Heriot-Watt University November 2011 Issue

The Actuarial "Watt"?

EDITOR'S NOTE

We hope you enjoyed the previous issue of The actuarial "Watt"? and we have produced yet another one for this semester. As usual, the newsletter would feature some hard hitting articles as well as an entertainment section at the back. We would love to encourage you to attend events organised by SAS as it is very beneficial towards your careers and you can even have your pictures displayed here in the printed newsletter!

We have also issued the first ever e-newsletter via emails a few weeks ago. We hope that you find them interesting and helpful.

On the side note, we would like to apologise to Angelina Wong for not acknowledging her contributions in the previous newsletter. She co-wrote the article on "Introduction to Actuarial Science" with Jack Paton and we wish to convey our sincerest apology.

If you did not receive the email or wish to subscribe to the emails, please let us know. And if you have not gotten yourself a hardcopy of the first newsletter, you can request for the softcopy. Any suggestions? Just drop us an email at mcs4@hw.ac.uk

-Mei Chen, Soon-

IN LOVING MEMORY: PROF ROGER GRAY

BY NEIL K CHADA

(With special thanks to Dr Iain Currie)

For years Heriot-Watt has been a pioneering university in the fields of Mathematics and Statistics. Its actuarial mathematics and statistics programme was setup in 1972 and being the first one officially in the UK, it boasts of an excellence prestige!

Great departments make up a great university but what makes those great departments are the group of people who drive the university forward with both excellence in teaching and academic achievements. There is one person in particular that comes into mind, and that person is Professor Gray.

Professor Gray was born and raised in Scotland, and when his teenage years were almost over, he enrolled into the University of St Andrews where he started his degree in Mathematics. Upon finishing his degree, he immediately went on to a teaching career and joined Heriot-Watt almost directly after completing his degree at St Andrews. He enjoyed giving lectures and his students enjoyed attending them. His lectures were characterised by his rare ability to teach mathematics with such charm and enthusiasm, his passion for teaching and his passion for mathematics inspired many for almost 43 years. He had many ties with the actuarial profession and later on the "The Actuary "magazine. On many occasions he wrote articles for the magazine and as well was an examiner for statistical exams related to the profession itself.

Outside the office, Professor Gray had many interests such as music and art, and in particular classical music. His devotion to some famous composers such as Wagner led him travelling to various music festivals around the world where he would occasionally visit to admire the music pieces. He was also interested in travelling which got him to visit numerous destinations such as Vienna and Budapest, which surprisingly complemented his interest in classical music.

Professor Gray's tragic death came shockingly to the University's community earlier this year and he will be greatly missed by students and colleagues alike.

IMPACT OF THE CREDIT CRISIS ON INSURANCE COMPANIES

BY JAIMIN CHUDASAMA

The much talked about credit crisis is back again; this time we look at the impacts on insurance companies. Compared to the banking industry, insurance companies have fared better, but that's not to say they have led a prosperous few years of late.

The general idea is that insurance companies take money beforehand, and any payouts are based on claims. For example, a life insurance company is funded in advance, and there is no real incentive for a policyholder to terminate their contract. In fact, a contract termination would tend to be less worthwhile for the holder.

Unfortunately, it was inevitable that there would be a negative impact on insurers. During the crunch period till present, it would be difficult for companies to sell their services to prospective clients. With the majority unwilling to dig deep for high end policies such as life insurance and any other such, it is quite easy to see that the companies fell victim to this difficult period in time.

If we take a look at a few examples, the three most often reported events of the crisis for the insurance industry are the government bailout of the AIG, the write-downs at Swiss Re (due to reinsurance in credit portfolios), and the insolvency of Yamato Life Insurance (due to severe risk management failures in asset management). All three events have different characteristics and illustrate that insurers' balance sheets were affected by different aspects of the crisis.

Certain insurance companies were dealt with a bigger blow. If we take into consideration the European insurance companies; they have a tendency to invest more conservatively, so the severity on their books were comparatively less than on firms investing in stocks carrying higher risk.

Overall, this article briefly touches on the vast amount of problems caused by the crisis, within the insurance industry, however, it goes to show that no-one came out of this period unscathed!

THE FUTURE IN PENSIONS: AUTO-ENROLMENT

BY WAN FATIN HAMIMI AND BALQISH SYAHIRA SHAIR

From 1st October 2012 (subject to the employers own introduction date), all eligible workers will have to be auto-enrolled into a qualifying pension scheme. Auto-enrolment will mean workers being automatically enrolled into their employer's qualifying pension scheme without any active decision on their part.

