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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 & profit, so ought they of duty to endeavour themselves by way of amends to help and ornament thereunto - Francis Bacon

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MESSAGE FROM PRESIDENT:

MR. RAJESH DALMIA



Dear Members,

We are happy to share that first time in the history we successfully declared the results on the pre-determined date declared to students. This has been possible due to exemplary commitment from the examiners and associate examiners, relentless effort of examination advisory group and the Institute staff. It should be noted that the whole system in the Institute is run through volunteering and hence it requires extra commitment from these volunteers to achieve this. I am sure that once we reached this milestone we will continue to achieve this and students will not have to check the results on every day. Additionally, we have successfully integrated the sms and email system with the administration system and students got their results on mobile.

This examination diet we also made two significant commitments to the students. Firstly, we allowed the

students to access their answer scripts post the declaration of results. We believe this would help improve the pass rate as students would be able to compare their answer scripts with the model solutions and would know where they need to improve. We would be able to analyze the impact of this initiative from next diet since by then we will have some data on the students accessing their answer scripts and reappearing. Secondly, if any student believes

that something went wrong then they can ask for re-validation of the process. It should be noted that it is not a re-evaluation of the answer scripts but checking that the process is error free. If any error is detected then this would be corrected and the results would be revised. In the history of the Institute, we never revised the result and this is a significant change in the position of the Institute. We will still continue with the consultation process where a student can discuss his answer script with an actuary (not an examiner) to understand the areas that he needs to strengthen. However, with a small change that this time the student can have access to his answer scripts and keeps it with him.

I am happy to share that the experiment we did with coaching for CT4 has been successful. The Institute decided to get into coaching for subjects where the pass rates are abysmally low and we picked up CT4 since pass rate for this paper was in a

single digit. Surprisingly, this time the general pass rate was 19% against which the pass rate among coaching students was 36%. When we started, we set our target as 40% and we ended up very close to the same. I must highlight here that coaching at the Institute does not mean access to the question paper as both the processes are run independently to ensure the independence between the two. We decided to get into this activity to provide quality education and to help the students to pass the exams. For the next diet we have introduced it for two more papers. We plan to expand this activity to all the subjects in future.

Last week I was talking to the SoA president. It is really interesting to note that in the economy like US where more than 25k actuaries are present, the supply demand gap still exists. Additionally, every year, more than a thousand students qualify as actuary. Agreed that the size of our economy is not as much as US but given our growth rates all projections indicate that we will surpass US economy by 2050. It is important to note that US economy will keep growing during this period and the requirement of actuaries is likely to keep the pace. Currently, we have 300 actuaries and every year we produce nearly 30 actuaries. This only means that we have a lot of catching up to do. We need bright students to take up this profession and qualify as actuary sooner than later. I believe that in this context, the focus on education by the Institute is quite timely.

We would be hosting the global conference of actuaries in the next month. I hope you would be there and we would get a chance to meet face to face.

We invite articles from the members and non members with subject area being issues related to actuarial field, developments in the field and other related topics which are beneficial for the students of the institute.



The font size of the article ought to be 9.5. Also request you to **mark one or two sentences that represents gist of the article.** We will place it as 'break-out' box as it will improve readability. Also it will be great help if you can suggest some **pictures that can be used with the article, just to make it attractive.** Articles should be original and not previously published. All the articles published in the magazine are guided by **EDITORIAL POLICY of the Institute.** The guidelines for submitting the articles are available at http://actuariesindia.org.in/subMenu.aspx?id=106&val=submit_article

MESSAGE FROM EDITOR: MR. SUNIL SHARMA

It gives immense pleasure to connect with you immediately before the 18th Global Conference of Actuaries. The 18th GCA is scheduled from 1st to 2 February, 2016. It is likely to be a massive event, with representation from all across the globe. More than 750 people are expected to attend the GCA not only from India but from all across the Globe. This is one of the events which all actuaries look forward to attend. The event provides a great opportunity to learn from each other. It also provides fantastic networking opportunity to professionals. The Event lives to its name "Global". As many as 22 sessions are expected during the two action packed days. The 18th GCA is expected to have representations from Insurers, reinsurers, regulators, Indian Bankers Association, and actuarial Institutes.

The Key notes address shall be given by Sh. T S Vijayan, the chairman of IRDAI. The event is expected to have full representation from the IRDA with the Presence of Ms. Pournima Gupte, Member Actuary and Actuaries from Products and Valuation department of IRDAI.

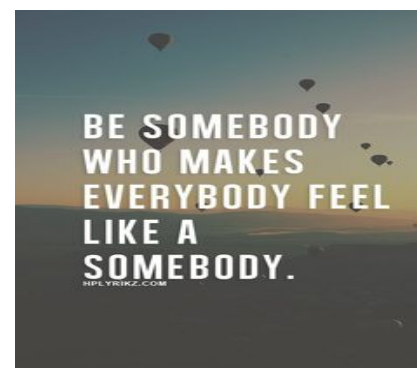


We expect various papers and presentations on the topics covering, Issues relating to actuarial profession, current issues in Life, Pension, general and health insurance, issues related to products and valuation in India for Life, health and general insurance, risk of guarantee relating to morbidity products, financial inclusion through Banking and Insurance, solvency -II etc.

So far the current volume of Actuary India is concerned, it covers wide variety of topics. The current issue covers a detailed event report of capacity building in General Insurance and Micro insurance, event report of 19th Asian actuarial conference, an industry update. The current issue also covers few interesting success stories of students.

I would like to thank all the reporters for putting their efforts to take notes during the seminar and put together the Event update for our readers.

Without taking too much of your time, I would like to sign off now. I look forward to see you in the 18th GCA.



Funny Actuary

A psychologist was studying the problem-solving abilities of engineers and actuaries. During a joint interview with one engineer and one actuary, the engineer was asked "If there was a fire in the wastebasket and a bucket of water on my desk, what would you do?" The engineer responded that he would put out the fire with the bucket of water. Then the actuary was asked "If there was a fire in the wastebasket and a bucket of water on the window sill, what would you do?" The actuary's studied reply was "I would move the bucket to the desk, thus reducing the problem to the previously solved one

An actuary is walking down the corridor when he feels a twinge in his chest. Immediately, he runs to the stairwell and hurls himself down. His friend, visiting him in the hospital, asks why he did that. The actuary replies, "The chances of having a heart attack and falling down the stairs are much lower than the chances of having a heart attack only.

An actuary and an underwriter are watching the eleven o'clock news. A story comes on involving a man on a window ledge threatening to jump. The underwriter says, "I'll bet you fifty bucks he doesn't jump."

The actuary says, "I'll take the bet." A few minutes later they see that the guy does indeed jump. As the underwriter reaches for his wallet, the actuary says, "Never mind. It's not fair. I saw the six o'clock news."

The underwriter responds, "So did I. I just didn't think it would happen twice."

Organized By: General Insurance and Micro-Insurance Advisory Group, IAI**Venue:** The Club, Mumbai**Date:** 4th December 2015

Introduction & Opening: The focus of the seminar was to enhance the technical expertise of the members, involved in general insurance and micro-insurance industry and helping them to gauge various actuarial tools and techniques that are widely used. The audience and speakers consisted members working with different General Insurance, Microinsurance and Re-insurance companies, Brokers, Consulting Firms and others.

Mr. Mayur Ankolekar, Secretary of



the Advisory Group on Microinsurance, welcome the audience & the speakers. He expressed his condolence at the ongoing situation in flood-lashed Chennai & advocated the importance & criticality of insurance under such natural disaster. He insisted members working in insurance domain to develop their professional & technical skills & to contribute further in building the capacity of Indian Insurance Market.

Session 1: Exposure Based Pricing for Commercial Risk

Speaker: Mr. Hiten Kothari- Actuary & Vice President - Almondz Reinsurance Brokers

Mr. Hiten started-off by briefing on



the current situation surrounding the commercial risk insurance under Indian scenario and the burning cost approach prescribed by IRDAI for pricing Fire line of business.

He then explained the difference of personal line and commercial line insurance, wherein Commercial insurance being widely heterogeneous

than the former, & thus requires the underwriters' judgement in understanding the nitty-gritty of the risks. He then explained how inadequate data, heterogeneity and huge variation in the claims experience of the commercial risks, impose challenges on the use of standard pricing methods such as Generalised Linear Modelling, Burning Cost and Frequency-Severity.

He pointed out that the premium should be adequately loaded for the potential large losses, which may not be evident from the insurer's own data, thus hindering the insurer to price it adequately and appropriately. He mentioned that for determining the load for the potential large losses, insurers can use the allocated reinsurance premium cost of its Excess of Loss Reinsurance for the respective commercial risk or the insurer can use Exposure Curve for determining large losses load.

He explained how the exposure curve can be used in determining the large risk load. He detailed general assumptions that are to be made while applying the exposure curve and the process of using exposure curve using a case study. He further provided an overview on the industry standard exposure curves and their appropriateness at pricing particular line of business and type of risk.

He then concluded by expounding the limitations of the use of exposure curves such as uncertainty imposed, as the selected curve may not be appropriate or relevant to the underlying risk or the caution that is to be made as the exposure curve too does not allow for unforeseen event.

Session 2: Understanding the basics of LaTeX

Speaker: Ms. Shruti Shetty - Senior Associate - Ankolekar & Co.



Ms. Shruti introduced LaTeX, its history, its evolution and its wide use in

writing research papers. She highlighted the advantage and ease of using LaTeX for writing technical papers over the standard word processing software like Microsoft Word.

She pointed out that for the beginners, LaTeX may be intimidating as it requires trivial extent of coding but once the users are familiar with it, it will really help them to use it widely in writing their papers quickly and efficiently.

She walked through some of the basic steps and functionality of LaTeX with multiple real-time examples and thus ended her session by enabling the audience to write their first document in LaTeX.

Session 3: Pricing Term Insurance for Low Income Groups

Speaker: Mr. Sagar Desmukh - AVP - Actuarial - Birla Sun Life Insurance As Term Insurance for Low Income Group falls under Microinsurance (MI) originated from Microfinance,



Mr. Sagar preferred to introduce Microfinance (MF). He explained the operating niceties of MF in India and the underlying framework of credit check and the loan disbursement. Having briefed on the MF, Sagar then embarked on the Term Insurance Product which is sold in conjunction with advancement of loan so as to provide a layer of security to the Micro-financial institution.

Mr. Sagar then discussed the process involved in pricing such term insurance product. He then detailed how the Term Insurance associated with MI (TIMI) is distinct from the Standard Term insurance and the resulting impact on the pricing process. He elaborated different rating factors used for pricing TIMI, primarily being area of operation, prior experience, the processes and controls of the respective Micro Financial Institutions distributing the product and the underlying gender mix of the insured

population.

He showed how the mortality rate varies greatly across & within different states, thus reducing the relevance & appropriateness of the standard mortality table across all the regions & the usual actuarial problem of credibility versus relevance.

He then exemplified the data issues related to the pricing of TIMI, where in addition to non-availability of reliable data there are challenges imposed by significant delays in reporting of claims, wrong recording of number of life covered and the incorrect date of death, causing mismatch in the underlying exposures and claims.

He illustrated how the process of different Micro-Financial Institution have a bearing on the claims experience and the underlying changes and improvement in their processes could make the use of the past claims experience less relevant.

Also he demonstrated the variation in the mortality rate between genders under the TIMI which is far more than the standard insured population, causing significant variation in the insurance premium rate, and hence make the projected underlying gender mix of the population absolutely critical.

