



Institute of Actuaries of India

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the **Actuary** **INDIA**

THE MAGAZINE OF THE INSTITUTE OF ACTUARIES OF INDIA

August 2017 Issue

Vol. IX - Issue 8

Pages 36 • ₹ 50

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CONTACT US

#231, #232 Access Lower Parel,
Level 2, Upper Level, Kamala House,
Senapati Bapat Marg, Kamala City
Mumbai 400013, India

Tel +91 22 6179 3841 / +91 22 6179 3842
infoMumbai@actuarial.pt

www.actuarial.pt

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

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

CHIEF EDITOR

Sunil Sharma

Email: sunil.sharma@kotak.com

EDITOR

Dinesh Khansili

Email: dineshkhansili111@gmail.com

COUNTRY REPORTERS

Nauman Cheema

Pakistan

Email: info@naumanassociates.com

Kedar Mulgund

Canada

Email: kedar.mulgund@sunlife.com

T Bruce Porteous

United Kingdom

Email: bruce_porteous@standardlife.com

Vijay Balgobin

Mauritius

Email: vijay.balgobin@sicom.intnet.mu

Rajesh S

Singapore

Email: prasannarajesh30198@yahoo.co.in

Devadeep Gupta

Hongkong

Email: devadeep.gupta@prudential.com.hk

John Smith

New Zealand

Email: johns@fidelitylife.co.nz

Frank Munro

Srilanka

Email: Frank.Munro@aia.com

Krishen Sukdev

South Africa

Email: krishen.sukdev@gpaa.gov.za

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

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Dear Readers,

The August month is auspicious month for all of us. Independence Day is celebrated across India and abroad. The month is beginning of the festivities and Country seeks the blessings of the Lord Ganesha spearheaded by Maharashtra and some other parts of the country. I send my good wishes to all members and readers for the festive season.

Through this issue, we are announcing much awaited our upcoming flagship seminar **"19th Global Conference of Actuaries (GCA)" in Mumbai in Jan 2018**. We expect the participation from over 20 countries in this event and number of local and global issues relevant to actuaries and other stakeholders in the actuarial profession shall be discussed.

The Institute has been taking many initiatives/ steps for the benefits of our students - both employed and those who are seeking opportunities.

We shall continue to work and will increase the intensity of the efforts towards achieving this aim so that the employability of the actuarial students increases. Your suggestions as members of the profession help us sharpening our efforts. Please do write to me your suggestions.

Employment portal is ready and some of the actuarial students have uploaded their CVs. IAI office is acting as bridge between potential employers and students in order to achieve the aim of actuarial students hired in quicker way and organisations need not to spend higher amounts on advertisements/ recruitments to attract students. Many more such programmes are in offing, please watch the Actuary India forum regularly for updates.

To help students pass actuarial exams quickly, the coaching classes for CT1, CT5 and ST1 were held this month and many students got the benefit of discussing the topics and exam style questions with faculty of senior actuaries. The response of students

has been encouraging as they came to know many mistakes which they commit in exams. We are also soon arranging such face to face coaching classes for CA1, CA3, SA2 and SA3 where many students stuck in their exams.

On Seminars for our fellows and senior students, we conducted 4 programs during last one month - two programs one each in Gurgaon and Mumbai on Economic Capital based life insurance product pricing and other two programs, one on capacity building in Retirement & Other employee benefits and other seminar on the same area in Mumbai. We have identified few more such programs to be held during rest of the year.

The activities at IAI office are on increase and so IAI staff capabilities and infrastructure need to be enhanced so that they cope up with increasing needs of the Profession. We are working in many initiatives for the benefit of all stakeholders of the profession. Our new Executive Director, Mr Dinesh Khansili and his team is in the process of taking many new projects. We shall update you as we move along.

Thanks for the increasing support, IAI is getting from senior and young actuarial professionals! We need more; I once again appeal to our members to volunteer your support in whatever capacity you can. There are many areas right from marking the scripts, participating in working groups, contributing in research activities, technical training to students, and even writing articles in our Actuary India magazine which benefits to many youngsters.



Recently, I was reading an article on Actuarial Profession in the developed market on topics related to the Future of Actuarial Profession. What future holds for the actuarial profession? What does the profession need to focus on in this competitive environment?

Well, first of all let me share with you a joke which you may have heard before. Two people are flying in a hot air balloon and realize they are lost. They see a man on the ground, so they navigate the balloon so that they can speak to this man. They yell to him, "Can you help us - we're lost." The man on the ground replies, "You're in a hot air balloon, about two hundred feet off the ground." One of the people in the balloon replies to the man on the ground, "You must be an actuary. You gave us Information that is accurate, but completely useless."

Is there any relationship with this joke and ground realities? How do employers perceive actuaries working in their organisations?

Historically, actuaries are a small community; approximately 25,000 in North America and approximately 12,000 engaged in work in UK that many outsiders regard as mysterious and tedious, however, vital to ensure

profitable operation of the insurance business. Actuaries being secure in their positions have always been able to laugh at the negative stereotypes. So what if others do not understand what actuaries do? Nonetheless, actuaries themselves understand it perfectly.

SOA reviewed research conducted by various actuarial organisations. The objective was to see if the employers have any negative preconceptions about the actuarial profession and if the market's view of actuaries is in alignment with how actuaries view themselves.

As per the survey, actuaries rated themselves very high on the following attributes:

- Quantitative modelling
- Solving complex problems

Employers rated actuaries very high on following attributes:

- Being ethical
- Quantitative modelling
- Solving complex problems
- Financial assessment and reporting

Clearly employers of actuaries seem to be in agreement on strengths.

While we have not done any such

survey in India, the outcome is expected to be similar so far the strengths of the profession is concerned. There is a need to utilise these strengths and show new market employers how actuarial skillset applies to their business issues. It is vital to demonstrate that actuaries can:

- Grow a business
- Manage a business and
- Really shape the future of business

It came out that both actuaries and employers agree that profession need to improve on business communication, ability to focus on the big picture, business acumen and being proactive. Business communication was identified by both groups as the top issue needing improvement.

Further, during the analysis, it was found that employers scored other competing professionals highest on following:

- Intellectual agility
- Being Proactive
- Reliably getting the right solution
- Being a team Player and
- Being ethical

With regards to business communication, competing professions were rated very high.

Back home in India, given that there is limited growth potential in traditional areas, the profession needs to in road into new market areas. The profession need to work on to acquire the skills where the competing professions are being rated higher than actuaries.

Now we have plenty of qualified actuaries to expand into new market and show new market employers how actuaries can help grow, manage and shape the future of their businesses.

I eagerly look forward to this and with this note, I will like to sign off for now.

19th Global Conference of Actuaries Theme Contest Winner and Call For Papers

19TH GLOBAL CONFERENCE OF ACTUARIES

Date: 30th - 31st January, 2018

Venue: Hotel Renaissance, Powai, Mumbai

Theme

'Actuaries, through the crystal ball!'

We cannot live by our past glories. We need to look into the future and ensure that we are still relevant and innovate our profession. We need to be seen as creating value add for the organizations that we work for.



THEME CONTEST WINNER

Theme
'Actuaries, through the crystal ball!'

Congratulations

Mr. Tushar Chatterjee is working as Senior Risk Officer in Swiss Re Insurance Company Ltd. He is fellow member of the Institute of Actuaries of India and Institute and Faculty of Actuaries (UK).



The Global Conference of Actuaries (GCA) 2018 Organizing Group invites papers for deliberation at 19th Global Conference of Actuaries

A: Introduction: The GCA, organized annually since 1999, is a signature two-day event attracting stakeholders in the insurance and financial sector, with an evening being devoted to the Actuarial Gala Function and Awards (AGFA). The AGFA and GCA are organized with financial assistance from the insurance and pensions industry, consulting organizations and other stakeholders in the event, called Partners.

The Institute of Actuaries of India (IAI) organizes this event yearly, where actuaries and non-actuaries assemble in a global ambience to share thoughts and debate matters that affect the financial services industry in general, and the insurance industry in particular. It is a great opportunity to witness the recognition of young actuarial professionals along with celebrations at the AGFA and to learn/contribute papers/presentations on subjects that impact the industry on a global level.

Papers/ presentations could be from anyone with knowledge and expertise in the subject. Presenters may choose to write a research paper, not exceeding 15,000 words, which if accepted, can be presented at the 19th GCA. The shortlisted papers will be published by the Institute of Actuaries of India. Detailed guidelines for paper submission are in Appendix IV. (<http://www.actuariesindia.org/downloads/Appendix IV.pdf>)

This two-day conference provides an excellent platform for participants to exchange ideas and share experiences with colleagues from different jurisdictions within and outside Asia, the event has taken the stature of world-event, though focused on issues around Asia.

