INTERNATIONAL ASSOCIATION OF CONSULTING ACTUARIES

Special Newsletter

February 2016

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NOTE FROM THE EDITOR

Gerd Warnke

Dear Reader,

The International Association of Consulting Actuaries was constituted in June 1968 by its founders (all of them renowned consulting actuaries) because they felt an urgent need for a forum for exchange on an international level. Nearly 50 years later and far deeper into globalization, it is even more important that consulting actuaries across the world communicate with each other, thus spreading and sharing their knowledge and experience in assessing and solving problems of great relevance, spanning from the classical areas of actuarial practice such as pensions, life insurance or healthcare to dealing with the consequences of climate change and natural catastrophes.

IACA's purpose is to facilitate an international exchange of views, advice, research, and practical information among consulting actuaries on matters affecting their professional responsibilities and business interests. To achieve this aim IACA organizes colloquia and conferences all over the world. It encourages and assists in the development of consulting actuarial associations in locations where there is an identifiable need for actuarial skills.

Today, its members benefit from a vital, vibrant forum for dialogue between fellow professionals operating across the world. However, many consulting actuaries still do not know of IACA's existence. The purpose of this special edition of IACA's newsletter is to give you an impression of the variety of topics IACA's members are dealing with all over the world. Furthermore, there are accounts of conferences and events organized by IACA together with other IAA sections.

These articles have been taken from the IACA newsletter, which is sent to IACA's members twice a year. To learn of the advantages you would have from joining IACA, please read Nigel Sloam's account further below. More information can be found on IACA's website.

IACA provides the medium for pooling resources on global professional problems, as well as providing actuaries who work in only one country the opportunities to gain a global perspective to better help their clients. IACA members have access to in-person networking and relaxing in a variety of attractive international venues, consulting-specific newsletters, and continuing education webinars.

Please join IACA and see for yourself. IACA's next big event will be the Joint IACA, IAAHS, PBSS, and IPEBLA Colloquium in St. John's, Canada, which will take place on 27-29 June 2016. We are looking forward to meeting you there!

IACA MEMBER VALUE

Nigel Sloam

GET INVOLVED IN THE WORLD OF IACA!

The work of consulting actuaries worldwide is evolving fast. Tried and tested solutions, which worked for half a century or more, may no longer fit the old world - and will not be appropriate for the new. People are on the move and technological innovation is rapid. As a result, the environment, longevity, areas of working, places, and mode of living are changing out of all recognition. The world is so much smaller and "no man is an island". Everyone's work has an increasing international dimension. The existence of multi-national companies and vast global trade imply the need for maximum information and knowledge and regular international contact.

As a result of all of this, consulting actuaries have to develop new solutions to old problems taking account of modern circumstances – and not just local ramifications of their work. The profession is emerging and developing across the planet, applying historic and creating new techniques for unforeseen challenges. In these circumstances it is vital that there is an internationally recognised organisation for international exchanges of information and the dissemination of the research, advice, and views that consulting actuaries are producing worldwide.

IACA - The International Association of Consulting Actuaries – is the only organisation in the world that provides this forum specifically for consulting actuaries. It has organised conferences and colloquia across the world and has provided assistance to the promotion of national forums for consulting actuaries, wherever the need for actuarial consultancy emerges. In this special edition of the IACA Newsletter, we show some of the diverse nature of our members' work and interests. IACA is an association both for actuaries who consult in the international arena and for those who would benefit from applying internationally developed techniques and ideas to their local areas of interest.

In order that IACA's work is further enhanced and that existing and future members will be able to gain full advantage of what IACA has to offer, the Committee is working to ensure that independently - and in conjunction with national associations - there is a readily accessible program to promote consulting actuarial work across the planet.

Our technical program of international meetings, newsletters, webinars, and local sessions provides continuing professional education and development – as well as regular opportunities for actuaries from different backgrounds to meet, share ideas, and network in agreeable and congenial surroundings all over the world. We are working to promote these more, bringing IACA orientated programs into the life of regional and national associations, and encouraging particularly younger members to become actively involved.

If you are an existing IACA member, we hope that reading this Special Newsletter will encourage you to participate further in the life of IACA and to contribute to its further growth. If you have not yet joined IACA, we hope that you will feel prompted to join our vital and dynamic Association and enjoy the benefits of participation in an exciting international organisation – whose membership is open to all consulting actuaries worldwide.

