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the Actuary INDIA

INDIAN ACTUARIAL PROFESSION
Serving the Cause of Public Interest

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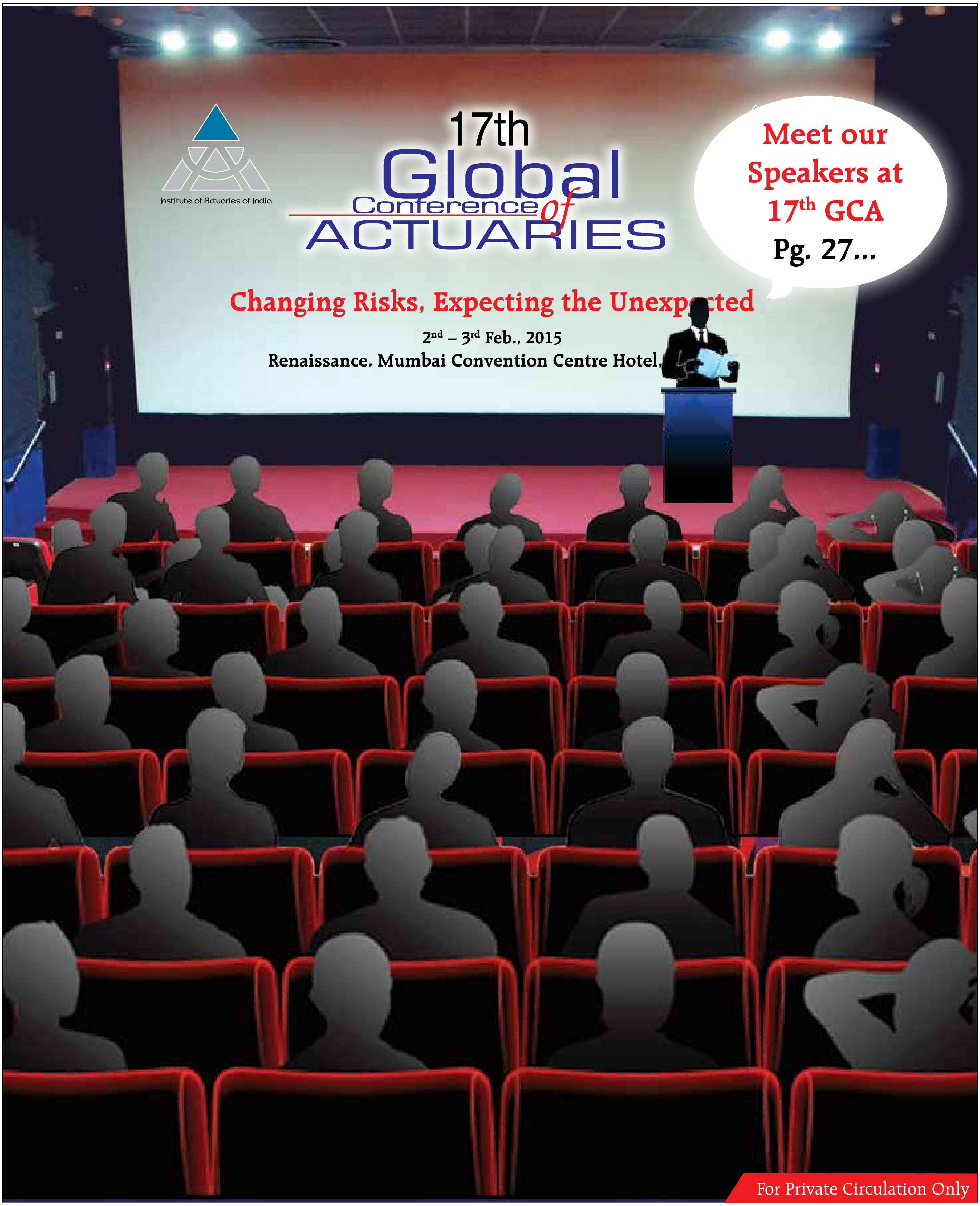

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FROM THE PRESIDENT'S DESK

RAJESH DALMIA

dalmia.rajesh@gmail.com

Dear Members,

Wish you a very happy new year. A beginning of a year is special as it gives us an opportunity to analyze the past and to set the path for the coming year. I have often heard about the New Year vows which last for days or weeks. Personally many of my vows have not even lasted a month. Yet we keep doing it because there is a lingering wish to be better person than what we are. I am sure this year is going to be better than the earlier year for all of us.

The year began with a great news that ordinance has been passed for the Insurance Bill which was slated to be introduced in parliament in 2008. Finally, the government decided to pass an ordinance after the Rajya Sabha failed to take it up. It gives immense power to the regulator, IRDA, in various areas which would impact even the actuaries working in these companies. The regulator has full power to allow the role of the tier 2 capital towards solvency capital besides many others like caps on commissions or expenses. This is positive news as change in regulations or circulars is easier than the Act. This is also opportune time that Member Actuary position got filled after 3 years. I would personally congratulate Pournima for taking up this responsibility. Expectations run high among actuaries and industry professionals given that there is significant power granted by the ordinance and Member can give the positive spin to all the matters.

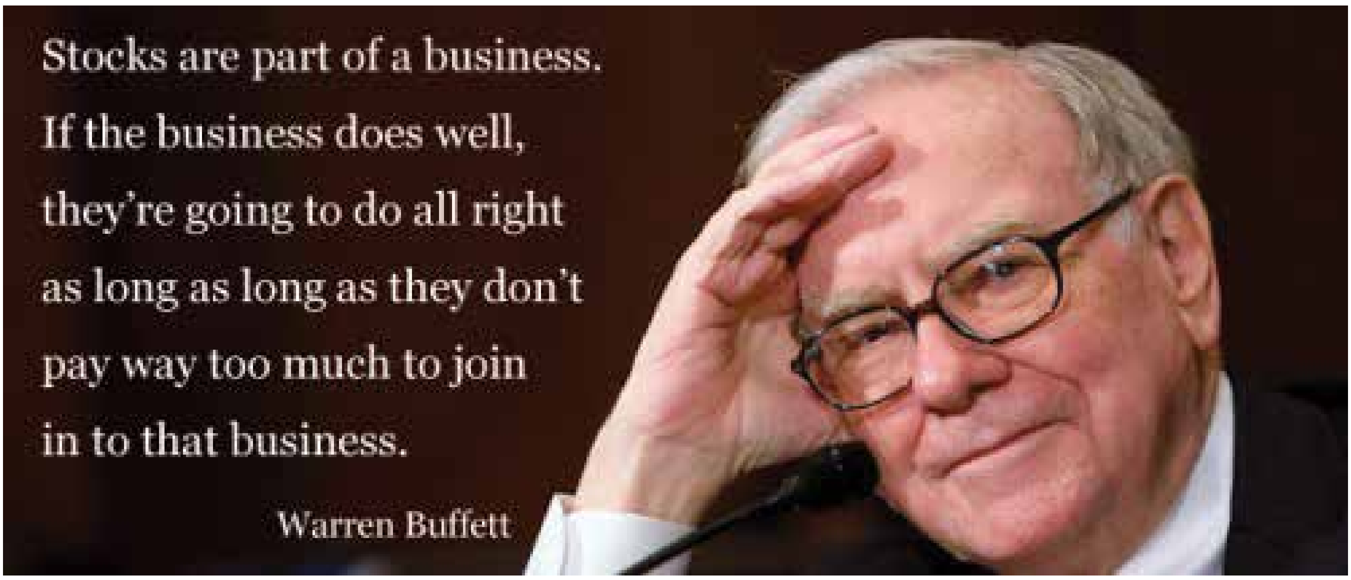
We are looking at a lot of changes that are going to happen in India and globally. The change in government in India has pushed lot of agenda in motion. Insurance Bill was just one such agenda. Globally, IFRS, risk based solvency initiatives like Solvency II, strengthening of professionalism standards etc. would have significant impact on actuaries not only globally but also in India.

Globally, Actuarial Profession is changing rapidly. We, in India also need to change to keep us relevant to the global world. IAA is revisiting its syllabus for the qualification as actuary. Financial Reporting Council in UK has published a draft on Professional Standards in UK which revisits a lot of the existing Professional Standards. Many of these changes have relevance for India too.

In the light of changes, we need to work together to move in right direction. We need to make many changes which can take our Profession forward. We need to strengthen various Actuarial Practice Standards/ Guidance Notes and Compliance Processes related to it. We also need to bring in more transparency so that the members are aware of the various work done by the Profession and can participate in it.

Currently, the Institute is busy in preparation for Global Conference of Actuaries which is the flagship conference of the profession. This year it will be in Mumbai and more than six hundred participants are expected to attend this time. I hope to see you there.

Do write to me if you have any concerns or any issue to the following email id president@actuariesindia.org.



FROM THE EDITOR'S DESK

RAUNAK JHA

Raunak.Jha@CignaTTK.in

Hello Friends!

Wish you all a very happy new year. So by now you all must have picked up your new year resolution(s) or might have already decided not to pick one!

Making New Year resolutions is very similar to our actuarial pricing exercise; we rely on past experience to make future resolutions. At the start of year, we are hundred percent sure of success and as we move ahead in the year we notice that while building our assumptions we have ignored qualitative factors(like emotions) for picking up resolutions.

We design our products either to be different from the market or to be similar to our peers so as not to lag behind in the race. The same logic we follow while picking up our New Year resolution and many times end up angry, annoyed and at times frustrated for our selections. No one wants to step into an over-crowded gym!

So let's focus on making this New Year a successful one by taking a deeper look into what we want to achieve in this year. Be realistic in making your choices, plan ahead (why make last minute resolutions, we can plan before 31st also), make a list of pros and cons and track your progress. Don't beat yourself up if you fail, just keep trying. And last but not the least, talk about it! This helps at times to keep you motivated.

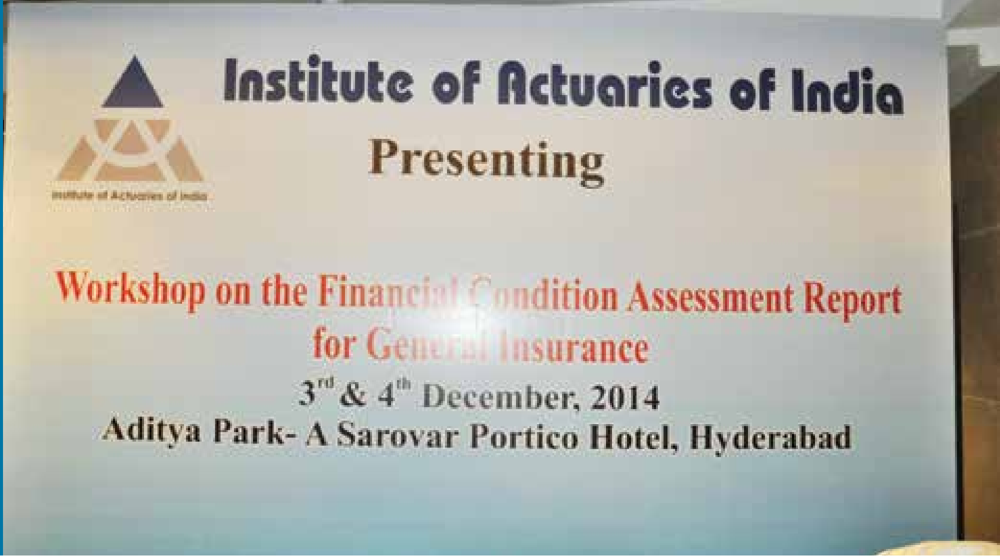
Looking forward to see you all in GCA and hear your New Year resolutions!

(Birthday greetings to fellow members who have attained 60 years of age)

MANY HAPPY RETURNS OF THE DAY

the Actuary India wishes many more years of healthy life to the fellow members whose Birthday fall in **January 2015**

BHUDEV CHATTERJEE
N K PARIKH
SRINIVASAN NAGASUBRAMANIAN
RAJENDRA PRASAD SHARMA



Workshop on the Financial Condition Assessment Report (FCAR) for General Insurance

- **Organized by** : Institute of Actuaries of India
- **Venue** : Hotel Aditya Park, Ameerpet, Hyderabad
- **Date** : 03rd - 04th December 2014

The seminar was arranged to facilitate discussions between the regulator and members of the Indian actuarial profession along with actuarial department officials of all general insurance companies operating in India on new format of FCAR applicable effective financial year 2014-15. Particular emphasis was toward enhancing the understanding on FCAR 2013-14 tables in excel format and difference between old and new formats.

About the Author

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RAJESH S is Manager, Actuarial Department with ECGC Limited Mumbai. He is a Student member with the Institute of Actuaries of India. He is an honours graduate in Mathematics and a post graduate in Economics from Madras School of Economics, Chennai.

