



Institute of Actuaries of India

www.actuariesindia.org

the Actuary INDIA

INDIAN ACTUARIAL PROFESSION
Serving the Cause of Public Interest

THE MAGAZINE OF THE INSTITUTE OF ACTUARIES OF INDIA

VOL. VIII • ISSUE 12

DECEMBER 2016 ISSUE

Pages 32 • ₹ 20

20th ASIAN ACTUARIAL CONFERENCE

9th - 12th November, 2016 | Hyatt Regency, Gurgaon (NCR)

Changing Asian Societies : Challenges and Opportunities



For Private Circulation Only



Institute of Actuaries of India

Institute of Actuaries of India

Who is an Actuary?

An Actuary is a business professional who analyzes the financial consequences of risk. This is a niche profession with strict standards for qualifying and is also a global profession as it is recognized in most countries. The actuaries attract competitive salaries globally.

Exam Centres in 27 Cities of India

Who can Apply?

- Have a degree in or are studying for **Mathematical Sciences: Maths, Statistics, Econometrics** or any other
- An Engineer or studying for it.
- A Management Graduate or studying for it.
- A Chartered Accountant, Cost Accountant or a Company Secretary or studying for any of these.
- Have a degree in Finance or studying for it, or any other, but you have love for Mathematics and skills in Numeracy.
- With minimum of 10+2 or even a maximum of a Phd in Maths or Stats or any other.

Contact: 022 - 67843333/3304

Email: acet@actuariesindia.org

**DATE OF RESULT:
22nd April 2017**

ACTUARIAL COMMON ENTRANCE TEST

ACET APRIL 2017

How to Apply?

Register online for ACET at

www.actuariesindia.org

**REGISTRATIONS START
04th January 2017**

**REGISTRATIONS CLOSE
28th February 2017**

**EXAMINATION DATE
01st April 2017**

NOTE:

On successful registration you will get one sample Question Paper and Solution under your login. After passing the ACET you can take admission as student member of IAI and pursue the actuarial course.

CHIEF EDITOR

Sunil Sharma
Email: sunil.sharma@kotak.com

EDITOR

Dinesh Khansili
Email: dinesh.khansili@mithrasconsultants.com

LIBRARIAN

Akshata Damre
Email: library@actuariesindia.org

COUNTRY REPORTERS

Krishen Sukdev
South Africa
Email: krishen.sukdev@gpaa.gov.za

Frank Munro
Srilanka
Email: Frank.Munro@aia.com

Anshuman Anand
Indonesia
Email: anand.anshuman@gmail.com

John Laurence Smith
New Zealand
Email: johns@fidelitylife.co.nz

Nauman Cheema
Pakistan
Email: info@naumanassociates.com

Vijay Balgobin
Mauritius
Email: vijay.balgobin@sicom.intnet.mu

Kedar Mulgund
Canada
Email: kedar.mulgund@sunlife.com

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

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

FROM THE DESK OF PRESIDENT

Mr. Sanjeeb Kumar..... 4

FROM THE DESK OF EDITOR

Mr. D C Khansili..... 5

20th AAC EVENT REPORT

Inaugural Address & Plenary Session
by Ms. Neelasree Deb 6

Parallel sessions on Life Insurance
by Ms. Vichitra Malhotra &
Mr. Ashish Taneja 10

Parallel Session on Crop Index Insurance -
Agricultural Insurance
by Ms. Yogita Arora 14

Parallel Session on importance of
Professionalism
by Mr. Satynarayan J..... 16

Parallel sessions on Pension & Other Employee
Benefits
by Mr. Sumeet Shah..... 18

Parallel Session on Regulating Insurance
Industry including IAIS Core Principles
by Ms. Ridhi Paliwal 20

Parallel session on Enterprise Risk
Management
by Mr. Sonjai Kumar 22

Parallel sessions on Data Sciences
by Ms. Jasika Singh 24

Parallel sessions on Stochastic Modelling
by Mr. Pushp Aggarwala..... 27

Parallel Session on Insurance Accounting
Transformation
Mr. Devinder Kumar..... 29

OBITUARY

Mr Akshay D. Pandit..... 15

PEOPLE'S MOVE

Mr Ajay Chaturvedi 21

Mr. Prabaht Kumar 23

Mr. Abhijeet Singh..... 28

PUZZLE

by Ms. Shilpa Mainekar..... 26



Disclaimer : Responsibility for authenticity of the contents or opinions expressed in any material published in this Magazine is solely of its author and the Institute of Actuaries of India, 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 and legality of such advertisements and implications of the same.

The tariff rates for advertisement in the Actuary India are as under:

Back Page colour ₹ 38,500/-

Full page colour ₹ 30,000/-

Half Page colour ₹ 20,000/-

Your reply along with the details/art work of advertisement should be sent to library@actuariesindia.org

ENQUIRIES ABOUT PUBLICATION OF ARTICLES OR NEWS

Please address all your enquiries with regard to the magazine by e-mail at library@actuariesindia.org.
Kindly do not send it to editor or any other functionaries.

Printed and Published monthly by Gururaj Nayak, Head of the Operation, Institute of Actuaries of India at ACME PACKS AND PRINTS (INDIA) PRIVATE LIMITED, A Wing, Gala No. 55, Ground Floor, Virwani Industrial Estate, Vishweshwar Nagar Road, Goregaon (E), Mumbai-63. for Institute of Actuaries of India : 302, Indian Globe Chambers, 142, Fort Street, Off D N Road, Near CST (VT) Station, Mumbai 400 001. • Tel +91 22 6784 3325 / 6784 3333 Fax +91 22 6784 3330 • Email: library@actuariesindia.org Website: www.actuariesindia.org

For circulation to members, connected individuals and organizations only.



From the Desk of

the President

– Mr. Sanjeeb Kumar

Let me begin with first congratulating all those students who cleared their actuarial exams early this month. Special congratulations to those who qualified all exams leading to Fellowship and I extend welcome to the profession of actuaries. I would urge them to serve professional responsibilities to the highest standards and maintain the dignity of our esteemed profession. Those who could not make their exams through, take a fresh guard and start a new fresh inning with a new day with positive energy. That's the way life moves on and one achieves the big milestones like reaching to the Fellowship.

As I mentioned in the previous column, the Institute has launched the online coaching for the CT series papers (except CT7) at a nominal cost. More than 300 students have already registered for the coaching, if you have not yet registered, you may do so and make the best use of this facility. For any clarification related to coaching, please contact vinodkumar@actuariesindia.org. We are also evaluating possibility of face to face counseling sessions for some of the CA and SA level exams during last week of January or first week of February, the notification will reach to the needy students, who appeared and could not succeed in those papers,

in those papers in due course of time. In the meantime, good luck for your studies.

In December, the Institute organized the India Fellowship Seminar on 15th & 16th Dec. Over 70 members attended the seminar and participated in the area of life, health and general insurance. Few case studies on professionalism and conduct were also discussed. I would like to share one important take away from the seminar – for all professionals more so for youngsters, the day of big success will definitely come. Wait for that and do not deviate from path of good conduct & professionalism and strictly avoid shortcuts coming on your way.

It has been close to now over a month and a half when economy is turning in a direction of less cash and more online transactions. Our mobiles are now becoming as precious as our wallet; on the one hand there is an ease of payment through our mobiles, on the other hand the risk of financial frauds is increasing. I see a lot of opportunities for the actuaries in the area of risk management and product designing & pricing in such a rapidly changing scenario. I would recommend that we should carefully keep ourselves updated on the threats and opportunities arising from these

developments and use our skills in better advising our clients/ employers. We expect to witness many product & distribution innovations in life and non life insurance in days to come and we will definitely have a role to play in our businesses.

I finished my last column in encouraging you all in participating in the Mumbai Marathon in January 2017. I wish good luck to all those who are running.

May I appeal to all members specially students to write articles or even small write ups in this magazine. This is a good forum to share your views with thousands of actuarial and other professionals. Please do not hesitate and start writing. I would appreciate more and more contributions from our members even if those write ups lack in quality as long as those meet the criteria of good conduct, professionalism and ethics. This will also help your ability to communicate better in future which is as important as our technical skills in becoming a successful Actuary.

May I expect the number of articles/ write up to increase many fold in the new year.

Wish you all seasons' greetings and **Happy New Year 2017.** ■



From the Desk of

the Editor

- Mr. D C Khansili

IRDAI Chairman in his inaugural address in AAC seminar raised a point that majority of the new business by LI Companies is being written in with profit business space. We may anticipate that IRDAI would closely monitor management of with profit business. Depending on the customers' grievances, their expectations and criticism of with profit business in developed countries particularly in UK may lead to new guidance/regulations. However, this business has been well accepted in country. IRDAI and Actuarial profession in India have already put the responsibilities upon AAs relating to with profit business management through AA regulations, distribution of surplus regulation, product regulations 2013 and GN6, etc. More and more investigations are expected to be undertaken and documented by Actuarial team and company to maintain equity, ascertaining sustainability, fair distribution through RB and TB, ALM, proper treatment of estate and miscellaneous surplus, maintaining PRE, impact on solvency, investment freedom, NB plans in current and in future, etc. The decisions not only of AA but company is also required in calculation of earned asset share.

Recently print media carried news about state-wise longevity of people. Though annuity products may not be sold state wise in India, yet it is worth to notice that gap in longevity in lowest and highest is to tune of 16 years. In India, the average age as per 2016 report is 68.45 years. Depending on various definitions and understanding some reported it as 67.47 years. For male, it is 67.3 years and for females it is 69.8 years. Thus gap between male and

female is 2.5 years. Generally, Insurers take gap of 3 years set back in mortality for females and so it may be justified by latest data. In Australia boy is expected to live average age of 80.1 years and girl to 84.3 years. In developed countries, the gap is more pronounced. The need is thus to generate new annuitant table in India and depending on volume of data for females, a separate table could be generated. This would help understanding the expectancy of life for male and female annuitants and gap between them.