BURSARY RECIPIENTS FEEDBACK – ICA 2014 (Extracted from August 2014 Newsletter)

Sebastian Ibarra

The following individuals received bursaries from IACA to attend ICA 2014:

- Kudzai Chigiji - South Africa
- Tawanda Josephat Chituku - Zimbabwe
- Rodrigo Silva - Columbia
- Estevan Bermúdez Aguilar - Costa Rica
- Sebastian Ibarra - Ecuador
- Ignacio Maricich - Argentina

From Left to Right: Rodrigo Silva, Tawanda Chituku, IACA Chair Andrew Vaughan, Kudzai Chigiji, Sebastian Ibarra and Ignacio Maricich. Missing: Esteban Bermudez

As consultants, the entire congress was an enriching experience in terms of intellectual interaction with colleagues from all over the globe, making us realize how similar our profession is regardless the location. The professional network we had the opportunity to build was extremely advantageous and helpful for our day to day responsibilities.

Attending the ICA was eye-opening for us. Having most parts of the globe represented under one roof was a unique experience. The planning, from when the initial call for papers was made in 2012, the venue, the

Kudzai Chigiji

"In South Africa, increasingly, any actuary can operate in several areas of the profession, sometimes at the same time. Actuarial skills have become extremely marketable and valuable in South Africa in the recent years, affording us the ability to apply our skills across different industries seamlessly. Actuaries in South Africa are even working in mining, energy efficiency, transportation, education and loyalty program design. There is a declining emphasis on specializing although many still do opt to focus on one practice area. It was interesting to hear colleagues from some countries say that banks do not focus on hiring actuarial staff. The reverse is true in South Africa. After insurers, it seems that banks have made the highest demand for actuarial staff - valuing the risk based education and training as well as modelling skills we possess.

During the ICA congress, the highlight was receiving a Best Paper Award for our paper "The Evolution and Future of Social Security in Africa - An Actuarial Perspective". It was an unexpected surprise. I didn't even know that there were prizes on offer. It has encouraged me to pursue this area even further and ensure that actuaries are more heavily involved in social security development in Africa."

Ignacio Maricich

"I am based in Panama and work in all Central America countries where we have some common problems regarding lack of statistical materials (regulators collect a lot of useful info but give a little back). Most local companies are very small or very new (35% of Panama Market and 90% of Costa Rica Market are companies that started operations in the last 3 years) so it is a challenge to fit a model there. Another point I would like to comment is that we do not have actuarial associations in Central America region. "

Esteban Bermudez

"As a consultant, I have worked in Central America and the Caribbean and have dealt with all kinds of problems. For example, I worked without technical notes in Insurance in Guatemala for a IFRS analysis, or I found that a Company was using mortality tables from 1956 in El Salvador. We have various problems of statistical information in the region, and we need more actuarial organizations in the region (at least one)."

Tawanda Chituku

"Being based in Zimbabwe where actuarial services are not developed beyond the basic level of conducting a statutory valuation, we read a lot of theory during our studies and for the most part never get the chance to fully implement what we learn in practice. Often times we do not know where to start from, or which questions we should ask in order to reach our professional goals."

On a broader level, I am the Secretary of the Actuarial Society of Zimbabwe (ASZ), an institution that is really trying to get back on its feet after years of being battered by an economic collapse; and hence in dire need of bold leadership. In my own quest to develop a path for our local profession, ICA2014 allowed to me interact with leaders of similar international bodies at various stages of development of their local professions. As a result, I really got strategic clarity on this front as well, particularly from the diversity of the conference. What was interesting is that the more developed actuarial bodies encourage members to specialise, whereas the opposite is quite true back in Zimbabwe. So, I will probably be knocking on the door of IAA as we (ASZ) work out how we can chart our own operating framework."

Rodrigo Silva

"During ICA, I had the opportunity to learn new ideas, not so easily grasped without attending this event, given the fact that it is not scientifically oriented (i.e. papers) but focused to professional actuaries.

This event was a breath of fresh air in order to remind us of the big responsibility that we have with our profession and each of our countries. This is something beyond our day to day duties and our professional careers."

Sebastian Ibarra

"The actuarial field in Ecuador is still much undeveloped. The lack of offering of this profession in local universities has led to a very high demand of actuaries. Most actuaries in Ecuador have their own small private firm and provide consultancy services. There is an urgent need to create an actuarial association to gather existing actuaries and incentivize the development of the profession going forward.