Session 1: Key Note Session

J Meenakumari, HOD -Actuarial, Insurance Regulatory and Development Authority (IRDA) delivered the keynote

J Meenakumari

address. She drew attention of the audience to the clear and comprehensive regulatory definition of powers, duties, obligations and role of an Appointed Actuary (AA) that encompasses policyholders' interest, business plan, product design, pricing, reserving, reinsurance and investment decisions as well. She further emphasized that such extensive definition extending far beyond the traditional actuarial functions of reserving and pricing was coined to enable Appointed Actuaries to meet the requirements and expectations of the IRDA, industry and organisation. While expressing concern on the resistance to wide involvement of Appointed Actuaries in India she stated that regulator has already played its part to enhance actuarial contribution to various functions of the company. She informed that claims reserving draft circulated one and a half years before will be modified and sent to Appointed Actuaries for their opinion. She mentioned that the IRDA has begun User Acceptance Testing for its Business Analytics Project and asked the insurance companies to complete the online submission of data.

Session 2: Adequacy of Premiums

Anurag Rastogi, Appointed Actuary, HDFC Ergo General Insurance Company spoke on Adequacy of Premium: Retail Perspective. His presentation started with different aspects of FCAR context viz. target audience, materiality, the trade-off between granularity and credibility and regulatory expectations. He elaborated

Anurag Rastogi

that an FCAR must consider who the audience is their comprehension capabilities, the overall perspective and true to the report title, materiality may be gauged by the degree of its impact on financial soundness of the company. He dwelt on balancing granularity with credibility and said that it is a challenge to make the FCAR intelligible to the Board comprising primarily generalists and also to the regulator composed of technical experts. He further emphasized that the FCAR has much learning to offer to the senior management that is not part of the Board.

He continued in detail on FCAR tables and points required to be discussed by the Appointed Actuary in the FCAR. He touched on various aspects as requirement of a standard method to calculate Premium Deficiency Reserve (PDR) to make it comparable across companies and the need to analyse gross loss ratios apart from net loss ratios. He pondered if underwriting (UW) loss was bad at all if shareholder is aware that UW profit is not possible in the given LOB / product and investment return more than offsets UW loss. Further, he deliberated if investment returns from premium float be factored into pricing to benefit customers. The HOD-Actuarial at IRDA commented that Appointed Actuaries shall explain to the Board that no product be offered at a combined ratio above 100% is a regulatory requirement.

Nikhil Gupta, Appointed Actuary, The Oriental Insurance Company Limited anchored the second part on Adequacy

Nikhil Gupta

of Premium: Commercial Perspective. He discussed measures to assess premium adequacy based on a comparative analysis – actual price vs technical price, actual ratios vs target ratios, UW result vs investment income and considering underwriting and investment cycles. He continued his presentation on the IRDA circular dealing with commercial lines technical pricing throwing light on approach to premium calculation, monitoring and compliance. He illustrated the actual process of commercial lines technical pricing, its various components and two main pricing approaches propelled by exposure rating and experience rating. He highlighted that the pricing model must allow credits and surcharges for engineering characteristics of risk quoting an example that a cotton plant near a petroleum company dump yard getting charged same premium as a cotton plant in another hazard free location. His presentation ended with specifics of capital allocation, rate monitoring and pricing challenges.

Session 3: Analysis of Experience

Gayle Adams, Appointed Actuary, Raheja QBE dealt with Analysis of Experience. Her presentation was divided chiefly into two parts viz. broad principles, and specific topics. The first part was further subdivided into purposes and users,

Gayle Adams

conflicts, general process overview, first priority, materiality, meaningfulness and actual priority. While underscoring the need of standardisation for efficient regulatory compliance, she said actuaries need to strike a balance as most useful experience analysis will vary according to the purpose and the situation of a company. Her presentation continued at length on various sectional tables. She brought to notice of the audience that while a new actuary may take time to catch up on speed, various sign-offs may already be happening. In the second part, she primarily concentrated on claims, terminations, profitability and expenses. She demonstrated how an analysis leads to another unintended inquiry with the example of a spike in IBNR leading to an examination of claims with large ones truncated. She picked reinsurance and performance of reserving as significant areas under other parts of FCAR.

Session 4: Business Projections, Analysis of Business Growth

Post lunch first session was on Business Projections, Analysis of Business Growth by **Tania Chakrabarti,** Appointed Actuary, Royal Sundaram. She identified documenting the divergence of actuals from projections and investigating the reasons as the key purpose of the section. She opined that actuaries must travel beyond already conversant functions

Tania Chakrabarti

and keenly make themselves an integral part of management processes which evolve business philosophy and redraw their core functions. She illustrated the method adopted for making annual projections first, then allowing for seasonality to be factored in and finally arriving at quarterly projections. She shared her company experience on using new software analytics to generate IBNR tables and practice of Appointed Actuary estimating the Ultimate Loss Ratios (ULRs) for each branch and in turn asking the branch to generate sufficient premium. On a lighter vein she remarked that the process may make branches call for rationale behind the ULRs computed by Appointed Actuary. She reasoned that consistently favourable ULRs in an LOB or a product have to be attributed to robust underwriting, excellent claims management and prudent reserving.

Session 5: Unique Aspects of a Monoline Credit Insurer's FCAR

Mayur Ankolekar, Appointed Actuary, ECGC Limited took the last session of the day on Unique Aspects of a Monoline Credit Insurer's FCAR. While most

Mayur Ankolekar

actuaries may view a monoline business as much easier option, he exemplified from various angles that each function of the actuary needs to be dealt with accentuated caution. His presentation took the audience through nine sub-topics of distinct features, experience analysis, capital management, premium adequacy, ALM, reserving, reinsurance, CAT strategy and risk management. He pointed out the basic difference in the interest of the insured stems from the intent of the insured to buy the cover. A bank that covers export credit principally for capital relief and not out of own risk perception may show different claims experience. He reasoned that long tailed claims meant pricing had to be heavily inclined toward experience rating. Yet another unique feature he mentioned that recoveries are consistently substantial and hence, built into experience rating. He explained that while risk transfer through reinsurance happens in regular course, credit and surety insurers world over get state support for covering medium and long term (MLT) projects that may be more of strategic interest than commercial. He enlightened the audience on other distinct aspects of the LOB as negligible role of intermediaries, asset side risks and economic capital working out to approximately five times the regulatory capital. He laid particular emphasis on how the nature of business leads to high concentration risks and threw light on what concentration risks meant for credit and surety insurers in terms of risks clustering around a buyer / country / borrower / industry. As a natural corollary, catastrophic events are triggered by economic crises at a country or global level and not by natural catastrophes.

Session 6: Adequacy of Reserves

The second day of the workshop started with Adequacy of Reserves by **Prachi Chemburkar** and **Adarsh Agarwal**, Bajaj Allianz. The presentation was subdivided into four sub-parts viz. Overview of the section, Challenges likely to be faced, Probable solutions and Areas requiring further clarification. The speakers discussed in detail parts of the section

Adarsh Agarwal

including tables, methodology and data constraints, monitoring actual vs expected and analysis of quantitative information. As the speakers discussed allocating overall IBNR to different LOBs, HOD-Actuarial, IRDA advised that companies must develop systems to estimate IBNR for each LOB separately and then arrive at overall IBNR. They spoke on their company practice of making an auto reserve / default reserve as soon as a claim is received even before inspection / processing. They explained that such a reserve is made based on historical trend of average claim settlement. They continued to present on IBNR claims reserving, approaches, data and system constraints, reserves utilisation, analysis of ULR movement and allocating overall IBNR to different accident periods based on preferred business measure, incurred claims or a weighted average of both. The session ended with discussion on analysis of quantitative information chiefly, tracking change in reserve composition by LOB, splitting of reserves, plugging PDR into pricing model and assessing uncertainty around CAT and large claims reserves. When one of the participants expressed that auditors disallowed interest provision for third party claims, HOD-Actuarial, IRDA responded that the point needs to be put forth to auditors as a regulatory requirement.

Prachi Chemburkar

Session 7: Solvency Scenarios and Model-building

Biresh Giri, Appointed Actuary, Max Bupa Health Insurance and **V Lakshmi,** Appointed Actuary, Bharti AXA General Insurance anchored the next session on Solvency Scenarios and Model-building. The presentation started with the global economic crisis, its impact making equity market returns volatile and consequent regulatory and accounting developments.

V Lakshmi & Biresh Giri

In the new economic environment, the Board, the regulator and the rating agencies began focussing more on risk and capital management and a paradigm shift towards more dynamic, forward looking and comprehensive regulatory framework ensued. Ideas crystallized into solvency II directives including Own Risk and Solvency Assessment (ORSA) and scenario & stress testing parts of FCAR.

A short discussion on sectional tables followed, succeeded by benefits of the segment the prime one being better Enterprise Risk Management (ERM) framework. The presentation continued on various relevant definitions. Scenario analysis was discussed in detail centred on governance and process, objective function and design and analysis. The speakers followed it up with deliberations on types of scenarios, business planning modules, parameters and some illustrations of scenario analyses with reference to Uttarakhand floods, Hudhud cyclone in Andhra Pradesh and Jammu & Kashmir floods. The presentation continued on modelling scenarios, CAT event implications for an insurer, operational risk, presentation of results and some last mile problems that might crop up in implementation. The speakers interspersed the theoretical concepts with examples from their company experience.

Session 8: Reinsurance & Risk Management

Vishwanath Mahindra, Appointed Actuary, Apollo Munich Health Insurance and **Raunak Jha**, Appointed Actuary, CIGNA TTK Health Insurance delivered the session on Reinsurance. The presentation started with the evolution of reinsurance over the years from being a risk management tool to a capital management tool. As a consequence, it is an integral part of financial planning.

Vishwanath Mahindra

The speakers continued with a brief comparison of old and new format of sectional tables and proceeded to stochastic modelling techniques with example of indemnity based cover (Health). They spoke on extreme value theory and made an excel demonstration of reinsurance retention. They explained that when capital is scarce, amount of capital determines reinsurance retention while return on capital is the determinant when capital is adequate and company is focussing on return.

One of the participants added that in simulating pandemic situations, modelling must be developed to allow for increase of claims over and above the already identified extreme value i.e. in a catastrophic situation claims will be more than the extreme value already identified using distribution of claims at other times. The participant opined that such a modelling would be closer to real situations and would also serve to validate adequacy of reinsurance arrangements at extreme claim conditions where reinsurance requirement is acute. He further added that reinsurance treaties must come with a foreclosure clause to repeal the treaty midway during the period of cover if and when rating of reinsurer falls below investment grade. He maintained that when reinsurance adequacy is the concern, such a clause is more important than reinsurance adequacy modelling.

The latter part of the session was taken by **Manalur Sandilya,** Appointed Actuary, ICICI Lombard General Insurance on Risk Management. He said that the two main risks are risk of reputation and underwriting risk with the latter

Manalur Sandilya

including pricing and reserving falling in the domain of actuaries. In group health products particularly Rashtriya Swasthya Bima Yojana (RSBY), since actuaries sign-off on documents stating that they are satisfied with the facilities and infrastructure in place, he reasoned that it would be appropriate for them to inspect in person the availability of the same. And he maintained that such visits help in actuaries' understanding of field conditions and they also help technically as actuaries get to know probability of a pandemic directly.

He expressed that risk management chapter in FCAR gives enough space to make it an annual report card on risk management. He shared his experience on mitigating risk concentration and elaborated on under-priced products in the market. Recounting the amounts awarded under Third Party (TP) Claims by Supreme Court in its verdicts since 2013, he pondered if the industry can afford reserving at that level. He further continued on the subject expressing concern that in India there are instances of records getting fabricated to turn natural deaths into accidents and lodge them as TP claims. Further, he said TP claims land up even after a period of 7-8 years. He labelled this as an area of acute problem for an insurance company technically too as companies cannot estimate the liability with more and more cases getting decided by judicial bodies.

Session 9: AA Views/Queries on new FCR

J Anita, MBVN Murthy and **Mukesh Kewalramani** from the IRDA anchored the last session of the workshop. They started with presentation on good practices of earlier FCARs submitted by companies and followed it up with a detailed session clarifying various queries that participants had raised during the workshop. To a query from a participant that the actuarial team has to spend considerable time in data reconciliation, HOD-Actuarial, IRDA answered that actuarial departments shall request their

J Anita, Mukesh Kewalramani

internal data providing departments to sign and authenticate the data. She stated that this was in line with the regulatory requirements as actuarial departments have to only collect and not validate the data as per the regulator's guidelines. She assured the participants that the IRDA shall communicate to CEOs of all companies to ensure that data validation be done by source departments when they provide data to actuarial department. She called upon the participants to cultivate the practice of maintaining data at very fine granular levels in their respective companies as it is required under the provisions of the Insurance Act, 1938.

