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FROM THE EDITOR'S DESK

The LokSabha elections are over and the feeling of "achey din" (better days) is all around across the regions and across the whole strata of the Indian society. One of the key initiatives taken by this government that could immensely benefit the insurance sector is reintroducing the insurance bill. While there is initial struggle, it is very likely that sooner or later the bill will get approval from the parliament. I see this as very positive development for insurance Industry. If we were to look at the new business premiums the last few years, the insurance industry struggled to grow. This could be attributed to various factors like gloomy state of overall global and Indian economy and perhaps massive frequent regulatory changes in past. However, over the last few months, there seems to be significant amount of optimism among the Industry players and it is believed that industry will again be back on the double digit growth path. Some of the recent economic numbers also supports this belief. For example, the Industrial product Index (IIP) rose by 3.4% in June 2014 over a year ago level. There was a growth in electricity generation to the tune of 15.7%. A recent report from Moody's projects a 5% economic growth for FY15 and even higher next year between 5.5% - 6%. It is believed that the Indian economic growth is very resilient and is likely to bounce to 7-8% by FY18. The growth in Insurance sector will bring significant amount of positive impact on the actuarial community. I personally believe that number of insurers currently operating in India is not sufficient to meet the needs of 1.25 billion people of this vastsubcontinent (well India in itself is like a subcontinent). Therefore, the number of insurers operating in India is expected to grow significantly once the insurance bill is passed and implemented. This brings a significant amount of opportunities and challenges for the actuarial community to meet the resource needs of these potential new insurers. I firmly believe that this change in the Insurance act is likely to lead to generate fairly good amount of employment for actuarial students and qualified actuaries. I look forward to this and with this note would like to conclude this message.

We invite opinion & comments on the articles published in magazine. Email: library @actuariesindia.org

CAREER CORNER

REPORTAGE

1ST CAPACITY BUILDING SEMINAR (PENSION) - INTEREST RATE IMPLICATIONS IN EMPLOYEE BENEFITS AND SOCIAL SECURITY SCHEMES

Organized by: Institute of Actuaries of India **Venue:** Hotel Sea Princess **Date:** 20th June, 2014

The seminar was arranged to facilitate discussions on the issues surrounding the interest rate volatility and its impact on Employee Benefits Liabilities. The change in the interest rates have a significant impact on the discounting rates, inflation expectations and also the return on the assets and thus significantly affect the values placed on assets and liabilities. The presenters in the seminar were mainly practicing actuaries who have practical experience when it comesto the impact of interest rate fluctuations on the DB plans.

Opening address

Preeti Chandrashekhar

Preeti linked the choice of the topic for the seminar to the interest rate volatility in the recent past. Due to this volatility, corporate projections/ budgeting of the Defined Benefit liabilities were significantly different compared to the actual valuations and the (Consulting) Actuaries had to put in considerable time and efforts in explaining the reasons for the same.

The choice of discount rate in valuation of employee benefits is so critical that the IFA has set up a committee to study into various topics surrounding the the interest rates.

The seminar was a step towards discussing how the concepts like asset liability matching, Liability Driven Investments, Stochastic Modelling can applied in the valuations and management of the Defined Benefit Schemes in India.

Session 1:

Asset- Liability Matching in Defined Benefit Schemes

Mayur Ankolekar

Mayur began with the basics on concept of 'duration and modified duration of a liability' and progressed onto details of how it can be calculated rigorously. He then provided different measures using which one may estimate the duration of liability for different employee benefits. Mayur also presented instances where the estimates can be different in comparison to the actual term of the liability under various sets of assumptions. He emphasized that the actuary has to be very diligent in choosing the different assumptions and valuation methodologies as these have a direct bearing on the estimates of the term of the liability and hence the value of discount rate chosen.

Mayur then stressed on importance of holding assets having term same as the liabilities. The presentation included an example to explain the impact change in interest rates can have on the assets and the liabilities. It was demonstrated how the change in interest rates should have a mutually compensating effect on the values of the assets and the liabilities if both have equal duration and scheme is fully funded.

During the course of the presentation, practical aspects surrounding the choice of assets were also considered. It was stressed that in the Indian context where there have been negative real rates for a sustained period of time, it becomes pertinent for the schemes administering long term liabilities to hold real assets. In this respect it was discussed whether unitizing the assets leads to greater efficiency. Few suggestions were made regarding the disclosures of the investment products by the insurance companies so that the asset managers can make appropriate decisions regarding the asset allocations.

In the concluding section Mayur correlated the whole process of asset-liability management with the Actuarial Control Cycle and provided a step-wise guide on implementation of a simple ALM strategy based on duration matching.

Session 2:

Discount Rate implications on Pension Obligation

Nirav Mehta

The presentation was divided into two sections: (i) Impact of discount rate on the assets and liabilities under different accounting standards. (ii) Trends in the yield on the government bonds in different countries.

Nirav restated the provisions under different accounting standards (Indian, IFRS and the USGAAP) regarding the choice of discount rates, recognition of actuarial gains and losses and determination of the balance sheet liability. He then demonstrated with help of an example, the impact of change in discount rate on the Obligation, Assets and the Funded Status of a company.

The next part of the presentation was a compilation of trends in yield on government securities and corporate bonds in India, US and the European countries. This was followed by a round of deliberations regarding the observed trends and the reasons for the same.

Towards the end on the session, Nirav gave a summary of methods under which the Actuary may choose the discount rate which in turn depends on the purpose of valuation.

Session 3:

Liability Driven Investments

Arpan Thanawala

Arpan began the presentation with a peek into the history of fund management and evolution of Liability Driven Investments. He presented how the perceived meaning of LDI changed from a simple duration matching to a complicated cash-flow matching approaches in recent years. He also explained how the benchmarks for the fund managers changed over the years and why 'reducing risk' took precedence over 'maximizing returns' of the scheme. Arpan presented why there is growing emphasis on investments which captures the characteristics of liabilities and increased usage of derivatives to achieve more precise liability hedges. Arpan then discussed concepts of LDI at length. He highlighted that any scheme is typically exposed to 'investment risk' and 'non-investment risk' and LDI can help reduce primarily the former.

In the later part of the presentation, he covered the application of LDI in general and also in specifics with respect to India. He pointed out that pursuing LDI requires significant capital commitments and hence derivatives (swaps, repos, swaptions etc) can be particularly helpful. It was observed that implementing LDI in India has its own challenges because of following reasons:

- no compulsion to pre-fund employee benefit liabilities or minimum funding requirements
- restrictive investment strategy for recognized (tax exempt) trusts, compulsory buy out of pensions and limits on (tax exempt) contributions
- Lack of available investments (long duration, index linked etc).

He supported the discussion by a case study of a MNC operating in India offering a Post Retirement medical benefit plan and how it adopted LDI strategy to reduce the funding level volatility.

Discussions following the presentations were mainly about the practicalities involved in implementation of LDI i.e. cost v/s benefit analysis, any additional reporting requirements (since leveraged products would be involved) and the type of risks that may not be possible to cover under this strategy.

Session 4:

Interest Rate Guarantee & GN 29

Dr. Sriram

Dr. Sriram presented the methods of valuation of interest rate caps and floors and how these may be adapted and applied to the valuation of interest rate guarantee arising in case of an exempt provident fund. Dr. Sriram had contributed in drafting of the GN 29 as it reads today. In this presentation he revisited the Option Pricing Approach and Stochastic Modelling Approach and provided further explanation and examples on the same.

The Option Pricing Approach is based on the Black's formula and implicitly assumes a Log-Normal Distribution for the interest rates. Dr. Sriram provided a step-wise procedure that may be followed while valuing the interest rate guarantees for an exempt provident fund under this approach as well as under the stochastic modelling approach. He also discussed the desirable characteristics of a term structure model should satisfy before the same can be adopted for the stochastic modelling.

As per the current version of GN29, an Actuary is allowed to value the interest rate guarantee by using any of the three approached mentioned in the GN. It was concluded during the course of the presentation that a Stochastic Modelling Approach is the most appropriate way of valuing the interest rate guarantee as some of the term structure models fit the interest rate behaviour reasonably well. The Option Pricing Approach is the next best option given that the Lognormal Model does not accurately fit the G-Sec behaviour in India whereas; the Scenario Based Valuation (Method 1 in the GN29) should be the choice of last resort.

Session 5:

Investment approaches adopted by Indian Provident Fund trusts

Souvik Nag

Souvik started his presentation by highlighting some interesting statistics from the EPFO's annual report 2012-13 related to the membership counts and the funds under management of exempted PF Trusts as against the un-exempted PF Trusts. He also covered the guidelines for PF Trust investments and practical challenges faced by the managers during implementation of the same. Souvik provided an overview of PF investment objectives, accounting and documentation process followed by organizations that mange the PF funds professionally.

The second half of the presentation covered the different criteria by which portfolio can be analysed. These include analysis by-

- Maturity profile of the portfolio
- Yield attribution at various residual terms
- Impact of redemption on portfolio yields
- Exposure of the portfolio to investments with various credit ratings to manage credit risks

He emphasized that analysis based on the above points can help the scheme managers manage the security of assets, sustainability of returns, control costs falling on to the company and help companies to initiate corrective actions and policy formulation. The essence of the whole presentation was to institutionalize PF investments, giving relevant advice to the clients and to emphasize on Trustees responsibility to be more proactive with investment strategy. There is a need for more professional outlook towards PF investments in Trusts and sound governance framework in India.

Concluding remarks

The members benefitted from proactive discussions throughout the day. There was a general consensus that the actuarial community needs to take more initiatives and make representations at various forums so that there is more awareness and education on the various topics. In this way we can live up to the mission of 'Serving the Cause of Public Interest' and contribute in bringing about a systemic change that may lead to a more robust and sound financial framework.