The frequency and loss due to disasters are now rampant in India as well. The recent Vardha cyclone hitting Tamil Nadu and Andhra has reminded past floods, cyclones, earth quakes and man-made disasters like Bhopal Gas tragedy. From year 1993, big examples of natural disasters are Latur earthquake, Odisha super cyclone, Gujrat Earthquake, Indian ocean Tsunami of 2004, followed by 2013 Uttarakhand flash floods and Kashmir floods of 2014 raising reported death toll to 55,500 + apart from 2004 Tsunami which left dead to tune of 2.0 lac in Southern part of India, Andaman Nicobar, Sri Lanka, Indonesia etc. The presence of NDRF team, advance planning like diverting trains to other stations, restriction on air control, advice to general- public and fishermen to remain inside their houses controlled the human loss and only a few deaths were reported in recent cyclone but asset loss would be higher. It would take time for general insurance companies to take stock of loss. This is high time that India specific model be developed for predicting the impact on insurance companies for human and property loss.

The political decisions have many a times impact on economy and so on insurance companies. The results of US Presidential post, political changes in Italy, the much-talked dog policy, embroiling of South Korean President in leaked document scandal and #demonetisation# in India are recent examples. In India, the availability of liquid cash, interest rates moving southward, the change in interest, Government smoothing the way for rebate for digitally buying and paying future premiums through public sector insurance companies, etc. would have impact on insurance market. It is expected that promise of level playing field to private players is retained. The move to invest in legitimate investments like insurance products have started surfacing. The recent example is a person having real estate interest buying first ever highest amount immediate annuity plan worth INR 500 million. Following media report of people paying long due property tax, it is expected that many policyholders might have revived their policies. Once IRDAI publishes persistency figures, the impact of demonetisation on revival of policies would be known.

President, IAI in his first column had sought support of the volunteers. I believe his appeal has impact. The successful AAC and declaration of examination results at pre-declared date are proof. Hats off to Volunteers and IAI staff. Congratulations to those who passed the examination and best wishes for next exam diet to those who wish to appear.

Seasons' greetings and Happy New Year 2017! ■

Inaugural Address and Plenary Sessions



Organized by: Institute of Actuaries of India

Venue: Hotel Hyatt Regency, Gurgaon, India **Date:** 9th – 12th November, 2016

Session Name: Opening Ceremony

Welcome Address: **Mr. Rajesh Dalmia**, Chairman, 20th AAC organizing committee

Address by:

Mr. Jerry Brown, President Elect, SOA

Ms. Alissa Holz, Senior Vice President and Chief Pricing Actuary, RGA

Mr. Sanjeeb Kumar, President, IAI

Inaugural Address: **Mr. T S Vijayan**, Chairman, IRDAI

Vote of thanks: **Mr. R Arunachalam**, Vice President, IAI



Brief of the session:

Mr. Rajesh Dalmia started the session by giving welcome address to the delegates of the 20th Asian Actuarial Conference and introduced the guests to the audience.

Mr. Jerry Brown, **Ms. Alissa Holz**, **Mr. Sanjeeb Kumar** and chief guest **Mr. T S Vijayan** in turn addressed

the audience about various aspects and challenges faced by the insurance industry in general, regarding key drivers for growth in terms of changing regulation, innovative research, predictive modelling and analysis, sustainable product development, risk mitigation and transfer and economic environment, and how the actuaries can contribute towards the growth of the insurance industry.

Session Highlights:

The session started with **Mr. Jerry Brown** addressing the audience where he briefly spoke about the significant aspects about key driver of growth and how Asian Actuarial Congress (AAC) can contribute towards the growth of insurance industry. The significant factors he highlighted in his speech were about changing regulations, use of predictive modelling and analysis to solve problems, innovation through research and education, and professionalism.

Ms. Alissa Holz spoke about the challenges faced by the Asian societies in terms of shifting demographics across Asia in terms of ageing population in certain countries versus relatively younger population in some others. She briefly focused on the significant factors that would drive growth of insurance industry in Asia, including innovative research, customized products to suit target market need, process development,

increased digitization through new technology, risk mitigation and transfer, and sustainable product development.

Mr. T S Vijayan, in his inaugural address, spoke about the growth potential in the Asian insurance industry and what are the challenges and opportunities towards achieving high growth. He highlighted the need to focus on the type of risks that can be covered and number of lives that can be reached through effective insurance penetration. He also spoke about the primary challenge faced by the insurance industry in India, which is in terms of affordability of adequate insurance cover and sustainability of the distribution channels as well.

He briefly spoke about how global nature of reinsurance can overcome the limitation of boundaries of nations by the mechanism of risk sharing across different countries around the world.

He also highlighted the challenges faced by Indian insurance industry in terms of products, particularly with profit products and guaranteed return products. He emphasized about the need to analyze the sustainability of guaranteed return products with future changes in economic environments.

He emphasized on the duty of the actuaries to provide stability to the industry by striking a balance between shareholders and customers, which

is essential to bring sustainability to the business and also drive growth potential. He also emphasized about the need of actuaries to be dynamic to be able to capture the ever changing requirements of target population. He also spoke about how technological advancements unlocks huge growth potential in terms of wider reach through new distribution mechanism like e-commerce platform, web aggregators etc.

He ended his speech mentioning that every aspect of insurance industry including product design, distribution mechanism, claim settlement process etc. will have to be dynamic to address the changing need of target markets to drive higher growth prospects.

The session ended with vote of thanks by **Mr. R Arunachalam**.

Session Name: Regulatory changes in evolving economies from different jurisdictions and technologies

Moderator: Mr. N Rangachary, first Chairman, IRDAI

The Panel:

Mr. Malcolm Campbell, President, IAA, Sweden

Mr. Harvey Duckers, Consultant to International Regulators, England

Ms. Damayanthi Fernando, Director General, Insurance Board of Sri Lanka

Ms. Pournima Gupte, Member (Actuary), IRDAI



Brief of the session:

Mr. N Rangachary introduced the esteemed panelists to the audience. The speakers discussed about various

regulatory challenges in evolving countries, specifically, globalization of insurance, role of regulator in developing insurance industry, role of actuaries and other professionals in developing the industry, emergence of new risks in terms of cyber risk and risk in terms of the data compromise.

Session Highlights:

Insurance industry being a sector that deals with financial planning of the common public, is one of the most regulated sectors, where the regulators job is primarily to aid to the growth of industry and to set rules for penal provision for violation of integrity issues. On this note, **Mr. N Rangachary** and the respected speakers discussed various issues and regulatory challenges observed in evolving economies.

The first point of discussion was whether the future path of insurance industry will be through globalization or through enlightened self-interest. The speakers agreed on the need of globalization as the need of the hour for long term progress of the insurance industry, but they also emphasized that globalization will also have to take account of the pace of the development of individual countries. Regulators should put in place a mechanism to ensure that the industry should progress at a pace it can afford to in the long term. At the same time, regulator should consider the fact that along with focus on globalization, there should be room for individual countries' characteristics, which involves tailor making the policies to suit the customer needs of the individual markets, differing economic environments and differing levels of IT sophistications. Speakers also added that in developing economies regulator's role is more significant for facilitating development and ensuring that the manner in which the business is conducted is fair.

The second point of discussion was regarding the extent of collaboration that actuaries should expect from

other professionals in the industry. Insurance being the integral part of the financial industry, intervention and coordination of different functions are absolutely necessary to for arriving at a comprehensive solution to any problem. Effective communication is the key to the successful collaboration, which is imperative to the better understanding of the evolving economic environments and sophisticated regulatory requirements.

Speakers also discussed about the emergence of new risks in insurance sector and how this may affect the industry in future. While the life insurance industry is mostly affected by investment returns fluctuation in the domestic market as a result of guarantees provided under the policies, the property and casualty sector is more exposed to global market movement. Another potential source of risk can emerge from the data compromise due to increasing centralization of the data. Insurance companies should ensure that the data it collects is protected and secure with implementing sophisticated IT system. Speakers also emphasized the role of the regulator in this regard to put safe guards in place for data protection, which is crucial for maintaining customer confidence.

The last point of discussion on the panel was whether online distribution platforms, including e-commerce platforms, are long term solution for the insurance industry. The panelists agreed that the nature of the products distributed through online distribution channel will have to be simple in terms of the benefit structure and terms & conditions requirement. This is particularly important to avoid any potential dispute at the claim settlement stage. At the initial stage, regulator should be involved in guiding the development path including standardization of terms & conditions. Success of online platform as distribution channel also depends on the sophistication of the market.

Session Name: Mergers and Acquisitions – Perception & Reality

Moderator: Mr. Kunj Behari Maheshwari, Director – Risk Consulting, Willis Towers Watson, India

The Panel:

Mr. Mark Saunders, Group Chief Strategy and Marketing Officer, AIA, Hong Kong

Mr. Donald Lacey, MD, Investment Banking Division, Citigroup Global Markets, Asia



Brief about the session:

Mr. Kunj Behari Maheshwari introduced the esteemed panelists to the audience. Then the panel discussed about important aspects of mergers and acquisitions, specifically, the critical factors behind the success of mergers and acquisitions, and what parameters are important other than price for successful completion of M&A.

Sessions Highlights:

The panel discussion started with if there is any possibility of significant merger and acquisition activity in the Indian Life Insurance sector. The panelists discussed that factors like presence of overcapacity in economies of scale, excessive expense over run, generally lead to scope of consolidation across the industry. Large numbers of consolidations in Indian Life insurance sector also require presence of a strong global insurer. In an industry where majority of the market share is controlled by top 3/4 companies, there is definitely scope of consolidations going forward, but

that will depend on a number of other factors like economic environment, regulatory requirements etc.

The panel then proceeded to discuss how bancassurance, which has emerged as a significant distribution channel, affects merger & acquisitions, in terms of the challenges and opportunities. Banks provide a low cost model and a larger customer base as compared to agency model, which provides a scope for larger economies of scale.

The panel also discussed the factors which are most important for successful completion of merger and acquisitions, particularly, fair price, strong financials, ease of transaction resulting from strong processes in place, the certainty of the execution of transaction, interest of other stakeholders other than the shareholders, regulatory framework and valuation of competitors etc. The panel also emphasized that since the synergy will come from the extent of the cost savings achieved due to consolidation, the entities should have a specific plan drawn on how the existing employees will be treated post the M&A.

The panel also focused on the need of effective communication between both the parties involved in the transaction, specifically regarding the critical assumptions considered for valuation. Few factors which can be typically aggressively estimated in valuation are extent of synergy that can be achieved from consolidation, expected investment return, better product mix etc. Hence, it is important for the persons involved in carrying out the valuation to consider assumptions as realistically as possible. The discussion ended with the note that along with the factors mentioned above, some of the unforeseen changes like regulatory changes or changes in significant management role are crucial factors that can also affect the success or pace of the merger & acquisition.