Debarshi Chatterjee, Secretary, Advisory Group on General Insurance thanked the regulator and the speakers for sparing time

Debarshi Chatterjee

out of their hectic schedule and sharing valuable insights on several important issues related to FCAR. He also thanked the audience for their active participation.

■■■

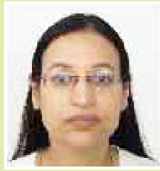
FUNNY ACTUARY

There is an actuary who is trying to pick someone up at a bar.
The person at the bar asks, "So, what do you do for a living?"
The actuary responds, "I model."
The person at the bar responds, "Really?! I never would have guessed. What kind of modelling?
The actuary answers, "Actuarial Modelling!"

22nd India Fellowship Seminar

- Organized by : Advisory Group on Professionalism Ethics and Conduct, IAI
- Venue : Hotel Sea Princess, Mumbai
- Date : 18th - 19th December, 2014

About the Author



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Day 1

The seminar began with a welcome address by **Abhay Tewari,** Chairperson of Advisory Group on Professionalism Ethics and Conduct.

Abhay Tewari

In his address, he stressed that the participating groups should take a firm stand while presenting their case studies and not take the safe "middle path " route by only presenting the pros and cons of following any approach. His reasoning was that in real life situations they would have to pursue a definite course of action. He encouraged the groups to actively participate in the discussions and ask questions.

Session 1: Reserve ranges

This was presented by **Vandana Baluni, Irvinder Singh Kohli** and **Abhijit Pal** under the guidance of **K.K. Dharni.**

The case study required the participants to present their opinion as a Company Actuary on the reserves of a General Insurance company. The Finance director has asked the actuary to reassess the reserves so they meet profitability expectations of market and avoid

K.K. Dharni, Vandana Baluni, Abhijit Pal, Irvinder Singh Kohli

downgrade by credit rating agencies. An interesting question in the case was whether incentives like a hefty bonus or stock options would lead to a change in actuary's opinion. The presentation highlighted Professional Standards on advice, breach of conduct and conflict of interest. It covered the GN12 regulations. It discussed the obvious challenges in reducing reserves – being unable to meet liabilities, risk of regulatory intervention, capital requirement in later years. Various options were presented for resolution the first being revision of reserves after checking for data errors, revisiting margins in assumptions and reviewing the basis itself. The other options touched upon were discussion with stakeholders and external parties to determine their opinions. The AA should justify the reason for reducing reserves or not changing them and the impact of the decision on the company's current and future financial conditions.

Session 2: Use of Interest rate Swaps in Insurance – Why the market is not growing?

This was presented by **Ramnath Shenoy** and **Rishabh Prakash** under the guidance of **Anuradha Lal.** The presentation began with an overview of definition

Ramnath Shenoy

and types of swaps and brief recap of the recent derivative guidelines in India. It touched upon the utility of swaps for different types of insurance businesses especially annuities, non participating and retirement products and described

Rishabh Prakash

the major uses of swaps. The presenters drew attention to the challenges in dealing in the swaps market, principle ones being that the market is illiquid and immature, the difficulties in finding a suitable instrument beyond 10 years and the basis risk insurers faced by the insurers. It also highlighted the complexities in management such as getting board approval, setting up investment management and risk management systems, constant monitoring and compliance with regulatory requirements. It brought to light the risks and issues in managing swaps. The presenters concluded that due to supply constraints and management issues, alternative products like caps, floors and swaptions more suited to meet insurer needs.

Session 3: Case Study from GI module - G5 - Data Quality

This was presented by **Supriyo Chaki, A V Karthikeyan, Adarsh Kishor Agarwal** and **Sipika Tandon** under the guidance of **Saket Singhal.**

The case covered the dilemma of a consulting actuary who has to provide an actuarial certificate confirming the adequacy of the claims reserves for a General Insurance company. The actuary is concerned by data quality in recent years, high claims staff turnover and

A V Karthikeyan, Adarsh Agarwal, Sipika Tandon, Supriyo Chaki,

rumors about the company suppressing case reserves to improve results. The initial consideration of the presentation was to set out the scope and purpose of actuarial certificate and its intended target audience. Then the group described the issues, clues in the case and the relevant guideline. The main issues highlighted were poor data quality, reliance on other's work, suppressing claims reserves and delayed action. The presentation highlighted importance of having access to all data, seek assurance from company and auditors about its accuracy, carry investigations to assess accuracy of data despite confirmations, consider all aspects which could impact data quality and ensuring adequacy of claims reserves. The group extensively referred to GN12, GN18, PCS, and Actuaries Act 2006. The possible courses of action open to actuary were to provide unconditional certification or provide certification after highlighting data & other limitations or deny certification citing data and other limitations. Also highlighted were the circumstances under which each course of action should be taken and the consequences of taking the action.

Session 4: Capital Infusion - Is the business appealing enough to attract investors?

This was presented by **Vichitra Malhotra, Gopal Kumar** and **Ishwar Gopashetti** under the guidance of **Mayur Ankolekar.**

The group conducted industry analysis for 3 industries – Life insurance, General

Gopal Vishwanath Kumar, Vichitra Malhotra, Ishwar S Gopashetti

Insurance and Ecommerce. The group delineated certain factors to measure the level of attractiveness of each industry. The market driven factors included market size, growth rate, pricing and profitability trends. The industry driven factors included competition, purchasing power and product innovation. Other factors considered were barriers to entry, substitutes available, supplier or distributor dominance and regulatory environment. Then it highlighted the potential of each industry and the challenges facing faced by them.

Session 5: Distribution of profits

This was presented by **Archana Anoor, Rutika Kumar** and **Rahul Khandelwal** under the guidance of Philip Jackson**.**

Archana Anoor

The withprofits actuary had to advise the Board of a proprietary composite company which until now allocated 90% of all profits from the fund (both participating and non-participating) to

Rutika Kumar

policyholders and 10% to shareholders. Now the Board wanted to restrict the 90:10 calculation to the participating business only. The group covered the practical ways to implement the change. These included financial impact of change, dealing with legal and constitutional issues including obtaining legal advice. The presentation also covered policyholder communication, ethical concerns and treating customers fairly. It referred to GN and APS and also stressed on obtaining independent opinion on the change.

Session 6: Professionalism issues in estimation of Commercial Vehicles Third Party Reserves

This was presented by **Varadaprasad Jagannathan, Shruti Saxena** and **Vaibhav**

Rahul Khandelwal

Tyagi under the guidance of **Khushwant Pahwa.**

After briefly touching upon the evolution of Commercial Third Party Business in

Shruti Saxena, Vaibhav Tyagi, Varadaprasad Jagannathan

India the group covered the technical issues concerning party liabilities. It then described the creation of the IMTPIP and its dismantling in April 2012 and the features of the current Declined Risk Pool. The presentation touched upon several professionalism issues as data issues, possible conflicts of interests as valuation of the declined pool is conducted by Actuaries who are also Appointed Actuaries of GI companies, maintaining documentations, communication with stakeholders, breach of conduct by understating reserves and financial interest if the actuary has incentives linked to financial health of the company. The group recommended greater role for Institute of Actuaries in building awareness, need to facilitate peer interactions and building and sharing technical resources.

Session 7: Low performing endowments

This was presented by **Yogita Rawat, Himanshu Bhatia, Ranjan Gupta** and **Swati Gupta** under the guidance of **Suresh Sindhi.**

The topic was a challenging one as it posed twin questions of whether actuaries were

Yogita Rawat, Ranjan Gupta, Himanshu Bhatia, Swati Gupta

responsible for current underperformance of endowments and if they should take on a more general role to whistle blow when they foresee problems in future. The group presented the case from both perspectives ie actuaries were responsible for nonperformance and actuaries were not responsible for non performance of endowments.

For the first perspective the group argued that due to non-involvement in the projection process and non-transparent pricing process the actuaries were responsible for non performance of endowments. They cited GN, APS and IRDA regulations for professional obligations of actuaries. For the second perspective the group argued that actuaries did not control the investment market, faced modeling limitations and obstacles as lack of hedging instruments, regulatory restrictions and low marketing volumes was an industry issue and that they.

Session 8: Case Study I4 — Eavesdropping

This was presented by **Ramnath Shenoy** and **Rishabh Prakash** under the guidance of **Anuradha Lal.**

The case revolves around an Investment consultant to the Trustee of a UK pension scheme. He involuntarily eavesdrops on a conversation involving the sponsoring company of the client while travelling to present the results of an investment strategy review. Based on the sketchy information received it seemed that one of the most stable parts of the business would be sold. The presentation briefly discussed the issues faced by the consultant in light of the Actuaries Code. These include integrity, competence and care. The information received was sketchy, incomplete and not credible. It was confidential - "not meant" for his ears. Dissemination could lead to rumor mongering but if true could have serious impact. The crucial issue however, revolved around standards for advice and the group concluded that the consultant would not bring up the information in the meeting but build a contingency scenario in his strategy based on the information received.

Session 8: Actuarial advice and resultant liabilities of an Appointed Actuary

This was presented by **Supriyo Chaki, A V Karthikeyan, Adarsh Kishor Agarwal** and **Sipika Tandon** under the guidance of **Saket Singhal.**

The key issue in presentation is the unlimited liability faced by an Appointed Actuary for his/her actions. The group started by briefly describing the responsibilities of an Appointed Actuary in Life and General insurance companies. It also highlighted the risks associated with providing actuarial advice including the risks of failing to comply with regulations and guidelines. The challenges faced by the Appointed Actuary include balancing demands of different stakeholders, data issues, meeting regulatory requirements, changes in insurance environment and shortage of skilled actuaries. The Appointed Actuary faces significant legal risk because of magnitude of liabilities of the company he advises and the unavailability of any financial instrument to provide financial indemnity. The presentation referred to the governance framework for Appointed Actuaries - The Actuaries Act 2006, IRDA Appointed Actuary Regulations, 2000, PCS, APS and GNs. It concluded by recommending the mitigating measures and advocated the devising of Professional Indemnity insurance cover for Appointed Actuaries in India.

The topic for the last presentation of the day was "Growing importance of Professional and Ethical issues in India". It was delivered by **S.V. Sunder Krishnan,** Chief Risk Officer, Reliance Life Insurance Company Limited.

Day 2

Session 9: Case Study G3 — Increasing share of non-participating business in India and systemic risks associated with it?

This was presented by Archana Anoor, Rutika Kumar and **Rahul Khandelwal** under the guidance of Philip Jackson**.** The group started by exploring the history of participating and non-participating business in India. It then defined systemic risk and its indicators. Then it elaborated on the investment risks, underwriting risks, risk of policyholder runs, counterparty risks and other risks facing insurers in India. The presentation concluded with risk mitigation measures.

Session 10: Case Study G3 — Another actuary's work

This was presented by **Varadaprasad Jagannathan, Shruti Saxena** and **Vaibhav Tyagi** under the guidance of **Khushwant Pahwa.**

The case study centered on how an actuary should deal with an assignment which was handled by another actuary. The presentation discussed the approach to be followed if the work of another actuary is to be criticized by referring to PCS and GN issued by the council. It also highlighted the approach in dealing with a professional and technical breach by another member.

Session 11: Should Expense Overruns be adjusted against Lapse Profits while calculating the asset shares in participating business?

This was presented by **Yogita Rawat, Himanshu Bhatia, Ranjan Gupta** and **Swati Gupta** under the guidance of **Suresh Sindhi.**

The presentation discussed the reasons for expense overruns, treatment of expense overruns, lack of uniformity in treatment of expense overruns across Indian companies. The group stated that the approach would depend on various factors as age of insurer and participating fund, size of estate, company policy, PRE, industry practices, regulatory and professional guidelines.

Session 12: Case Study I2 — Conflicts in a sale and purchase

This was presented by **Vichitra Malhotra, Gopal Kumar** and **Ishwar Gopashetti** under the guidance of **Mayur Ankolekar.**

The case threw up various issues such as conflict of interest, criticism of another actuary's work and providing advice. The group discussed the approach to dealing with these issues in the light of PSC.

Session 13: Corporate Health Portfolio: Challenges and Solutions as these schemes have been experiencing very adverse claim ratios

This was presented by **Vandana Baluni, Irvinder Singh Kohli and Abhijit Pal** under the guidance of **K.K. Dharni.**

The presentation started with history of corporate health schemes in India. It touched upon the features of corporate health products. Then it described the features of corporate health portfolios which create issues as heterogeneity, volatility in claims, lack of quality data, non-standard policy wordings and tailored products and liberal underwriting. The group identified various reasons for adverse experience and advised possible solutions.

Lastly, at the end of the closing day, Prithesh Chaubey, Secretary, Advisory Group on Professionalism, Ethics and Conduct gave the closing address to end 2 days of interactive and informative sessions.