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EQUITY RELEASE (REVERSE MORTGAGE) - RETIREMENT INCOME OPTION

According to a research study by IAI, salary growth and CPI inflation do not move in tandem in the period of study 2000/01-2012. Past trends indicate that salary growth does not increase with CPI inflation. This implies that there is an earnings gap that is created over a period of time. It is a general observation that the rate of salary increase in an individual's work life itself is not uniform. So there is an imperative need for the individuals to consciously adjust their life style as they age forcing them to increase the savings to spending ratio towards the end of their work life. The situation worsens post retirement when the retirement income does not increase on par with inflation. Basic needs would have been fulfilled; however there may be additional needs for medical care and other standard expenses in one's retired life. Hence there is a requirement to augment the sources of retirement income.

Living longer...... - An expression of worry/merry?

Increasing longevity has been the topic of interest for different professional communities over the last few years. According to a statistical report by United Nations World Population Prospects, the average life expectancy at birth was 71.0 years (68.5 years for males and 73.5 years for females) over the period 2010–2013. While we are happy and proud of medical advancements that have contributed to this increased expectation of life, somewhere an alarm of caution also rings. What is this alarm about? It is about providing adequate savings to maintain the expected life style for a longer duration post retirement. With retirement age remaining the same, our current work life span will not be sufficient to provide for longer post retirement phase. In addition, we are exposed to more uncertainties about socio-economic factors. How do we cope with increased costs of living when the regular income stops? There are many conventional retirement products in the market like annuities, pension plans, unit linked plans, etc. However, **there is concern if the returns generated from these (conventional retirement products) would meet the costs of living in the post retirement period**

Supplementing retirement income

As actuaries, we understand the financial implications of uncertainty. In developed countries like US, UK, etc., social security and state pension systems exist. Hence increasing longevity has raised concern for these governments about the cost of providing state pensions. Many of these governments are campaigning and educating individuals on the need for alternate/additional means of providing for retirement income to maintain the desired life style. Many innovative products have come into the markets to meet the changing needs of the individuals thereby prompting regulatory authorities also to take appropriate steps to regulate the same. There are always costs associated with regulation which act as barriers for further innovation and development of such products in the market. The focus of this article is not on regulation though.

Traditionally, using real estate as a mode of investment, and reaping the benefits out of it by renting a portion or the whole of it in times of need, selling it to buy annuities, etc had been in vogue. Some elements of risk existed in all these arrangements in some form or other. For example, assume one rents out a property. As one ages, collection of rents and maintenance of good tenants is a concern. Though one may hire the services of property agents, services do have a cost. Increasing expenses and the associated worries come in the way of peaceful retired life.

Using Home ownership enhancing retirement income

Financial services industry had always been quite adaptive in understanding the changing needs of the consumers over time. To address the worries of the retirees on expected long life after retirement and their desire to maintain a particular standard of life style, the concept of equity release was introduced. Products of equity release are offered only for those who are in their post retirement age. It is essentially converting a low rent yielding real asset into a steady stream of cash flows much higher than the rent. Equity release aims at generating an income stream from the ownership of the home one occupies. While the home owner retains the ownership and occupancy status he/she can get some income out of it. Sounds like eating a cake and having it too. Recall the famous saying, "There is nothing called free lunch". Then how does it work? It works similar to a reverse mortgage in which the income provider gets his pie after the death of the owner of the house in return for the payments paid during the latter's lifetime

Equity Release - Types

There are two main types of equity release- lifetime mortgages and home reversion plans.

Lifetime mortgage: In this type, the owner of a home occupies but can obtain a loan from a provider which is secured against the property. The amount released by the provider can be either taken as a lump sum or a regular income. The customer not only retains the ownership but can continue to stay in the property and repays the total amount with interest rolled up for the duration of the contract. The term of the contract could be the lifetime of the customer in which case the loan is repaid when he/she dies.

Home reversion plan: In this type, the owner sells all or a part of the property at a discount to a provider and then continues to stay in it without paying rent until death.

Given the nature of the equity release products, providers are predominantly banks and insurance companies.

of equity release products depend on macroeconomic factors, mortality rates and others. The tenure of the product also depends on the life expectation of the customer after retirement which **depends in turn on health, living style and others.**

Benefits and Costs

The main benefits of equity release products for the consumers include:

- They provide a lump sum or periodic cash flows until death. These cash flows are tax free. / taxed at lower rates depending on the jurisdiction.
- The proceeds such as lump sum could be used for home improvements, medical needs, repayment of small debts or as supplementary retirement income.
- Flexibility of changing the provider when the interest rates fall (as of now, these products are offered at fixed interest rate)
- Portability of moving the plan chosen to another property without any penalty in monetary terms
- Above all, the no negative equity guarantee (NNEG) offered by these products does not impose a burden on the borrower when there is a downturn in the housing market as it happened during the recent financial crisis. The loan to be repaid cannot exceed the value of the home mortgaged at any point of time. This rules out the possibility of problems encountered with sub-prime mortgages

The costs involved in these products are:

- They are more expensive than other options – as there is a guarantee attached to it. (recall no negative equity guarantee discussed above) Over time, the cost disadvantage may diminish when the markets develop in volume and the benefits of economies of scale are passed on to the consumers
- Opting for these products would imply a reduction in the amount of wealth that is left for inheritance on death of a particular consumer.

Insurers as Providers - Comparative Advantage

Though the cash flows of equity release products are modeled on the likes of a mortgage, a closer look at the nature of the product would reveal a fundamental difference. In a traditional mortgage, interest rate is fixed or floating and a portion of the principal with interest is repaid each year. The term of the loan is not often as long as in the case of an equity release. In the latter, loan plus interest is repaid when the consumer dies. Therefore, in a portfolio of such products, smaller cash flows tend to continue for a longer time. Duration of these products depends on the health status and the mortality of the consumers and tends to be much longer than that of the traditional mortgages. Conventional actuarial models and modern simulation techniques (for forecasting macro-economic indicators) could be deployed to fairly predict the cash flows of the portfolio of equity release products. Insurance companies could also use cash flows associated with equity release assets due to their long tern nature to match their long term liabilities. Thus these products fit in their asset portfolio more comfortably. Insurers can tap the huge potential of the market for these products as they can leverage on their existing customers for other retirement products such as annuities. As insurers are more stringently regulated, consumer confidence can be built up more easily which also helps in making of these products.

In Europe and United States, though equity release markets had been in existence for over three decades now, the growth had been slow till the beginning of this decade. With increasing pressure of socio-economic factors discussed above, potential for growth in equity release products is surging. Adequate regulation and consumer education would help in achieving a huge amount of cash to be released from the home equity. It is important to note that while regulation of these products are essential to avoid misuse /mis-selling of these products, excess of it would escalate their costs and may impair the viability of these products for the insurance companies/ other financial institutions. While home value are on the rise, reversing the downward trend set during the recession period, it is an appropriate time to promote the development of such products with variants depending on the age groups (62-80), that would help release quite a bit of value released from the home.

The development of equity release markets not only offers benefits to the consumers but also reduces the burden on the governments to provide for ageing population. When the money is released from the value of homes, it is made available for consumer spending and thereby stimulating economy. Hence attention is required towards providing a regulated yet transparent environment in these markets.

Indian Scenario

The market for equity release/reverse mortgage is in its very nascent stage in India though it has been introduced in 2008. This is not a surprise given the conservative nature of the society we live in. As the customers of this market are senior citizens they may be still reluctant to pledge their home and thereby depriving of inheritance wealth to their heirs. Lack of adequate campaign for these products is also another primary reason for underdeveloped market. Nevertheless, it is known that the changing life style and socio-economic factors paving ways for increasing independent nature of senior citizens would contribute to the potential growth of the market in such products.

In India, reverse mortgage products are offered by banks wherein the eligible loan amount for the property is released by the banks to the insurance companies who in turn offer annuity to the individual who pledges the property. The individual can choose the frequency of payment of the annuity. In this model, the insurance company stands in between the bank and the individual. The fuel for innovation in this market has to be supplied by the regulator. The very presence of regulation boosts public confidence but too much of it would act as a deterrent for the new entrants. The regulation should therefore target to create a competitive market. Only a handful of banks are offering reverse mortgages in India with heavy and bulky documentation needs. If such documentation needs are eased with prudence, take up rate for these products would increase.

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About the Author

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See your goal
Understand the obstacles
Create a positive mental picture
Clear your mind of self doubt
Embrace the challenge
Stay on track
Show the world you can do

DISRUPTIVE INNOVATION IN INSURANCE DOMAIN THROUGH THE USE OF BIG DATA ANALYTICS IN PROVIDING GROUP INSURANCE

How successful is the insurance industry penetration in India? This is the most important question any Insurance industry expert should be asking as the industry is nearing maturity globally. This generic statement is to be read with caution as the industry has not seen very disruptive innovation in most of the developing economies like India, where customers are more price sensitive. This is evident from the below graphs which shows very low insurance penetration and density in India compared to other developed countries.

