Institute of Actuaries of India

www.actuariesindia.org

the Actuary INDIA

THE MAGAZINE OF THE INSTITUTE OF ACTUARIES OF INDIA

February 2020 Issue

Vol. XII - Issue 2

Pages 36• ₹ 20

INDIAN ACTUARIAL PROFESSION
Serving the Cause of Public Interest

21st Global Conference of Actuaries (GCA) &

Actuaries: Striving for excellence, creating sustainable future.

Actuarial Gala Function and Awards (AGFA 2020)

17th - 19th February, 2020
Mumbai, India

Celebrating 75 years of Indian Actuarial Profession

www.actuariesindia.org

With AXA, explore a career and not just a job.

Discover one opportunity and many possibilities.

Join our **Actuarial and Data Science** team and be a part of the exceptional AXA experience.

We are on:
https://www.facebook.com/AXABSIndia/
https://twitter.com/AXA_BS
https://www.linkedin.com/company/axa/
https://www.youtube.com/channel/UCsLJR7fmEY4m4wsUeYmsjrA

Job title: Sr. Actuarial Analysts/Consultant

Relevant Work Experience: 2 - 6 years

Expertise:
- GAAP/Non GAAP Valuation
- Model Integration
- Model Development
- Solvency II Risk Management

Location: Pune

Number of vacancies: 22

Job title: Manager/Sr. Manager

Relevant Work Experience: 8 - 10 years

Expertise:
- GAAP/Non GAAP Valuation
- Annuity Valuation
- Model Integration
- Model Development
- Assumptions
- Solvency II Risk Management

Location: Pune

Number of vacancies: 8

To get a sneak peek at what a career at AXA looks like, **visit https://axaindia.com/careers**
Contact: **Prerona.dutta@axa-abs.co.in** and **Smriti.singh@axa-abs.co.in**

the Actuary INDIA
www.actuariesindia.org

CONTENTS

"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"

CHIEF EDITOR

Bhavna Verma
Email: bhavna.vrm@gmail.com

EDITOR

Dinesh Khansili
Email: dineshkhansili111@gmail.com

COUNTRY REPORTERS

Nauman Cheema
Pakistan
Email: info@naumanassociates.com

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

T Bruce Porteous
United Kingdom
Email: bruce_porteous@standardlife.com

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

Devadeep Gupta
Hongkong
Email: devadeep.gupta@prudential.com.hk

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

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

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

Nikhil Gupta
United Arab Emirates

For circulation to members, connected individuals and organizations only.

FROM THE DESK OF CHIEF EDITOR
Ms. Bhavna Verma 5

ANNOUNCEMENT
7th Capacity Building Seminar on Retirement Benefits (7th CBRB) 6

EVENT REPORT
4th Seminar On Data Science & Analytics
Ms. Radhika Sen 7

2nd Capacity Building Seminar on Enterprise Risk Management (CB ERM)
Mr. Arun Goel 12

7th Capacity Building Seminar in Health and Care Insurance
Mr. Ankit Mittal 14

FEATURES
A Brief Introduction to US GAAP Long Duration Targeted Improvements (LDTI)
Ms. Arundhati Ghoshal 19

Insurance Frauds In India
Mr. Venkatesh Ganapathy 22

Self Driving Cars and Insurance
Mr. Udit Bansal 24

INDUSTRY UPDATE
Life Insurance Insights
Mr. Vivek Jalan 29

COUNTRY REPORT
Hong Kong
Mr. Devadeep Gupta 33

CAREER CORNER
AXA 2
Bajaj Allianz 4
Principal 11
SBI General Insurance 32

Disclaimer : Responsibility for authenticity of the contents or opinions expressed in any material published in this Magazine is solely that of its author(s). The Institute of Actuaries of India, any of its editors, the staff working on it or "the Actuary India" in no way holds responsibility for the same. 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 ₹ 40810+5%GST | Full page colour ₹ 33000+5%GST | Half Page colour ₹ 22000+5%GST

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 Vinod Kumar Kuttierath, Head of the Education and Training, Institute of Actuaries of India at PRINT VISION, 75/77, 1st floor, Punjani Ind. Estate, Near Abhishek Hotel, Khopat, Thane (W) 400 601, for Institute of Actuaries of India L & T Seawoods Ltd., Plot No. R-1, Tower II, Wing F, Level 2, Unit 206, Sector 40, Seawoods Railway Station, Navi Mumbai 400 706
Email: library@actuariesindia.org, **Web:** www.actuariesindia.org

17-19 February 2020
21st Global Conference of Actuaries (GCA) & AGFA
"Theme: Actuaries: Striving for excellence, creating sustainable future"
Venue: Renaissance Mumbai Convention Centre Hotel, Mumbai

Assistant Manager - Pricing

Around 1 to 2 years of experience, preferably in the Pricing role.
Minimum CT series - 4 to 5 papers

Deputy Manager - Pricing

Around 3 to 5 years of experience, preferably in Pricing role.
Any other experience will be considered.
Prophet software's knowledge would be an added advantage.
Minimum CT series - 7 to 8 papers

Deputy Manager - Shareholder Reporting

Around 3 to 5 years of experience, preferably in Shareholder Valuation team.
Any other actuarial experience will also be considered.
Prophet/any other actuarial software knowledge is a must.
Minimum CT series - 7 to 8 papers.

Deputy Manager – Modelling

Around 2-5 years of experience, preferably in Modelling role.
Any other actuarial experience will also be considered.
Experience in SAS & Prophet will be preferable.
Minimum CT Series – 7 to 8 papers

Mail your resume at

Deepak.Giri@bajajallianz.co.in | Pune

Disclaimer
Bajaj Allianz Life Insurance Co. Ltd., Regd. Office Address: Bajaj Allianz House, Airport Road, Yerawada, Pune - 411006., IRDAI Reg No: 116, Visit : www.bajajallianzlife.com, CIN : U66010PN2001PLC015959, Mail us : customercare@bajajallianz.co.in, Call on : Toll free no. 1800 209 7272, Fax No: 02066026789. The Logo of Bajaj Allianz Life Insurance Co. Ltd. is provided on the basis of license given by Bajaj Finserv Ltd. to use its "Bajaj" Logo and Allianz SE to use its "Allianz" logo.

From Chief Editor's Desk

Ms. Bhavna Verma

"If you resist change, you resist life itself."

The last few months have seen a lot of focus on boosting economic activity in the country. Among other measures, a major step in the form of reduction in corporate tax rate was implemented in 2019. Budget 2020 was announced on 1 February and laid out plans of the government to sell a part of the government's holding in Life Insurance Corporation of India (LIC) by way of an initial public offering (IPO) to meet its disinvestment targets. Budget 2020 however did not have any specific boosters for the insurance sector such as a separate exemption limit for insurance savings or increased Foreign Direct Investment (FDI) limit over the existing 49%. On the contrary, taxpayers have been provided with an alternative new tax regime at lower tax rates, if they forego exemptions that they avail currently. This also includes tax exemptions for insurance premiums. It will remain to be seen what impact this will have on insurance premium collections in the last quarter of the financial year, which are driven in part by last minute tax efficient investments in insurance policies.

The Insurance Regulatory and Development Authority had released a regulatory sandbox to promote insurance innovation in the areas of solicitation and distribution, products, underwriting, policy and claims servicing. Press reports suggest response was positive with a large number of applications received, mainly from the general insurance sector and insuretech firms. The Authority has now reportedly approved several products in the health and motor categories which can be launched as a pilot for a limited period to test effectiveness. This is a welcome move and I hope it achieves the objective of brightening the future of insurance and increasing penetration in a rapidly changing customer and technology driven world.

The other key regulatory announcement was around implementation of Ind AS 117 in India; the Authority has notified that the timelines will be pushed ahead from FY20-21 and will be announced once the final IFRS17 standard is notified by the International Accounting Standards Board (IASB) and subsequently the corresponding Indian standard is notified by the Ministry of Corporate Affairs (MCA). This should allow

reasonable preparation time to insurance companies.

In this issue, you can read coverage of the recently held Enterprise Risk Management seminar and Capacity Building Workshop on Health & Care Insurance. There is also an interesting feature on the potential impact of self-driving cars or driverless cars on the Auto Insurance Industry. This could be one of the many developments in insurance products owing to lifestyle, technological and lifespan changes; few others may be higher accident, health and longevity covers, anxiety / depression insurance, replacement insurance for your virtual pets etc. A futuristic piece on Artificial Intelligence that I was reading suggested that suicide may become an insurance product rather than an exclusion as it was traditionally. It also pointed out that pricing suicide insurance will involve actuaries changing traditional thinking on moral hazard, and potentially partnering with bioengineers and psychologists to embed nanobot sensors that detect dangerous mental anxiety and alert intervention agencies accordingly. Interesting, isn't it?

We will get an opportunity to understand and discuss many traditional and far-fetched ideas at the 21st Global Conference of Actuaries scheduled for 17-19 February 2020. Look forward to meeting many of you there!

Do write in to us with your perspectives, thoughts and suggestions at library@actuariesindia.org.

ANNOUNCEMENT

7th Capacity Building Seminar on Retirement Benefits (7th CBRB)

Advisory Group : Advisory Group on Pension, Other Employee Benefits and Social Security
Venue: Ramada Gurgaon Central, Gurugram, Haryana **Date:** 7th March, 2020 **Time:** 9:00 am to 5:15 pm

Background:

The topic of the 7th Capacity Building Seminar is "Data Analytics- A Game Changer in Employee Benefits". The advent of Big Data Analytics coupled with technological advances has the opportunity for actuaries of the future, in India to redefine the approach to employee benefits advice. Deeper Data analytics can be a big benefit to, the employers and employees. "People Data Analytics" has forced organisations to look beyond spreadsheets and conduct deeper analysis to improve corporate employee benefits. It has therefore become even more important for the employee benefits actuary and the actuarial profession to be equipped with Big Data Analysis, as well as advise clients suitably on assumptions.

In light of the above, the Capacity Building Seminar will introduce how the use of "Big Data" can be initially used in the setting of actuarial assumptions in employee benefits. Participants will be given hands on experience of analysing employee benefits data using Data Analytics Software.

The Seminar would focus on the following topics:

- Data Analytics: A game-changer in Employee Benefits Industry
- Using Data Analytics in Assumption Setting for Employee Benefits
- Benefits of Big Data Analytics: Employers and Employees Perspective
- Practical Examples on Middling Employee Benefits Data Using Software

Presenters:

We will have a number of eminent guest speakers/facilitators , as well as experienced actuarial professionals in the Employee Benefits industry would be facilitating this capacity building seminar and sharing their experiences and insights with participants.

Who Should Attend?

Actuarial students, qualified actuaries, data analysts, engineers, CEO's and all current or potential future employee benefits practitioners. This seminar is useful for not just Fellows/ Associates, but also student actuaries who are looking to develop a career in the area of employee benefits in India.

Registration Fees (Excluding 18% GST):

Categories	Amount in INR
Students & Associate Members	3,500
Affiliate & Fellow Members	7,000
Non Members	7,500

General Points:

- **CPD Credit for IAI members:** 6 hrs. Technical - Pensions and Employee Benefits
- **Registration last date:** 3rd March, 2020; Registration on first come & first serve basis
- **Dress Code:** Business Casual
- **Point of Contact:** marketing@actuariesindia.org
- **Accommodation:** Program is Non- residential
- **Register now at:** http://www.actuariesindia.org/SeminarRegistration.aspx

4th Seminar On Data Science & Analytics

Planned by: Advisory Group on Data Science & Analytics (AGDSA)
Venue: Hotel Ramada, Gurgaon Central, Gurugram, Delhi–NCR **Date:** 2nd November, 2019

Introduction

A keynote by an industry veteran, seven invigorating sessions and a diverse audience ranging from individuals who've helped shape the profession in India to wide-eyed students brimming with optimism. In this reportage, I shall attempt to capture the day through each session highlighting the points presented, audience discussions and closing comments.