Session Name: Big data – Hidden opportunity

Moderator: Mr. Joydeep K. Roy, PwC, Partner & Director, Insurance & Allied Businesses, India

The Panel:

Mr. S Anand, CEO, Gramener, India

Mr. Kaushik Mitra, Senior Vice President, Actuarial, Data Sciences & Business Intelligence and Research, AXA BS, India



Brief about the session:

Mr. Joydeep Roy introduced the esteemed panelists to the audience. Then the panel discussed about how practically big data and analysis have been used so far and how it can be used efficiently in future, what are the kind of tools required for the purpose and what are the challenges and learnings in the process.

Session Highlights:

The panel discussion started with how data and analysis have been used so far and where it has had significant impact. The panelists discussed that few areas where big data made most significant impact are customer service, product design and Operations. Big data and analysis can enable insurance industry to successfully identify customer needs and subsequently cross sell and up sell their products to existing customer base. The various kinds of data can be used for the purpose of the analysis, namely, demographic data, psychographic data, financial transaction data, market sentiment data etc. Lifestyle data including employment related data can be used

to analyze how customer lapsation or withdrawal behavior has changed over time. Behavioural characteristics like human motivation may make interpretation of data different.

The panel also emphasized that data available for analysis may not always be a structured data. Hence, it is important to make the data clean and accessible. Data scientists should form multiple groups from the data and test on the multiple groups to eliminate sampling error in terms of spurious accuracy. Adequate care should be taken towards data curation and data governance. The panelists also emphasized that the people carrying out the data analysis should have adequate skill and right capability. The panel discussion ended with emphasis on need for qualitative analysis which can be useful in reality.

Session Name: Expanding Professions and Blurring of Boundaries

Session Name: Mr. Ashvin Parekh, Managing Partner, Ashvin Parekh Advisory Services LLP

The Panel:

Mr. Malcolm Campbell, President, IAA, Sweden.

Ms. Fiona Morrison, Immediate Past President, IFoA, UK

Mr. Jerry Brown, President, SoA, USA



Brief about the session:

After a brief to introduction to the audience, the panel discussed about how actuaries can utilize their skill set in alternative professions, how actuaries can add value to these professions and the need for the actuaries to improve on communication or interaction with other professionals to expand beyond the boundaries of insurance industry.

Session Highlights:

The panel discussion started with panelists discussing about the interaction of actuaries with other professionals. The panelists emphasized that actuaries should not remain insular in nature but should interact

more with other professions, and they should also apply their problem solving skills beyond traditional roles, eg. to work in risk management, investments and banking sector. Some of the professions which can benefit more from employing more actuaries can be credit risk analysis in banking or big data analytics or any kind of predictive analysis. Along similar lines, **Mr. Jerry Brown** mentioned that CAS has been able to develop climate index for predicting financial impact of the weather patterns.

The panelists also emphasized the need for good co-operation and mutual respect between actuaries and other professions. Actuaries should work on improving their communication skills to reach beyond the boundaries of insurance. Astute actuaries can be expected to understand the market and the regulatory environment better, and actuaries being more forward looking, are expected to make better sense of the future. ■

About the author

Ms. Neelasree Deb



 neelasree.deb@iciciprullife.com

 Actuary

 Iciciprullife

Airtel Delhi Half Marathon" on 20th Nov 2016



I recently ran Airtel Delhi Half Marathon (ADHM) and completed the same in 2 hours, 18 minutes and 41 seconds. I must say that participating in ADHM (including the preparations beforehand) was a nice experience. We are usually lost in office work and personal lives. Taking out time daily to prepare for the half marathon was a nice change and I relished the positive energy it helped me garner! I look forward to improving my timing next year!



Mr. Khushwant Pahwa

Parallel sessions on Life Insurance



Organized by: Institute of Actuaries of India

Venue: Hotel Hyatt Regency, Gurgaon, India **Date:** 9th – 12th November, 2016

Actuaries from all across Asia (and beyond) came together in Delhi, India for the 20th Asian Actuarial Conference. The conference ran over three days and covered a rich mix of issues, challenges and best practices seen across the globe in the insurance and pension industry. Despite the massive scale of the conference, the sessions were extremely interactive and initiated an active dialogue in the profession.

Following parallel sessions were held covering emerging new trends, challenges and developments seen in the life insurance industry:

Session Name: Challenges and opportunities of business model transition in Global Insurance markets

Moderator: Mr. Nilesh Sathe, Member (Life), IRDA

Speaker: Mr. Bruce T Porteous, Investment director – Insurance Solutions, standard Life Investments, UK



The session commenced with Mr. Nilesh Sathe introducing the speakers and setting the tone for the session by sharing the multi-fold

challenges created by an ever changing global environment.



Mr. Bruce T Porteous then kick-started the main session by presenting the case study of Standard Life, which went from being a leading Insurance Company to (now) being primarily an Investment company. He shared the journey of the company and how various global factors influenced its business model over time with one of the primary factor being low interest rates environment. He further deep dived into the challenges that a low interest rate environment created from a product development perspective, accentuated by the regulatory changes seen across the globe. He shared examples of how Standard Life approached some of its products (such as Investment linked insurance products), in the face of such challenges and in an attempt to make them simple/ transparent for the customers. Along the same lines, he also shared the key regulatory trends seen across the globe with Solvency II being one of the major regulatory change of our times. Furthermore,

he also pointed out how some of the regulations in UK market (primarily in the pension space) had over time moved towards being more customer centric such as removal of compulsory annuitisation under pension plans.

Overall, it was a very interesting session and brought to fore front the need for the industry to recognize the changing global trends and adapt to them and for actuaries to make the products more capital efficient, transparent and customer friendly.

Session Name: Industrialization and automation of actuarial processes

Moderator: Mr. Nilesh Sathe, Member (Life), IRDA

Speakers: Mr. Michael Freeman, Managing Director, Risk Consulting & Software Asia-Pacific, Willis Towers Watson, Tokyo & Mr. Devanshu Agarwal, Consultant, Risk Consulting & Software, Willis Towers Watson, India



Mr. Michael Freeman started by setting the context and agenda of the session. Mr. Devanshu Agarwal then

took over by defining the meaning of 'Industrialisation'. While defining industrialization, he made reference to **Mr. Henry Ford**, the founder of the Ford Motor Company, who used industrialization to convert the automobile from an expensive curiosity into a practical conveyance that profoundly impacted the landscape of the 20th Century. He further highlighted the positive impact of industrialization through an interesting audio-visual, which showed the construction of multi-storey Ark hotel in China in just six days.

Mr. Michael then brought out the relevance of industrialization and automation to actuarial work. He described various sources of operational risks for insurance companies and also mentioned some of the past case studies where operational errors led to significant financial loss for different companies. He then brought out the outcomes of the survey of major life insurers in India done by Willis Towers Watson. The results of the survey suggested that majority (nearly 80%) of the insurers surveyed considered operational risk management to be quite important for their Company, with Regulatory risk being most crucial.

Thereafter, **Mr. Devanshu Agarwal** talked more specifically about sources of operational risks in actuarial processes. With no surprise, use of excel spreadsheet in actuarial processes was highlighted as the major source of operational risk. He also talked about other sources of operational risk in actuarial modeling process. Mr. Freeman then talked about various means to mitigate the operational risks and improve overall efficiency of actuarial processes. He also described how industrialization can change the current state of insurance industry to a more automated, agile and efficient state.

Mr. Devanshu Agarwal then concluded the session by highlighting

the advantages of systemization and automation through a case study, where they were able to complete the Solvency II valuation for their client in just one day through the application of industrialization and automation.

Session Name: Embedded Options and Stochastic Models

Moderator: Ms. Pournima Gupte, Member (Actuary), IRDAI

Speaker: Mr. Andrew Smith, Partner, Deloitte, UK



The session commenced with **Ms. Pournima Gupte** introducing the speakers and sharing her views on the growing importance of recognizing options and appropriately valuing them in a low interest rate environment.



Mr. Andrew Smith then introduced the topic further explaining in a layman language the concept of embedded options (from an insurance company's perspective) and why it was important to value them stochastically. A case in point was the dynamic link that lapses may have with the economic environment and hence instead of assuming lapse rates to be deterministic (which is largely the practice in India), this behavior could be better studied and reflected in the liability models by employing stochastic methods. In introducing the different methods (such as binomial, lattice, monte carlo etc.) that could be used and sharing

their advantages and limitations, **Mr. Smith** kept the session lively and interactive by explaining some of these concepts by way of games requiring people to choose one of the many options. The objective was to demonstrate that majority of people behave rationally when an option has the potential of being beneficial, thus underpinning the importance of appropriately valuing these option in our products.

Overall, the session ended on a positive note with people recognizing the different methods available for valuing embedded options and also recognizing that growing importance of employing such techniques more so now (with low interest rates globally) to appropriately capture the cost of these options.

Session Name: Breaking the Insurance Mould – What's Next for Our Industry?

Moderator: Mr. D K Pandit, KA Pandit Consultants & Actuary

Speaker: Ms. Daisy Ning, Chief Pricing Actuary Asia Swiss Re, Hong Kong

The next session of the day was about the possible future of insurance risk assessment through the use of technological and medical advancements.



Ms. Daisy Ning started the session by emphasizing on the fact that technological advancements have made consumers much more informed about their own health. However, the full use of this information about consumers for effective underwriting of insurance risks still remains a distant milestone to reach.

Ms. Daisy then brought out the change in key trends impacting the life and health insurance markets in Asia in today's world. While rapid ageing, growing middle class and regulatory and economic turbulence continue to have significant impact; radical medical advances, technological advancements to monitor health and big data analytics are the new emerging trends.

She further highlighted that the key technologies influencing the healthcare delivery are genetic testing and ease of collection of health data from physical world through use of low cost sensors. The cost of genome testing has gone down significantly leading to its increased use in diagnosis and treatment of diseases. However, the use of genetic testing in the insurance industry is very limited leading to significant financial loss as per the study done by Swiss Re in collaboration with Canadian Actuarial Society.

She then discussed cancer insurance as a case study to highlight the growing popularity of cancer and critical illness products across Asian markets and more specifically Indian market. She finally concluded the session by summarizing some of the consideration for customers, distributors, actuaries, underwriters and claim specialists in Life and Health Insurance industry in the near future.