Eventually, all insurance companies in Ecuador will be required to hire a local Actuary. The support we have received from the IAA has been very helpful and we would like to become a full member association going forward."

workshops, the parallel sessions, the plenary sessions - all were superb. We learned more in that one week than we have in months. We could learn all the different types of work actuaries are doing in other parts of the world and how the structures differ per country.

In the many discussions we had, particularly with those dealing with developing countries, we could see great potential for leveraging off of each other for skills and training for the work we do and continue professional development. Given that we face very similar challenges in operating in the developing and emerging world, there was great scope to learn from one another and share experiences. Areas surrounding regulation and best practice are also avenues to have extensive discussions at.

ICA2014 imparted us to elaborate protocols on implementation of actuarial work, modelling, thinking ahead and thinking broad, asking the right questions and diligently seeking for answers.

At a personal professional level, we managed to consolidate some thoughts that we have had on General Insurance topics, risk management and healthcare issues. ICA2014 also pointed us towards large pool resources (databases, software platforms, working parties) that actuaries have available as they develop their work.

ICA helped us to strengthen the need of actuaries outside the US when most of the available actuarial literature and events are US based. Therefore, being able to attend actuarial seminars that take into account contexts different than the US (or in general, countries in development) are very rare.

As bursary recipients, we would like to thank IAA, ICA and all the organizers, sponsors and stakeholders involved in making the event such a success and in giving us a chance to be a part of it.

SURVIVAL SKILLS (Extracted from February 2015 Newsletter)

Rade Musulin (Australia)

I recently was invited to give a lecture to the actuarial students at Australian National University (ANU) in Canberra. The professor asked me to talk from the perspective of an employer looking for young graduates about things I look for when hiring.

I entitled the lecture "Survival Skills for Actuaries" and used examples from my own career to illustrate the skills that have helped me over the years. I identified seven things students should have:

- Strong technical background, plus…
- Big Data competence (manage, handle, analyze large data sets).
- Multidisciplinary focus, particularly history and economics.
- "Big Picture" mindset.
- Master of communications techniques.
- Attributes of flexibility and adaptability.
- Global thinking.

I reminded them that very few of us who have been fortunate enough to make it to our late fifties had any idea at their age what we would be doing forty years later. In today's world that is an eternity, long enough for me to have started working before there was widespread use of laptops, spreadsheets, mobile phones, ATM cards, or the internet. In order to survive the introduction of so many potential disruptions I had to continually learn new skills and be flexible in how I applied those I had.

If you get the opportunity to mentor a young student, help them understand the value of skills like those I have listed above. Having worked with many of them in recent years I have been struck by ones who assume that getting a 4.0 in university and passing some exams will lead them directly to a great career, or who think they can confidently predict what they will be doing in ten years.

As you consider how to accumulate your Continuing Education (CE) points, think about broadening your own learning outside your immediate practice area. Education is a lifetime activity, and as actuaries we are fortunate to have many options for CE. I try to allocate a portion of my CE time to things well outside the scope of my current role, as one never knows when circumstances will change and knowledge of a new area can help. That is particularly true for people in consulting.

A CHANGE IS GONNA COME (extracted from February 2015 Newsletter)

Rodrigo Silva

Colombia is in the process of adopting International Financial Reporting Standards (IFRS), and it means that we are moving to a new environment. From a regulatory perspective we are transitioning to a whole new landscape. In this article, I explore some of the implications of this change.

One of my favorite songs is *"A Change is Gonna Come" (by Sam Cooke)*, a timeless classic, and its lyrics cannot be truer nowadays: "It's been a long, a long time coming but I know a change gonna come". In the context of the actuarial work, it means that we as actuaries have to update our toolbox and to change our role from doing valuations in order to comply with the local regulation, to become a business partner of our clients in order to help them to navigate to IFRS.

I work in the retirement area, therefore this article will be biased toward pensions, retirement and long term benefits (i.e. IFRS 19), but the main ideas also hold in the insurance field (i.e. IFRS 4).

In my experience, the process of doing valuations under IFRS standards involves multiple stakeholders: human resources, accountants (sometimes taxes), and of course, managers and auditors. Under IFRS we have to answer fundamental questions, such as the following:

- Does the company have benefits that are significant and offered on a long term basis?
- What kind of benefit arrangements does the company have with its employees?
- Is there enough experience in order to project the behavior of the benefits (e.g. withdrawal, compensation increase)?

