

SYNOPSIS

ATTRACTING THE BEST AND BRIGHTEST TO THE ACTUARIAL PROFESSION THROUGH MASSIVE OPEN ONLINE COURSES

Adam Butt

Key words: Actuarial education, online learning, Massive Open Online Course

Purpose of your paper: To introduce delegates to the world of Massive Open Online Courses (MOOC), whilst discussing the success of "Introduction to Actuarial Science", the first MOOC on actuarial science

Synopsis: On October 17, 2015, the first ever Massive Open Online Course (MOOC) on Actuarial Science went live on the edX platform. "Introduction to Actuarial Science" provides students with an introduction to the actuarial profession and the fields that actuaries work in, along with basic examples of actuarial work in practice. The primary target of the course are those considering an actuarial career, so as to give them sufficient information upon which to make a decision about whether to pursue actuarial science further. The course has been a significant success, receiving strong reviews from students, and enrolling over 26,000 students from over 170 countries since going live. This talk will provide insights on the following:

- design of the course;
- experience and feedback of students taking the course;
- impact of the course on students' career intentions;
- the potential effects of MOOCs on actuarial education; and
- how MOOCs can be used for professional development for all actuaries.

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PREPARING FOR CLIMATE CHANGE IMPACTS: FUNDING MECHANISMS

Climate Change Working Group

Key words: Climate Change; Funding Mechanisms; Risk Management

Purpose of your paper: To provide an overview of the types of funding mechanisms available to government and institutions to finance the costs of preparing for and responding to climate change impacts, and give examples of how such funding mechanisms are being implemented, so the reader has a basic understanding of the current market mechanisms and the key benefits and challenges of such funding approaches.

Synopsis: Climate change is a long term risk faced by corporate institutions and governments. Many countries, particularly European countries, have pledged substantial funds to climate finance measures. Until recently, it was generally assumed that the risk was too uncertain and the projected time frame too long to make funding of risk responses by non-government entities appropriate or efficient. This thinking has now changed and an increasing number of basic and innovative mechanisms have been developed to fund mitigation and adaptation measures.

This paper sets out an overview of the types of funding mechanisms currently available and the key benefits and challenges of such funding approaches. It also sets out some recent case studies of funding mechanisms that have been successfully implemented, and briefly looks forward to new approaches now under consideration.

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Group Insurance – Structures of the Future

Jeff Humphreys (possibly others not yet known)

Key words: group insurance, superannuation, stable, efficient

Purpose of your paper: Explore the structures of the future that will deliver a stable and efficient market for the delivery of death and disability benefits for superannuation fund members

Synopsis:

The group superannuation insurance sector of the Australian economy is gifted by the community with compulsion, both from the SG contribution which helps finance premiums and from the compulsory Opt Out provisions for members in relation to death and TPD cover.

The sector has seen a deterioration in both efficiency and stability since 2012. It has also suffered reputational damage resulting in calls from some sections of the community for the “compulsion” built into the system to be removed. The Productivity Commission is in the process of running the ruler over the industry.

Current structures in superannuation for providing death and disability benefits to superannuation fund members are arguably old, clunky and inefficient. The paper explores this proposition then explores the various structures of the future that may be able to better deliver death and disability benefits for fund members and restore the twin goals of stability and efficiency.

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Retirement Planning and Social Security

Garry Khemka and Adam Buff

Key words: Superannuation, Retirement planning, taxation, social security, dynamic programming, utility functions

Purpose of your paper:

Impact of Australian social security and taxation rules on retirement planning using a CRRA utility function under a dynamic programming framework.

Synopsis:

Two of the main decisions in retirement planning are asset allocation and consumption. In this study employing a CRRA utility function in the dynamic programming framework; firstly we analyze the optimal decisions in retirement planning both during working life and in retirement under the current taxation rules. Then the impact of the existing social security structure, in particular the age pension, on the optimal decisions is analyzed. Any policy implications are discussed.

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Body Hacking and the Quest to Cure Death

Greg Solomon

Key words: biohacking mortality longevity underwriting wearables wellness risk diabetes cholesterol

Purpose of your paper: This will update actuaries on the odd hobby of biohacking, and the medical discoveries we're making as a result, some of which contradict what life insurers currently believe. What should individuals do for their health, and how should the industry change?

Synopsis:

In recent years, we have witnessed the rise of "**biohackers**" – a group of individuals prepared to experiment with their own bodies, who are open to try things that conventional wisdom says is bad, and to see what really works. Their goal is to get healthier, live longer, feel better, think more clearly, memorise more easily, sleep more deeply, perform better – and more. I consider myself a biohacker, and have obtained encouraging results from my own experiments.

Insurance companies are also interested in **wellness** – but rather than the old world of 'Insurance v1' (sell them insurance, wait for them to die, pay claim), we're moving into a new world of 'Insurance v2' (offer a wellness program, attract healthier lives, sell them insurance, encourage them & support them to get & remain healthy, everyone's a winner). Part of the problem is most at while 'motivated' individuals are happy to track really detailed information about themselves, even to the point it becomes invasive, an insurance company's wellness program is reliant on information which they can reasonably get from policyholders, not necessarily that which is most effective.

More & more evidence is emerging that (a) **medical underwriting** is in some aspects erroneous; (b) **mortality is going to improve** a lot faster than we thought; (c) more people are going to be **taking more 'substances'** which have the potential to backfire on insured lives. Examples the session will cover include the follow:

- What are the implications of the recent NY Times article that shows the sugar industry paid scientists in the 1960s to soften the link between sugar & heart disease, and to incorrectly implicate saturated fat as the culprit instead?
- If cholesterol really is such a poor predictor of heart disease as more recent studies are showing – what should life insurers be using instead?
- What is the most successful life-prolonging drug science has discovered (noting that it is already in common use, and only costs less than \$1 a day)?
- Smart drugs actually exist, and are rife even in places like Wall Street & universities around the world – but what can it do to our physical health?
- Major health insurance companies around the world are watching this "low carb, high fat" diet trend carefully to see if it's something they should support or reject – what is the evidence actually showing?
- Given technological advances in the last couple of years, how out-of-date is the insurance industry's stance on genetic testing, and how much is it currently being used for anti-selection?

Aside to program committee: *This is a very broad topic, and I've presented on a variety of sub-topics at actuarial conferences across Asia in the last couple of years. At the Institute & Faculty of Actuaries Asia conference in KL earlier this year, my break-out session was the most popular and had to be hosted in the main ballroom. Engagement in the debate is high, with a number of people have attended many of my sessions in different countries. Given how health & wellness is a topic of interest in Australia – both personally & professionally – I expect there to be a strong interest in this topic for everyone at the summit.*

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Better Health Outcomes

Caroline Stevenson and Anthony Maher

Key words: health, risk quantification, classifications, operational efficiencies, wellness, treatment and provider benchmarking, medical inflation, strategies for managing utilisation

Purpose of your paper: To show the use of actuarial techniques in driving better efficiencies in the healthcare sector while improving patient outcomes and generating higher value for all

Synopsis: Our presentation will draw on both Australian and international experience illustrating how actuarial techniques can be used to answer a range of questions within the healthcare sector. We will discuss a number of different applications with a focus on improving efficiencies and health and wellness outcomes.

Examples will be drawn from a broad spectrum of healthcare players, including suppliers, funders and providers. We will demonstrate how enhanced insights into healthcare can be achieved, drawing on a wide data ecosystem that includes health data sets integrated with data spanning broader consumer behaviour. These in turn lead to enhanced decision making capabilities, risk management strategies and measurably improved outcomes.