Session: Keynote Address

Speaker: Liyaquat Khan, Managing Partner, Global Risk Consultants

Following an awe-inspiring introduction, Mr Khan began his session with a simple idea, "Mathematics is not a science, it is a language and without this language, one cannot express anything scientific". It is on this platform that the actuarial profession is built.

He said that perhaps the most fundamental input for an actuary has always been data. For example, the mortality table, a tool used by generations of practising life insurance actuaries, is developed using elements of data science. Arguably, actuaries have always been data scientists, but what has considerably changed, are the tools at our disposal to study data. As we explore this space, Mr Khan stressed on the responsible interpretation of data, reminding the audience of our professional accountability. The Actuarial Professional Standards require actuaries to uphold a high standard of ethics and rigour – two critical components in the world of data science today.

Session: Changing Landscape of the Actuarial Profession - Worldwide

Speaker: Mahidhara Davangere V, Founder & Managing Director, Pramartha

The IAA defines an actuary as one "who is able to apply unique skills and a professional approach to solving complex problems, advising on future risks, opportunities and options, across diverse fields and industries". Against this backdrop, Mr Davangere emphasised that actuaries must develop a holistic approach to mathematical thinking through greater business acumen and effective communication. Echoing Mr Khan's views on accountability, he added IFoA's recently published guide on Ethical Data Science practices.

Referring to a 2018 presentation by Mr Gribble, Mr Davangere showcased the diverse range of areas that have already adopted actuarial techniques globally. Whilst some were natural extensions within the finance industry, the list included renowned international bodies like UNESCO, WWF and WHO that generated a palpable buzz in the room. Actuarial advice is also being sought in areas such as agriculture, disaster management, climate change and policymaking.

Today, the IAI has about 8,700 students, a group that Mr Davangere believes will largely shape the dynamics of

the profession in the future. Across generations, our strength lies in our unique positioning vis-à-vis many other professionals in India. Compared to an annual production of around 15L engineers, 5L MBAs and 2L CA's in India, there are less than 75,000 qualified actuaries worldwide - with less than 500 in India! By 2030, it is estimated that over 20% of the world's actuaries will be involved in what we are calling wider fields today. To enable this transition, he stressed on the need to rebrand ourselves proactively, "The time has come for us to step out and discover".

Session: 10/10 - 10 Impactful use cases in Life Insurance

Speaker: R Krishnakumar, Executive VP & Chief Customer Officer, Max Life Insurance

To set the context for his session, Mr Krishnakumar said that he would like to give the audience a feel for the use of analytics within life insurance via several broad examples.

In insurance, information asymmetry is an unmitigable risk and from the insurer's perspective, the risk of fraud is a reality at both the underwriting and claim stage. Predictive modelling using a wide range of data points has been adopted by several players to detect and prevent fraud. Every unusual claim could be scored on a model that triggers necessary action.

Risk scoring models may drive efficiencies in proprietary channels. Using grading approaches, the management can reward virtuous cycles and possibly cull vicious cycles. Similar scoring models may be adapted to persistency management to drive retention efforts, ultimately improving the quality of the book. He highlighted that this exercise at Max Life has also proven to introduce significant cost efficiencies.

Quoting a LIMRA study, he said: "Happy customers buy 6-7x more products". Max Life has developed a recommendation engine to throw relevant social recommendations to their online customers. This serves to guide the potential buyer towards more appropriate products, reinforcing their confidence with relatable statistics like "80% of our customers in your age group bought this plan with a Critical Illness rider".

Mr Krishnakumar subsequently gave the audience an insight into several newer models under development at Max Life, from NLP to gauge customer disposition to triangulation models to aid business expansion. In conclusion, he said: "Disruption is the new normal" stressing on the need for insurers to adapt to the customer's evolving mindset.

Session: Digital Behaviour - A Hidden Treasure

Speaker: Ankit Mittal, Vice President - Actuarial & Risk Analytics, PolicyBazaar

Mr Mittal began by highlighting the need for Actuaries to move from the traditional number-crunching role to a business-facing one.

As India's leading insurance aggregator, PolicyBazaar is uniquely placed from a data collection perspective, given the breadth of its user base. Over the last two years, the actuarial unit has been studying the digital touch points in their ecosystem to identify unorthodox drivers that directly influence consumer behaviour. Measures such as 'time taken to buy a plan', 'credit scores', 'whether a sale was assisted or unassisted' and 'renewal timelines', exhibit a direct material correlation to claims experience. An NLP model to scrape call-centre conversations suggested a direct correlation between the usage of the word "claim" and the actual proximity to claim. He highlighted that the examples above are just a few of the 50+ parameters that PolicyBazaar analyses.

With a detailed example, he explained how PolicyBazaar improved their percentage of unassisted sales using a GLM model studying over 5 million leads across 22+ parameters. Exercises of this nature introduce significant cost efficiencies and improve the overall shareholder value proposition. Similarly,

propensity and premium models have been developed to improve lead conversion rates on their health portfolio.

Mr Mittal urged the audience to reflect on how these insights can impact our work. Given PolicyBazaar's analytical warehouse, he highlighted the potential to collaborate with insurers allowing these insights to flow into product designing, portfolio optimisation as well as traditional actuarial pricing and profit testing.

Session: Financial Data Science techniques in Retail Analytics

Speaker: Shailesh Dhuri, Executive Director, Decimal Point Analytics

Mr Dhuri began his session echoing Mr Khan's opening comments. Actuaries have always worked with numeric data and may even be considered pioneers in Bayesian techniques. However, today we have the power to harness data in several wider formats and dimensions. The profession must revisit its definition of data and statistical application using emerging tools to truly embrace the idea of a data science actuary.

He highlighted, that besides traditional business intelligence data, untapped data sources/formats through blogs, news etc. may provide interesting insights. Leveraging retail analytics, tactical decision making has also evolved. Perhaps one of the most visible outcomes is the advent of dynamic pricing (e.g. Uber) that assesses demand and supply in real-time to determine optimal rates. Retail analytics is also being used to address today's "here and now" economy from content management on Netflix to same-day delivery on Amazon. Quoting a recent project for a banking client, night-time satellite imagery was layered to predict population density patterns as an input to optimise Branch/ATM expansion.

"Media bias often leads us to believe it is the West that is breaking the mould. But in reality, it is the East that is changing the face of tech-adoption". While many believe Amazon has pioneered unmanned shopping experiences earlier this year, China has been using this technology for over two years!

In summary, factors such as increasing consumer expectation, data availability and emerging technologies have led to the rapid growth of innovative business models that value the impact of analytics. Mr Dhuri further emphasised that there is no doubt that actuaries are inherently skilled to contribute to this era of disruption. It is only a matter of a moderate up-skilling that will allow the profession to take this leap.

Session: Application of Predictive Models in the Banking industry

Speaker: Yash Ratanpal, Founding Member at Acies Consulting

Bestowed with the daunting task of keeping the room awake after lunch, Mr Ratanpal began his session with an engaging live audience poll. He used this to highlight two key themes – actuaries can apply themselves to wider fields and predictive modelling should go beyond the inherent complexity and instead focus on the end-user's application.

In the context of the banking industry, he highlighted some of the key drivers that have propelled the adoption of predictive models - Forward-looking regulations, exponential growth of data, access to superior computing power, rise of open source technologies and an increased desire for optimisation. Demonstrating the power of cloud computing, he cited a bank's transition that brought down cash-flow generation from 11 hours to 1 hour.

He highlighted some practical aspects through two detailed case studies. The first, a credit scoring model that generated a default probability in the form of a rating to grade corporate obligors which helped develop a comprehensive risk acceptance policy. The second was based on implementing CCAR in the US where a network of 500+ models was used to generate the required capital ratios.

In conclusion, Mr Ratanpal reflected on his journey as an actuary in the banking space and the industry's growing appreciation for actuarial techniques. “There is no doubt we can go beyond the myth of an insurance-related profession”, he said. In the engaging Q&A that followed, he explained how data science is being increasingly used to understand, model and predict human behaviour.

Session: Analytics in Health Insurance

Speaker: Prashant Rai, Data Scientist, SAS

Mr Rai contextualised the need for analytics in healthcare by highlighting the key challenges it faces today - high medical inflation, a shortage of practitioners/facilities, unchecked fraud and poor penetration.

“Loss Ratio management is every insurer's #1 priority”, he said, and this is precisely where analytics has the potential to play an integral role given the 20+ steps that may be studied before a policy claims. Fuelled by emerging technologies, the ability to make sense of unstructured data has widely expanded the scope of analytics. It is estimated that 90% of the data available in 2020 will be unstructured. Quoting a recent project, he explained how 85,000+ free-text claim rejection messages were reduced to 9 homogeneous buckets which helped identify dishonest service providers in their network. Other examples included image recognition to detect fraud, reconfirm a diagnosis through x-rays and extracting insights from handwritten doctor notes.

He subsequently detailed the key components in effective fraud management, emphasising on the need for entity scoring and networking along with the practice of generating intelligent dashboards to recognise unusual patterns. On a recent project, the model exposed a case of agent-hospital-patient collusion that claimed nearly 1Cr.

In closing, Mr Rai highlighted that the quantum of data available to health insurers today is 8x that in 2016. With the unparalleled domain expertise actuaries already possess in this industry, it is the perfect time for the profession to get involved. It is important to create an environment in which an analytics practice can make an impact and this can only be made possible through cross-vertical collaboration and management support.

Session: Panel Discussion on the Actuarial Profession in Industry 4.0 and beyond

Moderator: Mahidhara Davangere V

Panellists: Shailesh Dhuri, Executive Director, Decimal Point Analytics

Ankit Mittal, Vice President - Actuarial & Risk Analytics, PolicyBazaar

Manoj Kumar Chattlani, Deputy General Manager, IRDAI

Mr Dhuri began the session defining 'Industry 4.0' as the movement towards an era of data-driven automation and tech-adoption. Given this transformation, Mr Chattlani highlighted the regulatory support being extended through initiatives such as introducing the sandbox framework, an approach encouraged by the IAA across many regions overseas.

Over the next hour, the panel discussed and debated several relevant topics including the role of artificial intelligence (AI), management of cyber risk, drivers of innovation, correlation vs. causation and the need to improve penetration. An interesting highlight was a conversation about the fundamental concept of risk-pooling and how granular analytical approaches have the potential to disrupt traditional actuarial areas like pricing.

Given the push towards digitisation, cyber and privacy risk becomes particularly relevant. “The next war will be fought via the internet” added Mr Dhuri emphasising the need to strengthen our technologies to which Mr Mittal added the need for a robust regulatory framework.

The final discussion addressed the most popular

question of the day, "Where do I start?". With the deluge of information readily available at practically no cost, it is important to take the time to ask the right questions. Volunteering in an area of interest can also prove to be an enriching experience, suggested Mr Davangere. In closing, the panel unanimously agreed that 'Industry 4.0' presents an exciting and unparalleled opportunity for actuaries to evolve and add a new dimension to the profession.

Conclusion

In his keynote, Mr Khan cited a question in a recent survey conducted by the IFoA: 'Which of the following best describe the area in which you work?'. Nineteen options were presented, a testament to the 'wider areas' in which actuaries add value today. Mr Chattlani reinforced the importance of regulatory support and encouraged the industry to focus on innovation. To propel analytics in India, Mr Davangere encouraged students to take risks, volunteer and take part in soon-to-be-announced hackathons.

Whilst every speaker expressed immense confidence in an actuary's technical ability to adopt data science techniques, both Mr Ratanpal and Mr Rai explicitly called out the need to tailor our approach to the end-user, emphasising on the role of effective communication.