In the first meetings, the idea of *"robust assumptions"* is something totally new, because our current regulatory framework states the parameters that we must use, for example, interest rates. It was not common to ask if the stated interest rates made sense from a business or market viewpoint, because all the parties were accustomed to use what the regulations said. This topic leads to the following questions:

- Do the stated parameters make sense, given the environment faced by the company?
- Are there parameters that are relevant, that we are not aware of (e.g. withdrawal)?

The discussions around these ideas are the beginning of very interesting conversations about the risks faced by the company, and the possible outcomes of these risks.

Another issue is what benefits should be evaluated, which means that the company may have "surprises". Benefits that are being paid may now require the disclosure of a reserve (along with all the other disclosures required by the standards). When we analyze the benefits, they are fully reviewed by all the involved parties and some of the characteristics of them are fully disclosed and shared. This is the mantra behind IFRS: to disclose, to disclose and then, to disclose.

The inertia that we are used to is something very powerful, and to change the mindset about the way we do our work begins at the start of every project. This is not something simple given the fact that the client may see that he needs a report, but "just on another basis". We have to change the way we work and also to change our client's mindset. Therefore our communications skills as consultants must be honed in order to accomplish this. We must be able to raise the issue around risk appraisal that IFRS implies, which is just the core of our work. Just like the song, we cannot just continue "running ever since" given the new environment that IFRS implies.

Rodrigo Silva, ASA is an actuary with 15 years working in retirement and benefits, he is a principal in Mercer. He can be reached at Rodrigo.Silva@mercer.com

THE ROLE OF AN ACTUARY IN DEVELOPING A SUSTAINABLE NATIONAL HEALTHCARE SYSTEM ON THE AFRICAN CONTINENT (Extracted from February 2015 newsletter)

Kudzai Chigiji

Healthcare, once seemingly untrodden terrain by the actuarial profession, has become common ground for many actuaries. Involvement has evolved from primarily private healthcare to increasing involvement in the public healthcare sector. It has also become home for many actuaries seeking to make a lasting impact on socio-economic factors that affect nations.

Actuaries, once known to be the number crunchers on the team, have increasingly been given a more strategic role in the teams involved in healthcare and related activities.

Healthcare Actuaries and Africa

As countries such as South Africa, Namibia, Rwanda, and Zambia embark on implementing Social Health Insurance and National Health Insurance programs to provide affordable healthcare to their residents, government Departments of Health are increasingly looking to actuaries. Actuaries have an in-depth understanding of long term implications of demographic changes and resource allocations both on the economy and morbidity of the nation.

In South Africa, the Department of Health and National Treasury has approached the Association of South Africa to provide assistance with developing a costing model. Several consultancies and academics have provided their assistance in these projects and have actively engaged with government to ensure that the derived approach to national healthcare takes into consideration the insights that actuaries have into demographics, finances and economic factors. In Namibia and Zambia, actuaries have also been actively involved in costing and strategy development of national healthcare systems, calling on actuaries from other parts of the continent to provide their insights.

This can also be seen within government-supported medical aid schemes that now frequently seek the services of healthcare actuaries for their financial management. Given the significant portion of the formal sector working within government institutions, the role of government medical schemes has become pivotal to successfully introducing sustainable and efficient nationwide healthcare solutions.

The African healthcare landscape is as diverse as its economic and socio-cultural landscape with varying levels of funding and provider care. Operating in different countries comes with varying challenges and a strong requirement to remain flexible and able to learn rapidly to provide relevant solutions.

Actuaries such as Ms. Fatima Badat (Senior Manager at Ernst & Young Africa Advisory Services) and Mr. Barry Childs (co-CEO of Insight Actuaries and Consultants) have been actively involved in both the private healthcare sector and in assisting government to define funding models, optimal reimbursement structures, and financing policies for national healthcare. They have briefly shared their experience and insights from performing actuarial healthcare work in Africa.

Both Mr. Childs and Ms. Badat have pointed out that the initiatives implemented in each country and their success are heavily dependent on the current state of healthcare and supporting facilities and structures. Health is inextricably intertwined with many other aspects of society such as clean water, sanitation, education, and employment. Many countries are able to achieve significant health outcomes with limited healthcare resources because they have taken care of essential basics such as those mentioned above. However, national healthcare reform is still a lengthy process that requires thorough consideration of all the factors that contribute to the development of an enabling environment.

