

JANUARY 2015 ISSUE

# THE MALAYSIAN ACTUARY



A Newsletter by the Actuarial Society of Malaysia



## ABOUT THE MALAYSIAN ACTUARY

The Malaysian Actuary is a regular newsletter/magazine published by the Actuarial Society of Malaysia.

This publication is for general information purposes only, and intended only for members of the Actuarial Society of Malaysia. While all reasonable efforts are made to provide correct information, the Actuarial Society of Malaysia does not guarantee that the information provided in this newsletter is complete, reliable and accurate in every aspect. The articles in this newsletter are based on the views of the individual authors and do not necessarily represent the views of the Actuarial Society of Malaysia.

The Malaysian Actuary welcomes interested members who would like to contribute to the newsletter in any way, either by submitting articles relevant to the actuarial industry, conducting interviews or contributing puzzles. With regards to submitted articles, the Malaysian Actuary reserve the rights to accept, reject or request changes before publishing the articles. In addition, the editor may amend the article for grammar, punctuation and spelling. For more information on contributions, please contact the Malaysian Actuary editor at [editor@actuaries.org.my](mailto:editor@actuaries.org.my).

Feedback on the Malaysian Actuary can be submitted to [editor@actuaries.org.my](mailto:editor@actuaries.org.my). Nominations for suitable candidates for the "Up Close and Personal" section can also made.

## EDITOR's NOTE

# Greetings to all readers,

Happy New Year to all ASM members and readers!!!

I wish for everyone's good health and happiness throughout 2015 and years ahead.

2014 has been an eventful year for myself and I apologize to all the readers and members of the lack of issuance of the newsletter itself. My biggest apology here to all.

I would also like to take the opportunity to share one of the experiences from my 2014. As we are well aware of, or some of us may have even been one of the victims (or family of victims), the East coast flood in Malaysia that happened towards the end of 2014. A few days before the end of 2014, I was among the several members of the voluntary flood relief team that went to Kota Bharu, Kelantan.

Most of us would have somewhat recognised the disaster that broke out whether through news, pictures shared through online media. We viewed the devastation of the flood through the screen of our computers, phones or Ipads. What we'll not be able to comprehend is that those devices play an insignificant role to the victims. It is back to the basic needs; food, clean water and shelter.

Yes. The basic needs. As we progress, chasing through our ambition and dreams, have we ever took a breather to reflect our surroundings? All of us including myself will probably have mixed answers to this. The truth is I don't think there is a right answer to this question. My answer may differ from that of yours. But one similarity is that we must be conscious of what we do and how we affect others. Do not forget who we are, know what we want to be and never stop thinking how we can be what we want to be without forgetting about others or important things in life. Just like the our basic needs of food, clean water and shelter.

I thank you all again.

## President's NOTE

*Dear members,*



First of all, I would like to wish you and your family a very Happy New Year. We hope you will have a very fruitful 2015.

ASM has organized many professional and social events since the last publication. For example, IFRS seminar, Life Insurance & Family Takaful Seminar, Professional Skills Course, ASM Movie Night, New Year Gathering etc. I would like to thank you for making all these events a great success. I am particularly delighted with the success of the "General Insurance Workshop: FCR & Loss Reserving" held in November 2014. ASM co-organized this workshop in collaboration with Casualty Actuarial Society (US), with sponsorship from the Actuaries Institute (Australia). This workshop was dedicated to address in-depth the specific areas of FCR and Loss Reserving in the context of the Malaysian General Insurance industry, and we have obtained very positive feedback. We hope to make this technical workshop a yearly event to address different technical issues in general insurance using a more in-depth approach, supporting our young general insurance professionals. I would also like to take this opportunity to thank BNM for agreeing to our request to hold this event at BNM's Sasana Kijang.

ASM also organized an "Ice bucket challenge" in conjunction with the annual dinner to raise funds for the National Cancer Society Malaysia, a charitable body established in 1966 to provide education, care and support services to people affected by cancer. It is my personal belief that while ASM primarily dedicates its services to its members, it also has social responsibilities. The amount raised was not a big sum but I hope this can be the first step towards a more active role in social responsibility in the future. I personally think actuaries are fortunate people with stable jobs and relatively good salary and we should care for the less fortunate people around us. Other than raising funds, we also hope that this activity has helped to spread the importance of health to our members. I would like to thank Wan Saiful, Loke Chang Yueh, Liew Pek Hin, Patrick Cheah, Raymond Lai, Charlene Lee, Ching Ing Chian for being sporting enough to take part in this challenge. Perhaps in 2015 we should try "Fire Bucket Challenge" : )

Lastly, I would like to thank my Council for their services to ASM in 2014 and wish the new Council under Wan Saiful's leadership all the best in bringing ASM to scale even greater heights.

## OUT & ABOUT

### Updates from the last quarter...

- The Health Ministry will discuss with relevant parties including insurance agents, private hospitals, MCOs and BNM to address the high medical charges on patients using insurance cards as opposed to those paying in cash. While the professional fees are capped in accordance with Schedule 13 of the Private Healthcare Facilities and Services Regulation 2006, other charges and fees, like accommodation, nursing procedures, equipment, lab tests and medicines, are not regulated by the ministry.
- PIAM has appointed Mark Lim Kian Wei as its new CEO. Mark was the Executive Director of Singapore General Insurance Association from 2006-2013.
- Namlifa believes that GST will have negative impact on the growth of life insurance and family takaful businesses and appeals to the government to exempt the premiums of PA and medical riders from GST.
- LIAM welcomes the increase in tax relief for treatment of serious diseases but hopes that the current tax relief for medical and education insurance can be increased from RM3,000 to RM6,000.
- STMB has provided a RM50,000 bursary scheme to UiTM degree and diploma holders in actuarial science to sit for the professional exams
- PIAM expects the gross written premium this year to grow 6-7%, mainly driven by M&H, Liabilities, PA and Fire. The accident rate in Malaysia is close to 40% higher than the world average and 4-7 times higher than developed countries. The world average rate is 18 per 100,000 population.
- MII believes that the motor claims experience will improve with the introduction of GST. The total cost of claims will come down because the workshop can seek reimbursement on the input tax.
- Sun Life Takaful signed a strategic bancassurance agreement with Bank Rakyat to develop the direct marketing and telemarketing channel.
- Singaporeans will be able to buy certain types of life insurance products directly from insurance companies next year without paying any commission. MAS has specified the following types of insurance products to be made available for direct purchase: 1) Term Life with TPD cover (5 years renewable, 20-year term, term expiring at age 65); 2) Whole Life (premium ceases at ages 70 and 85); 3) Optional CI rider.



## *Year 2014 reflection*

The year 2014 has been an eventful year. We would like to take this opportunity to reflect back on the incidents that shook country and world as we know.

### *The missing flight of MH 370*



### *The crash of MH 17 in Ukraine*



*The crash of flight QZ 8501*



*One of the worst flood in history for Malaysia's East Coast*





## global lookout

### R1C1 – Excel Musings

#### Defined names

By Dan Mayoh, dan@fintega.com

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<http://www.actuaries.asn.au/Library/AA/2014/Actuaries194OCT2014.pdf>

Welcome to another edition of R1C1 – Excel Musings! The previous edition on array formulas was well received judging by the responses I received to the included Excel challenge. I hope this edition is equally to your liking. The topic this time is Defined Names. Also known (with varying degrees of accuracy) as Range Names, Named Ranges and Named Formulas, Defined Names in Excel can be a very powerful tool for adding convenience and functionality to our workbooks. After giving a quick introduction, I'll be discussing some of the more advanced things we can do with them that I find interesting.

