 million employees for our analysis to check the average leave availment patterns across over various sectors / industries as well as under few age bands.

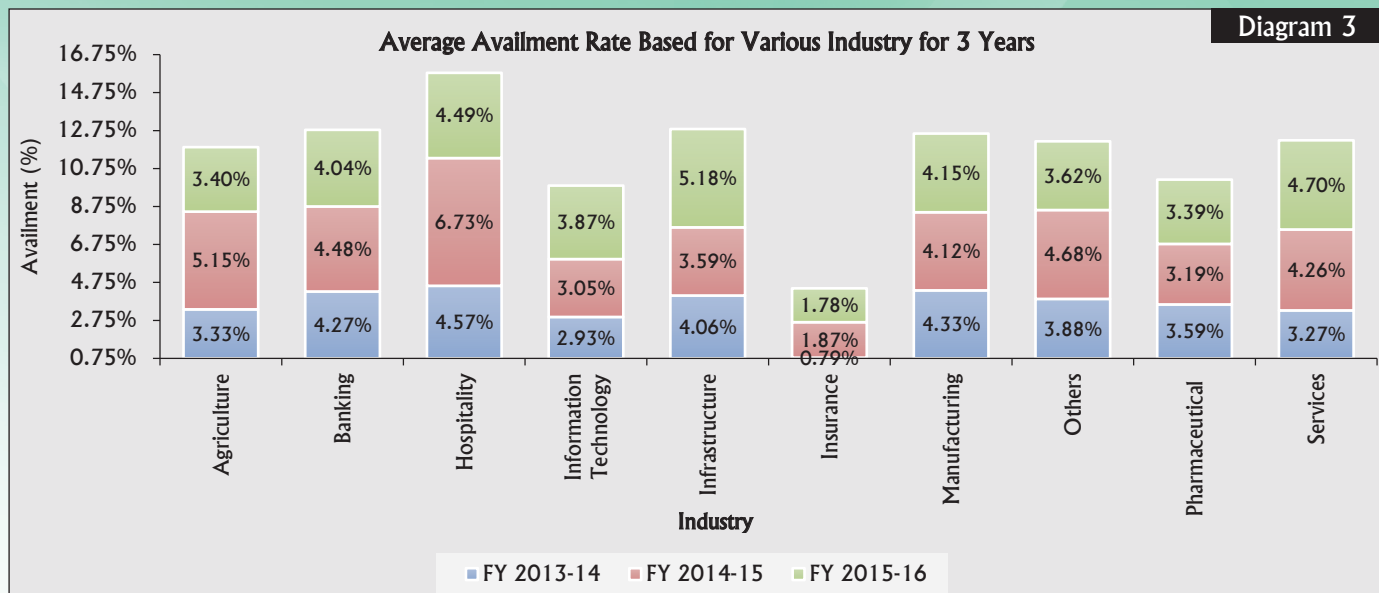
We have used raw data of various industries and collected the base data like Employee Code, Date of Birth (DOB), Date of Joining (DOJ) and Accumulated Leave balances as on certain date. The raw data had many abnormalities like duplicate data, missing DOB & DOJ, negative or blank leave balances, then the data was cleaned after removing duplicate data, and considering average DOB & DOJ where missing, and negative & blank leave balances considered as 0 (Zero).

Above Diagram 1: shows Sample Population proportion for each year Based on Various Industry:

Below Diagram 2: shows composition of various industry on total sample population data:

Diagram 2





Normally it is seen across the industries that leave accumulation pattern follows Last in First out Method (LIFO) i.e. leave availed are first taken out from current years credit and any unused balance is accumulated. Defined Benefit Obligation (Actuarial Liability) is the actuarial value of accumulated leave balance at the end of the period based on few assumptions.

To arrive at the availment rate on the assumption of Last in First out (LIFO) basis we have applied below formula:

Difference: Leave balance at beginning of the period minus Leave balance at end of the period;

if difference is negative availment rate is zero;