Apart from this, he explained other rating factors which are used for pricing TIMI. He then concluded by explaining the actuarial control cycle and how the result of such cycle is communicated in terms of numbers.

Session 4: Evaluating the Insurance Product through Impact Evaluation

Speaker: Mr. Qayam Jetha – Senior Policy & Training Associate – Abdul Latif Jameel Poverty Action Lab (J-PAL)



The primary objective of this Session to illustrate the best practices for evaluating and quantifying the impact of any programs, product or measures i.e. their effectiveness in meeting their underlying goals and to provide the correct evaluation result to the decision makers which in turn help them to decide the programs, product or measures which they have to implement, scale up or to discontinue.

Understanding the impact of any

program is two-fold i.e. in addition to evaluating the impact of the direct results achieved by the program ("Causality"), it is vital to assess the situation if the program was not implemented ("Counterfactual").

Mr. Qayam then explained different mathematical and statistical methods that could be used in performing the impact evaluation. For this purpose, he has taken a real-life case study and illustrate different mathematical methods for the impact evaluation. He then concluded by resonating, how the theory and method of impact evaluation could be used in insurance in areas like determining:

- ⊙ price - elasticity of the insurance product
- ⊙ the impact of insurance on the insured lifestyle and his income generation
- ⊙ impact on the demand of any product or service (like loan) if it is covered through insurance
- ⊙ the effectiveness of the current insurance product and its resulting impact on the future demand of insurance

Session 5: Risk Transfer Test of Reinsurance Contract

Speaker: Mr. Manalur Sandilya – Consulting Actuary



Mr. Manalur took the audience to the origination of the Risk Transfer Test, first mandated in the US under US GAAP FAS 113 and NAIC's SSAP 62. These regulations require the reinsurance contract to pass through the risk transfer test to receive the "insurance accounting" treatment. If the reinsurance contract fails to pass the reinsurance test then its accounting treatment would be similar to "deposits".

Under FAS 113, to pass a risk transfer test, a reinsurance contract must assume "substantially all" of the underlying risks or the reinsurer must "assume significant insurance risk" and it must be "reasonably possible" that the reinsurer may realize a "significant" loss. If the contract transfers "substantially all" the risk then it is not subject to "significant risk transfer".

The reinsurer is assumed to have taken "substantially all" the risk, if the

downside risk of the reinsurer is the same as those of the cedant with respect to the original unreinsured portfolio i.e. if the cedant underwriting margin equals or exceeds the reinsurance margin under all the situation then clearly the reinsurer is expected to assume "substantially all the risk".

If "substantially all the risk" is not transferred, then to evaluate the second criteria - "significant risk transfer", different risk metrics such as Expected Reinsurer Deficit could be calculated and compared with critical threshold values to evaluate the proportion of risk transfer.

Manalur demonstrated both the test with examples. He concluded with the remarks that the Actuarial Profession of India is coming with the guidance note on the risk transfer test very soon which would entails the tests that is to be used in Indian context.

Vote of Thanks

Speaker: Mr. Kamlesh Gupta – Joint Vice President – Birla Sun Life Insurance



All the sessions were brimming with insightful discussions finally came to a close with a vote of thanks by **Mr. Kamlesh**. He briefly summarised discussions by various speakers and thanked the Institute for organising such an informative and interesting seminar and the participants for their valuable time and inputs.

About the Author



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Venue: The Club, Mumbai
Date: 10th & 11th Dec, 2015

IFS is a two days seminar enabling interaction of the recent qualifiers or those about to qualify for the fellowship and the fellow members of the Institute covering professional issues and India specific regulations, legislations & practices in core areas.

Day 1

The seminar began with a welcome address by **Mr. Abhay Tewari**,



Chairperson of Advisory Group on Professionalism Ethics and Conduct. In his address, he dwelled upon the attributes of a professional. Importance of effective communication was stressed, he referred to chosen phrases by the legendary Warren Buffet to stress upfront, clear and unambiguous communication. He encouraged the participants to actively seek discussions.

He referred to the altered format for the Seminar being implemented from this seminar to encourage participants to debate more on professional and ethical aspects, & bring awareness of the same to an actuary's daily work. New content keeping Indian perspective are expected to be developed facilitating these discussions. He advised participants to integrate professional values in work and life, rather than perceiving them as verbose high ground morals.

Mr. Chandan Khasnobis,



chairperson, Professionalism Committee, welcomed the participants. He reiterated the value of

the discussions in the Seminar to the new members and appreciated contribution by Fellow members. He referred to the service rendered by the Institute as part of professionalism. For the remaining part of the day, sessions on various actuarial issues were presented by the participants.

Session 1 : Role of TPA in Health Insurance and associated risks in having a TPA,

Presenters : Ms. Keerti Singh, Ms. Shivali Chopra and Mr. Sanjay Gupta, guided by Ms. Murugan Eshwari.



The group discussed the evolution of TPA in India, their role in Health Insurance, and benefits of TPA to the Insurers. They also highlighted the key risks to the Insurers, significant being the risk of business disruption on being dependent on TPA and lesser control over claim process. The group further mentioned the recent Regulations leading to shrinking role of TPAs and anticipated consolidation in TPA space and renegotiation of existing TPA service agreements.

Session 2 : Mediclaim policies' pricing for different cities/hospitals

Presenters : Mr. Pawan Kumar Sharma, Ms. Khushboo Hamirbasia and Ms. Neha Kamalkumar Podar, guided by Mr. Suresh Sindhi.



The group discussed the mediclaim business in India, its volumes and current pricing practices based on frequency and severity estimations.

Noting significant differences within the average claim sizes over different geographical areas, the group proposed zone based pricing, where the perceived level of risks were considered to group areas for differential pricing. Another approach on pricing based on categorizing hospitals based on their cost structures was discussed as well. Group debated on the advantages & challenges on these approaches.

Session 3 : Challenges in pricing Long Term Care for ageing population

Presenters : Mr. Ashok Kumar Singh Kushwaha, Mr. Manish Hemnani and Mr. Saurav Rajgaria, guided by Mr. Subhrajit Mukhopadhyay



The group discussed the product features mentioning non existence of them in India, expected increase in target aged population and the opportunities in terms of absence of state provision and changing family structure. Challenges for pricing in terms of design, data, medical advancement and distribution were elaborated. As way forward simple structure, reinsurers involvement & reviewable benefits were suggested.

Session 4 : Treatment of Lapse Profits sitting in the Asset Share/FFA of with-profit policies

Presenters : Mr. Abhishek Patodia, Mr. Anupam Biswas & Mr. Hemant Kumar, guided by Mr. Ajay Kumar Chaturvedi.



The group discussed the regulations around profits within the participating

fund and noted that the par business in India has grown recently and majority of Insurers have begun to estimate asset shares only recently. Significant amount of profits have been seen from lapses. It was noted that majority of the Indian companies are crediting the lapse profit to the Estate as these profits are very uncertain. This is mostly not to create unreasonable PRE as well as consistent with observation that asset shares are not sole criteria to set bonus rates. Noting that eventually all the profits should flow back to policyholders, it was suggested to strengthen the par fund governance in line with PPFMs and periodically review the with profits committee scope of function.

Session 5 : ALSM draft Regulations 2015 and its impact on capital requirements

Presenters : Mr. Nakul Yadav, Mr. Anshumali Mishra and Mr. AsfaKausar Bihari, guided by Mr. Srinivas Kumar Chiruvolu.



The group discussed the changes being proposed by the exposure draft and its impact on the solvency capital requirement. It was brought out that the changes to the asset valuation wouldn't impact significantly, except may be disallowance of unutilized service tax credit. Significant changes to liability valuation were consideration of special surrender value in reserves, zeroization of negative cash-flows for unit linked policies, use of actual expense and lapse rates.

Session 6 : Reserving for Guarantees in Non-Participating Products

Presenters : Mr. Ripudaman Sethi, Ms. Shilpi Jain and Ms. Krithika Verma guided by Mr. Akshay Dhand.



The group discussed the type of non-participating guarantees. Differentiation between guarantees like common endowments and those with embedded derivatives like guaranteed annuity options were made. While the common guarantees could be dealt with asset liability marching and reserving prudence those with embedded derivatives would require estimation of time value for the derivative. Regulatory requirements, asset models and real world/risk neutral methodologies for estimating reserves were discussed.

Session 7 : Mandatory Crop Insurance & Challenges

Presenters: Mr. Pasunkumar Sarkar, Mr. Ananthanarayanan C and Mr. AnshulBhushanand, guided by Ms. Asha Joshi.



The group began with the summarizing the major crop insurance schemes over past 20 years, and brought out the successive improvements in the scheme structures. Pricing challenges were discussed for the weather and yield index based insurance schemes. Market and legislative structure challenges were highlighted. Operational challenges leading to area correction factors, lack of adequate weather data and crop cutting experiments were discussed. Way forward suggestions were technology usage enhancement in terms of land records, remote sensing data and weather data in pricing, longer allocation of units to insurers to handle random variations. The discussion was concluded by noting the plus points of the crop insurance.

Session 8 : Challenges in Pricing of Export Credit Insurance

Presenters : Mr. Priyank Gupta, Mr. Vikas Garg, Mr. Manalur Sandilya, guided by Ms. Priscilla Sinha.



The group started with summarizing the product features and risks covered. Issues around product design, underwriting and application of Regulations were discussed. Experience Rating and Exposure Rating approaches to pricing were compared noting that major challenges are appropriate data to get assumptions correct. Other issues would be level of recoveries, getting IBNR/ IBNER reserves correct in this medium tail risk. Way forward in view of frequent large credit events and changing global markets suggested were developing new exposure methods, sharing of data and alternative approaches such as score based mechanisms.

Session 9 : Use of swaps for hedging reinvestment risks in regular premium non-participating products

Presenters : Ms. Sanghamitra Dey, Mr. Jenil Shah and Mr. Pratik Agarwal, guided by Mr. Jose John.



Discussions began with highlighting the significant reinvestment risk in the non-par regular premium risk, seen together with interest rate outlook in India anticipating interest rate decline. Different tools to manage reinvestment risk were compared ranging from risk retention to total risk avoidance. As a risk transfer approach Interest Rate Swaps which can be customized over the counter might help in asset liability matching. Further Regulations around the use of these swaps were discussed.

On interaction with the participants it concluded that the discussion would require more application related discussions rather than theoretical summarizations.

After these group sessions evening of day 1 evening saw pre-dinner address from the IAI President and introduction to the Institute disciplinary process.

President's Address : Mr. Rajesh Dalmia, President, IAI



President, Institute of Actuaries of India emphasised that this seminar is meant for discussing professional issues, where the guides have equal responsibilities as the discussion groups that they are leading while delivering the presentations. He was concerned that for these seminars /events tend to be focused on speakers' view points, & hence suggested future events could be designed to be discussion oriented. It was mentioned that the seminars/events would be recorded & made available online. Along with offline videos & webinars, CPD credits would be made available on these materials, to cater to increasing members & to avoid hassles of traveling for senior members. President's focus this year had been on professionalism & education as stated at the beginning of the year at GCA. Recent initiatives on education like conducting classed for the subject CT4 and making answer scripts available to students were referred to. Appointed Actuary forum for General Insurance would be formed by the Institute. Members of the Seminar suggested that the expected content of the discussion topics to be provided to the groups in advance, that more time for preparation to be provided and that experienced members may present on actuarial techniques in an unusual territory/field, helping student members to widen their perspectives.