Speaking about the opportunities today, Mr Mittal cited an interesting email that his management received following an investor presentation he had given on behalf of PolicyBazaar. The VCs were keen to understand how they could get actuaries involved in some of their other businesses like Zomato! Mr Dhuri even admitted to waiting for actuaries to apply to his company - I fear he underestimates the impact this is likely to have on his recruitment team! Even within the insurance space, Mr Krishakumar noted that many actuaries have taken up non-traditional roles including underwriting, operations and risk.

The seminar was a refreshing and welcome take on what the profession has to offer in the years to come. If I had to describe this event in one word, it would have to be "Inspirational".

Written by

Ms. Radhika Sen

radhi.85@gmail.com

"Ms. Radhika Sen is an AVP in Tata AIA Life Insurance Co. Ltd."

Principal®

Principal helps people and companies around the world build, protect and advance their financial well-being through retirement, insurance and asset management solutions that fit their lives. Our employees are passionate about helping clients of all income and portfolio sizes achieve their goals—offering innovative ideas, investment expertise and real-life solutions to make financial progress possible.

We are expanding our actuarial space and looking forward to potential actuaries joining our US DB Pensions and Life Insurance teams in Pune.

Be a part of something bigger

At Principal, it's not just about the opportunities but also about the lives we touch!

Qualification:
- Graduate in Mathematics / Science / Statistics / Engineering
- Candidates who have cleared at least six actuarial exams preferred

Experience Required:
- 4 to 10 years of relevant actuarial experience

Areas of expertise:

Aspiring candidates should have worked on one or more of the following areas:

US DB Pension valuation team
- Funding and Accounting valuation of DB pension plans, preferably for the US market

Life Insurance Team
- Valuation, pricing of life insurance products
- Modeling, Reporting functions
- Data base management using SAS, R
- Prior knowledge of actuarial software MG-Alfa and exposure to life insurance actuarial work for the US market would be an advantage

Please send your resume to kothari.purvisha@principal.com

For more information, visit : www.principal.com

Follow us on LinkedIn

Principal, Principal and symbol design and Principal Financial Group are trademarks and service marks of Principal Financial Services, Inc., a member of the Principal Financial Group.

2nd Capacity Building Seminar on Enterprise Risk Management (CB ERM)

Organized by: Advisory Group on Risk Management
Venue: Hotel Sea Princess, Mumbai **Date:** 13th November, 2019

Welcome and keynote Address

Mr. Kailash Mittal, Chairman of Advisory Group on Risk Management, extended a warm welcome to all the participants and provided a brief background on the planned session. He talked about creating more awareness on risk management and other non-traditional opportunities for an actuary in the banking and other Non-Banking financial institutions.

He also talked about the role the Advisory Group is planning to organise such awareness and capacity building sessions more frequently. The topics would be topical and the ones relevant for the industry and actuarial fraternity. He also announced that the Advisory Group would be rolling out 4 projects shortly which would be worked up on by the students with the help of mentors.

A video presentation prepared by IAI aiming to create awareness about actuarial profession and the diverse role an actuary can perform in the modern financial institutions and a video clip on the upcoming GCA was presented.

Mr. Sunil Sharma, President of IAI, welcomed everyone and acknowledged the Advisory group for organizing the seminar and creating the awareness towards exploring new opportunities for actuaries in the field of risk management and banking & investment. He also mentioned that lots of actuarial professionals abroad, especially in African region, are working in banking and NBFC sector. He urged the members to explore the opportunities in non-traditional financial sectors as there is great scope for an actuary in sectors beside insurance.

Session: Using Economic Capital to manage risks

Speakers: Subhash Khanna and Megha Mehra, Milliman

Session Highlights: The session kick started with an introduction of the concept of Economic Scenario Generator (ESG)

17-19 February 2020
21st Global Conference of Actuaries (GCA) & AGFA
"Theme: Actuaries: Striving for excellence, creating sustainable future"
Venue: Renaissance Mumbai Convention Centre Hotel, Mumbai
Indian Actuarial Profession
Serving the Cause of Public Interest

by explaining the process used in the ESG and the challenges and technical details which one needs to be aware of in their generation. The speaker discussed the application and advantages of using ESG in various actuarial domains such as Asset Liability management, computation of Embedded Value and calculation of Cost of guarantees & options. The speakers further discussed various mathematical tools (such as Black-Scholes equation for equity return generation, Hull White model for interest rates generation) used for generating economic scenarios and briefly touched upon the calibration of model parameters using the data. The speakers shared their experience from a project with a US client where they had used ESGs in projecting the lapse rate for a universal life product by linking the lapse rate with the interest rate in the market.

The session then continued with an interactive excel exercise where the speakers presented the audience with a simple ESG scenario by using excel. Additionally the speakers presented a more complex model which could be used for calculating the economic capital requirements of the company. The speakers concluded the session by presenting the advantages and scope of using ESG in various areas and how ESG could help in better risk management of the portfolio.

Session: Managing risk in Banking / other non-traditional actuarial businesses

Speakers: Kinshuk Pal and Naveen Yadav, KPMG

Session Highlights:

The session provided an overview of the confluence of risk modeling tools and techniques used in the Banking and NBFC sectors. The speakers discussed various machine learning algorithms (such as regression, neural networks, etc.) for building of classification, association and predictive models which are currently being used for risk management in the Banking and NBFC space. The speakers explained the underlying methodology and the advantages and limitations of different statistical tools and techniques in Financial Risk Management especially for credit and market risk. The speakers highlighted how these techniques can be extended to the insurance sector for risk management as well as for predictive analysis, hence knowledge of these tools and techniques by Actuaries can equip them to explore more opportunities in the insurance sector and also equip them to work in the problems outside the insurance domain such as in the Banking and NBFC sectors.

The speakers ended the session by presenting a sample logistic regression based classification model along with the validation exercise developed on 'R' software. . The speakers shared the code files and the input dataset with the participants for the hands-on exercise.. Participants appreciated the practical experience gained from the session.

What was different and interesting in this seminar was the ability and intent of the speakers to focus on practical training and taking the participants through spreadsheets and codes. This caught fancy of quite a few participants, since this was the first time that such a hands on workshop was being organized with delegates actively involved with their laptops throughout the day.

Vote of Thanks:

Mr. Ashish Ranjan, Member, Advisory Group on Risk Management, concluded the session by appreciating the speakers and all participants for an insightful and interactive session. He also took the opportunity to highlight the importance of risk management and the plethora of opportunities that await an actuary in modern day financial institutions. He also motivated participants to take SP9 Enterprise Risk Management examinations. He also collected the feedback of participants which will help the institute in efficient planning of future similar seminars and workshops.

Written by

Mr. Arun Goel

Arungoel2805@gmail.com

"Mr. Arun Goel is a student member of IAI and IFoA. He is currently working with ICICI Prudential Life Insurance in Enterprise Risk Management team."

7th Capacity Building Seminar in Health and Care Insurance

Organized by: Advisory Group on Health Care Insurance
Venue: The Ramada, Gurugram **Date:** 13th December, 2019

Welcome address

The seminar got off to a start with the welcome address by **Mr. Vishwanath Mahendra**. Mr. Mahendra highlighted the usefulness of simplified products and processes and concluded his welcome address by setting the agenda for the conference where he gave a brief overview about the sessions to be presented throughout the day along with the brief introduction of respective speakers.

Keynote address

Mr. Liyaquat Khan gave the keynote address where he spoke about the difference between the current issues seminar and capacity building seminar. He took audience back in the history where young actuaries present in seminar got a good understanding of how senior actuaries many years back decided to create a professional body (and professional councils within that body) that would in future govern the actuaries in India. He concluded his address by placing the importance of ethical responsibilities that actuaries should hold and abide by to serve the profession.

Session: PMJAY -AB: A roadmap to universal health insurance in India?

Speaker: Dr. Rana Mehta

Session Highlights

A whole new ecosystem will come into place that will shift influence from provider to the payer and data analytics expert.

The session kick started with a question on what is the best healthcare system in the world. Dr. Mehta pointed that any successful healthcare system is successful when it provides 3 accesses - Financial, Geographical and Technical. He related these 3 accesses with PMJAY and mentioned what has worked and what not so far. Unscientific pricing, lack of awareness and political reasons (some states not opting for this) are the current areas where PMJAY looked a little lack luster. He mentioned that despite these limitations, there is a scope that PMJAY would lead to volume growth to the tune of covering more than 3.5cr individuals who currently do not have access to healthcare. The current coverage of PMJAAY was explained where Dr. Mehta mentioned that 17 states/UTs adopted it on trust mode, 9 on insurance mode while 6 took it in a hybrid mode.

17-19 February 2020
21st Global Conference of Actuaries (GCA) & AGFA
"Theme: Actuaries: Striving for excellence, creating sustainable future"
Venue: Renaissance Mumbai Convention Centre Hotel, Mumbai
Indian Actuarial Profession
Serving the Cause of Public Interest

Although PMJAY is offering higher tariffs for NABH accredited hospitals the geographical expansion looks a bit far from reaching where it should be. Tier 2/3 geographies offer avenues of growth. Data is pivotal for such a big scheme to be successful. NHA is capturing the data and going forward this data would be pivotal in deep analytics and will eventually lead to rise of many health tech firms. There is a need for integration of 2 arms of PMJAY (H&WC and PMJAY) as early detection of diseases would lead to fall in mortality rate significantly. He mentioned that any universal health care scheme takes a long time to be successful. PMJAY is a right step towards a universal health coverage and there is a need to establish direct links between theory and practicality.

According to Dr. Mehta, digital health will play a significant role in patient life cycle - todays data lacks deep insights but the future is prone to adopt digital data. He concluded his session by referencing about a paper published by PwC (Health system for New India - Building blocks) for Niti Ayog which is available publicly to read. He said that healthcare is a part of political agenda so it is good and more activity is expected. This would lead in evolution of new stakeholders (e.g. new tech companies) and new influencers (innovative ways by insurers in incentivizing the insured life) and all of this would lead to advancement in gathering and collection of digital data.

Session: Fraud Controls in PMJAY -AB Scheme

Speaker: Ms. Parul Naib

Session Highlights

It is imperative to understand what Fraud is and how to differentiate between Fraud vs. Abuse vs. Waste vs. Error

The session was initiated with an introduction about coverage in PMJAY and what types of frauds have been witnessed. Ms. Naib clubbed the types of frauds in 4 categories - Beneficiary, Provider, PMAM/ CSC and Payer/Implementing Support Agency. For each of the above 4 categories, fraud was differentiated with Abuse, Waste and Error. She defined fraud as intentional, illegal and rule breaking. Each of these were explained through relevant examples like non eligible members taking treatment with eligible members' authorisation, patient not admitted but benefit claimed (both constitutes examples of fraud). Abuse was defined as something which is not rule breaking but rule bending (e.g. claiming higher package rates), which is not illegal but inconsistent with medical, fiscal and business practices. Waste and Error were defined as completely unintentional but waste and error differed in the way resources were utilized - waste implies inadvertent use of resource (e.g. prescribing high cost medicines) while error is simply a mistake that happened during the process of healthcare delivery (e.g. prescribing wrong medicine).

Ms. Naib then explained the process flow under PMJAY. She stated that the process involves Verification, Enrolment, Empanelment and Treatment and responses to some key questions are generally administered to identify the fraud under each of these process flows. She then presented the Data management and analytics layer of PMJAY. Machine learning algorithms are built that continue to evolve. The risk modelling / analytics at PMJAY is done through 4 phase approach: Descriptive analytics - learnings from past; Diagnostic analytics - reasoning for current scenario; Predictive analytics - using past to give an insight into future; Prescriptive analytics- action steps to be taken. This leads to Risk detection and Analytics Report where advanced reports are created on procedures, hospitals, treatments etc. and all such parameters are studies through a multivariate model to build inferences that helps in enabling a sound understanding about frauds.