#### The Quick Introduction

I would expect that most people reading this have come across them before. Since Excel 2007, the Formulas tab on the ribbon has included a section called Defined Names and a tool called the Name Manager. At their simplest, a name can be given to a specific cell address, e.g. cell \$C\$3 on Sheet1 could be named TaxRate, which then enables us to use the syntax TaxRate in other formulas whenever we want to refer to cell \$C\$3 of Sheet1. It is this simple and common use, of providing a name to a cell address (also known as a range) that leads many people to call the Defined Names feature 'Range

Names' or 'Named Ranges'. However, if after assigning this name we open up the Name Manager and click on TaxRate, what we see down the bottom in the 'Refers to:' box is =Sheet1!\$C\$3. This looks just like something we might enter for a cell in the formula bar! And that's because it is in fact a formula.

#### Defined Names are in fact named formulas

This is a very important conceptual leap the first time we become aware of it. Any formula that can be entered into a cell can also be entered as the definition of a defined name. A reference then made to that name by another formula (either from a workbook cell, or indeed another defined name) will then return the result evaluated by the formula that is our first defined name. For example, we could define a new name called DiceRoll and assign it the formula =RANDBETWEEN(1,6) (well, provided we are using Excel 2007 or later, as the RANDBETWEEN function was only introduced with Excel 2007). We can then type =DiceRoll in a cell in our workbook, and have a random whole number between 1 and 6 returned. We could define a second name, SumTwoDice, and assign it the formula =DiceRoll+DiceRoll. Referring

to SumTwoDice in a cell will then simulate the sum of two dice. In fact any formula that can be put in a cell can be put in a defined name.

### **Why oh why is this at all useful?**

Let me start my answer to this by saying that, like most of the more advanced features in Excel, there is a time and a place for using them, and a time and a place for avoiding them. I started my career as a spreadsheet model auditor, and from an auditor's point of view it is generally preferable to keep defined names to a very low level of complexity, such as simple direct references to single cells and not much more. This is because auditors need to review every formula in a model, and having complex formulas embedded in a workbook's defined names rather than in standard cells makes them harder to access and harder to review. For the developer, such complex formulas are also harder to create with the correct syntax since the auto-prompting by Excel that occurs when entering formulas in cells does not occur when entering formulas as defined names. There are several other commonly held opinions on the cons of complex defined names which I won't list here, but are worth being aware of.

There are, however, some distinct advantages to embedding certain complex formulas within defined names rather than cells. One such advantage is that it can in certain circumstances save on workbook space through avoiding the need for 'helper cells'. This isn't normally a concern in financial modelling, but can be quite useful when Excel is being used to develop a spreadsheet that behaves like an application with one specific stable purpose rather than a cash flow model with multiple variable assumptions. Less helper cells through the use of defined names can mean a neater presentation, a more secure model and in some circumstances a materially faster calculation speed. The second and larger advantage though is that named formulas automatically behave as array formulas (and they do so without the need for using Ctrl+Shift+Enter). This sentence might not mean much on first reading, but it opens up a plethora of new possibilities for things we can do. One aspect of array formulas that I did not go into in the last edition is that multi-cell array formulas can be of variable size. For example (here's one for the life insurance folks), let's say your spreadsheet asks you to enter your age-last-birthday as a user-variable assumption (call this age 'n'), and you have a calculation that relies on the array {1,2,3,...,n}. Let's also assume that the calculation is complex enough to need helper cells, and so we can't do the entire calculation in one cell. Entering the variable sized array {1,2,3,...,n} into cells in a flexible way that caters for changes to n is not something that can be done neatly, as we have to fix in advance how many cells we enter the array into. Too few, and it doesn't go all the way to n. Too many, and we received #N/A results in the extra cells. But if we enter this array as a defined name, it will automatically size itself to the correct size whenever it is used.

For example, let's define the name increment and give it the formula =ROW(OFFSET(Sheet1!\$A\$1,,n)). Increment is now a variable sized array that returns the numbers {1,2,3,...,n}, auto-sized to n elements regardless of the value of n. We can call increment in other formulas. Let's say n = 10. If we type =COUNT(increment) in a cell, it returns 10. If we type =SUM(increment) in a cell, it returns 55 - useful if we ever forget that the sum of 1 to n is  $(n)*(n+1)/2$ . If we type using Ctrl+Shift+Enter =SUM(increment^2) in a cell, it returns 385, which is the sum of the first 10 square numbers. And if our assumption for n is changed from 10 to 20, this sum of squares result auto updates to 2870. If we want to avoid having to use Ctrl+Shift+Enter to get the sum of the first n squares, we can define a new name such as SumSquaresN and assign it the formula =SUM(increment^2). Now we can type =SumSquaresN into a cell without the need for Ctrl+Shift+Enter, making use of the fact that named formula automatically

calculate as array formulas. And putting my auditor hat back on again, if for some reason I was auditing a calculation that relied on summing the squares from 1 to n, I would probably find this setup easier to review than the formula  $=n*(n+1)*(2n+1)/6$ , because I can see what it is the formula is actually intending to achieve.

### **Okay, I'm starting to see some uses. What else?**

Aside from assisting in calculations that involve a single cell result and a variable-sized array in the interim steps, two other beneficial uses of the array nature of named formulas are (i) dynamic drop down lists, and (ii) charts that need a variable maximum value on the x-axis. Both of these features take advantage of the fact that arrays as defined names auto-size to a variable number of elements. Dynamic drop down lists are when the data-validation options given for a cell change depend on the value in some precedent cell, and I won't explain them here. Let's talk about the charts. A chart with a variable x-axis can be useful in many situations. For example, if we want to chart the forecast balance of a debt facility over time, or the split between interest and principal payments each month of a standard mortgage over time, and need to model this where the duration of the loan is variable. The key is to make the x-axis of the chart refer to a defined name that returns a variable array. Achieving this is tricky to stumble upon if you don't know how, but fairly straight-forward to implement once you've been shown. The following page includes some advice on doing this. Using named formulas in this way to make dynamically sized charts can be extremely useful in improving the presentation and flexibility of our models.

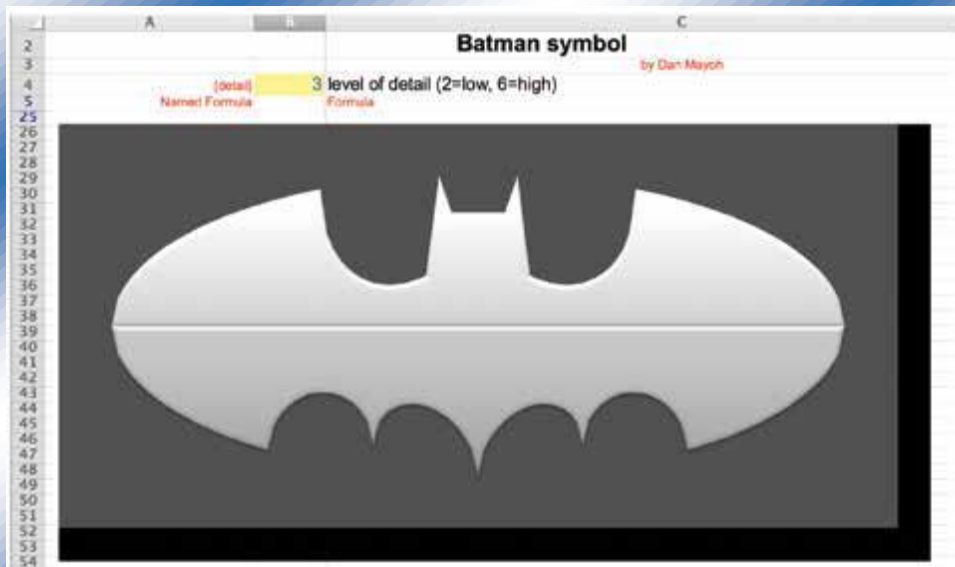
### **An old challenge and a new challenge**