The 19th GCA is expected to attract around 1,000 participants, the 18th GCA and the 20th AAC held in the year 2016 having crossed 750 participants.

B: Papers/ Presentations and Programmes: The broad objective in selection of papers/presentations will be to provide a balance of topics to cover the **Core Disciplines** of:

- 1) Life insurance
- 2) Property & Casualty (i.e., Non-life or General insurance)
- 3) Health insurance
- 4) Pension, Employee Benefits and Social Security
- 5) Reinsurance
- 6) Risk Management in Insurance and Banking
- 7) Financial Derivatives
- 8) Data Sciences and Analytics
- 9) Corporate governance
- 10) Regulatory matters
- 11) Environmental / Climatic changes, sustainable development
- 12) Behavioural finance
- 13) Ethics

Aside from the papers/presentations accepted after a selection process, the Organizing Group would be inviting papers on specific subjects perceived to be of key importance to the event.

Presentations may be based on research work, published or un-published, but should not be an exact repetition of any presentation already done in another forum. Papers should demonstrate original, unpublished research which will denote the original contribution of the author. This contribution will be a copyright assigned to the Institute of Actuaries of India.

Around 18-20 concurrent sessions and plenary sessions (including panel discussions) are planned.

GCA ANNOUNCEMENT

For information on the structure of past GCAs, see the following link.

http://www.actuariesindia.org/subMenu.aspx?id=201&val=Global_Conference_of_Actuaries.

In case of enquiry or clarification, please write to gca@actuariesindia.org.

Mr. Kailash Mittal (Chair - GCA 2018 Organising Group)

Paper/Presentation submission process

Appendix I - Time lines

Submit the following:		
Expression of Interest	From 1 Sep, 2017 to 15 Oct, 2017	Biography (Appendix II)
		If expressing an interest for 'presentation only', a summary outline of presentation (Appendix III).
		If expressing an interest for 'paper and presentation', a draft of the paper for review by the Editorial Team (Appendix IV).
		Detailed outline of the presentation and paper (either in traditional text format or in presentation format)
Paper acceptance	By 31 Oct, 2017	Accepted presenters will be notified and a presentation template will be provided.
First draft submission	By 30 Nov, 2017	Draft papers and presentation to be re-submitted for review in the prescribed format. Comments will be provided based on the review by the Editorial Team within three weeks from the date of submission.
		Accepted papers will be advised along with comments, if any, by the Editorial team for paper editing.
Final submission	By 15 Dec, 2017	Final paper and presentation to be submitted with updated biography for final review.
Meeting of Contributors	29 Jan, 2018	Accepted presenters will be required to attend a conference briefing meeting at the Hotel Renaissance, the Conference Venue.

GCA ANNOUNCEMENT

All submissions must be made to through **Online Submission System**. (Will be live from 1st September, 2017)

The presentations shall constitute property of the IAI though having personal (of the Author/ presenter) responsibility for the content and views expressed, will be published on the 19th GCA website at a later date. By submitting the slides to the 19th GCA presenters will be deemed to have given permission to publish their presentations.

Appendix II - Biography

	Name :
Insert Photo	Title :
	Organization
Work experience:	Please provide an outline of your background and relevant work experience.
Recent public presentations	Please provide details of recent public presentations, including audience and when the presentation was conducted. In case of papers, please provide details of past academic publications.
Contact Details	Email:
	Telephone :

Appendix III - Summary outline of presentation

Area	Presentation information
Title of presentation	Add the title of presentation.
Core discipline	Please specify the core discipline, this should be one of the core disciplines specified under section B.
Summary of presentation	Please provide brief outline of the topic including the linkage to the conference theme of 'Actuaries, through the crystal ball!'.
Detailed outline of presentation	Please provide a detailed outline of the presentation. This could be either in text format or presentation format which could be attached.
Length of presentation	Typical presentation session will be 30 minutes and there may be more than one presenters in a session.

Appendix IV: Guidelines for research papers
(available at <http://www.actuariesindia.org/downloads/Appendix IV>)



Thinking Forward

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EVENT REPORT

Economic Capital Pricing in Life Insurance

Organized By: Institute of Actuaries of India

Venue: Plazzio Hotel, Gurgaon

Date: 31st July 2017

Session Name: Economic Capital Pricing in Life Insurance

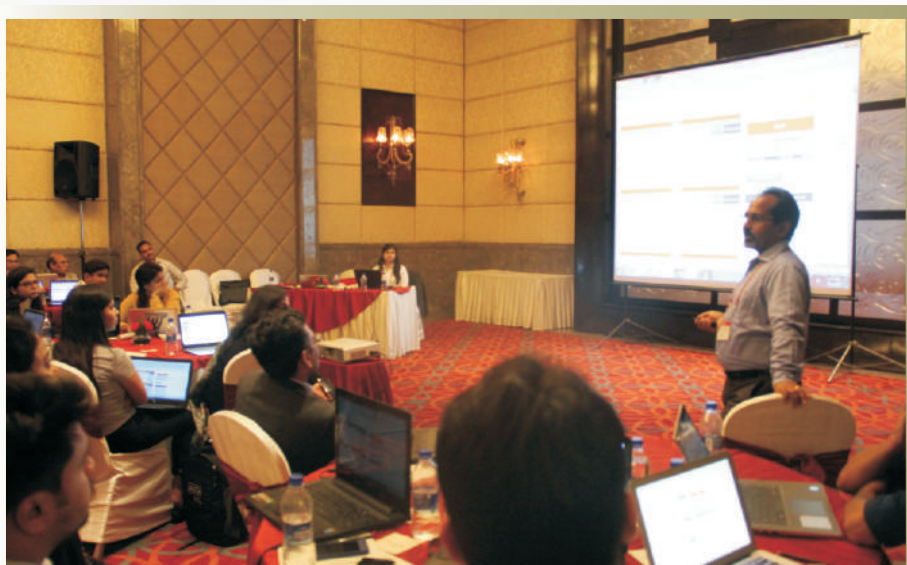
Name of Chairperson: Mr. Sanjeeb Kumar; President, IAI

Speakers/ Presenters: Ms. Neha Singh, Manager - Product Development, Aviva India Life Insurance Co. Ltd.

Brief about the session

The President of the Institute of Actuaries of India, **Mr. Sanjeeb Kumar** began the seminar with a warm welcome to all the participants. He gave an introduction to the topic & then a detailed itinerary for the day was shared with all the participants. The participants were required to take a copy of Excel files into their laptop which later was used to demonstrate the calculation of components of Economic Capital.

Session Highlights



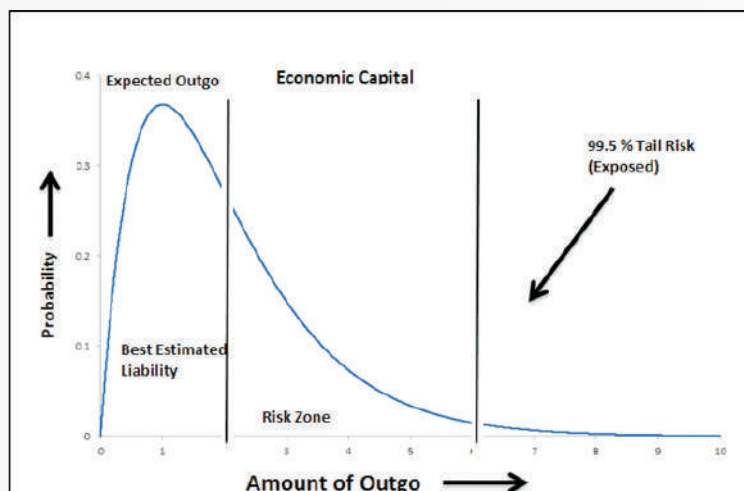
Key topic of the session was Economic Capital & its impact on Pricing in Life Insurance & hence the session with the basic definition, from the audience.

Pricing of Product:

Price = Present Value of (Customer Benefit Payout + Expenses & Commissions + Profit Margin + Tax & Tax Adjustment + Cost of Shareholder capital + Risk Margin)

The key concern of the change in basis is the impact on pricing cashflows for both Traditional Basis & Economic Basis. Major difference is change in the treatment of Expense Inflation, Risk Margin & Cost of Shareholder Capital. Each assumption carries a risk & hence all those relevant risks need to be included in risk margin. This discussion helps in making the definition of Economic Capital more practical.

Economic Capital is the amount of risk capital that company estimates in order to remain solvent at the given confidence level & time horizon. It is the value of risk measure based on 99.5% Confidence Interval of variation over 1 year in the amount of loss.