She concluded her session by sharing a perspective of key lessons learnt. She stated that it is imperative that continuously evolving tools and techniques are helping in identification and reduction of frauds but the institutional responsibility lies with the public agency that administers the scheme. Due diligence in identification of rightful beneficiary is necessary and timely implementation of deterrence measures (penalties etc.) is the key that requires consistent and strong administrative commitment.

Session: IRDAI's Regulatory Sandbox initiative

Speakers: Mr. Randip Singh Jagpal and Ms. Raunak Jha

Session Highlights

The objective of this initiative is focused upon development of insurance sector by facilitating innovation sector whilst at the same time protecting

the interests of policyholders

Ms. Jha moderated the session and introduced Mr. Jagpal who joined the seminar through a video conference.

Mr. Jagpal provided an excellent overview of the work done on regulatory sandbox. His session focused on sandbox regulations, operational guidelines and next steps. He initiated the talk by first explaining the objective of this initiative and then he spoke in depth about type of applicants, categories of applications, conditions for grant of permission and validity of these applications. Upon speaking about the background of this initiative, Mr. Jagpal touched upon the operational guidelines that involved identification of potential risks, periodic monitoring by Board of the applicant, upfront disclosure and prior consent of the customer, size of the proposal and accounting treatment of this initiative among many other points. He also highlighted the fact that there will be no relaxation related to customer privacy / data protection, KYC/AML/CFT, statutory restrictions, protections of policyholder and grievances.

Mr. Jagpal completed his presentation by detailing about the nature of applications that the authority has received from various stakeholders. He stated that a total of 173 applications were received which were distributed across products, distribution, underwriting, policy servicing and claims servicing. The distribution of these 173 applications is - Life (29), General (109), SAHI (9), Intermediaries (18) and InsurTech (14).

Mr. Jagpal then addressed Q&A. He first answered the questions from the moderator which were focused towards comparison of this sandbox with other sandbox initiatives across the globe. He answered that the authority has been in touch with other authorities (e.g. UK) to get the best insights and understanding of what those international bodies have done. On the question pointed towards limiting the number of customers / size of premiums under the sandbox initiatives, he mentioned that there were two important aspects considered - what is a decent size and what came out of discussions from various stakeholders. He stated that the size should not be so large that it impacts the stability of the entity. A process of consultation with the industry was also done and based on the responses, the size was decided. On a question being asked about authority's response on the number of applications received and quality of applications, he responded that this number certainly better than expectations. Upon being asked about the timelines on the results, he said that in consultation with all the relevant departments the progress so far is good and the authority is working within the established timelines.

Mr. Jagpal concluded his session by responding to questions from audience. He mentioned that the young professionals should not be in hurry and work on innovations with the open mind and open eyes. On professional indemnity part arising out of sandbox experiments, a broad regulatory framework has been shared by IRDAI but any liability would fall on the entity undertaking the experiment. IRDAI would not be a party to the liability arising out of these experiments.

Session: Data Science in Health Insurance - Need of the hour

Speakers: Mr. Sumit Ramani and Mr. Rajasekhar Maddireddy

Session Highlights

AI is the fourth industrial revolution

Mr. Ramani started the session by focusing on 2 key areas: What is data science and Why is it a need of the hour? He said that data science is where meaningful insights can be drawn using domain, programming, mathematical and statistical expertise and stated that AI is a tool to implement data science. He expanded that AI is any technique that enables computers to mimic human behaviour and machine learning is one such AI technique which uses statistical methods to enable machines to improve with experience. Machine learning

encompasses deep learning that makes computation of multi-layer neural networks feasible. Before handling over the discussion to Mr. Raj, Mr. Ramani highlighted that World Economic Forum mentioned that Fourth Industrial Revolution is disrupting every industry in every country. He concluded by saying that emergence of Artificial Intelligence (AI) has played a key part in ushering in the Fourth Industrial Revolution.

Mr. Raj started his session by stating how data is perceived in western world and what role AI is playing in this. He segmented the usage of AI in customer analysis, customer engagement, claims management and predicting the emergency visits. Globally companies have started creating universal health scores by collating health and lifestyle data. This has led in prediction of risk of preventable lifestyle diseases like Cardiovascular, COPD, Diabetes etc. Citing example of China based ZhongAn insurance, he mentioned that the company has built AI bots for customer engagements and adoption is now as high as 97%. AI has also been instrumental for some companies in efficient claims management where Machine Learning (ML) algorithms have helped in detecting patterns related to Frauds and wastes.

Mr. Raj concluded his session by highlighting the usage of AI and ML in converting unstructured data into structured data. He cited examples of sample medical records and doctors' prescriptions as unstructured data and showed how fraud detection was possible when AI and ML techniques in form of image classification and image fingerprinting were used to convert such unstructured data into readable structured data and formats.

Session: Practical Aspects of Designing a Morbidity Table

Speakers: Mr. Abhijit Pal, Mr. Sumit Ramani and Mr. Anshul Mittal

Session Highlights

A morbidity table creation - practically

This working session started with Mr. Pal giving an overview about morbidity tables. The audience were divided in 5 groups where 1 senior actuary was present in each group to assist the students in understanding how a morbidity table is created. The technical aspects covered were knowledge about morbidity, exposed to risk, graduation/smoothness of incidence rates, practical considerations and example of multifactor analysis of incidence rates.

Audience participated in an open discussion by highlighting the rating factors that would go into designing a morbidity table. During this discussion, it was emphasized that underlying data in designing a morbidity table should reflect the homogeneous lives for which the new morbidity table would be used.

Mr. Mittal then took-over the session and started the practical aspects of designing the morbidity table. He used an excel based Case Study on morbidity table to explain students how it works explaining all the steps from start to end on a sample data set being shared with everyone and following step by step process was performed:

1. Calculation of policy tenure
2. Calculation of risk period
3. Mapping of claims with policy
4. Formula used to find initial morbidity rate
5. Credibility check
6. Curve for smoothening to arrive at final smoothed rates

Mr Pal then concluded the session by explaining about various Graduation techniques and also explained Univariate/ Bivariate Analysis of morbidity rates using a small case study on two factor data sample was also performed. He separated the bi-variate relativities to get individual factor relativity so as to capture the independent effect of each factor.

Mr. Raj started his session by stating how data is perceived in western world and what role AI is playing in this. He segmented the usage of AI in customer analysis,

customer engagement, claims management and predicting the emergency visits. Globally companies have started creating universal health scores by collating health and lifestyle data. This has led in prediction of risk of preventable lifestyle diseases like Cardiovascular, COPD, Diabetes etc. Citing example of China based ZhongAn insurance, he mentioned that the company has built AI bots for customer engagements and adoption is now as high as 97%. AI has also been instrumental for some companies in efficient claims management where Machine Learning (ML) algorithms have helped in detecting patterns related to Frauds and wastes.

Mr. Raj concluded his session by highlighting the usage of AI and ML in converting unstructured data into structured data. He cited examples of sample medical records and doctors' prescriptions as unstructured data and showed how fraud detection was possible when AI and ML techniques in form of image classification and image fingerprinting were used to convert such unstructured data into readable structured data and formats.

Written by

Mr. Ankit Mittal

ankitmittal.mittalankit@gmail.com

"Mr. Ankit Mittal is a Vice President (Actuarial & Risk Analytics) at Policybazaar.com."

CALL FOR ARTICLES

Institute of Actuaries of India

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://actuariesindia.org.in/subMenu.aspx?id=106&val=submit_article

A Brief Introduction to US GAAP Long Duration Targeted Improvements (LDTI)

Summary

Long-duration Targeted improvements (LDTI) are targeted improvements to the accounting for long duration insurance contracts. The improvements are contained in the standard ASU 2018-12 issued by the US Financial Accounting Standards Board (FASB) in August 2012. The targeted improvements are aimed at existing US GAAP standards applicable to such contracts.

This article outlines the main features of existing US GAAP standards for life insurance contracts and the targeted improvements to these standards.

When is US GAAP accounting needed?

In order to obtain a listing on the New York Stock Exchange, the Securities and Exchange Committee (SEC) (listing regulator in the US) requires companies to prepare accounts in accordance with the financial accounting standards set by the US Financial Accounting Standards Board (FASB). These financial standards are known as the US generally accepted accounting standards (US GAAP).

The objective of the standards is to provide a realistic picture of company earnings and to facilitate performance comparison of companies by having uniform accounting. Stable emergence of profits is also an objective of US GAAP accounting regulations.

Existing US GAAP standards for insurance

The main standards for calculation of reserves under US GAAP are FAS 60, FAS97 and FAS 120.

FAS 60

FAS60 (Accounting and Reporting by Insurance Enterprises) was issued in 1982 and covers accounting for nonparticipating traditional fixed premium policies. Premiums are paid throughout the duration of the contract.

Some features of FAS 60 are:

- Net premium reserving is used
- Due to matching of costs and revenues over the life of the policy, profits emerge as a fixed percentage of gross premium
- For a tranche of business, reserve assumptions and discount rate are locked in at inception and kept constant for all future valuations. Assumptions are best estimate but include a provision for adverse deviation (PAD). Although this reserving approach provides stability and predictability of reserve movements for FAS60 contracts from year to year, due to locking in of assumptions there is a risk of insufficient reserves being held for the future. Due to this, loss recognition testing in is needed on portfolio basis.

  Loss recognition testing or 'LRT' is an annual exercise performed to check the adequacy of reserves, which along with future premiums should suffice to meet future benefits, expenses and support intangible assets (such as DAC). LRT is performed prospectively to an aggregate block of existing business.
- Discount rate is based on expected asset yield
- Certain acquisition costs are capitalized as an intangible asset (Deferred Acquisition Cost or DAC). DAC is amortised as a level percentage of gross premiums using the same assumptions as reserves and subject to recoverability test

FAS 97

FAS 97 (Accounting & Reporting by Insurance Enterprises for Certain Long-Duration Contracts and for Realized Gains & Losses from the Sale of Investments) was effective from year 1987. It contains accounting for following contract types:

Limited Pay Contracts:

For these contracts, the coverage extends beyond the premium payment period.

Reserving methodology is as for FAS60 but also requires Deferred Profit Liability (DPL) which is amortized to income over the duration of the contract in a constant relationship with insurance in force (for life insurance policies) or with expected future benefit payments (for annuities). Any excess of gross premium over the net premium is deferred as a liability under FAS 97 (i.e., establish a DPL). The net premium is defined as the portion of the gross premium required to provide for all benefits and expenses.

17-19 February 2020
21st Global Conference of Actuaries (GCA) & AGFA
"Theme: Actuaries: Striving for excellence, creating sustainable future"
Venue: Renaissance Mumbai Convention Centre Hotel, Mumbai

Universal Life-Type products:

Fees assessed and/or benefits are not fixed or guaranteed. Policyholders have significant discretion over the amount and timing of premiums.

DAC is amortized at a constant rate based on the present value of Estimated Gross profits (EGP), where EGP is the sum of mortality and expense margins and surrender charges, based on current updated assumptions and trued up for actual experience.

Reserve comprises the account value and Unearned Revenue (UREV) liability for front-end fees, which is amortized like DAC.

Investment Contracts:

These contracts carry no significant insurance risk.

DAC amortization may be similar to that of UL type contracts or use other approaches, depending on the nature of contract.

FAS 120

FAS 120 (Accounting and Reporting by Mutual Life Insurance Enterprises and by Insurance Enterprises for Certain Long-Duration Participating Contracts) was effective from year 1995.