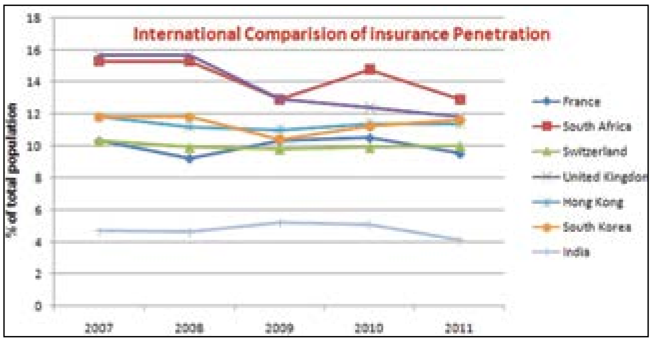

Fig: Chart shows the International comparison of Insurance Penetration [source: IRDA]

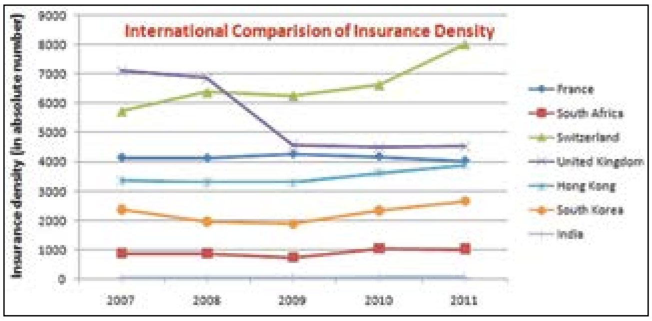

Fig: Chart shows the International Comparison of Insurance density [Source: IRDA]

Ernest and Young's research report indicates that the Asia- Pacific region's share of the global middle class to nearly double from 28% in 2010 to 55% by 2020. Demand for both life and non-life insurance are expected to increase. Regulatory changes in many developing nations including India are liberalizing the industry by permitting the players with the formation of insurance- based mutual funds. These indicate the new opportunities in private savings market where the insurer need to evaluate the new product development, distribution and its related services with special emphasis on risk mitigation; possible increase in VaR (Value at Risk) to mitigate the daily volatility in the stock market. Thus the increased market indicates the potential and the challenges the industry may face in serving the new market. Here the word challenge is used with more emphasis in Indian context as the industry was not successful in making inroads into deep Indian markets which are mostly price sensitive. This article puts special focus on how to make this industry disruptive especially using the big data analytics that may possibly show patterns to create group insurance of low premium and thus increase the industry's penetration and density; Indian consumers are more price sensitive and major reason for not getting an insurance policy remains its premium.

Disruptive innovation through Big Data analytics:

Disruptive innovation is something that transforms or defines the existing markets into new markets by making simple, affordable and convenient products or services by displacing the existing technology or service method. For example, making the existing product or service more affordable i.e. by reducing the price and the cost of production so that a new market can be defined where the new target segment covers those who were not covered earlier.

"Crossing the Chasm" explains that companies make real money mostly by operating in **"The Mainstream Market".** Meaning every firm should make their policies/services affordable to the masses first to survive and then to make real money as they barely make money being in the **"Early Market".** Assuming this to be true for the Insurance industry, experts should focus on making the industry more disruptive so that the people who think it as a luxury should also be able to afford it. Thus experts are looking at making the industry wider than it is today.

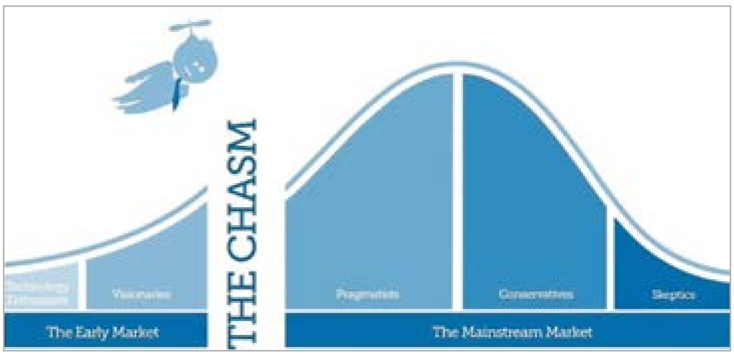

Fig: Product/Service diffusion cycle

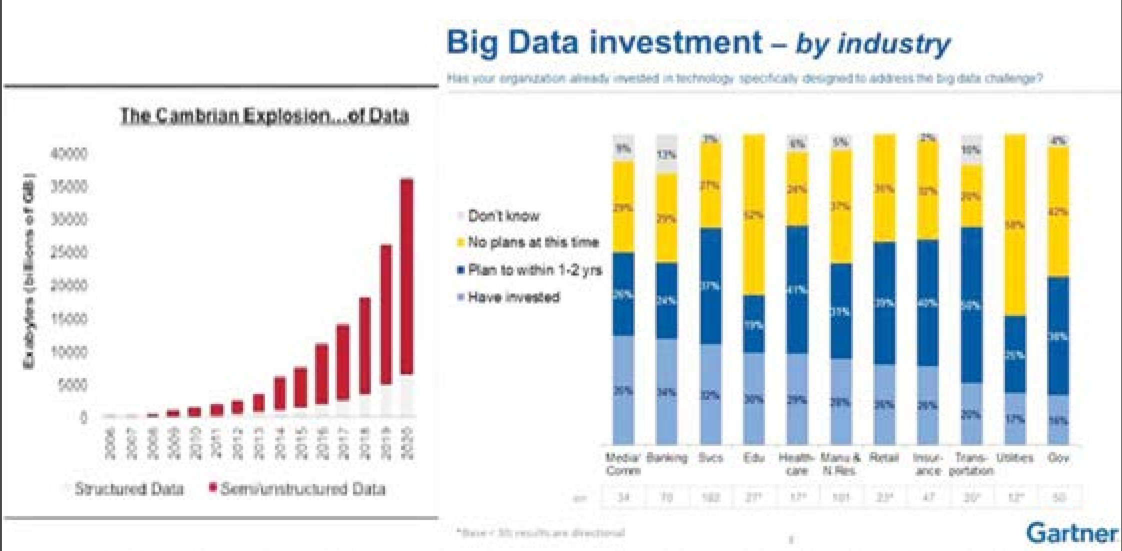

Fig: Charts shows the growth in conventional and unconventional data and the industry's Big data adoptions

Probable methods of making the industry very disruptive in generic are: decrease the unit costs of production so that selling prices come down, make the process simple so that people who felt uncomfortable to use earlier also feel comfortable etc. This article focuses on making the insurance industry disruptive through the usage of Big Data analytics, where the focus is on identifying the better target audience to whom service is offered at competitive premium by forming group insurance. Just for basic understanding, **Big data** in lay man terms is defined as the combination of exponentially growing structured and unstructured data that is so large that it's difficult to process using traditional data base and software techniques. Below picture shows the forecasted growth in the both structured and unstructured data. And every industry vertical is looking at defining its own competitive advantage by using this data skilfully. Coming back to the primary focus of the article, let's first focus on how the Insurance premium is calculated and then at how to reduce the premium of the insurance service by forming group insurance in the unconventional areas that are identified with the help of big data analytics, which eventually brings down the premium as identified groups will have lower standard mean of claims compare to the average claim of random population and the related risk. The insurer while designing any premium for example auto insurance premium considers the various customer parameters like risk category, lifestyle, which model is driven etc., and his internal parameters like cost of service provided, operating cost, cost to manage risk etc. With the help of big data analytics if the insurers are successful in identifying groups for which the service can be offered at lower premium as they might exhibit lower claims or predictive analysis to identify any possible financial risk involved etc. could drastically reduce the price of the premium. Below are a few examples of forming user groups and identifying risks if any using big data analytics:

a) Product group personalisation:

Scoring or customer selection models based on demographics account information, driving records, health information and other related data helps the insurance firms in forming the groups to design premium based on their needs and risk factors. Some insurance firms are already collecting data even from the sensors of automobiles like parameters of distance travelled, average speed etc. This collected data is compared with other aggregate data to determine the competitive rate for the formed group based on their common habits, history and degree of risk.

b) Cross selling and upselling:

Collecting data across channels include web site click stream, social media platforms etc. can help insurers to develop products to the group which match their need, budget and risk. Based on the obtained data, customers are targeted for cross selling and upselling.

c) Optimise multi-channel interaction:

Integrating and expanding distribution channel options requires insurance agents to provide consistent and well co-ordinated experience across all channels while delivering sales and services cost effectively. This includes interaction between agents, brokers and related distribution channels while providing the effective services. By moving the channel interactions to the lower cost channels, firms can offer right combination of options, personalisation, visualisation and rich experience to the involved business stakeholders.

d) Optimize enterprise risk management:

In today's complex interlinked insurance cum finance industry, insurance firms should protect themselves against enterprise risks including insolvency. Insurance firms can use the analytics insights gained to monitor the performance of their invested financial capital and look at the methods to predict, identify, prevent and monitor the insurance frauds. Identify any cyclical risks/ pattern and trends that can identify the fraudulent methods and improve fraud prevention in the future etc.

Opportunities like above help in forming possible user groups and predicts the risk involved which were not possible earlier using conventional techniques. Thus formed group insurances are offered at very competitive premium as they enjoy the luxury of possible lower claims and hence risk. As group insurance offer no scope of adverse selection, insurance companies have the leverage to reduce the premium prices of the insurance offered if the analytics is carried out to identify the set of better profile consumers who were not identified earlier. Thus with the help of big data analytics, insurance firms can focus on increasing the penetration and density in those areas whose insurance penetration is very dismal, and thus look at the possibility of bringing in disruptive innovation in insurance industry which was not possible earlier mainly due to consumer's price sensitivity in terms of higher insurance premium.