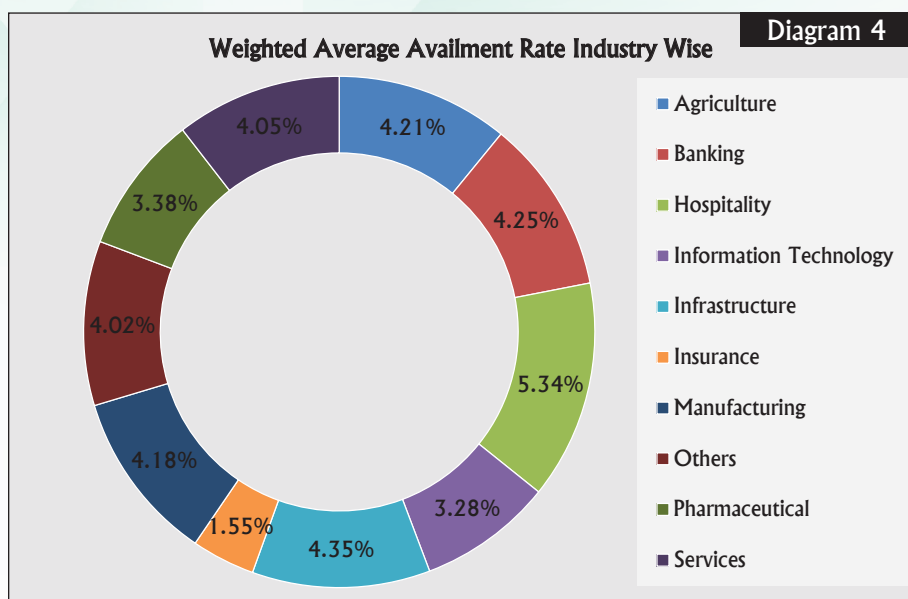
If difference is positive then the availment rate is calculated as:

Above difference divided by Leave balance at beginning of the period multiplied by 100.

Above exercise is done for all employees and then weighted average is calculated.

Above Diagram 3: shows Average Availment Rate Based on Various Industry for 3 Years based on sample population:

Considering above data we have arrived at weighted average availment rate for each industry mentioned here. above Diagram 4: shows Weighted Average Availment Rate Based on Various Industry based on sample population:



Similar exercise was performed for age related (starting age 18 years to Normal Retirement Age 60 years)

converted into few age bands to get availment rates for each age band for each of 3 years as below Diagram 5:

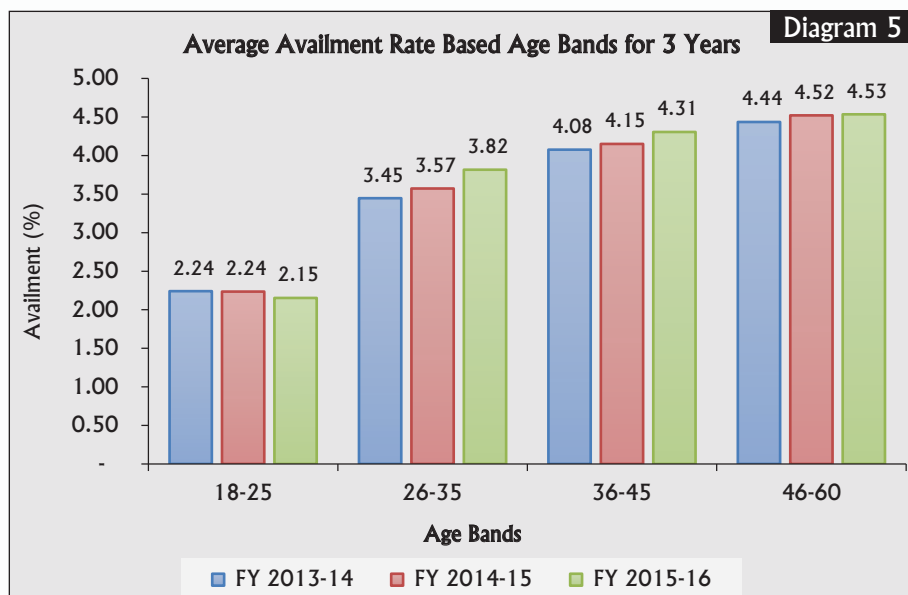
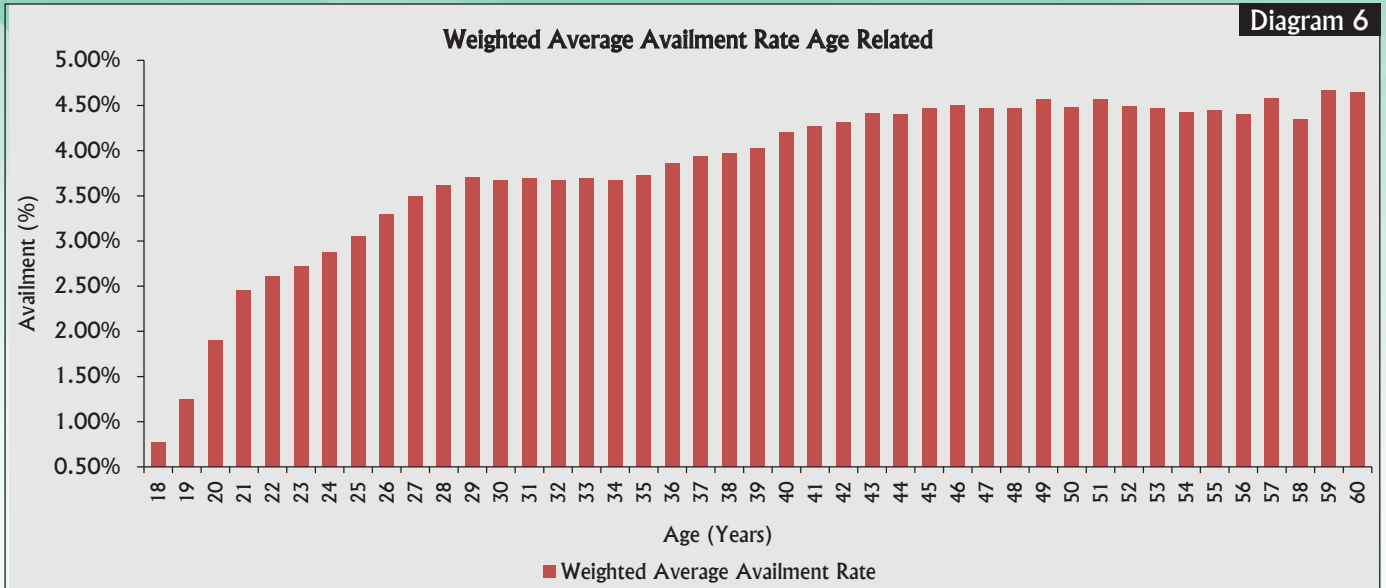