The final session on day-1 was on IAI Disciplinary Process was presented by **Mr. GLN Sarma**.



Successive stages of the disciplinary process from initial application stage through hearing stage were brought out. He urged each member to be

acquainted with Actuaries Act which specifies the dos and don'ts and follow professional ethics and conduct to stay away from unwarranted disputes that may trigger disciplinary actions.

Day 2

The day began with **Mr. Nick Tacket**



stepping in as discussion moderator and introducing the new format for discussions. Instead of case studies being discussed by a select group of participants in the previous Seminars, the on-line videos from the Institute of Actuaries, UK were presented to the group. These videos enabled the moderator to involve more number of the participants in the discussions, prompting for immediate responses to address professional/ethical dilemmas rather than pre-meditated actions, more like in real life situations. It was mentioned that IOA would develop Indian specific content similar to the on-line videos being presented now.

The first session saw online video describing a new actuary going through difference of opinion with her manager. The video developed a scenario where the new actuary finds financially significant deviations in estimation of liability but faces a manager who initially doubts the methodology & increasingly brazenly asks to produce acceptable numbers, & finally asks to remove all work from auditable records.

At different intervals, the moderator prompted for responses from the participants on what would have been right professional conduct at these stages. Several themes that emerged were having right amount of work done before providing a solution, ensuring consistency & being open to alternative suggestions, documenting work done in an auditable way, & handling tricky situations where proposed solution has financial impact and hence pressure to adjust the results and finally what is right thing to do when being forced to compromise.

Session : Impact of (IND AS) 19 on Reporting Standards

Presenters: Mr. Abinash Churoria and Mr. Vineet Khanna, guided by Mr. Khushwant Pahwa.



Impact on the liability valuation, actuarial gains and losses and disclosures were brought out in comparison with AS 15. Challenges and professional aspects in terms of standards of advice, additional volumes of work, reporting P&L impacts due to actuarial gains and losses etc were discussed. It was recommended to update practice standards and more research to help practicing members.

Post lunch break, another video from the IoA playing out a scenario where a reserving actuary is under pressure from CFO not to upset the expected financial results. The discussions brought out aspects such as making responsibilities clear or clear communication, not to commit without having all the facts being analyzed, and communicating clearly the need to adhere to professional standards and prudence established by them, even if they upset short term goals.

In the last session, **Mr. Anish Thakkar**, Partner E & Y spoke as guest lecturer.



Coming from another profession which equally is bound by the professional ethics, his insights into professionalism were very thought provoking. He touched upon professionalism being at forefront, depends upon most common characteristics such as insatiable curiosity to understand problems and solutions, enthusiasm over competency, clinical discipline in execution in work and personal space, clarity in concepts and what is right &

what is wrong, gumption to accept errors and learning to say sorry and sticking to it. All these would definitely need to be supplemented by clear communications.

With these very valuable insights, the two day Seminar ended with **Mr. Sanjeeb Kumar** thanking the participants on behalf of the Institute.



Most of the things worth doing
in the world had been declared
IMPOSSIBLE
before they were done
Louis D Brandeis

About the Author



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The Actuary India – Editorial Policy

Version 2.00/23rd Jan 2011

A: "The Actuary India" published monthly as a magazine since October, 2002, aims to be a forum for members of the Institute of Actuaries of India (the Institute) for;

- Disseminating information,
- Communicating developments affecting the Institute members in particular and the actuarial profession in general,
- Articulating issues of contemporary concern to the members of the profession.
- Cementing and developing relationships across membership by promoting discussion and dialogue on professional issues.
- Discussing and debating issues particularly of public interest, which could be served by the actuarial profession,
- Student members of the profession to share their views on matters of professional interest by way of articles and write-ups.

B: The Institute recognizes the fact that;

- there is a growing emphasis on the globalization of the actuarial profession;
- there is an imminent need to position the profession in a business context which transcends the traditional and specific actuarial applications.
- The Institute members increasingly will work across the globe and in global context.

C: Given this background the Institute strongly encourages contributions from the following groups of professionals:

- Members of other international actuarial associations across the globe
- Regulators and government officials
- Professionals from allied professions such as banking and other financial services
- Academia
- Professionals from other disciplines whose views are of interest to the actuarial profession
- Business leaders in financial services.

D: The magazine also seeks to keep members updated on the activities of the Institute including events on the various practice areas and the various professional development programs on the anvil.

E: The Institute while encouraging stakeholders as in section C to contribute to the Magazine, it makes it clear that responsibility for authenticity of the content or opinions expressed in any material published in the Magazine is solely of its author and the Institute, any of its editors, the staff working on it or "the Actuary India" is in no way holds responsibility there for. In respect of the advertisements, the advertisers are solely responsible for contents of such advertisements and implications of the same.

F: Finally and most importantly the Institute strongly believes that the magazine must play its part in motivating students to grow fast as actuaries of tomorrow to be capable of serving the financial services within ever demanding customer expectations.

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EVENT REPORT

19TH AAC

19th Asian Actuarial Conference (19th AAC) was held between 3rd and 6th of November 2015. The theme of the conference was **Innovation through Sustainable Development**.

The conference formally started with a cultural program of traditional Thai Dance on the morning of 4th of November. This was followed by the VIP address from **Mr. Khun Korn Chatikavanij**, chair of the Democrat Party Policy Unit and former Finance Minister of Thailand. Though he was speaking for the first time to a group of actuaries, he rightly mentioned that “actuaries are people who would like to be completely wrong rather than approximately right”. He focused on the point that the world today is becoming increasingly short term focused, & emphasized upon the need to focus more on long term, an area where actuaries could contribute significantly & should own the responsibility for longer term developments. He called upon the more effective use of data & more cooperation between industry & regulators to have a sustainable long term growth.

The VIP address was followed by the opening remarks from **Mr. Craig Reynolds**, President of Society of Actuaries (SoA) in which he mentioned about the impressive growth in insurance sector in Asia and the willingness of SoA to participate in this growth. He said that though we speak different languages, the language of risk is common across actuaries around the world. He also mentioned the need to move together in areas which are affecting all the insurers who are coping with ever changing regulations and the need for increased use of big data capabilities through Innovation. Referring to Actuaries as original data scientists, he asked them to own the big data space and come-up with innovative techniques to put this to use.

This was followed by two keynote speaker speeches. First was by **Mr. Mark Saunders**, Group head of Strategies, AIA Group Ltd. He focused on avenues of innovation in Actuarial domain and how actuaries can individually and collectively contribute and create long term value for all the stakeholders & keep them



happy. He mentioned that innovation must add value to the society and for doing this he asked us to transcend from focusing from “What to do” to “Why to Do”. One key area he felt the need for actuaries to do more is in area of pensions where there are not enough solutions for rapidly aging population of Asia. He mentioned that it is not possible for governments to provide pensions and the onus lies on the industry to provide people with long term protection. He mentioned a very interesting fact that even country like Hong Kong (where Government is in fiscal surplus) would not be able to support the state funded pension for more than 20 years, leave apart the countries in fiscal deficit!

Mr. Zia Zaman, Chief Innovation Officer, Metlife, Asia was the second keynote speaker. He emphasized on the need of disruptive innovation as against continuous innovation. His seven rules for Innovation being:

- ⊙ Disruptive innovation,
- ⊙ Risk tolerant,
- ⊙ Magnet for talent,
- ⊙ Sequestered and dedicated professionals,
- ⊙ Leader-led,
- ⊙ Deep customer empathy, and
- ⊙ Being audacious and relentless.

He highlighted few facts which helped in bursting some of the most common myths in Life insurance business. One such fact was that in USA 41% of insurance is bought through mobile phones - this reality is contrary to the most common myth in Insurance industry that “Insurance is sold and not bought”.

Next event was a panel discussion facilitated by Mr. Mark Saunders with four participants. The topic for the discussion was “What role does innovation play in the future of

Actuarial profession”. The panelists emphasized on the need for innovation in Actuarial profession mainly around usage of Big data to make the current Actuarial processes more efficient, fast and more value adding. They gave examples of innovation happening in other fields such as Uber which has become the biggest cab provider without even owning a single cab! Another example was of real time pricing of products done by Alibaba. They emphasized upon the need to move faster in such areas as against the current reality where we take months to price a single insurance product. Among many others, use of DNA profiling for underwriting remains another contentious area where much more could be explored. To leverage such opportunities, they called upon the regulators and the industry to work in tandem.

Next two days were followed by sets of three parallel presentations by various presenters across the globe. Extracts from some of these presentations is given below.

Data driven Innovation in Pricing and Underwriting

The presenter emphasized upon the need of more innovative use of data in the insurance industry, mainly in pricing and underwriting domain. As evident from growing use of big data in many other industries, job of data scientists is considered to be the top rated job for next ten years. This could be a potential threat to the scope of Actuarial profession in future.

Some possible uses of big data in Actuarial applications could be:

- ❖ Use of Life style based data, face amount (sum assured) rating, ratings based on wealth/income of individuals at underwriting and pricing stage.

- ❖ Use of credit data to differentiate mortality risk. Based on some empirical data the difference in mortality between the individuals with best credit rating vis-à-vis individuals with worst credit ratings could be very substantial.
- ❖ Big data could be used in other business areas within insurance like cross-selling and up-selling of policies.
- ❖ Going a step beyond, based on big data analysis, we can have differential pricing within the underwritten class. As an example, in USA driving habits of the individuals is considered as a factor for mortality risk. Since the motor vehicle records might be incomplete & hence lead to usage of incorrect information, companies are using Telematics data to identify the driving habits.
- ❖ Use of Bio-psychological data & data around well-being of an individual could also be used in pricing the mortality risk. It has been proven that mortality of mentally healthy people is about 30% better than that of mentally unhealthy people.
- ❖ Use of Electronic health records will help in capturing the complete medical records from a central location. This will improve the processing speed and will ensure safe transmission of such data.
- ❖ Another extreme step is usage of genetics data in pricing the insurance products.

Given the above instances there are lots of opportunities & technologies which could be exploited but only through advanced capabilities.

Another factor which also need to be considered is the social acceptance of the usage of such advanced technologies like usage of genetic data, advanced medical records, lifestyle habits and well-being data etc. There could be varied degree of data protection legislation across different economies, hence the granularity of risk pooling varies from country to country.

Mastering the elevator speech:

The speaker emphasized on the need of giving an effective elevator speech in the current dynamic and time-crunched environment. He told us some ways to master the art of elevator speech.

He emphasized to focus on 3 W's of effective communication:

- **What to share:** Having enough and sufficient information of what needs to be shared in a concise format.
- **When to share:** It could be a chance encounter or a planned discussion or may be a networking event where you meet some senior people; one needs to be prepared accordingly.
- **Who to share:** Tailor your content & tone as per the person with whom you have to communicate.

The art could be mastered only with some ground work, where it is needed to focus on: brainstorming the key messages, focus on the audience, flow and articulation of speech, making the speech punchy and a lot of practice.