This standard covers participating contracts, particularly those sold by mutual insurance companies. Reserving approach is based on net premium reserves with locked-in assumptions based on non-forfeiture values or dividend fund assumptions.

DAC is amortized over Estimated Gross Margins (EGMs), similar to EGPs in FAS97.

Smoothing of profits under US GAAP - intangible assets and liabilities

Insurance contracts do not display smooth emergence of profits due to initial acquisition expenses and non-uniform incidence of charges under the contracts.

In order to achieve stable emergence of profits under US GAAP, intangible assets and liabilities are created to offset initial expenses/non-uniform charges and to enable matching of revenues and expenses over time.

To prevent front ending of profits, excess premiums for limited pay products are deferred as a liability (DPL or deferred profit liability). Similarly, initial expenses are capitalized as an asset (DAC). Similarly, front-end loads on UL-type contracts are meant to compensate the insurer for services to be performed over future periods and so should be deferred and amortized in proportion to gross profits, parallel to the amortization of DAC. These constitute the unearned revenue liability (UREV).

Why is LDTI being introduced?

As per ASU 2018-12, the objective is:

"To improve, simplify and enhance the financial reporting of long-duration contracts, therefore it will provide users with more useful information about the amount, timing and uncertainty of cash flows."

The effective date of the new standard is January 1, 2022.

What products will be affected?

Insurance companies that issue long-term contracts such as life insurance (particularly universal life contracts, whole of life, term life), disability income, long term care and payout annuities.

Proposed changes under LDTI

The changes are in the following areas:

1. FAS 60 liability for Future Policyholder Benefits (FPB)
2. Market Risk Benefits (MRB)
3. Deferred Acquisition Costs (DAC)
4. Extensive disclosures needed

FAS 60 liability for Future Policyholder Benefits (FPB)

Cashflows

- Cashflow assumptions are not locked-in and updated at least annually with documentation of review. Changes are recognized in net income.

- Need to store historical data by tranche and at the appropriate level of granularity (as for IFRS 17) as this is used to recalculate the net premium when actual experience is different from expected, or assumptions are updated

- No requirement of loss recognition testing as assumptions are not locked in

Discount rate

- Discount rate is based on high quality fixed income yields (instead of expected asset yield) and is updated quarterly or annually. Changes flow

17-19 February 2020
21st Global Conference of Actuaries (GCA) & AGFA
"Theme: Actuaries: Striving for excellence, creating sustainable future"
Venue: Renaissance Mumbai Convention Centre Hotel, Mumbai
Indian Actuarial Profession
Serving the Cause of Public Interest

through to Other Comprehensive Income (OCI).

Market Risk Benefits (MRB)

As per ASU 2018 - 12, a Market Risk Benefit is a contract or benefit feature that both protects the contract holder's account balance from, and exposes the insurer to, other-than nominal capital market risk.

A nominal risk is a risk of insignificant amount that has a remote probability of occurring. The risk must be 'other-than nominal'.

MRBs are associated with market-based options or guarantees offered and affect the following product categories:

- Variable Annuities, Unit-linked products, Variable universal life
- GMXX's (GMDB, GMIB, GMAB etc) and deferred annuity guarantees featuring interest guarantees

Market risk benefits may be an asset or liability and are measured at fair value. A contract may contain multiple MRBs which are valued together.

However, the following are reported separately:

(1) the carrying amount of market risk benefits in the balance sheet

(2) the change in fair value related to market risk benefits in net income, and

(3) the change in instrument-specific credit risk in OCI

Currently:

- Embedded derivatives are reported under ASC 815
- Insurance Contracts are reported under ASC 944 (SOP 03-1)

It is proposed to report the above and GMXX's under MRBs.

Deferred Acquisition Costs (DAC)

Under existing US GAAP rules, DAC is amortised in several different ways based on income recognition under a contract. For FAS 60 products, DAC is amortised as a constant percentage of gross premium while for FAS 97 products, amortization is based on a percentage of estimated gross profits (EGPs). The percentage varies as assumptions are retrospectively unlocked. For FAS 120 products, DAC amortization is like that for FAS 97 except that it is based on gross margins.

Under LDTI, amortization of DAC has been simplified and is on a constant level basis over a contract's life and in proportion to the amount of insurance in force. Revisions to the amortization are prospective.

DAC does not accrue interest and DAC amortization may be done on grouped basis.

Conclusion

In summary, existing US GAAP standards would be impacted by LDTI in the areas indicated in the diagram below:

IMPACT OF LDTI ON EXISTING US GAAP STANDARDS

FAS 60	FAS 97	FAS 120
• Liability for future policyholder benefits • Elimination of Loss Recognition Testing • DAC amortization • Additional disclosures	• DAC Amortisation • MRB • Additional disclosures	• DAC Amortisation • Additional disclosures

The improvements that LDTI would usher in are broadly as follows:

- Improving reserve estimates and adequacy by updating assumptions
- Consistently evaluating and reporting market risks across all product features involving market-based options and guarantees associated with deposit (or account balance) contracts
- Bring about uniformity in DAC amortization and thereby help to smooth profits
- Detailed disclosures

All the above would promote simplified, transparent and improved reporting for long-duration insurance contracts.

Reference: *ASU 2018-12 (Targeted Improvements to the Accounting for Long-Duration Contracts)*

Written by

Ms. Arundhati Ghoshal

arundhati.g3@gmail.com

"Ms. Arundhati Ghoshal is a life actuary and has worked across life insurance and consulting both in India and in the UK."

Insurance Frauds In India

Introduction

Frauds are a universal phenomenon. Insurance frauds are causing heavy losses to the insurance sector across the world. The problem is compounded by the fact that many frauds go unreported, so there is no clear cut data about the real extent of frauds. Motor and health insurance sectors lead the pack when it comes to fraudulent claims. Western countries have started setting up specialist fraud investigation units and a common database for accessing all fraud related information in attempts to pre-empt the occurrence of frauds.

Preventing frauds is a much better option than detecting it. In India, the regulator (IRDA) has taken some concrete steps to address the issue of frauds. But the issue is not as easy as it seems. It is essential that all stakeholders involved are made aware of the ill-effects of fraud so that the fight against fraudulent claims is successful. The solution lies in using technology and adopting world class best practices to combat fraud.

Insurance frauds are not limited to just one class of insurance. Opportunists failing to disclose their claims history when applying for cover can be an example. Exaggeration of claims by adding extra items to a genuine claim to match the limits of sum insured is another kind of fraud. In the West, there are highly organized 'crash for cash' crime rings that contrive often dangerous road crashes and claim for phantom passengers and fictitious injuries.

Insurance fraud may be committed by the policyholder or a third party claimant against an insurance policy and may be aided and abetted by so-called professionals, including claims management companies. Insurance fraud is a global economic problem - it threatens the financial strength of insurers affecting their capital and has an adverse impact on their survival.

How do we define Fraud?

Fraud is broadly defined as – 'All the multifarious means which human ingenuity can devise, which are resorted to by one individual to get an advantage over another by false representation'. Fraud takes place when greed co-exists with the possibility of deception.

As per IAIS (International Association of Insurance Supervisors), fraud in insurance is defined as an act or omission intended to gain dishonest advantage for the fraudster or for the purpose of other parties. This may for example be achieved by

- Misappropriation of assets and/or insider trading
- Deliberate misrepresentation, suppression or non-disclosure of one or more material facts relevant to a financial decision or transaction.
- Abuse of responsibility, a position of trust or a fiduciary relationship.

Categories of Fraud

a. Internal fraud : Fraud against the insurer by an employee, a manager or a board member on his/her own or in collusion with others who are either internal or external to the insurer.

b. Policyholder fraud and claims fraud: Fraud against the insurer in the purchase and/or execution of an insurance product by obtaining wrongful coverage or payment.

c. Intermediary fraud: Fraud by intermediaries against the insurer or policyholders (Broker/agent).

Mis-selling of insurance policies is rampant in India. This is also a type of fraud. It is important to realize that we need to look at fraud management from all angles. Information asymmetry between the insurer and the insured also leads to greater scope for occurrence of frauds.

Approaches to deter Fraud

The theoretical literature on insurance fraud has identified two approaches of deterrence in this regard - deterrence via contract design and that by auditing. These two approaches confront insurance fraud that may stem from the two asymmetric information corollaries: adverse selection and moral hazard. Moral hazard is classified as – ex ante and ex post. Adverse selection takes place at the application stage (pre-contractual) while moral hazard occurs when the insurance contract has already been signed (post-

17-19 February 2020
21st Global Conference of Actuaries (GCA) & AGFA
"Theme: Actuaries: Striving for excellence, creating sustainable future"
Venue: Renaissance Mumbai Convention Centre Hotel, Mumbai
Indian Actuarial Profession
Serving the Cause of Public Interest

contractual).

To sum up

Adverse effect on solvency margin and underwriting profits are the most possible fallouts of fraudulent claims. As insurance frauds continue to increase, insurers are realizing the need for counter fraud procedures and access to legal services. Fraudsters are becoming more and more tech savvy. The growing incidences of cybercrimes are a pointer to this fact.

Experts say that fraud is likely to occur where there is opportunity, motive and people whose integrity is under doubt. Therefore fraud management is all about balancing the costs of prevention, identification, investigation and mitigation. This is the reason data analytics is proving to be useful in fighting fraud.

Caselet: Insurance frauds in Nigeria

Low level of awareness of insurance by the general public in Nigeria has led to insurers delaying the claims under the pretext of checking frauds. Insurance companies do everything to frustrate the insured from collecting claims. At organizational level, no single Nigerian insurance company has a designated staff for detecting and preventing fraud. Those at the top echelon of the regulatory body have the technical skill to appreciate the magnitude of the threat; they do not have competent field workers to execute their mandate.

In Nigeria, the fraudulent claimants inflate genuine claims to cheat insurance companies. Other methods include fictitious claims through submission of fake documents and arson with active connivance of service providers such as motor mechanics, lawyers and medical personnel. The former form 80% while the latter accounts for remaining 20%. Collusion of fraudsters with members of staff of the insurance companies is also a distinct possibility. Employees who are not paid adequately in insurance companies in Nigeria resort to fraud to make a fast buck.

References

1. "Fraud Risk Management - A guide to good practice" - published by Chartered Institute of Management Accountant, 2008.
2. Presentation by Mehul Kapadia, Mastek : Workshop on Controlling Fraud and Abuse - organized by Insurance Institute of India, Feb 2012.
3. Presentation by Jagbir Sodhi, Swiss Re - "Underwriting - Role, Challenges & Solutions", 23rd Feb 2012, Insurance Institute of India.
4. Presentation by Alam Singh, Milliman India Private Limited, "Simplifying claims management": Workshop organized by Insurance Institute of India, 24th Feb 2012.
5. http://www.ibisworldwide.com/news/insurers-struggle-to-fight-fake-claims-m.aspx
6. http://www.business-standard.com/article/finance/irda-hikes-third-party-motor-premium-rates-by-5-20-112032800081_1.html
7. Rodney L Crawford, Thomas R Weirich (2011), "Fraud guidance for corporate counsel - reviewing financial statements and reports", Journal of Financial Crime, Vol. 18, Iss: 4, pp.347-360.

Written by

Mr. Venkatesh Ganapathy

gvenkatesh69@gmail.com

"Mr. Venkatesh Ganapathy is currently associated with Presidency Business School as a faculty member."