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ANNOUNCEMENT

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

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

STUDENT CORNER

ECONOMICS OF PENSIONS AND AGING IN UNION BUDGET 2014-15

Introduction: The Union Budget 2014-15 (UB15) came at a time when macroeconomic situation warranted serious thinking to spur growth. The macroeconomic situation summarized by two broad indicators: 1) unstable trajectory of twin deficits – fiscal deficit (4.8% of GDP) and current account deficit (1.7% of GDP) and 2) high inflation (9% plus), a partial outcome of the twin deficits themselves. In this context, some measures to amend rules and regulation related to pension schemes were expected. The UB15 has many key takes as far as pension sector is considered and this is what concerns us in this write-up.

Pension provisions in India are largely subsumed under household saving decisions as there is no universal social security (SS); at least in Western sense of the term SS. Hence, augmenting the pension corpus (i.e. savings) is but one of the many ways to ensure some adjustment on the external front. Pension corpus is all the more crucial now as household sector is the only surplus sector in Indian economy and is a net lender to all sectors (including the government sector). Household savings have steadily declined from their peak of 36% of GDP to 31% of GDP in 2013. Hence, a major thrust to small savings in this budget is no surprise.

The measures announced by Finance Minister's on a closer look, directly and indirectly, impact the short and long-run dynamics of pension sector. The measure range from tax treatment of pension savings in accumulation phase to taxation of pension drawn. Then we have introduction of new pension schemes -the Varishtha Pension Bima Yojana (VPBY). There are also policy interventions in respect of Employees Pension Scheme (EPS) and Employees Provident Fund Organization (EPFO). There is a crucial decision on FDI in pension sector which is implicit in the announcement of FDI for insurance sector. We take each of these and other issues in following paragraphs.

Tax treatments of pension monies

Favorable tax treatment of long-term funds in accumulation phase has always been view from point of stable source of financing for growth. Thus taxation issues of long-term fund and pension annuity both have received explicit attention in this budget with an objective to spur growth. The exemption limit for eligible investments under Section 80C has been hiked from Rs. 1.0 lakhs to Rs. 1.5 lakhs and same celling applies to investments under the Public Provident Fund. In a similar vein the income tax exemption limit for pensioners (senior citizens) was also raised from Rs. 2.5 lakhs to Rs. 3.0 lakhs, to partly preserve the standard of living constantly eroded by galloping inflation in food items.

However, given the extent of imbalances owing to twin deficit this hike looks insufficient. It is also unlikely if this tax incentive will materially alter the savings mix which has tilted towards other monetary assets like gold owing to high inflation and macroeconomic uncertainty. The real interest rate on small savings has been negative for long time and many existing schemes are witnessing net withdraws in recent years. A series of committees had recommended major overhaul in small savings, to correct the asset liability mismatches in National Small Savings Fund but not many of these recommendations have seen the light of the day. Hence there is much work to be done to revive small savings.

New pension schemes for senior citizens

In 2003-04 NDA Government had introduced the VPBY as a pension scheme for senior citizens. Under the old scheme a total number of 3.16 lakh annuitants had benefited and the corpus amounted to Rs. 6,095 crore. The UB15 proposes to revive this scheme for senior citizens with age 60 years and above (as against 55 years and above in 2003-04). The 2003-04 scheme offered a guaranteed return of 9% which was 3% above the ongoing market rate on Government security of tenure equal to average life expectancy at age 60 years. Given the state of fiscal finances, when government is trying rationalize subsidies, the UB15 is silent as to how this subsidy (if any) will be financed. It will also be a test of the actuarial wisdom to make the scheme attractive enough to mobilise enough corpus so that both social welfare objective and saving objectives are simultaneously met.

Summary of VPBY key variables since 2003	
Population > 60 2001 Census (A)	76,622,321
VNPY Subscribers 2003-04 (B)	316,000
Percent mobilised in 2003-04 (B/A)	0.4%
SRS Life expectancy 2000-04 at age 60	17.5
17-Year G-sec yield in 2003-04	5.88%
Population > 60 2011 Census (C)	103,849,040
Percent increase since 2001 (C/A)	36%
SRS Life expectancy 2006-10 at age 60	17.5
17-Year G-sec yield in 2014	8.70%
Source: Census of India, SRS Based Life Tables, RBI	

Policy interventions

There were three major policy announcements in this budget which require careful consideration. These include 1) the FDI in insurance sector, 2) hike in pension payments under EPS to Rs 1000 per month and 3) implementation of uniform account numbers for subscribers of EPFO. I take them in same order below. Under Para 18 of the speech, the Union Minister announced that '[t]he composite [FDI] cap in the Insurance sector is proposed to be increased up to 49 per cent from the current level of 26 per cent, with full Indian management and control, through the FIPB route'. Now, as per Section 24 of the PFRDA Act 2013: '[t]he aggregate holding of equity shares by a foreign company either by itself or through its subsidiary companies or its nominees or by an individual or by an association of persons whether registered or not under any law of a country outside India taken in aggregate in the pension fund shall not exceed twenty-six per cent of the paid-up capital of such fund or such percentage as may be approved for an Indian insurance company under the provisions of the Insurance Act, 1938, whichever is higher'. Hence by virtue of Section 24, the increase in FDI limit in pension funds under PFRDA is implicit if FDI in insurance sector is hiked to 49% through the FIPB route. Should FDI in pension sector be allowed is matter of serious debate and one must assess the cost and benefits of this option. A major announcement in this budget is notifying minimum pension of Rs. 1,000 per month to all subscriber members of EPS. Along with this hike in benefits, the mandatory wage ceiling of subscription to EPS is also raised from Rs. 6,500 to Rs 15,000. A provision of Rs. 500 crore has been made in the current financial year to meet the expenditure. Setting aside the welfare motives of this announcement, this decision merits close financial scrutiny. First of all, this decision has its origins in a 2009 Committee headed by S K Srivastava to ensure long term viability of the scheme. In this report the Committee explored six combinations of changes in benefits/ contribution. It appears Scenario No. 4 which UB15 has accepted. Because of this change the contribution would be raised to 12% (employer 10.84% and government 1.16%) and from a base line deficit of Rs. 69,800 crore, the scheme will have a surplus of Rs. 6,700 crore. Some caveats immediately follow. One, the 2009 analysis was static hence the inter-temporal impact was not assessed. Two, there has been considerable delay in implementing the proposals and since 2009 even mortality tables have undergone revision. Hence, the surplus figures must be read with caution. Third, in its Performance Audit Report No. 32 of 2013, the Comptroller and Auditor General observed that for the period 2006-2012 the government invariably did not fully remit its share of EPS contribution in each year. Symptomatic of the fiscal strain, this shortfall steadily increased in each year since 2006 and stood at Rs. 1944 crore in 2012. Hence, even the budgetary provisions need to be reworked if there is an existing backlog in Governments share to meet the pension promise. Lastly, for the convenience of the subscribers, EPFO will launch the "Uniform Account Number" (UAN) Service for contributing members to facilitate portability of Provident Fund accounts. This a measure, a long due and with this EPFO and National Pensions Scheme will achieve near convergence. UAN will definitely elevate the service quality of EPFO.

Other issues

Military pension has always be kept out of the preview pension debate in India. A policy of "One Rank One Pension" has been adopted by the Government in UB15 to address the pension disparities in various ranks of military. A sum of Rs. 1,000 crore has been set aside in UB15, which is twice the amount set aside in the Interim Budget. One must remember that design of the military pension had undergone a change from Fourth Pay Commission. Till the Third Pay Commission, the pension of a soldier was linked his rank and the length of his service. The Fourth Pay Commission changed this pattern when the pension was linked to pay drawn at the time of retirement by ex-serviceman. This measure need not be looked from the prism of fiscal constraints and is largely welcomed.

Conclusions

Overall, UB15 is a good start in terms of fiscal consolidation. High levels of fiscal deficit has been one the many reasons for high inflation, a very important variable for pension contracts. It is not expected that fiscal adjustment will be swift, it is generally never the case. But a long term strategy, reinforced every year can ensure that pension sector can achieve some diversification away from gilts into other asset classes so that the real value of pension corpus can be preserved. Should pension sector be opened to foreign players? This question has must receive its due attention. When pension policy has already moved towards defined contribution plan, how can foreign participation help pension sector where not fund management but coverage is the key issue. FDI choice requires wide consultations and long term view.

About the Author

Saket has worked for four years as consultant to various pension funds in India. He has a specialization in pension fromthe Netherlands. He is pursuing his Phd in Economics and is student member of Institute of Actuaries of India.

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PENSION UPDATE EPFO

During the budget speech Finance Minister made few important announcement to Employees' Provident Funds and Miscellaneous Act, 1952

- Increasing maximum coverable salary ceiling from ₹6,500 to ₹ 15,000 (Highest ever)
- Minimum Pension to be ₹1,000 p.m.

These announcements would have several implication on benefit and contribution, as being a social security scheme, it always works on the principle of redistribution of income. With minimum pension of ₹ 1,000 p.m. there will be immediate increase in the cost of payment of pension.

Historical wage ceiling of EPF and MP Act 1952 is

One will observe that the salary ceiling was revised consistently within a period of 4 to 6 years with an abnormal period of 1962-76 and current of 2001-2014.

It is intrigue to know that the PF is applicable to the employees drawing salary equal to or less than the ceiling, but if an employee gets covered because the salary being less than the ceiling then the employee remains covered under the PF & MP. Act 1952 even if the salary crosses the ceiling, though statutorily contribution is to be made on the ceiling salary.

Even though there is an option available to the employer to contribute to the PF account on actual salary which is more than the ceiling salary, very few have opted for the same as employer wishes to reduce wage cost and employee wants more take home pay.