Diagram 6



Considering same data we have arrived at weighted average availment rate for each age mentioned above. Above graph shows that leave availment rate increases with age, and this can also be interpreted as and when employee has sufficient accumulated Leave balances, they start consuming / availing the leaves.

Above Diagram 6: shows Weighted Average Availment Rate Based each Age based on sample population:

Based on all data together, we have checked leave accumulation pattern i.e. increasing or decreasing over 3 years to arrive at availment rate. We have found that only approximately 10% of employees availed the leaves from accumulated leave balances while in service.

Considering same 10% data out total population we arrive at the availment rate based on industry as shown in Diagram 7.

After total analysis based on total data of approximate 1 million employees we have arrived at the weighted average sample availment rates as below:

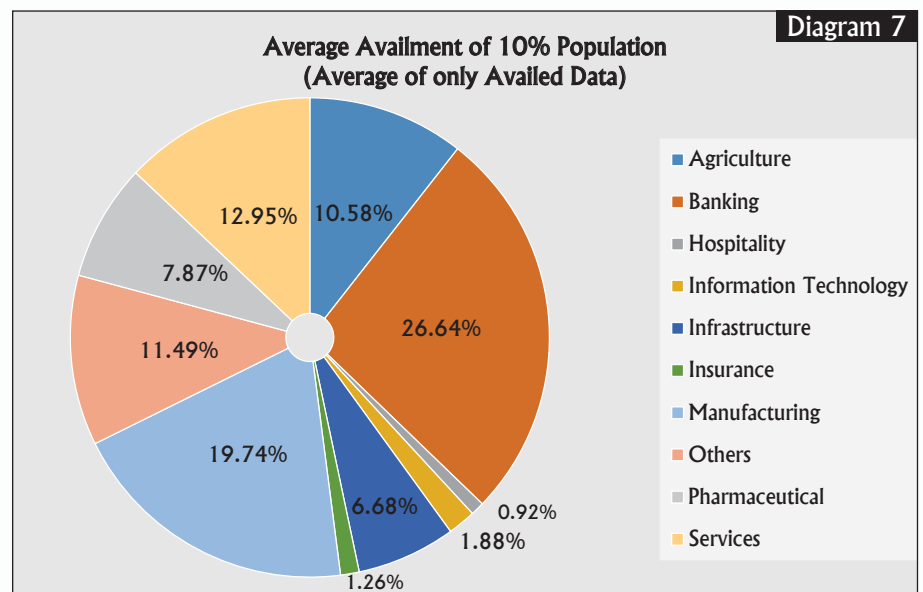
- Industry specific: total Weighted Average rate is **3.86%** with minimum **1.55%**, and maximum **5.34%**).
- Age specific: total Weighted Average rate is **3.80%** with minimum **0.78%**, and maximum **4.67%**).

This can be further classified if required based on experience of individual company to company, but then availment rate in such cases will be dependent on data availability and its materiality. But overall data shows there is gross accumulation of leave days i.e. average leave days are increasing between two years at a company level and very few employees (approximately 10%, as shown above) avail the leave while in service over and above credit leave days in a year. We feel that one can have different view to look at the expensing on account of availment of leave days, If one takes a company as a whole and not individual taking leave more than the credited, than the provision on account of leave availment may work out to be nil, and

on an individual basis there could be some provision which company will have to carry on account of availment of leave days.