This then leads to the next interesting topic of what are the risks a Life Insurance company is exposed to & what are the possible impacts of the various stressed scenarios on the Economic Capital.

There were Excel Spreadsheets provided by the training team in the seminar, where each one of us got an opportunity to understand the impact of stress on the Best Estimate Liability (BEL).

BEL is the present value of best estimate net cashflows, discounted using a risk-free yield curve.

For example, mortality spreadsheet had a flag to apply the stress & further the stress percentage to be applied on Mortality rates. The change in BEL was observed due to this change & the new BEL then becomes a part of final Solvency Capital Requirement (SCR) calculation

This exercise was carried out for 4 other stresses - namely Lapse (Lapse Mass), Catastrophe, Expenses & Interest Rate.

Best Estimated Liability from each of the 5 stress runs were then used to calculate the final SCR. These risks hold a correlation amongst themselves and a simple aggregation would not be the right approach to calculate final SCR.

Hence, it is required to use the Correlation Matrix provided by the Solvency II guidelines for further calculation.

$$SCR = \sqrt{\sum_i \sum_j Corr_{ij} \times SCR_i \times SCR_j}$$

SCR_i = capital requirement for individual risk i
 $Corr_{ij}$ = correlation between risks i and j

The exercise to calculate SCR was performed by each participant individually on Excel files provided at the beginning which helped in the better understanding of the concept in the realistic scenario.

It was further discussed that the correlation matrix may differ for UK & India.

Operational Risk might be lower in India as compared to the European Market. Their legacy systems may have more issues compared to the new systems which the Indian market will be developing.

The calculation methodology for Risk Margin was also demonstrated through Excel Spreadsheets.

Risk Category:

Market Risk- Interest Rate, Equity, Property, Credit, Liquidity, Exchange (FX), Inflation etc

Insurance Risk- Mortality, Expense, Catastrophe, Policyholder behavior

Operational Risk - Legal, Fraud etc

For each individual risk,

$$\begin{aligned} EC &= \text{Net Asset Value}_{\text{Base}} - \text{Net Asset Value}_{\text{Adverse}} \\ &= (A_0 - L_0)_{\text{Base}} - (A_0 - L_0)_{\text{Adverse}} \\ &= \text{Own Funds}_{\text{Base}} - \text{Own Funds}_{\text{Adverse}} \end{aligned}$$

Economic Capital was then further calculated for all the relevant risks.

To keep the presentation simple, only 5 risks were considered as part of the calculation process, namely - Interest Rate, Mortality, Lapse (Lapse Mass), Catastrophe & Expense

EVENT REPORT



Risk Margin is intended to increase Technical Provisions & is generally calculated for Non- Hedgeable risks & thus is cost of holding capital to support the additional risk. It is based on Cost of capital method & is the theoretical compensation for the risk of future experience being worse than the best estimate assumptions.

Final piece of calculation is the Economic Value Add. It is the cost coming from Shareholders for putting in the money & thus is defined as an absolute amount measure of value created from a shareholder perspective.

Summary of Session

Advantages of Capital Pricing:

- Product related business risk are measured and priced accurately

- Removes personal judgment - such as use of Risk Discount Rate and use of investment return assumption
- Uses market observable values
- Helps to identify efficient product strategy to deploy capital to new business

Disadvantages of Capital Pricing:

- Complex
- Lack of data to calibrate the stresses relevant to India as Solvency II is based on EU
- Arbitrary cost of capital through Risk Margin bring subjectivity
- Local Statutory rules on maintaining solvency capital remain the same
- Time horizon over which companies should calculate their economic capital requirement
- Number of runs required of economic capital may pose a problem, particularly for regulatory reporting purpose
- Validation of proxy model if used by different companies

About the Author

Mr. Kartik Chhabra



katrick_patrick@yahoo.co.in



“He is a Student member of IAI.”



Institute of Actuaries of India

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09th November 2017

EXAMINATION DATE
09th December 2017

DATE OF RESULT:
22nd December 2017

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Contact: 022- 39686060/6064
Email: acet@actuariesindia.org

Latent once upon a time, deferred compensation is progressively becoming popular with overwhelming possibilities.

Mayur Ankolekar discusses why so, what to expect and which skills actuaries should hone for the new DC opportunity

In the new millennium, pensions practice has deliberated considerably on DB and DC. Over the same period, the fourth industrial revolution that is blurring the lines between the physical, digital and biological spheres has fast-tracked many technologies and debunked established business models and products.

We live in an age where the speed of current breakthroughs has no historical precedent and the possibilities of billions of people connected by mobile devices are unlimited. Organisations craft their business plans on the supply-side miracle delivered by technology. Even as automation substitutes for labour across the world economy - ironically - employee skills increasingly differentiate one company from the other.

At the risk of sounding clichéd, it is true that companies greatly covet human skills. And human skills alone can harness technology for delivering cutting-edge products and services. In this backdrop, employers try to attract and retain talent with a new DC - “Deferred Compensation” available whilst employed, not the old DC - “Defined Contribution” waiting on retirement.

The medium-term narrative

Pension actuaries as a result are expected to measure, recognise and disclose on a greater variety of in-service employee benefits. These include the new DC or “Deferred Compensation” that is spreading fast and wide across many industries and deep within employee levels as employers realise that ‘yesterday’s winning capabilities become tomorrow’s table stakes.’ Medium-term compensation is also a sandbox of sorts - a tool with course correction embedded within.

The new DC benefit is posited on the principle that disruptive business models provide a large long-term upside if the right employee team performs over the medium term.

The new DC benefit is posited on the principle that disruptive business models provide a large long-term upside if the right employee team performs over the medium term. With stock markets discovering a company’s value, designing compensation programmes linked to an employee’s contribution to the company’s value has witnessed great momentum. If the company’s shares are not listed, deferred cash often linked to a proxy of the company’s

value is fast becoming the new currency of compensation. Both constituencies i.e., employers and employees progressively view the medium-term as the engagement narrative of choice.

DEFERRED COMPENSATION

In its detail

The new DC is a payout that vests over the medium-term (3 to 5 years) and linked to the long-term value the effort creates. Examples include the already popular viz., Employee Stock Option Plans and Deferred Cash Payments, and the new found viz., Deferred cash linked to enterprise value metric and Advance cash with claw-back features.

Table 1 summarises the new DC benefits within the new landscape of the IFRS-adapted Ind AS standards.

ESOP as the new DC

Whilst measuring the fair value of share options is a fundamental skill for ESOP/ ESPS under Ind AS 102, variants like restricted shares, share appreciation rights and share-based payments with cash alternatives require a more sophisticated application and greater professional judgement. Example, measuring restricted shares as compared with a vanilla ESOP will require a culling of the value of the opportunity lost

An accrual over time



Midway changes in ESOP plans are possible. For example - it is not abnormal for an employer to think differently as the company's share price spirals, and offer during the term of the ESOP a cash option with an added sweetener of premium to the share price to employees who already hold equity-settled options.

And beyond ESOPs

Deferred remuneration is defined in paragraph 153(d) of Ind AS 19. The standard requires an entity to recognise a liability when an employee has provided service in

during the additional holding period. And share-based payments with cash alternatives are valued as a compound financial instrument i.e., the debt and equity component is separated.

Table 1 : Deferred Compensation benefits

Benefit Description	Accounting Standard	Measurement	Recognition
ESOP/ ESPS	Ind AS 102	Fair value at inception for Share Options and Restricted Shares. Frequency is higher for Share Appreciation Rights and Share-based payments with Cash Alternatives.	Over the vesting period of the option with adjustments necessary for withdrawal, forfeiture and service and performance conditions.
Deferred cash payment	Ind AS 19	Projected Unit Credit method (paragraphs 67 and 68) to decide the expected present value of the cash payment.	Over the vesting period of the cash payout, with adjustments for employee withdrawal rate, forfeiture and service and performance conditions.
Deferred cash payment linked to a company value proxy	Ind AS 19	Estimated present value of the cash payment. The value is based on the company's value proxy e.g., a certain multiple the change between current and future EBITDA. The expected present value of the cash payment is calculated using the Projected Unit Credit method.	Over the vesting period of the cash payout, with adjustments for employee withdrawal rate, forfeiture and service and performance conditions.
Advance cash payment, with claw-back on exit before vesting	Ind AS 19	Estimated cash payment to vest with employees after expected claw-back. Note that the historical cost convention applies as there are no future cash flows.	Over the vesting period of the cash payout, with adjustments for employee withdrawal rate, forfeiture and service and performance conditions.

FEATURES

exchange of employee benefits to be paid in the future. Benefits need to be attributed to the periods of service as an obligation arises when the service is rendered (paragraph 157, Ind AS 19). Indeed employee service before the vesting date gives rise to a constructive obligation because at the end of each successive reporting period, the amount of future service that an employee will have to render before becoming entitled to the benefit reduces.