Overall, the session was well received by the audience and did highlight the need for insurance industry to make better use of technological and medical advancements to help understand the risk better.

Session Name: Delivering appropriate expert judgement

Moderator: Mr. Sanket Kawatkar, Milliman, India

Speaker: Mr. Roger Austin, Partner, Austin Professional Resourcing LLP, UK and **Mr. Kieran Barnes**, Actuarial Technical Specialist, Life Insurance on behalf of IFOA, UK



Mr. Sanket Kawatkar commenced the session by introducing the speakers and emphasizing the importance of having a robust governance procedure in any business. He highlighted how an efficient governance procedure was at the heart of ensuring that the board and the senior management fully understand and appreciate the key judgements driving their business and the impacts of making these judgements.

Mr. Roger Austin then set the tone of the session by providing background to who would be considered an 'expert' and of all the judgements a business has to make, what would fall under the purview of 'expert judgement'. He highlighted the fact that actuaries have been making judgements since the very start, however with the advent of Solvency II a greater emphasis is being placed on having a robust process for making expert judgements and monitoring / documenting these. He then shared the framework that their paper on this topic proposes – requiring a business to distinguish between judgements and expert judgements taking into account materiality and proportionality principles.

Mr. Kieran Barnes, then further explained their framework by way of a case study. The key aspects of their framework included – preliminary assessment of judgement, defining the problem, elicitation of expertise, decision making and on-going monitoring.

Overall, the session highlighted the need for recognizing that judgements are an essential part of any business and with the growing complexities of our businesses, we should place greater

emphasis on having appropriate governance structure for making / monitoring and documenting these judgements keeping in mind materiality and proportionality of these.

Session Name: In-force Portfolios as a Value Creator

Moderator: Ms. Fiona Morrison, Pensions partner, Lane Clark & Peacock LLP, UK

Speakers: Mr. Doan Le Head of In-force Solutions L&H Asia Swiss Re, Hong Kong, **Mr. Chee Foo**, Regional Pricing Actuary Southeast Asia & India Swiss Re, Singapore.



The session marked the beginning of third and last day of the conference and threw light on the importance of in-force business portfolio as a value creator. The insurance companies in Asia and more so in India are primarily focused on volume of new business as a measure of success. However, the session did highlight gains of efficient management of in-force portfolio in enhancement of value of business.

The session started with traditional way of managing the in-force business mainly pertaining to experience analysis to ascertain impact of difference between actual and expected experience; calculation

of reserves for regulatory reporting purpose and setting assumptions for pricing and reserving using the past data.

The session thereafter emphasized on the need of increased focus on in-force portfolio mainly as a result of decline in new business; increase in lapse rates leading to erosion in value of business; regulatory changes like Solvency II in Europe, IFRS etc. requiring better valuation and presentation of in-force business; economic slowdown and political uncertainty requiring more efficient management of capital and increase in cost of IT systems to manage in-force business pushing for need of increasing the operational efficiency.

Subsequently, a case example highlighting the importance of persistency management was discussed. As per the example, the costs of acquiring a new insurer customer was roughly 7 times more than retaining an existing customer or in other words loss of 1 unit of in-force premium can only be compensated by 7 units of new business premium.

Thereafter, some of the possible solutions for better management of in-force business were discussed. Liability management tools to better understand the portfolio profitability, capital management solutions to lower capital requirement through efficient risk transfer and administration efficiency tools to improve efficiency and accuracy of operational processes were some of the solutions presented to better manage the in-force business.

The session ended with three different case studies highlighting the advantage of using technology to better manage the in-force portfolio. Overall, the session was instrumental in making the audience understand the importance of focusing on in-force portfolio as a means of value creation.

Session Name: Selling protection through Banks Economic and Ease of Issue

Moderator: Mr. GLN Sarma, Hannover Re, India

Speaker: Mr. Andy Hui, Head of Singapore Market, RGA

Mr. GLN Sarma commenced the session by introducing the speakers and sharing his views on current business issues and need for simplifying the way we approach our business and our customers.



Mr. Andy Hui then kick started the session by highlighting how insurance companies can leverage their banca partnerships for selling protection products. The key to selling protection through banks was to strike the right 'economics' for the banks. He shared how companies should ensure this by bringing in 'ease of sales', maximizing the revenue (by increasing sales) and ensuring that commission was commensurate with the selling effort. He emphasized the need for bringing in 'ease of sales' by leveraging the banks' network, by being innovative and targeting the right individuals who

really need protection (such as people who have recently had a life event and thus realize the need for having protection). He further highlighted the need for building lasting relationships with banks and investing in these relationships, leveraging technology as far as possible and exploring new initiatives to be able to innovate in this space.

The session was extremely insightful and touched the issues facing insurance companies today i.e. lack of innovation and need to increase sales of protection products which truly meet the needs of customers than savings products. The session shared practical solutions that could be done in this space.

Overall, the conference ended on a positive note and provided a useful platform in bringing together the members of the profession working in different countries. It emphasized the need for the profession to work as one, continuously sharing new and best practices to help the profession and industry grow. ■

About the author

Ms. Vichitra Malhotra



 vichitra.malhotra22@gmail.com

 Consultant

 PricewaterhouseCoopers

About the author

Mr. Ashish Taneja



 ashish.taneja.nsit@gmail.com

 Assistant Vice President

 Max Life Insurance

Parallel Session on Crop Index Insurance - Agricultural Insurance



Organized by: Institute of Actuaries of India

Venue: Hotel Hyatt Regency, Gurgaon, India **Date:** 10th November, 2016

Session Name: Climate Cost of Cultivation: A New Crop Index Method to Quantify Farmers' Cost of Climate Change

Moderator: Ms. Mary Frances Miller, CAS, India

Speaker: Prof. David M. Dror, CMD, MIA, India

At the outset, he explained the current situation of the crop insurance schemes in India, which are mandatory for farmers who have taken loan (loanee farmers) and optional for other farmers (non-loanee farmers). The premiums under these schemes are heavily subsidized by the government

participation without any subsidy on premiums. Prof. Dror also spoke of the social and financial impact of these schemes on rural communities. The schemes have promoted gender balance, inclusiveness and local governance - with 57% of insured being women and 89% of insured belonging to socially marginalized groups. The schemes have high renewal rates between 30 - 80%, prompt claim settlement period of less than a month and healthy claims ratio between 40 - 85% (for health).



Brief about the Session:

Awarded the first prize in paper presentation at 20th AAC, **Prof. David Dror** presented a very interesting and enlightening view on the farmers' needs & behavior and how crop insurance can be made an attractive proposition for them. He presented Micro Insurance Academy's (MIA) experience in catalyzing demand for crop insurance amongst farmers. Towards the end of the session, he gave insights on the problems and issues with the indices used by current crop insurance schemes and presented a new index developed by MIA – "Climate Cost of Cultivation (CCC)" – that provides a better correlation between losses and payouts. He also highlighted its benefits against the traditional yield/weather index.

and their loss estimates are based on indices whose calculation have the issues such as fraud, moral hazard and adverse selection, in addition to the basis risk.

During his presentation, he explained the key challenges with crop insurance and emphasized on how the current schemes do not consider the demand side i.e. these schemes are not customized and do not meet the farmers' needs completely. As a solution to this problem, Prof. Dror presented MIA's experience of providing "Context Specific Insurance" and how it is more relevant to the farmers. MIA piloted community based and bottom up insurance schemes covering crop, livestock and health. These schemes are based on voluntary and contributory

With evidence of the above statistics, he emphasized on the fact that to create demand for crop insurance it is important to address the needs of farmers and focus on ways that enhance trust - rural communities are more comfortable interacting as a part of a group with external stakeholders, trust is enhanced when the farming community is involved as a group for insurance, before and after sales. Further, Prof. Dror mentioned that provision of value added services like agricultural advisories and weather information are useful in generating demand.

On the side of challenges in product design of index based insurance, Prof. Dror discussed the innovative research on CCC (Climate Cost of Cultivation) index done by MIA. The CCC index is an innovative method which also quantifies the added cost of climate

change to the farmers and reduces design-related basis risk. It is calculated from a mix of climatic and non-climatic parameters viz. topography, soil type, precipitation, solar radiation, min/max temperature etc. It covers the risk of water stress, water logging and excess heat.

CCC was experimented for winter wheat, which is an irrigated crop, in Bihar. CCC differs from existing indexes as it considers aggregated rainfall in preceding seasons (which affects the soil moisture during the insured season). CCC focuses on soil moisture as it is most crucial for productivity and it considers both the effects of yield loss and increased input costs.

The Vital feature of CCC method elaborated by Prof. Dror is the "Polluter Pays" principle. In the present situation, farmers pay incremental risk due to climate change, even though they might not be contributing to it. In this context, CCC index allows to assess risk increment due to climate change

at region, season and crop specific levels. If this increment is quantified, it can help reduction in premium and increase insurance uptake.

To conclude, he emphasized that insurance must make sense for farmers

irrespective of subsidies. Insurance will be better understood by increasing peer to peer engagement and making it community based. Further, CCC is a better index to measure loss to the farmers than the traditional indices. ■

The full text version of the paper can be downloaded free at:

https://www.researchgate.net/publication/299492396_Climate_Cost_of_Cultivation_A_New_Crop_Index_Method_to_Quantify_Farmers'_Cost_of_Climate_Change_Exemplified_in_Rural_India

About the author

Ms. Yogita Arora



 yogitaarora@aarconsultants.in

 Principal & Consulting Actuary

 Actuarial Analytics & Risk Consultants

OBITUARY



In Loving Memory of Akshay D. Pandit

Akshay D. Pandit, AIAI, left for heavenly abode on November 17, 2016, surrounded by family at his home in Mumbai. Known to all as Akshay, he was happiest travelling and was a zealous food lover, always wanting his friends and family to be riding along with him.

He was a leader who helped guide M/s K.A. Pandit Consultants & Actuaries in Mumbai, for nearly 30 years. His professional life started with the firm following his graduation in Computers.

The grandson and son of Actuaries, Akshay lived to carry forward his family legacy. The constants in his life were reinvention and modernisation while applying his core values wherever he took up advisory roles. His biggest achievement was his ever-growing circle of friends and professional colleagues and admiring family of staff. His quick wit, hearty grin, generosity and undying loyalty earned him a multi-generational following that extended back decades. Akshay knew no strangers – only friends he hadn't met yet.