Impact of Low rates on Investment and capital:

The low interest rate environment is prevailing in most of the Asian countries. The interest rates in many countries are closely correlated to interest rate in the USA which has been in a range of 2% to 3% during last 5 years. Low interest rate environment generally leads to two main challenges for insurers:

- ❖ **Generating Yields on assets in Low interest rate environment:** The speaker talked about the various ways of improving yields in such a scenario wherein he mentioned about various kinds of fixed interest assets and fixed interest derivatives that are used in Thailand. He outlined how some of these derivatives work and how they could be useful to different kind of investors in order to, Improve yields, better matching of assets and liability, and reducing the reinvestment risk.
- ❖ **Impact on Balance sheet and Capital requirement:** Such an environment could lead to potential adverse impact on balance sheets of insurance companies, mainly due to the duration mismatch between assets & liabilities. He mentioned that the derivative instruments like Interest rate swaps, forward interest rate swaps & zero coupon swaps etc could be used in order to match the assets to liabilities.

Emerging Innovation of Health care delivery in developing

countries:

The presenter mentioned that each country has its own problems when it comes to delivery of healthcare products. Some of the challenges faced are:

- ⊙ In India 400 Million people are not able to afford health insurance. People are getting pushed below poverty line because of healthcare costs.
- ⊙ Challenges in cost-effective distribution of health care products.
- ⊙ No availability of coverage for low income group
- ⊙ Operational challenges such as underwriting
- ⊙ Insurers not willing to participate

This was followed by brief details of some of the most emerging innovations in the field of health care and health care insurance in the developing economies:

- Huge success story of Pradhan Mantri Jeevan Jyoti Beema yojna(PMJJB) and Suraksha Beema Yojna (PMSBY) in India along with opening of bank accounts for all. This has been a Guinness world record and is widely taken as an example of innovation in insurance domain. These schemes are based on awareness through financial inclusion, advertising and are very simple to enroll (as simple as replying with a "Yes" through SMS). In addition, premium rates are very competitive.
- Another success story was from East African countries about medical insurance through mobiles. The important points to be noted here would be that different tiers of life & hospital covers are provided to cover people from wide socio-economic classes. This would lead to penetration even in the semi urban & rural areas. The premium collection would happen by deducting the airtime minutes.
- Another example of innovation related to health Insurance was of Sugha Vazhvu from Thanjavur, India. This is a health care institute which offers primary health care services to rural population in India. The Innovation here is that instead of appointing full time doctors, the project attempts to see if medical records, technology and strict protocols can replace much of what primary care doctors do.

India. The Innovation here is that instead of appointing full time doctors, the project attempts to see if medical records, technology & strict protocols can replace much of what primary care doctors do. Based on their experience, 80% of primary health care needs could be cured by following a strict protocol of capturing medical information through basic tests. This also helps in reducing the number of health insurance claims due to reduced hospitalization & hence leading to lower health insurance premiums.

- Other examples were of significant reduction in costs of medical devices like ultrasound devices & launch of innovative machines like Odon devices which comes at as low as \$50 and help in reducing maternal deaths due to complications at time of delivery.

What would be an Ideal Embedded Value reporting basis in Asia?

Traditional Embedded Value (TEV), European Embedded Value (EEV) and Market Consistent Embedded Value (MCEV) are three widely used basis for Embedded Value calculations. While TEV and EEV broadly follow similar methodologies, MCEV is a more enhanced methodology that leads to:

- Increased transparency to investors
- Improve consistency of information between companies
- Follows a market consistent approach to allow for financial risk
- Gives a potential Shareholder a genuine comparison across different companies.

Though MCEV is a more sophisticated methodology, it could lead to confusion amongst the Investors due to the complicated terminologies like CRNHR (Cost of residual non-hedgeable risks), TVFOG (Time value of future options and guarantees) and FC (Frictional cost).

Currently, companies in more developed markets like Europe mostly disclose EV based on MCEV methodology, and most of the companies in Asia use TEV. However, some of the Asian companies which have European parent companies do MCEV as well. In India, the regulator has prescribed Indian Embedded Value (IEV) which is broadly similar to

MCEV.

Also, in most of the Asian countries the swap market is not very developed and hence there are a lot of challenges around the selection of risk free rates to be used for MCEV calculations.

Going forward, in Europe, post implementation of Solvency II, it is quite possible that MCEV disclosures might not be needed as the value of the company to the shareholders could be derived from own funds estimated as part of Solvency II.

In Asian economies, as the Risk based capital regulations come into place, MCEV might become a more preferred basis as it would lead to a consistent basis for EV and Capital requirements.

Agriculture Insurance – A new frontier for Actuaries

Speakers talked about the rising need for innovation in Agriculture Insurance. The scope of agriculture Insurance could be very wide ranging: covering crops, insurance on losses arising due to disruptions in transportation networks, safeguarding against adverse impacts of pesticides, injuries to workers, insurance against super bugs (where antibiotics do not have any impact).

Historically there have been many incidents which have led to significant losses in Agriculture business. Some of the most devastating incidents are listed here:

❖ **Irish potato famine:** Where a fungus spread from Mexico, and destroyed the potato plantation. Since large majority of people were dependant on potato plantation, they had to migrate from Ireland.

❖ **Year without a summer:** Severe Climate abnormalities caused average global temperatures to decrease. This resulted in major food shortages across the Northern hemisphere.

Evidence suggested the anomaly was predominantly a volcanic winter event caused by the massive eruption of a Volcano in Indonesia.

❖ **The Mayan collapse:** The great Mayan civilization collapsed around 900 AD. It is believed that this was mainly due to agricultural failure due to natural droughts.

Apart from providing protection against such type of calamities, innovations in agriculture insurance is a requisite since it contributes hugely to the global economy and is a very significant contributor in Asian economies.

Scope of involvement of Actuaries is very huge, but, innovations in this field will require specialized skills such as knowledge of agricultural products & the food distribution system.

To cater to the need of specialized knowledge, separate courses and exams could be developed and included in the Actuarial study curriculum. There could also be specialized trainings & workshops to promote interest and knowledge in this area.

Currently in the Asian markets, agriculture Insurance is being actively promoted by the Chinese Government. The most common type of Agriculture Insurance in US is Yield Guarantee Insurance. Here the Insurance company has to pay to the farmers if the actual yield is below a selected percent (65% being the most common) of the estimated expected yield. Such products cover the risks arising due to multiple perils like drought, flood, wind, rain, insect damage, diseases and other non weather perils. Since the number of possibilities are too many the modeling of all such risks and pricing of product becomes a very tough challenge.



Innovation in Capital management to support sustainable growth:

The presentation mainly revolved around the challenges that the companies face in their Capital management and what innovations can be done in this area to make the business sustainable.

In order to have a sustainable growth, companies will have to focus on sustainable new business, which would be an outcome only if we could deliver on:

- ⊙ The business is value for money for all stakeholders.
- ⊙ Linked with economic growth potential.
- ⊙ Profitable for insurers.
- ⊙ Help Individuals and corporations in managing risk.
- ⊙ Leads to controlled capital consumption and risk profile for insurers.
- ⊙ Can be efficiently distributed.

To make the products attractive and value additive for customers, we will have to offer some form of guarantees, which will lead to higher capital requirements. The need hence would be to efficiently use the capital. Some of the challenges that companies face in Asia are that currently the liabilities under legacy products are not marked-to-market, hence cost of long term guarantees is understated. Hence moving to an Economic basis for Capital requirements would be a step towards better capital management.

What are the benefits of sustainable approach? If we consider different stakeholders: customer and distribution would benefit from cross-selling and retention; shareholders would benefit from better profitability and ease of Issuance of Capital; rating agencies would be able ensure risk and reward balance.

Connecting growth agenda with capital market: Sustainable growth places demand on capital. Attractive products like guaranteed products will require higher capital. Also, to demand a higher rating from the market you need to have high level of capital. Key question is how to optimize and manage capital while taking care of all stakeholders. Reinsurance or Financial reinsurance are tools which could be used for efficient capital management.

Takaful Business in Asia

Takaful is the Shariah compliant form of

conventional co-operative insurance. In Asian economies It's most prevalent in Malaysia and Indonesia.

There are two operating models which are most common:

- Combined model: A combination of the principal-agent (Wakala) & a principal-manager (Mudarabah) model. Wakala is used for underwriting activities whereas Mudarabah is used for investment activities. This Takaful model is most common in Malaysia and Indonesia.
- Wakala Model: A principal-agent (Wakala) arrangement is used for both underwriting and investment activities. Mostly used in Indonesia.

Malaysia accounts for 71% of Takaful market within Asian countries, whereas Indonesia contributes 23%, remaining six percent comes from Singapore, Brunei and Thailand. Out of total Takaful business 67% of business is Family Takaful whereas 33% is General Takaful.

In Asia Takaful Industry has been growing at an annual growth rate of around 24% over last 3-4 years, still challenges remain in making the Takaful as competitive as conventional insurance. Most of these challenges are around achieving efficiency in operations which are mainly due to low business volumes and inexperienced employees. Another challenge is Investment in Shariah compliant investments. Majority of investments in market are non compliant and hence investment managers are left with very little opportunity to diversify their portfolio.

Though, regulations were published between 2002 & 2013, to take care of solvency as per Sharia governance principles, but going forward lots needs to be done on following aspects:

- ⊙ Increased standardization of products
- ⊙ Developed & detailed regulations
- ⊙ Sorting out the governance issues
- ⊙ Developing the brand
- ⊙ Formalizing and following the Solvency capital requirements.

Parallel presentations which were spread over two days were followed by two plenary sessions.

First session was taken by **Mr. Fred Rowley, President of International**

Actuarial Association (IAA). He talked about the importance of Enterprise risk management (ERM) and how it is inseparable from solvency and capital management. He briefly talked about initiatives that IAA is taking for the development and inclusion of ERM. He also talked about the CERA qualification, Its syllabus, its importance in the current economic scenario & how it would be useful for the growth of the Actuarial profession.

Second session was conducted by **Mr. Paul Melody, MD, Life Asia Pac, Towers Watson**. He talked about how the value could be generated amidst constantly changing regulations. He emphasised on the importance of reducing the duration mismatch between Assets and Liabilities. According to him, for the Insurance industry in Asia, the average duration of assets is around 7 years against liabilities with average duration of around 37 years. He also emphasised upon increased innovations in modelling techniques and forward thinking, which could enable Actuaries to provide critical, decision-making analysis & ideas to the stakeholders.

This was followed by closing remarks from **Itt Apirativong, Chairman, 19th AAC**.

The conference ended with the closing ceremony of traditional Thai dance and music performances. This was accompanied with a farewell Gala dinner. The baton for organizing the (next) 20th AAC was passed on to Institute of Actuaries of India and it would be held in India in 2016.