The possibilities to design the new DC are immense - from a simple cash payout to payouts derived from a proxy of enterprise value.

The possibilities to design the new DC are immense - from a simple cash payout to payouts derived from a proxy of enterprise value. At the other end of the spectrum, some companies in the high technology domain pay a joining bonus to campus recruits with a claw-back on the recruit's withdrawal before a predefined period. Don't be surprised if a flavour of deterrence is applied for the recruit's leaving with a shorter notice period. It is a different calibration for a profession that has long valued future cash flows using projected unit models to now model past cash with a future prospect of retrieval on defined and often new decrements.

Tax, inevitably

Actuaries must weigh the



considerations of their attest services in the new DC on stakeholders. Medium term employee benefit provisions are usually tax-deductible, however sometimes the tax authorities have deferred the deductibility of ESOP expenses to the time of actual exercise. On the other hand, provisions of employee benefits have varied tax treatments: gratuity expense is deductible only if actually paid or if contributed to an approved fund, but leave expense is deductible only when paid. The new IFRS-adapted accounting standards are yet to be fully tested among investors and tax authorities. The jury on the implications of attest work on taxability of deferred compensation is still out.

Many benefit structures

The Hungarian mathematician Paul

Erdos once attempted to prove the infinity of primes to a fellow colleague. Erdos reasoned, "Just consider P, Q and R as simultaneous prime numbers. $PQR + 1$ is not divisible by P, but PQR is. So primes are infinite." The colleague quipped, "Why did you lie to me? Why did you tell me those are the only primes when they aren't?" Like primes, the new DC truly has infinite structures and possibilities. Employers will unleash innovative compensation programmes tuned with the notes of dynamic business.

Clients view employee benefit actuaries as the preferred counsel on most attest work in the area. The question is whether actuaries can sew their technical skills into the new IFRS-adapted accounting standards and communicate to expectations.

Actuaries practising in retirement benefits can be the preferred 'Go To' for clients if skills needed for the new DC are quickly embraced.

Actuaries practising in retirement benefits can be the preferred 'Go To' for clients if skills needed for the new DC are quickly embraced.

About the Author

Mr. Mayur Ankolekar



mayur.ankolekar@gmail.com

"Mayur Ankolekar is a Fellow of the Institute of Actuaries of India."



What's in store with IFRS 17 - Key features and implications for insurers

Background

After nearly 20 years in the making, on 18 May 2017 the International Accounting Standards Board (IASB) issued IFRS 17, 'Insurance Contracts', and thereby starting a new era of accounting for insurers. The goal of the standard is to achieve an international accounting standard which is consistent and principle based. At the heart of the standard lies the current measurement approach of insurance contracts, requiring insurers to measure performance of their insurance contracts over time through the life of the contract, and asking insurers to talk about risks on their books through various disclosures.

Where the current standard IFRS 4 which was only meant to an interim standard, allowed insurers to use their local GAAP, IFRS 17 defines clear and consistent rules that will significantly increase the comparability of financial statements across different industries and geographies. For insurers, the transition to IFRS 17 will have an impact on financial statements and on key performance indicators.

	2017	2018	2019	2020	2021
IFRS 17 (Insurance contract liab.)	Final IFRS17 issued in May	EU endorsement process			Effective date 01/01/2021
What firms can do	Impact assessment	Design, implementation & remediation		Prepare comparatives	
IFRS 9 (Financial assets)		IFRS 9 mandatory effective			2021 IFRS 9 effective date*

- The new standard is applicable for annual periods beginning on or after 1 January 2021. Early application is permitted for entities that apply IFRS 9, 'Financial Instruments', and IFRS 15, 'Revenue from Contracts with Customers', at or before the date of initial application of IFRS 17.
- FASB decided to only make targeted amendments to US GAAP, so there is no global insurance standard.

This article is aimed to provide a brief overview of the key changes brought by the standard and how it affects the recognition and valuation of insurance contracts.

Scope

The entity shall apply IFRS 17 to:

- Insurance and reinsurance contracts that it issues;
- Reinsurance contracts it holds; and
- Investment contracts with discretionary participation features (DPF) it issues, provided entity also issues insurance contracts.

It does not apply to investment contracts. For example unit linked pensions with insignificant death benefit are not impacted.

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Measurement

There are three measurement approaches under IFRS 17 for different types of insurance contract:

	<i>General model</i>	<i>Premium allocation approach</i>	<i>Variable fee approach</i>
<i>Why is it needed?</i>	Default model for all insurance contracts	Simplified measurement for short-term contracts with little pre-claim variability	Model for direct participating business
<i>Mandatory?</i>	Mandatory	Optional	Mandatory

General model should be applied to all insurance contracts, unless they have direct participation features or the contract is eligible for, and the entity elects to apply the premium allocation approach.

Premium allocation approach is an optional simplification for measurement of liability for remaining coverage for insurance contracts with short-term coverage.

Variable fee approach should be applied to insurance contracts with direct participation features. This approach deals with participating business where payments to policyholders are contractually linked and substantially vary with the underlying items. This approach cannot be used for the measurement of reinsurance contracts.

Building Block Approach (BBA) or General Model

The general model is based on the following building blocks:

Contractual service margin	Unearned profits recognised over coverage period.
Risk adjustment	Reflect compensation entity requires for uncertainty. Quantifies the value difference between certain and uncertain liability.
Discounting	Discounting future cash flows using 'top-down' or 'bottom-up' approach for discount rates to reflect characteristics of the liabilities.
Best estimate of fulfilment cash flows	Best estimate cash flows - explicit, unbiased and probability weighted estimate of fulfilment cash flows.

An entity should estimate each building block of the general model explicitly and separately, unless the most appropriate measurement technique combines some of the elements, as follows:

- cash flows should be estimated separately from the adjustment for the time value of money and other financial risks; and
- the risk adjustment for non-financial risks should be explicit and separate from the estimates of future cash flows.

Contractual service margin (CSM)

The contractual service margin is a component of the carrying amount of the

asset or liability for a group of insurance contracts representing the unearned profit that the entity shall recognize as it provides services under the insurance contracts in the group. An entity should measure the CSM on initial recognition that eliminates any gains arising at that time. The CSM cannot depict unearned losses i.e. negative CSM not allowed (except for reinsurance contracts, detailed later). Instead, IFRS 17 requires an entity to recognize a loss in profit or loss for any excess of the expected PV of cash outflows above expected PV of cash inflows, adjusted for risk. Some of the other key considerations for CSM are:

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- The CSM calculated on initial recognition is required to be amortized over the coverage period in a systematic way reflecting provision of coverage.
- The unwinding of interest rate on CSM should be based on discount rate determined at the date of initial recognition.
- Entity will need to decide the appropriate approach for CSM amortization. For instance, they could base it either on a straight line based on number of policies or the size of policies or a run off factor approach (increasing level of complexity in these three approaches). A run off factor approach is likely to closely mirror the actual pattern of profit/loss release, but shall be operationally complex, as it will require factors to be stored all groups of contracts.

Premium Allocation Approach (PAA)

The premium allocation approach is a simplified method for measurement of the liability for remaining coverage for eligible groups of insurance contracts. Under PAA, initial measurement of liability equals premium received less acquisition costs. Insurers are permitted but not required to use PAA for a group of insurance contracts if:

- each contract in the group has a coverage period of one year or less; or
- measurement of the liability for remaining coverage for the group using PAA is reasonably expected to produce a measurement of the liability for remaining coverage which is not materially different from using the general model or the variable fee approach. This criterion is not met if at initial recognition there is significant variability expected in fulfilment cash flows, for example through embedded derivatives in the contract or the contract being of long tenure.

It is generally expected that general insurers will mostly use the PAA approach as it avoids the need to calculate CSM and in many aspects is similar to their existing unearned premium approach. For eligibility assessment of PAA, life insurers should consider questions such as interpretation of materiality, difference arising due to consideration of discounting in general model approach effecting eligibility, different pattern of liability release under the general model approach and PAA effecting eligibility.

Variable Fee approach (VFA)

Insurance contracts with direct participation contracts are accounted using the VFA. The contract which meets all the below criteria falls under this category:

- a) the contractual terms specify that the policyholder participates in a share of a clearly identified pool of underlying items;
- b) the entity expects to pay to the policyholder an amount equal to a substantial share of the fair value returns on the underlying items; and
- c) the entity expects a substantial proportion of any change in the amounts to be paid to the policyholder to vary with the change in fair value of the underlying items.