"Think where a man's glory most begins and ends, and say my glory was I had such friends." – W.B. Yeats

Akshay leaves behind his loving wife and constant companion, Ami Pandit and he is also survived by his daughter, Niyati Pandit and many friends.

Being a dynamic visionary and an active teacher, his knowledge lives among us every day, ever growing ever blooming.

- KAP Staff

Parallel Session on importance of Professionalism



Organized by: Institute of Actuaries of India

Venue: Hotel Hyatt Regency, Gurgaon, India **Date:** 10th November, 2016

Name of the Session: The importance of Professionalism in a Globalised Environment

Moderator: Mr. K Subrahmanyam, Consultant

Speaker : Mr. Derek Cribb, CEO, IFoA, UK

career spread across the countries in different markets, it is all the more important for a professional to know the importance of professionalism. With the profession demanding increased levels of responsibility, there is a need to prepare oneself for the same. Besides it is also required to

practices issued through various Guidance Notes (GNs). All the Members must comply with these Standards.

2. Lifelong Training:

Lifelong Training helps the professionals facing some of the challenges in their professional life including complex professional dilemmas and to come out with good ethical decisions. All members of IFoA have an obligation under the Actuaries' Code to maintain their competence. The Continuing Professional Development (CPD) Scheme sets out the framework which assists Members in complying with this obligation. CPD together with Professional Skills Training form part of Lifelong Learning activity. Appropriate minimum amount of CPD is to be achieved through various CPD Programs / Conferences. IFoA's new On-Line content is designed for illustrating the Professional Skills Training requirement. Any Member who fails to comply with CPD Scheme may be referred for consideration under the IFoA's disciplinary Scheme.

3. Monitoring:

Monitoring activity includes CPD monitoring on a sample basis. If a member is selected, he / she will be asked to provide evidence of the CPD points earned to comply with the monitoring exercise. IFoA offers Quality Assurance Scheme (QAS) for



Brief of the Session

Mr. Derek Cribb, presented this session in a lucid way. He emphasized upon that IFoA ensures that their Members meet appropriate professional standards through four core regulatory activity – Standards and guidance, Lifelong training, Monitoring and Enforcement and discipline so that profession's image enhances amongst general public.

Professionalism, in simple words, refers to the skill, good judgment and polite behavior that are expected from a person who is trained to do a job well. But it is something more than the skill and behavior, which is required to maintain high professional practice standards. In a globalised environment with actuarial jobs and

manage and prevent ethical dilemmas arising from time to time by exercising appropriate judgment and decisions. Actuarial Institutes / Bodies across the world, assume an important role as a regulator to regulate its members to assure public trust and support business and education.

1. Standards and Guidance:

Various Standards and Guidance issued by IFoA set the platform for maintaining the ethical standards of the profession. IFoA sets and maintains the ethical standards and Financial Reporting Council (FRC) sets the Technical Actuarial Standards. Standards like Actuaries' Code, Actuarial Profession Standards (APs) are mandatory in nature and there are non-mandatory, but recommended

Organizations employing one or more Members of IFoA. Organizations can apply for accreditation by completing and submitting the Application Form by email. This Scheme helps in promoting confidence in the work of Actuaries besides identifying issues for improving future regulatory efficiency.

4. Enforcement and Discipline:

Misconduct by a Member affects the reputation of the Profession. A Member shall be liable to disciplinary action if he / she has been guilty of misconduct. IFoA has well laid out process to handle various complaints through Disciplinary Scheme. All complaints are investigated through various panels like Adjudication Panel, Disciplinary Tribunal Panel including Independent Examiner. A Panel is usually made up of members drawn from IFoA one of whom will always be a lay person. The Panel may be assisted by a legal advisor.

IFoA expects the Members to maintain confidentiality on a role or task they do. This means respecting the confidential nature of information and material shared with the Members for protecting the integrity of the IFoA. Members should exercise

utmost care in handling documents, communications and honoring confidentiality agreements in order to comply with Professional requirements under the Actuaries' Code.

Conclusion:

Mr. Cribb maintained that through these activities IFoA maintains and protects the Standards, Professionalism, reputation and public perception of members besides safeguarding the Public Interest. IFoA's Professional Standards Directory provides an up-to-date listing of the IFoA's APSs and FRCs. One can get more information on

this topic by visiting the Institute's Website.

While IFoA is responsible for setting and maintaining professional standards for the Members within its geographical remit, with actuaries practicing in a globalised environment, it is also equally necessary to adhere to the professional conduct standards of the Actuarial Bodies in the practicing country. Professional regulations undergo regular changes and it is for the Members to keep their knowledge up-to-date of the latest changes in order to comply with all professional requirements. ■

About the author

Mr. Sathyanarayanan J



 satyalic@yahoo.com

 Associate of IAI & IFoA

 Freelance Actuarial Practitioner

**'THE ACTUARY INDIA' WISHES MANY MORE
YEARS OF HEALTHY LIFE
TO THE FELLOW MEMBERS
(Who have attained 60 years of age)
WHOSE BIRTHDAY FALL IN DECEMBER 2016**



T BHARGAVA

N N JAMBUSARJA

C S MODJ

S. P MULGUND

S V NARAYANAN

Y. P SABHARWAL

Parallel Sessions on Pension and other Employee Benefits



Organized by: Institute of Actuaries of India

Venue: Hotel Hyatt Regency, Gurgaon, India **Date:** 10-11th November, 2016

Session Name: The Retirement Opportunity in Asia – needs, solutions, and capabilities

Moderator: Mr. D K Pandit, KA Pandit Consultants & Actuary

Speakers: Mr. Philip Jackson Consulting Actuary Milliman, India



Brief about the session

What are the problems and what can we learn about potential solutions for retirement industry?

The session started with the discussion of the various problems and issues faced by the retirement industry in various countries of Asia. Additionally, the strain on existing systems where 47.5% of the population is urban (based on UN World Urbanization Prospects, 2014 Revision) and rest is rural was discussed along with how the proportion of population at various ages will increase the strain on the existing system by the year 2050.

The important point which was taken up was “for how much of the

population is the current system adequate for providing pension benefits in various countries across Asia?” and how the current system can be changes to mitigate and, if possible, remove the strain on the existing system? The challenges in the current state of the pension systems are on account of the low retirement age, insufficient contribution, overly generous promised benefit and insufficient rules to enforce full funding. All these were covered and discussed in detail.

Session Highlights:

Who should ideally be significantly responsible for providing income to the retired – the Retirees Themselves, Government or Grown children or other family members? Until now an informal system was used to source retired people, but now this informal system is breaking down in various Asian countries. In many Asian countries, the low interest rate environment is impacting pension outgo and annuities.

To fix the various problems highlighted above, a perfect example is available in the form of “Australian Superannuation”.

- Australia’s retirement income system is a combination of Superannuation (the defined contribution system established in 1992) and the government’s means tested defined benefit age pension.

- More than USD 1.5 trillion in assets is in superannuation, primarily as a result of the compulsory minimum employer contributions which are currently 9.5% of wages.
- As a result, the Australian funds management industry is the 7th largest in the world and is estimated to be the highest in the world per capita

Summary of Session

The solution to the above problem is that we have a large opportunity to cover majority of the population under various pension plans and increase the current offering for retirement.

For the fore mentioned example on “Australian Superannuation”, the success factors were shared, such as:

- Mandatory personal pensions in the form of superannuation, with amongst the highest compulsory employer contribution rates in the world.
- Favourable tax treatment for account based pensions relative to other products in Australia such as annuities.
- The large funds management industry in Australia, which allows for comparatively lower fund management costs as compared to OECD countries.

Financial advice on retirement scheme should be used by majority of the population to plan their retirement

Session Name: Who takes responsibility for retirement wealth: Japanese Case?

Moderator: Mr. Hideyuki Yoshida, Institute of Actuaries of Japan

Speaker: Mr. Tomohiro Kawaguchi, Retirement Consulting Mercer Japan Ltd, Japan



Brief about the session:

The discussion flow began with an Introduction to the Japanese pension systems, followed by the recent legislative updates such as Individual DC: will be in place from January 2017 and Collective DC: under discussions and will be in place by March 2017.

Next, the discussion moved to the Japanese 3 Pillar Model,

- Pillar 1 –State Pension (composed of 2 layers for workers) –difficulty in terms of solvency
- Pillar 2 –Corporate Pension –high dissemination ratio of DB and slow transition to DC
- Pillar 3 –Private Pension –not very common so far

Currently the Japanese pension systems are facing a difficult situation around solvency due to aging society and mature economy, also the state pension is facing difficulty on account of expenditure being higher than income.

As per the proposed changes, small sized companies will be encouraged to pay contributions to individual DC instead of sponsoring corporate-sponsored DC, DC assets portability will be enhanced and Contribution cap will be redefined on an annual basis.

More discussion was done on Collective DC (or to be precise

“Risk-sharing DB”) where points were highlighted on the hybrid scheme sponsored under Japanese DB regulations, risks shared between employer and employees etc.

Session Highlights

A discussion was also done on the Japanese DC Prevalence. 4.5 million people are covered by corporate-

- Risks shared between employer and employee
- Employer risk contribution covers part of risks | DC accounting will be allowed under Japanese GAAP
- Employee benefits are adjusted

Next, the focus was brought on how Risk-sharing DB can be a good balance between traditional DB and DC.

Possible challenges highlighted were: risks are just shared and still there and the need to find a way to deal with conflict of interests 1) between employer & employee and 2) among employees

Summary of Session

Long history of guaranteed defined benefits via state and corporate pension scheme from individual perspectives was discussed. Next, the recent legislative changes encouraging individuals to take risks (and inherent opportunities as well) associated with retirement wealth were touched upon.