There was a great response to the array formula challenge, with 26 people submitting entries. The most elegant solution provided was `=MATCH(MAX(MMULT(data,TRANSPOSE(COLUMN(data)^0))),MMULT(data,TRANSPOSE(COLUMN(data)^0)),0)`. This was submitted by eight different people. The winner of the book prize was Corey Plover. For a detailed write up of the challenge, see my summary at <http://bit.ly/1obLuVg>. We have another challenge this issue, with a \$50 Dymocks e-voucher sponsored by the Institute to be awarded to the best entry. This is a named formula / chart building challenge with quite a wide scope for creativity. The task is to prepare a chart using named formulas for the data, rather than worksheet cell references. Try and keep worksheet cells used to no more than setting assumption variables, and do all calculations in named formulas. The chart can be about anything you like – be it work related such as a loan profile chart, or leisure related such as a chart of the Batman logo. A zip file containing these exact two examples, along with some tips on constructing these charts, can be downloaded at <http://bit.ly/1twN0mU>. For the mathematically inclined, try charting Lissajous figures this way. Send me your submissions by email by 4 November, and I will judge a winner.

### **A final note, for fun and learning**

Some pretty amazing things can be done in Excel with defined names and charts when the software is pushed. For an extreme example, check out 'Dancing Pendulums' by fellow Excel guru Ian 'Hui' Huitson, based in Perth. Open up the Name Manager and see what can be done with defined names! You can download it at <http://chandoo.org/wp/2011/07/06/3d-dancing-pendulums/>

Chart approximating the Batman logo in Excel, using defined names as the chart source data



### Tips for making charts in Excel that refer to defined names – By Dan Mayoh.

Here, I will walk you through how to make a chart approximating the ABC logo in Excel, using defined names as the chart source data. For this particular chart, we will use an XY-scatter plot as the chart type. Ultimately before we can create the chart, we need to set up two defined names – one which will generate our series of x-axis points and one which will generate our series of y-axis points.

The ABC logo can be approximated as a parametric curve with the functions:

$$X = \sin(t)$$

$$Y = \cos(3t)$$

For  $t$  covering the range from 0 to 360 degrees, or 0 to  $2\pi$  radians. Since Excel works in radians, it will be useful to make use of the `=PI()` function in Excel to generate this range.

We'll plot 360 data points, which will be enough to give us a smooth looking curve. The first step is therefore to generate an array that returns the numbers {1, 2, 3, ..., 359, 360}. Let's call this 'increment'.

An easy way to achieve this is to define a name 'increment' with the formula `=ROW(OFFSET(Sheet1!$A$1,,,360))`

What's happening here is the OFFSET function is returning a range of cells beginning at `$A$1`, that is 1 column wide and 360 rows tall. i.e. it is returning the cells `$A$1:$A$360`. Putting the ROW function around this returns an array of 360 elements, with each element corresponding to a row number in the cells `$A$1:$A$360`. i.e. the ROW function is returning the array {1,2,3,...,360}. It can happily live in Excel's memory as a defined name without us needing to enter it into 360 worksheet cells.

Next, we need to convert each value of 'increment' from a number of degrees to a number of radians.

We'll do this by defining a new name 't' and giving it the formula

=increment/360\*2\*PI()

't' is still an array of 360 elements, but now ranges from 0 to ~6.28. We then define names for X and Y as follows:

X = SIN(t)

Y = COS(3\*t)

Now, save your workbook as 'ABC.xlsx'.

(You can save it as whatever you like, but for this example, we'll call it ABC.xlsx, and we'll need to know this later.) All that's left is to insert a XY-scatter plot chart that refers to the names X and Y for the source data.

Go to the 'Insert' tab, the Chart grouping, select a Scatter (X, Y) chart, and pick one of the chart types. If need be, fill in some dummy cells with dummy data and select those cells before inserting the chart, just in case Excel is being picky about inserting a chart when no data is selected.

Once the chart is on the worksheet, click on the chart area (if it is blank) or click on the current chart scatter points (if the chart is not blank) and type this into the formula bar:

```
=SERIES("ABC Logo",ABC.xlsx!x,ABC.  
xlsx!y,1)
```

Alternatively, if our sheet is named 'Sheet1' we could also type this into the formula bar:

```
=SERIES("ABC Logo",sheet1!x,sheet1!y,1)
```

At which point, after hitting Enter, Excel will change what we typed to the version that uses the workbook name rather than the worksheet name.

The important point is that when entering a defined name as part of the source data for a chart, we cannot type only the name (in this case, only 'x' or only 'y'). Rather, we must type either the workbook name, followed by an exclamation mark, followed by the defined name, OR we must type a worksheet name, followed by an exclamation mark, followed by the defined name. And if our workbook name or worksheet name have spaces or other special characters in them, we will also need to put apostrophes around the workbook/worksheet name, just like what would appear in a normal off-sheet formula reference.

Remembering this is the trickiest part of the entire process. If you remember to always include the worksheet name or workbook name in front of the defined name, then you should be able to adapt this walk-through guide to your own charts with ease.

The other thing we are taking advantage of here is that we can directly edit the components of a chart in the formula bar by editing the SERIES function, rather than by right-clicking the chart, selecting 'Select Data' and then editing it through the interface that pops up.

In this instance, the SERIES function is made up of four arguments, and they are:

i) The series title (doubles as the chart title in this case)



ii) The x-axis data points

iii) The y-axis data points

iv) The number of the series that this set of data corresponds to. For charts with multiple data series included in the one chart, this final argument will increment from 1, to 2, to 3 and so on for each data series.



## global lookout

### Improving Your

### Public Speaking Skills

By Ruby Huang, [ruby.a.huang@au.pwc.com](mailto:ruby.a.huang@au.pwc.com)

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<http://www.actuaries.asn.au/Library/AA/2014/Actuaries194OCT2014.pdf>

Public speaking, in the eyes of many young actuaries, is on the 'to-improve' list and requires both ongoing effort and practice to develop. The need to stand in front of a big crowd also does not make it any easier. However, as the actuarial profession evolves over time, the demand for this soft skill is increasing. To provide members with a good forum to learn and to get inspired to practise this skill, Melbourne YAP invited Barry Rafe, the former President of the Actuaries Institute, to give a presentation on Monday 28 July. The presentation highlighted how to make good public speeches. Barry has rich experience in delivering effective public speaking and has had years of experience as a stand-up comedian, the ultimate test to the skills of public speaking and performing. Barry stepped onto the stand-up comedy stage as a challenge he set for himself to help conquer his fear of public speaking. This fear resonates with many young actuaries who are not long out of university and find it uncomfortable speaking in front of a large crowd of people. Knowing that Barry shared the same experience and has now progressed to become such a successful public speaker was therefore very inspiring for many to hear. As well as being inspirational, Barry's speech was extremely practical for young actuaries. Tips we heard from Barry throughout the night included:

#### **Before your speech**

- practise without slides and notes – doing this removes your safety net but at the same time allows you to talk more naturally and to have more eye contact with your audience;
- do not memorise sentences – instead, memorise the structure and key messages that fall under that. This aids the flow of your speech without hindering your delivery of messages;
- dress appropriately – never under-dress. First impression counts; and
- be prepared – allow sufficient time before the presentation to familiarise yourself with the environment and sound check the equipment – preparation and checking of all operational matters gives you peace of mind and therefore increases your focus during the delivery of your speech.