At present, many workers fail to take up valuable pension benefits because they do not make an application to join their employer's scheme. Auto-enrolment is meant to overcome this.

Each qualifying scheme must meet minimum standards

- make a minimum 3% contribution towards a defined contribution scheme(benefits based on accrual rate, pensionable service and pensionable salary) or NEST (the National Employment Savings Trust); or
- offer membership of a defined benefit scheme or certain hybrid scheme which either has a contracting out statement or meets the test scheme standard.

Contributions

The minimum contribution for the auto-enrolment in a defined contribution (DC) or National Employment Savings Trust (NEST) is 8% of qualifying earnings. The employer must pay a minimum 3% from that and if they choose to pay the minimum of 3%, the employee will pay 4%, with a further 1% paid as tax relief by the government. The qualifying earnings is earning between £5,035 and £33,540.

However, these minimum contribution levels will be staged in between October 2012 and October 2017. This minimum increases gradually between 2012 and Oct 2017.

- October 2012 to September 2016 - total minimum of 2% of qualifying earnings with at least 1% from the employer.
- October 2016 to September 2017 - total minimum of 5% of qualifying earnings, with at least 2% from the employer.
- From October 2017, total minimum of 8% of qualifying earnings, with at least 3% from the employer.

Timing	Minimum total percentage that has to go into the pension pot
October 2012 to September 2016	**2%**
October 2016 to September 2017	**5%**
October 2017 onwards	**8%**

Pitfall in auto-enrolment

Of course there is a lot of heat being generated from this issue. One of them would be, salary sacrifice. Auto-enrolment into company pension schemes means staff would see their slice of the cake get significantly smaller. The problem is that auto-enrolment is predicted to encourage seven million more employees to join a company pension's arrangement. It means firms that have already given quite generous contributions to a low base of company pension-enrolled employees will suddenly find their costs for funding greater numbers arise dramatically. The only solution is for firms to cut the contributions they have given to the few in order to pay for the many.

Experts agree all organisations need to find ways to reduce the costs associated with auto-enrolment, and soon. One method is by salary sacrifice. Because an employee would give up their salary equivalent to their pension contribution and the employer would pay that contribution on their behalf, salary sacrifice could bring the cost of contributions, for the employer, down by as much as 22%. Another way of reducing the impact of the 3% contributions is to save for them over the next three years. Companies could save 1% per employee each year, and offer this as part of or instead of a pay rise. Employers could, for instance, offer each staff member a pay rise of 2%, but put 1% towards their pension contribution.

To get a better grasps on the issue, visit http://www.pensionsadvisoryservice.org.uk/future-pension-reforms/auto-enrolment. The website provides a clear introduction to the issue and it is pretty useful for those interested in the pensions' industry for a future career choice.

TREATING CONSUMERS FAIRLY (TCF)

BY SWEET YIN, CHUA

The significance of TCF imposed by the FSA (Financial Security Authority) has been an ever increasing major concern whether you are in the life or non life actuarial field. TCF focuses on consumer outcomes that underpin the delivery of the statutory consumer protection objective and times of market turbulence are when consumers need protection the most. It recognises that financial firms must not divert attention away from focusing on risks to the fair treatment of customers despite of the difficult economic and financial circumstances.

How?

TCF aims to tackles the unfair treatment of financial services customers from a principles rather than rules-based perspective. Having said this approach, senior management plays a vital onus in determining what TCF means to them.

The role of financial firms

Firms must be able to demonstrate that they are consistently delivering fair outcomes to consumers at every organisational level, and at every stage of the product lifecycle. This can be achieved by:

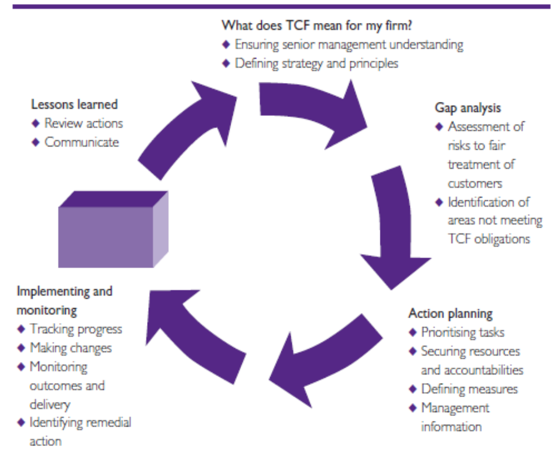
Demonstrating that senior management have instilled a culture within the firm whereby they understand what the fair treatment of customers means; where they expect their staff to achieve this at all times; and where firms promptly identify (a relatively small number of) errors, put things right and learn from them;