Under Risk-sharing DB “Benefits are adjusted so balance sheet components are balanced”, the below cases were highlighted,

Case 1: Assets + PV of contribution = PV of benefits + Expected deficit + benefit improvement

Case 2: Assets + PV of contribution = PV of benefits + Expected deficit

Case 3: Assets + PV of contribution = PV of benefits + Expected deficit - benefit reduction. ■

About the author

Mr. Sumeet Shah



sumeet.shah@globalriskconsultants.in



Head Employee Benefits



Global Risk Consultants

Parallel Session on Regulating Insurance Industry including IAIS Core Principles



Organized by: Institute of Actuaries of India

Venue: Hotel Hyatt Regency, Gurgaon, India **Date:** 11th November, 2016

Session Name: Expanding risks in the era of the ASEAN Economic Community (AEC)

Moderator: Ms. Subha Neelakantan; SCOR, India

Speaker: Mr. Hassan Scott Odierno; Actuarial Partners consulting sdn Bhd, Malaysia

Brief of the Session

The overall aim of the presentation was to throw greater light on the importance of ASEAN Economic Community and the opportunities for the insurers and the Actuarial professionals by understanding the major aspects of AEC relating to the

of fellow actuaries in a few countries such as Singapore and Malaysia. In the backdrop of this information the presentation listed benefits of single market, such as free flow of goods and services, free flow of investment and capital and free flow of skilled labour. The presentation threw light on the ongoing development in the region such as infrastructure development, focus on small industry and the implication of these developments on insurers especially in the areas of motor and health insurance.

During the course of the presentation, the speaker also with the aid of slides also discussed the future of AEC in next 10 years. As the slides pointed, financial inclusion through MSME is a medium term goal to be achieved by expansion of financial access and literacy, reduction in the cost of financial services with aid of growing technology. For the Insurance market, the AEC aims to promote deeper penetration in Insurance sector through ASEAN Insurance Integration framework. The speaker explained that this framework would aim for greater risk diversification, deeper underwriting capacity, improved regulatory structure etc. Promotion of development of sovereign bonds corporate issuance and initiatives towards a strong healthcare structure are other areas where ASEAN aims to stress in the next ten years.

In order to ensure that the points discussed were well received, the speaker ran a brief quiz halfway during the presentation. Since the quiz was participative it really helped the audience to reflect on the discussion



Introduction

The 20th Asian Actuarial Conference was a great event which witnessed participation by top professionals, business leaders and the regulators across the globe representing varied areas like Life & General Insurance, Health, Pension, Investments, and Business Risk. This conference had representatives from 25 countries and more importantly representatives from 12 countries shared their presentation during the course of seminar.

There were a range of presentations and sessions during the course of the conference covering wide range of important issues pertaining to areas of Insurance, Pension, Data Management, Risk, Investments, etc. While some of the presentations were made in the plenary sessions, there were also parallel sessions during the event where a lot of important topics were discussed.

insurance. Presentation also aimed to discuss the use of pools for micro insurance and specialized risk and finally understanding the challenges that the regulators are faced with.

Session Highlights

The presentation began with information pertaining to economic size and demographic details of the ASEAN as one region. The speaker also provided details of the Insurance market and penetration and statistics related to the country-wise break-up of the total premium written in the year 2015. The underlying message was to bring out the business opportunities and explore the possibilities of a single market and production base aimed at catering to the ASEAN region. The presentation used a series of very informational slides showing the mix of qualified actuaries by country, by Nationality and by qualification. These slides brought out the concentration

and to present their view on the areas discussed.

Further the presentation focused on the need of insurance plans catering to the specific business and personal needs of the population of the ASEAN region. The presentation also highlighted that there are over 45 million people in the ASEAN region with Diabetes, of which Malaysia accounted for the highest number with around 15% of population suffering from diabetic at an early age of 35. To tackle the issue of high Diabetic population of Malaysia, Malaysian Diabetic Association has been set up and the functioning of this association was explained in the subsequent slides. The focus of the presentation then shifted to the challenges faced by the Regulators in ASEAN region, some of the key issues being:

- Need to have consistency in regulation throughout ASEAN region. For e.g. need to align capital requirement in less developed countries of ASEAN region based on Risk based capital approach (followed in developed countries in tandem with IFRS4) to avoid regulatory arbitrage.
- Allowing the ideal (characteristics of ideal/model insurer were also discussed in later slides) insurers to enter the market rather than allowing cut-throat competition to cripple the market.

In the next few slides, speaker talked about the key risk factors faced by Life Insurance Industry and then each risk factor was explained in a greater detail.

- Operational and Sustainability-focusing on the nature of ideal shareholder (banks most ideal and individuals least preferred) and

fund performance (Analysis of Surplus)

- Free Capital Index (capital adequacy ratio as a % of target capital level)
- Premium Growth (some of the preferred criteria are: APE growth exceeds expense growth, more than 50% premium are from regular premium, better persistency)
- Shareholder's Profitability (Evaluated by comparing Surplus attributed to Shareholder with Target Capital level)

Presentation briefly touched upon the challenges and issues faced by Family Takaful and General Insurance. Speaker pointed out how Takaful in different countries of ASEAN region are different and bringing consistency amongst them throughout the ASEAN region is both exciting and challenging for the Regulators

For General Insurance, some of the main issues discussed in the presentation were:

- Operational and Sustainability (Liquidity Ratio – company's

ability to honor its short tailed obligations, Receivables Ratio – high ratio indicates poor operational processes)

- Profitability (Claims Incurred Ratio – indicator of underwriting profitability, Combined Ratio – takes into account both profitability and operational expenses, Operating Margin Ratio – indicator of investment income generated from assets)
- Diversification (plays a more significant role in General Insurance compared to Life Insurance. Challenge is to quantify this benefit when multiple countries of AEC are involved)

Conclusion

Speaker concluded the presentation highlighting the key takeaways from the session. Though there are lots of challenges faced by AEC in making ASEAN region one single market, positive outcomes and opportunities of this decision cannot be ignored.

Speaker ended the presentation with a warm thank you and opened the session to the audience for Question and Answers. ■

About the author

Ms. Ridhi Paliwal

 ridhi.paliwal@avivaindia.com

 AVP – Actuarial

 Aviva Life Insurance Co. Ltd.



PEOPLE'S MOVE



Mr Ajay Chaturvedi

Mr Ajay Chaturvedi has been appointed as Appointed Actuary of DHFL Pramrica Life Insurance.

Parallel session on Enterprise Risk Management



Organized by: Institute of Actuaries of India

Venue: Hotel Hyatt Regency, Gurgaon, India **Date:** 9-12th November, 2016

The "Enterprise Risk Management" section had two parallel sessions, one on "Risk Function Effectiveness: Lessons' Learnt from Reviews" and Second on "Interest rate, Lower too Longer". The key areas discussed and presented in the conference are summarized below:

Session Name: Risk Function Effectiveness: Lessons' Learnt from Reviews.

Moderator: Mr. Heerak Basu, Tata AIA Life

Speaker: Mr. Kailash Mittal, KPMG, India.



The factors impacting the effectiveness of risk function within an organization were identified as importance of risk function, risk function effectiveness, Risk Function effectiveness Program. The speaker set the tone of the session by introducing the importance of risk management and the role played by the risk function in achieving the shareholder's target of the risk-return equation.

The authors explained the importance of risk function in optimizing the

resources of the organization through **cost reduction, capital optimization** and **revenue identification**.

They explained the role of risk function in the **cost reduction** through their unique position within the business to see aggregate profile of the business; identify themes around risk and control across broader and functional reporting lines, identify opportunities and create a balance in risk and return proposition for the business.

The **Capital optimization** is achieved through reducing the volatility in the earnings and profits. In the absence of proper risk management, volatility will erode the steady flow of profits that may require frequent capital intervention.

In **revenue generation**, the authors discussed the dichotomy, whether the revenue generation should be a focus point of risk function or not. This is because, if risk function involves identification of revenue opportunities, this affects their independence. However, the authors felt that risk function should play an important role in identifying areas of revenue generation.

The authors explained that the risk function effectiveness is largely driven by the risk management framework, that not only covers the regulatory compliance but also includes market practice and internal guidelines.

They explained that a good risk management framework encompasses governance structure, risk culture, risk

appetite and integration of processes of risk management throughout the Company with oversight given by the Board. The effectiveness of risk function is largely driven by the tone from the top with risk culture flowing into the DNA of the organization.

The application of risk management program within an organization is set through defining robust Risk Governance Structure, Setting the risk appetite and risk management process.

The speakers also covered the case on the risk management effectiveness in a large global bank showing the importance of risk management process and Governance.

Session Name: The interest rate, Lower too Longer

Moderator: Mr. Sanchit Maini, Director, Insurance and Market Risk Management, Prudential Corporation Asia.

Panelist: Ms. Maeve Sherry, Actuarial Risk Director, Aviva Asia and Mr. B.N. Rangarajan, Appointed Actuary and CRO, Exide Life Insurance.



The session was a panel discussion; started by Mr. Sanchit describing

the current low-interest rate scenario in most of the developed and Asian markets. He cited examples of consistent low-interest rate regime in the US, UK, and negative interest rate scenario in the Japanese market. He mentioned that though the interest rate in India is also on the decline over the last couple of years but still higher than most of the developed markets of the world. He highlighted various challenges that an insurer faces in view of the low interest rate.

The discussions on the low-interest rate spanned over different areas such as assets' liability mismatch, meeting guarantees within the products, issues regarding the product design and challenges in meeting the policyholder's reasonable expectation (PRE) under the participating products.

The members deliberated on finding the alternate areas of investment in property, infrastructure, and equity where return on assets can be increased. However, there could be regulatory restrictions on investment in these assets' classes limiting the ability of the insurer to optimize the return.

The members also discussed the impact of low rates leading to increase in the liability duration in comparison to assets, thereby further increasing the gap in the asset and liability duration. This in turn will increase the economic capital requirement due to interest

rate in the jurisdiction where risk based capital is applicable. Therefore, many of the insurance players in the European market are moving to protection and health products to manage the capital requirement due to low interest rate.

The panel suggested, that to address the low interest rate scenario is through managing the product design and management of other surpluses apart from interest rate in the existing participating business.

The product design suggestion was to reduce the guarantees within the non-participating products, focusing on unit linked business where the returns are market linked and putting more focus on protection business. On the participating side, the panel suggested for better management of other surpluses such as lapse, mortality, and expenses. This could help the players in managing the PRE better amongst their peers as all competitors

are facing same low interest rate risk. This however, may not meet the PRE against the illustration.

The discussion also suggested on the communication between the players, regulator and the policyholders in creating the trust and transparency. The panelist suggested that in some jurisdictions, regulator have asked to revise the illustration rates under par products and enhance the disclosures.

Conclusion:

On the one hand the first session embraced upon the importance of risk governance and role of risk function in optimizing the risk-return equation for the shareholders; the second topic dug on the risk of low interest rate faced by many international markets and its risk management performed by them. This discussion may help prepare the Indian players better who may see the lower interest rates in future. ■

About the author

Mr. Sonjai Kumar



sonjai.kumar@avivaindia.com

Vice President (Business Risk)

Aviva India Life Ins. Co. Ltd.