From the analysis (shown in patch below) we can see the leave availment pattern for current generation and old aged population of employees as well as the assumption for expected future generation of employees will be an important task and the variance between assumption and actual leave availment based on experience will give rise to actuarial gains or losses. Leave when availed is valued on 'cost to the company' (CTC) basis. So any understatement of expected future leave availment assumption may lead to under provision of the liability.

Diagram 7



*Issues might arise in case of incomplete data or data unavailability.

In this case as an alternative one would exercise the option of booking the liability as and when the availing cost is incurred considering the assumption that probability of availing is very small and cost related to same may not be as 'material' comparing other employee benefit costs.

For appropriate assumptions, Actuary must get proper data from the company which enables him/her to arrive at reasonable estimate of leave availing rate, both from current credits as well as from past leave accumulated days. Based on data, Actuary may help company to decide on leave availing rate based on current age or at company level or at industry level.

We would suggest to make a leave availing table based on the past experience & data like Mortality Table which can help an Actuary for actuarial valuation / Companies to make reasonable provisions / Auditors to verify true & fair valuation results.

If such leave availing assumptions are used across all actuarial valuation of accumulating compensated absences, everything will be smoothened and Actuarial Gains or Losses will give the impact of variation in leave availing rates (assumed v/s actual experience).

Conclusion

Study was made with a raw data of approximately 1 million records over

a period and it was seen that there is a tendency to accumulate leaves year on year and encash it for cash on exit, though there is always a need of availing additional leave at some point of time from the accumulated balances which forms additional liability for employer in the year, overall analysis shows

that around 3.00% to 5.00% of the accumulated leave balances are being availed and it is very safe assumption to build in valuation to reflect the leave availing liability along with encashment liability, this principle gels well with most accounting standards and produces appropriate results.

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happy birthday to you!



'THE ACTUARY INDIA' WISHES
MANY MORE YEARS OF HEALTHY LIFE
TO THE FELLOW MEMBERS
WHOSE BIRTHDAY FALL IN SEPTEMBER 2016

MR. G. N. AGARWAL
MR. N. C. DAS
MS. ASHA J. JOSHI
MR. V. K. VYDIANATHAN



Job Description

Position reports to: Manager– Actuarial Services

Department: Actuarial Services

Location: Mumbai, India

PRIMARY FUNCTIONS:

- Pricing and associated data analytics. Set and periodically update pricing bases.
- Contribute to new products and reinsurance structures design.
- Ensuring delivery of quotes on time adhering to the quality standards.
- Drafting proposal and treaty documentation.
- Research and develop areas of pricing expertise as required.
- Assist with review of business and product mandates for the local business mandate
- Maintaining complete and accurate pricing documentation.
- Interacting with clients on data issues and other issues to ensure the data used for pricing is complete and accurate.
- Involvement in any project-type activities from time to time.
 - Interaction with clients on
 - Manage timely internal reporting documentation requirements.
 - Understanding of RGA internal standards and meeting them.

REQUIREMENTS:

- Bachelor's degree in Mathematics, Finance, Statistics, Actuarial Science or a related field.
- Fellow of the Institute for Actuarial Science or a related field. . Fellow of the FIA and / or FIAI
- Minimum 5 years' experience in handling various aspects of the actuarial or analytical function of an insurance/reinsurance/financial business

OTHER REQUIREMENTS :

- Excellent oral and written Communication skills
- Ability to effectively participate and help foster, a team based work environment.
- Proven track record of setting and meeting individual and team goals in a project oriented, customer-focused environment.
- An ability to set and manage priorities in a changing work environment is essential.
- Strong IT skills – sound working knowledge of MS Excel, Macros, MS Word and any actuarial/statistical software.
- Ability to work in cross-functional teams/projects.
- Strong oral and written Communication skills. Strong IT skills – sound working knowledge of MS Excel, Macros, MS Word and any actuarial/statistical software. Ability to work in cross-functional teams/projects.

COMPANY OVERVIEW : Reinsurance Group of America, Incorporated (**NYSE: RGA**) is a leader in the global life reinsurance industry with approximately \$2.9 trillion of life reinsurance in force and assets of \$40.4 billion. We are one of the largest life reinsurance companies in the world. We are the only global reinsurance company to focus primarily on life and health-related reinsurance solutions.

SALARY INFORMATION : Commensurate with experience

APPLICATION SUBMISSIONS : Qualified applicants can apply by submitting a resume/CV to: Margaret Munnaluru, email : mmunnaluru@rgare.com