Unique Contributions by Actuaries to Healthcare in Africa

Ms. Badat pointed out that within the developing nations, the role of the health care actuary has expanded and evolved significantly. Within Africa, health care actuaries play an important role in developing, valuing, and monitoring innovative health insurance products such as gap cover, hospital cash-plans, medical aid cover, etc. Strategically, actuaries have further embarked upon development of innovative health care solutions targeted at low-income earners and informal employees so as to increase the access to health care funding within Africa. Actuaries have also taken on a role in policy and strategy development.

Barry Childs says of the unique skills actuaries have to offer to ensure sustainable national healthcare, “we understand how to structure sustainable funding mechanisms for healthcare systems, as well as how to structure benefits, pricing, and provider reimbursement structures. We also understand how to assess the impacts of policy on the healthcare environment. And our ability to work with varying levels of data are invaluable to ensure healthcare systems are meeting their desired objectives.” The value actuaries are bringing to the table is clearly invaluable and provides structure and “science” to problem solving very

difficult and challenging problems.

Mr. Childs and his team have moved beyond simply providing price and benefit design advice into measuring quality and value, profiling provider efficiency, and developing tools for market stakeholders to better measure their risks. They are also increasingly involved in the interactions between funders and providers to assist them in exploring alternative reimbursement models in a mutually beneficial basis.

A Quick Look at the Private Sector and Resource Allocation

In South Africa, actuaries working in private healthcare insurance companies have provided their assistance to ensure that the nation can leverage off of the learnings from those in the private sector as well as to maximize the utilization of resources. Understandably, the existence of a private sector is still necessary, especially in the African countries that are only beginning their journey to a comprehensive and reliable national healthcare solution. The actuaries within private companies have been forthcoming to also understand what the implications on their businesses would be, especially in the markets where private insurers are the main healthcare funding providers for individuals.

A lot of the work currently being done by actuaries sits in the private sector but will hopefully assist government as it seeks optimal health solutions for the nation. Even as much of the technology and innovation in healthcare comes from the private sector, its implementation in the public sector is essential. The private system can also act as a ‘competitor’ to a public system by showing an alternative by delivering excellent quality care affordably, and thereby holding the public sector accountable. It is clear from the experience of actuaries in both sectors that performing the current functions in both public and private sector concurrently is necessary to ensure a continually improving healthcare system.

Given the current shortages of healthcare professionals in the nation, with a greater weighting towards the private sector, public-private partnerships will be required to ensure there is a fair distribution of healthcare personnel across the nation. African actuaries have already performed research and modelling exercises in task-sharing and task-shifting to ensure optimal utilization of healthcare professionals. This, if effectively implemented, may result in a reduction of costs associated with running a national healthcare program.

A Word of Wisdom

Having extensive experience in the actuarial healthcare sector, Barry Childs advises those looking to get more involved in this area to supplement their actuarial training with an understanding of health economics, and other wider fields. The solutions in healthcare are elusive and difficult, but extremely rewarding.

Ms. Badat supported this, saying skills in these wider fields “are directly transposable to the health care arena, and it is imperative that health care actuaries practicing within emerging markets begin to develop these broader actuarial skills.” Ms. Badat pointed out (and cautioned) that actuaries are “by no means business and economic experts, nor are health care actuaries clinical experts”. Collaboration across various professions such as economists, statisticians, demographers, health care professionals, politicians, and actuaries is vital in order to develop a comprehensive understanding of the health care complexities inherent within each nation and to collaboratively produce synergized solutions and strategies in achieving universal, efficient, appropriate, and cost-effective health care.

Ms. Badat rightfully says the key to the success of an actuary in the healthcare space (and of many things in life) is "successful health actuaries are those that are following their passion. If health is your passion, then immerse yourself and know no boundaries. "

A special thank you to Fatima Badat and Barry Childs for taking time to discuss the work they are doing in this space.

SUMMARIES OF SESSIONS AT THE OSLO COLLOQUIUM (extracted from August 2015 Newsletter)

Social Insurance Issues in the Gulf

Cathy Love Soper

There are social insurance funds in all of the six Gulf Cooperation Council states which provide social protection and social welfare to all Gulf nationals. They represent the largest, and typically the only, pillar of pension provision for most people. Expectations are very high regarding the level of benefits provided, which are extremely generous. However, these funds are finding themselves in progressively worsening financial positions (for a number of reasons, outlined below) and are unsustainable in their current form. The challenge is therefore how to reform these social insurance funds to achieve stability and sustainability, particularly given the sensitive political constraints in the region.