Products like US variable annuities, unit linked contracts, conventional or unitized with profit contracts, equity index linked contracts are expected to be categorized under the VFA. These contracts create an obligation to pay policyholders an amount equal in value to specified underlying items, minus a variable fee for service. That fee is an amount equal to the entity's share of the fair value of the underlying items minus any expected cash flows that do not vary directly with the underlying items.

The important differences from the general model approach is that under VFA:

- (I) CSM is also adjusted for changes in entity's share of the underlying items only to the extent that a decrease of entity's share of fair value does not exceed the carrying amount of CSM.

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- (ii) As opposed to the general model approach, under VFA there is no adjustment of CSM for accretion of interest. Implicitly, change in entity's share of fair value of underlying items already incorporates an adjustment for financial risks and using current rates of the CSM for the time value of money.
- (iii) Change in the value of options & guarantees is adjusted in the CSM.

Level of aggregation

One of the key decisions insurers need to make is around the unit of account i.e. the level of granularity at which recognition and measurement needs to be applied. Decisions taken on this will have the biggest impact on how data is maintained within the company. Standard requires the entity to first identify its portfolio of insurance contracts. A portfolio should comprise of contracts subject to similar risks and are managed together. Contracts within a product line would be expected to have similar risks and hence would be expected to be in the same portfolio if they are managed together.

Each portfolio shall then be divided into groups which are separated by the period in which they were sold, a single group not including contracts sold more than one year apart. After that, each group shall be divided into the following groups of contracts:

- A group of contracts that are onerous at initial recognition
- A group of contracts that at initial recognition have no significant possibility of becoming onerous subsequently
- A group of the remaining contracts

Entity is permitted to further subdivide the groups described above if their internal reporting system provides information on these. For example based on size of the contractual service margin, or remaining coverage period, or different possibilities of contracts becoming onerous after initial recognition, or dividing contracts on the extent to which contracts are onerous.

Onerous Contracts

A group of insurance contracts is onerous if at initial recognition total fulfilment cash flows are a net outflow. Such a net cash outflow is recognized in profit or loss immediately. Contract 2 below is an example of an onerous contract. On subsequent measurement, insurance contracts can become onerous when adjustments to the contractual service margin exceed the amount of the contractual service margin. Such excess is recognized immediately in profit or loss.

	Contract 1	Contract 2
Estimate of the present value of future inflows	-900	-900
Estimate of the present value of future outflows	545	1,089
Estimates of the present value of future cash flows	355	189
Risk adjustment for non-financial risk	120	120
Fulfilment cash flows	-235	309
Contractual service margin	235	0
Insurance Contract (asset) / liability on initial recognition	0	309

The approach to the measurement of onerous contracts could be significantly different from the approach used currently under IFRS 4 in many jurisdictions. Entities are likely to need to develop operating systems to be able to track groups of onerous contracts and to account for the loss component of the liability for remaining coverage.

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Reinsurance

Reinsurance contracts shall be aggregated in portfolios in a similar manner to the underlying insurance contracts i.e. a portfolio of contracts subject to similar risks and managed together. When estimating cash flows and the time value of money arising from reinsurance contracts, the assumptions used shall be consistent with the assumptions used for underlying insurance contracts. Some of the other key requirements on reinsurance are:

- The effect of non-performance of the reinsurers shall be included in the estimates of the reinsurance cash flows.
- The net gain or loss on initial recognition for a group of reinsurance contracts shall be recognized as CSM i.e. CSM held could be negative or positive on initial recognition. Therefore, there shall be no onerous contracts under reinsurance as they are required to be identified for underlying insurance contracts.
- The CSM shall be adjusted for the change in the estimates of fulfilment cash flows. However, there shall be no adjustment in CSM to the extent that change in fulfilment cash flows of the underlying insurance contracts does not change the CSM of underlying insurance contracts.
- Change in estimates of the expected credit losses from reinsurance shall not be adjusted in the CSM, rather to be realized as gain or loss in the Profit & Loss.

Presentation

The biggest difference in the presentation of financial statements will be around revenue recognition. Under IFRS 17, revenue will no longer be equal to premiums received in the period. Many insurers currently account for premiums received on a cash basis, rather than as services are provided. Because this kind of cash accounting is no longer permitted under IFRS 17, revenue will now be recognized in different periods. Disclosures will also be more onerous under IFRS 17 including reconciliations between opening and closing balances, nature and extent of risks taken by the entity, confidence level used to determine risk adjustment, yield curve.

Current presentation	IFRS 17 example presentation
Net earned premium Investment income Other Income Total Income Benefits and claims Change in insurance contract liabilities Expenses Profit/Loss before tax	Insurance contract revenue → Incurred claims and fulfilment expenses Insurance service result Investment income Insurance finance expense Net financial result Profit/Loss before tax Discount rate changes on insurance liability (optional) - OCI Total comprehensive income

Release of contractual service margin
Release of risk adjustment
Expected claims and fulfilment expenses
Release on unearned premium
Insurance contract revenue

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Operational Impact

The technical requirements of the standard gives rise to range of operational implications that entities that must consider. The following table is based on some of the common issues that UK insurers are currently facing when formulating the plan for IFRS 17 implementation.

Length of implementation	- Whether 3 years are sufficient? - Drawing parallels with other major changes such as solvency II
Reporting timetables	- Usually amongst the UK insurers solvency II results are generated after the IFRS 4 reporting - IFRS 17 would require information from solvency II results which would make the reporting timelines challenging
Systems & Data	- Fundamental shift in the way data is collected - High level of granularity would require massive increase in storage capacities - Can the existing systems support the new data requirements, new calculations, reconciliations, analysis? - Updating the existing governance structure and controls framework to reflect the new standard
Difference with Solvency II	- IFRS is a retrospective standard while Solvency II is prospective looking - Different contract boundary conditions - Restrictions in Solvency II matching adjustment versus IFRS top down approach - CSM doesn't exist in solvency II - VFA approach for participating contracts different from solvency II - Acquisition expenses required for each group of contract at initial recognition under IFRS
More than technical impact	- Will impact across businesses not just finance, actuarial, risk management or IT - Product design and distribution - Incentive and wider remuneration policies - Tax implications



About the Author

Mr. Avdhesh Gupta



gupta.avdhesh@pwc.com

“Avdhesh is a qualified life actuary with 10 years experience working as a Principal Consultant at PwC. In his current role, he is part of IFRS 17 team responsible for assisting insurers in implementing and model the new standard.”





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Equity Release – Valuation Part 4: Property value projection and House price index

Equity Release valuation depends upon choice of valuation model, assumptions and customer data. This article is fourth in the series of articles on actuarial valuation of Equity Release. This article covers discussion on housing price indices (HPI) available in the UK. HPI can be used for roll forward of valuation of house property. First part describing product features and valuation model was published in May 2015. Second part describing longevity assumptions was published in June 2015 along with its youtube link covering discussion on its contents. Third part was published in February 2016 along with link for youtube covering discussion on lapse assumption.

Equity release is a financial contract that allows elderly people, who may not have enough liquid cash to access the equity in their home. Equity release is also known as reverse mortgage or home equity conversion loan. Equity release is a means of retaining use of house (or object which has capital value), along with obtaining a lump sum or a steady stream of cash inflow, from value of such house. The equity release provider must be repaid later with interest, usually when policyholder dies or goes in for long term care from sale proceeds of home. Equity release is particularly useful for seniors who do not intend or are not able to leave a large estate for their heirs when they die. Such elderly persons must be of minimum age (which is country specific, for US 62, UK 55) and live in their own home to

sign equity release contract.

Loan v/s Property value: Loan disbursement under Equity Release contract depends on the value of house property based on which loan is provided. Loan to value (LTV) is a ratio which defines amount of loan against the property value.

Projecting property value: Future projections of property value depend on:

1. Initial property valuation at the point of sale. This can be done by an independent or approved appraiser.
2. Choice of house property index (HPI). Such index to be used for roll forward of initial property value to valuation date.
3. Property value projection/roll forward methodology. Example: Continuous or discrete or treatment of unusual movement in HPI, seasonality in price movements etc. In general, in the UK, house price reduce over winter and increase again in spring.
4. Cross hedging adjustment - Provider specific: It is an adjustment to apply on diversified housing price index (HPI) to geographically concentrated portfolio of the provider. This captures mismatch between the changes in house property held by the provider and index movements. A provider may have concentration in particular geographical regions. This is applied from point of sale of contract till valuation date. Also future

projection of property based on HPI projections should take care of this adjustment. HPI projections can be based on CPI or RPI projections.

5. Cross hedging adjustment - Property specific: It is a measure to capture mismatch between movements in specific property held and index movements. This is to be applied at three levels

- ◆ Property type adjustment: This is based on property type such as flats, house, shop, bungalow, chalet, barn, cottage etc. There can be further sub classification like basement flat, converted flat, studio flat or freehold flat etc.
- ◆ Underwriting adjustment.
- ◆ Depreciation on building - usual wear and tear.