22ND INDIA FELLOWSHIP SEMINAR

REPORTAGE

LEADERSHIP DEVELOPMENT PROGRAMME

"In life, more often than not, you get what you negotiate."

- Organized by : Institute of Actuaries of India
- Venue : Hotel Sea Princess, Mumbai
- Date : 20th December 2014

About the Author

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Vichitra Malhotra is a nearly qualified actuary from the Institute of Actuaries of India. She is currently working with Max Life Insurance as Manager - Pricing Team.

The conference hall at Hotel Sea Princess bustled with (newly and nearly qualified) actuaries gathered to attend the Leadership Development Seminar (organized as part of 22nd India Fellowship Seminar). The seminar was being conducted by **Nimesh Rathod**, an Associate Certified Coach by International Coach Federation, USA famed for coaching CEO's and senior executives and the key theme for the seminar was 'Negotiation'.

The coach (Nimesh) kick started the session by seeking introduction of each participant and understanding the areas where they typically need to negotiate. This not just made the participants more comfortable but also helped the coach understand the needs of audience better. The seminar thereafter focused on addressing these key areas whilst giving insights on the art of negotiation.

Essence of Negotiation

The first important question the group had to answer was 'what is the essence of negotiation and why does one need to negotiate at all'. Amidst active discussion and debate that followed emerged a broad consensus that negotiation was needed to arrive at outcomes which are mutually beneficial to the parties involved. In-fact where a long term relation (professional or otherwise) is inevitable, negotiation is needed to sustain the same. The participants also appreciated the fact that in a formal setting, being prepared for a negotiation could be advantageous and in some cases, even necessary. In this respect, collecting relevant facts, information about the situation at hand / about the needs of other party could come in handy.

With the fundamentals in place, the group now had the big task of learning the art of negotiation. And thus followed a day full of group activities, role plays and real life case studies, each encrypted with a key message the team had to decode.

Group Activity:How to seek information about other party?

The group went through an ice-breaking activity.

As it emerged, the key for seeking information was to ***ask the right question*** keeping in mind the following:

- Asking open ended questions;
- Allowing the other party to speak more.

Myths about Negotiation

The next activity saw the group evaluating a set of ten statements as either true or false. The statements were around popular notions / beliefs about negotiation such as:

The purpose of this activity was to help the group understand that negotiation is bigger than just winning arguments or scoring more points. It is about finding a common path where both parties ultimately win and can work together on basis of mutual trust. It is about being able to identifythe requirements of other person and being able to share one's own firmly.

To ensure the same, people who believed maximum number of statements to be false were identified and were assigned to different tables. Their job was then to convince the other members of the table on the fallacy of the statements. Thus, the participants engaged in healthy debate within each table and the activity concluded only once each one agreed all the statements to be false.

Role Play: Handling a difficult situation

The situation at hand involved a boss and a subordinate. The participants were divided into two groups, one representing the subordinate and one representing the boss. Neither group was aware of the situation brief given to the other group.

Role Play: The role play required the chosen participants to enact the meeting between the subordinate and boss. Four people were called from the participants, two from each group to act as boss and subordinate depending on the group they were representing. The coach and the remaining participants had the task of evaluating the two role plays and noting how each boss handled the situation.

At the end of the two role plays, the coach

The role play was followed by a case study involving various stakeholders, each with a different stand or position on the problem at hand. The participants were divided into smaller groups and were asked to come up with a solution which would satisfy all the stakeholders. They were advised to first map each stakeholder with his position / stand on the situation and then try to understand his real interest behind the same. The key was to appreciate the fact that in most cases, the interest of any stakeholder is very different from his / her position. Therefore, any potential solution should be aimed at solving the 'interest' not the 'position'.

and other participants shared their views on how the two bosses managed the situation and what should have ideally been done. The crux of the discussion and key messages were as follows:

- **Compassion:** A good leader is one who has the ability to understand the other side of the situation. In this case the boss should have first put the subordinate at ease and tried to understand the reason for his behavior.
- He must have taken into account the subordinate's views on being moved to another team and objectively evaluated the same.
- **Firm, when needed:** At the same time, a leader must be assertive in communicating his decision. If he feels that the subordinate must be moved to another team, then he must communicate the same to the subordinate clearly without making any false promises.

The role play thus underlined the importance of patience, understanding and empathy on part of the supervisor in handling a difficult and sensitive situation.

Case Study: Differentiating 'interest' from 'position'

Role Play: Understanding what is important to other party

The group then went through an intense round of negotiations where-in most of the times, it was a dead-lock situation.

The key message of the role play was to understand that for successful negotiations, one must be aware of what is important to the other party. This can be instrumental in reaching a common consensus between the parties.

Tools of negotiation

The last leg of the seminar saw discussion on various tools needed for successful negotiation. Some of them have been shared above.

- **Body language:** By way of a clipping, the group was able to appreciate how one can understand other party's weakness just by observing their body language and use it whilst negotiating.
- **BATNA i.e. Best Alternate to Negotiated Agreement:** In any negotiation, it is important to identify the next best alternative which can be used when any negotiation fails.
- Identifying what is valuable to the other party and negotiating accordingly.

Conclusion

The seminar gave food for thought to every participant. There was a realization that negotiation is so much a part of our everyday life and not just confined to our offices. One of the most important learning was to view any negotiation in conjunction with its long term impact

rather than as one time transaction. And hence, the need to be patient and emphatic in dealing with people cannot be over emphasized.

So as the actuaries walked out of that conference hall they knew they had each learned something new, something useful and something they ought to practice and master. Overall it was a day well spent.

Welcome

Ms. Devangi Devendra Desai has joined on 09/12/2014 as Data Analyst in Examination Department. She is M.Sc in Statistic and carries 2.5 years of experience. Her hobbies include singing, watching movies and listening music.

We welcome Devangi to the family of Institute of Actuaries of India.

Farewell

IAI has helped me to climb a step ahead towards my career growth and development. Well it's very hard to say but this is the moment we all have to face. Moving towards the new phase of my life, I take all the sweet memories along with me and say a sweet Good Bye.

ROLE OF ACTUARY IN MARKET CONDUCT

Introduction:

James Dodson pioneered the actuarial science in modern times with scientifically calculated level premium rates for long-term life insurance policies. He then looked at how a life assurance company based on scientific principles would operate. He explored the worst case facing such a company, assuming that it experienced deaths in the early years as heavy as the actual experience of 1741, a year of high mortality. In the light of this he suggested that a large sum should be borrowed at the outset as a contingency reserve[1]. Thus the pricing of a product and valuation of liability of a life insurance company have become the core areas of an actuary. The actuary takes major inputs mainly from commercial, economic and demographic environment in these core areas.

consumers or policyholders.

The following activities might fall within this area:

- An Overview of Actuarial History by Chris Lewin - www.actuaries.org.uk
- Marketing, advertising and product representations
- Sales
- Underwriting
- Issuance of insurance policies
- Collection of premiums
- Policy renewals, surrenders
- Bonus declarations
- Alterations to policy contract
- Claims settlement and payment

The regulators and legal courts expect that the market conduct shall be fair and based on sound principles. Any marketing activity or business conduct crossing this thumb rule may lead to complaints, litigations, violation of the regulations/laws.

Environment		Role of actuary
Commercial	→	Product design
Economic		Pricing
Demographic		Liability estimation

Any unfair market conduct will have multiple effects on the company in the form of unwarranted benefit payments, penalties, withdrawal of the product etc. The role of actuary in market conduct is

Environment		Role of actuary
Commercial	Core Activity →	Product design
Economic		Pricing
Demographic		Liability estimation
Market environment		
Market conduct experience: Complaints of customer Sales practices	→	Market conduct framework Setting, Monitoring the standard and providing advice

desirable as the lapses of market conduct will have negative impact on the company and the actuary is in better position to prevent such lapses as described in the diagram given above.

The role of actuary in other areas like investments, risk management is increasing and gradually these areas are also becoming core-areas of an actuary as these areas have direct relation with core areas mentioned above. An actuary is equally playing a significant role in these areas also. Apart from these, the market conduct of a company also will impact the actuarial core areas of product design, pricing and liability estimation.

This paper examines the actuarial implications of market conduct and how the role of actuary in market conduct can improve the performance of an insurance company.

Market conduct:

It is commonly agreed that market conduct encompasses insurers' and agents' market practices that involve interactions with

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Role of actuary in market conduct activities in other markets:

Recognising the facts mentioned above the US market created a role for actuary in market conduct in the form of "Illustration Actuary". The National Association of Insurance Commissioners (NAIC) of US model regulation on Life Insurance Illustrations mandates that each insurance company shall appoint one or more illustration actuaries. The illustration actuary shall certify that the illustration is in conformity with the Actuarial Standard of Practice for Compliance with the above said regulation and that the illustrated scales used in insurer-authorized illustrations meet the requirements stipulated therein.

No mandatory role for actuary in market conduct activities is envisaged by the

Indian insurance market so far. However, there is a requirement for such role considering the market conduct activities in Indian insurance market. The following paragraphs discuss the market conduct in Indian insurance market.

Market conduct in India:

The market conduct is better reflected in the nature of customer complaints. The Consumer Affairs Department of Insurance Regulatory and Development Authority (IRDA) is publishing annual report on the trends in Grievances of policyholders across industry and across companies. The latest report pertaining to 2012-13 provide the following information at industry level.

Area of complaint	Line of business	% to total number of complaints
Death Claims	Non-Linked	1.80%
	ULIP	1.69%
Policy Servicing	Non-Linked	17.64%
	ULIP	13.58%
Proposal Processing	Non-Linked	11.55%
	ULIP	11.91%
Survival Claims	Non-Linked	9.28%
	ULIP	24.70%
Unfair Business Practices	Non-Linked	51.32%
	ULIP	44.51%
Others	Non-Linked	8.40%
	ULIP	3.61%

The above table indicates that "Unfair Business practices" are the major area of customer grievances. The report provide further analysis into the Unfair Business Practices by classifying the Unfair business practices into different areas of market conduct activity. The following table gives such different areas and the percentage of customer grievances.

The side table indicates that Malpractices are the major unfair business practice area followed by Single premium sold as annual policy, Product differs from what was requested or disclosed, Tampering of proposal papers, Proposed insurance not in the interest of customer are some of the serious market conduct areas and have significant financial impact and on the performance of the company. The following paragraphs discuss the actuarial implications of some market conduct areas.

Actuarial implications of Unfair business practices:

Malpractices:

Malpractices indicate that the practices adopted in marketing activity are not fair principles. The company shall have a framework to identify such practices and take corrective action. The framework shall also assess the long-term impact of such practices. Apart from this, the malpractices may attract penalties from the regulator or the judicial courts.

The agent/intermediary is an important person in the market activity. It is an established fact that the agent/ intermediary is the primary underwriter of a life insurance policy. If any malpractice at this stage may distort the assumptions made about the quality of underwriting at pricing stage. Heavy incidence of such malpractices may require the actuary to revise the design of product or revision of pricing assumption.

Single premium policy is issued as an annual premium policy:

The next major area of Unfair Business Practice is that the single premium policy is issued as an annual premium policy. It indicates that the intermediary didn't properly assessed the financial needs of the customer and explained the product to the customer. The amount of commission could be one of the reason in resorting to such practice. The incidence of such cases in significant number may distort the business mix of the company and also the estimated cash flows which again will have implications on pricing.

S. No	Unfair Business practices- Classification	Percentage to total complaints 2012-13	2011-12
1	Malpractices	40.43%	34.53%
2	Single premium Policy issued as Annual premium policy	15.08%	8.74%
3	Product differs from what was requested or disclosed.	11.45%	18.53%
4	Tampering, Corrections, forgery of proposal or related papers	7.24%	9.77%
5	Free-look refund not paid	6.27%	6.20%
6	Misappropriation of premiums	3.98%	5.33%
7	Spurious Calls	3.76%	0.25%
8	Proposed Insurance not in the interest of proposer	2.77%	3.85%
9	Premium paying period projected is different from actual	2.14%	3.89%
10	Illegitimate inducements offered	1.99%	2.31%
11	Intermediary did not provide material information concerning proposed cover	1.30%	1.51%
12	Term(Period) of the policy is different/ altered without consent	1.06%	1.48%
13	Surrender value projected is different from actual	0.91%	1.01%
14	Mode of premium payment differs from requested or disclosed	0.72%	1.30%
15	Do Not Call Registry	0.40%	0.35%
16	Credit/Debit card debited without consent of Consumer	0.24%	0.26%
17	Annuity/Commutation/Cash Option /Rider/ other Options not included as requested	0.14%	0.46%
18	Advice concerning Exclusions/limitations of cover not communicated	0.11%	0.22%

(source:www.policyholder.gov.in/uploads/CEDocuments/CAD_Annual Booklet_2013.pdf)

Product differs from what was requested or disclosed:

Product differs from what was requested or disclosed is another area that has serious financial implications. Product differs from what was requested or disclosed grievance may result into heavy lapses as the customer is dissatisfied. It is an established fact that early lapse of a life insurance policy creates heavy financial strain on the company.