PEOPLE'S MOVE



Mr. Prabaht Kumar

Mr. Prabaht Kumar has joined Lead- Actuarial Pricing with SBI General Insurance Company Limited. Formerly, he has worked as a Senior Manager - Actuarial with HDFC ERGO General Insurance Co. Ltd. a Senior Manager - Actuarial with HDFC ERGO General Insurance Company Limited. Mr. Prabhat Kumar has overall 8 years' industry experience in the area of Pricing and Reserving of General Insurance Product, Prior to joining HDFC ERGO General Insurance Limited, he worked with AXA Business Services in the area of Pricing - Home Insurance. He will be based in the Mumbai office.

Parallel Sessions on Data Science



Organized by: Institute of Actuaries of India

Venue: Hotel Hyatt Regency, Gurgaon, India **Date:** 10th -11th November, 2016

The discussions involved interactive panel discussions, presentations and briefings on topics of interest to the future actuarial profession. As the world of analytics has entered into a new era with big data, machine learning and advancements in predictive analytics reaching new statures, the conference addressed the need for the profession to adapt to the global changes in how information is gathered, stored and analyzed. Speakers from diverse backgrounds professional expertise shared their and encounters on the vision for Data Analytics in traditional actuarial practices. The summary captures the four parallel sessions on Data science.

Session Name: What does success in Personal lines look like?

Moderator: Ms. Mary Frances Miller, CAS

Speakers: Mr. Roberto Malattia Director - General Insurance Consulting, South East Asia, Willis Towers Watson, UK; Ms. Sipika Tandon Sr. Consultant, Willis Towers Watson, India.



Beginning with the opportunities that exist in personal lines insurance, the speaker established the frameworks for a successful response in the domain. With all Industries getting to be client driven, it is imperative to think about products, distribution and strategies.

Mr. Roberto very methodically disclosed the means to make progress in personal lines. The discussion revolved around linking clients to policies and highlighted the importance of tools

and techniques, data understanding, building capability and capacity, underwriting strategy and regulations. There needs to be clarity of roles, proper training and communication to ensure moving in the right direction.

The speaker emphasized on the need for proper understanding of claim costs and shared approaches for Risk Modeling through Generalized Linear Models Demand, Modeling and Pricing Assessment through Scenario Testing.

Ms. Sipika took the group of onlookers through an Indian case study for non life insurance industry. The study involved market segmentation analysis to identify accurate loss cost and constructing a portfolio monitoring tool. It resulted in formulating underwriting guidelines for profitable business, comparing underwriting costs with the cost of business in various segments and modifying

current discount levels in the view of long term profitability and market position. The case study was a compelling use of the techniques and ideas talked about.

Session Name: A Pragmatic Overview of Predictive Analytics Applications

Moderator: Mr. Debashish Banerjee Managing Director, Deloitte Consulting

Speakers: Mr. Lee Sarkin Head: Research & Development, Munich Re, South Africa, Singapore

Mr. Gavin R. Maistry Chief Actuary & Chief Risk Officer, Munich Re, Munich Re's Life business in the Asia-Pacific, Middle East & Africa region

Doing complete justice to the title, Lee and Gavin gave a down to business yet basic outline of the



applications of predictive analytics in the insurance industry. They drilled down to the core concepts of usage and fitness of the models in different scenarios.

The speakers explored external trends driving analytics. Placing Data Analytics as a lend of Technology, Data and People, they discussed how statistical learning has evolved over time starting from basic regression models to the Big Data Analytics today. In their view, there are large data pools that can be brought together and analyzed to discern patterns and make better decisions. This will become the basis of competition and growth for individual firms, enhancing productivity and creating significant value for the world economy by reducing waste and increasing the quality of products and services.

Taking the exchange forward, the speaker talked about analytics concepts for actuaries, covering relevant models, concepts of machine learning, model evaluation, IT infrastructure and software. They explored the application opportunities existing across the insurance value chain for analytically advanced models of artificial intelligence, neural networks, geospatial and digital analytics. The speakers gave a full dimensional aspect of the applications covering all pros and cons, limitations, and implementation failures along with the methodology.

They moved the audience to recalibrate their views as to the future of predictive analytics by offering a balanced opinion on the potential for new technologies and tools in better understanding complexity.

Session Name: Getting Ahead in Predictive Analytics

Moderator: Heerak Basu, TATA AIA Life

Speakers: Dr. Winnie Sun Actuarial Manager, EY / Casualty Actuarial Society, China

Dr. Justine Poon Actuarial Manager, EY / Casualty Actuarial Society Hongkong, China)



The featured speakers, **Dr. Winnie Sun** and **Dr. Justine Poon** addressed the need of the hour for actuaries to stay abreast with the advancements in Predictive Analytics. While focusing on the power of predictive analytics tools in managing the risks faced by insurers and reinsurers, they also enlightened the audience with the right path to attain the requisite skill set.

Describing the various types of analytics from descriptive, diagnostic, predictive to prescriptive, **Dr. Winnie Sun** focused on how analytically advanced models and effective utilization of data are capable of generating effective insights about the modeling strategy and product development, thus improving the current traditional practices.

The exchange spun around application

of predictive analytics tools in hand, actuaries can broaden their area of work and become well rounded professionals.

The speakers additionally discussed the professional education of actuaries in predictive analytics, to help them develop the required skill set and explore new opportunities. They made the audience mindful of the Casualty Actuarial Society and the Certified Specialist in Predictive Analytics course offered by it.

Session Name: Social Listening for Business Insights.

Moderator: G.L.N Sarma, Hannover Re, India

Speakers: Archna Wadhwa Founder and Managing Director, Analytics Saves at Work



of predictive analytics in real life scenarios, including life insurance underwriting, up/cross selling, motor ubi, medical claim costs and reserve analytics, leading to models that are robust and efficient. It uncovered the hidden opportunities of better risk management for the insurers and higher customer satisfaction for the companies.

In the speakers' view, with the power

Ms. Archna Wadhwa placed social media analytics as a potent instrument to understand the attitudes and preferences of customers across a myriad of online sources and underlined on how businesses today are increasingly taking help of tools to gain insight into the psyche of their consumers through social media. There is a flood of information that is available to us through various

online platforms and with the help of analytics these can be channeled into action based strategies.

The speaker uncovered the business potential linked to social media in the insurance industry. She shared some notable implementations in the insurance sectors that have saved the insurance companies a lot of money. Social Media Analytical tools allow companies to see a bigger part of the whole picture. Investing in this customer data and analyzing consumer behavior not only helps enterprises improve their reputation, communication and targeting, but also their profits. Knowing Customers better can help insurance industries effectively capture risks and evaluate the costs

associated with them. This would help in account validation and would hence, decrease the risk of fraud.

The speaker did agree that the use of analytics to assess and guide social media strategy is still not as rampant as it should be in the insurance

industry and there are challenges pertaining to data quality, reliability and applicability. Be that as it may, she highlighted and strengthened the notion of building a streamlined process for analyzing social media data and utilizing it for making strategic or tactical decisions. ■

About the author

Ms. Jasika Singh



 jasikasingh16@gmail.com

 Customer Insights and Data Analytics Team

 Evaluateserve

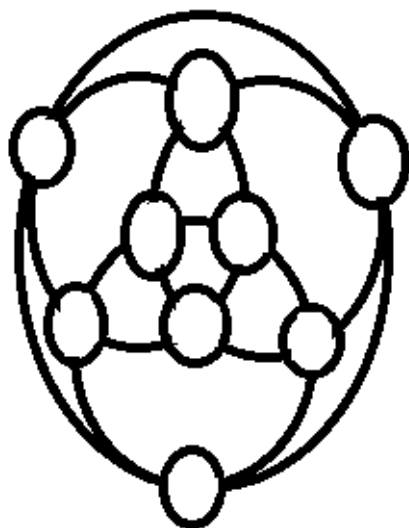
PUZZLE

Mind Exercise



Puzzle No 255

Insert the numbers from 2 to 10 in the nine small circles, in such a way that the sum of the numbers appearing round each of the four larger circles is the same.



Puzzle No 256

Ants placed on a thin long piece of wood may only move left or right. If they bump into each other they bounce off of each other and immediately move in the opposite direction maintaining speed the entire time. The only time they change speed is when they fall off of the edge of the piece of wood. If 25 ants are randomly put on a 1 meter long thin piece of wood moving 1 meter per second, what is the longest amount of time it could take for them to all fall off?

Ms. Shilpa Mainekar
shilpa_vm@hotmail.com





Parallel Session on Stochastic Modelling

Organized by: Institute of Actuaries of India

Venue: Hotel Hyatt Regency, Gurgaon, India **Date:** 10th November, 2016

Session Name: Stochastic Modelling for with-profit business

Moderator: Mr. Sanket Kawatkar, Principal and Consulting Actuary, Miliman, India

Speaker: Mr. Ripudaman Sethi, AVP Actuarial, DHFL Pramerica Life Insurance, India

(The presentation was made by Mr Ripudaman Sethi. He also presented on behalf of co-speaker, Mr Kailan Shang, who could not attend because of unavoidable reasons.)

par products and simultaneously reducing their guarantees in non-par products. The work done by the speaker is amongst the first of its kind in embedding stochastic modelling, dynamic policyholder behaviour and management action in managing WP portfolios. The speaker presented the results of the modelling approach taken by the authors.

Session Highlights :

Mr Sethi set the context for the session by discussing the history of interest

invest in riskier investment strategies despite the fact that the guarantees were piling up in the par funds. This was mainly due to competitive pressures with little respect for appropriate risk management controls. The high risk investments led to an increasing cost of guarantees for the companies. He touched upon the importance of assigning accountabilities to different stakeholders, imbalance of power between the policyholder and the company and having the right policyholder disclosure and communication. He drew upon the comments made by Mr T. S. Vijayan, Chairman IRDAI that 70% of the new business in India is being written under par products and this highlights the importance of efficient management of this business. He also highlighted the role of the actuarial profession in ensuring fair treatment of policyholders, who have blind faith in the profession.