#### **During your speech**

- get in front of the lectern – be the centre of the stage and have people's full attention;

- do not overload the audience with information – allow time for the audience to digest information during your speech;

- entertain the audience – people are only drawn to your speech if they are interested or curious, so take the audience through a lens that makes the matter interesting whilst you highlight the key take-aways;

- use humour smartly – do not attack your audience and avoid politically sensitive topics; and

- lead the audience with your body language – do not give conflicting messages between your verbal and body languages.

### **Ongoing development**

- always ask for feedback – focus on the constructive feedback and improve on those areas;

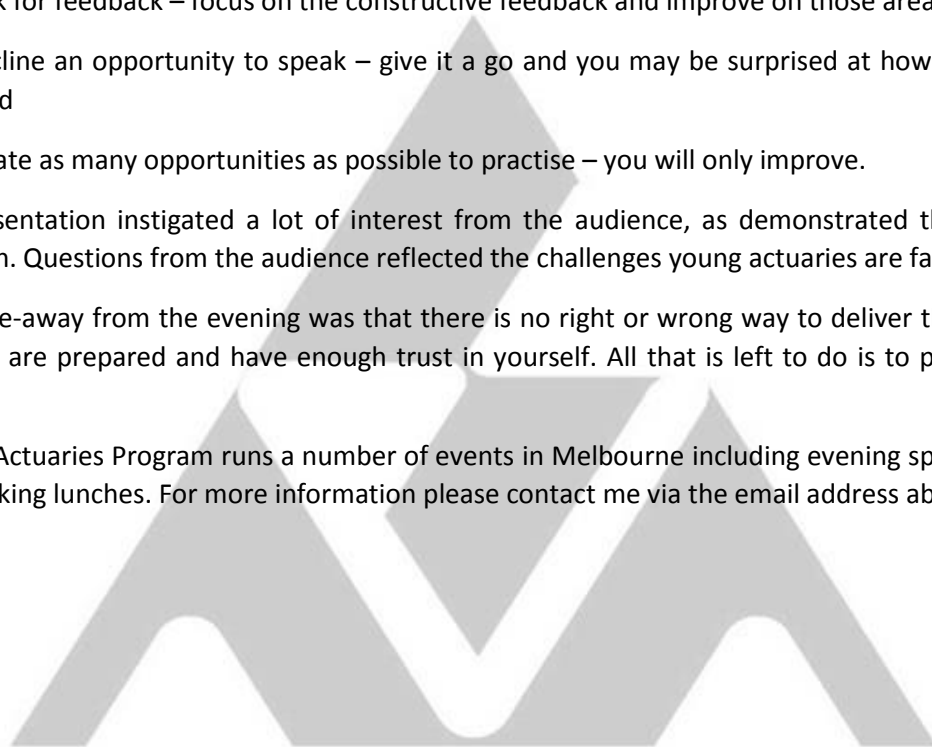
- never decline an opportunity to speak – give it a go and you may be surprised at how much you get out of it; and

- take / create as many opportunities as possible to practise – you will only improve.

Barry's presentation instigated a lot of interest from the audience, as demonstrated throughout the Q&A session. Questions from the audience reflected the challenges young actuaries are facing.

The key take-away from the evening was that there is no right or wrong way to deliver the message so long as you are prepared and have enough trust in yourself. All that is left to do is to perform on the stage!

The Young Actuaries Program runs a number of events in Melbourne including evening speaker sessions and networking lunches. For more information please contact me via the email address above.



## Recent & upcoming events

### Past Events

April 1, 2014	ASM Talk with Gen Re
April 4, 2014	Introduction to R with Application to Claim Reserving
April 28-29, 2014	4 <sup>th</sup> General Insurance &Takaful Actuarial Seminar
May 17, 2014	ASM-MLRe Badminton
May 22, 2014	ASM Talk with Milliman
	Professional Skill Course 2014
June 27, 2014	ASM Movie Night 2014
August 13, 2014	IFRS 4 Phase 2 for Insurers
October 2, 2014	ASM Half Day Seminar
	ASM Annual Dinner 2014
November 3, 2014	General Insurance: FCR & Loss Reserving Workshop
November 19, 2014	Life Insurance & Family Takaful Seminar 2014

### Upcoming Events

February 16, 2014	ASM Annual General Meeting 2015
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## ASM talk with Gen RE

By Chong Sher Ryn



1<sup>st</sup> April 2014 - Actuaries gathered at Bronx V Room of Berjaya Times Square Hotel, Kuala Lumpur for yet another ASM Talk. Chong Sher Ryn, our Ordinary Member of ASM, reports. Special thanks to Peh Meng Kien for contribution of pictures this event.

1<sup>st</sup> April 2014. No, it is not just any other weekday nor it is just April Fool's Day. Today would be another day that ASM presents to us the ASM Talk which is held at Berjaya Times Square Hotel, Kuala Lumpur. We were privileged to have three notable representatives from Gen Re to cover wide range of topics under the broad headings of actuarial profession.



The first session that afternoon was about “Changing Consumer Behavior”, by Dr. Wolfgang Droste, the Chief Executive Asia-Pacific Life/Health based in Hong Kong. Given the ever-changing environment, there is a fundamental shift in consumer behavior and expectations. Dr. Wolfgang Droste discussed about the variations in consumer attitudes and behaviours driven by the diverse demographic, economic, competitive and regulatory environments. The emergence of new technology has implications on how insurers interact with consumers. However, most of the consumers have a continued preference for more conventional channels to complete the purchase, i.e. including agent/brokers, because of the need of expert assistance given the complexity of the products. Nevertheless, customers would prefer products which are transparent and simpler, so that it would be easier for them to make informed choices. This includes important information about the product such as the Pre-Exclusion Clauses (PEC) and Partial PEC. The increasing use of internet would



also make it easier for customers to compare prices, but it does not necessarily mean that the existing channels have become obsolete.



The following agenda of the day resumed after a ten-minute coffee break. The second topic of the day was “Underwriting and Claims for Health Insurance” by Irene Ng, Asia Regional Chief Underwriter and

Head of Claims for Gen Re Life/Health based in Singapore. Irene explained the main drivers for growth of healthcare which includes the rise of population growth, per capita consumption, and medical inflation. The underwriting considerations include ethnology and physiology of disease, financial risk, concentration risk, moral hazard, and occupational risk. All in all, to wrap it up, she remarked, growth in health expenditure outstrip the growth in GDP, with demographic change accounts for 19% of the growth. On that note, tax increases



will be unavoidable to maintain any existing public system and hence, government has the incentive to encourage private contribution to healthcare financing as well as there is an increase in demand for private (pre-funded) cover. Under these circumstances then, how can we position ourselves in this demand? Can we take opportunity and effectively manage our risks?