About the Authors

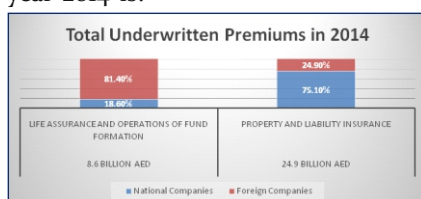


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INSURANCE MARKET AND ITS REGULATION IN UNITED ARAB EMIRATES

Insurance is a major Financial Services product & thereby UAE is looking at growth in Financial Services by undertaking insurance sector growth. Takaful insurance dominates the insurance sector in UAE. There were a total of 60 Insurance Companies; (34 national insurance companies and 26 foreign insurance companies) when the regulator last published their Annual Report for the year 2014. The number of companies carrying out all insurance activities (life assurance and operations of fund formation and property and liability insurance) are 11 national companies and 2 foreign companies. The number of companies carrying out property and liability insurance only are 20 national companies and 17 foreign companies. The number of insurance companies carrying out life assurance and operations of fund formation only are 2 national companies and 8 foreign companies, while the number of companies carrying credit export insurance is only one national company. It is worth mentioning that out of above said companies 11 national companies are carrying out Takaful insurance. The UAE Insurance Authority has imposed a number of stipulations to restrict the entry of foreign players into the insurance market. These include allowing only those companies to set up branches that had, in the past, obtained a license for operating in the UAE. Written premiums of all types of insurance amounted to AED 33.5 Billion (increased by 13.5% as compared to that of the year 2013). This fact ascertains the standing of this important sector and the vital roles it plays in the national economy due to the huge amount invested therein which amounted to, during the year 2014, as AED 39 Billion out of which 64.1% investments in shares and bonds and 22.3% investments in deposits. On the other hand, the total equities of the national insurance companies amounted to AED billion 19.8. The underwritten premium in UAE for the year 2014 is:



This clearly states that the market is driven by short-term insurance and the regulations are also thereby formulated in a way that reflect the same. To understand the concentration in the market better, the market share of insured risks under property and liability insurance is illustrated below:

The Insurance Authority of UAE (<http://www.ia.gov.ae/>) regulates the insurance sector in the United Arab Emirates (UAE), which is largely dominated by publicly listed companies, many of which have a majority government-holding. The UAE Insurance Authority has not directly sought to discourage the local industry's reliance on reinsurance. Instead it has introduced measures to strengthen the insurance industry, primarily through the enactment of the Financial Regulations in 2014 for both conventional and takaful. These regulations introduced for the first time a risk-based capital requirement for insurers where the regulators provided all market players with a regulatory template which is to be filled as part of the regulatory returns. This template holds information about the balance sheet, revenue account, technical provisions, solvency declarations, details of admissible assets, etc. Whilst commentators have suggested that the regulations do not adequately discourage the current levels of reliance on reinsurance, the clear intention of the Insurance Authority is to encourage consolidation and to create industry players who have the necessary financial strength to retain a greater percentage of the risks that they underwrite.

UAE registered insurance companies are obliged to maintain a minimum paid-up share capital of AED 100 million. For a reinsurer, the minimum paid-up share capital is AED 250 million. Depending on the type of insurance class underwritten, an insurance company is also required to make a deposit with a UAE bank as a form of guarantee of its obligations. The deposit is presently AED 2 million for each branch of an insurer undertaking property or liability insurance and AED 4 million for each branch of an insurer undertaking life insurance and accumulation of funds

business, not exceeding AED 6 million in total.

Let us look at the regulations as extracted from the Board of Directors' Decision Number (25) of 2014 Pertinent to Financial Regulations for Insurance Companies issued by the Insurance Authority of United Arab Emirates.

The Financial Regulations are broadly classified as under:

❖ **Regulations Pertinent to the Basis of Investing the Rights of the Policyholders:** This section lays out the General Requirements for Investments in the UAE along with the General rules to be followed when designing the Investment Policy. The Asset distribution and their allocation limits to ascertain permissible assets to avoid the risk of concentration. The regulations in this section also cover Compliance period for concentration and asset allocation limits, Investment related risks, Domiciling of investments, Derivatives, Investment outsourced activities, borrowed funds and the Relevant reporting requirements to the Authority. Domiciling of investments states that The Company is permitted to hold, for the purpose of investment, assets of its insurance fund for UAE policies in a foreign jurisdiction with a sovereign rating which is better or at least equivalent to the sovereign rating of the UAE. Total invested assets held outside the UAE shall not exceed 50% of the total invested assets or 100% of the total technical provisions for policies outside the UAE only (excluding unit-linked funds), whichever is greater.

❖ **Regulations Pertinent to the Solvency Margin and Minimum Guarantee Fund:** Minimum Subscribed and Paid Up Capital of each Company should not be less than the following:

- AED 100 million for an insurance Company.
- AED 250 million for a reinsurance Company.

Also, the Minimum Guarantee Fund shall not be at any point in time less

than (1/3) of the Solvency Capital Requirement. The Solvency Capital Requirement calculation needs to consider Underwriting Risk, Market and Liquidity Risk, Credit Risk and Operational Risk.

❖ **Regulations Pertinent to the Basis of Calculating the Technical Provisions:** This section lays out the Types of Technical Provisions and the methodology of calculating them. It also details the Actuarial Requirements for Technical Provisions and thereby the Reporting Requirements to the Authority. The technical provisions are:

- ⊙ **Unearned Premium Reserves:** To be calculated using straight-line method except for Marine.
- ⊙ **Unexpired Risk Reserves:** This needs to be provided only if the UPR is not sufficient to cover the risk in the remaining policy period.
- ⊙ **Outstanding Loss Reserves:** The Authority states that the Outstanding Loss Reserve (OSLR or case reserves) shall be calculated for each claim reported but outstanding as on the reporting date by the Company. The Actuary shall assess the OSLR based on the overall portfolio by each Line of Business.
- ⊙ **Incurred But Not Reported Reserves (IBNR):** IBNR should be calculated according to the guidance in Addendum (1) of the regulations. This talks about

the data to be used, the methodology and the inclusion of the Incurred But Not Enough Reported (IBNER) Reserves. If the Actuary feels that any guidance does not suit a relevant company/scenario, they could apply their judgement to do the said calculation and provide appropriate justifications to the Authority.

- ⊙ **Allocated Loss Adjustment Expense (ALAE) and Unallocated Loss Adjustment Expense Reserves (ULAE):** The Actuary shall certify the adequacy of the aggregate ALAE and ULAE as part of the certification of the overall technical provisions. Such certification shall be carried out on an annual basis at the minimum.
- ⊙ **Mathematical Reserves:** An actuarial certification on Mathematical Reserve is required at least annually to be submitted to the Authority. These are required only for Long-Term Insurance Businesses. It also gives guidance on selection of Valuation rate of Interest (yield on AAA Rated bond), Valuation Method (prospective method), Lapses and Surrenders to be ignored, Negative values to be eliminated etc.

Authority has also issued e-forms which are to be submitted every quarter. These e-forms detail the solvency calculations, movement in top

management, asset movements and the like.

Overall, the insurance market in the UAE looks set to continue its solid growth with local participants continuing to be heavily reliant on the international market.

About the Authors



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Mr. Akshay Pandit is a Partner in M/S. K. A. Pandit . He has more than 30 years of Experience in Actuarial Consulting within India and Abroad and is currently heading a portfolio of Business Development and client relations.



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Ms. Rashi Manek has been part of M/s. K. A. Pandit since the last 4 years & is now nearing qualification. In addition to Non-Life Insurance, she has extensive experience in global Employee Benefits as well.

Let me define a leader. He must have vision and passion and not be afraid of any problem. Instead, he should know how to defeat it. Most importantly, he must work with integrity.

Dr. APJ Abdul Kalam

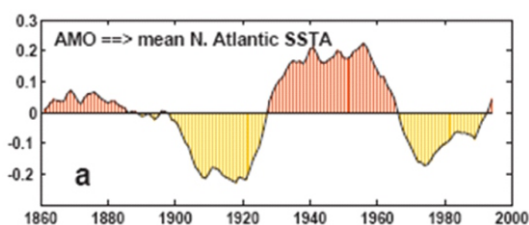


GLOBAL WARMING OR JUST A NORMAL WEATHER CYCLE?

The recent spurt in cyclones, heavy rainfall driven floods is a cause for concern not only in India but across the globe. It is quite natural to attribute the reasons to Global warming as this has been one of the most discussed topics in the recent past. But in reality it may not be the only reason or perhaps may not be the reason at all! Well it's a debate which can go on and on. Let's focus our attention in the next few paragraphs to a topic which is other than global warming and may be attributed to be the primary reason for the recent spurt of such natural disasters.

It is a known fact that a storm, cyclone, hurricanes (different nomenclatures but all are same in principle though) etc build up their strength from the oceans. The more time a storm/cyclone spends time in the ocean, more strength it gathers in terms of size, speed, etc. In other words, the sea-surface temperature and its variability determine the strength of a storm, hurricane, and the amount of rainfall during the monsoon season. Thus the sea temperature has a direct correlation with occurrence and severity of such weather events. Scientists all across the world have been studying Sea Surface temperatures and their variability across all oceans in order to be able to develop models for forecasting these weather events. Progress has been made to the extent that oceanologists could study the variability pattern of SST (Sea Surface Temperatures) of Atlantic Ocean and it's correlation with weather pattern changes in various parts of the world. We call this AMO cycle, where AMO stands for Atlantic Multidecadal Oscillation. Our focus is primarily on the observed weather patterns in India and their correlations with the SST variability from AMO cycle. SST stands for Sea Surface Temperature.

Atlantic Multidecadal Oscillation (AMO)



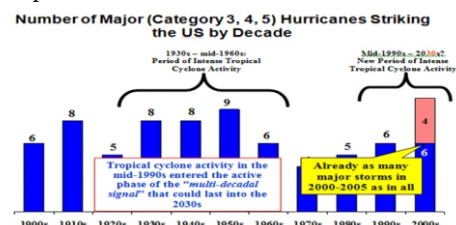
As you can observe in the chart above that it represents a cycle, similar to a wavelength in physics. A cycle is made up of both ups and downs. In the chart, the ups and downs are termed as warm and cold phases, respectively. In the warm phase, the actual sea surface temperature is above the average sea surface temperature. Whereas in the cold phase, the actual sea surface temperature is below the average sea surface temperature. The average sea surface temperature is average of all the historical temperatures observed or estimated.

In the chart, SSTA stands for Sea Surface Temperatures Anomaly, for example if it shows an anomaly of 0.2 C in 1940, and the average annual temperature of the ocean is 25 C, the temperature of the ocean in 1940 was around 25.2 C as 1940 falls in the warm phase where the actual sea surface temperature is higher than the average temperature.

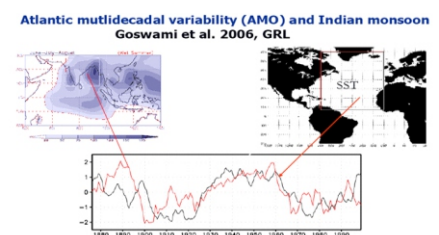
It is also observed from the chart that North Atlantic sea surface temperatures from 1856-1999 present two 65-80 year cycle with a 0.4 C range, referred to as the Atlantic Multidecadal Oscillation (AMO). AMO warm phases occurred during 1860-1880 and 1930-1965, and cold phases during 1905-1925 and 1970-1990. The term "Oscillation" refers to the variation of temperatures from low to high and then again high to low, completing a cycle. The "Multidecadal" refers to the cycle length (other common term being wavelength in physics). As per the AMO, the cycle is a multiple of ten (i.e. a decade) amounting to 60-80 years and hence the term "Multidecadal" (Multiple of ten)

The most interesting fact is that the number of storms and other severe weather events have occurred between 1930 and 1965 (warm phase) across the globe. The picture below shows the frequency of storms hitting USA between 1930's and 1960's as the highest. The results won't be different if we see the results in the Indian context too. And the most alarming fact coming out of this AMO study is that we have already entered the warm phase starting in the mid 1990's and already witnessed an increase in

number of natural calamities with intense severity. Some analysts are even predicting that we are soon to touch \$ 100 bn CAT loss !! In India, we have already witnessed severe flood events like in Mumbai, Kashmir, Uttarakhand and most recently Chennai. You may call it man-made disaster driven by the fact that damage caused is more due to lack of adequate drainage infrastructure. But one should not forget that these are after all rainfall driven floods and the final damage is directly related to the amount or severity of rainfall which is the focal point of our discussion.