Appropriately and accurately measuring performance against all customer fairness issues materially relevant to their business, and be acting on the results;

Demonstrating through those measures that they are delivering fair outcomes; and

Having no serious failings – whether seen through management information (MI) or known to FSA directly – including in areas of particular regulatory interest FSA has previously publicized.

Figure 1 Control cycle approach



Source: FSA, 'Treating Customers Fairly – Building on Progress', July 2005

The control-cycle approach (Figure 1) demonstrates the progress from one ARROW (Advanced Risk Responsive Operating framework – FSA's risk-based regulation framework) visit to the next. As TCF has become an integral part of the FSA's risk-assessment process, firms are required to demonstrate that their customers' best interests are embedded in the business practices. The actuary, who may be one of the approved persons in the organisation, could expect to be interviewed during the ARROW visit on the insurer's TCF strategy and be held accountable for it.

Desired Consumer Outcomes (Objectives):

- Outcome 1 - Consumers can be confident that they are dealing with firms where the fair treatment of customers is central to the corporate culture
- Outcome 2 - Products and services marketed and sold in the retail market are designed to meet the needs of identified consumer groups and are targeted accordingly
- Outcome 3 - Consumers are provided with clear information and are kept appropriately informed before, during and after the point of sale
- Outcome 4 - Where customers receive advice, the advice is suitable and takes account of their circumstances
- Outcome 5 - Consumers are provided with products that perform as firms have led them to expect, and the associated service is both of an acceptable standard and as they have been led to expect
- Outcome 6 - Consumers do not face unreasonable post-sale barriers imposed by firms to change product, switch provider, submit a claim or make a complaint

Why should actuaries care about TCF?

Having said earlier, TCF have implications across a diverse business area from the internal governance, IT systems, and staff training to its staff behaviour and the culture of a firm. To implement this delivery, FSA has strongly encouraged all firms to employ the usage of product lifecycle framework by considering TCF implications for their product development.

Therefore, life actuaries in the product development are in the best position to ascertain the risks in the product structure and assess which product suits which group of customers the most, offering them the best protection and hence complying with TFC.

In the product-development commonly monitored by actuaries, 'Stress Testing' is carried out to model how the product performs in different situations and shocks. For example, these stress tests may indicate that a certain type of product is suitable for customers who are willing to bear the of risk losing part of their initial investment in a short term in order to seek better returns in the longer term.

An actuary also may get involved in assessing whether the policy conditions are unnecessarily complex and hence difficult for consumers to understand. In some cases, actuaries also have the responsibility to interpret the complicated policies into layman terms, so that the customers fully understand their purchase and are clearly informed of their purchase which again, complies with TCF.

Moreover, changes to a policy design, such as the addition of a particular exclusion, may change the target customer base. Hence, there might be knock-on effects for pricing assumptions such as average propensity to claim, decline and fraud rates and adverse selection. Besides, changes to the claims process for the purpose of TCF compliance will have an impact on actuaries' work in reserving and pricing. The development patterns and loss ratios may change due to, for example, changes in the speed of claims settlement or the proportion of claims declined. This is clearly an area which actuaries can make a contribution in TCF.

As for management information (MI), many of the key performance indicators (KPIs) used to monitor TCF are in the actuarial department's domain. The actuary is in a good position to identify the most appropriate MI, for example, on a life policy, the age of policyholders at entry, duration specific lapse rates, and numbers of complaints. And any issues in these areas may lead to TCF-related issues. Therefore, actuaries hold a good responsibility in the implementation of TCF across all firms.

So what now?

In their report, FSA has made it quite clear that it is the Board (senior management)'s responsibility to ensure that the firm treats its customers fairly. But as said earlier, everyone in every level of the organisation including the actuaries may find themselves in a similar position to one another (or to other Directors) in having to pay appropriate interest and regard to TCF in performing their role. Therefore, actuaries are highly accounted for detailed knowledge of the intricacies of pricing and product management by formulating views on the impact of TCF.

