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the Actuary INDIA

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INDIAN ACTUARIAL PROFESSION
Serving the Cause of Public Interest

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Institute of Actuaries of India

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16th Global Conference of ACTUARIES

17th-18th February, 2014

Renaissance Mumbai Convention Centre Hotel

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FROM THE EDITOR'S DESK

SUNIL SHARMA

sunil.sharma@kotak.com

The first six months of current financial year has been very busy for the actuarial community in India, in particular the Products Team. First, meeting the deadline of group products by end of July and now meeting the deadline for individual products by end of this month.

The Products regulations 2013 for Linked and non-Linked Business have brought about significant changes in the structure of the products. The new regulations have challenged the classic definition of the endowment products by defining the death benefit to be different from the sum assured. While it may help some customers to get higher inbuilt death benefit, it may be costly for those in higher age band looking insurance for tax free savings with inbuilt insurance. A much has already been debated by the profession on this.

It's a difficult time for the insurers and the product teams to replace their existing products and to ensure that they have corresponding modified /new products in their bouquet.

The main challenge is for IT Teams. The significant system changes requirements resulting from new products within short span of time, including system programming, testing, regressing and moving into production which takes several months in developed market will have to be completed in few weeks in India. There is always a risk that some bugs may remain untested, if sufficient time is not provided to system testing process. Therefore, IT and system UAT Team have to go through an acid test duringnext few weeks.

September 2013 issue of Actuary India include a very topical article "Current Perspective on Life Insurance in India" by an experienced Actuary Mr NM Govardhan and FDI in Insurance by Mr R. Ramakrishnan, a Veteran in Actuarial world. The articlesare must read to learn from the writer's experience and how the Industry has evolved since 1818.

There has been challenges in past and there are challenges ahead, however, this is a country of opportunities. The Industry, Profession and the Government agencies really need to work together to grow the insurance Industry, to resolve the issues facing the industry and that too with speed to meet the insurance needs of the 1.25 billion population of this country. The expertise do exist in the Industry in all areas, we just need to use it with proper coordination, mutual trust and faster decision making.

I am confident that actuarial community in India is geared to ensure smooth transition into new era.

We invite opinion and comments on the articles published in the magazine.

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CAPACITY BUILDING WORKSHOP IN CROP INSURANCE

Organized by: Advisory Group on Micro Insurance • Venue: Indian Merchants Chambers, Churchgate, Mumbai • Date: 14th August 2013

The topics for the sessions of the workshop gave full justice to "the pressing need of the hour:" building adequate actuarial expertise and analytical capacity in the area of Microinsurance especially Crop Insurance.

The participants included representatives of various Insurance, Reinsurance, Consulting and Broking Companies from Actuarial and Underwriting Departments, representatives from IRDA and many students interested in developing knowledge of Crop Insurance.

The members of the Advisory Group for Microinsurance Mr Bharat Venkatramani & Mr Mayur Ankolekar greeted all the speakers.

Session 1: Key Note Address by A.K. Roy

A.K. Roy

A. K. Roy is currently Chairman and Managing Director of General Insurance Corporation of India (GIC). He pointed out few key challenges, highlighted the current status and addressed few areas of needs in the practical field of crop insurance in India.

One of the current challenges faced by Agriculture Insurance Corporation of India Limited (AICL) in current form of crop insurance is that the delay in claims settlement is more than one year which is due to delay in assessment and estimation of losses on a very large scale and hence the relief is not provided to the farmers when they need the most. He commented that an "index-based" approach may be better in cutting down the delay. In that again, Area Approach is not accurate in indemnifying the losses and there is a need for individual based indemnity which is currently not feasible due to lack of reach, technology and high operating costs. Cost of reaching out to farmers is very high because of large number of farmers who have small land holdings and ignorance about the insurance products at grass root level. The actuarial profession could contribute in product design, particularly in reducing basis risks.

Another area of concern for crop insurance is the "Climate Change" effect. It is still uncertain how the changes observed in the climate by way of increase in temperatures during summers and wide variation in rainfall year on year will affect the crop cycles. However, it is certain that there are imminent changes in the patterns of rainfall, temperature, humidity etc. and these will have an impact on the production of crops. Another effect of Climate Change is that the past data held by the insurance companies or the meteorological departments will have little relevance for determining future patterns.

He spoke about the history of coverage of crop insurance in India; prior to 1990 only risks before harvesting were covered by insurance. In the 1990's Oriental Insurance Company came out with "Khaliyan" plan which for the first time covered risks after harvesting of crop. As of today, there are 3 schemes currently running for crop insurance.

1. National Agriculture Insurance Scheme (NAIS) which is in its last lag and is in process of phasing out.
2. Modified National Agriculture Insurance Scheme (MNAIS) which is a better product than its predecessor.
3. Weather Based Index Insurance which has resolved many of the practical limitations of MNAIS. However it suffers from many inconsistencies not restricted to basis risks alone.

He concluded his address by specifying few areas of needs in crop insurance. The current structure of crop insurance does not meet the demands of the farmers completely. There is need for research and product innovation to cover the specific demands of individual farmers. Also coverage requires extending to the whole of India. And finally there is a requirement for actuarial support in analysing the trends and cost effective ways of providing

About the Author

neelhchheda@gmail.com

Neel works in the Actuarial department at Liberty Videocon General. He is an "Associate member" of IAI, ICAI, ICSI and FRM holder.

better insurance covers in Crop Insurance.

Session 2: Pricing Weather- Index Insurance Product in India by Manalur Sandilya

Manalur Sandilya

Manalur Sandilya currently acts as Appointed Actuary for ICICI Lombard General Insurance Company. He spoke on various considerations while pricing for weather based index insurance products in India.

He started with explaining the basics of pricing. First Pure Premium is calculated by looking at past years' data usually known as the loss cost or the burn. Alternatively, frequency and severity of claims is derived and multiplied together to get the Pure Premium. This is then loaded for various costs like commissions, management expenses, claim expenses, investment income, profit load etc. Some allowance is also given for market adjustments at the point of sale.

He then went into details of Product Structure of Modified National Agricultural Insurance Scheme (MNAIS) which covers Single Comprehensive Peril which is deterioration of Crop and Weather Based Crop Insurance Scheme (WBCIS) which covers Multi Weather based Perils. WBCIS is defined by thresholds, deviations and pay off tables. Set of weather variables like temperature, rainfall, humidity etc. are combined together in relevance to their effect on crop production. Thresholds are then defined for example decrease in rainfall below 100mm could affect a rice crop. And the payoffs from the product are defined in terms of deviation from the defined thresholds for example payoff may be Rs. 50 per acre times the decrease in rainfall below 100mm. Thus for a season with rainfall at 80mm, the payoff will be Rs. 50 X (100 – 80) = Rs. 1000 per acre of land.

Considerations for pricing relate to data considerations, product specific complexities and the market structure.

Data can be made available from the weather stations located at various locations in India. These weather stations may be owned by Government or by private organisations. The data that comes from the weather stations may not be always clean and would need a lot of cleaning. The format would be a time series data relating back to 10-20 years for multiple locations and containing details of rainfall, relative humidity, temperature etc. Another consideration relating to data is that it is bound to have "Basis" error. Basis error is the error in the data because the location of the weather station is not the same as the location of risk. And these two locations can have difference in experienced weather variables.

Complexities arise when multiple perils are covered for multiple sub-periods. Since multiple perils are covered, it is important to know the correlation between occurrences of those perils. This may be done by way of running monte-carlo simulations or by convolution of the probability distribution functions.

Crop Insurance in India follows a typical market structure where in there is an "open tender process". Sum insured is predefined by the crop and the cost of cultivation. Prices and pay-out structures are competitive.

He finally commented on the role of an actuary in this field as certifying the product viability, setting up reserves and ensuring adequate diversification.

Session 3: Overcoming Actuarial Hurdles in Index Insurance by Sonu Agarwal

Sonu Agarwal

Sonu Agarwal is a Founder and Managing Director at Weather Risk Management Services Limited.

He spoke about various Actuarial challenges faced by practitioners in Index based, Yield based & Multi peril crop insurance. He went ahead and discussed how each of the challenges can be overcome and ways to do it.

There are two types of risks that the crop faces: first, "systemic" risks which refer to risks like drought or excess rains which affect many farmers and second, "idiosyncratic" risks which affect a specific farm or few farms e.g. frost and hail. To accurately monitor systemic risks, the weather stations need to be at a distance of approx. 20-25 kilometres radius from each other. However, to accurately monitor the idiosyncratic risks the weather stations need to be present at farm level. Hence there is a trade-off between acceptable basis risk (risk that the details captured at the weather station do not match the weather conditions at specific insured location) and costs of installing weather stations. According to him, the Indices of Index based product should fairly represent the systemic risks however the definition of systemic risks varies from client to client.

Challenges in terms of rate making for Index Insurance:-

- Simple burn analysis on historical weather data is inadequate
    - o As they do not capture adequate trends for event with more than 20-30 years return period.
    - o They assume seasonal/annual weather is independent of each other which are not true and

they ignore the trends in means and variance.

- Detailed stochastic analysis is necessary to capture extreme events in case of high unbalanced exposures. Spatial variation for shorter time interval cover is high and needs to be factored in pricing.
- Data for humidity, solar radiation has to be estimated based on proxy estimates (e.g. satellite observations); Error in estimation has to be quantified.
- Appropriate discounts and loadings according to terrains – e.g. Soil texture plays a key role in water requirement leads to Product design issues.
- Need to factor in adverse selection – This can be done by controlled simulations study of principal agent relations or by reference to data from other class of insurance business

For yield based insurance and multi-peril crop insurance, there are additional challenges in terms of availability and reliability of past time series data. Yield estimates at granular levels and chances of moral hazard.

Challenges in reserving remain the same for all types of crop insurance. Although the claims get reported quickly, disputes and late payment of subsidies mean that there are huge settlement delays. These can be factored into the triangulations or other reserving techniques. Considerations should be given to fact that at times payouts have to be made to reduce grievances.

Session 4: Crop Insurance – Past, Present and Future by Dr. Reshmy Nair

Reshmy Nair

Dr Reshmy Nair is an Associate Professor at ASCI, Hyderabad. She was involved in many of the policy making groups of crop insurance schemes currently working in India.

She spoke about the Past, Present and what the future will be like of Crop Insurance in India.

Dating back to 1920's J. S. Chakravarti once quoted that system of crop insurance would be impossible due to huge need for supervising agency to watch each insured fields. Later post independence, in 1960's the Indian Government established a committee to investigate the feasibility of crop insurance. The reports of the expert Dharam Narain committee cited a few major hurdles in the feasibility of crop insurance. In particular, the concept of crop insurance broke down the insurance principle of pooling of risk as the number of claimants could be equal to premium paying policyholders. Elaborate administrative machinery would be required and lack of data for deciding homogenous regions.

To this V M Dandekar brought out explanations and solutions by which the above hurdles could be avoided. This led to Crop Insurance Bill and a Model scheme of Crop Insurance. Since then there were many crop insurance schemes which evolved and later were succeeded by better schemes.

At present there are 3 types of schemes running currently for crop insurance. 1. National Agriculture Insurance Scheme (NAIS) 2. Modified National Agriculture Insurance Scheme (MNAIS) which is a better product than its predecessor. 3. Weather-index Based Crop Insurance (WBCIS). She explained the details of each of the scheme including its coverage, premiums, actual historical loss experiences, how these schemes have improved over their predecessor schemes, number of farmers covered, performance highlights by season and the issues with the schemes.