This is applied from point of sale of contract till valuation date. Also future projection of property based on HPI projections (computed using CPI/RPI projections) should take care of this adjustment.

Cross hedging is a form of basis risk. Basis risk as a percentage of property value increases with time since origination. Such increase is not uniform. There are two components of this increase:

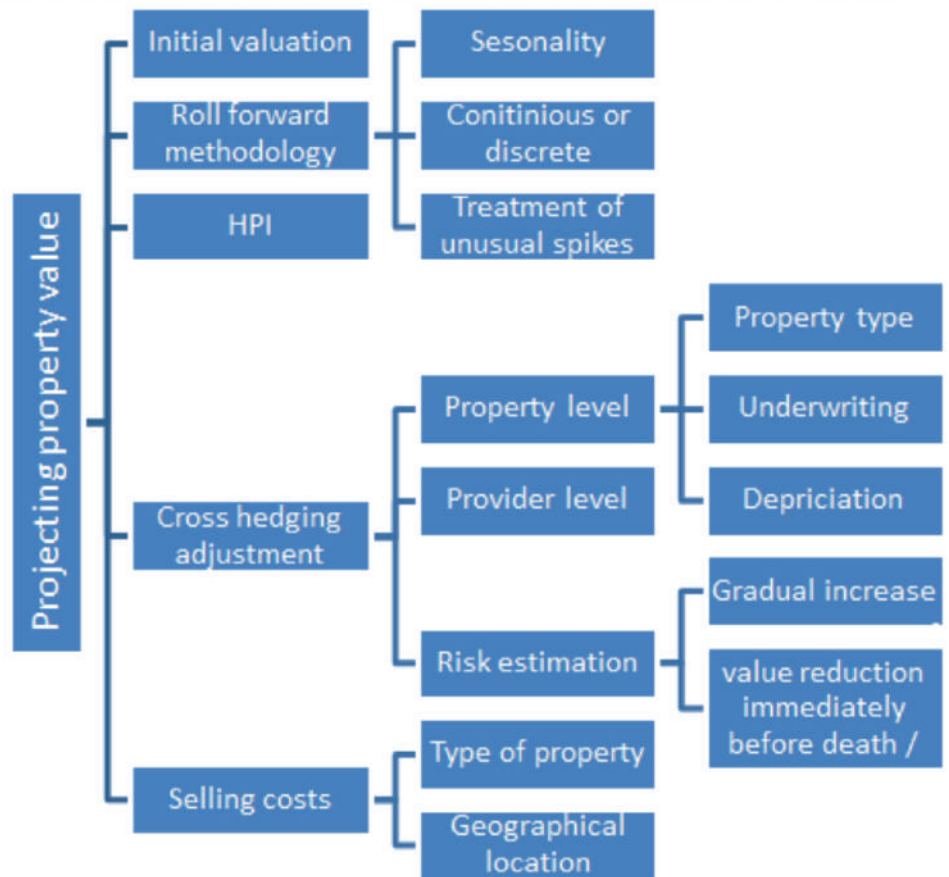
- ◆ Gradual increase
- ◆ Increase arising from misestimating of the one-off late-stage reduction in the value that can occur immediately prior to the death (or move into long-term care) of a policyholder,

- ♦ when the ability of the policyholder to maintain the property is reduced.

6. Property selling costs. These can be projection term dependent as well as dependent on type of property or geographical region.

Initial property valuation: Property that is most attractive to investors is generally called prime property. Prime property would score highly on all of the following factors:

1. Location
2. Age and condition
3. Quality of tenant
4. The number of comparable properties available to determine the rent at rent review and for valuation purposes
5. Lease structure
6. Size



Initial valuation of property can be done on discounted cash flow basis. Market rent, maintenance expenses, lease renewal probability, rent escalations, taxes are considered in determining expected cash flows. Such cash flows are then discounted at yield to determine property value.

Yield: The running yield on property is also known as the rental yield.

$$\text{Rental yield} = \frac{\text{Rental income net of all management expenses}}{\text{Cost of buying property gross of all purchase expenses}}$$

As with other asset classes, it varies between different types of property according to factors such as riskiness, marketability and, the level of expenses involved. Property types considered more risky will generally offer a higher running yield (i.e. rental yield). The running yield on property varies with the type of building as well.

Historically, it is observed that it is

usually between equity yield and yield on conventional bonds.

Property yield vs equity yield:

One can expect higher running yield on property than for good quality equities because of following reasons:

1. Property is much less marketable than equities
2. Property is available only in large,

indivisible and consequently inflexible investment units

3. Dividends arguably have better growth prospects than rents

Contrary arguments for lesser yield than equity yield:

1. Better income security (where there is a good tenant) than equities
2. Better capital security for properties with a high site value

Property yield vs bond yield:

Conversely, property rental yields will often be lower than conventional bond running yields because of the prospect of capital gain, reflecting the anticipated growth of rental levels. In comparison with index-linked government bonds, property is less marketable and less secure. Investors would therefore be expected to require a higher return from property.



Marketability: Property is generally very unmarketable. It can take a long time to buy or sell. Dealing costs are also high. This is because of the following reasons:

1. Unit size: The unit size of most investment in property is large. In general, single properties are indivisible in to smaller tradable units.
2. Uniqueness: Each property is different from other property.
3. Valuation of property is difficult than valuation of any other marketable assets.

Difficulties in arriving market value: Property valuation is a matter of professional judgment. There is no central market for quoted property prices. Different valuers may provide different valuations. In fact one

valuer can provide different values on different assumptions. Property valuation is both subjective and expensive. The true market value of a property is known only when a sale occurs. In addition, as sales are infrequent and prices agreed are normally treated with a degree of confidentiality, it may be difficult to place a certain value upon a particular property. This reduces relative attractiveness of direct property investment to certain

investors.

Obsolescence: Land is virtually indestructible. Land also does not depreciate. In financial accounting or for taxation purposes, there is no depreciation applicable on land. Buildings normally have a long life if maintained in a satisfactory condition. However, buildings depreciate. Buildings suffer from obsolescence as well. This results in a slowdown in the relative rate of growth in the value between old and new buildings. With time, expenditure on modernization becomes necessary. The cost of refurbishment is a major expense of property management. This is not the case with financial securities. Properties with a proportionately high site value - usually due to a prime location - will, however,

depreciate at a lesser rate over time. They are therefore less risky investments. Obsolescence arises when a building becomes out of date and when it is no longer of use to potential tenants. It means that even if average property values rise in line with inflation, the value of a particular building may fall in real terms. On expiry of the lease, the owner may therefore need to upgrade the building prior to leasing it out again. Owing to its political significance, property is susceptible to government intervention such as rent and planning controls.

Index choice for roll forward: In theory there are two main types of investment property index:

◆ **Portfolio-based indices:** These are most common indices available. Portfolio based indices measure rental values, capital values and total returns of actual rented properties. Different indices of this type will give different results because the underlying portfolio of properties will vary in size, regional spread and sector weightings (office, retail, etc.). The rate of return will typically be money-weighted, meaning that the timing and magnitude of cash flows into the particular property fund will influence the results. As the current rental income is fixed until the next rent review, any response to movements in rental values will be slow-moving.

◆ **Barometer indices:** Barometer type of index aims to track movements in the property

- ◆ market at large by estimating the maximum full rental values of a number of hypothetical rack-rent properties. The main use of this type of index is in highlighting short term changes in the level of the market in terms of rents and yields. But an index of this type is unsuitable for portfolio performance measurement since an investor could not closely match its movement with an actual portfolio of property holdings. (ST5 question in IAI-April 2017)

There are a number of index providers in the UK, who produce property indices that are suitable as benchmarks for Equity release providers. Indexes are typically divided into residential and commercial indices. Where sufficient data exists the commercial indices are often sub divided into industrial, office and retail categories. Within the European market, Investment property databank index (IPD) is a leading index provider for commercial property indices. IPD indices are sufficiently robust to have been used as a basis for pricing property derivative contracts. IPD is now owned by Morgan Stanley Capital International (MSCI). For Equity Release purpose, residential property indices are relevant. HPIs available in the UK for residential property are:

1. Halifax
2. Nationwide
3. CLG/ONS
4. Land registry
5. Rightmove
6. Hometrack



Let's look at how an actuary can choose an appropriate index for roll forward of property portfolio:

1. The prices agreed between buyers and sellers of properties are normally treated with a degree of confidentiality. How different available HPIs takes care of such unavailability of information should be studied.
2. Duration for which historical data of index is available.
3. Statistical credibility of the index in comparison to other available indexes. This is because estimation of property value is a subjective and expensive process.
4. Type of index: (i) Is the index based on actual transactions, valuations, and asking price etc. (ii) Are prices seasonally adjusted

and/or sales mix adjusted.