Causes of the worsening financial positions include:

- In the early years of these funds, the net cashflows into the funds each year were considered to be 'surpluses' and were spent;
- The funds are typically partially funded (as in common across the world for many social insurance funds) but they often do not have a 'benchmark' or 'level' defined in legislation as to what they should fund to. Thus all focus on the funding position is lost;
- Contributions are typically woefully insufficient to pay for the very generous benefit levels, particularly considering the very early ages at which people can retire with an unreduced pension;
- The countries are facing many of the same demographic pressures as the rest of the world; rising life expectancies which mean that pensions become more expensive, falling fertility rates which means that the ratio of contributors to pensioner is falling, and an ageing population.

Because of the above, there should be much work for actuaries in the region to help the funds reform their benefit structures. Action is required relatively urgently as changes will need to be staggered over time if they are to be accepted by the workforces.

Ex-pat provision

Foreign nationals in the Gulf, or ex-pats, are not included in the social insurance funds. They are protected to an extent by the region's labour laws (if they are in formal employment) which entitle workers to a lump sum linked to service and final salary when they leave employment. However, there is a huge disparity between the size of these lump sums (which are typically very small) compared to the level of benefits received by a Gulf national. Furthermore, these benefits are not pre-funded and so there is no protection for workers on insolvency.

Ex-pats account for the majority of the workforce, and population, in the Gulf and therefore this issue is coming to the fore. There should be demand for actuaries to get involved in modelling alternative arrangements for ex-pats.

Shareholder Reporting in Life Insurance

Gautam Kakar

This session reviewed several aspects of shareholder reporting for life insurance. It was repeated at the Sydney Colloquium.

Technical Provision:

This is funds set aside by the company to meet the expected future liabilities. The calculation depends on assumptions for parameters like Mortality/Morbidity, Investment Return, Expense Incurred, and Withdrawal Rates. An area of concern is the disagreement between shareholders and actuaries on the assumptions for setting technical provision.

It was discussed during the presentation that any expense overrun may be debited to shareholder's account to make the management accountable for their decision.

Embedded Value:

It was considered to be a useful measure of profit and an aid to putting a value on a company. Major shortcomings are allowance of risk, asset risk, and expensive guarantees. Market Consistent EV attempts to value shareholder adjusted basis. The shortcoming of MCEV is not persistent with quantifying mismatch risk and risks where market does not exist e.g. persistency.

Goodwill:

This is the value associated with new business the company is expected to write in future. Goodwill depends on several factors, including the reputation of the firm, the type of distribution outlet, and the expected growth rate in future sales.

Risk Appetite:

Risk Appetite is the degree of risk, on a broad-based level, that shareholders are willing to accept in pursuit of their objective. Management should first consider the shareholder's risk appetite in evaluating strategic alternatives, then in setting boundaries for downside risk. The importance of Risk Appetite is that it helps in defining company strategy, the risk management framework for the organization, and in managing stakeholder's expectations appropriately. Solvency 2 also requires a risk based approach. Two approaches are used to determine Risk Appetite, the Top Down Approach and the Bottom Up Approach. In the Top Down Approach, Risk Appetite is determined by the board and cascaded down to the organisation. In the Bottom Up Approach, expressions of Risk Appetite at ground level are aggregated to develop an overall appetite for risk. The relevance of Risk Appetite is that it defines the risk shareholder is willing to accept and helps in measuring risk adjusted return. Also, shareholders may expect to see risk appetite reports including any breaches.

The link to the presentation is http://www.actuaries.org/oslo2015/scientificprogram.cfm.

SUMMARY OF PRESENTATIONS FOR THE SYDNEY COLLOQUIUM (extracted from August 2015 Newsletter)

Sydney 2015

The Actuaries Institute hosted the Colloquium of the International Actuarial Association in Sydney from 23 to 27 August 2015. This colloquium was a joint collaboration of three IAA sections, the Actuarial Approach for Financial Risks/Enterprise Risk Management (AFIR/ERM), Actuarial Studies in Non-Life Insurance (ASTIN), and the International Association of Consulting Actuaries (IACA).

The theme of the conference, Innovation & Invention, recognizes the historic and ongoing contribution of ASTIN, AFIR/ERM, and IACA to actuarial thought and practice.

The meeting website is http://www.actuaries.org/sydney2015/index.cfm. Summaries of presentations made by IACA members appear below.