At present, 25 million farmers out of 120 million farmers are covered under these insurance schemes (20%). 90% are loanee farmers and only 10% penetration amongst non-loanee farmers. The Government of India targets to double the farmers coverage during the 12th Plan from 25 million to 50 million.

Looking at the future of crop insurance in India, she pointed out few points as below:-

1. Institutional Mechanism – Absence of a Crop Insurance Legislation/ Regulation to an Institutional Model promoting growth of the sector.
2. Product Design – WBCIS will be used more widely perhaps with more attention to individual indemnity in focus.
3. Government Support – Government should provide subsidy on need basis.
4. Area Approach – Lower units (MNAIS/WBCIS)/Adherence to Technical specifications to minimize basis risk/Better utilisation of technology.
5. Compulsory Insurance will lead to Greater Transparency.

Session 5: Pricing of Weather Index Insurance Contracts: A Technical Perspective by Harshvardhan Bhonsle

Harshvardhan Bhonsle

Harshvardhan Bhonsle works at K.A. Pandit Consultants & Actuaries. He has spent more than a year and half in pricing weather index insurance contracts in Sri Lanka. He provided a much grounded and detailed perspective into pricing weather index insurance.

One of the major challenges is to get the data and use it. Sources of data were meteorological department, local agricultural bodies, farmers, market authorities and tea manufacturers where all farmers used to supply tea crop and other sources of information like agronomists regarding crop cycles and weather requirements. However, much of the data is not accurate or missing. Methods like spatial interpolation or inverse power were used for fill up missing data and methods like Kendrall trend test or Double Mass analysis were used to analyse trends and cycles in the data and replace it with a better estimate of real data. He showed in an Ms-Excel working how the Double Mass Analysis is worked out.

Sri Lanka is a country with 56 different climate zones, highest for any country of this size. Due to this another major challenge for pricing is to manage the basis risk. For this purpose, selection of appropriate weather station is critical.

Relationship between the yield and rainfall is obtained and a payout structure is designed for the particular crop depending on various stages of its production (in his example was a tea crop and stages of production were Vegetative, Reproductive and Ripening. This relationship was established using parametric and non-parametric methods like curve fitting. Agronomists' intuitions were also used for this purpose.

Sum insured was chosen on the basis of the farmer's ability to pay the premium. Hence the premiums were reasonable and matched the farmers' earnings.

Pure Risk Premium was calculated by using two methods. First, Burn Analysis and second, Numerical Integration and both the results were compared against each other. Whereas Burn analysis meant simply taking the historic cost of claims and projecting it to future, numerical integration required fitting probability density function to predict the future outcome. Both these methods were shown by using Ms-Excel for better understanding. Tests were done to check the goodness of fit of the models.

The pure premium was then loaded with expenses, commissions and profits.

Session 6: Pricing for Rice Crop – a Vietnamese example by Mayur Ankolekar

Mayur Ankolekar

Mayur Ankolekar is the Secretary of the Advisory Group for Microinsurance of Institute of Actuaries of India. He is Appointed Actuary for the Export Credit Guarantee Corporation of India and also acts as a Consulting Actuary.

He showcased an example of his experience of pricing for Insurance of Rice Crop in Vietnam. In contrast to India or Sri Lanka, the data captured by Vietnam Meteorological departments were of good quality and quantity. Being a communist country, the state has greater discipline and practices from a single party socialist structure. Overall, weather data fields and validations are well captured.

In his typical example, it was yield based insurance where the sum insured was 3 years moving average of the past recorded yield with 10% deductible. The Government had fixed the premium rates for the product and the consulting actuaries were asked to independently certify whether the rates are viable or need adjustment.

He considered 3 possible ways of calculating Pure Risk Premium for this product. First is historical burn rate method, which was not considered appropriate for this product because no or little data on newly fit weather stations.

Second was to use predictive modelling using Binary or Ordinal Logistic Regression to the past weather and crop outcome data. In this method, questions were asked to farmers which could be answered in yes or no (Binary) or in few options (Ordinal) for example whether there was a flood in the past year or not, or whether there was a claim last year or not. The inputs can then be fitted into Binary or Ordinal Logistic Regression by using Maximum Likelihood Method. He also described various ways of checking if the model is a good fit. Tests like Hosmer-Lemeshow test and Shapiro-Willis test would meet the purpose.

However for the above method to be successful, the sample size needs to be large. Vietnamese farmers were not able to comment about the rainfall patterns 20 years ago and hence the sample size was very small. Hence this method was not considered.

Third method was to fit 'full loss probabilities' based on past weather and crop outcome data. For this 30 years' data for Meteorological Division was cleaned, formatted and arranged. Data was sliced per season and tabulated for two seasons of 120 days commencing 15Jan (winter crop) and 15May (spring crop). Rice farming process was broken down into 3 stages: viz. germination to rooting, leaf elongation to anthesis, and ripening to harvesting. Critical values of temperature, rainfall and wind speed for each stage were arrived after a brainstorming session comprising agronomists. Statistically, the data was fitted into an appropriate distribution with an acceptable goodness of fit.

Then using time series analysis, a margin for adverse deviation in weather variables and hence the loss was estimated. This included checking stationarity of time series by methods like Graphical test – Correlogram, Partial Correlogram & Analytical test – Dickey Fuller test and ARIMA processes.

Later a margin for cost of capital was added by testing for multi-collinearity amongst weather arameters, concentration risks and covariance risks at level of virtual certainty for crop insurance.

The pure risk premium plus margin for adverse deviation plus margin for cost of capital was then loaded for expenses and profit to arrive at the technical premium which was compared with the premium tariff by the Government.

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CAPACITY BUILDING WORKSHOP IN CROP INSURANCE - PHOTO COLLAGE

FEEDBACK FROM DELEGATES & SPEAKERS ON WORKSHOP ON CROP INSURANCE HELD ON 14TH AUGUST, 2013 AT IMC, MUMBAI.

Dhruv Gupta

Thank you for organizing such an informative workshop.

Mr. Ankolekar's Presentation was more interesting.

Saurabh Srivastav

It was an amazingly enriching experience attending the workshop. I have benefitted a lot during all the sessions and intend to benefit even more.

Prasun Sarkar feedback in seriatim.

- Contents of the program, their presentation and quality - *Good. Perhaps it could be improved with more cases taken from Indian context.*
- Topics *were Good. It could be improved in future by giving some sort of leads/data sources for executing such assignments (e.g. weather substations, various government departments)*
- Usefulness of the programme in general and particularly in relation to your current assignment -*Very useful as I am directly involved in pricing exercises for all products.*
- Venue - *It could be improved in future. There was lot of space crunch and therefore was not so comfortable.*

Hemalatha Chandrasekar

- Contents of the program, their presentation and quality - *Very Good and informative.*
- Topics - *Very relevant.*
- Usefulness of the programme in general and particularly in relation to your current assignment. -*Relevant.*
- Venue - *The venue could have been more spacious considering the no. of participants.*
- Other Comments / Suggestions, if any for future event - *this will decide the future course of action. Good initiative which can be followed for other specialty lines as well.*

Svetlana Cavoski - (Non Member)

It was my pleasure to attend the Workshop and I was honored to take part. Everything was excellent.

Sonu Agrawal - Speaker

Thank you for inviting and providing the platform to make the presentation. The Workshop was very well organized and turned out to be very informative for all participants.

Antonio Ferreiro - (Non Member)

Thanks for the great organization to IAI of the seminar with top speakers. It was highly appreciated and interactive session.

CURRENT PERSPECTIVES ON LIFE INSURANCE IN INDIA

Present Scenario: There are three distinctive phases of Life Insurance in India. The First phase was the period from 1818 to 1956, when Insurance Companies starting from Oriental Insurance were in operation in an open era. Second Phase was Nationalized Insurance from 1956 to 2000, when almost 243 companies were merged and nationalized. **The Third phase is the current opening up of the Insurance sector. This was an initial period of high New Business growth, and a proliferation of a number of innovative products. The Insurance Regulatory and Development Authority, brought in a number of Regulations, to tightly regulate the market and also foster balanced growth. The Institution of Appointed actuaries was adopted.** The Regulations covered a wide area; including solvency margins explicitly.A distinction in the treatment of sharing of Distributable Surplus between Policyholders and shareholders for participating policies of 90:10 was prescribed. For Non participating policies 100 percent of the distributable surplus was allowed to be taken by Shareholders as they bore the Insurance risk. Soon the Industry introduced Unit Linked Policies under Non Participating Business, in line with the trend in Developed countries. These products caught the imagination of the sophisticated Insuring public with the euphoria of a booming Stock market in the early period 2001-2008.Life Insurance Companies, product portfolios were heavily tilted to ULIP business. In fact in some companies almost 90% of the New Business was from ULIP policies. From 2008,the Global economic crisis had its very disturbing effect on the Indian Economy in general and the Indian Stock Market in particular.Net Asset values deteriorated and the Insuring Public woke up to a very volatile market. As expected, there was a downturn in the growth of New Business. To meet Customers expectation new innovative products with capital protection and minimum interest guarantees were introduced. The Mutual Fund industry, which was in competition with ULIP business, wanted restrictions on these products from SEBI.This resulted in a number of restrictions and New Product Regulation from IRDA for both Linked (already introduced) and Non linked business, which will come into effect from October 2013.

The present phase is marked by intense competition not only between Life Insurance companies, but also between different Investment and Savings Streams, Mutual Funds, Securities market, Debt market, Government Securities, Corporate Bonds, Provident Funds, Pension Schemes of PFRDA, National Savings Schemes etc. In this Scenario, Life Insurance has to compete with its traditionally higher expense costs and high Lapse Experience .For long, Life Insurance was looked at as a reliable source of systematic savings coupled with substantial Tax Relief both at the initial and Claims Stage. Currently, it appears there are considerable restrictions including service tax which affect the returns on Life Insurance Policies. **Earlier returns to policyholders could be stated as around two percent less than the yield on the Life Fund. Now perhaps the cost of Insurance cover and expenses would reduce the yield to policyholders by around 4%.**

There are at present a number of Regulators namely RBI, SEBI, IRDA, PFRDA and the Government. **It is a fact that all products regulated by these Regulators are Financial products, with perhaps a distinguishing unique feature, like Protection or Cover for Life Insurance Products. At the same time Life Insurance has traditionally been sold as a systematic savings plan with substantial cover for the Family. Hence the Life Insurance Industry should devise and continue to market products with both Savings and Protection, within the new framework of the new product regulations and the new tax laws.** However with new innovative products the distinct lines between Regulators do get blurred.

Global Environment: In UK, Australia, Singapore there are Regulators for the entire financial services market. This brings about certain advantages to customers who now have the benefit of fairly consistent regulations and perhaps packaged products which cover Insurance, Banking (savings), Mutual funds, Pension etc. **In UK, the Appointed Actuary system has given way to a Regulatory system with Product Actuary, Regulatory Actuary and the With profits Actuary. This With Profits Committee system is now being adopted by IRDA this year.** Commissions are being replaced by Fees paid by customers in UK. In India, the traditional commission rates would continue to hold sway as Insurance is generally sold and not bought. The Fee system in UK is perhaps a reaction to the traditionally high initial commission rates in Life Insurance.