Period Wage limit per month	₹Pm.	app period for which limit remained (years)	% increase in ceiling
01.11.1952 to 31.05.1957	300	4.58	
01.06.1957 to 30.12.1962	500	5.58	167%
31.12.1962 to 10.12.1976	1000	13.95	200%
11.12.1976 to 31.08.1985	1600	8.73	160%
01.09.1985 to 31.10.1990	2500	5.17	156%
01.11.1990 to 30.09.1994	3500	3.92	140%
01.10.1994 to 31.05.2001	5000	6.67	143%
01.06.2001 to 31.08.2014 (expected)	6500	13.26	130%
01-09-2014 onwards (expected)	15000	-	231%

The announcement of raising the salary ceiling and minimum pension of ₹1,000 pm .will have different impact on the employer and employee:

For employer, salary cost will go up by ₹12,240 pa. considering average salary of ₹15,000 pm. There will be additional burden of enhanced administrative charges of ₹1,116 pa. with a total of ₹13,356 pa per employee .

For employees there will be additional savings available on retirement, an enhanced pension benefit with minimum of ₹1,000 pm pension, but will have to cope with a reduced take home pay of Rs 12,240 pa. If an employee is under Cost to Company type of salary then the take home pay may again get reduced by ₹13,356 which is additional cost to the employer and total reduction in take home pay may go up to ₹25,596. This all will give them the fruit in the long term on account of higher pension and higher lump sum on PF withdrawal.

With increase in the ceiling there are employees/ organisations which were not covered earlier will get coverage. It is expected that there will be another 50 lacs employees will become part of scheme.This will also bring in more funds, which can be to the tune of ₹21,600 crore excluding admin charges. With this new money and enhanced contribution there will be substantial inflow in the bond and G.Sec market

Salary Ceiling	Employer Contribution	Admin Charge payable @ 1.1%	Total Outgo for Employer
6,500	780	72	852
15,000	1,800	165	1,965

which will be a boon to the economy as more funds will be available for the investments.

All the above changes will have an implication on the benefit calculations, as what weightage will be given to the past contribution after enhancement of salary ceiling as well as the weightage of service for enhanced contribution will require clarifications.

Minimum wage under minimum wage Act is increasing year on year and if wage ceiling has to keep pace with the ever increasing inflation, regular enhancement in the wage ceiling will be required, this is one area which will make EPS 1995 a Defined Benefit scheme more complex as EPS 1995 is a hybrid scheme where in benefits and contribution both are defined.

There was one more announcement of Universal Account Number (UAN), which is an "E" initiative of EPFO so as to have single account number throughout service period and help give better service to its account holders. It is a welcome step as this helps in faster and better settlement of claims as well as this will deter employees from false withdrawal of balances on switching the jobs.

The increased ceiling has come in an economic scenario of higher yield on the securities, with this higher yield on the securities available for investment of the fund with enhanced contributions, exempt as well as EPFO fund will be able to earn a better rate.

There will also be need of additional actuarial advise as to ALM and interest shortfall if any valuations for these funds.

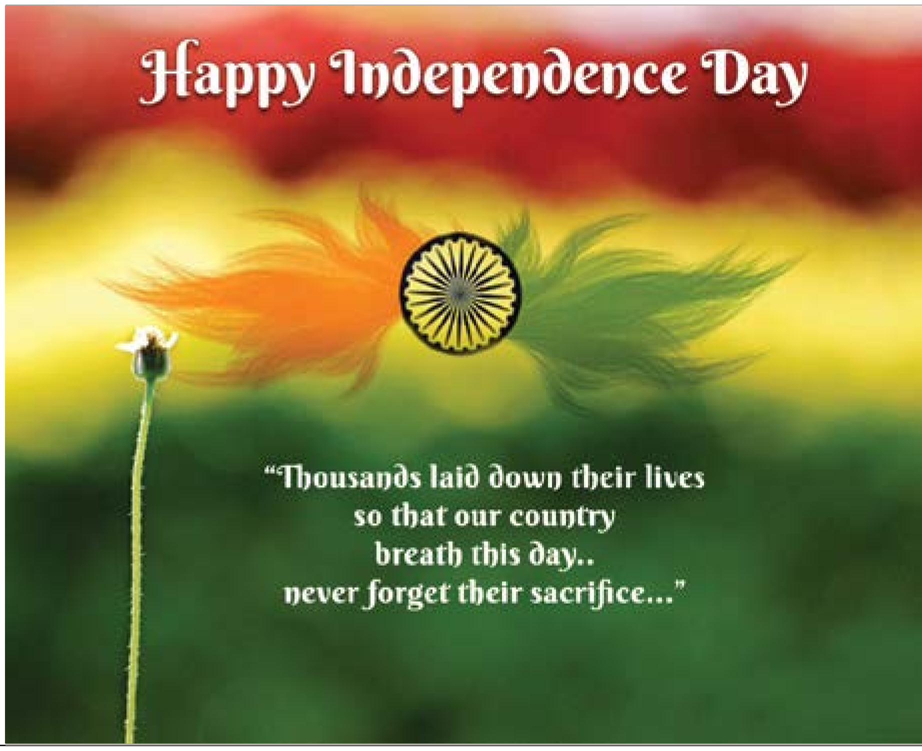
Overall the decision is timely, as there will be immediate inflow and more deferred outflow on account of pension and PF withdrawal, creating more investment opportunity, time to smooth payment and cash flow, build reserves etc.

About the Author

akshay@ka-pandit.com

AkshayPandit, is a Partner in M/S. K. A. Pandit, he has more than 28 years of experience in Pension and Insurance field working in India and abroad. He is currently heading portfolio of Business Head and Head of General Insurance Division in firmsaket.

IAI WISHES YOU ALL A VERY HAPPY INDEPENDENCE DAY



ADVISORY GROUP ON PENSION, OTHER EMPLOYEE BENEFITS & SOCIAL SECURITY

Report for the year 2013-14

The Advisory group during the year had one outgoing member – Hemamalini Ramakrishnan and one member was inducted –Preeti Chandrashekhar.

As on date (31st July 2013) the members of theAdvisory group are :-

K Subrahmanayam
Chitra Jaisimha
Kulin Patel
Simon Herborn
K Ganesan
A D Gupta
Preeti Chandrashekhar

1) **Current Issues in Retirement Benefit Seminar:** - The Seminar on the Current Issues in Retirement Benefits was held in Mumbai on the 8th of October 2013. The total number of participants attending the seminar was 31. The topics in the seminar was wide ranging with the speakers addressing IAS 19 revised 2011 –Changes and Implications,Exempt Provident Fund and Guidance Note 29 – View Point and discussions, Leave Valuations –Market Practice, issues and Suggested Approach,National Pension Scheme- Perspective and Way Forward,Employee Benefit Consulting and 2nd Pay Revision Committee Recommendations- A case Study and Professional Conduct Issues and Updates. The speakers at the seminar were not only from the industry but from other companies such as PWC,Siemens etc. .

The next CIRB seminar will be on the 18th of September 2014 at Mumbai. [Please watch IAI's website in this regard.]

2) **Research Paper by the Institute of Actuaries Research Team:** IAI's in-house research team has completed and submitted a detailed report on the "Trends in Salary escalations of PSU Bank employees in India "". This paper is currently under discussion with the members of the Advisory Group.

3) **16th Global Conference for Actuaries - concurrent session on pension, employee benefits and social security** - The concurrent session on Pension, Employee Benefits & Social Security schemes was conducted on the first and second day , ie the 17th and 18th of February 2014 at the 16th Global Conference of Actuaries. The concurrent sessions and panel discussions covered multitude of topics such as :-

- Changes& clarifications and additional disclosures of the IAS 19 Revised (2011)
- Merger and acquisitions and what Actuaries can do to help in such transactions
- Actuaries Act, Guidance Notes (GN), Actuarial Practice Standards (APS), and Professional Code of Conduct (PCC) issues
- Developing Investment Strategies for Funded Employee Benefit Plans and Role of Actuaries
- Pension Fund Industry in India and Scope for the future and a deterministic Model for Actuarial valuation of Long-term Compensatory Absences
- Deterministic model on leave benefit valuations

The session provided a platform to exchange general and technical updates involved in the designing, management, accounting and evaluation of all types of employee benefit schemes. All the topics experienced full house & attended by a mixture of senior professionals and junior students with active audience participation.

4) **1st capacity building seminar on Interest Rate implications in Employee benefits and social security schemes** was held on 20th of June 2014 in Mumbai. The Seminar was well attended and covered the following topics

- Asset - Liability matching in Indian Defined Benefit Schemes
- Discount Rate implications of pension liabilities in Indian, European and US Markets with case studies
- Liability Driven Investments –
- Interest Rate Guarantee and GN 29
- Investment approaches adopted by Indian Provident Fund Trusts

"Time is too slow for those who wait,
too swift for those who fear,
too long for those who grieve,
too short for those who rejoice,
but for those who love, time is eternity."
-Henry Van Dyke

ACET TOPPERS

Nimesh Gusani

nimesssh@yahoo.co.in

? What were the basic mantras of your success?

The basic mantra of my success was hardwork and dedication for my work plus it was my passion for mathematics also.

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

I am a nature loving, god fearing person. I have done ACCA from the oxford brookes university. My hobbies are travelling and watching movies. I am very fond of highly intelligent sci-fi thrillers, and they are a stressbuster for me

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

After completing my ACCA, i wanted to do somethimg more and different and that too in a field which would require more of mathematical skills. So once i came to know about actuaries as a profession, and application of mathematics in it, i decided to take it up

? How did you come to know about the ACET?

I came to know about ACET through my sister who was planning to do it

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

More than the quantity , it is the quality that matters for the serious preparation. I used to study just half to one hour daily and 4 to 6 hours on the day before exam

How did you start preparation for the ACET?