He put forth the importance of modelling dynamic policyholder behaviour based on investment return, bonus rate, surrender penalty, PRE, etc, modelling of dynamic bonus strategies and the difficulties encountered in modelling these aspects. The major difficulties encountered were in varying bonus rates based on numerous factors such as the need for stability of reversionary bonus rates, gradual distribution of surrender surplus, maintaining competitive position in the market, Asset share to GPV reserve ratio, transfer



Brief of the Session:

The session generated a fair amount of interest amongst the audience as it dealt with a pertinent issue of falling interest rates observed in most of the Asian economies and its impact and challenges thrown to life insurers while managing the par business. The insurers are increasingly wary of writing traditional non-par products which have high embedded interest rate guarantees. The customers are inclined towards purchasing par products and hence Insurers are meeting the needs of the customers by offering

rates in developed economies. He gave an example that in the UK, the interest rates were high in the 1980's which started falling during 1990's and eventually leading to rates less than 2% in 2000's. This led to solvency issues for several businesses, eventually leading to closure to New Business of many such funds. He noted that similar challenges are being faced by the Indian economy currently, and so it is important to take on board the lessons learnt from developed economies. An investigation into the real issues revealed that companies continued to

percentages between policyholders and shareholders, etc.

This was followed by a brief discussion on the various applications of the model. The main areas of application being - pricing and product development, formulating and executing the business strategy of the company (such as bonus rate declaration, capital management etc) and Risk Management (CoG etc).

Next, he discussed the various assumptions used for projecting the policy cashflows. The main inputs into the model were Asset allocation, Economic Scenarios for projecting investment return, mortality and expense assumptions, (dynamic) lapse behaviour and dynamic bonus rates. Using these, the reserves, economic capital and profit were determined using a stochastic approach.

The authors used the one-factor Hull-White model for generating stochastic scenarios and cubic spline & Nelson-Siegel models to extend the yield curve beyond the maximum available term. He next touched upon the modelling of credit spreads, equity returns and property returns. Getting the volatility estimate right was the key to obtaining a realistic distribution of returns. Certain simplified assumptions with respect to correlations among asset returns were made. A static asset allocation was assumed throughout the projection period, with 15% allocation to equity asset class.

He then proceeded to discuss the insurance assumptions used. A deterministic assumption was used for mortality and the details of the dynamic lapse model were discussed, with the key parameter impacting lapse rates being the realised return and the new money rates. He discussed in brief the assumptions used for expense, commission etc and the asset share formula used.

Next, followed a discussion on the issues surrounding the cost of guarantee in par business. He argued whether the guarantee to be valued should be the contractual minimum (say 0%), or the one at the lower illustration rate (4%) or somewhere in between. In the model discussed, the guarantee valued was 3%. Further, a simplified economic capital model was used to establish the capital requirements with a suitable correlation matrix to combine different risks. He concluded the discussion on the model by summarising the dynamic rules used in the projection, which were already

discussed at various points in the presentation.

He concluded the session by presenting the results of the model. The results were an eye opener. The KPI's analysed were liability value, CoG, Profit margin, Transfer margin and IRR. A comparison of the results of deterministic approach against the average results under the stochastic approach revealed that deterministic projections significantly underestimated the risk. Results at different VaR levels were also presented. It all went on to highlight the importance of stochastic and dynamic modelling in par business. The session ended with a warm round of applause from the audience and a Q&A session.

Mr Sethi mentioned that the excel models were available for download from the website: <http://swinsolutions.com/download/WP%20Model.zip>, for anyone who wished to do so.

About the author

Mr. Pushp Aggarwala



 Pushp.Aggarwala@avivaindia.com

 Senior Manager – Valuation & Reporting

 Aviva Life Insurance Co. Ltd.

PEOPLE'S MOVE



Mr. Abhijeet Singh

Mr. Abhijeet Singh has joined Actuarial Reserving with SBI General Insurance Company Limited. Formerly an Associate Consultant - Actuarial with Ernst and Young LLP Actuarial Practice. Mr. Abhijeet Singh has overall 3 years' industry experience in the area of Reserving of General Insurance Lines of Businesses



Parallel Session on Insurance Accounting Transformation

Organized by: Institute of Actuaries of India

Venue: Hotel Hyatt Regency, Gurgaon, India **Date:** 12th November, 2016

Session Name: Insurance Accounting Transformation - The journey of Indian insurers towards IFRS 4 Phase I and Phase II

Moderator: Mr. Dhiraj Goel, Sahara India Life insurance Co. Ltd, India

Speakers: Mr. Francesco Nagari, Partner, LLP, Deloitte, Hong Kong.

The Speaker then continued the topic by comparing the IFRS-4 versus IFRS-17 i.e. what changes would be there in Phase-II as compared to Phase-I. He stated that:

- IFRS-4 has been in use around the world since 2005 and has been referred to as the Phase I

Whereas in IFRS-17:

- There would be 3 categories of insurance contracts i.e. Non-Par, Indirect Par and Direct Par
- Unbundling would be at more granular level like Investment Contracts and Service components

He pointed out that as per IFRS-4, a substantial proportion of life insurance contracts (from 15% up to 50%) failed the Risk Transfer Test and moved to deposit accounting under IAS 39.

As far as recognition and measurement is concerned, IFRS-4, there is Liability Adequacy Test (LAT) for which there are 5 minimum requirements along with incentives for change in accounting policies. However, recognition and measurement will be dealt in depth in IFRS-17 via Building Block Approach (BBA) which depicts a current value of the insurance contract and single measurement model for all insurance contracts.

The Speaker then explained what the BBA is all about. A brief is given below:

- There are 4 blocks
- First Block deals with Expected (probability-weighted) cash flows from premiums and claims and benefits
- Second Block deals with adjustment related to Time Value of money which converts the future cash flow at current amounts



Brief about the session

Session started with a formal opening by the Moderator. The Speaker opened his session with a remark that the subject matter is creating lot of opportunities for the actuarially qualified persons and ensures them job security for at least next 5 years in case they would like to work in IFRS 4 and IFRS 17 reporting.

In the opening presentation slide, the speaker started with a quote from **Mr. Hans Hoogervorst**, IASB Chairman wherein, he states that ***"The lack of comparability and the often poor quality of current accounting practices in the insurance industry around the world is clearly unacceptable"***.

- IFRS-4 Phase II will become IFRS-17

- Phase II standard is in progress and will be a comprehensive IFRS for the insurance contracts

As far as scope and classification is concerned in IFRS-4 in respect of the insurance contracts that have been set by:

- Classifying three transaction types based on a risk transfer test and presence of Discretionary Participation Features
- Defining the Scope and exclusions
- Unbundling the deposit components from insurance contracts
- Bifurcating the embedded derivatives

- Third Block is in respect of the 'Risk Adjustments' required for the uncertainties attached to the various cash-flows of the insurance contracts
- Above these 3 Blocks there is a 4th Block which is called 'Contractual Service Margin' or in simple terms the profit margin required to service the insurance contract. This margin will be duly adjusted for changes in the future assumptions

While applying the BBA, few principles are to be ensured e.g. Estimates should be the latest ones, Grouping of insurance contracts basis risk profile and profitability, market based discount rates etc.

The Speaker then briefed about the 'Presentation and Disclosure' requirements for life insurers which have been transformed in IFRS-17. The presentation format of the 'Statement of Income' will be consistent between insurers and entities that do not issue insurance contracts; Revenue and Expenses- to be recognised as earned or incurred; Effect of discount rate change on insurance liability can be shown as a separate line item in the

comprehensive income statement.

Similarly, disclosures are already very heavy in IFRS-4 and in IFRS-17 these are heavier than IFRS-4. Extensive quantitative disclosures based on 'Roll Forward Tables and Reconciliation Tables between Balance-Sheet will be required. Apart from the regular Profit & Loss Account and Cash Flow statement, each building block is to be disclosed separately. All Risk disclosures in IFRS-4 have been retained and expanded further.

The Speaker also explained about the transition to the new IFRS-17. There would be three

hierarchically sequenced methods a) Full Restatement b) Simplified Restatement Approach and c) Fair Value Approach. This will lead to lot of data crunching for the life insurers. The transition to IFRS-4 will affect all areas of the balance sheet and IFRS 17 will cause an expensive transition. The benefits of adopting the new IFRS will be in terms of more transparency and consistency across the globe for the insurance sector with lower cost of capital.

The session ended with a very brief Q&A round and vote of thanks by the Moderator. ■

About the author

Mr. Devinder Kumar

✉ devinder.kumar1@avivaindia.com

🏠 Vice President-Actuarial

🌐 Aviva Life Insurance Co. Ltd.



Call for Articles



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 and cut-off date for submitting the articles are available at :

http://www.acturiedindia.org.in/subMenu.aspx?id=106&val=submit_article



Institute of Actuaries of India

302, Indian Globe Chambers, 142, Fort Street, Off D N Road, Mumbai - 400 001

+ 91 22 67843333 + 91 22 67843330 ✉ gururaj@actuariesindia.org

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;

- a. Disseminating information,
- b. Communicating developments affecting the Institute members in particular and the actuarial profession in general,
- c. Articulating issues of contemporary concern to the members of the profession.
- d. Cementing and developing relationships across membership by promoting discussion and dialogue on professional issues.
- e. Discussing and debating issues particularly of public interest, which could be served by the actuarial profession,
- f. 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;

- a. there is a growing emphasis on the globalization of the actuarial profession;
- b. there is an imminent need to position the profession in a business context which transcends the traditional and specific actuarial applications.
- c. 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:

- a. Members of other international actuarial associations across the globe
- b. Regulators and government officials
- c. Professionals from allied professions such as banking and other financial services
- d. Academia
- e. Professionals from other disciplines whose views are of interest to the actuarial profession
- f. 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.

Version history:

Ver. 1.00/31st Jan. 2004

Ver. 2.00/23rd Jan. 2011

Visit us at: www.actuariesindia.org

Your
connected
customers

+

Our
customized
solutions

=

More
moments like this



All around the world, the protection gap still yawns. There are millions of potential customers out there. But how do you reach them on their terms? What insights do you have about how they behave? And what can you do to increase the chances they'll say yes to life or disability cover? At Swiss Re, we've developed tools that inform, streamline and customise the whole business of underwriting. We'll help you extract actionable insights from ever-growing pools of data, and connect with your customers better by understanding what makes them tick. So you can build confidence in your decisions, build the ideal customer experience and – ultimately – help build better lives. **We're smarter together.**

swissre.com