ENTERTAINMENT SECTION

FASS DINNER 2011

On the 4th of November, the Faculty of Actuaries Students Society (FASS) organised another one of their very popular dinners. This time, it was at George Hotel, where the ambiance was grand with a chandelier which was just majestic.

As it was my first time attending the dinner, being extremely enthusiastic, I arrived an hour early. As I was waiting, the guests started to arrive in their classy dresses and charming kilts. Some of the actuary trainees came rushing straight from work. The turn up was simply amazing, comprising of Heriot-Watt students and actuaries.

Students were seated with employees from various Actuarial firms. I, myself tried to ask a few job-related questions. The input was helpful and they were more than helpful to share and friendly to meet.

The food with exceptions for the vegetarian option was delightful and there was a 'bottomless' serving of wine. After the whole banquet was served, music and flashing lights changed the sophisticated ball room into a raving dance floor. People were shy at first, but after a brave group of people started dancing, everyone joined in and rocked the dance floor. With songs by Steps, the "Macarena" group and the famous "Cha Cha Slide" serenading the hall, everyone seemed like they had a great time.

There was also a VIP room made available for us in a nearby club, Shanghai. And that of course, (despite it being too late to enjoy our free champagne) was a sweet cherry topping on the cake. Although I'm sure for some individuals, it won't be so sweet the next day they wake up.

UPCOMING SAS EVENTS!

CHRISTMAS HAMPER APPEAL

Destiny Church Edinburgh runs a Christmas Hamper Appeal every year in order to ensure families who have very little can still have a Christmas. This year SAS would like to help provide these hampers and is calling on everyone in the society to help out.

1 Hamper will be split between 4 people, with the cost per person working out at between £3-5. In addition SAS will donate a card and gift per hamper, tailored towards whoever needs it. If you are interested in providing a Christmas hamper we would love to hear back from you! Please send an email to Sarah at president@hwsas.com and she will let you know what you need to do.

ICE SKATING

Ice skating in Princes Street! This is a chance for everyone to wind down on the last week of term, walk around the Christmas market and have a go on the temporary ice rink in Princes Street gardens. We hope to see everyone there! (more details via email)

FEELING LUCKY?

As you all should already know, for each issue there is a puzzle at the end with a cash prize. For the last issue's puzzle, we went through dozens of submissions and checked all the answers. We took the submissions with the most correct answers and put them in a box.

Then we gave Prof. Andrew Cairns the honour of selecting the lucky winner!

Last issues winner was **Maziah Stapah Salleh**! CONGRATULATIONS!

JUST FOR LAUGHS!

1. What is the difference between an introverted actuary and an extroverted actuary? An introverted actuary stares at his own feet during a conversation, while an extroverted one stares at the other person's feet.

2. Actuaries like to have fun ... when nobody is watching.

3. Two actuaries are duck hunting. They see a duck in the air and they both shoot. The first actuary's shot is 20 feet wide to the left. The second actuary's shot is 20 feet wide to the right. The actuaries give each other high fives, because on average they shot it.

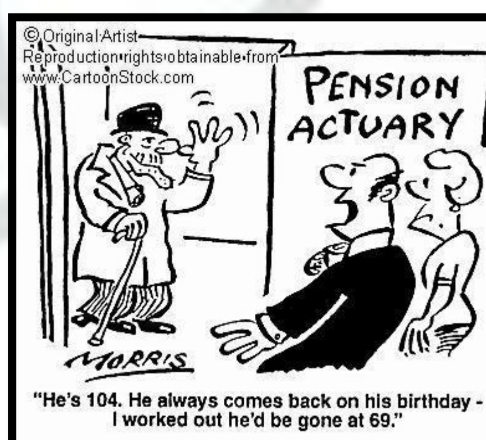
"There must be some mistake. According to our actuary tables I'm going to live to 83."

4. A life actuary designed a new coverage "Senility Insurance". He expected low claims because "If you remember that you have a policy, it is proof that you are not senile."

5. Trendy clothing store for actuaries: the GAAP

6. Why is remarriage the actuarial equivalent of death?
   Workers compensation fatality benefits are generally payable to the surviving spouse until death or remarriage.