Preparations become easy as there are downloadable notes available on the website. I just downloaded them and started preparing. The best part is that the notes are self explanatory and very easy to understand and signifies the area of importance

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

I dont think there was any difficult part in exam. But i think a basic conceptual thorough knowledge of mathematics is very important.

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

Yes i did prepare notes. Notes are very helpful and infact they are the best recources on the day of exam when one needs to revise everything in a short period of time. While preparing notes one must note down each and every formula plus contents that seem important. One should also not forget that the study material also specifies certain topics as important from exam point of view and one must not ignore that. Also can be included in the notes are problems which one may find very difficult while solving for the first time or which may have some unexpected catch.

? How do you visualize your success?

It feels over the top of the world. But it also makes me more responsible because success is more of a self evolving process rather than a one time achievement

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

I guess, passion for mathematics and my study skills have enabled it

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

Right now i think i am not at a level where i can answer this question satisfactorily but according to my vision i think i can provide, and satisfactorily provide, for all qualities and expertise required for the acturial profession and even beyond that.

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

Currently, i am not working anywhere.

? What are you passionate about?

I am passionate about mathematics and my work. I am also passionate about writing.

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

In my case, these people were my parents, sister and brother-in-law. Each had a unique and extremely needed role in my success. Above all i also think there was some divine power working, which saw to it that ' everything fell into place'

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

I think for better time mangement one must not stick to a very strict approach, with regards to the time of study, but a rather flexible approach will help. Also because of the nature of the subject it becomes very difficult to allot time for each chapters, as it may significantly vary from person to person, but one must see to it that while doing any chapter for the first time, howmuch ever time it takes, it should be done thoroughly because effectively it will reduce the overall time for preparation.

? Any comments on your experience with ACET process.

The experience was overwhelming. Firstly the registration process was online and very simple. Secondly the study notes are self explanatory and are easily available for download on the website. And lastly the results come after just 10 days of giving the exam which i think is the best part

ACET TOPPERS

Shivam Dutta

cvamdutta@gmail.com

What were the basic mantras of your success?

I strongly believe that three things are very important to succeed in any field - perseverance, passion and patience.

Tell us about yourself, your educational background & your hobbies

I was born and brought up in a small town called Lohardaga located in Jharkhand where I completed 12 years of my schooling. I am currently enrolled in the course of Chemical Engineering in Indian Institute of Technology, Kharagpur.

I spend my leisure time listening to music, reading old classics and playing chess.

When did you decide to take up Actuarial professional course?

During my second year in IIT Kharagpur, I came to know about the Actuarial professional course. The contents and the future prospects of the course interested me. I realized that knowledge of Actuarial Science would be an advantageous adjunct to my educational qualifications.

How did you come to know about the ACET?

I came to know about the ACET from a friend of mine whose father is an employee of LIC of India. Then, I gathered detailed information about ACET from the website.

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

The required preparation time will definitely vary from student to student. In any case, consistency matters the most. As for me, an hour a day was sufficient.

How did you start preparation for the ACET?

I planned an efficient manoeuvre from the very beginning to prepare for ACET. I went thoroughly through both the parts, i.e, FAC Pack and Stats Pack. Then I was left with sufficient time for revision and practice. This worked out for me pretty well.

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

There was no difficult part as such but I would definitely say that Stats Pack needs more emphasis. There are many topics in the Stats Pack which calls for silly mistakes if not studied painstakingly. Hence, I stressed more on this part of the course.

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

Yes, I prepared notes. They are very helpful during revision. I would strictly advise the upcoming aspirants to prepare brief notes as per their convenience.

How do you visualize your success?

I visualize this success as an awesome beginning to an enriched learning experience.

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

I had a very good command over calculus owing to the rigorous preparation during the board exams which gave me an upper hand in the ACET preparation.

I was able to solve all the questions well ahead of time which gave me opportune time for verification and hence ensured absolute impeccability in the exam.

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

Besides being a profound mathematics enthusiast, I have a keen inclination towards its practical applications. I hope to use my knowledge to advance all matters relevant to actuarial science and its applications.

Are you working somewhere? Describe a typical work week?

Currently, I don't work anywhere.

What are you passionate about?

I have always had a strong desire of learning new things from diverse domains. Being a student of science stream, I have very limited knowledge of the finance & insurance sector. It's this desire to learn something new that brings me here.

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

My parents are very supportive and they respect my career decisions. This has helped me to persuade a career of my interest.

My friends too were very helpful during the ACET preparation.

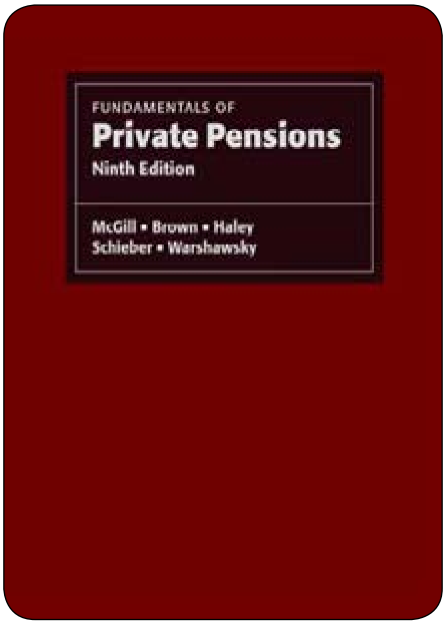
What are some of the mistakes that an average aspirant can avoid for better time management? What is your message for them?

The study material provided by the institute is very well designed to cover all the topics asked in the exam. I would advise all the upcoming aspirants to follow it meticulously. Students must avoid overburdening themselves with too much books.

I wish them best for the coming exams.

Any comments on your experience with ACET process.

The entire ACET process from registration to admission is fairly smooth & simple. The conduction of examination was well-organized followed by a quick delivery of results.



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Title:- Fundamentals Of Private Pensions

Author :-Mcgill, Brown, Haley, Schieber, Warshawsky

Reviewed by
R. Arunachalam
Email: arun.actuary@gmail.com

Fundamentals of Private Pensions is a classic book in the field of Pensions that one should not miss to go through. During the past sixty years, the book has remained as the most authoritative text and reference book on private pensions in the world. One of the good aspects of the book is that it collects and analyzes information from many sources and many disciplines.

The first edition of this book was published in 1955 reflecting the state of pension art at that time, winning the coveted Elizur Wright Award of the American Risk and Insurance Association – as the outstanding original contribution to pension literature in the year of its publication. This Seventh Edition has been published under the auspices of the Pension Research Council of the Wharton School. The book is written by a dream team of leading players in the pensions practice and legislation who has significant insights and experience in the US pensions market.

Dan McGill is Professor Emeritus of Insurance at the University of Pennsylvania's Wharton School. He has directed the Pension Research Council and the Huebner Foundation.

Kyle N. Brown is an attorney with the Towers Watson Worldwide Research and Innovation Center specializing in employee benefits.

John J. Haley is President, Chief Executive Officer and Chairman of the Board of Towers Watson Worldwide.

Sylvester J. Schieber, a private consultant, has been a member of the US Social Security Advisory Board and became Chairman in 2006.

I liked the way in which the book was organized. It deals with a variety of issues and has been split into five main sections.

Chapter 1 provides an introductory discussion on the historical evolution of the pension movements in the United States covering the Motivations, Public Programs, Private Movements and the various Approaches.

The First Section (Chapters 2 to 9) lays out the regulatory environment in which private pension plans operate. This covers the Regulatory Environment, Coverage, Participation, Non Discrimination, Tax Treatment and Flexibility.

The Second Section (Chapters 10 to 15) investigates the various forms of retirement plans and how they are structured in practical terms. This section dwells into the Defined Benefit, Defined Contribution and Hybrid Plan Designs. The Individual Plans, Tax Sheltered Annuities have been explained in a neat way. The Section concludes with the integration with Social Security.

The Third Section (Chapters 16 to 21) focuses on the economics of pensions. I found this section quite interesting and insightful. It deals with Setting Goals for the Retirement Income, how to adjust for Inflation and Productivity Gains, the Human Resources incentives and the Delivery models.

The Fourth Section (Chapters 22 to 28) explores the funding and accounting environments in which the private employer sponsored plans operate. This section explains the various Accounting Cost Factors and Cost Methods. It also deals with the Valuation of Ancillary Benefits & Small Plans and Pension Accounting.

The concluding Fifth Section (Chapters 29 t0 34) investigates the handling of assets in employer sponsored plans and their valuation as well as the insurance provisions. This section deals with the Policy, Operations, Funding Instruments and Benefits Insurance.

A beginner coming to the world of pensions for the first time could start from the First Section – as they likely will need to understand the regulatory environment and structure of plans before turning to a detailed understanding of why employers sponsor plans or how they fund them. Those with some general knowledge of the regulation and the structure of pension plans might jump to the Third Section – & focus on the discussions on the economics of pensions and why employer sponsor plans and operate them in the fashion that they do.

Others who are more interested in the actuarial issues important in the operation of defined benefits plans might want to jump to the later sections of the volume first.

The only issue that I had is the lack of examples. It would have been helpful if some real examples were included.

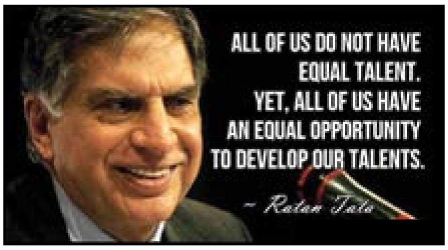
The book also has a useful Appendices of Case Citations & List of Statutes, Rules and Regulations.