The last topic of the day was “Life Products for HIV+” by Mr. Frank McInerney, General Manager of Life/Health of Gen Re Singapore with responsibility for South East Asia and India. He firstly introduced the development of HIV Pandemic on a global perspective, as well as in South Africa and also explained

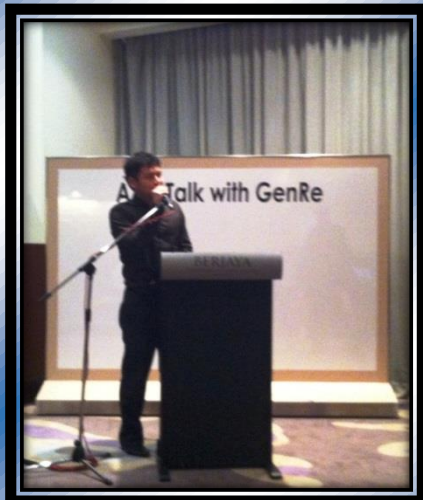


on the impact of pandemic in Malaysia. Next we were further exposed to the impact of retroviral... (For the next few minutes, I would say, we were overwhelmed with the images of genes and cells presented before us. Thanks for the useful information and effort in helping us to understand further, Mr. Frank..) Mr. Frank also led his session on the demand for life insurance policies for HIV positive consumers based on consumer demand and government pressure, with a few descriptions of the life insurance policies for those living with HIV and other chronic conditions.

The ASM Talk adjourned at around 5.30 p.m., and as a small token of appreciation, Encik Wan Saiful, on behalf of ASM, extended souvenirs to all three presenters of the day. Looking back, it is clear that the ASM Talk by GenRe demonstrated opportunity for fellow actuaries to understanding and discuss further on common

issues, solving problems and sharing ways to approach some of the challenges we all face in our day-to-day work.

Psst... Oh yes, did I mentioned anything about penalty of RM20 for those who registered but did not turn up for the event?



## 4<sup>th</sup> general insurance & Takaful actuarial seminar

Intercontinental Hotel Kuala Lumpur is the venue. 28<sup>th</sup> till 29<sup>th</sup> April 2014 is the date. Changing Landscape is the theme. This is the ASM 4<sup>th</sup> General Insurance & Takaful Seminar. As the theme mentioned, "Changing Landscape" shows the moving changes to the industry especially general insurance.

Right after it was kicked start by ASM President Elect, Mr. Wan Saiful in the morning, we have Mr. Yoon Yew Khuen who presented his speech on the supervisory expectation (namely our regulator) for the general insurance and takaful operators as a whole.

How do we manage our medical products? This may seemed as one of the main challenges for many companies. In his presentation, Managing Medical Insurance Portfolio: Pricing and Beyond, Mr. Pang Chye of Milliman touched on the key concepts under portfolio management control cycle. This is important in managing the medical portfolio so that not only companies may benefit from a controlled medical movement but also the consumers. It was interesting in the sense that we were able to see comparison of how Malaysia is doing as compared to other peer nations in Asia.

Next, we have Mr. Jeff Yeung who presented on Best's Credit Rating Methodology and Actuaries' Involvement in Rating Process. Mr. Jeff Yeung himself is the Associate Director of Analytics at A.M. Best Asia-Pacific Ltd. He shared with us on the conceptual work that actuaries may perform in credit rating.

There were 2 lady speakers from Barnett Waddingham, UK; Miss Cherry Chan and Miss Emma Abraham, who presented on Motor: The UK Experience. Motor: The UK Experience tells us on UK being an example of a de-tariffed market. The presentation went through some chronology background on how UK's motor market began and came to be as of now. It was interesting from the perspective of the ones listening where we try to relate UK and us if there are any similarity in the experience and environment in our own monologue.

Right after lunch which was sponsored by Milliman, we had Mr. Roberto Malattia of Towers Watson who presented on The Actuaries in a De-tariffed Market. He went through with the audience on how to utilise or make predictive modelling into practise. Here he showed to us on each stages in making a predictive model and that the right modelling tool is critical. It's most interesting to hear that actuaries are in raising demand in the de-tariffed market.

Mr. Jeremy Wall, the Group Managing Director of JPWALL gave his talk on his Confession of a General Insurance Actuary. This was immediately followed by Mr. Jim Qin of Tokio Marine Asia on his presentation of Findings of the Diversification Benefit Working Party. Here, he presented to the audience on what is diversification, how diversification can work, theories and fundamental on different distributions, and scenario analysis.

Actuarial Partners' delegate Miss Nurul Syuhada Nurazmi presented on General Takaful: Recent and Future Developments. She shared to the audience a lot of data and statistics of general insurance and takaful in Malaysia. Also shared was the regulatory guidelines chronology and the background of de-tariffing in Malaysia.

Mr. Tung Chee Lim of HSBC Amanah Takaful (Malaysia) presented his talk on the Realignment of General Takaful Practices in Malaysia. In his presentation, his core items were on profit measurement – measuring profit based on takaful models in general takaful, retakaful arrangement structure – where he doesn't foresee any major enhancements here, contract wording – the need to not rely on CTRL+F conventional contracts and change to takaful terminologies only, and no-claim contribution refund for PA products.

Day 2 started off with Dr. Mark Chia's presentation on "The conceptualisation and implementation of data management, advanced analytics and business intelligence in an organization ". In his presentation, we came to realize the need and usage of technology in our day-to-day activities and business. Also our role to foresee on what are our needs in order to work effectively and seamlessly through the right tools and data management.

Up next, Mr. Gary Hoo presented his topic on "Preparing for the Motor De-tariff". He took the audience through step by step approaches from the actuarial aspect. He started off from data preparations to analysis to regression to impact analysis and implementation.

The topic of "Usage-based auto insurance (UBI)" was presented by Mr. William Liang of Ernst & Young. Next up and the final presentation for the 4<sup>th</sup> ASM GI and Takaful Seminar was by Miss Chin Yuen Leng and Miss Tan May Lin of NMG Consulting where they share on the topic of "Future Vision: Post-detariffication".

The 4<sup>th</sup> General Insurance and Takaful ended with the closing speech from ASM Vice President, Mr. Kelvin Hii where all participants pursued for their lunch after that.



## ASM talk with milliman

By Michelle Cheang

As the implementation date for Solvency 2 edges closer, we are slowly feeling the effect of Solvency 2 in the Insurance and Takaful industry in Malaysia. Some companies have started to use the standard formula to calculate its S2 capital requirements, and comparing it against the current RBC and RBCT framework, or even the RBC2 framework that is newly implemented in our neighbouring country Singapore.



It was a great honour to have 3 different speakers from different backgrounds to bring us to the world of Solvency II on 22nd of May, 2014. We have Sam Morgan, Wing Wong, and Pang-Hsiang Chye, each bringing us a different taste of Solvency II. First up is Sam, who started off by giving us an overall view on calculating a company's own internal capital requirement based on S2 basis. This is different from the standard formula as the internal capital requirement is based on individual company's risk appetite, risk identification, and risk factors based on its own experiences. Definitions of scenarios have to be realistic as well, be it from past crisis, or simulation of dreaded events. It was definitely an eye-opener for those who are unfamiliar with the Solvency II process to listen to how Solvency II differs from our current local framework in Malaysia.

Next up we have Wing Wong, who picked up where Sam left off and introduced us to innovative techniques for enhancing the ORSA (Own Risk Solvency Assessment) process. As we know, risk assessment is easier said than done. It can be very difficult to assess the company's own risk. We need to reflect our company's unique risk profile, think about modelling operational, reputational, and strategic risk, and at the very end, how do we put all these risk together? Is linear correlation matrix and copula good enough? The weaknesses in conventional risk methods are also addressed from Mr Y by showing us different techniques using data analytics to help enhance the ORSA process and ending with an interesting case study!