One would certainly question and perhaps would like to know the impact on India due to the AMO cycle. Below is a picture depicting correlation between the AMO variability and the Indian Monsoon studied by a researcher at ISc Bangalore. There is a positive correlation of around 60%. The picture would help us answer why we had so many intense floods recently or severe temperature level like what we had witnessed in Mumbai during some of the winters. Also one shouldn't forget the fact that Mumbai witnessed the coldest temperature in its history (around 7°C) in 1962 which was in the warm phase between 1930 and 1965.



After studying the AMO cycle, one would really question the role of global warming behind the recent spurt in the number of NAT Cat events and their intense severity. Although a group of researchers across the globe, who do not hold the global warming as the only reason, believe that the global warming will certainly increase the length of the cycle which means that the number of years in warm phase will now stretch to

40-45 years instead of just 25-30 years. In other words, the length of the cycle should increase to 100-110 years from 70-80 years instead. Well that should be quite painful to our generation!

So should we really worry about the recent spurt in intense weather events like Chennai floods? I think we should worry about as we are in the mid of a warm phase and can expect such intense events frequently in next 15-20 years. That's not quite a short term for a human life! Insurers and especially the reinsurers should be on their toes while selecting risks and ensure charging the right premiums. We should not be surprised by any hardening of rates by the reinsurers.

But at the same time, we should get some comfort from the fact that we are in the warm phase which will always be followed by a cold phase. The intense storms, floods, etc will not continue forever and we will have some relief. Relief from the fact that the number of such weather events will be lesser combined with lower intensity whenever they occur during the subsequent cold phase.

It will be really interesting to see how the CAT modellers are factoring such cycles into their models, especially the Event and the Hazard modules. Just to highlight that there is not just one cycle across the globe as there are other cycles also which are active, for example, Pacific Multi decadal Oscillation, which is another cycle based on sea surface temperature variability.

An event module in a CAT model consists of a database of stochastic events (the event set) with each event defined by its physical parameters, location and annual probability / frequency of occurrence. This module will critically contain details of the sorts of events that can occur, and their likelihood: for example, a storm with a return period of 50 years.

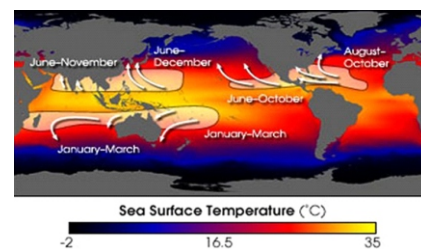
Similarly a Hazard module determines the hazard of each event at each location. The hazard is the consequence of the event that causes damage. For example, in the case of a hurricane, wind speed is the primary

cause; for an earthquake it is ground shaking. So this module will specify, for example, that if a storm happens again, then it is likely to result in some wind damage, some floods, etc.

Ideally because of these cycles, the modellers should change their assumptions to reflect the increase in number of such events in the event module as well as the increase in severity in the hazard module. The challenge is to do the right detrending of historical data to assess the influence of such cycles only and incorporate. Well modelling output varies a lot from model to model depending on the assumptions and one has to be very realistic in applying their judgement and experience while fixing the assumptions. One should also be careful in the vulnerability model when segregating the increase in intensity of loss damage due to man-made reasons against increase in intensity of loss damage due to natural reasons like such cycles. Vulnerability can be defined as the degree of loss to a particular system or structure resulting from exposure to a given hazard (often expressed as a percentage of sum insured). This module specifies how much damage each insured item (eg property) is likely to sustain given a certain peril. For example, a detached house on a flood plain will be more vulnerable to flood than a third-floor flat. The degree of damage will be expressed in monetary terms.

The property underwriters should be cautious and possess knowledge about the timings of these storms/floods across the globe as they remain more or less same during the course of the year. The underwriters have to be extra cautious in taking risks during certain times of the year from certain locations. There have been events in the past where it has been found that the insured possesses more knowledge about these probable weather events and takes out policies at the right time. Anti-selection risks! The underwriters can avoid such risks or better their loss ratios through a conscious underwriting. The map given below gives a snapshot of the timings of tropical storms which occur during the year. In short, the weather cycles are just the

opposite in the two hemispheres which is on account of the fact that the earth rotates around sun and it also rotates around itself with a tilted axis of rotation. To say few words on this as it is really interesting, if the axis of rotation around itself for the earth was not tilted, we would not have had the four seasons, the temperature would have been constant throughout the year in a particular zone, and the whole ecological balance would have changed. Quite hard to believe how our lives would have been. Thanks to the tilted axis of rotation!



Request your honest feedback and suggestions on this topic which will be highly appreciated, as I would like to take this session forward into storm and earthquake science which I guess would be even more interesting. I believe that the actuarial fraternity would be the most beneficial group from such discussion as we move into more diversified roles and give advice on these critical risks to our clients.

About the Author



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Mr. Prasun is a fellow actuary, specialized in General Insurance. He is currently working in Magma HDI General Insurance Co. Ltd as Actuarial Lead and Chief Risk Officer.

The life insurance sector in India has seen modest growth in its weighted new business premium collections in the first half of this financial year, a year on year growth of 3.3%. Masked within this is a resurgent 20.2% growth for private life insurers and continuing contraction of the state-owned Life Insurance Corporation of India (LIC) by nearly 8.9% for the half-year. Buoyed by the strong performance in this period, private players have expressed optimism and are generally targeting double digit new business growth for FY2015-16. In addition, the life insurance landscape seems to be dynamic with most private life insurance joint-ventures announcing potential stake transfers to foreign partners. We summarise below these and the top ten key trends and developments that shaped the life insurance market in India for the period September 2015 to November 2015.

10 The IRDAI approved Life Insurance Council's appeal to offer '50% rebate on reinsurance rate on Pradhan Mantri Jeevan Jyoti Beema Yojana (PMJJBY)'

In an effort to help minimise potential losses to individual insurers from government-promoted low premium insurance schemes, the IRDAI approved Life Insurance Council's appeal to offer 50% rebate on reinsurance rate on PMJJBY. In addition to this, the Life Insurance Council has made an appeal to several state governments to waive stamp duty for selling this product. These social security schemes have continued to witness positive pickup with 120 million+ enrolments within 7 months of launch.

For further coverage of these and other market developments, visit <https://www.towerswatson.com/en/Insights/Newsletters/Asia-Pacific/India%20Market%20Life%20Insurance%20Update>

9 Half yearly results round-up: 12 out of 19 private insurers declare profits

12 of 19 private players that made their financial results available for the first half of FY2015 - 16 reported profits during the period. Bajaj Allianz Life, DHFL Pramerica Life, Kotak Life and ICICI Prudential Life each witnessed a positive year-on-year growth in their profit after tax compared to the end of Q2 FY2014-15. Meanwhile, Aegon Life, Birla Sun Life, SBI Life and HDFC Life witnessed a decline in their profits compared to the figures reported for the corresponding period last year. Total reported profit after tax for private insurers on the whole declined by 9% from INR26,709 million over the first six months of FY2014-15 to INR24,296 million in the corresponding period of FY2015-16.

8 Industry new business performance: Private life insurers record 20.2% year on year growth in their weighted new business premium collections in the first half of FY2015-16; group single premium business witnesses surge.

Life insurance industry collected weighted new business premium, (measured as 100% of regular premium and 10% of single premium), amounting to INR236 billion in the first half of FY2015-16, a year-on-year growth of 3.3%, as per statistics released by the IRDAI. Private insurers continued their resurgence during the first half of FY2015-16 recording a growth of 20.2%, while the state-owned LIC witnessed another sluggish period with an 8.9% decline. Consequently, private insurers have consolidated their market share from 41.7% to 48.6% in the first half, year-on-year. Both private players as well as LIC have increased focused on group single premium sales, evident by a strong year on year growth of 59.6% for private players and 42.9% for LIC during the half year.

7 Sale from Bancassurance channel outperforms agency as it records a rise of 3.6% in its contribution to individual unweighted new business premium for the first half of FY2015-16, compared to a decline of 14.4% witnessed by the agency channel.

For the retail individual business, the total unweighted new business premium collections for the industry reduced by 10.1% owing to the sluggish performance of the agency channel, which witnessed a decline in collections of 14.4%, in contrast to growth of 3.6% for bancassurance and a marginal 0.7% growth for other

channels. Overall collections for private players increased by 16.2% largely driven by a 12.7% growth in individual new business from bancassurance with growth in agency remaining relatively flat. LIC witnessed decline in individual unweighted new business collections from both agency and bancassurance channels.

6 Publication of recommendations of the committee that examined extant life insurance regulations and subsequent release of exposure draft by the IRDAI on Assets, Liability and Solvency Margin (ALSM) of life insurance business

The IRDAI released exposure draft on amendments of ALSM of life insurance business which were largely in line with the recommendations of the committee on review of life insurance regulations, however, it remained silent on the transition towards a RBC framework. The amendments mandate the insurance companies:

- ❖ to hold mathematical reserves equivalent to the highest of reserve computed under Gross Premium Valuation method, Guaranteed Surrender Value and Special Surrender Value;
- ❖ to hold additional reserves for expenses where valuation expense assumptions do not reflect the current expense experience of the insurer;
- ❖ to maintain "Available Solvency Margin" at a level, which is not less than 50% of the amount of minimum capital and 100% of required solvency margin, whichever is higher. Moreover, minimum solvency ratio of 150% has been prescribed, breaching which would attract regulatory actions.

5 Unit-linked products regain popularity: Nearly two-fifths of the new product launches during September to November 2015 have been linked products, as unit-linked funds book healthy returns.

There has been a renewed interest of the customers in linked products. This has been driven by a positive economic outlook, accounting for 20-30% annualised gains in unit-linked funds over the past three years, as well as a resurgence in sales of linked policies. A relatively higher number of linked product launches during the current reporting period as compared to the previous quarter has been noted. Five out of 12 insurers with a new launch during the second quarter of FY2015-16 have launched a linked plan.

4 Tata AIA Life has tied up with IndusInd Bank to provide life insurance cover through the bank's branches

Tata AIA Life has entered into its second largest bancassurance tieup with IndusInd Bank to provide life insurance cover through the banks network of 854 branches. Prior to this, IndusInd Bank was a distribution partner of Aviva Life.

3 Implied valuations for several insurers emerge based on press-reported key transaction figures

Key transaction figures as reported in the press peg the valuation of HDFC

Life at INR190 billion. Reliance Life and Birla Sun Life follow with implied valuations of INR99 billion and INR72 billion, respectively. Transaction figures for Bharti AXA Life, Aegon Life and Edelweiss Tokio Life too have been reported in the press pegging the valuation of the insurers at INR37 billion, INR24 billion and INR24 billion respectively.

2 Insurers line up potential stake-transfers to foreign partners following FDI hike from 26% to 49%.

Foreign investments in the insurance sector are gaining momentum: Bharti AXA Life is the first insurer to have received the regulator's approval for increasing AXA's stake from 26% to 49% in the joint venture. Aegon Life and Edelweiss Tokio Life have obtained approval from the Foreign Investment Promotion Board for increase of stake of their foreign partners in their respective joint ventures while HDFC Life has reportedly applied for the same. Aviva Life, Reliance Life, Birla Sun Life, SBI Life, Star Union Dai-ichi Life and DHFL Pramerica Life are amongst the other insurers who are reportedly in advanced stages of increasing the shareholding of their respective foreign partners.