5. Demographic or geographic coverage of index constituents.
6. Timeliness i.e. after how many days value of the index is publically available and frequency of index - monthly or quarterly.
7. Consistency with commercial property index available.
8. Each property is unique so index may not appropriately capture specific features of property. Heterogeneity of property magnifies the problem of obtaining price data. It is difficult to group properties into usefully homogeneous groups and still obtain price data for each group.
9. The market value of the property is only known for certain when the property changes hands. Sales of certain types of property are relatively infrequent. How such infrequency is treated in calculation of index.

Volume adjusted: Indexes are generally weighted according to the volume of sales of properties with different characteristics.



Understanding Halifax: For most up to date indication of property values, Halifax can be used. It is based on mortgage approvals. It was started in 1983. It is a timelier indicator of trends in the market than indices such as Land registry or CLG (Certified Local Government) that are based on completed sales. Basing the index on approved mortgage values gives a reasonable proxy for movements in sale price and reduces index time delay (as compared with an index based on completed sales). However, it may include properties that are never sold which tend to overstate the volatility of returns. Halifax is the UK's largest mortgage provider covering around 15,000 mortgages per month (around 1/4th of all UK mortgages). Halifax is seasonally adjusted, mix adjusted using hedonic regression.

Note: Hedonic regression - Method of deriving property value which assumes that the property's value is derived from the value of its

different characteristics, both qualitative (type of heating) and quantitative (number of bedrooms). Therefore, it removes bias in changes of house price index due to change in the mix of property sales e.g. method of avoiding a rise in property price index simply because more 5 bed room semi-detached houses had been sold as opposed to 2 bed room terrace houses. Since the price of these characteristics cannot be observed, the hedonic regression model estimates the implicit value of them. A limitation of this model is that it cannot include all characteristics and the correlations between them because the parameters in the model must be independent, hence, dependent characteristics must be excluded from the model.

Another alternate to Halifax is Nationwide. Nationwide was started in 1952. It is based on approved mortgages. It is second largest UK mortgage provider covering around

10% of the market. Though Nationwide index is heavily weighted towards properties in south east of the UK.

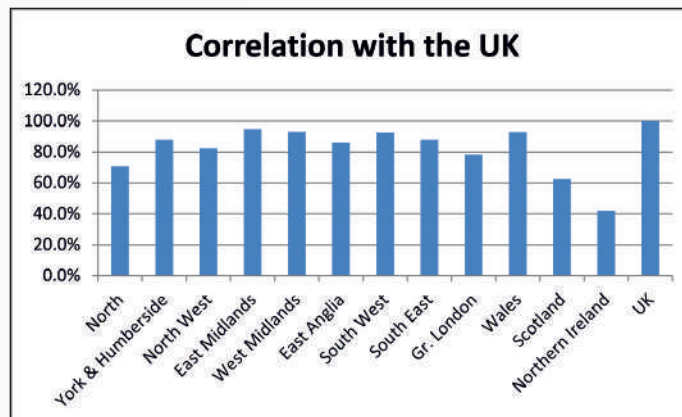
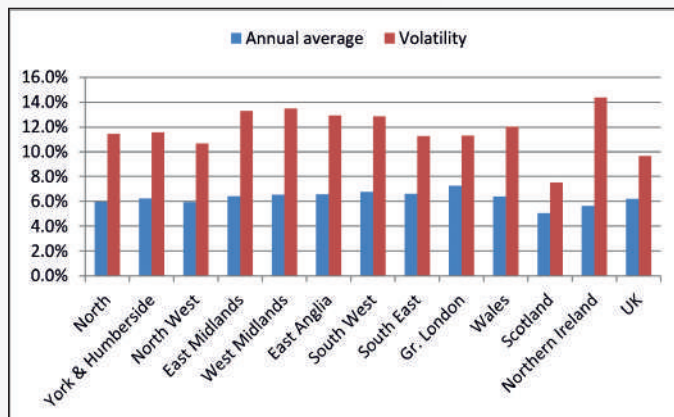
Property volatility: There is no active market for residential property options as a result implied volatility cannot be computed. Therefore, volatility is computed from empirical HPI data with any adjustments which the actuary may deem fit. Empirical data of Halifax has volatility of 9.7% and Nationwide has volatility of 9.28%. Actual assumption which can be used in the prudent valuation of no negative equity guarantee (NNEG) can have a prudence margin. Actuarial professions' Equity Release working party papers (2005 and 2007) recommend 3% top up for prudence.

Appendix 1:
Halifax non-seasonally adjusted average annual HPI for UK regions, 1983 to 2012:

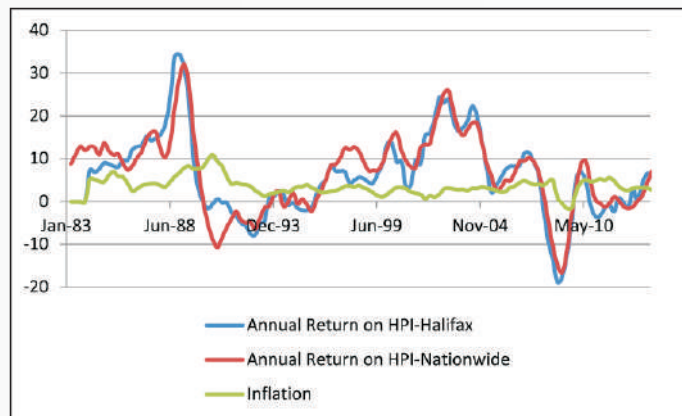
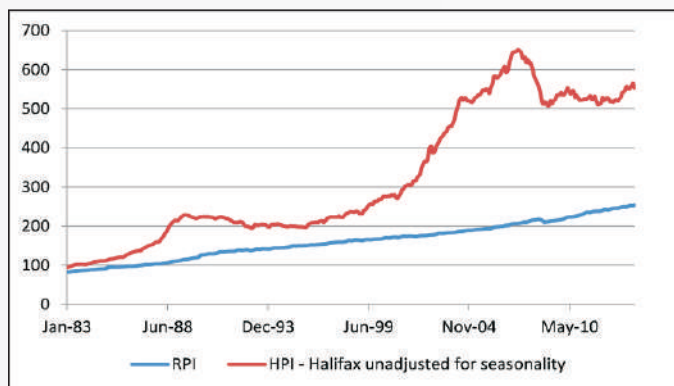
Region	Annual average	Volatility	Correlation with the UK overall
North	5.9%	11.4%	70.8%
York & Humberside	6.2%	11.6%	88.0%
North West	5.9%	10.7%	82.1%
East Midlands	6.4%	13.3%	94.8%
West Midlands	6.5%	13.5%	92.9%
East Anglia	6.6%	12.9%	86.1%
South West	6.8%	12.9%	92.5%
South East	6.6%	11.3%	88.0%
Gr. London	7.2%	11.3%	78.3%
Wales	6.4%	12.1%	92.7%
Scotland	5.0%	7.5%	62.6%
Northern Ireland	5.7%	14.4%	41.9%
UK	6.2%	9.7%	100.0%

Annual average return on Nationwide, 1952 to 2013	
Volatility	9.28
Average return	8.1

It can be seen that properties in the Scotland have least return. Properties in Northern Ireland are most volatile in the UK. Properties in London have seen maximum increase.



Here is the comparison of HPI and RPI since 1983 till 2013:



Correlation between historic RPI and HPI since 1984 till 2013 is 0.91.
Corresponding annual return on HPI (both Nationwide and Halifax) and RPI since 1984 to 2013:

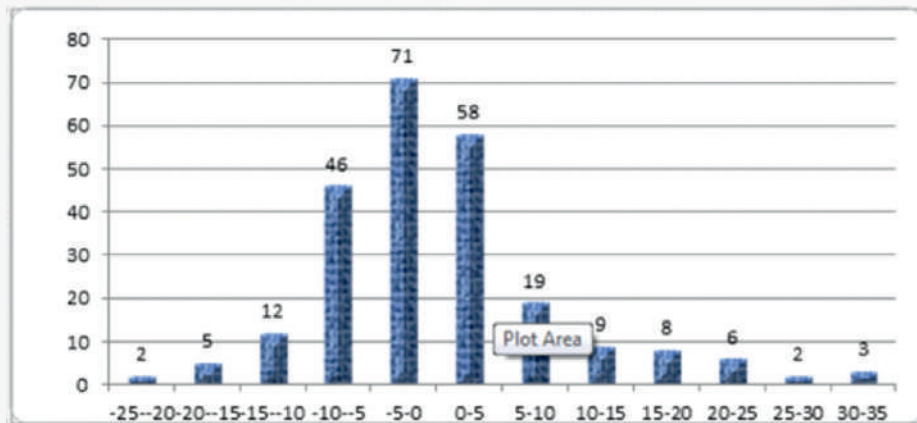
Correlation between historical returns on Halifax and Nationwide since 1984 till 2013 is 0.92. Return on HPI dipped in negative region from March-2008 to December-2012 hitting floor in March-2009 (Halifax = -16.53% and Nationwide = -17.6%).