Lastly we have Pang-Hsiang Chye, who talked to us about risk integration and the practicality of operational risk. As many companies do struggle to integrate everything together under one roof, it was fascinating to listen to Mr Z who discuss about the different risks and the possible approaches of capturing these risks together (silo or holistic anyone?)





# The asm professional skills course 2014

By Ng Yen Kuan

Pop Quiz ! Fill in the blanks!

The objective of the ASM Professional Code of Conduct is...

To uphold the \_\_\_\_\_ and \_\_\_\_\_ of the actuarial profession and to fulfil the profession's responsibility to the \_\_\_\_\_.

No, I won't tell you the answer, is time to revisit the ASM PCC.

The ASM Professional skills course 2014 presented by Charlene Lee was started with an interesting pop quiz. The training held on 22<sup>nd</sup> May in UTAR campus attempted to bring the audience through the thought process and lead the audience to use the right "tools" to enable appropriate decisions to be made when it is concern about professionalism.

The ASM proposed to define professionalism as "Skills relating to professional conduct, ethics, concern for the public's interest and professional obligations of actuaries." As the professionalism issues are never black and white, the understanding of actuaries' professional obligations is really crucial, and hence, the CPD hours. The training is recognized for 2 CPD hours of ASM professionalism and IFoA stage 3, 2.4 CPD hours for the SOA and 4 points for Actuaries Institute.

The content of presentation was based on content from the Institute & Faculty of Actuaries, UK. Charlene then talked about the 5 Core Areas in the Code of Conduct; *Integrity*, having High standards of conduct, uphold reputation & integrity of profession. *Competence and Care*, provide advice of high standard, must have personal competence or get guidance from a competent actuary. *Impartiality*, one must not let bias, influence of others, conflict of interests to affect judgement and/or ability to act in the best interests of the client. *Compliance*, members must comply to legal, regulatory and professional requirements. Challenge non-compliance by other members. Lastly, *Open Communication*, to include items in reports/recommendations necessary for effective communication.

The course was continued with interesting and open discussions on what makes one competent? How do we proof that we are competent? What is the difference between acting honestly and with integrity? The first word came to my mind on competency was *experience*, experience would make one competent, but there was one response from a participant enlighten myself, *attitude*. One not necessary need experience to do the right things, the first thing needed is the attitude to want to make thing rights!

The active discussion did not stop here, participants were invited to watch three short videos on difference scenarios an actuary need to use carefully demonstrating professionalism in their work. With each video watched, participant considered issues relating to professionalism, potential tensions and conflicts, what would the participants do if they were on the same position and what could the participants do differently.

The first video gave an example of potential conflict of interest and competency. Second video proof to the participants that confidentiality should never be scarified – don't ever gossip in the pantry. And the third video illustrated a scenario where an actuary standing between professionalism and reality – the boss's order, how impartial an Actuary? There were difference thought and opinion given by participants from the industry, again, professionalism is never black and white. Charlene added, there is no sample solution whenever there are potential issues on professionalism, one can either use the mom test, talking to your peer, boss, or making reference to the actuarial body when you unsure what is the best way to maintain the standard of your act.

The interactive course ended at 5pm on a rainy evening.

## ASM movie night 2014

A picture speaks a thousand words. What about several pictures? What about a movie? ASM Movie Night 2014 presents to ASM members the movie: Transformers – Age of Extinction starring the very hot robot from Cybertron – Optimus Prime. It started off with a dinner prepared by ASM and followed by the movie; of course. No phones, no photos, no video recording during cinema.



# IFRS 4 phase 2 for insurer

By Michelle Cheang



It was a sunny morning on August 14<sup>th</sup> 2014 in GE training room, where many actuaries are gathered together for the insurance IFRS 4 Phase 2 seminar, whom our presenters kindly flew from HK to Malaysia the night before.

It started off with a brief history of IFRS and how it has evolved over time, including the parties and stakeholders in the standard-setting process. After that we looked at the current IFRS4 reporting with its current product classification and compare it against the new IFRS 4 Phase 2. Then we moved on to newly introduced items such as contract boundaries, discounting, and risk-adjustment (margin), contractual service margin, and other comprehensive income. Few illustrations and examples are given by the presenters to provide us a better understanding on the new items.

Many interesting new concepts were introduced that is not seen in the current IFRS 4 reporting structure. The current expected implementation date is 2018-2019, which is 3-4 years from now. Many companies have already voiced out concern that with the system changes needed to successfully implement, 3 years might not be enough. More runs and analyses are now needed to complete the Profit and Loss Statement. Some simplifications may be needed in our models in order to make this doable.

The big question that is burning in everyone's mind towards the end of the presentation is:

"Is our company ready for IFRS 4 phase 2 by 2018?"



# ASM Half Day Seminar

## ASM Annual Dinner 2014

By Zac Leong

A half-day seminar, following by the ASM 36<sup>th</sup> Annual Dinner was held on 2<sup>nd</sup> October 2014 at Le Meridien Kuala Lumpur. As usual, the event was open to both members and non-members. Attendants of the seminar will be granted CPD of 2.5 hours.

Patrick Cheah from RHB Bank kicked off the seminar with “Bancassurance – Creating Win-Win Partnership” around 3:30pm. He illustrated the core difference between banca and direct agency by comparing farmers and hunters. The necessity of banca channel to be more aggressive in hunting business is vital to have a Win-Win partnership with insurers. Quality of time is crucial for banca agents as they do not have much time with the customers as compared to direct agents.



The next speaker was Serena Thio from RGA Reinsurance. She shared her opinion on how powerful predictive modeling can be in underwriting insurance business. Underwriting process is very critical to close cases. Like what Patrick had presented, time is very crucial for



Coffee Break: Tempting fruits and fruit juices



banca channel to close case. Predictive modeling serves the purpose of predicting the possibility of event such as claims likelihood and fraudulent cases based on the criteria met by the potential customers. For instance, people with under management are

bigger asset less likely to be non-standard. Simplified underwriting for certain segments of customers can be achieved using predictive modeling, thus improving the business of insurers. Serena also pointed the potential of predictive modeling in reducing fraudulent claims.

After a short but refreshing coffee break at 5pm, Aiza Yasmin Benyamin from Actuarial Partners briefly explained the role of asset-liability management (ALM) in managing risk for insurers and takaful operators. The seminar ended at 5:30pm.

The annual dinner door gift this year was a multi-national travel adaptor. The dinner started at 7pm with the opening speech from the President of ASM, Mr. Yap Chee Keong, followed by the ASM presentation of FASM to our new qualified actuaries.

Of course, lucky draw is something that will be never missed in an annual dinner. The prizes vary from vouchers to electronic gadgets and mobile devices.

One exciting event would be the ASM ice bucket challenge. Nomination was carried out on ASM official website before the annual dinner and the top 3 nominees will carry out the challenge at the swimming pool! The 3 lucky people were Mr. Yap Chee Keong (our beloved ASM President), Mr. Loke Chang Yueh (Great Eastern) and Mr. Wan Saiful (Towers Watson).

The dinner ended around 11pm with joy and laughter.