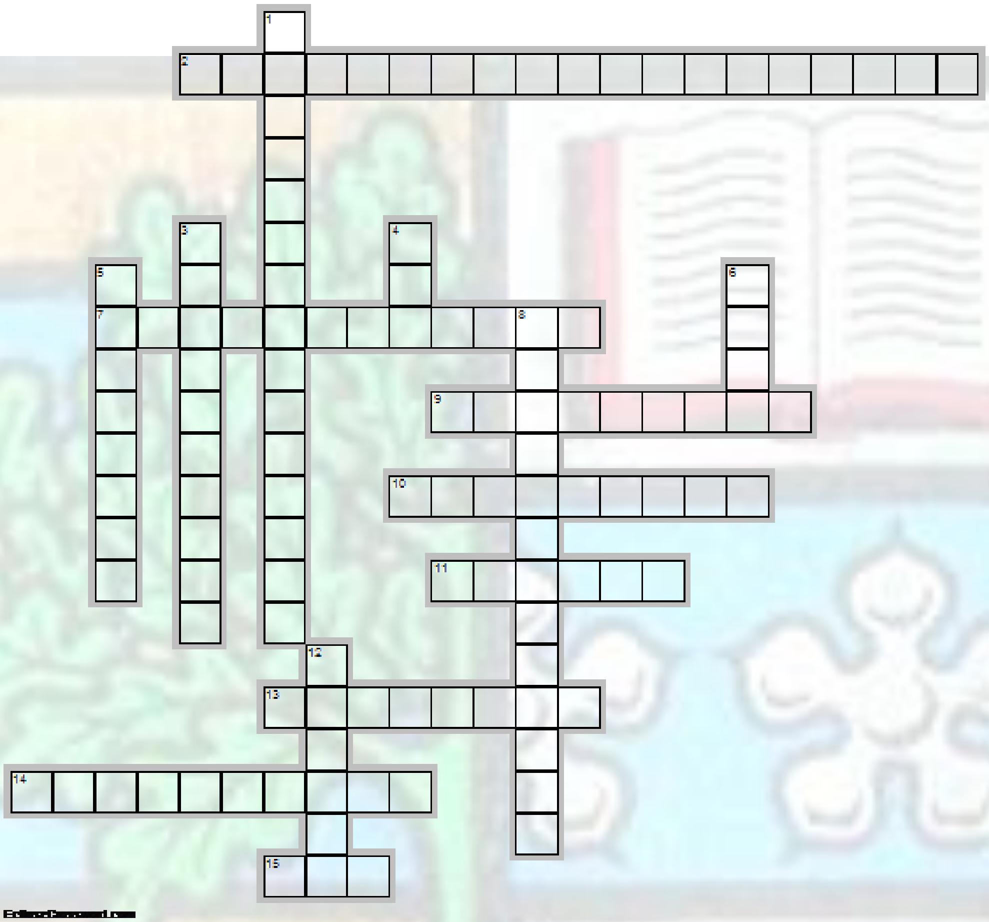
7. Why don't actuaries read novels?
   The only numbers in them are page numbers.



"He's 104. He always comes back on his birthday - I worked out he'd be gone at 69."

GRAB A CUPPA

BY MAY LING, WONG



Across

2. A module taken in Year 3 for BSc Actuarial Science students. (2 words, 10,9)
7. The man who created a formula for the British government to sell life annuities at appropriate prices adjusted for the age of individuals. (2 words, 6,6)
9. One of the checkpoints that drive the need for ERM: "_________" disclosures with more strict reporting and control requirements. (9)
10. A life table is also called a "_______" table. (9)
11. The General Register Office for Scotland(GROS) conducts their own ______ every 10 years. (6)
13. First name of the founder of SAS. (8)
14. One traditional area in which an actuary operates. (10)
15. Enterprise risk management exam code.

Down

1. Possibly the first film(1944) to feature an actuary. (2 words, 6,9)
3. A sequence of data points, measured typically at successive times spaced at uniform time intervals. (2 words, 4,6)
4. The national organization of the actuarial profession in Canada. (3)
5. The only Big 4 that is an official supporter of the London Olympics 2012. (8)
6. The new professional credential developed by the Society of Actuaries(SOA). (4)
8. One of the Big 4 firms. (13)
12. "______" mortality: Mortality that depends on current age and age of policy purchase. (6)

Complete the puzzle and scan it or take a picture of it (make sure it is readable) and send it to mcs4@hw.ac.uk to win £20! We will select ONE lucky WINNER with the most correct answers.
Contest ends 24th Nov.