Tampering of proposal papers and proposed insurance is not in the interest of customer:

Tampering of proposal papers is another area of serious concern. The proposal is the basic document for an insurance contract. Any tampering of such basic document creates bad reputation and weakens the position of company in case of litigations.

Tampering of proposal papers and proposed insurance is not in the interest of customer may lead to false claims or offering over insurance coverage. This may result into more number of claims than expected or more risk than expected at the time of pricing.

Proposed insurance is not in the interest of customers:

This area indicates the quality of training, professionalism of the intermediaries of the relevant insurance company. The rigorous training program for the intermediaries will improve the quality and professionalism. A proper training enables the intermediary to assess the financial needs and advising a suitable insurance product to match such needs. This improves the satisfaction of the customer and thereby improve the performance of the company on all counts including the reputation of the company.

Other areas:

The other areas like " Surrender value projected is different from actual" , " Premium paying period projected is different from actual" though less in percentage also have actuarial implications as discussed above.

Prevention is better than cure- Actuary in market conduct:

The above paragraphs discussed about the after effects of wrong market conduct activities and their influence on the pricing or liability estimation.

It is always better to prevent such wrong practices rather than taking corrective actions. The role of actuary helps in such preventive measure for the company.

The actuary shall be involved in market conduct review system. The system shall systematically review the disclosures, advertisements, benefit illustrations on a regular basis. The customer grievances shall be regularly reviewed and an immediate action shall be initiated to arrest further growth of any such lapses recurrence. The Indian insurance market also may adopt the US market practice of "Illustration actuary".

Training of intermediaries:

Another major preventive area of involvement of actuary is in training the intermediaries. An actuary can explain the implications of wrong practices of market conduct on the financials of the company in a better manner. Further, the actuary is a suitable professional to explain the product design, its target market, the targeted financial needs and the factors that have been taken into pricing such product. The actuary can also further explain the implications of reputation hazard because of wrong practices of market conduct.

Monitoring the quantum of new business sales:

Some products may appear quite attractive during high interest regime or when stock market is doing very well. The companies may start or re-start such portfolios at different points in time. The sales of such policies shall be regularly monitored by the company to estimate the risk exposure at macro level. This can be better monitored when the actuary is involved in market conduct related activities. If the actuary identifies the risk and apprises the senior management at the time of liability estimation which usually happens on annual basis may not help the senior management as significant amount of sales would have had happened during the past one year. period. The real time risk assessment can happen only when the actuary is involved in market conduct related activities.

Explaining the product features:

Explaining the product's weaknesses is probably even more important in prevention wrong practices of market conduct. Some products may be quite innovative, giving the customer a lot of flexibility, guaranteed benefits but may be quite sensitive to economic changes. Figuring out what type of complaints or legal issues may arise considering those weaknesses is important. Another important aspect is making sure that the sales, marketing, and disclosure materials address those product weaknesses. Making sure that those materials are in place to address those known product weaknesses is critical. Then finally, making sure that the company got the administrative systems in place prior to introducing new products is also very important. All these measures can be ascertained by the involvement of actuary in market conduct.

Conclusion:

The presence of an actuary in market conduct is a proactive approach for the company. This helps in real time assessment of risk exposure, better quality of training to intermediaries, explaining the strengths and weaknesses of the product. The market conduct lapses experience feeds into pricing and liability estimation. Therefore, the role of actuary market conduct must become a core-area in the days to come especially in Indian market like pricing and liability estimation.

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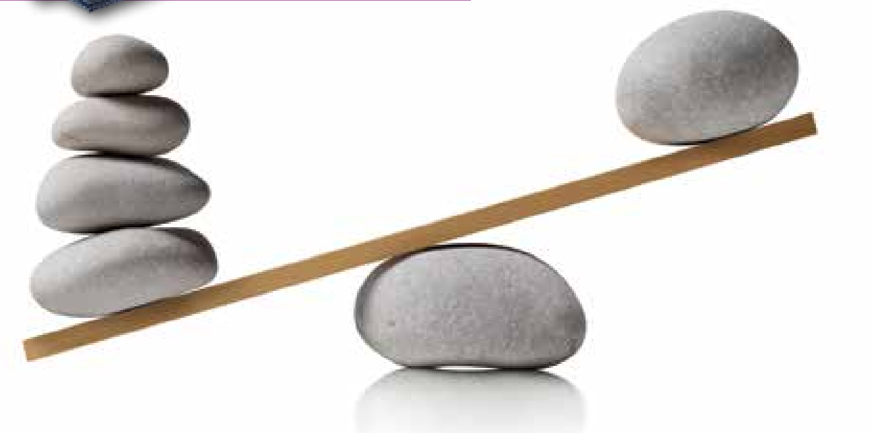
FEATURES



APPROPRIATE TO REQUIREMENTS

Want to consciously weigh proportionality in employee benefits actuarial practice?
Mayur Ankolekar and Nandan Nadkarni scale the dimensions.

As the curtains of the financial year get drawn, employee benefits actuaries face numerous reporting milestones. A question often vexes, "Is the approach and effort within the multiple guidance of accounting standards, guidance notes and actuarial practice standards in surplus to requirements?"

This question surfaces from the twin concepts of a) proportionality, and b) materiality. In professional guidance and accounting standards relating to employee benefits valuation, although proportionality and materiality are explicitly stated, they are sometimes also implied.

Materiality usually falls within an auditor's domain; the auditor considers a position with regard to the entity's overall financial statements. Proportionality on the other hand is inseparable from actuarial work.

The Merriam-Webster's online dictionary defines:

Proportional

adj: having a size, number, or amount that is directly related to or appropriate for something

The Webster's 1913 dictionary interprets:

Pro`por´tion

v: To form with symmetry or suitableness as the parts of the body.

Pro`por`tion`al´i`ty

n: The state of being in proportion

The contours of proportionality are drawn from various sources of guidance viz. accounting standards, guidance notes and actuarial practice standards. Overarching emphasis is on substance over form.

To inquire upon the theme of proportionality, we set the ball rolling on the features of these multiple sources of professional guidance. Proportionality is the spotlight, employee benefits practice the backdrop, and at the core are actuarial practice standards, actuarial guidance notes and accounting standards.

To inquire upon the theme of proportionality, we set the ball rolling on the features of these multiple sources of professional guidance.

We discuss facets of proportionality (see Fig. 1) across four dimensions: a) Entity and Benefit Classification, b) Data, c) Time, and d) Assumption Setting.

1 Clause 116 of Indian GAAP Accounting Standard (AS) 15 "Employee Benefits" (Revised 2005)

2 Clause 4 and 132 of Indian GAAP AS 15 "Employee Benefits" (Revised 2005) and clause 158 of International Accounting Standard (IAS) 19

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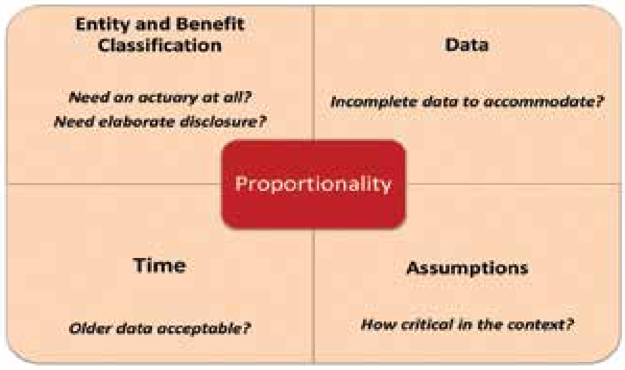
Fig. 1



Entity and Benefit Classification

Indian GAAP recognises the need to disclose less financial information on employee benefits for Small and Medium Enterprises (SME). Non-SMEs on the other hand need full financial disclosure.

An SME employing less than 50 may account for the accrued liability under the defined benefit plans using some other rational method, e.g., assuming that benefits are payable to all employees at the end of the accounting year.[1] That is, an SME with less than 50 employees may not need actuarial services.

Similarly post-employment defined benefit obligations need full disclosure, while Other Long term employee benefits may not, unless deemed material under other accounting standards[2].

Post-employment defined benefit obligations need full disclosure, while Other Long term employee benefits may not, unless deemed material under other accounting standards[1].

Other long term benefits are relatively short-term and less weighty in nature. They include long-term paid absences, jubilee or other long-service benefits, long term disability benefits, profit sharing, bonuses and deferred remuneration.[3]

Data

It is incumbent on the employee benefits actuary to describe the relevant data used for the demographic and financial projections and comment on its sufficiency and reliability[4].

The relative importance of assumptions differs with the benefit type. In pension plans with life annuity benefits, the mortality assumption is significant to results

The latent question is, "How much data related infirmity would be acceptable?" Data-related professional guidance is less pronounced. And inaccurate data is unavoidable.

If data inconsistency cases are a small proportion of the entire cohort, the position is more acceptable than otherwise. If hypothesized data is unlikely to materially affect the ultimate outcome, expediency pips accuracy. Example, it is common to assume spouse's age relative to a current pensioner. Consequential limitations on results should be stated in the report[5].

When data that is required is materially incomplete or inadequate, an assessment could be made to determine if the reliability could be improved by adjusting it in some manner.[6] This treatment or action should be documented.[7] An example could be the substitution of average values for invalid or missing entries.[8]

Data might be supplemented using additional sources of data, proxies or sampling methods. These sources need to be checked for relevance.[9] In some circumstances adjustments might be made to the assumptions used in models or calculations, or to their results, instead of or in addition to adjusting incomplete or inaccurate data. Any such adjustments will need to be documented and their effects identified.[10]

Assumptions

The relative importance of assumptions differs with the benefit type. Example, where lump sum benefits are paid at retirement, e.g. gratuity under the Indian Payment of Gratuity Act, 1972, the choice of mortality assumption may have little relevance to the liability[11]. The salary escalation and withdrawal rate assumed would be critical though and needs rigorous examination.

In pension plans with life annuity benefits, the mortality assumption is significant to results. Adjustments will be needed to be made to published mortality table rates. These need to be justified[12].

In cash long-term incentive plans, the estimation of benefit payout and business performance parameters is critical. The mortality rate is relatively insignificant to the purpose.

Also, it is acceptable to adopt or adapt assumptions selected for other purposes (such as to determine funding of the employee benefit plan) or demographic assumptions used at a prior measurement date when those assumptions are reasonable at the current measurement date.[13]

Time

The time between the Balance Sheet date and audited financial results has crashed. Expectations on time to present audited results have only seen one direction: up and higher.

Clients hence insist on measuring employee benefit obligations in anticipation of the Balance Sheet date. The exercise starts in advance of the measurement date. This aids in finalising the accounts earlier, provided the actuary has no reason to believe that there have been material changes in the data till the measurement date. How far back in time is the data acceptable? Are there risks of outdated data?

In lieu of collecting new employee census data at the measurement date, an actuary may appropriately adjust results using data collected at a different date when doing so will not materially affect the results.[14] When valuation data are not available annually, the actuary may make suitable approximations provided the client is fully informed and the client is satisfied that the effect of these approximations is not material.[15]

While such an approach eminently suits a periodic benefit like post-employment pension, tugging back too long (say, three months) for business parameter driven incentive plans is inappropriate. The dynamic nature of business changes would substantially render even recent data outdated e.g., while measuring liability for incentive plans.

The question of 'time latitude' is highly relevant for 'other long-term employee benefits' as compared with 'defined benefit post-employment pensions.'

Afterword

Proportionality in employee benefits draws from multidimensional sources: actuarial practice standards, guidance notes and accounting standards. Being aware of the various aspects of proportionality continues to be relevant today.

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Proposed final International Standard Actuarial Practice 3; International Actuarial Association 2014

Indian Accounting Standard 15 (Revised); ICAI 2005

Actuarial Practice Standards 13, 20 & Guidance Note 11; IAI 2012

Technical Actuarial Standard D: Data; Board for Actuarial Standards (UK) 2009

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3 Clause 153 of IAS 19
4 Clause D.4 of APS 20 of the IAI
5 Clause D.4 of APS 20 of the IAI
6 Clause C.5.11of TAS-D
7 Clause C.5.12 of TAS-D
8 Clause C.5.13 of TAS-D
9 Clause C.5.14 of TAS-D
10 Clause C.5.15 of TAS-D
11 Clause 7.2 of GN 11 of the IAI; Clause 2.3 (a) of ISAP 3 of the IAA
12 Clause 7.9 of GN 11 of the IAI
13 Clause 2.3 c of ISAP 3 of the IAA
14 Clause 2.3 b of ISAP 3 of the IAA
15 Clause 3.3 of APS 13 of the IAI

QUANTITATIVE EASING AND PENSION FUNDS – IMPACT, RISKS AND WAY FORWARD

Introduction

The term quantitative easing or 'QE' in short became popular after during the 2007 subprime crisis. QE was a massive injection of liquidity by major central banks across the world following the collapse of Lehman Brothers. QE measures involve a range of policy interventions by central banks. For example, in the United States (US), QE included purchase of unconventional assets by Federal Reserve (Fed) like the mortgage backed securities (MBS), operation twist wherein the Fed intervened in long end of the yield curve as against the traditional short end. In Europe, the European Central Banks QE measures did not include purchase of MBS but has recently experimented with negative deposit rates. While in Japan, the Bank of Japan mostly purchased government securities and has recently announced fresh round of Yen 80 trillion QE measure. Invariably whatever was the form of intervention, QE measures across all countries resulted in interest rates reduced to zero bound and they continue to remain at that level to this day.