*Ice Bucket Challenge at the pool!*



*Theme of pink and blue for breast cancer awareness!*

# ASM-CAS-IAAus General Insurance Workshop

By Kelvin Hii

The Actuarial Society of Malaysia (ASM) collaborated with the Casualty Actuarial Society (CAS) and the Institute of Actuaries of Australia (IAAus) to deliver a General Insurance Financial Condition Report and Loss Reserving Workshop in Kuala Lumpur on 3rd-4th November 2014. We were blessed to be able to hold the workshop at the beautiful Sasana Kijang, with its professional facilities.



The ASM's objective of partnering these international actuarial associations to

organize such an event is to provide quality training for the building up of local general insurance actuarial pool.



The General Insurance Workshop was quite timely, as the topics covered were (at that time) in anticipation of the issuance of a revised Financial Condition Report (FCR) guideline by Bank Negara Malaysia.

The Appointed Actuary guideline requires the preparation of the FCR, which is a new requirement for both the actuarial profession and companies in the general insurance and general takaful industry. This workshop covered a comprehensive range of topics under the FCR, based on the Australian requirements and on the underlying Solvency II philosophy, and explored how these can be applied to the Malaysia / Asia context. The workshop also covered the development methods, and discussed the more practical aspects of the loss reserving exercise.

The following article was written by Bob Conger, for the CAS Actuarial Review.

<http://www.casact.org/pubs/?fa=actuarialreview>

Ps: The ASM is currently in discussion with CAS to jointly organize yet another workshop for the benefits of its members. Please stay tuned!



# A “Muddy Confluence” of Appointed Actuaries

By Bob Conger

Recently, I had the opportunity to attend an excellent two-day workshop targeted to property-casualty appointed actuaries and their staff members. The CAS co-organized the workshop, and all three of the workshop presenters proudly carry CAS credentials. I had met only one of the presenters prior to connecting with them via the workshop. I gained some really useful knowledge, interesting perspectives and fresh insights from attending. The workshop attendees were quite engaged; I enjoyed hearing their questions and comments, and working with a dozen colleagues during the breakout session, as well as chatting with many other participants more informally during the breaks.

I know. Those elements don't sound like the ingredients of headline news; many other CAS seminars could be described similarly. But consider this: The workshop was conducted in Kuala Lumpur, capital city of Malaysia, half a world away from the vast majority of CAS members.

“Kuala Lumpur” literally means “muddy confluence” — thus the title of this article. Kuala Lumpur refers to the rivers that flow down from the inland areas. In the 1850s, rich sources of tin were discovered in the area. That tin, and the beautiful pewter of which the tin is a key ingredient, have been significant to the ascendancy of the city as a center of commerce.

So how and why did the CAS come to be involved in organizing and presenting a workshop in Malaysia in November 2014?

**Takaful** is an Islamic insurance concept that has been in use for more than a millennium. It has many similarities to a pure mutual or cooperative insurance company, with all participants paying their contributions into a pool that is used to assist the participants in need — the funds contributed to the pool are for the collective benefit of the participants rather than for profit. The structures, products, and other elements are designed carefully to respect Islamic constraints on commercial arrangements that might be viewed as including uncertainty, gambling or usury.

The roots of this workshop go back a year earlier, to the 2013 East Asia Actuarial Conference (EAAC) in neighboring Singapore. During that 2013 conference, senior CAS representatives leveraged the presence

### **Requirement Will Create Demand for Appointed Actuaries in Malaysia**

Starting 1 January 2017, all licensed general insurance companies and general *takaful* operators doing business in Malaysia must designate an in-house appointed actuary, i.e., an appointed actuary who is part of the company staff. This requirement will create a big gap between the demand and supply of general insurance actuaries; currently there are fewer than 20 qualified actuaries to meet the needs of 30 companies, and about half of those actuaries work in consultancies.

An appointed actuary's key responsibilities are to (1) certify insurance liabilities, (2) prepare financial condition reports, (3) provide recommendations on the appropriateness of surplus distributions, where relevant, and (4) apply reasonableness tests on the completeness and accuracy of the database used for responsibilities (1)-(3).

The appointed actuary has an essential role providing expert opinion directly to the company board of directors

of more than 500 actuaries from all over Asia to schedule a series of bilateral conversations with leaders from various actuarial organizations in the region, including the Actuarial Society of Malaysia (ASM). The ASM's leaders briefed us on the general insurance<sup>1</sup> actuarial marketplace in Malaysia (30 general insurance companies, including seven *takaful* operators, serving a population of 30 million people, but fewer than 20 credentialed actuaries focusing on general insurance). ASM's leaders also outlined some of the challenges of meeting the rapidly evolving actuarial educational needs of a small and young profession in a country where the insurance industry is in a state of significant development and evolution. We, in turn, described the CAS's appetite to work collaboratively with local organizations to deliver excellent education for general insurance actuaries around the globe. A seed of an idea was planted.

That seed took root and sprouted in the early months of 2014 under the leadership of Kelvin Hii, ASM vice president and leader of ASM's General Insurance Committee, who invited me to continue the EAAC conversations. A shared but not well-defined interest in educational collaboration came into clear focus when Bank Negara, the Malaysian regulatory authority, announced a new requirement for appointed actuaries: to issue an annual financial condition report on each general insurance company. The ASM and the CAS decided to join forces to produce a two-day workshop for Malaysia's general insurance actuaries, with a bit more than half of the workshop to be focused on financial condition reports and the remainder on loss reserving methods and considerations. The CAS agreed to identify, recruit, provide and support the speakers; ASM very skillfully managed all of the local marketing, budget and finance, site selection and management, logistics and on-site support. We also were pleased to welcome the Institute of Actuaries of Australia (IAAus) as a co-sponsor and to have the support of IAAus, particularly with respect to endorsing and marketing the event to its members through its significant communication channels.

Our solicitation for potential CAS speakers produced numerous enthusiastic volunteers with healthy diversity of backgrounds, experiences and job responsibilities. Ultimately, we selected a team

of three:

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<sup>1</sup> While "property-casualty" is the North American collective label for the insurance products that comprise the work of many CAS members, "general insurance" is the corresponding term in Malaysia and many other countries. The remainder of this article will refer to general insurance.



- Judy Ng, a 2013 FCAS working in Singapore, who had recently completed her journey through the CAS exams. With her active consulting work for a variety of insurers, she was an excellent choice to lead the basic loss reserving sessions.
- Herb Desson, a 1992 ACAS who has worked for several insurance companies in Thailand since relocating there in 2006, brought a depth of real-world experience to his sessions on the more subtle considerations that enter into the selection of loss reserving methods and the calibration of parameters.
- Daniel Tess, a 1997 FCAS and also a Fellow of IAAus, has lived and worked in Australia since 1998 and has extensive familiarity with implementing and delivering financial condition reports as defined in Australian regulation. He was very effective throughout the seminar in using that platform to illuminate key issues and suggest key areas of focus for appointed actuaries in the Malaysia market.

The loss reserving presentations in Malaysia also benefitted significantly from tapping the substantial CAS library of presentation materials used at past Casualty Loss Reserve Seminars. (Our thanks to CAS Director of Professional Education and Research Dave Core for great help in finding the materials we needed; and to the past CAS authors and presenters who created those materials.)

The 75 participants themselves contributed tremendously to the effectiveness and the success of the workshop. One of the highlights of the first day was a breakout session at the end of the day. The attendees were divided into groups and each group was assigned a question or issue to discuss. There was not a right or wrong answer, but rather a complex situation requiring thoughtful weighing of different ideas.