Self Driving Cars and Insurance

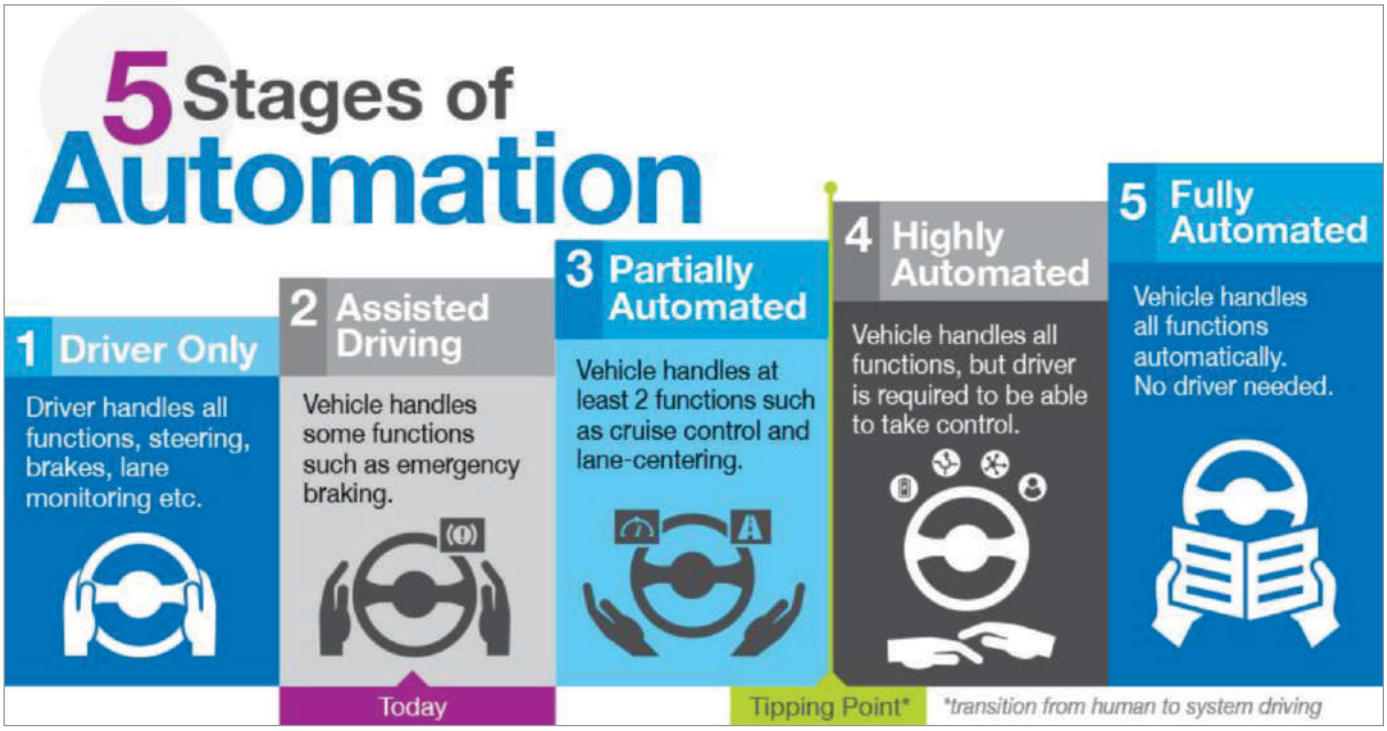
An Introduction - Self Driving Cars

With the world's constant technological advancements in the 21st century, which has made automations and robotics commonly used jargons; self-driving cars, a product of such advancement, can be considered as an epitome of the innovation drive in our era. It is anticipated that self-driving cars will be able to decrease accidents by a whopping 90%, resulting in safer roads for both: plying vehicles and pedestrians. This paper aims to describe the effects of self-driving cars on insurance sector. To understand the effects of self-driving or driverless cars on Auto Insurance Industry, let's first understand what a self-driving car is.

There is some inconsistency in the terminology used in the self-driving car industry. Various organizations have proposed to define an accurate and consistent vocabulary.

PC Magazine defines a self-driving car as "A computer-controlled car that drives itself". The Union of Concerned Scientists states that self-driving cars are "cars or trucks in which human drivers are never required to take control to safely operate the vehicle. Also known as "autonomous" or "driverless" cars, they combine sensors and software to control, navigate, and drive the vehicle.

A classification system based on six different levels (ranging from fully manual to fully automated systems) was published in 2014 by SAE International, an automotive standardization body, as J3016, Taxonomy and Definitions for Terms Related to On-Road Motor Vehicle Automated Driving Systems. Although very loosely related, this classification system is based on the amount of driver intervention and attentiveness required, rather than the vehicle capabilities.



Self-driving cars are in the near future, and data shows that more people are beginning to accept the prospect of autonomous vehicles. A study from Capgemini found that 30% of respondents said they would prefer to ride in a self-driving car versus a traditional car over the next year, and by 2029, 63% would prefer to ride in an autonomous vehicle.

In the United States alone, there are nearly **6.5 million car accidents every year**, according to the Insurance

17-19 February 2020
21st Global Conference of Actuaries (GCA) & AGFA
"Theme: Actuaries: Striving for excellence, creating sustainable future"
Venue: Renaissance Mumbai Convention Centre Hotel, Mumbai
Indian Actuarial Profession
Serving the Cause of Public Interest

Information Institute (III). Common crash factors, like distracted driving, speeding and driving under the influence could be essentially eliminated if more people rode in autonomous vehicles. **A survey by InsuranceQuotes found that 73% of consumers think a texting driver is more dangerous than a self-driving vehicle.**

Advantages and Disadvantages

One of the main reasons behind the development of driverless vehicles is the potential to significantly reduce the number of road traffic accidents, some of which can be fatal. Human error is a natural part of life, but when this occurs behind the wheel of a car, it can lead to catastrophic consequences - consequences which driverless vehicles are designed to avoid.

So why haven't driverless vehicles hit the roads already? What's stopping self-driving cars from gaining mass market approval? Although driverless vehicles present a wealth of new opportunities and advantages, there are numerous disadvantages behind the use of these vehicles, including the high costs involved.

Advantages

- Safety:
  - Driving safety experts predict that once driverless technology has been fully developed, traffic collisions, caused by human error, such as delayed reaction time, tailgating, rubbernecking, and other forms of distracted or aggressive driving should be substantially reduced. Consulting firm McKinsey & Company estimated that widespread use of autonomous vehicles could "**eliminate 90% of all auto accidents in the United States**, prevent up to US$190 billion in damages and health-costs annually and save thousands of lives".
- Traffic:
  - Additional advantages could include higher speed limits; smoother rides; and increased roadway capacity; and minimized traffic congestion, due to decreased need for safety gaps and higher speeds
- Other Effects:
  - Vehicle automation can improve fuel economy of the car by optimizing the drive cycle. Reduced traffic congestion and the improvements in traffic flow due to widespread use of automated cars will translate into higher fuel efficiency.
  - Manually driven vehicles are reported to be used only 4-5% of the time, and being parked and unused for the remaining 95-96% of the time. **Autonomous taxis could, on the other hand, be used continuously after it has reached its destination.** This could dramatically reduce the need for parking space.
  - By reducing the labor and other costs of mobility as a service, automated cars could reduce the number of cars that are individually owned, replaced by taxi/pooling and other car-sharing services.

Disadvantages

- Artificial Intelligence is still not able to function properly in chaotic inner-city environments.
- A car's computer could potentially be compromised, as could a communication system between cars.
- Susceptibility of the car's sensing and navigation systems to different types of weather (such as snow) or deliberate interference, including jamming and spoofing.
- Avoidance of large animals requires recognition and tracking, and Volvo found that software suited to caribou, deer, and elk was ineffective with kangaroos.
- Autonomous cars may require very high-quality specialized maps to operate properly. Where these maps may be out of date, they would need to be able to fall back to reasonable behaviors.
- Employment - Companies working on the technology have an increasing recruitment problem in that the available talent pool has not grown with demand.

Impact on insurance

Not only will autonomous vehicles have a major impact on drivers, they will also have an even greater impact on insurance providers. Until this point, insurance companies have made their money by selling policies and raising drivers' premiums after they have a collision or traffic violation. Because self-driving cars will eliminate much of the risk drivers face today, that will dramatically impact the premiums that insurance companies give out.

According to a study by insurance firm Accenture and the Stevens Institute of Technology in Hoboken, N.J., more than $225 billion insurance industry will see traditional premiums drop by **$25 billion by 2035** and by **$41 billion by 2050**. That's a nearly **20% loss over the next 30 years**, with any offsetting gains coming only in theory.

Some aspects of insurance will be impacted as autonomous cars become the norm. There will still be a need for liability coverage, but over time the coverage could change, as manufacturers and suppliers and possibly even municipalities are called upon to take responsibility for what went wrong.

Coverage for physical damage due to a crash and for losses not caused by crashes but by wind, floods and other natural elements and by theft (comprehensive coverage) is less likely to change but may become cheaper if the potentially higher costs to repair or replace damaged vehicles is more than offset by the lower accident frequency rate.

The number of vehicle-related workers compensation claims should drop as will the share of healthcare and disability insurance costs related to auto accidents.

Underwriting:

Initially, many of the traditional underwriting criteria, such as the number and kind of accidents an applicant has had, the miles he or she expects to drive and where the car is garaged, will still apply, but the **make, model and style of car may assume a greater importance**. The implications of where a car is garaged and driven might be different if there are areas set aside, such as dedicated lanes, for automated driving.

Vehicles will be equipped with complex sensors that can monitor and record vehicle activity. This data will be more reliable than human-reported or human-collected information for assessing risk, pricing auto insurance, managing claims and detecting fraud.

During the transition to wholly autonomous driving, **insurers may try to rely more on telematics devices that monitor driver activity**. Usage-based insurance (UBI) policies, which depend on data about the driver's behavior submitted by an electronic device in the driver's car, have attracted a smaller than expected percentage of the driving population, possibly because people do not want to be monitored. **Approximately**

70 percent of all auto insurance carriers are expected to use telematics UBI by 2020.

Liability:

As cars become increasingly automated the onus might be on the **manufacturer** to prove it was not responsible for what happened in the event of a crash. As automated vehicles shift liability toward vehicle manufacturers and technology providers, there will be more product liability litigation. The liability issue may evolve so that lawsuit concerns do not drive manufacturers and their suppliers out of business.

Repair costs:

While the number of accidents is expected to drop significantly as more crash avoidance features are incorporated into vehicles, the cost of replacing damaged parts is likely to increase because of the complexity of the components. It is not yet clear whether the reduction in the frequency of crashes will lead to a reduction in the cost of crashes overall.

Automobile ownership:

It appears to be on the decline, and more people in urban areas are opting for public transportation and shared rides. Some people wonder whether when all vehicles are self-driving anyone will own a car. Cars may belong to a company, municipality or other group and may be parked away from the center of the community in a location from which they can be summoned by phone.

Additional risks:

The European Parliamentary Research Service identified risks that will emerge with the rollout of automated vehicles. These risks include software and network failure, programming choices, hacking and cybercrime, and failure to install or update software.

Conclusion

With all being said, self-driving cars are still at a nascent stage. This provides a large window to Auto Insurance Companies for building improved business models. The “big players” need to find ways to incorporate advanced technologies, like insurance for self-driving cars, in their product offerings. If not, emerging startups which are ready to experiment with the workflow and products, can easily put them out of the game.

From improving road safety and potentially saving thousands of lives annually, to enhancing mobility and reducing traffic congestion, automated vehicles could change transportation systems around the world.

The technology is evolving rapidly. With rapid change, comes risk. Everyone who use automated vehicles, whether they use the vehicles for personal or business purposes, **will expect appropriate insurance to be available**.

If involved in a collision, they will expect fair and quick compensation. The IBC recommends three major changes that would help make sure people injured in collisions with self-driving cars are compensated fairly and quickly:

- Insurance companies need to provide a single insurance policy that covers both driver negligence as well as the vehicle's automated technology. This would allow the automated vehicle's insurance company to compensate injured people if the vehicle caused a collision, regardless of whether the human operator was in control or the automated technology was in control at the time.
- There should be a data-sharing arrangement between vehicle manufacturers, vehicle owners, and insurers. This would help determine the cause of a collision, whether the vehicle was in manual or automated mode at the time, and how the vehicle operator was interacting with the automated technology.
- New federal vehicle safety standards for vehicle technology and cyber security should be developed.