The QE measure had wide impact on financial sector and with the benefit of hindsight it is not beneficial to all segments of the financial sectors in same proportion. While asset markets may have benefitted from QE measures, the long-term investors *viz* the pension funds and life insurance companies, cost-benefits calculation is not that straight forward. This paper is therefore concerned with the impact of QE type measure on pension funds particularly in jurisdictions where QE measure are still in force.

Impact of QE measures

The QE measures, now in the seventh year and despite all the market jitters on Feds QE tapering; show no sign of withdrawal in other jurisdiction like Japan and the European Union (EU). The immediate impact of QE measure was on financial markets and both equity markets and bonds have touched new highs. The Dow Jones industrial index has surged over 50% since 2007 despite flattish industrial production and considerable buildup of excess capacity. Bond yield both in long and short ends have fallen to ultra-low levels and even fiscally unsound sovereigns of Europe have been able to comfortably refinance their debt at low yields.

The long term yield over a period of 200 years for the UK have been in the range of 3-3.5%. The similar yield for the US centered around 3% with a variability 2.5-3.5%. Beyond doubts, QE has distorted the risk preferences making pension liability valuation exercise a difficult task. Long term yield observed in markets can no more be relied as most efficient benchmark. An internal study by Bank of England (BOE) suggests that long-term gilt yields were around one percentage point lower than they would otherwise have been without QE. Investment-grade corporate bond yields fell by about the same amount, while high-yield corporate bonds fell by somewhat more in BOE study.

Assessing the impact on pension fund

Very few studies and market commentaries have drawn explicit attention to the impact of QE on pension funds. This is surprising, given most of the QE jurisdictions are also aging rapidly. Global retirement consulting firm Mercer estimates the aggregate funded status position of pension plans operated by S&P 1500 companies on a monthly basis. Beginning 2007, when the funding position was net positive, Mercers estimated a deficit of $367 billion as of October 31, 2014. The funding ratio has dropped from around 104% in 2007 to 85% in October 2014. Over the last seven years, despite three bouts of QE, the funding position has not regained the pre-crisis levels!

The BOE in July 2012, for the first time, in response to the Treasury Committee at House of Commons request, highlighted the redistributive impact of monetary policy, and explained the costs and benefits of their policy actions to groups that are perceived to have been particularly badly affected. Since this remains one and only study from an official source author has relied on this study. However, subsequently in November 2013 McKinsey Institute also came out with a discussion paper on the distributive impact of QE and 2013 study has benefitted from same study of BOE.

In assessing the impact of QE on pension fund one must distinguish between the types of fund – occupational pension fund or state sponsored pay as you go (PAYG). Furthermore, the impact should also accommodate variations in pension fund design that is DB or DC.

Occupational pension funds

Protracted period of economic slowdown in the US, Europe and Japan is not a healthy sign for corporate sponsored occupational pension funds (OPF). The simple reason being, post 2007 corporates earnings have seen lackluster growth. Furthermore, the structural demand in these countries is undergoing a tectonic shift. Let's see some examples. Proctor and Gamble announced that it is reentering adult incontinence products (adult diapers)

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business, a segment it exited more than a decade ago. As matter of fact adult diaper sale in Japan is all set to overtake sale of baby diapers and Daio and Nippon Paper are gearing up to meet the future demand. Sales for many products like potato chips, motorcycles etc. will decline in coming years while those of prescription drugs will expand as population aging gathers pace. QE can neither stop these structural changes nor can it revive demand using the text book policy prescription.

Hence, unless the corporate sponsor of DB fund is able to adjust its line of business (adjustment time itself a function of the liability profile of DB-OPF, position of cash flows and extend of ALM mismatch) the case for meeting pension fund liability is very grim in the long-run. On short term horizon also DB funds have not benefitted from QE as Mercer data shows. The negative impact of falling discount rates and not been fully countered by rise in asset prices. Further the loss of purchasing power owing to depreciation of currency due to QE has negative welfare for participant of DB fund. The pace at which finances of DB fund will react to future policy measure is also sensitive to initial funding position. As the BOE study observes, those pension funds who were in deficit before the crisis, QE was an important contributory factor in the deterioration of their financial deficits during the current crisis.

However, for corporates who have already migrated to DC funds, the aging population may not impact their pension obligations. But low discount rates and will increase the price of retirement annuity for participants of DC fund who retire in coming years. To that extent DC participant also lose as DB due higher annuity prices. The welfare impact of currency depreciation for DC participant is identical to that of DB participant.

Unfunded PAYG

Unfunded PAYG pension plans also came under sharp scrutiny after 2007 crisis as far as the ability to meet the pension promise. An unfunded PAYG whether it is DB or DC type is linked to ability of the sovereign to raise taxes in future. Any shortfall in taxes is met through market borrowings. With aging population, sharp rise in unemployment rate and low GDP growth, tax revenues have not grown in line with future growth in government liabilities leading higher market borrowings.

The recent default of The City of Detroit is also an instructive case of whether pensions should be seen as a contractual obligation that cannot be diminished or impaired, or whether those with pension rights should be treated like other creditors so that pension cuts cannot be ruled out. The U.S. Bankruptcy Judge declared in December 2013 that pensions can be legally cut. This judgment has set a precedence and may even have implications for resolution mechanism for OPF in future if sponsor fails to adjust to economic situation.

Irrespective of the design of PAYG pension - DB or DC, inability of the government to raise taxes will impact the future benefits. Countries which have reformed their PAYG schemes to DC like in Sweden, a reduction in tax collection will automatically reduce the benefits. However, for those countries where PAYG is DB, low tax collection coupled with rising longevity will put system under strain that may require drastic measure to restore balance. In theory, with aging population a government will migrate from direct taxes to broad consumption based taxes to meet the short fall in tax revenue owing shrinkage in tax base. However, the latter option is also contained due high unemployment rates and large market borrowing in relation to GDP. For example, in case of Japan, the debt-to-GDP ratio is in excess of 500% while in case of the UK it is 495%, the US 362% and the EU 335%.

Future risks

The coming days will not be very easy as far as pension funds are concerned. Sovereign credit risk remains a potent risk in the EU region. In December 2014, Moody's formally downgraded Japan citing uncertainty over whether Japan will achieve its deficit-reduction goals. Besides credit risk, sovereign bond markets are becoming illiquid and at times pension funds are finding it difficult to offload their position [See Levring (2014)]. The illiquidity in corporate bond markets is also gathering pace. According to International Capital Market Association, bond trading in secondary market in Europe is critically impaired and number participants has reduced considerably. The drop in liquidity is as high as 70% since 2008. One can even question whether the buoyancy in equity markets will sustain in future. Any sharp correction will have the obvious impact of further deterioration in funding ratios.

Conclusions

The future course of pension finances in countries under discussion are on fragile footing. The policy formulation in respect of pension funds in 2015 will have meet the twin challenges of adjusting to the fundamental changes and devising short term measure that will make this inevitable fundamental adjustment less painful. Whether QE type measure will make this short term adjustment less painful needs to be seen. Whatever little evidence is available indicates towards the contrary.

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EQUITY INDEXED UNIVERSAL LIFE (IUL)

This paper aims to discuss the features, mechanism of operation, hedging methodology and other aspects of a popular product in the US – Equity Indexed Universal Life, or Indexed Universal Life (IUL).

Background

Different product designs are popular during different economic phases, and IUL is popular during this one. IUL offers the high returns of the equity markets through links to popular indexes. However, it also provides a guarantee that your funds will not drop in value. This guarantee is often provided on a yearly basis, which makes it a very material one. Its share of the life insurance new business annualized premium grew from around 4% in 2008 to 13% in 2013 (Source: LIMRA). It has been the major supporter of Life Insurance sales growth in the past decade.

Universal Life products have become less popular in the US, as they are backed by bonds, mortgage backed securities, and other fixed income instruments. Due to the low interest rate environment, the yields on these assets are low. Hence, the credited interest rates on new policies are low. Old policies are also only protected to the extent that their benefits are matched with older bonds.

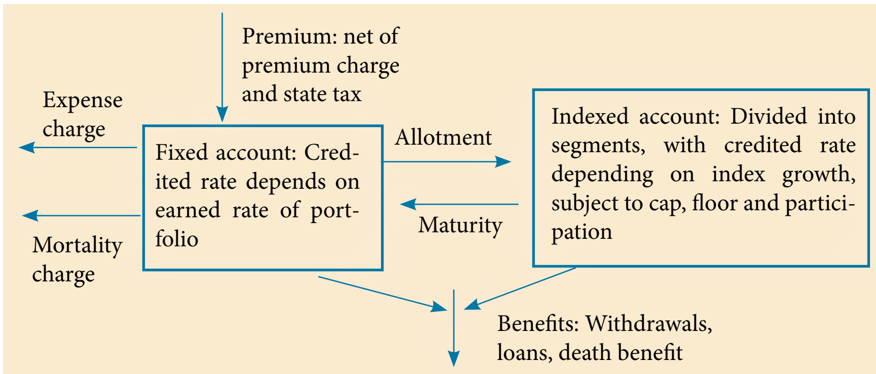
Investors are more interested in the equity markets. However, clients have been wary of buying Variable Universal Life (VUL), especially after the 2008 market crash and the ensuing recession. VUL is a product which transfers all equity risk to the policyholder. Even though VULs offer guarantees, they are often long term and/or out of the money.

Mechanism of operation:

When a premium is received, it is invested in an account called the fixed account, net of the premium expense charge and net of the state premium tax.

Fixed account:

The fixed account operates much like a Universal Life account. The funds backing the fixed account are invested in fixed income securities like federal bonds, state bonds, corporate bonds and asset backed securities. The earned rate is the yield



earned by the fund over the year.

Credited rate = max (earned rate – interest spread, guaranteed credited rate)

The interest spread may be around 75 to 150 bps, and the guaranteed credited rate is typically between 2% to 4%. Both these values stay constant through the duration of the contract.

Mortality and expense charges will be deducted from the fixed account on a monthly basis. If funds are not available in the fixed account, it will then be deducted from the indexed account. Note that the expense charge typically includes a per-policy charge and a per-sum assured charge.

The policyholder can elect to transfer funds to the indexed account. This can be done through an automatic allocation strategy. For example, the policyholder can choose to leave 1 year of charges in the fixed account, while allotting the remaining money to different indexed strategies.

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Indexed Account:

The indexed account contains segments. On a certain date every month, a new indexed segment can be created, by deriving funds from the fixed account or a matured segment. At any point of time, the indexed account can have multiple in-force segments. The interest to be credited is calculated as:

Index credited rate = max (min (index return X Participation Rate, Growth cap), Floor rate)

The floor rate is credited periodically (often daily).The remaining interest (equalling Index credited rate minus the floor rate), is credited only at the maturity of the index term. Let us go over some of the terms in this formula. Then we will use an example to illustrate how this happens.

Floor Rate: This is the rate at which the policyholder is ensured a minimum return. The floor is never less than 0% by regulation, ensuring that the segment does not lose money over the Segment term. Typical floors are between 0% and 2%.

Participation rate: This is the proportion of the index return that the policyholder gets in his account. There is generally a guaranteed participation rate, and a current participation rate, which is declared periodically. For example, the guaranteed participation rate may be 80%, but the current participation rate declared before segment creation is 100%.

The price of the options which back the strategy will change depending on the market conditions. Adjusting the participation rate can keep the options affordable to the Insurer. However, due to adverse publicity against low participation rates, many Insurers now offer a guaranteed 100% participation rate. Note, that due to cheaper options available, Insurers sometimes offer a participation rate which is greater than 100% (say 150%).

Growth Cap: The cap is the rate above which the returns of the index will not benefit the policyholder. Typical caps are around 12%, but is highly variable between Insurers. The Insurer will also offer a guaranteed minimum cap. Generally the above two parameters are kept constant through the years, while the Cap is the moving part. Though in reality, none of these three parameters are guaranteed by the Insurer, beyond the minimum guarantees provided on each of them.