About the Author

nm.govardhan@gmail.com

Mr. N. M. Govardhan is Past President Actuarial Society of India, Former Chairman LIC, Former Internal Actuary Bank Negara Malaysia (Regulator for Banking and Insurance, Initial Member Interim IRA, Member Insurance Advisory Committe IRDA, Consultant Actuary to Beema Samiti,Insurance Regulator for Nepal.

Prudential Regulations are in force in all Developed countries. Solvency regimes insist on Risk Based Capital, with Solvency margins ensuring possibly a 99.5% probability with a horizon of one year. **Solvencies II, Economic Capital, Enterprise Risk Management are the New Buzzwords in the Regulatory Framework. Stochastic Modeling is in vogue. Economic Scenario Generators are necessary tools for the Actuary to model, analyse and prognosticate.** With the increasing power of the Computer, more sophisticated techniques are prevalent. Shareholders are interested in Embedded values and profit projections. All these complexities are in the Actuary's domain. **More important is the skill to communicate to Top Management and the Board the Financial implications and the assumptions on which they are based. To many Laymen, it appears as a Black Box, not fully understanding the intricacies and the probability statements involved .As on economist stated, most of the projections are extrapolations based on historical data. However in Real Life, Economic Behavior is affected by global as well as local factors and is hard to accurately predict. Still the Actuary does have an understanding of the various risks involved and is possibly well equipped to strategies' for top Management and the Board.**

Products: Currently the New Product Regulations for Linked and Non Linked products is engaging attention of Actuaries and Management. Restriction on Non Linked products, for both participating and non participating products have been imposed on Minimum Sum assured.. Briefly for Single Premium products ,it is 125% or 110% depending on ages below 45 and above 45.For Annual Premiums ,it ranges from 5times to 10 times depending on term and age. There are more conditions of not less than Minimum Guaranteed sum at Maturity as given in the new regulations. This would impact new Business, as products have to made compliant with new Regulations. It is not clear as to the rationale for these restrictions. Here it has to emphasize that Life Insurance is and always has been a Protection and Savings Product. Hence any artificial restrictions to the savings element will come in the way of growth of the business. Life Insurance Funds has always been a big generator of Long term Funds, which can profitably be employed for growth of the economy. **In fact at present the Assets under Management in the Life Insurance Industry is well above fifteen Lakh crores. It has been traditionally the bedrock savings for the family with the added protection element. The IRDA should look at the Development aspects of the Life Insurance Industry.**

With Profit Pensions: ULIP policies have been very popular when the Stock market was booming. Now it is quite dull, and companies are looking at traditional par and non par products. **The inability to predict the future economic scenarios in general and the long term interest rate in particular, has made ULIP policies popular with both Customers and Management of Life Companies. With Customers bearing the Investment Risk, Life Companies were left with the easier option of Managing Mortality Risk. With increasing longevity, this risk was easily contained. However with increasing longevity, the Pension Business has come into the Limelight. Here Actuaries find it difficult to meet the Longevity and Investment risk. The challenge for Actuaries is to reinvent the Annuity business.** Definitely ULIP type Pension Products are necessary to meet inflation and increasing longevity. Further it may be necessary to have a basic pension element and a variable addition depending on Investment Experience. At an extreme end there is almost a banking product with an annuity and return of initial amount at death. At the other end a regular life annuity, where the entire corpus is exhausted. Many variations in between are possible and should be explored. This leads us also to the need for Mortality of Pensioners to be investigated.

Participating Business: Traditional Par Products with a basic sum assured and a bonus element have been in the past very popular. The upside of the Investment experience, with mortality and expenses is shared with the Policyholder. With the current downfall in ULIP policies, it is worth exploring ways and means to revive Par policies. Perhaps it requires some changes in IRDA regulations and possibly some Tax changes by Government. **The moot point is that the Customer does provide some capital through bonus loadings. Hence there is a case for relaxation relief in solvency capital requirements .Here it is to be stressed that such relaxations/relief could revitalize this business and provide a rich source of long term funds.**

Health Insurance: Health Insurance is a growing area. It used to be in the Non Life domain, till recently. However rightly now the Heath Insurance sector is also open to Life Insurance Companies. **Here Claim experience and customer satisfaction in receipt of the claims is very important. Complaints are that the fine print is used to delay or avoid claims. IRDA and Companies have a role to play to allay customers reasonable expectations and fulfill the promises made in the contract.**

Distribution Channels: In addition to the main tied agents Distribution Channel ,a number of alternate avenues have developed fairly rapidly, like Bancassurance, Brokers, Referrals, Direct marketing, Internet, Micro business agents, NGOs,web Aggregators. This has assisted in extending penetration of life Insurance. **However in this present competitive industry, a major issue is the high rates of lapses and the poor persistency of Business .The IRDA investigations have raised legitimate concerns. Some of the reasons are misselling, economic downturn, competition between products, channels and companies, large turnover of Marketing personnel, and possible lack of follow-up and keeping in touch with customers.** It is necessary that Managements take steps to arrest this trend. IRDA can also take proactive steps through the Life Insurance councils advocating good corporate governance and educating customers .Web Aggregators is a new developing channel. However they also have to be monitored as comparison of products depends on many factors including rates, benefits, Bonus systems, and riders.

Public Interest Role of Actuaries: It is important that Actuaries as expert Professionals play a very proactive public Interest role. Within the company, they can look at products, pricing, benefit illustrations, terms and conditions, claim settlements keeping a long term view on Customer protection. **They should look at equity between different classes of policyholders and ensure that Participating customers get their proper Asset share at Maturity through fair Bonus systems. Non participating policyholders would reasonably expect their premium rates to be fairly priced, reviewed more frequently in line with current experience.** The Appointed Actuary has a further onerous role to comply with regulations and assist the regulators, through fair, unbiased reporting . Further they can play a vital role in stratagising, Enterprise Risk Management and in developing good corporate governance .They should develop good communication skills in interaction with Marketing personnel and the public customers including well written brochures and prospectuses.

The Institute of Actuaries has a very great role to play in taking a balanced Professional view on various issues confronting the profession and the Life Insurance Industry. These should be communicated whenever necessary to the Life Council, the IRDA and the Government. The Institute should develop strong ties with fellow professionals, like Chartered Accountants, Company Secretaries, Insurance Lawyers, Doctors (medico actuarial investigations).

Future Perspectives: Life Insurance has and always should be the first choice for both family protection and systematic savings for every Breadwinner. This would require that Life Insurance Industry in general and the Life Companies in particular develop strong brand equity through good Corporate Governance and keeping Customer protection paramount.

In the competition between various Savings media, the unique feature of protection should be stressed with Savings as an additional concomitant. **The Industry in particular should address the issues of High Expenses and Low persistency. As seen in Markets elsewhere, the trend would be to have fairly well managed companies with a strong consolidated base of Assets under Management. Shareholder Value, Good Corporate governance and Customers Reasonable Expectations should be the major objectives.** With IRDA and the Government playing a pro active role the Life Insurance Industry, should grow at a very healthy rate in the years ahead.

FOREIGN DIRECT INVESTMENT IN INSURANCE SECTOR

Raising the FDI (Foreign Direct Investment) limit to 49% in the insurance sector is back in the news again. Will this be beneficial or harmful to the insurance industry? What are the reasons behind the pressure building up to raise the limit? What is the amount of Capital deployed so far and how much more capital may be required? Is the FDI route the only choice open to the Indian Insurance Industry? These and other related issues are discussed in this article.

About the Author

ramvijay3539@gmail.com

R. Ramakrishnan Retired about 20 years ago in 1993 as the Chief Actuary of LIC of India, in the cadre of Executive Director. Working as consultant actuary since retirement. The article is taken from the Blog JayaVijaya + Insurance (ramvijay3539.blogspot.in) with due permission from the author.

There are always two sides to any issue. There can also be issues with three sides. Foreign Direct Investment (FDI) in life insurance is one such. FDI is required and FDI is not required, are the two sides that one can immediately think of. What can be the third side? One may wonder. It is, **"No Capital is required"**. Only when capital is needed, the question of permitting or not permitting foreign direct investment will arise. If no capital is required, where is the question of permitting FDI?

Can an insurance company function without capital? Yes. For example, Mutual insurance companies. Wikipedia, the free encyclopedia, defines a mutual insurance company as, **"an insurance company owned entirely by its policyholders Any profits earned by a mutual insurance company are rebated to policyholders in the form of dividend distributions or reduced future premiums. In contrast, a stock insurance company is owned by investors who have purchased company stock and, any profits generated by a stock insurance company are distributed to the investors without necessarily benefiting the policyholders."**

The Wikipedia gives also the following additional information. "The concept of mutual insurance originated in England in the late 17th century to cover losses due to fire. The mutual/casualty insurance industry began in the United States in 1752 when Benjamin Franklin established the "Philadelphia Contributionship" for the Insurance of Houses from loss by fire. Mutual property/casualty insurance companies exist now in nearly every country around the globe. The global trade association for the industry, the International Cooperative and Mutual Insurance Federation, claims 216 members in 74 countries, in turn representing over 400 insurers. In North America the National Association of Mutual Insurance Companies (NAMIC), founded in 1895, is the sole representative of U.S. and Canadian mutual insurance companies in the areas of advocacy and education".

The "Bombay Mutual" was a well known mutual insurance company in our country, before nationalization of life insurance in 1956. A few decades ago, there were many big mutual insurance companies round the world. The number has now come down. Not because of any inherent disadvantage in being a mutual. The only disadvantage, if at all it can be called a disadvantage, is that, a mutual insurance company cannot raise any capital. When "Expansion through Acquisition" became a fashion, a number of mutual insurance companies demutualised and became stock insurance companies, since capital is needed for acquiring another company. In our country, after the opening of the insurance sector, the condition regarding "Minimum Solvency Requirement" automatically shut out the entry of mutual insurance companies. At the time of inception, an insurance company will not have any free reserves and can only show the capital against the minimum solvency margin required, viz. 150% of Rs.500 million. i.e. Rs.750 million. Since a mutual will not have any capital, it cannot satisfy the minimum solvency requirement at the time of inception.

At present, there are no mutual insurance companies in our country. But, the LIC of India is practically a mutual life insurance company. It started with a nominal capital of Rs.50 million, which was raised to Rs.One billion recently in order to satisfy the minimum capital requirement of life insurance companies. It controls a Life Fund of almost Rs.15 Trillion and has a Solvency Reserve of Rs.650 Billion. This mammoth Reserve was generated internally over a period of just 8 years, without bringing in any outside capital. The only purpose served by its token capital of Rs.One billion is to enable the Government to receive more than Rs.10 billion per year (and increasing year after year) as dividend. The example of LIC shows that a life insurance company does not need any capital.

TABLE-A below, gives the capital deployed by the 24 life insurance companies operating at present in our country.

Sources of Information—

Capital --IRDA Annual Report (2011 – 2012) --Balance Sheet of companies as at 31st March 2012. The sum of Share Capital, Reserves & Surplus and a few other minor items have been taken as Capital. Not much information was available in the Annual Report about Reserves. In the case of some companies, by comparing annual reports of successive years, it could be concluded that the profits emerging in the P&L account have been transferred to Reserves. In other cases, it has been assumed that, what is shown as "Reserves" is the share premium reserve. So, all have been taken together as Capital deployed.