However, we assume that fewer accidents means cheaper auto insurance for drivers who own a self-driving car. Self-driving cars and insurance costs lowering doesn't necessarily go together. One of the ways that insurance companies make money is by raising drivers' premiums after drivers get into an accident or receive a traffic violation. Because the rate of collisions and other violations will drop, insurance providers will need to make up for their losses.

Also, insurance providers can be expected to emphasize losses that aren't caused by collisions, such as weather damages and theft. Companies are also looking to create new types of insurance specific to autonomous vehicles, such as cybersecurity insurance, product liability insurance and public infrastructure insurance, which could come with steep premiums.

Provincial and federal governments and regulators, insurers and other stakeholders must work together to put in place appropriate auto insurance policies and supporting legislation as well as updated vehicle safety standards. With automated vehicles coming in the near future, the time to begin this work is now.

Self-driving cars are the natural extension of active safety and obviously something we should do.
- Elon Musk

Sources:
www.google.com, www.wikipedia.org, www.acko.com, www.economical.com, www.bankbazaar.com, www.iii.org

Written by

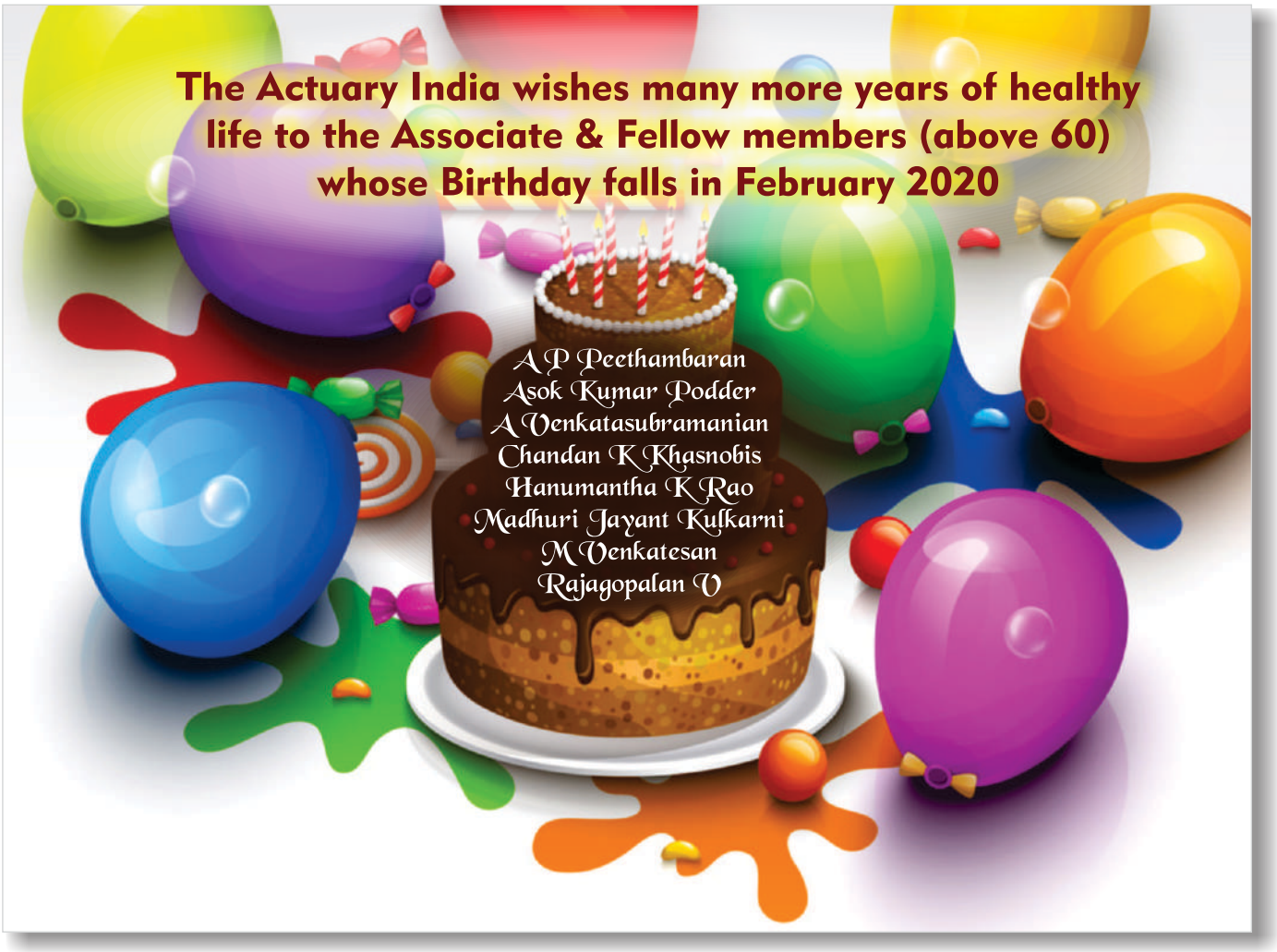
Mr. Udit Bansal

ubansal56@gmail.com

"Mr. Udit Bansal is an Actuarial Analyst at MERCER."

Reviewer : Mr. Supratim Narzary

supratimnarzary@gmail.com



Life Insurance Insights

Top 10 – news, views and trends

"Weighted new business premium collection by the private life insurers grew by 17.9%, year-on-year. SBI Life continues to be the market leader amongst private insurers with a growth of 21.6% in terms of weighted new business premiums and a market share of 21.3% amongst private life insurers.

The insurance industry witnessed launch of a range of non-linked products during the reporting period. The market remained dynamic with transactions and distribution activities. SBI Life has witnessed a series of stake sales by SBI (4.5%), KKR (0.55%) and Carlyle group (3.0%) respectively. Standard Life has divested 4.95% holding in HDFC Life. Max Life, PNB MetLife and Star Union Dai-ichi Life might also see dilution in holdings by some of minority stakeholders. The industry also saw various tie-ups between insurers and other financial institutions aiming to strengthen their digital presence and corporate agency arrangements.

On the regulatory front, the IRDAI has issued insurance advertisement guidelines for ensuring an effective and transparent sales communication. Following is a summary of the top ten key trends and developments that shaped the life insurance market in India during the period of September to November 2019."

10 Key appointments at LIC, IRDAI to appoint two full time members for actuarial and distribution positions

Mr. Mukesh Kumar Gupta and Mr. Raj Kumar have been appointed as the new managing directors of LIC. Prior to this, Mr. Gupta has served as the Executive Director for Personnel while Mr. Kumar held the position of Executive Director for International Operations for the insurer. Mr. Ashish Vohra has been reappointed to the role of Executive Director and the Chief Executive Officer at Reliance Nippon Life. Mr. Avdhesh Gupta has replaced Mr. Saisrinivas Dhulipala as the Appointed Actuary at Bajaj Allianz Life. He was previously working as the Principal Consultant in actuarial services with PricewaterhouseCoopers.

Further, the Government of India has initiated the process of appointing two full time members for actuarial and distribution positions at the IRDAI. The term for the current members is coming to an end in January 2020. The member - actuary shall be responsible for vetting insurance product proposals filed with the regulator while member - distribution shall be responsible for sales channels and distribution related regulations.

9 Bulk transactions among listed insurers

SBI Life experienced a series of bulk deals during the reporting period. SBI Life's promoter, State Bank of India has sold 4.5% stake worth approximately INR35.0 billion through an offer for sale. The sale has resulted in a fall of SBI's stake in the insurer from 62.1% to 57.6%. This transaction was targeted to achieve the minimum public shareholding of 25% as per SEBI regulations.

Private equity firm KKR has reportedly raised INR5.3 billion by offloading 0.55% stake in SBI Life through a block deal on stock exchanges, reducing its holding to 0.22% in the insurer. Private equity firm Carlyle group has divested nearly 3.0% stake in the insurer worth INR28.1 billion through a block trade to institutional investors in the open market.

UK's Standard Life has offloaded 4.95% stake in HDFC Life, reducing its total holding in the insurer to 14.73%. The promoter fetched INR57.5 billion from the sale of 100 million shares to institutional investors through open market transactions. As per norms by Securities and Exchange Board of India (SEBI), listed companies are required to ensure that atleast 25% shares are held by public and no more than 75% are held by promotors. This transaction marked promoter's fifth sale in the last two years, reducing the total promotors' holdings to nearly 69.5%.

8 IRDAI releases guidelines for insurance advertisements

As a part of its ongoing effort to reduce mis-selling and promote simplicity and transparency of insurance sales communications, the IRDAI has issued following key guidelines:

- Insurance advertisements highlighting benefits of

17-19 February 2020
21st Global Conference of Actuaries (GCA) & AGFA
"Theme: Actuaries: Striving for excellence, creating sustainable future"
Venue: Renaissance Mumbai Convention Centre Hotel, Mumbai

Guarantees should also prominently mention the underlying conditions (such as charges) under which these guarantees operate, wherever applicable.

- The actual asset mix of various underlying funds compared against the asset composition of approved asset pattern for unit-linked funds should be disclosed on the web portal of insurers at least on a half yearly basis.

- All the relevant assumptions along with significant limitations/criteria should be disclosed for any statement of fact, promise or projection.

- Advertisements aimed at inducing the public to purchase a product should necessarily include details of the nature and type of product, risks involved, exclusions and benefit illustrations. The illustrations provided should cover both 4% p.a. and 8% p.a. investment return scenario or such rates as stipulated by the IRDAI periodically.

- There should be no claim of ranking by the insurer, as regards to its position in the insurance market, based on any criteria like premium income, number of policies, claim settlements, etc.

- Any death claims paid ratio used in the advertisements should be based on annual figures only; reflecting the entire financial year and should be computed on number of policies basis. Further, the data for individual and group policies should not be clubbed together and advertisements for group products should only reflect group ratio and individual products should only reflect individual ratio.

7 IRDAI releases guidelines in respect of preparation of financial statements by life insurers

In a bid to enhance uniformity, comparability and fair representation of financial position, the IRDAI has issued following directions to be complied with while preparing the financial statements:

- The excess of Expenses of Management over the allowable limits should not be deducted while reporting the operating expenses under Schedule-3 and Revenue Account (Policyholders' Account). This excess amount should now be shown as income under Revenue Account as a separate sub-line item. In the Profit and Loss Account (Shareholders' Account), the excess should be reported as a separate sub-line item below 'expenses other than those directly related to insurance business'.

- Similar to the above, the contribution towards the remuneration of Managing Directors/Chief Executives/ Whole Time Directors over and above the specified limits allowed to be charged to the Policyholders' Account, should be shown as a separate line item in the Profit and Loss Account.

- Further, rewards and remuneration to agents, brokers and other intermediaries should be reported as a separate line item in Schedule 2 "Commission", below the line "Net Commission" in the financial statements.

6 Developments in the Distribution Landscape of India

The life insurance industry has witnessed further developments towards improving insurance penetration in the country, with insurers keen to enter into partnerships with payment banks and other financial service companies. Major updates are as follows:

- Bajaj Allianz Life has entered into a bancassurance agreement with Axis Bank.

- SBI Life has reportedly tied up with Repco Home Finance Ltd with an aim to reach customers in new geographies through latter's pan India network.

- HDFC Life along with its agency partner, iProspect, is collaborating with Google to target prospective customers using machine learning based automation in Google Ads.

- Aegon Life has entered into a corporate agency tie-up with Paytm.