Here is the example: Let us assume that an amount of $1,000 has been invested in an indexed segment. The cap rate is 17%, the participation rate is 60%, and the floor rate is 1%. Being a segment of 1 year term, the index return over the next year was 20%.

Value of the segment 6 months later: $1,000 X 1.01^(1/2) = $1,004.99

Value of the segment 1 year later, but before maturity = $1,000 X 1.01 = $1,010

Since index return X participation rate = 20% X 60% = 12% is lesser than the cap of 17%, this amount will be credited. However, since 1% has already been credited, only 11% will be credited at maturity.

Value of segment 1 year later, after maturity = $ 1,010 + 1,000 X 11% = $1,120

Deduction of charges, withdrawals, and loans from the Indexed account can complicate interest calculations.

Indexing strategies:

Companies generally offer multiple investment strategies, which fit the needs of different classes of their policyholders. The variations in the investment strategies can be broken down into some key variables, which are explained below.

Indices used: S&P 500 is the most common index used. Other US indexes used are the NASDAQ-100 and the DJIA. International indexes like Hang Seng and EURO STOXX 50 are also used.

All indexes are based on equity, and some Insurers provide international indexes as well. The index will be based on share price and will not include dividends. The reason for excluding dividends is based on the unavailability of derivatives to back total return. The hedging methodology is explained later. The current average dividend yield on S&P 500 stocks is around 2%.

Multiple Index strategies: Insurers may base their Index return on the performance of multiple indices. For example, if Index1, Index2 and Index3 are the chosen indices, 75% of the top performing index's return, 25% of the runner-up index's return can be used to compute the Index return. Alternatively, an equal weighting of the 3 index's returns can be used to calculate the Index return. The cap, floor and participation rate will only be applied on the composite Index return.

Index Term: This relates to the maturity of each segment. When a segment matures, funds in it can either by shifted to the fixed account, or can be reinvested in a new segment (under the applicable new rates). An Insurer will try to offer some variations regarding the term of the segments it offers. Terms typically vary from 1 year to 5 years. For example, an Insurer may offer 1 year and 2 year strategies.

An increase in term means that the annualized rates are more generous. For example, assuming that the floor and the participation rate are the same, the annualized cap for a 2 year segment will be larger than that of a 1 year segment. With a larger term, the variability of the index reduces and the cost of options backing the segment also reduces. In fact, some Insurers offer no cap for 5 year segments. Longer term strategies can alternatively have larger participation rates and/or larger floors.

Point to point vs. Monthly average strategies: While the point-to-point strategy calculates index growth based on (Final index value/Initial index value – 1) %, the monthly average strategy calculates index growth based on (Average of month end index values/Initial Index value -1)%. The monthly index values are not subject to any cap/floor - only the index growth is. The monthly average strategy is typically available only with a 1 year index term.

Cap buy up: Some Insurers may offer an option to "buy up", or increase the cap and will charge for it. The charge may be a percentage of the initial segment value. For example, increased caps will be available for a charge of 1% of the initial segment value. The actual increase in cap will depend on the option that can be bought with the additional charge, and hence will be re-declared periodically by the Insurer.

Trigger Strategy: This is another example of a strategy offered by some Insurers. If the index growth is greater than 0%, then the trigger interest (say 8.5%) will be credited to the segment. The trigger interest will also have a guaranteed minimum (say 5%), and will be periodically reset by the Insurer.

Benefits:

The way benefits are structured in this product, is closely linked with policyholder tax regulations in the US.

- Here, premiums are paid net of tax and this amount is called the basis.
- The account values (both fixed and indexed) grow at a tax deferred rate (Internal Revenue Code or IRC Section – 72e)
- When a withdrawal happens the basis is withdrawn first, free of any further tax.
- Any withdrawal in excess of the basis is taxed at income tax rates.

- Policy loans are also not taxed to the extent that the policy maintains its status under the life insurance definition of taxation. (IRC Section 7702)
- Death benefits are free of federal income tax (IRC Section 101). Death benefit will be paid net of outstanding loans.

The initial withdrawal of basis followed by taking loans, up to the permissible limit, can be structured to create an income plan for the client. Since loans are such an important part of benefits, let us discuss two common types of loans available.

If surrender happens when there are un-matured segments in the indexed account, the client will lose the interest above the guaranteed rate. Surrender charges are also applicable for early durations.

Fixed account loans: These are loans taken from your fixed account. The loan rate is the interest rate charged from you. The loan credited interest rate is the rate credited to your account.

Net cost = loan interest rate – loan credited rate

For example, the loan interest rate is 4%, and the credited interest rate can be 3%. In this case, there is a net cost of 1% for you. After the initial years, companies often provide 0% net cost loans. This allows you to take your money out for no additional charge.

Variable loans: In these loans, the loan interest rate is dependent on a measure of market interest rates, like Moody's corporate bond yield. The other factors remain the same as in the above.

Indexed account loans:

Here the loan credited rate is equal to the Index Credited Rate of that index segment. The loan interest rate would be fixed, but would be different from the rates in the above two sections. For example,

Year	Loan interest rate	Loan credited rate	Net cost
1	5%	0%	5%
2	5%	11%	-6%
3	5%	8%	-3%

Since the loan credit rate is dependent on index return, the net cost can be positive or negative. The question also arises, in which strategy the loaned account value should be invested in. This type of loan is generally considered to offer "loan arbitrage", but is more risky to the policyholder.

Hedging methodologies:

The Insurer does not invest directly in the underlying index. Instead it purchases derivatives which hedge the option payoff expected by the policyholder. There are three risk strategies that the Insurer can take:

- Buying OTC or exchange traded derivatives
- Dynamic hedging of the risk using option greeks
- Retain the risk.

Let us understand the first strategy through an example. Suppose $1,000 is invested in a new point-to-point segment whose term is 1 year. The floor is 1%, the participation rate is 100%, and the cap is 13%. The Insurer is able to get a 5% return on investments in the general account comprising of fixed income instruments (bonds and mortgages), or loans.

In order to meet the guaranteed liability of $1,000 X 1.01 = $1,010 in the general account, the amount to be invested in the beginning is $1,010/1.05= $961.90. The remaining $1000 – 961.90 = $38.10, called your option budget, can be used to purchase an instrument which can replicate the payoff.

The Insurer can buy an exchange traded European call option on the index for a term of 1 year and strike price of $1,010. We would also be able to sell a call option on the index for a term of 1 year and a strike price of $1,000 X 1.13 = $1,130. The value of this transaction is called your option cost.

Profit/loss = option budget – option cost

The profit/loss is dependent on:

- The yield on funds backing the guaranteed floor in the general account
- The price of options in the markets, which are dependent on the floor, cap and participation rates

The Insurer will, possibly on smoothed terms, re-declare cap, floor and participation rates so that no losses are made in the long run. There is significant pressure to offer competitive terms. Sometimes, Insurers offer competitive caps, floors and participation rates, but charge larger expense or mortality charges– which appears attractive to consumers who don't specifically check for expense loads. Other Insurers may be forced to accept losses, in order to gain market share. Still others have differential index strategies, and/or additional features.

Asian options can be used for the monthly averaging strategies. For international indexes, derivatives in dollars, but on the foreign index would be required. Similarly, for other strategies, matching derivatives would be required.

However, generally companies prefer to buy over-the-counter (OTC) derivatives from an investment bank. A vertical call spread with an upper strike price of $1,130, and a lower strike price of $1,010 could be bought. This is the most common risk strategy used. Insurers must have systems to control counterparty risk, exposure and concentration. There will typically be more counterparty risk in OTC derivatives, compared to exchange traded derivatives. The portfolio of index strategies provided is seen to be closely dependant on the options available in the derivatives market place.

Dynamic hedging:

It may be difficult for an investment bank to hedge their position by finding a third-party who wants an opposite transaction. Instead they do dynamic hedging to create a portfolio which hedges the risk of the option.

As an example, the option will have 5 greeks – delta, gamma, theta, vega and rho. It is possible to create a portfolio of 5 assets which can have the same values of these partial derivatives. Assets with suitable Greeks should be chosen, and the proportion of each can be calculated by solving these 5 equations of 5 unknowns. Since these Greeks only consider the first partial derivative, frequent rebalancing would be required to ensure that the liability is always hedged.

By performing this activity themselves, the Insurer can

- Create strategies whose derivatives are not available in the market.
- Reduce costs, particularly on complex strategies where the investment bank's profit and risk premium margins are high.

However, in order to do this, the insurer

- Needs in-house hedging expertise.
- There is a higher risk of hedging and process errors.

The reserves for IUL are computed according to Actuarial Guideline 36 (AG 36). This guideline explains 3 different methodologies. One of the methodologies applies in case full hedging has been achieved. The other two methodologies apply in case the hedging is not complete. A significant overhaul of the reserving methodology is expected soon with the introduction of Principles Based Reserves. An in-depth analysis of reserving methodologies is beyond the scope of this paper. The risk based capital requirements, and liquidity for derivatives also impact the hedging strategy used.

Insurers may retain some or all risk from index strategies with smaller uptakes. They will be subject to higher reserve requirements as per the guidelines above.

Other aspects

In the highly competitive IUL markets, Insurers can compete either by reducing rates or by design changes which are more attractive to the current socio-economic phase. We will talk about a minor addition to features, which Insurers often offer separately.

Secondary guarantees for guaranteed death protection: The IUL is a flexible premium contract, so the policyholder can pay whatever premium he/she chooses (up to certain maximums). Poor premium payments coupled with lesser credited rates compared to illustrations, can result in a negative policy value, lapsation and consumer discontent.

Some providers offer a secondary guarantee. The most common form consists of a shadow account, which has guaranteed credited rates, guaranteed mortality and administration charges. A premium is calculated based on keeping this account positive till a target age. If the policyholder pays this premium, the shadow account will remain positive, even if the policy value turns negative. In this case, he/she is assured the sum assured on death. This account doesn't affect other benefits like surrender value or loans.

The reserving methodology for shadow accounts is contained in Actuarial Guideline 38 (AG 38).The reserves for IUL products with secondary guarantees are considerably higher, as the higher of the reserves through AG 36 and AG 38 needs to be held – the latter being more onerous.

Illustration rates: There have been concerns that the illustration rates for IUL have been too high, and inconsistent between Insurers. The regulator is taking pre-empting measures against a potential mis-selling situation. An Actuarial Guideline is currently being drafted for the methodology, look-back period and other "moving parts" of the illustration rate calculation.

The bigger picture

The traditional view of life insurance being merely a cover against death must be challenged. Life insurance should cater to all the risks and needs of Life, partly through the active management of client wealth.

IUL has captured the client fancy, because it has provided a type of investment (options) that was previously unavailable or too technically challenging to them. The writers of options are less risk averse, and are able to provide guarantees to the buyers of options (clients). The Insurer facilitates such risk transfer in the long term, and captures any residual risk. This enables the maximization of utility of both parties, which is the purpose of insurance. Through the structuring of benefits, the income can be used to meet specific client goals. The ability of insurers to offer such tailor-made products justifies the higher expense loads compared to other mediums of relatively passive wealth management.

IRDA may be considering investments in equity derivatives. IRDA has recently amended its guidelines (IRDA/F&I/INV/CIR/138/06/2014) to allow investments in Forward Rate Agreements, Interest Rate Swaps and Exchange Trader Interest Rate Futures for purposes of reinvestment of investment income, matured securities or the investment of future premium.

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FACADE

No one can see the smile i am faking,
how constantly deep inside i am dying,
No matter where i go these feelings stay inside,
I would run away fast and quickly hide.

I don't understand why there's pressure inside,
The pain comes from it brings a tear drop to my eyes.
Want to wipe blind stare of living dead away,
The pain so deep, i locked and hide the way.

All i want to do is close my eyes
Its like an eternal torture that guess never dies
When i get home, i'll take off my mask
Faking happiness is nearly an impossible task.

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SUCCESS STORY

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What were the basic mantras of your success?

My basic mantras for success is study regularly, finish study material provided by IAI ie FAC pack and Stats pack well before time of examination, make notes and formula sheet for the purpose of revision, solve at least all problems in the study material and take mock tests. Take help of technology, for reading on the go. It was very helpful in my case, as I completed most of the study during my travel time in metro train, local train or auto rickshaw with the help of mobile reader.

Tell us about yourself, your educational background and your hobbies

I am currently working with Global risk consulting group (GRC) as a Research Associate in Mumbai.I have completed graduation in Electronics and communication from BIT Sindri, Dhanbad in 2007 and MBA from SBM, NMIMS in 2014. Before pursuing MBA, I was working as an Engineer in Damodar valley corporation. I have a keen interest in Mathematics, Statistics and Finance. I like listening to music, solving puzzles, following market trends and Teaching.