In the case of LIC of India, another Rs.427 crores is shown under Reserves & surplus. It appears that this amount has been given by the Government to the LIC to strengthen the existing foreign operations and to commence new operations. Since this article deals only

TABLE-A EQUITY SHARE CAPITAL OF LIFE INSURERS, As at 31st March 2012 And Premium Income (Linked & Non-Linked) during 2011--2012

All amounts in Rupees (crores) [One Crore = Ten Million]

Company	Capital + Reserves	Total Premium Income	% (3)/(2)	First Year Premium Income	% (5)/(2)
Aegon Religare	1,135	457	40.3%	208	18.3%
Aviva	2,005	2,416	120.5%	802	40.0%
Bajaj Allianz	3,561	7,484	210.2%	2,717	76.3%
Bharti Axa	1,905	774	40.6%	225	11.8%
Birla Sunlife	2,450	5,885	240.2%	1,926	78.6%
Canara HSBC	925	1 ,861	201.2%	687	74.3%
DLF Pramerica	492	167	33.9%	103	11.8%
Edelweiss Tokio	550	11	2.0%	11	2.0%
Future Generali	1,327	780	58.8%	345	26.0%
HDFC Standard	2,210	10,202	461.6%	3,834	173.5%
ICICI Prudential	4,952	14,022	283.2%	4,441	89.7%
IDBI Federal	800	737	92.1%	311	38.9%
Indiafirst	605	1,298	214.5%	982	162.3%
ING Vysya	1,465	1,680	114.7%	636	43.4%
Kotak Mahindra	613	2,937	479.1%	1,164	189.9%
Max Life	2,205	6,391	289.8%	1,902	86.3%
METlife	1,970	2,678	135.9%	1,077	54.7%
Reliance	3,392	5,498	162.1%	1,809	53.3%
Sahara	301	226	75.1%	71	23.6%
SBI Life	2,156	13,134	609.2%	6,631	307.6%
Shriram Life	256	644	251.6%	391	152.7%
Star Union DaiIchi	419	1,272	303.6%	965	230.3%
Tata AIA	1,954	3,630	185.8%	940	48.1%
Total (Private Sector)	**37,658**	**84,183**	**223.5%**	**32.080**	**85.2%**
LIC of India	**100**	**202,889**	**202,889%**	**81,862**	**81,862%**

with operations within India, this amount has been ignored.

Premium Income – Linked and Non Linked Premium Income for the year 2011 – 2012 as given in IRDA's Annual Report (2011 – 2012)

Explanatory Notes

The third column of TABLE-A gives the total premium income under both Linked and Non-Linked. This includes Single Premium, First Premium, First Year Renewal and Subsequent Year Renewal.

The fourth column gives the total premium income as a percentage of capital deployed. For example, in the first row, (457 / 1135) x 100 = 40.3%. This can also be stated as, "For every one rupee capital deployed, the total premium income during the year 2011 – 2012 was Re.0.403

The fifth column gives the First Year Premium Income, under both Linked and Non-Linked, during the year 2011 – 2012. This includes Single Premium, First Premium, First Year Renewal Premium.

The sixth column gives the first year premium income as a percentage of capital deployed. For example, in the first row, (208 / 1135) x 100 = 18.3%. This can also be stated as, "For every one rupee capital deployed, the total new premium income during the year 2011 – 2012 was Re.0.183

The data available in the public domain is quite meager. The information contained in Table-A may seem quite impressive. But, on the basis of this information, not much can be judged about the relative performances of the 24 companies. Consider for example two companies, A and B, each procuring 100,000 policies in a year, with an average sum assured of Rs.100,000. If all the policies procured by Company-A are for term 10 and those procured by Company-B are for term 20, the premium income of B may be just 50% of that of A. But, Company-B may prove to be more profitable.

Judging the performance of life insurance companies on the basis of premium income alone, can be misleading. Many more factors are needed to arrive at a proper judgment and these are not available in the public domain. But, one thing stands out clearly. Even after 10 years, the new premium income of a number of companies is less than the capital deployed. This should be a cause for concern.

As for as life insurance is concerned, Capital Deployed is just a dummy entity. There is very little correlation between the size of the Capital and performance of a life insurance company. The latter is a function of planning and operational efficiency. As in the case of heavy industries, one need not build huge factories and import costly equipment for starting a life insurance company. To commence operations, what is required is a few offices and P.C's, which can even be taken on rent. Only raw material required is the agency force which, in our country, is available in plenty. The raw agents recruited are to be trained and sent into the field for procuring business. The training of agents is the most crucial part. They do not even occupy any office space, but function from their homes. Where then is the need for billions of Rupees of Capital.

It can be demonstrated that, but for the minimum solvency margin requirement, with a working capital of just Rs.250 million, and no Share Capital, a life insurance company can be started and run profitably. The only requirement for making it succeed are a team of competent administrators, a group of experienced marketing personnel, for recruiting and training agents, one actuary and one accountant.

Capital is a scarce and precious commodity. The data contained in Table-A is a visual demonstration of how such a scarce commodity can be wasted in a country starved of Capital. The irony is that, Instead of feeling embarrassed by such a wastage, we are craving to waste more.

The foreign investors, who brought in 26% of this huge capital (except in the case of Sahara Life, which has no foreign partner) would have been well aware that a life insurance company needs very little capital, just enough to satisfy the minimum capital and minimum solvency requirements. Why then such a huge capital was brought in? Two reasons can be attributed for this..

- The foreign entities did not have the patience to build an organization brick by brick, but wanted instantaneous success and an extra quick return on the capital brought in .
- The huge capital deployed was also an indirect tribute to, and acknowledgement of, the strength of LIC of India.

It appears that, in order to get, as quickly as possible, a firm foothold in the Indian Market, the strategy adopted was to, launch a publicity blitzkrieg, open well furnished offices across the country, create a high degree of visibility and recruit staff and agents on a large scale to man these offices.

The huge capital at the command of the new companies was deployed successfully to achieve these immediate objectives and, **a massive infrastructure was created**. But, before steps could be taken to consolidate this initial success, they were overtaken by events which were, to a certain extent, beyond their control. To understand what went wrong, it is necessary to digress a little and look at the experience of the life insurance companies in the United Kingdom during the last three decades.

U.K. Experience

Proper planning and execution will enable a life insurance company to break even in three years and start declaring bonus to policyholders and dividend to shareholders from the fourth year onwards. But, it would take the company about ten years to achieve its full potential The rate of return on the premiums paid is an important factor that influences a policyholder's choice between two life insurance companies. Since the rate of return depends, to a large extent, on the rates of bonus declared, a company that is able to declare a higher rate of bonus always has an edge over its competitors. This aspect works to the disadvantage of new life insurance companies since they will not be able to declare any bonus during the initial years and their bonus rates will remain uncompetitive for atleast five or six more years thereafter. In order to break free from the shackles of bonus rates, new life insurance companies in United Kingdom, resorted to the Unit Linked Insurance Policies (ULIP).

The introduction of ULIP was a runaway success. It was simply a mutual fund product, dressed up as a product of life insurance, and immediately caught public imagination and new business began increasing rapidly. When the high volume of premiums collected under ULIP began flowing into the stock market, the demand for stocks far exceeded the supply, and set off a price spiral. This, in turn, increased the NAV's (Net Asset Values) and made the ULIP more and more attractive to policyholders. The charges levied under ULIP should have deterred the prospective policyholders. But, in booming market conditions, these charges were hidden by the rising NAV's The high charges increased the profit margins of companies and, since these products came under Without Profit Portfolio, the entire profit went to the shareholders.

The impact of ULIP premium flowing into stock market was to raise the FTSE (UK stock Index similar to SENSEX) from 1,231 at the end of 1984 to 6,930 by the end of 1999. An average annual growth rate of 12.2% over a period of 15 years. The rate of growth of NAV was much higher and the returns to policyholders exceeded 15%. The life insurance industry in the UK never had it so good. Good times do not last forever. This maxim, known to everyone, was somehow forgotten by the professionals in the insurance industry, who imagined that the high growth rate will last forever and even designed new products based on this high growth rate. Then the bubble burst.

Within three years, the FTSE index came down to 3,940. Just more than 50% of the peak reached in 1999. Till today, the FTSE index has not regained the peak and is still below 6,100. It also appears that the life insurance industry in that country is also struggling to regain the public confidence and is registering negative growth.

The Indian Experience

The scenario witnessed in the UK repeated itself, with uncanny precision, in the Indian market. With the opening of the insurance sector to private players, the Unit Linked Insurance Policies were introduced in the Indian market. By 2004, ULIP constituted a major portion of the business procured by the private insurers. In the U.K market, even before the introduction of ULIP, a significant proportion of the life fund was getting invested in equities. The introduction of ULIP only increased this proportion. In the Indian market, before the introduction of ULIP, less than 10% of the life fund was being invested in the equity market. This proportion increased dramatically after the introduction of ULIP. Unlike the U.K. market, the Indian equity market was quite shallow and the sudden inflow of high volume of new funds threw not only the market but also financial experts out of balance.

From just above 3,000 on 31st March 2003, it crossed 20,000 is December 2007, in less than 5 years. An average growth of almost 50% per year. The euphoria generated by this incredible growth rate made even otherwise sane people to predict when the SENSEX will be crossing the 50,000 mark. Experts in the Government began saying that this upsurge was indicative of the "Strength of Fundamentals" in the Indian economy. But, those who had knowledge of earlier U.K experience, were quite anxious. They knew that a big crash was in the offing, but were not sure as to when it would come. The crash came. Sooner than expected.

When a bubble was emerging in the Indian Life Insurance market, a much bigger bubble was emerging (or, was it being carefully nurtured?) in the USA. The US sub-prime bubble burst in 2008 and, under its impact, the much smaller Indian bubble too burst. The SENSEX reversed its path and, within a short time, went below the 9,000 mark, in October 2008. The Journey from peak to trough taking less than a year.

Millions of persons who had purchased the Unit Linked Policies, suffered heavy losses. Just as in the case of FTSE index of the UK, the Indian SENSEX too has not regained its peak value even after 5 years

The policyholders lost heavily. But, since the ULIP is risk free from the point of view of life insurance companies, the insurance companies did not lose. What they lost was generation of further profits and loss of public confidence, to some extent. The Indian experience was an exact replica of the UK experience and could have been easily anticipated and avoided. The only unknown factor was the timing of the crash. But for the bursting of the sub-prime bubble of the USA, the Indian ULIP crash might have been delayed by atleast two more years and imposed much heavier losses on the ULIP policyholders.

Back to the Main topic

The minimum capital requirement of the 23 private insurers was Rs.23 billion. Instead, the actual capital brought in was about Rs.376 Billion. More than 16 times the minimum required. The objective, it appears, was to swamp the market with a blitzkrieg, throw the public sector life insurer off balance and capture more than 50% of the market share. The inexperience of the Indian Insurance regulator too helped them to a great extent.

Exorbitant charges (especially, high discontinuance/surrender charges) were permitted under unit linked policies.

Shareholders' share of valuation surplus was prematurely and abruptly raised from 10% to 100% in respect of without profit portfolio, to which the unit linked policies belonged.