Appendix 2: Creating statistical distribution of returns based on Nationwide Index returns:

Based on Empirical data: Demeaned (Excess over simple average) annual percentage change in Nationwide as starting point to find the closest statistical distribution

Class interval	Frequency	Percentile	Based on empirical data
-25--20	2	0.999	33.96
-20--15	5	0.995	32.65
-15--10	12	0.98	24.22
-10--5	46	0.9	12.61
-5-0	71	0.75	3.55
0-5	58	0.5	-0.82
5-10	19	0.25	-5.74
10-15	9	0.1	-9.21
15-20	8	0.02	-17.24
20-25	6	0.005	-22.27
25-30	2	0.001	-24.23
30-35	3		

First step will be to identify different statistical distributions with pdf similar to above shape. Once different distributions (with appropriate parameters) are determined, statistical tests such as Chi-square, Anderson-Darling p-value etc can be applied to see which distribution fits the empirical data more closely. Number of data points generated using statistical distribution falling outside empirical plot for different percentiles should be studied. Distribution with minimum outside falls can be studied further as a reasonable for on



empirical data. Statistical distribution which gives a good fit should have ratio of empirical data and distribution data points across different percentiles, closer to 1, with minimal deviations in each direction. Where the deviation is in one direction only a scaling approach can be developed for a closer match.

Source:

1. Nationwide: http://www.nationwide.co.uk/hpi/datadownload/data_download.htm
2. Halifax: <http://www.lloydsbankinggroup.com/media/economic-insight/halifax-house-price-index/>
3. RPI: <http://www.wolfbane.com/rpi.htm>

Next part of this series will focus on valuation of no negative equity guarantee (NNEG).

THANK YOU



About the Author

Mr. Saket Vasisth



saket.vasisth@gmail.com

“Saket is involved in Asset Liability modelling for life insurance. He is a student member of IAI and works for AIG.”



The Actuary India wishes many more years of healthy life to the fellow members whose Birthday fall in August 2017

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F. No.29-6/2013-LI (Vol II)
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NOTICE INVITING REQUEST FOR PROPOSAL (RFP)

Directorate of Postal Life Insurance, Department of Posts, Government of India invites applications from interested Actuaries for engagement of Full Time Actuary in Directorate of Postal Life Insurance, Chanakyapuri PO Complex, New Delhi- 110021 through the process of competitive bidding. Detailed terms and conditions are prescribed in the RFP document, which may be downloaded from the e-procurement portal www.eprocure.gov.in (tender ID: 2017_DOP_225612_1). The last date of submission of bids is **24.08.2017 (1500 Hrs)**.

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Brexit

The uncertainty caused by Brexit is a huge issue for UK insurers at present and this uncertainty likely to persist for a number of years.

Insurers are beginning to shift operations to locations like Dublin and Brussels, with the European institutions sending out clear signals that these operations must be more than brass plates used to reinsure risks back to the UK. It is very difficult for UK insurers to plan ahead and manage their businesses in this environment of extreme uncertainty.

All of the EU legislation that affects UK insurers is required to be reviewed and amended, a huge task for government, supervisors and the UK insurance industry itself.

Some insurers see this as an opportunity, however, to amend certain aspects of EU legislation that they disagree with, Solvency II's risk margin, for example.

Solvency II

Although Solvency II was successfully implemented at 1 January 2016, it is not stable and it continues to be consulted on and amended. For example, EC and EIOPA are currently reviewing and consulting on the Standard Solvency Capital Requirement, with consequential changes to be implemented in 2018.

Infrastructure asset class capital charges have only very recently been agreed and the entire Solvency II package is due to be reviewed by 2021.

Despite Brexit, there is a feeling that any UK version of Solvency II will not move too far away from the EU version.

IFRS 17

As is the case in many global insurance markets, UK insurers have started the preparatory work for IFRS 17 and are building the teams and programmes needed to deliver this very significant piece of accounting legislation.

An important aspect is running internal quantitative impact studies to check how businesses look and perform under IFRS 17.

Market

The market remains challenging as a consequence of low interest rates, with Solvency II's risk margin especially hurting annuity writers. As a consequence, many insurers are withdrawing from the individual and bulk annuity markets.

It is also worth noting that UK insurers generally no longer offer guaranteed savings products with evidence that this trend is also spreading to other global insurance markets.

Low interest rates, excess capital and technological developments

continue to challenge non-life insurers.

Asset Allocation

Emerging trends in UK insurance asset allocation include:

- ❖ Increasing risk appetite - most notably, taking on more credit risk. However, these allocations are often constrained by Solvency II that requires capital to back risk exposures.
- ❖ Use of diversification to manage explicitly risk through the use of new asset classes or strategies, such as modern approaches to multi-asset investment.
- ❖ A rotation from public to private market assets as insurers attempt to increase returns using the illiquidity premium. However, this rotation is being hampered by the limited supply of appropriate investments. It is also constrained by the enhanced modelling requirements needed by supervisors and regulators before they will allow insurers to invest in what are relatively new asset classes for the insurance industry.
- ❖ A re-structuring of traditional asset exposures, and improvements in asset and liability management, aimed at improving capital efficiency.

About the Author

Dr. Bruce T Porteous



bruce.porteous@standardlife.com

“Bruce works at Standard Life Investments as an Investment Director, developing Standard Life Investments insurance solutions proposition and business.”





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PUZZLE COLUMN

Puzzle 261:

What letter is missing in this sequence?

B C D E G _ T

Puzzle 262:

I have two perfectly spherical baubles for a birthday party decorations. One has a lead core surrounded by a layer of aluminium; the other has an aluminium core surrounded by lead. Both have a copper outer casing and both contain the same mass of all three metals. How can I tell them apart without damaging them?

Answers to puzzles

Puzzle 259:

Each word contains an animal home - hive, lair, nest, sty, den and coop.

Puzzle 260:

Six (3+3)

In each square multiply the two numbers on the left to get the top right and add them to get the bottom right.

Correct answers were received from:

Puzzle 259:

1. Palash Shah
2. Hemant Rupani
3. Vamsi Dhar

Puzzle 260:

1. Palash Shah
2. Hemant Rupani
3. Rahul Pahuja
4. R. Babu
5. Shikha Agarwal
6. Aditya Javadekar
7. Sampada Kelkar
8. Vivek Rana
9. Dikshay Ramnani
10. Parth Vira
11. Vamsi Dhar
12. Bharti Singla
13. Nageswara Rao Gopavarapu
14. Dilip Anand

About the Author

Ms. Shilpa Mainekar



shilpa_vm@hotmail.com



PEOPLE'S MOVE



Mr. Hemant Kumar joined as Principal Advisor, leading the actuarial team - Principal Global Services, Pune from July 2017. His area of work is Valuations of Defined Benefit Pensions and Post Retiree Medical plans for US. Prior to this he was working as a Group Manager in Mercer Consulting (India) Pvt. Ltd, Gurgaon. His area of work was Valuations of Define Benefit Pensions and Post Retiree Medical Plans for US, Thailand and UAE Geographies for the period December 2012 to July 2017.

28th India Fellowship Seminar (IFS) Announcement

Institute of Actuaries of India announces **28th India Fellowship Seminar (IFS)** on **9th & 10th November, 2017** in Hotel Sea Princess, Juhu Mumbai. The 28th IFS is open to IAI Fellow Members for CPD requirement (12 hrs.-Professional.) under APS 9 (Ver.2); and Student/Affiliate/Associate members for fulfilling requirement for admission as FIAI.

In view of the fact that all participating students, associates & affiliates have to be assigned topics for presentation, **the registration will close by 30th September, 2017 (for Students, Associates & Affiliates).**

Registration Fees applicable for IAI members is Rs. 10,000 + 18% GST.

To Register, LOGIN to your account on IAI website.

In case of any query, please feel free to mail at Quintus@actuariesindia.org.



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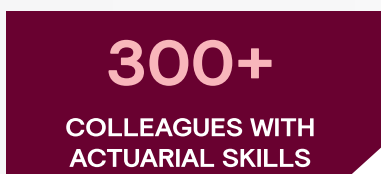
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