7 Guidelines providing clarification on 'Indian Owned and Controlled'

Following the passage of Insurance Laws (Amendment) Act 2015, effecting an increase in the FDI limit in the

Indian insurance sector to 49%, there was an additional stipulation requiring the insurance companies to be "Indian owned and controlled". Providing clarity over the issue, the IRDAI has released guidelines requiring all the insurance companies to comply with it by January 2016. The guidelines state that the Indian promoter should nominate majority of the directors and the chairman of the Board with a casting vote. The Board shall appoint key management persons including the CEO. The guidelines also throw light on what constitutes a valid quorum for Board meetings.

About the Author



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Mr. Vivek Jalan leads the life insurance consulting practice for Towers Watson, India

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SUCCESS STORY

Mr. Prajesh Dhanuka
(ACET TOPPER – DECEMBER 2015)



1 What were the basic mantras of your success?

The basic mantra of my success was to forget luck, to live by intent and to stop fixating on failure. I believed that if I failed 10 times a day I learnt 10 new lessons. I always worked with clarity and perfection. I tuned up my insight and looked for inspirations. My last mantra of success was to "Go for Gold".

2 Tell us about yourself, your educational background and your hobbies

I'm a first year student of St. Xavier's College, Kolkata now. I finished my schooling from Birla High School, Kolkata where I pursued commerce for my higher studies. Regarding my hobbies, I like studying new subjects, listening music, going on drives and surfing the internet for getting new updates.

3 When did you decided to take up Actuarial professional course?

Choosing a career as an actuarial is really tough. But it's really easy if you have good mentors who can tell you that's its not at all difficult, you just have to focus. My teachers and my sister advised me to look up for Actuarial Science and I also found that my friends were pursuing this course and then I made up my mind to give ACET. I found that my mentors were not wrong.

4 How did you come to know about the ACET?

During February'15, I was looking for my career prospects while studying for my board exams. It was then I heard about the Actuarial Science course from my teachers and the internet.

5 How much time do you think one requires for serious preparation for this exam?

Time has no limits. It seriously depends on the interest and passion of an individual for any preparation. If you prepare for any course blindly, then even 12 hours a day can make you insane. But, if you accept the course with your heart then even 12 minutes of learning can give you the best message of your life. At the end time management plays a vital role, because

you are responsible for having a cup of coffee with your family and friends also.

6 How did you start preparation for the ACET?

I began the preparation of ACET by going through the study material provided by IAI first and thought that wherever I will have problems, I will look up to the online tutorials and then I would give the online mock test.

7 Which is the most difficult part of this examination and why? What was your strategy to tackle this difficult part?

The most difficult part of this examination was when you are not sure of an answer and there is negative marking for wrong answer. To tackle this part, first I made up my mind to overlook questions which I am unsure and to attempt those questions which I'm comfortable with. This saved me a lot of time and gave me energy and confidence to try those difficult questions. There were some questions which I had to leave because if I would have given time to those then it would have caused a stress in my mind. Lastly, revision was a vital part to make sure that, the hammer was struck at the right place.

8 Did you prepare notes? How helpful are the notes? What is your advice on notes-making?

Yes, I did prepare notes regarding all the important formulae and the procedure of difficult sums. These notes proved to be quite helpful in making my points more effective. I just had to go through these notes before my examination which ensured a complete revision of the study material itself. One should prepare notes in such a way that the whole of the study material is covered and the individual is able to recall the contents while going through the notes.

9 How do you visualize your success?

Success to me is like a mission to accomplish. I learnt this from army people. I took ACET as a target to hit bull's eye, and I'm proud of it. But what you do well is forgotten tomorrow you

have to hit your target once again then only you can visualize and frame the structure of success.

10 What were your strong points which enabled you to achieve success in ACET?

First and for-most important point was positive attitude with an acceptance that I can crack it. There were many other strong points which enabled me to achieve success. First one was time management followed by developing a study plan. I developed effective note-making techniques and worked with concentration. The most difficult sums were dealt first to pump up my concentration level which made it much easier to solve the less difficult ones. The strongest point was not to study hard but study smart.

11 How do you think you can add value to the Actuarial Profession?

You go with any profession, the most important thing you should analyze first is generation. Thorough study of what today's generation require will not only help you to add value, but also to create a renaissance. Till now what I have analyzed is "Survival of the fittest". To remain fit you have to innovate, innovate and innovate.

12 Are you working somewhere? Describe a typical work week?

Currently I'm not working anywhere, just pursuing my graduation.

13 What are you passionate about?

I'm quite passionate about mathematics and its branches because it involves a lot of calculations which continuously challenges my mind and helps it grow sharp. I'm also passionate about cricket, after all it's also a game of numbers. This also adds a boost to sharpen my brain.

14 Behind one topper are many people who stood by him/her during those uncertain times when he/she was merely an 'aspirant'. Who were those people in your case? Any specific incidence that you would like to share with us?

Well that's a difficult question to answer. Uncertain times passed away that's an achievement. In today's time no-one can put one's hand on your head and can guarantee you success. You have to remain self-motivated with a belief in self. At the end only the person who can wipe your tears sitting beside you is a perfect aspirant. I'm thankful to my family, friends and teachers who stood nearby me in all cases.

15 What are some of the mistakes that an average aspirant can avoid for better time management? What is your message for them?

A prime mistake which all do is studying only selective parts. After all it's not college or school exam. Moreover to that an aspirant can avoid those things which they're confident with and to spend less time on those areas. They should concentrate more on the tough areas and spend more time to ensure that all of the areas are

covered and nothing is left untouched.

16 Any comments on your experience with ACET process.

It was a very good experience with the ACET process. It provides a lot of opportunities to develop oneself through self study. It also provides all the help which a student can require while preparing for the ACET. It helps to boost one's confidence which is quite helpful in the clearing the ACET.

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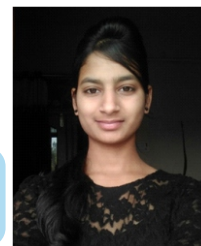
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**THE ACTUARY INDIA WISHES MANY MORE YEARS OF
HEALTHY LIFE TO THE FELLOW MEMBERS WHOSE
BIRTHDAY FALL IN JANUARY 2016.**



SUCCESS STORY

Ms. Bharti Singla
(ACET TOPPER – DECEMBER 2015)



1 What were the basic mantras of your success?

The basic mantras of my success were regular study, hard work and daily basis revision. I always do study keeping in my mind the goal of my life. I daily, think about the person who I intend to be in future. It encourages me to work hard.

2 Tell us about yourself, your educational background and your hobbies

I am currently doing my 1st year of B.com in M.H.D College, Odhan. I have done my schooling of 12 years in evergreen royal public school and Govt. Sen. Sec. School, Kalanwali in commerce background. I have been a district topper in 12th grade. I spend most of my free time in listening to music, dancing and reading books. I also love to watch seminars of motivational speakers.

3 When did you decided to take up Actuarial professional course?

After giving the final examination of 12th in March 2015, I searched about this course deeply and decided to take up this course because I found it very interesting.

4 How did you come to know about the ACET?

My elder brother told me about it. He encouraged me to take up this course. Then after getting complete knowledge about it on the actuarial website, I got ready to sit for entrance exam.

5 How much time do you think one requires for serious preparation for this exam?

One can clear ACET after doing serious preparation of two months.

6 How did you start preparation for the ACET?

I read all the topics carefully and highlighted important ones. Also I prepared my own notes because I really needed it

7 Which is the most difficult part of this examination and why? What was your strategy to tackle this difficult part?

Although I was familiar with most of the topics of ACET because I am from commerce background yet there were some topics which I did not understand in one reading. For this, I read these topics 2 or 3 times and also I took help of my school teachers to solve them.

8 Did you prepare notes? How helpful are the notes? What is your advice on notes-making?

Of course, I prepared my own notes for both STATS and FAC pack. I always prepare notes from my schooling because it saves time and highlights important portions. These notes proved really helpful for me. One can use notes for final revision when there is not enough time to go through the course notes.

9 How do you visualize your success?

This success is very meaningful for me. It inspires me to work harder in future also. I take it as the first step of my destination. Now I think 'If I can do this, then I can do everything'

10 What were your strong points which enabled you to achieve success in ACET?

My strong points are my love for mathematics and other practical subjects, my supportive family and my positive thinking. I can do study for many hours in a day because I love it. I think it is also a strong point of my success.

11 How do you think you can add value to the Actuarial Profession?

As I have just passed my 12th grade, I am not so experienced. But I will do my best as well as I get experience in mathematical and statistical techniques.

12 Are you working somewhere? Describe a typical work week?

No, I am a student.

13 What are you passionate about?

I am passionate about completing this course and being an actuary. In fact, study is my passion. I always have a hunger of learning and getting new

knowledge.

14 Behind one topper are many people who stood by him/her during those uncertain times when he/she was merely an 'aspirant'. Who were those people in your case? Any specific incidence that you would like to share with us?

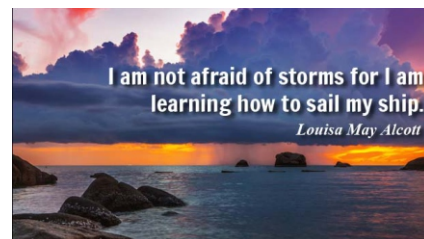
My supportive and loving family stood behind me and the best wishes of my friends was also there to encourage me. In fact I had a great support of my elder brother at every step of the preparation for the exam. I would like to discuss here about the book I have read before about 15 days of ACET exam, named 'THE POWER OF YOUR SUBCONSCIOUS MIND' by Dr. Joseph Murphy. After reading only few pages of it, I started visualize this success and believing that I will be a topper.

15 What are some of the mistakes that an average aspirant can avoid for better time management? What is your message for them?

Don't get nervous by seeing the timer during the exam. There is enough time to complete all the questions if you don't stick to one question. You should move to the next and come back to it afterwards. Always think positive because you can do anything. Never give up!

16 Any comments on your experience with ACET process.

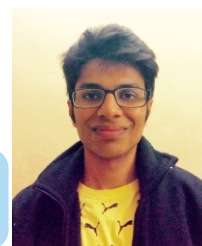
The whole process was very interesting. I really enjoyed it. All the topics were of my interest. Students can take the help of online classes and the forum provided along with the study material. The experience of giving online exam was also good. I appreciate the quick release of results which were declared within 14 days of the exam.





SUCCESS STORY

Mr. Jenil Shah
(ACET TOPPER – DECEMBER 2015)



1 What were the basic mantras of your success?

I'd say, work smart and efficiently. Solving problems and practice are essential, but you need to have a good grip over the fundamentals before doing so.

2 Tell us about yourself, your educational background and your hobbies

I am currently a second-year undergraduate student at Indian Institute of Technology, Bombay, pursuing a dual degree (B.Tech + M.Tech) in Energy Science and Engineering. I completed my schooling in ICSE Board from Pawar Public School, Bhandup.

To unwind, I read, play cricket and chess and listen to music.

3 When did you decide to take up Actuarial professional course?

Around the beginning of the 2nd year of my engineering course, I developed an interest in statistics and I was in touch with a friend who is also pursuing this course. It was then that I decided to take up this course.

4 How did you come to know about the ACET?

My parents had heard of Actuarial Science profession in some career counselling seminars. Also, some of my friends had told me about ACET.