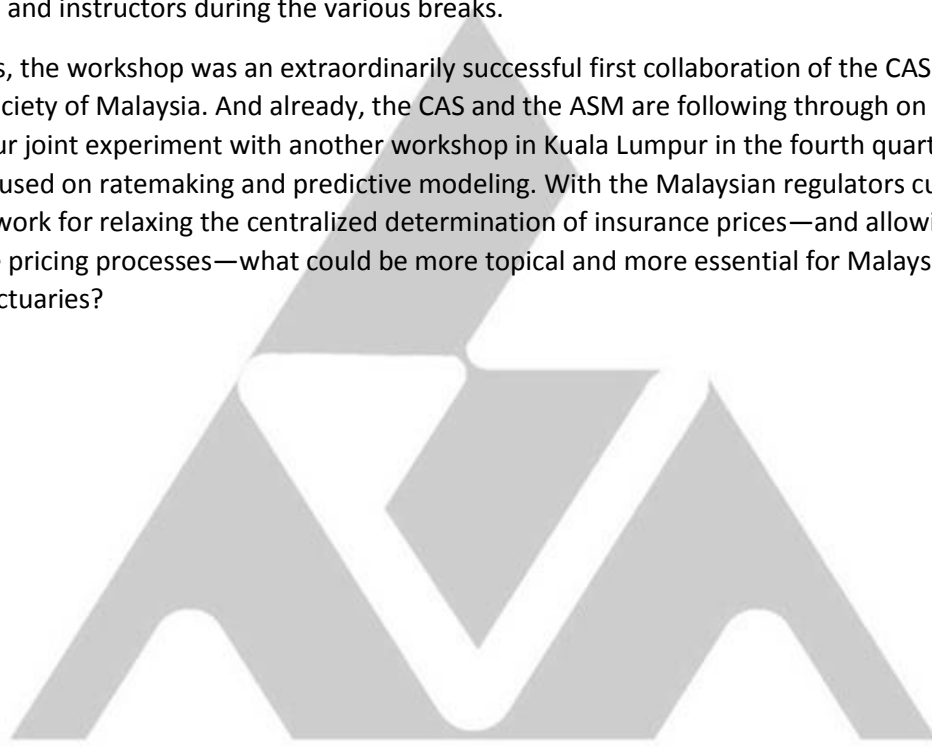
The team I was assigned to took on the following issue: “You are the loss reserving actuary for Malaysia Airline. How do you analyze the airline’s loss reserve requirements at the end of 2014?” This group decided to segregate the reserving analysis into two major elements. The first would deal with routine daily claims (minor injuries, damaged property and so forth), and would likely use typical forms of aggregated data and conventional actuarial methods to examine and extend patterns in that aggregated data. The second element would focus on catastrophic claims and likely would be customized to deal with the particulars of each catastrophe, the process and status of identifying and resolving all claims and obligations, and the knowledge of experts. This element would also contain detailed information about legal responsibilities and liability limits, insurance and reinsurance protection, and the involvement of other insurers in the various layers of exposure. Another theme of this discussion centered on communicating with experts in the business being analyzed. This communication is vital because it gives the actuarial analysis some context and shows that the analysis is not simply a mathematical process applied to abstract numbers.

Another one of the teams considered how an actuary might use generalized linear models (GLMs) for loss reserving. This group saw the potential of GLMs as predictive models to estimate ultimate losses from partially developed claims. For example, you may apply three dimensions in a traditional triangulation data: accident years, development years and financial year factors (e.g., inflation). However, you need to be careful of overparameterization. Because external factors may result in past trends being not relevant to future expected developments, caution is needed when using GLMs. With any projection model, it is important to understand the intricacies of the model and its

limitation, as opposed to using the model as a “black-box.” Data quality remains an important consideration, as bad data may produce results that are not credible.

I was very impressed with the grasp of key loss reserving concepts, as well as subtle issues, that came out in our group’s discussion. And I was equally impressed with the energy of the participants! During the second day, some of the liveliest discussions during the general sessions related to how the appointed actuary can clearly convey the key elements of the technical analysis, the nature and magnitude of uncertainty associated with future projections, and the most important business implications of the actuarial work and conclusions. These are communication challenges that I still face on almost every project! Equally energetic were the informal exchanges and networking among participants and instructors during the various breaks.

On all fronts, the workshop was an extraordinarily successful first collaboration of the CAS and the Actuarial Society of Malaysia. And already, the CAS and the ASM are following through on an intention to repeat our joint experiment with another workshop in Kuala Lumpur in the fourth quarter of 2015, this one focused on ratemaking and predictive modeling. With the Malaysian regulators currently laying the groundwork for relaxing the centralized determination of insurance prices—and allowing more competitive pricing processes—what could be more topical and more essential for Malaysia’s general insurance actuaries?



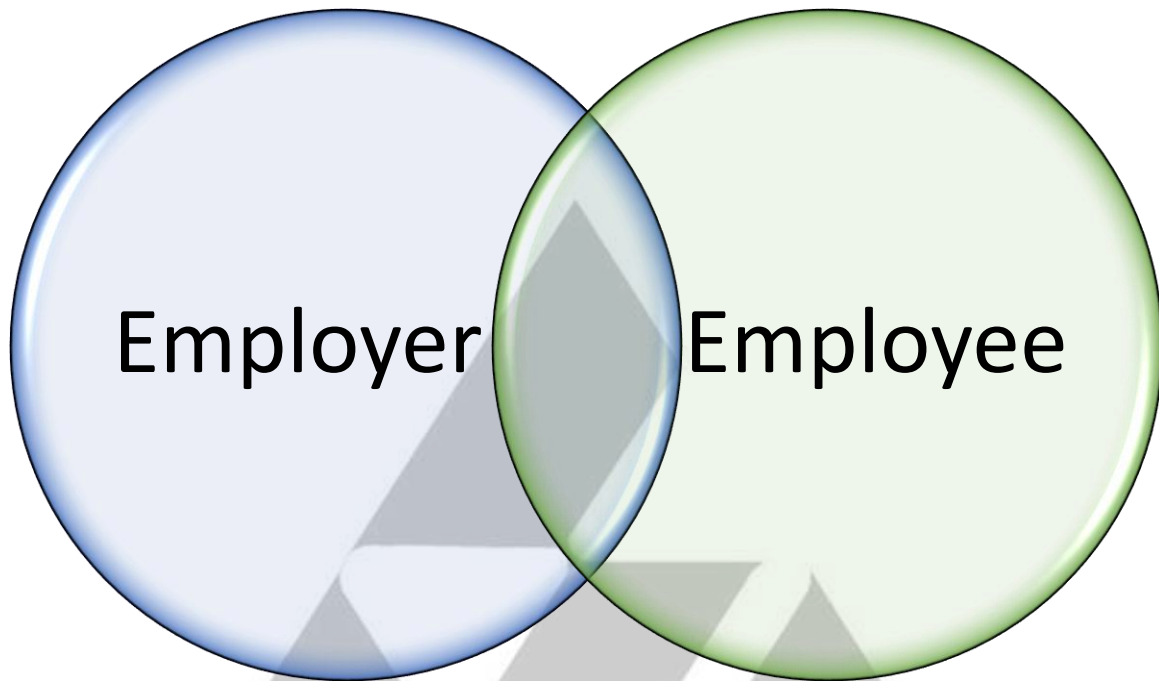
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*Just for fun*

Answer for the previous guesses...

3	10	13	24	6	56
16	17	18	8	1	60
7	4	20	19	25	75
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Just for fun

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