- ICICI Prudential Life has teamed up with Airtel Payment bank to leverage its vast distribution network and digital reach to meet the insurance needs of its customers at affordable rates.

- IndiaFirst Life has entered into a strategic partnership with Spice Money for distribution and marketing of "Insurance Khata", a micro-insurance plan targeted at the informal sector.

- Canara HSBC OBC Life has partnered with IndianMoneyInsurance.com to meet the insurance needs of latter's customers.

- LIC has reportedly renewed its bancassurance agreement with Karnataka Vikas Grameen Bank.

- Bharti AXA Life has partnered with Bharti Airtel to offer insurance protection to latter's pre-paid subscribers with every pre-paid recharge of prescribed amount.

- PNB MetLife is reportedly planning to double its agency network by increasing the number of branches to about 200 in next two years' time.

17-19 February 2020
21st Global Conference of Actuaries (GCA) & AGFA
"Theme: Actuaries: Striving for excellence, creating sustainable future"
Venue: Renaissance Mumbai Convention Centre Hotel, Mumbai
Indian Actuarial Profession
Serving the Cause of Public Interest

5 Growth in IEV reported by listed life insurers

All the three listed life insurers have recorded an increase in their Indian Embedded Value (IEV) over the first six months of FY2020. SBI Life witnessed the highest year-on-year growth of 24.0% among the three insurers, followed by HDFC Life and ICICI Prudential Life which recorded growth of 22.8% and 17.8% respectively. The total IEV of these three insurers increased by 21.5% from INR555.4 billion at the end of Q2 FY2018-19 to INR674.9 billion at the end of Q2 FY2019-20. The details of reported IEV, profitability margin on new business and implied valuation multiples based on market capitalisations have been summarised in a table below.

4 Update on New Product launches

Indian life insurance industry has witnessed launch of few new products during the reporting period. Most of the new product launches were non-linked, thereby keeping up with the continued trend of emphasis on non-linked products in the insurers' propositions.

- Exide Life has launched Sampoorna Jeevan which provides life cover till 75 years or 100 years, along with five different bonus options to choose from.
- HDFC Life has launched Sanchay Par Advantage, which also comes with a cover till 100 years of age.
- ICICI Prudential Life has launched a term insurance plan - ICICI Pru Precious Life which is specifically designed to provide life cover to people with pre - existing medical conditions.
- HDFC Life has collaborated with Axis Mutual Fund to provide life cover with open ended retirement savings fund applicable under the iPlus SIP options with a tenure of atleast 3 years. The life cover starts 1 year after the first SIP instalment is paid.

Several reinstatements of existing products have also been witnessed during the reporting period due to recent changes in the product related regulations.

3 Mergers of Public Sector Banks may impact promoters' stake in life insurance companies

In August 2019, the Government of India announced consolidation of ten Public Sector Banks (PSBs) into four large banks. With block mergers on the way, PSBs are seeking to divest their stake in insurance companies to remain complaint with current IRDAI guidelines. Existing IRDAI norms do not allow one entity to be a promoter (entity holding more than 10% stake) of more than one insurance company in the same segment.

According to the merger plan, Union Bank will be merged with Andhra Bank and Cooperation Bank. At present, Union Bank holds 25% stake in Star Union Dai-ichi Life while Andhra bank holds 30% stake in IndiaFirst Life. Market reports indicate that Andhra Bank is looking to divest 20.5% stake in IndiaFirst Life with private equity firm, Warburg Pincus reportedly in talks with the bank to pick up its stake. This will increase the latter's stake in the insurer to 46.5%.

Promoters of PNB Metlife and Canara HSBC OBC Life - Punjab National Bank and Oriental Bank of Commerce hold 30% and 23% stake in the insurers respectively. With the amalgamation of Punjab National Bank, Oriental Bank of Commerce and United Bank of India into one entity, adhering to the existing guidelines may mean more potential stake sales in the months to come.

The mergers are expected to be completed by April 2020.

In the meantime, some of the reports also indicate that the IRDAI may be open to potentially relaxing the 10% stake holding cap but limiting bank's management control activity to only one insurer instead.

2 Update on potential transactions in life insurance industry

- Media reports suggest that Bank of India is looking to raise INR12 billion by offloading 27% stake in Star Union Dai-ichi Life. Reportedly, the stake sale is being undertaken to raise additional capital and reduce the bank's stake in the insurer down to nearly 2% from its existing holding of 28.96%. The transaction is expected to be completed by the end of the financial year.
- M Pallonji Group is reportedly planning to exit from PNB MetLife by offloading its entire 17.15% stake in the insurer. Media reports suggest that M Pallonji Group's total stake is likely to be valued at INR20-25 billion. Reportedly, the move is driven by delayed and uncertain listing plans in relation to PNB MetLife's intended IPO.
- Reports suggest that Hero Corp is eyeing a purchase of up to 10-15% stake in Max Financial Services Limited (MFSL) from Mr. Analjit Singh. MFSL is the holding company of Max Life. This transaction will enable Max Financial Services to deleverage its balance sheet

through a decrease in promoters' shareholding.

1 Private life insurers continue to exhibit growth in new business premium collections over the first eight months of FY2019-20

As per data released by the IRDAI, weighted new business premium collections (calculated as 100% of regular premium and 10% of single premium) for private life insurers amounted to INR294.7 billion during April to November 2019 as compared to INR249.9 billion for the same period previous year, recording a year-on-year growth of 17.9%. SBI Life retained its position as the largest private life insurer witnessing a growth of 21.6% by writing weighted new business premiums worth INR62.8 billion, compared to INR51.6 billion in the corresponding period in previous fiscal. In terms of growth, Future Generali Life and Kotak Life were the top performers, registering growth rates of more than 40%.

Disclosures by listed life insurers as at 30 September 2019

All figures are in INR billion

Metric	SBI Life	ICICI Prudential Life	HDFC Life
Indian Embedded Value *(A)*	246.9 (199.1)	226.8 (192.5)	201.2 (163.8)
Value of new business* (VNB) *(B)*	8.5 (6.4)	7.1 (5.9)	9.6 (6.1)
VNB Margin	18.1% (17.3%)	21.0% (17.5%)	27.5% (24.3%)
Market capitalisation *(C)* (based on share price as at 29 Nov 2019)	960.1 (511.6)	721.4 (479.1)	1,153.1 (788.6)
EV multiple = *C/A*	3.9x (2.6x)	3.2x (2.5x)	5.7x (4.8x)

Previous year figures mentioned in brackets
** Value of new business is for six months period from 1 April 2019 to 30 September 2019*

Written by

Mr. Vivek Jalan

vivek.jalan@willistowerswatson.com

"Mr. Vivek is a Managing Partner, Willis Towers Watson Actuarial Advisory LLP."

SBI General INSURANCE

SBI General Insurance Company Limited commenced its operations in the year 2010. We are a dynamic, rapidly growing and expanding company. In the company the Actuarial function is well recognized and their output appreciated. Hence, we are looking to expand our actuarial team to meet our rapidly growing technical requirements to support the company's successful growth. If you think you have the skills and drive to contribute to our successful growth, please send us your CV

We are currently inviting applications for multiple positions in Actuarial with experience in following areas:

Actuarial Analyst (Product Pricing)

Experience in areas like -

- indemnity health pricing (retail or group), rating structures,
- Drafting technical notes, filing experience
- GLM's and retail pricing
- New product pricing and filing experience
- Data work including specification, cleaning and preparation
- Portfolio monitoring experience
- Development and management of actuarial related inter-departmental processes

Actuarial Analyst (Reserving)

Experience in areas like -

- Reserving experience, particularly Motor TP reserving will be a plus
- Financial and capital projections
- Actual versus expected analysis, trend monitoring, experience with use of various reserve estimation techniques etc.
- Development and management of actuarial related inter-departmental processes
- Data work including specification, cleaning and preparation

Applicants for both the positions should meet the following requirements:

2+ to 10 years of experience with good exam progress (experience and exam pass requirement varies with seniority)
Very good SAS, other WTW software, excel skills and good written English skills

Interested candidates can please send their CVs to Dimpy.vora@sbigeneral.in with subject line: 'Resume for Actuarial Analyst'

SBI General Insurance Company Limited. Corporate & Regd. Office: 'Natraj"301,Junction of Wester Express Highway & Andheri-Kurla Road. Andheri (East), Mumbai 400069. CIN U66000MH2009PLC190546. IRDAI Registration Number 144. SBI logo displayed belongs to State Bank of India and used by SBI General Insurance Company Limited under license

Hong Kong

Hong Kong insurance business statistics for Full Year 2018

The Insurance Authority (IA) released Hong Kong insurance business statistics for 2018 with reference to the audited returns and actuarial information submitted by insurers. The total gross premiums reached $514.5 billion in 2018, indicating a year-on-year increase of 5.2%.

Total office premiums for in-force long term business were $461.4 billion in 2018, i.e. an increase of 4.7%. The Individual Life category remained the dominant line of business, making up 92.4% of total long term business. Office premiums for new Individual Life business remained stable, including $133.2 billion from Individual Life (Non-Linked) business and $17.4 billion from Linked business.

In 2018, the total gross premium and net premium of general business stood at $53.1 billion (increased by 10%) and $34.7 billion (increased by 5%). The overall retention slightly decreased from 68.5% to 65.4%.

The gross premium growth was mainly driven by growth in General Liability business followed by Accident & Health business.

Detailed statistics of industry aggregates and individual insurers are available at the IA website (www.ia.org.hk).

HK Insurance Authority starts direct regulation of insurance intermediaries

Starting from 23 September 2019, the Insurance Authority will take over from the three Self-Regulatory Organisations the responsibility for direct regulation of some 110,000 insurance intermediaries in Hong Kong. Under the new regulatory regime, the Insurance Authority has introduced changes in areas such as basic academic qualifications, annual Continuing Professional Development (CPD) training, codes of conduct, and minimum capital and net asset requirements for broker companies. The IA is also responsible for handling complaints related to the conduct of insurance intermediaries, conducting investigation into alleged cases of non-compliance, and taking enforcement action in accordance with the law and established regulations, codes and guidelines.

Premium Levy Rate adjusted on 1 April 2019

In accordance with the schedule set out in the Insurance (Levy) Order under the Insurance Ordinance (Cap. 41), starting from April 2019, the premium levy rate will be adjusted to 0.06% of the insurance premium per policy year, with the levy cap set at $60 for life insurance policies and $3,000 for general insurance policies.

Except for certain policies that are exempt from the levy by law, policy holders of all new or in-force life insurance policies and general insurance policies (such as travel, motor, property and household insurance) have to pay the levy along with their premium payment. The Insurance Authority (IA) collects the premium levies from policy holders via the insurance companies.

The Insurance Ordinance provides for the IA to collect premium levies from policy holders, authorization fees from insurance companies, and fees from users for specific services to finance its operations. To mitigate the impact on policy holders, an incremental approach has been adopted, whereby the premium levy rate is adjusted gradually from 0.04% upon introduction on 1 January 2018 until it reaches the target rate of 0.1% on 1 April 2021.

Thank You!

Written by

Mr. Devadeep Gupta

devadeepgupta313@gmail.com

"Mr. Devadeep Gupta FIA FIAI CERA is working at Prudential Hong Kong. Previous he was the Head of Reporting; currently he is leading the IFRS17 implementation for Prudential Hong Kong."

Institute of Actuaries of India

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

Vintage is our Vantage

Celebrating 75

K. A. PANDIT

KAP

Consultants & Actuaries

Since 1943

RNI No. MAHENG/2009/28427
Published on 1st of Every Month

Postal Registration No. NMB/180/2020-22
Posting Date: 7th of Every Month

Posted at Mumbai Patrika Channel
Sorting office Mumbai - 400001