5 How much time do you think one requires for serious preparation for this exam?

It would depend on person to person. Also, it depends on what educational background the person has.

For me, I had a good grasp of calculus and statistics due to my educational background. I put in around an hour a day for a month which increased to 5-6 hours/day, a week before the exams.

6 How did you start preparation for the ACET?

I downloaded the study material provided by the institute and formulated a plan to complete the

syllabus within the time span. I simultaneously studied both FAC and statistics pack which were sufficient. I didn't feel the need for any other study material.

7 Which is the most difficult part of this examination and why? What was your strategy to tackle this difficult part?

Being from a non-commerce background, I found it difficult to understand certain commercial terms used. I read the chapters explaining these terms from the study material and if I still had problems, I used the internet to get an explanation.

8 Did you prepare notes? How helpful are the notes? What is your advice on notes-making?

I did not need to make notes as in "summarising" the chapters because the summary was already present in the study material. However, I did jot down the topics / terms that I did not know about / understand so that I could get back to them later.

9 How do you visualize your success?

It is a great feeling to have achieved this, but I haven't let it get into my head. I still have a long way to go.

10 What were your strong points which enabled you to achieve success in ACET?

I have studied calculus in 12th grade for JEE preparation. So, ACET calculus part was comparatively easy for me. We also had a course in data analysis in IIT which gave me an insight into statistics. So, although it did require studying, statistics did not become an impediment for me. Also, I enjoyed studying both these subjects – which was an added bonus. I have also been taking competitive exams since my childhood which has helped me a lot in managing time and smartly attempting questions during the test.

11 How do you think you can add value to the Actuarial Profession?

I love studying calculus and statistics, both of which are key ingredients in the Actuarial Profession. Being from Engineering background, where the focus is on solving the problems that people face, I think I would be able to look at intricate complexities in the profession with a different perspective.

12 Are you working somewhere? Describe a typical work week?

No, I am not working at present.

13 What are you passionate about?

I am very passionate about gaining knowledge – in whatever way or form it presents itself.

14 Behind one topper are many people who stood by him/her during those uncertain times when he/she was merely an 'aspirant'. Who were those people in your case? Any specific incidence that you would like to share with us?

I think my parents would be the biggest contributors to my success – they knew the importance of this course and aside from motivating me, they helped me whenever I got stuck.

15 What are some of the mistakes that an average aspirant can avoid for better time management? What is your message for them?

While writing the examination, one of the common mistakes that many students make is getting stuck in one particular question for a long time. This not only causes a shortage of time for other questions but also causes frustration and affects the morale. This, therefore, must be avoided.

16 Any comments on your experience with ACET process.

The process was fairly straight forward and I hardly had any issues.

COUNTRY REPORT CANADA

Greetings from Canada!

In this article I will be reviewing upcoming changes in the required capital framework for life insurance companies.

The Office of the Superintendent of Financial Institutions (OSFI) is the regulator of insurance companies in Canada. The Insurance Companies Act requires federally regulated life insurance companies to maintain adequate capital, and OSFI assesses if a life insurance company maintains adequate capital through its Minimum Continuing Capital and Surplus Requirements (MCCSR).

Under the MCCSR framework, required capital for life insurance companies is generally a factor based approach applied to assets and liabilities to cover risks including asset default risk, insurance risks (mortality, morbidity, lapse) and changes in interest rate environment risk. Since 2006, OSFI and the Canadian life insurance industry have been working together through the MCCSR Advisory Committee to develop more advanced risk measurement techniques to incorporate into the MCCSR.

Annually, the committee has been conducting quantitative impact studies

(QIS) that companies would complete to provide information to help set the new approach for MCCSR. Most recently the seventh and final QIS has been released with a due date of January 2016. Although still not final, this is expected to form the basis of the new MCCSR framework with an implementation date of January 1, 2018.

The new approach will use a target asset requirement approach where companies are required to hold assets equal to the sum of the best estimate of their insurance obligations and a solvency buffer. The solvency buffer generally follows a model-based approach where the buffer is based on shocks from model runs.

For example, the solvency buffer for mortality risk (i.e. the risk associated with the adverse variability in liability cash flows due to the incidence of death) covers the risks associated with the level, trend, volatility and catastrophe risks. The level risk is calculated by projecting cash flows with a factor on the best estimate mortality rate (i.e. $(1 + \text{factor}) \times \text{best estimate mortality assumption}$), and the solvency buffer is the difference between the present value of the shocked cash flows and the present value of the best estimate cash flows.

Companies will now need to start assessing the impact of the new capital approach on areas such as pricing, and even practical considerations such as the time required to complete the calculation. Under the factor based approach MCCSR could be calculated in a shorter time frame, but now with explicit model runs the calculation will take longer and have an impact when the information will become available.

About the Author



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Mr. Kedar Mulgund is an Actuary at Sun Life Financial in Toronto, Canada. He has 20 years of experience in pricing, product development and financial reporting spanning Canada and India.

PEOPLE'S MOVE



Mr. Chirag Shamji Rathod

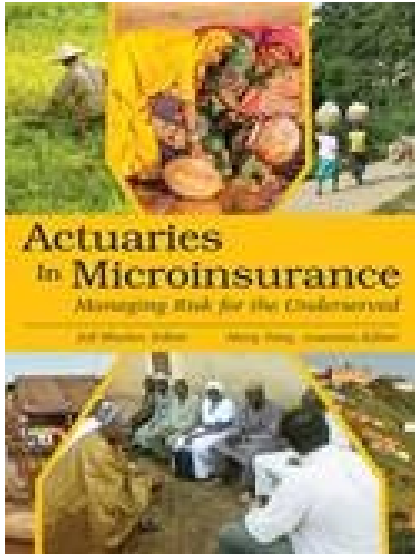
After seven years with Canara HSBC Oriental Bank Life Insurance Company Ltd, Mr. Chirag Shamji Rathod has decided to step down from the position of Appointed Actuary and Director - Products & Strategy and will be relocating to Hong Kong. He will be joining Transamerica Life (Bermuda) Ltd as Chief Actuary, with overall responsibility for the Company's Hong Kong and Singapore actuarial teams.

BOOK REVIEW

ACTUARIES IN MICRO INSURANCE



Title: Actuaries in Micro insurance:
Managing Risk for the Underserved.
Author: Blacker & Yang
Reviewed by: Mr. Sonjai Kumar
Available at IAI Library: B13254



This is a first book on Microinsurance written by actuaries giving firsthand account of working in the developing markets on Microinsurance products. This book has three sections, in section-1, foreword and introduction is written, section-2 comprises twelve chapters sharing the experience of authors working in the developing market such as Africa, South America and in Asian countries drawing richness to the author in those conditions. The section-3 has nine chapters containing technical aspects of designing and pricing Microinsurance products that may be used for educational purpose. This could be useful for actuaries working in traditional market, young actuaries

living in developing countries and Microinsurance workers want to learn more on this subject. This book could also be useful for someone who wants to understand the global aspect of Microinsurance landscape both in qualitative and quantitative terms.

The book shares the personal transition of author from an established actuarial work to more challenging and satisfying working in the Microinsurance area in developed market and his subsequent interest in going for academic research in United States.

The book starts with the definition of Microinsurance as there is a no standard definition, the authors have given various definitions used worldwide. He also discussed the debate over whether Microinsurance should be defined from the point of low coverage or low premium.

The authors have emphasized the need of soft skills that is more required to be successful in such areas than the technical skills because the conditions are challenging. One needs to adapt to the different working conditions and make use of available technology to complete the work. Patience is another mantra that author has emphasized to be successful in many challenging situation.

In further chapters, they discussed various works that they have completed in different markets such as flood insurance, crop insurance, credit insurance etc. He further stresses

how they managed the different stakeholders in all operational areas and explaining the complicated concepts in a simple language. They also touched upon the working, personal and professional experience in African countries.

The book also covers the demand and supply of actuaries in developing market and suggested the ways of increasing the demand for suitable actuarial services and to increase the supply of those services where the level of demand is greater than supply.

The book covers the development of actuarial profession is developing in the West African countries. The route to the actuarial knowledge in those countries is through the University, covering the subject at three years Undergraduate level and two year post graduate level.

The book touches upon the various challenges that the actuaries have to face in such markets from lack of data or no data to price various different products on credit life, crop insurance, and health products. In some market, market research is a starting for designing the products. However, besides challenges, the book also explains the opportunity that is available in such markets for actuaries to sharpen their skills.

Overall the book provides a very good summary of Microinsurance across the world.

Puzzle No 243:

Replace letters with digits and have this sum be true:

KAYAK
KAYAK
KAYAK
KAYAK
KAYAK

SPORT

Puzzle No 244:

Use the numerals 1, 9, 9 and 6 exactly in that order to make the following numbers:
28, 32, 35, 38, 72, 73, 76, 77, 100 and 1000

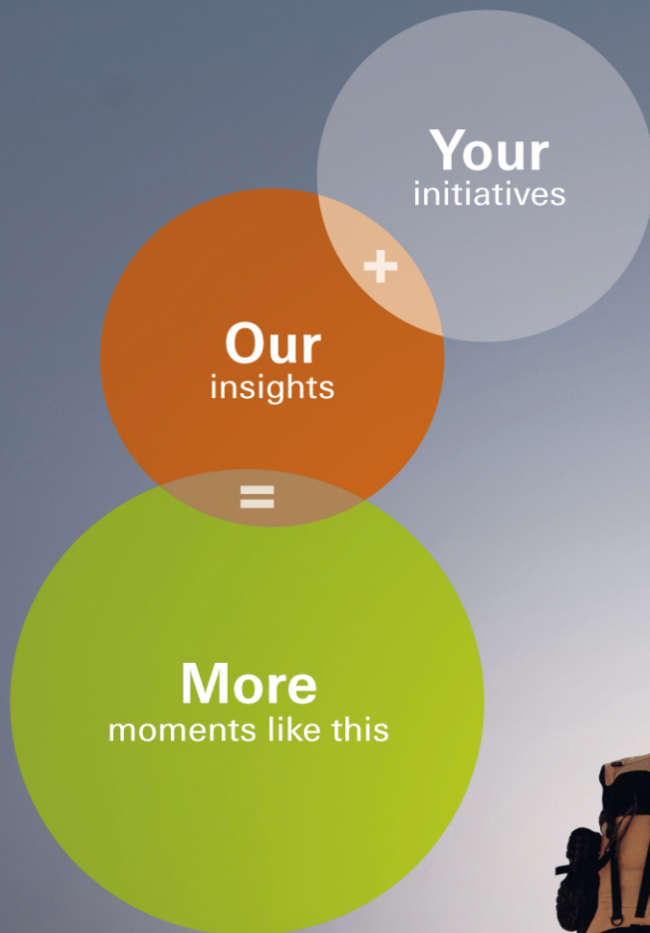
You can use the mathematical symbols +, -, ×, /, √, ^ (exponent symbol) and brackets.

Example: $63 = 1 \times 9 + 9 \times 6$



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With a mortality protection gap of a staggering US\$ 58 trillion in Asia Pacific and a shortfall in healthcare funding forecast to reach nearly US\$ 200 billion by the end of this decade, talk about mountains to climb! With more than 100 years' experience working together with insurers in Asia, Swiss Re understands the benefits of pooling our resources. By combining our extensive insights into ageing Asian communities with our global capabilities in analytics and risk management expertise, we can help grow your business, protect more customers and close Asia's protection gap. Let's set our sights on the summit. **We're smarter together.**

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