I also understand that the book has been revised and updated recently with a Ninth Edition. The ninth edition reflects recent developments in retirement plans including the passage of the US Pension Protection Act of 2006 (PPA) & finance research literature on retirement and retirement plans.

The volume is organized into eight main sections so the reader may use the volume as a text, a research tool, or a general reference.

This book will prove invaluable reading for both academics and professionals working in the arena of pensions and pension management & I suggest you to go through this wonderful experience.

Happy Reading!



A Trekker's triumph

Like a pack of gazelles, the Sherpas negotiate the treacherous terrain,
Baying for blood, the leeches wait patiently for rain;
The icy river roars downhill promising to drown every mortal's pain,
There they stand upright, the mighty Himalayas, reigning over this unruly, heavenly domain!
For some, it is redemption that drives them to the summit,
While for some, it is their hearth that needs to be lit;
As the Sun beats impartially on every man's face, each man trudges along keeping his own pace,
As the wind wipes out each step's trace, Annapurna watches it all, with aplomb and grace!
As the clouds provide solace for the turmoil within and without,
The leeches sense blood as they all try to slither out;
As some men find themselves at the end of their tether,
Each step has to be in front no matter what the weather;
Walking through the mountains is just like the journey of life,
However, there is no one there to convey your inner strife;
While you are home, cherish the moments spent together,
Cause one day you will have to lean on them, in this world or the nether;
When you take the mountainous road,
Stick to your road, like the leeches do to your skin;
With their 3 jaws and 300 teeth, let them remind you of the strength of their will;
Don't let the ice or the Sun deter you either, maintain equanimity and take a breather;
It is not about reaching your destination,
And the applause that is to follow;
What matters is whether you stepped ahead with conviction,
And beat all your demons hollow!

Nandan Nadkarni
(nandannd@yahoo.co.in)

USA SOCIETY 0F ACTUARIES 2013 YEAR IN REVIEW

The Society of Actuaries (SOA) made available in July this year, a review of activities in 2013. Tonya Manning, President 2012-13 called the year 2013 as a year filled with many accomplishments in the areas of education, professional development, research studies, and advancement of the profession. This report summarizes these accomplishments.

Education & validation - enhancing and raising awareness of SOA Credentials.

1. Preparing Actuaries for growing challenges. The year 2013 marked a milestone in the SOA's history as it launched the new General Insurance track, that would equip actuaries with the knowledge, skills and ability to make a positive impact on organizations around the globe, especially in developing economies, and to remain competitive internationally.

   After the addition of this new track, the Fellow of the Society of Actuaries (FSA) now has a total of six separate tracks to choose from as a specialty: Insurance Life & Annuities, Group & Health, Quantitative Finance & Investment, Corporate Finance & ERM (Enterprise Risk Management), Retirement Benefits, and General Insurance.

2. FSA Restructuring. To build on a rock solid foundation of educational excellence and to consistently provide candidates with up-to-date coverage, major changes were made to the FSA tracks that went into effect in July 2013. A major driver of the restructuring was the desire to enhance the pathway to the Chartered Enterprise Risk Analyst (CERA) credential and to expand enterprise risk management (ERM) learning opportunities in all tracks for candidates pursuing fellowship.

   FSA candidates still choose one of six specialty tracks. In addition, all tracks offer a CERA option, under which the ERM exam can be taken in place of the track-specific two-hour exam. CERA/FSA candidates take two additional hour examination time as compared to the traditional route, and are eligible to receive both the FSA designation and the CERA credential.

3. Taiwanese e-learning Regulation and Taxation Module. The SOA's e-learning portfolio continues to grow and evolve with the release at the end of 2013 of a Taiwan-specific Regulation and Taxation module. The development of this module was a collaboration with the Actuarial Institute of Chinese Taipei, with the support of the Financial Supervisory Commission Insurance Bureau, the supervisory authority of the Taiwanese insurance industry.

   The module is a requirement for candidates pursuing the FSA in the Individual Life & Annuities track. By choosing the Taiwanese version, actuarial candidates gain an understanding of not only issues affecting the North American industry, but also learn about the Taiwanese regulatory environment and tax framework affecting the life and annuity industry, businesses, product design and pricing. In addition to country-specific content, the module is available in the local language—traditional Chinese for written content and Mandarin for audio portions.

   This module is the first prequalification education e-learning module to be authored in the SOA's new Learning Content Management System and delivered via a new

Learning Management System. Together, these systems provide the capability to deliver content in 28 different languages. This module is also available for professional development e-courses.

Learning continues with professional development -

In a dynamic and rapidly changing world, actuaries must continuously expand their knowledge and skills in order to meet increasingly complex problems and to enhance the value added by actuarial work. The SOA recognizes its responsibility to provide all members with a broad range of opportunities, at convenient times and locations.

1. **BizLibrary Business Skills: Courses on Professionalism, Leadership and Communication.** In today's business environment, communication, leadership, relationship management & interpersonal collaboration skills are essential. In response to an increased need for resources and development in these areas, the SOA partnered with BizLibrary and launched a series of online courses developed by Skillsoft, a leading provider of online training.

2. **Preparing Actuaries for growing opportunities.** With greater globalization comes new business opportunities, and there is a real opportunity for actuaries in the area of business analytics. Right now it is a wide-open space with data scientists, mathematicians and behavioral economists filling the gap. However, the SOA has taken steps to provide actuaries with the tools and skills to meet this growing need. In December 2013 actuaries attended a new 2 ½ day seminar, "Advanced Business Analytics." Appealing to a broad range of actuaries and going beyond merely explaining what business analytics is, this seminar provided attendees hands-on, interactive experience using R statistical computing software to perform data manipulations. Plans are to offer this seminar again in 2014 and beyond.

Professional development opportuniti are now more accessible than ever, and members are able to participate in a wide array of continuing education opportunities, including webcasts held in local time zones.

Building the academic community and enhancing the candidate experience

1. **Centers of Actuarial Excellence** (CAE) program is a key component in the SOA's plan to strengthen the position of the academic branch of the profession, thus enhancing research and intellectual capital development. Universities with outstanding actuarial programs that meet and/or exceed the designation's eight rigorous criteria are recognized for their achievement and may compete for substantial education and research grants.

2. **University Outreach Program.** The SOA's University Outreach Program helps the profession engage with students on college campuses across the United States, Canada and other countries. SOA education and marketing/communications staff are joined on campus by SOA members to promote the profession as well as share education-related information with students, faculty and advisors. In 2013, the program included visits in Hong Kong, China and Thailand.

3. **Candidate Connect.** In November more than 120 students attended the first-ever Candidate Connect event held in Philadelphia. Attendees gained insight into the profession from educational presentations, roundtable discussions and a networking reception. They were able to connect with SOA leaders, members and fellow candidates.

   Students from local universities were also invited to attend selected sessions and network with actuaries at the Valuation Actuary Symposium held in Indianapolis in September. For most students this was their first professional development meeting experience and, based on survey results, found it enlightening and beneficial.

Research & innovation -

Equipping Actuaries with cutting-edge, impactful research. While early research focused on mortality and morbidity studies, today the SOA supports a dynamic research agenda, extending across a wide range of topics and industry needs.

Forty nine Research projects and experience studies were completed in 2013, providing non-partisan information while expanding current thinking and the boundaries of actuarial practice. A number of the projects earned substantial visibility in the media and among policymakers, especially those dealing with health care issues in both the US and Canada.

Global professional organization

Cultivating growth, enhancing relationships, and advancing the credentials. SOA's membership is geographically diverse and spans the globe. Our international membership growth has been steady, with the fastest growing international constituent group located in mainland China and

Hong Kong.

In 2013, SOA leaders made numerous visits to universities, local actuarial clubs, and employers throughout Asia. They met with leaders of actuarial societies in Taiwan, India, Hong Kong, China and Singapore and conducted discussions with the China Association of Actuaries (CAA) about ways to cooperatively advance the profession in China. Finally, in October SOA hosted a first-ever meeting of actuarial science faculty members from Thailand, Malaysia, Singapore and the Philippines where they provided feedback on the state of the profession in their countries, challenges they face educating actuaries, and how the SOA can help them.

The SOA is focused on more effectively meeting the needs of international members. One way the SOA has worked to better support its international members is to increase available educational offerings. In 2013 there were a number of seminars and webcasts developed specifically for the Asia-Pacific community and held in that region's time zone.

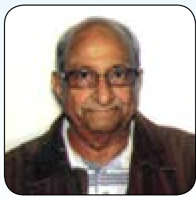
The SOA's International Committee, approved by the SOA board in October 2011, is comprised of representatives of several key constituencies within the SOA, including the Educational Executive Committee, the Professional Development Committee, the International Section, the China Region Committee, and the SOA's International Actuarial Association (IAA) delegation. The charter of the committee is focused on oversight of the SOA's international activity and to help coordinate international initiatives and benefits, as well as spur new thinking and ideas. The committee is working with national associations, universities and the IAA around the world to identify, articulate and execute on the value proposition for SOA membership and section affiliation. Global recognition of the SOA pathway and credentials benefits all SOA members and candidates. Employment opportunities, as well as opportunities to expand into new emerging fields, will result from a larger global community.

Soa volunteers

Volunteering at the SOA provides actuaries with the opportunity to make a profound difference in the actuarial profession. 3,687 (11.5% of total) members volunteered at the SOA in 2013, giving back to the profession and adding value to their own professional development. 40% of these volunteers provide their services to education committees.70% of the education volunteers are under the age of 44, with 30-34 year olds have the highest level of participation in education.

And the professional work efforts continue to go on ……….