Data Problems and Solutions
Margaret Tiller Sherwood

The availability, quality, and issues surrounding quantitative data are at the forefront of all data-driven actuarial work. Of equal, and sometimes more importance, is qualitative data, which also can vary in availability and quality. Examples will be given of qualitative data that changed the interpretation of quantitative data and significantly affected the estimates.

One problem often encountered is small data sets for unique situations and reinsurance. Various approaches to working with small data sets were discussed.

Credibility is dependent on data type, size, and applicability to a particular situation. Examples of questions to ask and how the answers affect the credibility decisions were presented.

Applicable international and United States practice standards were discussed.

Participants were encouraged to pose data issues for the presenter and participants to discuss or provide data issues they have encountered and how those were handled.

Demographics, Development, and Disasters: The Role of Insurance in Planning for the Future
Rade Musulin

Consulting actuaries need to adapt to changing conditions and seek new areas to utilize their expertise in. This session considered several such "emerging" opportunities in non-traditional practice areas. One was examined in detail: how actuarial tools and techniques can be applied to the problem of designing building codes for a future state which may differ significantly from the current one.

To date global building codes have been developed largely by structural engineers using static state deterministic approaches focused on life safety, single building structural integrity, and today's environment. It should be obvious that all three of those thought process are flawed:

- Macroeconomic costs are an important consideration, currently using the buzzword "community resilience".
- The cost of insurance is related to the risk concentration, meaning the cost of insuring a building depends not only on its characteristics but those of the buildings that surround it.
- Conditions of either risk concentration or climate conditions will change over the 50 or 100 year design life of a building.

Because of the above, a new building code and land use paradigm is being proposed, moving to a stochastic process to determine the optimal level of investment in risk mitigation, and "actuarial" tools such as catastrophe models and Economic Capital Models can be a key tool for doing so.

Regulatory Trends in the Asia Pacific Region – Opportunities for the Actuarial Profession
Rade Musulin

The Asia Pacific region is comprised of over twenty jurisdictions, each of which is pursuing modernization of their regulatory regimes. In addition, many countries will be or are considering taking government actions to form (or reform) catastrophe pools or increase the use of insurance to improve their economies. This will have profound implications for companies doing business in the region. This session surveyed major regulatory initiatives and offered three case studies of government initiatives in the insurance sector.

The case studies were in Australia (Northern Australia Insurance Premiums Taskforce), China (Opinions of the State Council on Accelerating the Development of Modern Insurance Industry), and New Zealand (Post-Christ Church Response). These represent both opportunities and challenges for consulting actuaries.

PENSIONS AND POLITICS (extracted from February 2016 Newsletter)

David Fairs

Much has changed in terms of UK pension policy, with changes to the State Pension, auto-enrolment of employees into pensions, and the need to purchase an annuity at retirement. Now the UK is undertaking a review of pension tax relief as an incentive to save.

Ultimately, decisions on many of these items are made by Ministers with support from Government officials in the Treasury and the Department of Work and Pensions. The Association of Consulting Actuaries (ACA) plays an active role in helping both Ministers and officials in understanding the advantages or disadvantages of different courses of action through ACA members' detailed knowledge of the impact that different decisions may have.

Prior to the 2015 election, it became clear that pensions, and particularly pension taxation, would be a key issue in the political debate. Various senior members of the ACA had chaired or worked on Committees looking at risk sharing schemes on behalf of the Pensions Minister. ACA members also met with and debated pension issues with the Shadow Minister. However, as the election approached it was important for the ACA to maintain a politically neutral role.

In March, prior to the election in May, the ACA published a thought paper on the challenges presented by the current tax regime and highlighted the implications of options being considered by politicians, with a call for independent review. Each of the political parties included proposals in their manifestos on pensions which were summarised in a briefing paper to MPs and journalists provided by the ACA. The ACA also helped officials gain understanding the practical ramifications of each of the proposals set out in the manifestos.

Against pollster predictions, a single party emerged as the winner, with the Chancellor announcing implementation of their manifesto pledge to implement further pension taxation changes. Importantly, this included a comprehensive consultation on pension taxation as requested by the ACA. Since the launch of the consultation, the ACA has been actively involved in debating the issues at a Ministerial round table, presenting the options to the All Party Parliamentary Group on pensions, meeting with other trade and professional bodies to debate the options, and meeting formally and informally with the Treasury.
In parallel with the discussions on pension taxation, the ACA has been involved with officials on detailed regulatory and technical changes as the State and private pension framework changes. The importance of the ACA is recognised by the standing invitation the ACA has to Ministerial briefings on pensions; its support to the All Parliamentary Group on Pensions; and liaison meetings with the Government Actuary, the Pension Protection Fund, and the Pensions Regulator. The Chairman is a member of the advisory panel to the Pensions Regulator.