The ceilings on Cost Ratios, stipulated in Sec.40B of the Insurance Act, 1938, and Rule 17D of Insurance Rules, 1939,, were not enforced, enabling these companies to spend too much of the capital, in launching the great push. It may be mentioned here that the Life Insurance Council even suggested that the ceilings on expenses

should be scrapped. Contrast this with the approach adopted by the office of the Controller of Insurance, in strictly enforcing the ceilings on cost ratios in the case of LIC of India, soon after the formation of the Corporation in 1956. This helped the Corporation to develop in a disciplined manner.

Lured by high profit margins permitted under Unit Linked policies, the new companies (with a few notable exceptions) concentrated only on ULIP and neglected the traditional products, thus creating a lopsided portfolio. When the bubble burst, and marketing of ULIP became difficult, and business development suffered.

TABLE-B below, gives the debit balance as at 31st March 2012, in the Profit &

A major portion of the debit balance in the P&L account may get wiped out in the next two years. It is worth quoting here a report from Goldman Sachs. "However, insurers will now have to focus on efficiency and productivity levels as the share of surrender charges and lapse charges in overall profit will fall as the old policies (sold prior to September 2010) on which charges were high will run off".

INSUNEWS, the weekly e-news letter of the Insurance Institute of India, Mumbai, quoting from Hindu-Business Line, states in its issue for week ending 20th June 2013,

"According to analysts' estimates, even though the surrender profits of life insurance companies have come down this year, they continue to constitute a major portion of their profits. Along with the drop in the number of agents, the industry also saw large-scale surrender of insurance policies and low rate of renewal (persistency) of policies. Even though in the first year the rate of renewals of life insurance policies is about 65 per cent, it goes down to 25 per cent by the third year. The low rate of persistency is a huge issue with the life insurance industry. Life insurers have also cut down on the number of branches. From over 11,100 branches in 2011, the total number of branches fell to 10,300 by 2012-end, as cost pressures hit the branch expansion and existing non-performing offices were shut".

That is, a reduction of 800 in the total number of Branches.

It may be appropriate to quote here from the address delivered by Shri. Sushoban Sarker, Managing Director, LIC, in the Conference of Senior Divisional Managers of th th the LIC of India, held on 13to 15of May 2013. **"The Hon'ble Finance Minister in the Union Budget has declared that all towns with population of 10,000 or above would be covered by LIC offices manned by our employees. There are 1,975 such towns which remain to be covered. Details are being worked out to decide the type of offices to be opened. This has to be done on a war-footing with fortnightly monitoring and has to be completed by 30.09.2013".**

That is, an increase of 1,975 in the total number of Branches.

The next few years may prove to be quite tough for life insurance industry. The private life insurers have to readjust their product profile and shift from the easily marketable and High Profit ULIP's to the difficult to market, Low Profit traditional plans of insurance. In order to maintain proper risk balance, they have also to market a fair proportion of With-Profit Plans of life insurance, under

TABLE-B Debit Balance in the P&L Account for the year 2011 -2012

All Amounts in Rs.(crores) One Crore = 10 millions

Company	Capital + Reserves	Debit Balance carried over to Balance Sheet
Aegon Religare	1,135	941
Aviva	2,005	1,405
Bajaj Allianz	3,561	---
Bharti Axa	1,905	1,749
Birla Sunlife	2,450	1,376
Canara HSBC	925	757
DLF Pramerica	492	376
Edelweiss Tokio	550	29
Future Generali	1,327	1,096
HDFC Standard	2,210	1,355
ICICI Prudential	4,952	1,947
IDBI Federal	800	432
Indiafirst	605	189
ING Vysya	1,465	1,150
Kotak Mahindra	613	--
Max Life	2,205	370
METlife	1,970	1,620
Reliance	3,392	2,486
Sahara	301	--
SBI Life	2,156	---
Shriram Life	256	--
Star Union DaiIchi	419	124
Tata AIA	1,954	1,298
Total (Private Sector)	**37,658**	**18,700**
LIC of India	**100**	**--**

which shareholders' share of profit will only be 10% as against the 100% enjoyed by them under ULIP's. Since the Solvency Margin requirement under the traditional policies is also almost three times that under the ULIP's, the provision to be made for Solvency Margin will also increase steeply. This change in product profile may trigger demand for more capital.

But, it was stated in the beginning that the life insurance industry needs no capital. This is true if the expenses are kept under strict control from the word GO and business development is properly planned. However, if a company first creates a massive infrastructure in anticipation of big business, as stated in Sec.15, and has to change its plans midway through, additional capital may be required.

None of the Indian partners of the joint ventures may be in a position to bring in any additional capital. The foreign partners will not bring in any additional capital unless the FDI limit is raised to 49%. So, the industry is caught in an unenviable situation. FDI limit will have to be increased from 26% to 49% in an industry that needs no capital. The government may not have any other option in this regard than to accept the **fait accompli.** Such a contingency would not have arisen if the Insurance Regulator had not only consulted, but had also worked in close coordination with the public sector insurance companies, before the opening of the sector. Unfortunately however, this never happened and, as a result, the country is today burdened with huge wastage of capital.

Till now, the returns to shareholders from the life insurance companies has been negligible. Will this increase in future? What will be its quantum? On what basis the foreign companies are pressurizing the Government to increase the FDI limit to 49% or even 74%? To understand why the foreign companies are still interested in deeper involvement in the Indian Life Insurance Sector, in spite of whatever happened during the last 10 years, we have to appreciate the power that can be wielded by a successful life insurance company in the private sector. These are,

- **Profitability** - Astronomical returns on investments over a long period,
- **Power** - Control over huge funds
- **Influence** - Influence that can be wielded over other industries.

Let us consider these three items one by one.

Profitability - The Government invested Rs.50 million in the LIC in 1956 and, in the coming years, it would be receiving about Rs.15 Billion as dividend. i.e. 30,000%. This will increase continuously year after year. In no other industry, the rate of dividend can increase like this without infusion of any additional capital. The following data taken from the Annual Reports of the LIC of India will show how this happens.

TABLE-C gives the total premium income (linked and non-linked) of the LIC during the eight year period 2004 – 2005 to 2011 – 2012 and the dividend paid to the Government.

The dividend to Government as a percentage of total premium income was 0.93% in 2004 – 2005 and dropped to 0.69% next year. It remained steady between 0.55% and 0.60% for the next 5 years and then increased to 0.63% in 2011 – 2012. Before 2004 – 2005, it was hovering near 1%. What can be the reason? It is quite a simple one. The Unit Linked Policies (ULIP) were introduced by the LIC in 2004 – 2005 and the proportion of ULIP to the total portfolio was very small in that year and the ratio of dividend (to Govt.) to total premium income was almost 1%. Next year, the proportion of ULIP to total portfolio became significant and the ratio of (dividend to premium income) became smaller and dropped to 0.69%. It appears that, as the proportion of ULIP to total portfolio starts increasing, the ratio of (dividend to premium income) starts decreasing. In 2011 – 2012, when the ULIP premium income dropped, the ratio of (dividend to premium income) increased. In the case of LIC, the charges under ULIP, including the Fund Management Charge are quite moderate and consequently, the profit margin is lower under the ULIP portfolio. If the Corporation too had increased the charges in line with those charged by the private insurers, the percentage of the dividend to the total premium income would have increased in step with the proportion of ULIP premium to the total premium. With the ULIP products losing their charm, the proportion of ULIP premium to total premium will not increase much in future and, the dividend to Government may stabilize around 0.75% of total premium.

Over the last 20 years, the average annual rate of growth of the total premium income of the Corporation has been about 17%. Assuming that it would be atleast 15% in future, the total premium income during the year 2021 – 2022 will be, Rs.8.2 Trillion. The dividend payable to Government in that year will be, 0.75% of Rs.8.2 Trillion. Or, Rs.61.5 Billion (i.e. Rs.6,150 crores)

TABEL C

Year	Total Premium Income Rs. (Billion)	Dividend to Government Rs. (Million)	Percentage of dividend to Premium
2004 2005	751	6,970	0.93%
2005 2006	908	6,220	0.69%
2006 2007	1,278	7,580	0.59%
2007 2008	1,497	8,300	0.55%
2008 2009	1,572	9,290	0.59%
2009 2010	1,860	10,310	0.55%
2010 2011	2,034	11,380	0.58%
2011 2012	2,029	12,810	0.63%

As seen earlier, in the case of private insurers, the shareholders' share of surplus (profit) is 10% under with-profit policies and 100% under without-profit policies. On the average, the profit to shareholders will not be less than 2.5% of the total premium income (it may even be 3%). This is only a very conservative estimate and the actual percentage may even be much higher. Their premium income during 2014 – 2015 will cross the Rs.One Trillion mark (i.e. one lakh crores) and the premium income in 2021 – 2022 will be about Rs.Three Trillion. The dividend to shareholders will be, 2.5% of Rs.3 Trillion or Rs.75 Billion (i.e. Rs.7,500 crores) and, will continuously increase by about 15% each year. It is this long term flow of profits, without having to bring in any additional capital, that the foreign insurers are interested in and, the temporary setback suffered in recent years is nothing from their point of view.

Power – Control over Funds

Today, the total funds under the control of LIC is about Rs.15 Trillion. Ten years hence, the total funds under the control of private insurers will surpass this figure and a major portion of this will be under the control of the top five companies. Just imagine the power these companies would be able to wield over the financial markets in general and the stock exchange in particular. With control over 49% of the equities, the foreign partners would be able to control more than 75% of crucial investment decisions of these private insurers.

Influence

Loan to Companies is one of the avenues of investment for a life insurance company. When the loan to a company increases beyond a certain limit, the life insurance company can, in order to protect its interests, insist on having representation in the Board of the company. This presence in the Board of a company gives it automatic access to vital information about the company and also places it in a position to influence the company's decisions on important matters. When a foreign insurer has this access, it can prove invaluable to the country to which the insurer belongs.

Cash flow in the form of ever increasing dividends, Control over the financial markets and Influence over decision making processes of important industries are the main reasons behind the entry of foreign insurers into the life insurance sector. We have reached a stage where the increasing of FDI limit to 49% cannot be prevented. Let us see why?

As per Sec.2(7A), incorporated in 1999 in the Insurance Act, 1938, "Indian insurance company" means any insurer being a company –

a) which is formed and registered under the Companies Act, 1956 ;

b) in which the aggregate holdings of equity shares by a foreign company, either by itself or through its subsidiary companies or its nominees, do not exceed 26% paid-up capital of such insurance company ;

c) ....

The section only mentions, "a foreign company". That is, one foreign company cannot hold more than 26% of the equity. If there are two foreign companies, then each can hold 26% of the equity. That is, two foreign companies can together exercise 49% control over an Indian life insurance company, with the Indian partner in the joint venture having the balance 51%. Though two foreign insurance companies will never like to come together, one insurance company and one non-insurance company can easily combine together and enter the Indian market.

This was reinforced by Press Note 10 dated 19.10.2000, of the department of Industrial Policy and Promotion, permitting automatic approval route in the insurance sector if the foreign equity participation is upto 26%. That is, for a group of foreign companies to hold more than 26% stake, prior approval is required. Which may be a mere formality. The important point that comes out from Sec.2(7a) of the Insurance Act and the Press Note 10 is that, unlike in the case of Telecom sector, the Government did not want to place any cap on FDI in insurance sector.

A restriction has however been placed by a sub-ordinate legislation, the IRDA Regulations 2000, in respect of registration of Indian insurance companies. This regulation places a cap of 26% on the entire foreign investment. This restriction is however only temporary in nature and the government can, at any time, direct IRDA to amend this regulation in step with Sec.2(7A).