When did you decided to take up Actuarial professional course?

My maiden interaction with actuarial science occurred during MBA when I was working on fourth trimester project in Financial Econometrics subject. In this project, we have studied and prepared report on basic working of Life Insurance sector, its financial reporting structure, potential and trends of Indian Life Insurance Industry. I got interested in actuarial science after this project. Continuous interaction with the faculty Dr. Chandra A Poojari, who had worked in insurance industry for several years before becoming faculty, made me more eager to take this course. Fortunately, I got a job with GRC, an actuarial consulting firm. After joining it, I haven't waited anymore and decided to take this course.

How did you come to know about the ACET?

When I decided to pursue Actuarial profession course, then I consulted my colleagues Abhinav and Aparna. They let me know about ACET.

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

It depends on your back ground and your interest level. In my case, interest in mathematics and statistics helped me a lot. I dedicated 2 hours of regular studies everyday almost for 3 months.

How did you start preparation for the ACET?

I have started my studies with FAC pack along with solving problems. Many concepts were familiar to me, which gave me confidence in getting ahead. After completing study of FAC pack once, I started study of stats pack and watched BPP tutorials for better understanding of concepts. Study material provided by IAI is well prepared and is sufficient for ACET.

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

ACET study material was excellent and explained concepts clearly. So, I have not found any part difficult in the exam.

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

Yes, I have prepared notes and according to me it is quite useful. It is a faster way to revise course just before time. Preparation of a table containing all important formula is also very helpful.

How do you visualize your success?

ACET is gate to the Actuarial profession and it is my first step into Actuarial profession. Being a topper is a morale booster and gave me confidence to pursue this course with full vigor. I will work hard for next actuarial exams.

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

My strong points were regular studies and time management during the examination. I practiced a lot of questions and given mock tests. Interest in subject was added advantage. All these enabled me, to achieve success in ACET.

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

I have keen interest in mathematics, statistics and finance. I have data extracting and data analysing capability. I am working on projects which require combination of actuarial, management and technical skills. Risk management has become an integral part of management function in sectors apart from BFSI such as oil and gas and power. With these skills, work experience and educational background in engineering and finance, I will add diversity to actuarial profession. And I will be able to contribute significantly to the profession.

Are you working somewhere? Describe a typical work week?

Yes, I am working in GRC as a research Associate. It is an actuarial consulting firm founded by three qualified and well reputed Actuaries. As part of my work, I regularly interact with actuarial consultants working in different domains ie life, health, non-life and pensions. I extract data from different sources, analyse data and prepare reports, so that it can be used as reference by consultants. At present, I am working on projects related to solvency II development and risk management.

What are you passionate about?

I am passionate about numbers, analysing data and managing things.

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

My wife priya, brother, parents and parents-in-law were the people who always supported me and stood by me. I thank them for their belief in me. My friends were very helpful. Seniors and colleagues at GRC always motivated me to excel in the exam. I am thankful to Aparna and Abhinav, with whom I discussed a lot of concepts. I wish to thank Shaikh Thaika and Tanmeet to keep me motivated and focused, when I was feeling low just some days before exam. Thanks to Dhiraj and Gautam sir, who helped me in various ways. At last, I want to thank almighty for bestowing me this success.

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

One of the common mistakes made by students is to devote a good time only on studying the course material and giving proportionately a less amount of time on solving problems. Since ACET tests skills of application of concepts, this can only be developed by solving a good number of practice problems. Other mistake that should be avoided is to ignore some part of syllabus or a selective study because ACET questions were quite balanced and no section was ignored.

Any comments on your experience with ACET process

I appreciate IAI for the present ACET system. The whole process was very satisfying. It is very student friendly, where help is easily available online. Study material and tutorial support are excellent.

INDONESIA

Country Overview

Warm greetings from Indonesia! Last few months have seen significant changes in the country. Indonesia elected President, Joko Widodo, or popularly known as "Jokowi", who took office in October this year who promises to elevate the status of Indonesia globally with market friendly policies.

The growth momentum of Indonesia has moderated in the last one and a half year with GDP growth lowering from a pace of around 6% to around 5.1% by end of 2014 mainly due to weak performance by the export sector. However, the outlook for 2015 and medium term depends on continued sound macroeconomic management by the new government and sustained pro-market reforms.

Life Insurance industry in 2014 has reportedly seen a growth of around 15% to 16% in total premium which has mellowed from last year due to slowdown in the economy.

Lately, Financial Services Authority of Indonesia locally called the "OJK" has been very active in building a supervisory framework. A number of regulations have been introduced recently.

New Insurance Law

The long awaited Indonesian insurance bill was finally passed by the Indonesian House of Representatives in September 2014.

Key highlights:

- **Foreign Ownership limit**

The publicly mooted controversial lowering of the foreign ownership cap (in relation to Indonesian insurance companies) to 49% has not been included in the final draft of the bill which was passed by the legislative council, although the government may still lower the foreign ownership limit via subsidiary government regulations. It remains to be seen whether this may happen. As things currently stand, the position remains that foreign share participation in an Indonesian insurance company is limited to 80% at the time of establishment, but a foreign shareholder has in practice been able to subsequently increase its shareholding beyond 80% by subscribing for new shares, provided that the total capital issued to the local party is maintained.

- **Single Presence**

A 'single presence' policy has now, for the first time, been applied to the insurance sector in Indonesia. This is a significant development as, unlike the Indonesian banking sector (where such policy has been in place for many years), there has been no single presence policy in relation to the insurance sector in Indonesia.

- **Policyholder Protection**

Another key aspect of the New Insurance Law is that it obliges insurance companies to participate in a policyholder protection program. The New Insurance Law provides that the implementation of this program will be implemented by further primary legislation which must be introduced at the latest within 3 years of the New Insurance Law being promulgated. It also requires insurance companies to adhere to certain minimum standards in relation to policies, premiums or contribution, underwriting and KYC, claims handling, expertise in insurance sector, distribution or marketing of products and handling of customer complaints.

Reinsurance

Government has a concern on the rising current account deficit and the contribution of reinsurance transactions in worsening the balance of payments situation. The deficit is partly attributed to inability of local reinsurance capacity to absorb all the needs of reinsurance and the inefficiency of the joint local reinsurers' capacity. OJK has taken up a mandate to issue regulations in near future to optimise local capacity, especially in domestic reinsurance. It has announced the formation of Indonesia Re which will be formed by merging the public reinsurance companies. OJK has also proposed to raise the mandatory cession from current 10% to arguably 100% for life insurance sector. New regulation will also oblige insurance companies to appoint leader reinsurer from within the country.

The industry is concerned on the requirement to place all reinsurance domestically as it is difficult to change immediately life treaties which are long term. There are other concerns like product innovation, service, systems/ processes, credit ratings, concentrations of risk which will be affected due to the proposed regulations.

A new regulation is being finalised and is likely to be formalised by early January 2015.

Good Corporate Governance

Supported by International Financial Corporation (IFC), a World Bank subsidiary, OJK promulgated a new regulation on Good Corporate Governance. Regulation covers various aspects of Corporate Governance that must be improved, namely: corporate governance framework, shareholders protection, stakeholders roles, transparency of information, as well as roles and responsibilities of the Board of Commissioners (BoC) and Board of Directors (BoD). An insurance company and a reinsurance company must have at least three directors and three commissioners. All directors and commissioners are required to pass the 'fit and proper' test imposed by the OJK.

Amongst one of the important requirements in this regulation, companies are required to submit Corporate Plans and Business Plans to OJK on an annual basis.

Corporate plan gives an overview of the company's activity plans for the next 5 years. The Business plan is more detailed and should cover company's plan for one (short term) to three years (medium term) including plan to improve business performance, and strategy to implement these plans according to set time and target.

Risk Based Supervision

With the aim to strengthen risk management and increase surveillance, OJK has introduced Risk Based Supervision (RBS) for Non Banking Financial Institutions effective 1 January 2015. The regulation requires companies to perform self assessment to understand the risks inherent in the business activities once a year for previous year end position. The supervision and intervention level will be determined by OJK depending on the total risk level and the impact of the company on the industry.

Microinsurance

OJK is committed to increase access to insurance amongst lower socio economic strata. In this endeavour, a blueprint was launched by OJK in partnership with insurance industry associations which also featured launch of standard micro-insurance products. The blueprint includes a premium price and benefit limit.

Stay tuned for the next edition!!!

About the Author

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Anshuman Anand AIAI is currently working with PT. AIA Financial Indonesia as Head of Valuation - Corporate Actuarial.

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

PUZZLE

Puzzle No. 227:

If i represents the square root of minus one, then $(1+i)^2 = 2i$ equals twice the square root of minus one. Numbers which comprise a real number plus a multiple of i are known as complex numbers. Which two complex numbers are such that they are the squares of one another?

Puzzle No. 228:

Everybody knows that some numbers are interesting, but did you know they all are? The facts that Aunt Lucy's postcode is also the hundredth number in Pascal's Triangle and that her telephone number is also the first seven places of π in reverse are not merely coincidences! Here is a proof that

It will be agreed that 1 is interesting, being the integer on which all others are based. The integer 2 is interesting because it is the lowest prime, 3 because it is the sum of the preceding integers and 4 because it is a perfect square. The integer 5 is interesting because it is the sum of the first two primes, and 6 because it is equal to the sum of its factors.

Continuing through the integers we might, if we had not done enough research, eventually find an integer which appeared to be totally uninteresting. This integer, however, would then be the least such integer, which would make it extremely interesting! Quite clearly, therefore, we can continue through the integers and each one will be interesting..

Accepting that all integers are interesting, it would be agreed that some are more interesting than others. What makes the integer below especially interesting?

8 549 176 320

Note that there are over three million integers that contain exactly one of each digit, so this alone does not make this integer "especially interesting".

ANSWERS TO PUZZLES

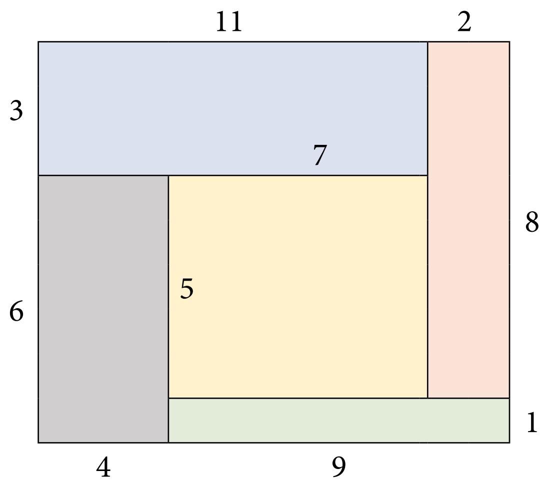
Puzzle No. 221:

The divisors of 672 are 1, 2, 3, 4, 6, 7, 8, 12, 14, 16, 21, 24, 28, 32, 42, 48, 56, 84, 96, 112, 168, 224, 336 and 672, and these total $3 \times 672 = 2016$.

Puzzle No. 222:

Begin by noting that the cake's area cannot be less than $(1 \times 10) + (2 \times 9) + (3 \times 8) + (4 \times 7) + (5 \times 6) = 110$ cm². By trial and error, the smallest cake which will meet the requirements will then be found to be 9×13 cm, which has an area of 117 cm².

The cut cake is shown below:



Puzzle No. 223:

The angles are 4π/7, 2π/7 and π/7 (i.e. A = 2B = 4C)

Puzzle No. 224:

42 arrangements are possible.

Correct Solutions Were Received From

Puzzle No. 221:

1. Shilpi Jain
2. Arun Bharti
3. Graham Lyons
4. HemantRupani

Puzzle No. 222:

None

Puzzle No. 223:

1. Graham Lyons
2. Ambikeshwar Kumar
3. Karolina Napierala

Puzzle No. 224:

1. Graham Lyons

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SUDOKU

SUDOKU No. 28 for the month of January 2014

SUDOKU

		2	6		4	1		
	7					9		
	8				3	5		
2				6				5
3				9				8
4				1				2
		3	5				4	
		1					6	
		9	2		6	7		

HOW TO PLAY

Fill in the grid so that every horizontal row, every vertical column and every 3x3 box contains the digits 1-9, without repeating the numbers in the same row, column or box.

You can't change the digits already given in the grid.

- Sudoku Puzzle by Vinod Kumar

Solution of Sudoku Puzzle No.27 published in the Month of December 2014

SOLUTION

4	6	3	2	9	7	8	5	1
5	7	9	6	1	8	4	2	3
1	2	8	5	3	4	7	9	6
7	9	6	1	5	2	3	8	4
2	3	4	8	7	9	6	1	5
8	5	1	4	6	3	2	7	9
6	8	2	9	4	5	1	3	7
9	4	7	3	2	1	5	6	8
3	1	5	7	8	6	9	4	2

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