About the Author



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The Actuary India – Editorial Policy

Version 2.00/23rd Jan 2011

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

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

B: The Institute recognizes the fact that;

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

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

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

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

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

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

Version history:
Ver. 1.00/31st Jan. 2004
Ver. 2.00/23rd Jan. 2011

Visit us at: www.actuariesindia.org

10^{th} Seminar on Current Issues in Retirement Benefits

Date: 18^{th} September, 2014 **Venue:** Hotel Sea Princess, Mumbai.

Seminar will cover the following

•Growing the actuarial consulting business - an update
•Overview of Ind AS19 and its impact on companies in India
•India Pension reforms and update on the PFRDA
•Fair value of assets in the context of accounting for employee benefit plans (Indian benefit plans context)
•Overview of research papers by the Institute of Actuaries
a) Salary assumptions b) Public sector assumptions
•What do we need as practicing actuaries in terms of:
a) Research from the IAI or other bodies and b) Future topics of interest
•ESOP Valuations (an employee benefit valuations) - an overview
•Overview of the AGPSS Terms of reference and facilitate discussion on priorities members would like IAI / AGPSS to consider

Program Schedule available at

http://www.actuariesindia.org.in/subMenu.aspx?id=285&val=10th_Seminar_on_Current_Issues_in_Retirement_Benefits

Speakers:

K Subrahmanyam - Consulting Actuary
Chitra Jaisimha – Aon Hewitt Consulting India Pvt. Limited
Dr K Sriram - Consulting Actuary
A D Gupta - Consulting Actuary
Vinod Kumar- Head Research, IAI
Kulin Patel-Towers Watson
Anuradha Sriram- Towers Watson
Khushwant Pahwa – IFFCO TOKIO
Mayur Ankolekar – Ankolekar & Co.
Preeti Chandrashekhar – Towers Watson; External Speaker from PFRDA

General matters:

•Participation Fees: Rs.5,000 (+12.36% Service Tax)
•CPD Credit for IAI members: 4 hours, as per APS 9
•Registration Start & close date: From 21st August, 2014 till 10th September, 2014
•Register at: http://actuariesindia.org.in/SeminarRegistration.aspx
•Contact: Quintus Mendonca (quintus@actuariesindia.org) for any matter related to this seminar.

2^{nd} Workshop on Crop Insurance

Date: 19^{th} September, 2014 **Venue:** Hotel Bawa International, Mumbai

Seminar will cover the following

- Evolution & history of Indian Crop Insurance
- Crop Insurance-schemes- A brief and developments
- Crop Insurance - An actuarial perspective
- Meteorology & Crop Insurance
- Climate Cost of Cultivation: a method to quantify the cost to farmers of climate change, exemplified in rural India
- Crop Reinsurance in India – An Insight
- Research Methodologies & technical paper writing

Speakers:

D D Dange- Agricultural Insurance Company of India;
Dr. N Chattopadhyay- Indian Meteorological Department
Tania Chakrabarti- Royal Sundaram
Pankaj Kumar Tewari- IRDA
Dr. Nihar Jangle- Micro Insurance Academy
Nymphea Batra- Marsh Insurance Brokers.

Who should attend: Whilst the programme is aimed at actuaries and actuarial students in the general insurance industry, it also holds promise to those interested in agricultural insurance at large.

General Matters

- Participation Fees : Student Members Rs. 2500 & Others Rs. 4000 (+ 12.36% Service Tax)
- Registration Starts on 22nd August, 2014 & Ends on 13th September, 2014
- Register at: http://actuariesindia.org.in/seminarRegistration.aspx
- CPD Credit for IAI Members: 4 hrs (As per APS 9)
- Point of Contact for any query: Quintus Mendonca (quintus@actuariesindia.org)

Notice

NOTICE

CERA - Chartered Enterprise Risk Actuary qualification

CERA

CERA, or the Chartered Enterprise Risk Actuary qualification, is a global risk management qualification which the Institute of Actuaries of India is accredited to award to members who meet certain criteria.

What CERA-qualified actuaries say

- *'It opens the door to a wider risk management role outside the traditional actuarial life and pensions roles'*
- *'CERA is slightly different from the other subjects as involves more business knowledge and business experience and makes you stand out from the crowd and from other actuaries ...'*
- *'If you look at the changes the EU is making ... there is a lot more focus on risk and risk management, so even in traditional areas we are having to think about a wider range of risks ... '*

Background

CERA was first developed by the US Society of Actuaries which later joined with a group of other actuarial associations to sign the CERA Board Treaty in Hyderabad in November 2009. It was the first time that actuarial organisations had worked globally to offer a specialized professional credential.

Founded on the principles of actuarial science and incorporating all aspects of ERM, the CERA credential embodies the key elements of a global professional qualification: expertise, insight, creativity and integrity.

The Treaty represents a global commitment to lead and uphold best practice in risk management worldwide and strengthens in ternational recognition of the actuarial profession's expertise in the field of risk management.

Co-signatories to the treaty include:

- Institute of Actuaries of Australia
- Canadian Institute of Actuaries
- Actuarial Institute of Chinese Taipei
- Institute of Actuaries of France
- German Actuarial Society
- **Institute of Actuaries of India**
- Israel Association of Actuaries
- Institute of Actuaries of Japan
- Mexican Association of Actuaries
- Actuarial Society of the Netherlands
- Actuarial Society of South Africa
- Swedish Society of Actuaries
- Swiss Association of Actuaries
- US Casualty Actuarial Society
- US Society of Actuaries

All signatories to the Treaty use the acronym 'CERA', but CERA variously translates as one of the following, according to the preference of the signatory body:

- Chartered Enterprise Risk Analyst
- **Chartered Enterprise Risk Actuary**
- Certified Enterprise Risk Analyst
- Certified Enterprise Risk Actuary

☞**The Institute of Actuaries of India has chosen CERA to represent "Chartered Enterprise Risk Actuary".**

CERA's dedicated website can be found at: www.ceraglobal.org

Purpose

The purpose of the CERA designation is to promote actuaries in the field of ERM. The credential will identify actuaries who meet stringent education requirements in ERM and are governed by a strong code of professional conduct.

CERA is designed to equip actuaries to fulfil roles such as chief risk officer in fields such as insurance; reinsurance; consulting; energy; infrastructure; transport; manufacturing; technology; media; and healthcare.

Importantly it covers individual risk categories and how they interact with other risks. The qualification requires understanding of how to measure, model and manage risks and how economic capital can be best applied.

How to obtain the CERA qualification

The members of the Institute of Actuaries of India can be eligible to receive the CERA qualification in the following way:

1. Become a fellow and have passed ST9 as one of your ST subjects for Fellowship or Fellow members not having ST9 as one of your ST subjects then pass ST9 as an additional ST subject.
2. Attend and successfully complete ERM seminar.

More Information on ST9 and ERM Seminar

1. On ST9 Exam: IAI has an arrangement with the Institute and Faculty of Actuaries, UK (IFoA) for ST9. As per this arrangement the members who pass the UK exam are treated as pass in IAI ST9 exam. The application for ST9 can be made to IAI as per the timelines set by IFoA.
2. Currently, ERM Seminars offered by the Institute and Faculty of Actuaries, UK and The Institute of Actuaries of Australia are eligible for CERA qualification

Should you have any queries, please contact:
Ms. Gauri Kothari, Head-Education and Examination
Tel: 022 6784 3324
Email: gauri@actuariesindia.org

ST9 Reference books which are available in IAI Library

1.Enterprise Risk Management From Incentives to Controls – James Lam. Wiley, 2003. ISBN: 0-471-43000-5

2.Financial Enterprise Risk Management – Paul Sweeting. Cambridge University Press, 2011
ISBN: 0-521-11164-5

3.Simple Tools and Techniques for Enterprise Risk Management – Robert J Chapman. Wiley, 2006. ISBN: 0-470-01466-0

4.Quantitative Risk Management: Concepts, Techniques and Tools – McNeil, Frey & Embrechts. Princeton University Press, 2005. ISBN: 0-691-12255-5

PUZZLE

Puzzle No. 217:

Almost all whole numbers can be expressed as the sum of no more than eight (positive) cubes. Taking the number of this puzzle as an example, we need just six:

$121 = 4^3 + 3^3 + 3^3 + 1^3 + 1^3 + 1^3$

Remarkably, there are just two exceptions to this rule, where nine cubes are needed.

The first is $23 = 2^3 + 2^3 + 1^3 + 1^3 + 1^3 + 1^3 + 1^3 + 1^3 + 1^3$. What is the other?

Puzzle No. 218:

What is the missing number?

9 22 24 12 - 4 13

Answers to puzzles:

Puzzle No. 213:

No extra telephones are required. There will be exactly one telephone, no more and no less, between each milestone.

Puzzle No. 214:

	•		•				
•					•		
				•		•	
•		•					
	•						•
						•	•
		•		•			
			•		•		

SUDOKU No. 24 for the month of AUGUST 2014

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

Solution of Sudoku Puzzle No.23 published in the Month of July 2014

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

Sudoku Puzzle by Vinod Kumar

Correct solutions were received from:

Puzzle No 213:

1. Graham Lyons

Puzzle No 214:

1. Mercy Amalraj
2. Graham Lyons

shilpa_vm@hotmail.com

August Month Birthday

D C Chakraborty
Badri Prasad Gupta
O Lakshminarayana
N Seethakumari
N H Thanawala
Derwyn Emrys Thomas

the Actuary India wishes many more years of healthy life to the following fellow members whose Birthday fall in August 2014 (Birthday greetings to fellow members who have attained 60 years of age)

RNI NO. - MAHENG/2009/28427
Published on 16th of every month

Postal Registration No. - MH/MR/South/297/2012-14
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