The Foreign insurers cannot be prevented from tightening their hold over the Indian insurance industry by just pegging the FDI limit at 26%. They can take over control, whatever be the FDI limit. They can be contained only if we understand their strengths and weaknesses. Their strength is their bottomless pockets. They can invest any amount of money. Their weakness is lack of patience. They can start a life insurance company, but would prefer to expand and consolidate through a series of acquisitions, rather than building it brick by brick, over a period of time, as LIC has done. How Coca Cola expanded its operations in India may still be fresh in every one's memory. Block this acquisition route. They will cease to be a force to reckon with.

This can be done by making conditions more favourable for fully Indian owned companies to enter the insurance sector and barring FDI in such companies. The minimum capital and minimum solvency margin requirements for a life insurance company are very high at present. They have been so designed as to keep an Indian entrepreneur from entering the Insurance Sector on its own. What is needed is the lifting of these artificial restrictions on the entry of fully Indian owned companies. The raising of FDI limit to 49% may not harm LIC of India in the foreseeable future. At the same time, LIC too may not be able to contain the foreign dominated private insurers on its own. The only way to contain them will be to Enable fully Indian owned companies to enter the insurance arena. Atleast one per State. This will lead to development of healthy industry standards, generation of better job opportunities and reduce the influence of foreign insurance companies. The trade unions too should work towards lifting of the present artificial restrictions on the development of fully Indian owned companies, rather than wasting their time in chasing the illusion of FDI limit,

Big life insurance companies can exercise Control over the financial markets and Influence the decision making processes of important industries. It was for curbing these powers and utilize the life insurance funds for national development, that life insurance industry was nationalized in 1956. Shri. Chintaman Deshmukh took another important decision when he moved the LIC Act in the Parliament. He reduced the shareholder's share of surplus(profit) from 7.5% (as given in the Insurance Act, 1938) to 5%. By reducing the government's share of profit, he increased the IRR (internal rate of return) to policyholders on the premiums paid by them. This enhanced the competitiveness of life insurance as a savings instrument. The resultant increase in business automatically increased the flow of dividends to Government. Contrast this with the recent notification by the Government, increasing Government's share of surplus from 5% to 10%. That too, at a time when the competition is heating up. This has the potential for decreasing the IRR (though only marginally at present) to policyholders and blunt, to a certain extent, the competitiveness of the Corporation. The resultant deceleration of growth will reduce the emergence of surplus. It may turn out that, (10% of the reduced surplus) will be less than (5% of normal surplus). Thus benefiting neither the Government nor the Corporation nor the Policyholders.

Another important decision taken by Deshmukh was the government guarantee to the policies issued by the LIC. He might have followed a simple reasoning while arriving at this momentous decision. "With more than 75% of the assets invested in government securities and a major portion of the balance assets in fixed interest securities, the assets of the Corporation will be fully secure. With an experienced and competent office of the Controller of Insurance strictly overseeing the cost ratios and valuation of liabilities, the Balance Sheet of the Corporation too will be under full control. When chances of failure are thus eliminated, giving the guarantee will be a mere formality". Again, contrast this with the attempts of present day governments to remove this guarantee, pressurized by the private sector and driven by the fear of unknown eventualities.

The above instances bring to focus the difference between the approaches of a Visionary and an Expert to national issues.

Every country has two borders. One is Geographical and the Other Financial. If one falls, the other too will fall automatically. The armed forces protect the former and, it is the duty of national financial institutions like, State Bank of India and LIC of India to protect the latter. Let us stop worrying about the FDI. Let it be 49% or 100% or even 150%. But concentrate on improving productivity and efficiency and remain fully committed to the Dream & Vision of those who conceived and gave shape to these National Organizations.

Theme Contest for the 16th GCA, 17-18 February, 2014

28th August, 2013

Dear IAI members,

Re: Theme Contest for the 16th GCA, 17-18 February, 2014

The Theme for the 14th GCA on 19th -21st February, 2012: **Meeting the Challenges of Change by Arnrita Kaur** caught attention of all and in line with the same, the 15th GCA on 17th — 19th February, 2013: **Waves of reforms... Oceans of Opportunities by Ajai Kumar Tripathi** had captured the underpinning of the whole event. Around the themes the whole program of the GCA's was structured.

The Theme for the **16th GCA to be held over 17-18 February, 2014** has to capture not only the reality within India but what is happening around the world, because that affects India as well.

The stability and growth of the Insurance Industry within India is perceived to be on track, except the life insurance which has been struggling for the last about two years and is yet to look up. There are expectations around product structures and regulatory approvals. Besides the attitude and capacity of the Indian population to use mechanism of life, Health and General Insurance for wealth creation and protection appears to be on somewhat shaky grounds.

The theme of the 16th GCA, therefore, has to capture essence of the above so that the event revolves around the same. The members are requested to give it a thought and send their submission latest by **30th September, 2013** to **Quintus Mendonca** at quintus@actuariesindia.org along with your **Name and Membership ID** with subject line: **16th GCA Theme Contest.**

The winners will be chosen by the 16th GCA Organising Group based on laid down principles & procedures and will carry a reward to be presented during the 2014 AGFA on 17th - 18th February 2014.

With Warm Regards

Dilip Chakraborty

Chair — External Affairs Committee

Institute of Actuaries of India

ADVISORY GROUP ON LIFE INSURANCE UPDATE

The function of the Life Insurance Advisory Group (LIAG) is principally to address issues in life insurance that it considers appropriate or that are referred to it, and to advise Council appropriately. Specifically, it is responsible for the drafting and review of actuarial practice standards and guidance notes on life insurance and for organising programmes of continuing professional development (CPD) for members. To fulfil these responsibilities, it tries to keep abreast of the latest developments in actuarial thinking from around the world.

The last twelve months have seen lots of development in guidance notes and practice standards. In December, 2012, Council approved the adoption of APS4, APS10, GN6 and GN22, all on the recommendation of LIAG. APS4 was revised as a part of LIAG's ongoing programme to review all the extant practice standards and guidance notes. APS10 was upgraded from the guidance note that had been adopted on a fast-track basis the previous year. GN6 is a brand new guidance note and addresses the management of participating life insurance business, with particular reference to the role of the asset share. In the current environment where many private companies are expected to seek to increase their volumes of participating business, we expect this to be of particular help to actuaries. Lastly, GN22 addresses the valuation of embedded derivatives. While the IRDA (Assets, Liabilities and Solvency Marginof Insurers) Regulations, 2000, require the appointed actuary to provide for options available under individual contracts, there was no framework prescribed for the calculations. The guidance note sets out such a framework and is a step towards a standardised approach.

Meanwhile, the work of reviewing and updating guidance notes and practice standards continues. During the spring, a revised draft of APS2 was disclosed for public comment and is currently undergoing further revision in the light of feedback received. A review of APS5 has also begun.

On CPD, November 2012 saw the annual Current Issues in Life Assurance (CILA) Seminar. The line-up of speakers included the former Chairman of LIC, Mr S B Mathur, and the then Chairman of IRDA, Mr J Hari Narayan. We are now engaged in compiling the agenda for this year's CILA, which we hope will be comparable success.

On international developments, the biggest event has been the publication of an Exposure Draft on IFRS4, Phase 2, by IASB. Together with the Advisory Group on Accounting and Solvency, LIAG is currently engaged in drafting feedback on IASB's proposals.

LIAG has also been involved in the field of risk-based capital. We were very grateful to be invited to discuss the proposals being considered by IRDA's Committee on Road Map for Risk Based Solvency Approach in Insurance Sector, chaired by Mr P A Balasubramanian.

It has been a busy year, and we expect the same next year. If you are interestedin taking part in our activities, please get in touch,

Avijit Chatterjee

Chairperson, LIAG

THE ACTUARY INDIA – EDITORIAL POLICY (VER. 2.00/23RD JAN 2011)

Version history; Ver. 1.00/31 01 2004 Ver. 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;
   • there is a growing emphasis on the globalization of the actuarial profession; • there is an imminent need to position the profession in a business context which transcends the traditional and specific actuarial applications. • The Institute members increasingly will work across the globe and in global context.

C: Given this background the Institute strongly encourages contributions from the following groups of professionals:
   • Members of other international actuarial associations across the globe • Regulators and government officials • Professionals from allied professions such as banking and other financial services • Academia • Professionals from other disciplines whose views are of interest to the actuarial profession • Business leaders in financial services.

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

FACE TO FACE

Dr. Amarnath Ananthanarayanan

Managing Director and CEO, Bharti-AXA General Insurance

amarnath.a@bharti-axagi.co.in

PERSONAL:

What was your 'success mantra' as a student? How it helped you reach where you are now?

As a student I was not very academically oriented but looked at getting better in all dimensions which included sports, music, extra-curricular activities apart from academics. This overall exposure gives a wider perspective to life and makes one think of multiple solutions to fix challenges or create opportunities. It also gives one the confidence to excel in different things.

Who is your inspiration/role model? What are the key qualities required to achieve one's goals?

The saying that inspires me is ..."The Best Way To Predict the Future Is To Create It". Anything where I can create something that is worthwhile to society especially if it is highly challenging is something that motivates me, In terms of people I admire Mahatma Gandhiji for whatever all of us admire and respect him for, apart from his ability to think of out of box solutions.

The first thing to able to set the right goals is to actually understand one's capabilities. And this is not easy as anyone needs to know both one's strengths and weaknesses. My focus has been to figure out my weaknesses and try to improve them via training or on the job. Being able to deliver on weak areas gives one a lot of confidence which is a critical success factor for any senior manager. Innovation, which is 99% perspiration and 1% inspiration, is very critical in achieving one's goals. Apart from this, to be successful at the senior levels the people need to trust you so one needs to be doing what it takes, including walking the talk, for people to trust you. The other critical factors are passion for what you are doing, having an open mind, having an ability to take calculated risks, being in touch with reality while thinking futuristically, clear and open communication skills. And if anyone is managing large teams, then the ability to motivate, energise and give them the right direction, will be very critical success factors.

PROFESSIONAL:

Tell us more about your typical day.

My day starts with first just taking a few seconds to get my bearings right on which city or hotel I am at or whether I am at home given my frequent travel. The second quick look would be to see if there are urgent emails/SMSs that would have come during the night. Post my mandatory cup of morning coffee and reading a newspaper especially the daily horoscope in the newspaper, I take any sheet of paper to create a to-do list for the day. Once I get to work it ends up being a series of meetings with internal as well as external stakeholders with a lot of the meetings veering towards a decision I would need to take. In the evenings if I am not traveling I come home to relax and unwind in the evening by listening to Carnatic or Hindustani classical music or watching an old film. Before going to sleep I try to check my personal email as well try to log into LinkedIn and Facebook to see how my friends are doing or to post anything special that might have happened. In the weekends it is pretty much spent with my kids.

Tell us about the best part of your work.

Having been a part of the inception stage of Bharti-AXA GI, seeing the company move ahead from the 20th entrant in the market in 2008, to being ranked 8th today is very heartening. I am overjoyed at every milestone the company achieves, big or small, thanks to the collective efforts of different teams across different functions.

I also feel very happy at the growth, recognition and accolades my team receives for their efforts and results, and in turn seeing them grow in their careers. The one thing that is still left to be done is to take insurance to the under-served segments of society in India and I hope that we as an organization with the right combination of technology and telecom would be able to make this happen soon.

How to you manage work-life balance?

As you grow in the corporate world, responsibilities increase and that has a direct impact on the demand on one's time. Maintaining a work-life balance in such a scenario is difficult. But it is essential for the overall growth of an individual and to also preserve peace of mind. I spend as much of my weekend as I can with my children and spend time with them on things they like to do. I also enjoy cooking. I also take a few days off every year to travel to new places especially near beaches so that I can unwind and get charged up for the work left in store for the rest of the year. These are times when I try to stay away completely from work, email as well as the internet.

INSURANCE INDUSTRY RELATED:

How the General insurance industry has transformed over last one decade?

Post liberalization in 2000 the Indian general insurance industry is growing at good pace with last year's growth pegged at 24% in 2011-2012. Increased competition has brought in a choice of insurers from the customer perspective and also a variety of products to choose from. The authority has also introduced new norms and regulations to improve efficiencies and operations of the industry overall. Whether it is an intermediary who is distributing the insurance products, a person who assess the damage to property (surveyor), an organization who facilitates cashless settlement of medical expenses or an institution that certifies qualified intermediaries are all licensed by IRDA through stringent norms. On the face of it may look to be a tough stick but ultimately brings in a healthy growth of insurance sector in India. From the growth of microinsurance to the recent increase in FDI cap to 49% and even the slow but steady uptake of the online penetration of insurance, the country is witnessing momentum through the steps being put in place by authorities and the players to collectively drive growth for the industry. However we have many miles to go to be a recognised country in the global landscape.

How this change has changed the general insurance market dynamics and its functioning?

While the industry has seen many changes some of the noteworthy ones are -

- Every productoffered in the market today, goes through the rigorous process of filing and usage guidelines where in the regulator goes through the policy wordings and the terms and conditions. They also ensure that the pricing is done through a scientific process as their actuarial team scrutinizes the product pricing before the approval of the same. The freedom in tariff which allowed pricing discretion and add-on covers to the standard products has been a boon to the Indian customer where he enjoys a better product at a lesser cost.
- While this freedom in pricing has resulted in the growth of the industry, it has been lopsided, with only the motor segment growing and the property and commercial segment have stagnated though the Indian infrastructure is rapidly growing, which is not a good sign. The health insurance sector is yet to really see the untapped potential while considering the Indian population where in the government as well as the regulator can definitely think of incentives for this segment.
- IRDA has brought in regulations such as the pattern of investments stipulated by them which the member companies are strictly to abide by. This is one of the reasons the Indian insurance industry was least affected during the economic downturn in 2008. There is also a constant vigil and monitoring by the regulator on the solvency margins, as periodical returns are to be submitted by the insurers where in the minute details of the assets and liabilities have to be disclosed.

What are the emerging trends in the GI industry? What will be the future strategy for growth of this sector?

The GI industry in India is slowly but surely maturing. Automation of processes, increased competition and the resultant introduction of new and innovative products are some developments in the industry that have boosted its growth. New regulations by IRDA across service, products and operations to increase the overall operational efficiency of the industry are also proving to be drivers of growth for the industry.

Considering the huge rural markets and the affordability of the poor segment of the Indian population, micro insurance is definitely a promising field for the Indian general insurance industry which also caters to the masses. If the IRDA is able to bring in more flexibility in the distribution models and incentives for the micro products, the rural segment can also benefit.

How the role of actuaries in GI industry has evolved over time? What more they can bring on the table?

The role of the actuary in the GI industry has evolved post liberalisation in 2000. Prior to the advent of privatisation in India, actuaries had practically no role in GI and the stream was pertinent only to the life insurance sector. However with increased presence of foreign players, more products and slow but steady uptake general insurance in the country, the role of the actuary has come into the limelight. The regulation from the authority that mandates all insurance companies to have in-house actuaries has also helped in bring this stream to the fore. Given the increasing significance of actuaries in the country we are seeing measures by the government and authorities like the passing of the Actuaries Act 2006 and the establishment of the Institute of Actuaries of India to boost the sector.

Today, an actuary plays a key role within a general insurance company, right from developing the right pricing strategy for new and existing products, to helping arrive at the right reserve and even helping in risk assessment, assessing the asset liability etc.

What are the main challenges that non-life industry faces? What role actuaries could play to overcome these issues?

The fundamental difference between life insurance and general insurance is the term/duration of the policy – and that lends itself to varied dynamics and parameters to deal with. While a life insurance product is simpler in comparison to a general insurance product, the analytics involved in life insurance are higher.

Lack of awareness on the need for insurance is one of the biggest challenges for the general insurance industry in India. Most people in India think of 'Life' on the mention of the word insurance. Lack of product differentiation in the market, dealing with multiple lines like motor, health, home, especially of multi-line general insurers like us, are some of the other challenges that this industry faces. Analytics, which is the key skill of an actuary, needs to deep dive into multiple aspects, perspectives and approaches to arrive at the right recommendations on pricing, risk management etc and hence, the role of the actuary becomes that much more critical and crucial from an insurer's perspective.

What are future plans of Bharti AXA and what role do actuaries have in them?

Despite being a late entrant into the market, we have raced ahead in terms of growth. We are looking to introduce affordable products with a wide bouquet of choices that could potentially redefine the general insurance industry in India, making these products available to a larger population through innovative service channels and growing our share in the industry in India. And in all of this, the actuaries will play a critical role at every step to provide valuable recommendations based on deep analysis for us to make the right decisions. Overall in India the use of data & analytics is limited in General Insurance industry. So we are looking at data analytics to be our key differentiating factor in creating customer and partner value propositions so actuaries will be key to and an integral part of our success.

Invitation

9TH SEMINAR ON CURRENT ISSUES IN RETIREMENT BENEFITS

Date: October 8th, 2013 **Time:** 9am to 5pm **Venue:** Hotel Orchid, Vile Parle East, Mumbai-99; **Tel.:** 022 2616 4040

Background: National Pension Scheme is gaining a lot of popularity with the passage of Pension Fund Regulatory and Development Authority Bill (PFRDA) in Parliament recently. Retirement and Employee Benefits in India offers opportunities to consulting actuaries. Employers are placing importance on Employee Benefits in the last few years in India because of new accounting standards. Speakers and panelists in this seminar are with vast experience in Pension and Employee Benefits and are from actuarial and non-actuarial background.

Seminar will cover the following

• IAS 19 (AS15-R) Changes and Implications • Exempt Provident Fund and Guidance Note 29 (APS 29) – View Point and discussions • Leave Valuations – Market Practice, issues and suggested approach • National Pension Scheme-Perspective • Employee Benefit Consulting and 2nd Pay Revision Committee Recommendations - A case Study • Professional Conduct Issues and Updates for consulting actuaries.

SPEAKERS:

- **K Subramaniyam** - Consulting Actuary; Employee Benefits and Social Security
- **Dr K Sriram** - Consulting Actuary
- **R Arunachalam** - Consulting Actuary
- **Anuradha Sriram**-Towers Watson
- **A D Gupta** - Consulting Actuary
- **Kulin Patel** - Towers Watson
- **Chitra Jayasimha** - Mercer Consulting India Pvt Limited

Seminar will be benificial to :

1) Managers and staff working in Finance and HR departments of companies.
2) Auditors in relation to Employee Benefits Scheme provisions as per AS15-R.
3) Managers and staff working in Group Business Departments of Life Insurers.
4) Consulting Actuaries and their staff.
5) Trustees of Employee Benefit funds such as Gratuity Funds, Provident Funds and Pension Funds including officials having responsibility of such Trusts;
6) Actuarial students.
7) Regulatory Staff supervising employee benefit schemes.

M Karunanidhi
President, IAI

K Subramaniyam
Chair, Advisory Group on PEBSS

General matters:

- **Participation Fees:** Rs.5,000 • **Dress Code:** Business Casual
- **CPD Credit for IAI members:** 4 hours, as per APS 9 in Life Insurance
- **Registration Start & close date:** From 10th September, 2013 till 3rd October, 2013
- **Capacity: Limited to Fifty**, admission will be on **first-come-first served** basis, subject to receipt of payment.
- **Register at:** http://www.actuariesindia.org
- **Contact:** Quintus Mendonca - quintus@actuariesindia.org

Subject Matter: Suspicious Answer Scripts found for subjects CT2, CT7 and CT8 for May 2011 Exam Diet and CT1 for May 2012 Exam Diet

This matter is being published in the Actuary India magazine, the in-house publication of the Institute of Actuaries of India, in accordance with the decision of the Executive Committee (now Council) in its meeting held on 4th March, 2003 applicable to all such cases and keeping in view IAI's membership requirements of the International Actuarial Association.

Name of the Candidate: Jayant Popat (MID:19765)
Exam Centre: Ahmedabad
Exam Diets and Subjects involved:

1) **May 2011 Exam Diet:**
   - **a) CT2 – Finance and Financial Reporting,**
   - **b) CT7 – Business Economics, and**
   - **c) CT8 – Financial Economics**
2) **May 2012 Exam Diet:**
   - **a) CT1 – Financial Mathematics**

THE CASE:

May 2011 Exam Diet :

While evaluating the subject CT8 answer scripts, one of the associate examiners brought to the notice of the Institute that one of the answer scripts was identically close to the indicative solution. Institute as per the procedure, forwarded the candidate's answer script to another associate examiner and review examiner, who gave similar remarks as the first associate examiner. This made the Examination Team to get the scripts, for subject CT2 and CT7, in which the candidate had also appeared, reevaluated from the examiner in order to get their opinion. The examiner for CT2 and CT7 subjects also confirmed that there is uncanny similarity between the answer scripts and the Indicative solutions. The script appeared near-perfect and almost too good to be true. The mistakes in the answer scripts were same as the indicative solution initially sent to them. It was observed that the candidate has scored highest mark in all the three subject.

It was suspected that the indicative solutions were available to the student prior to the examination date/s and prima facie opinion having been formed, the President ordered an Enquiry while the results were put on hold.

May 2012 Exam Diet:

In May 2012 diet, the candidate had applied for CT1, CT3 and CT6 subjects but only appeared for CT1 and CT6 subjects. While evaluating CT1 answer script of May 2012 exam diet, one of the CT1 associate examiners again brought to the notice of IAI examination department some irregularities noticed in one of the answer script which seemed to have similarity between the answer script and the indicative solution. As per the procedure, IAI administration had referred the answer scripts of subject CT1 to second associate examiner and Review Examiner for their comments. Further, candidate's script for subject CT6 was also sent to respective associate examiners and examiners for their comments. For CT6, the associate examiners didn't find any similarity to the Indicative solution. However, for CT1 subject, all the associate examiners and review examiner found similarity to the Indicative solution. Further, review examiner had also commented that there is totaling mistake in the indicative solution and candidate has done the same mistake in the answer script indicating that the indicative solution was available to the candidate prior to the examination date. While Enquiry was ordered in this case, the results were withheld.

The Enquiry

Framework for Enquiry and Disciplinary proceedings;

1) Section 19 (2) (i) of the Actuaries Act, 2006
2) Professional Conduct Standards Ver. 3.00
3) Declaration required of and given by the student member in Application form for Student Membership and/or Examination Application Form.

The letters dated 14.09.2012 and reminder letter dated 19.10.2012 was sent out (by post and e-mail) to the candidate referring that his results have been withheld seeking explanation on these events and charges against him; and why any disciplinary action should not be taken. There was no response on any of these letters from the candidate.

Recommendation of Examination Advisory Group:

The matter was deliberated in the EAG meeting held on 10th January 2013 & it was decided to give one more chance to the candidate to explain his position However, there was no response from the candidate on the letter dated 23rd January, 2013. In the EAG meeting held on 17th February, 2013, it was taken on record that the candidate, Mr. Jayant Popat had not reverted on the three showcase letters issued to him nor has he made any enquiry about his results till date. In view of this, it was decided to recommend to the Council to suspend the candidate for the next three years.

Decision of the Council:

The Council deliberated the matter in its meeting dated 4th May, 2013 and reviewed all documents and correspondence available on record. The Council agreed with the recommendations given by Examination Advisory Group and concluded that Mr. Jayant Popat has been involved in unethical conduct which is not expected of a candidate.

Order:

The Council decided to suspend IAI membership of Jayant Popat (MID:19765) for a period of three years with immediate effect starting from 4th May 2013 till 3rd May 2016.

The decision has been communicated to the candidate vide letter dated 15th May 2013 which was delivered on 20th May, 2013.

By Order
Gururaj Nayak
Head - Operations

COUNTRY REPORT

NEW ZEALAND REGULATION UPDATE

Free market competition resulted in over 100 insurers servicing a population of 4½ million[1]. However, the insurance market is dominated by a few Australian owned financial institutions.

Three years ago, the Insurance Prudential Supervision Act initiated the prudential regulation of insurance by the Central bank. This has resulted in some consolidation of the tail.

As at 19 August 2013, Reserve Bank of New Zealand (RBNZ) had issued 83 full licences and 4 run-off licences, cancelled 12 licenses leaving 18 insurers still to be processed before their provisional licenses expire on 7 September 2013 [2].

Changes that insurers have made include appointment of independent directors, formation of statutory funds (for life insurers) and stronger catastrophe reserving (for general insurers). One listed insurer had to hold back proceeds from the sale of a business unit to satisfy a stronger solvency target [3].

Refinement of regulation is ongoing. Consultation papers have recently been issued on guarantees [4] and financial reinsurance [5]. Guidelines have been issued for small insurer exemptions [6], life captives [7] and statutory funds [8].

RBNZ approved the compulsory transfer of 61,148 life insurance policies with an annual premium income of NZ$ 86m with effect from 1 August 2013. This was a significant transaction for the small New Zealand market, propelling the fifth largest life insurer into third place [9].

Investment standard

For the past couple of decades most defined benefit schemes have been closed to new members. Many ex-superannuation actuaries now practice in investments. The emphasis is on maximising risk-adjusted returns rather than assessing funding levels and funding rates. Hence, the New Zealand Society of Actuaries decided to develop a professional standard for this field.

The main actuarial associations do not have an investment standard that we could adapt. Hence, our investment practice committee studied codes used by other professions and held several sessional meeting before issuing an exposure draft last year.

Professional Standard No.11 on investment advice[10] came in to effect on 1 July 2013. This requires members giving professional advice on investments to document in advance their investment philosophy and methods for determining returns, variability and diversification.

A sessional meeting will be held shortly to get feedback on the operation of the new standard. The key aim is to provide a framework for providing clients with information on the methods and assumptions underlying investment advice, not to constrain professional judgement.

Earthquakes

On 16 August 2013, several earthquakes, including one magnitude 6.6, occurred at the top of the South Island and in the Cook straight. Many buildings on reclaimed land in Wellington suffered severe shaking. Fortunately, there were no fatalities or serious injuries and property damage was relatively minor.

In February 2011, 122 people died in the Christchurch earthquake. The latest series of earthquakes gives impetus to strengthening of buildings in a region prone to earthquakes.

The RBNZ solvency standard for non-life insurance requires insurers to hold enough capital or reinsurance to meet the financial impact of a 9.0 earthquake in the centre of Wellington (albeit phased in over several years).

Reinsurance capacity is available but at significantly greater cost than three years ago. Most insurers are requiring insured parties to specify the maximum sum insured which will act as a cap to indemnity cover for demolition, site stabilisation and rebuild.

About the Author

John.Smith@Fidelitylife.co.nz

John Smith has been the Appointed Actuary of a New Zealand life insurer since migrating to Auckland in May 2000. John has been the Secretary of the New Zealand Society of Actuaries since November 2005 and a Council member of the International Actuarial Association since January 2006.

1 http://www.stats.govt.nz/tools_and_services/population_clock.aspx
2 http://www.rbnz.govt.nz/regulation_and_supervision/insurers/register/
3 https://www.nzx.com/companies/TWR/announcements/239344
4 http://www.rbnz.govt.nz/regulation_and_supervision/insurers/5310220.pdf
5 http://www.rbnz.govt.nz/regulation_and_supervision/insurers/publications/5061333.pdf
6 http://www.rbnz.govt.nz/regulation_and_supervision/insurers/licensing/4540823.pdf
7 http://www.rbnz.govt.nz/regulation_and_supervision/insurers/regulation/5199831.pdf
8 http://www.rbnz.govt.nz/regulation_and_supervision/insurers/licensing/5246233.pdf
9 http://fidelitylife.co.nz/homepage/AboutUs/NewsItem.aspx?newsID=770
10. http://www.actuaries.org.nz/publications/PS%2011%20investment%20final.pdf

PUZZLE

Puzzle No 199:

Tom, Dick, and Harry met for a picnic. Tom brought 15 items, Dick brought 9 items, and Harry brought 8 coins of equal value to be shared by the other two as a reimbursement for bringing food for him to share.

Assuming the men consumed equal shares of food (and all the items are of equal value), how should the money be divided?

Puzzle No 200:

The finals of the Tiddlywinks Club Championship features two players: Tiddle and Wink. Both players know that in any one game between them, Tiddle's chance of winning is two in three.

The championship is a best-of-nine series. Tiddle says that, according to the odds, after six games the score should be 4-2 to him, but to save time, he'd be willing to start the championship from a base score of 3-2 in his favor, thereby leaving Wink a chance of being tied 3-3 after game six.

Wink would like to give himself the best chance of winning the championship. Should he accept Tiddle's offer?

Solutions to the puzzles

Puzzle No 193:

The dispatch rider travels 9.66 km.

Suppose the army has advanced x km before the Commanding General receives the dispatch. The dispatch rider will then have ridden x + 4 km.

The dispatch rider now rides x km back to the point where the army commenced its advance. The rider will arrive at this point at the same time as the rear of the army does and when the front of the army completes its 4 km advance. Thus the rider travels 2x + 4 km while the army travels 4 km.

Assuming constant speed throughout, the ratio of the dispatch rider's speed to the army's speed will also be constant. Thus $(x + 4) / x = (2x + 4) / 4$. Solving this we get the answer 9.66 km

Puzzle No 194:

The sides of the quadrilateral measure 2, 11, 5 and 10.

Puzzle No 195:

Jonh could do it in 4 steps:

Filled 5G bucket and poured all of it into 6G bucket.

Refilled 5G bucket and pored one gallon into the other bucket leaving 4 gallon in it.

Dumped 6G bucket and poured the four gallons from the 5G bucket into 6G bucket.

Then refilled 5G bucket.

Puzzle No 196:

Four changes are needed, as shown below:

Km	Front Left	Front Right	Rear Left	Rear Right	Spare
0 – 13,500	A	B	C	D	E
13,500- 22,000	A	E	C	D	B
22,000- 27,500	A	E	C	B	D
27,500- 36,000	A	E	D	B	C
36,000- 49,500	C	E	D	B	A

Correct solutions were received from:

Puzzle No 193:

1. Kailash Mittal
2. Graham Lyons
3. Prasenjit Roy
4. Punit Parekh
5. Neerav Bhomaj
6. Siddhi Wadhwa
7. R. Mythili
8. Graham Lyons
9. Srushti Sheth
10. Arun Bharti
11. Vishal Bhutani
12. Akanshya Bapat
13. Sarthak Goel
14. Vikas Rathi
15. Malik Mansoor
16. Prasad V.
17. K. M. Shanthi
18. Mercy Amalraj
19. Harsh Jain
20. Mansi Malik
21. Harshul Taneja

Puzzle No 194:

1. Shilpi Jin
2. Graham Lyons
3. Madhav Mittal

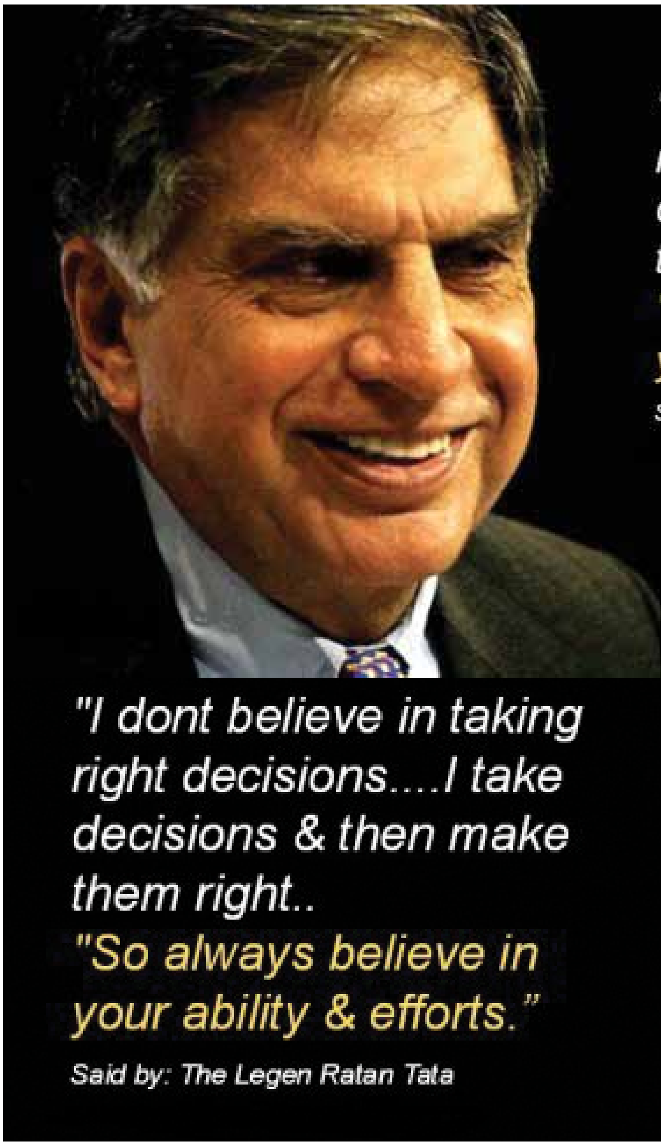
Puzzle No 195:

1. Ashwin Pugalia
2. Shilpi Jain
3. Kailash Mittal
4. Karan Jain
5. Himanshu Verma
6. Siddhi Wadhwa

Puzzle No 196:

1. Graham Lyons

shilpa_vm@hotmail.com



BIRTHDAY

Many Happy Returns of the day

the Actuary India wishes many more years of healthy life to the following fellow members whose Birthday fall in **September 2013**

G N AGARWAL	N C DAS
ASHA J JOSHI	V K VYDIANATHAN

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

SUDOKU

SUDOKU No. 14 for the month of September 2013

HARD

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

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.13 published in the Month of August 2013

SOLUTION

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

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