In the UK, pensions have been subject to much change, often for short term political expediency. The ACA believes it is important that Ministers and officials understand the long term implications of those 4 decisions.

HYPER-INFLATION IN ZIMBABWE – NOT FUN AND GAMES (extracted from February 2016 Newsletter)

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I lived through hyper-inflation, and survived. If my credentials for survival could be displayed on a wall, I would be declared an international hero.

Over many years of study, I know that that hyper-inflation is defined as "when the month-on-month inflation exceeds 50%." Is it as simple as that? That sounds to me as if hyperinflation is when some technical goon in glasses rich with age stands up to announce that monthly inflation is now 50%. In my imagination of the technical definition, perhaps then there would be a discussion about it like what happens when Liverpool gets whooped by Manchester United. Far from this, hyper-inflation is a life style, war, and chaos.

I am not going to bore you with the history of how it happened in Zimbabwe as Wikipedia has that part covered. I want to talk about the experience for me in my day to day life, and beyond. You see, when we are born, we are sold a very straightforward story: 'It starts with birth then school where you should get good grades and then varsity and then get a job, get married, have children, save money for a rainy day, start a business, create a legacy for your kids, and then die.' Sweet and straightforward for as long as we omit actuarial exams in the flow. I like this story because with this kind of system I can make financial sense of the future!

Let us just put things into perspective for a little bit. As actuaries understand figures (by the way there are no official figures but different sources have tried to estimate): Inflation was 230 million percent and 1 USD bought sextillions of currency by the close of 2008. My personal account balance had 30 zeroes in after a few numbers, who cared, it was not enough for me to commute to town. I believe ours was not hyper-inflation, it was a total currency collapse.

All confidence in the currency was lost and any record of it was just for numbers, with the funniest recollection being the day the national budget was announced in our parliament and the Minister repeatedly used phrases like, "I propose to allocate 300 trillion billion billion...ah…ah thousands your Honour", followed by an uproar of laughter from the parliamentarians. I am not yet sure how I personally lived from day to day with the cash and food shortages, endless queues and occasional cross border trading even for a revered actuary. But fasten your seatbelts, the real stumble was yet to come.

The Behaviour of insurance liabilities during hyper-inflation

In February 2009, a declaration was made by the then Minister that all insurance liabilities, as well as all other goods and services in Zimbabwe, would be converted to USD. The date of conversion was set as 28 February 2009 to be precise. Sounds simple right? In Zimbabwe nothing is so simple.

Zimbabwe primarily had the following major types of insurance product:

- Individual life policies with/without profits. Many classes fell under this type of product including whole life policies, annuities, education plans, savings plans, funeral plans, endowment products etc.
- Unit-linked contracts that were tied to some underlying asset.
- Pension schemes offering either products in point (1) or (2) on a group-wide basis.

Now, a distinction has to be made at this stage between the members who were still paying a regular premium and those whose policies had matured or were participating in annuity products. This distinction is critical for us to understand how the policy values of each individual were updating during hyper-inflation.

For the policyholders who were still active, premiums based on salaries self-adjusted to inflation along with salary adjustments. The constant contact with insurers also meant that this class of policyholder could alter their policies such that they automatically indexed the sum assured on the basis of a chosen scale. The other class of policyholder that I spoke about did not have such a privilege but instead depended on the automatic indexing that was applied to their maturity values based on underlying asset performance. Now, here is where the problem started. There were three inflationary pressures at play:

1. Expense inflation for expenses levied on the policies by the insurance companies (EI)
2. Salary and hence premium inflation for active members (SI)
3. Inflation of insurance liabilities linked to underlying asset growth (LI)

My theory is this:

When (EI)>(SI) then with every premium that is paid, less and less of it in real terms is allocated to the life fund to purchase real assets.

When (SI)>(LI) then with every premium paid, the nominal share of underlying assets for active policyholders increases at a disproportionate rate when compared to real terms. Remember assets are bought in a pooled fashion and everyone gets a cut based on their proportionate contribution.

In our case it got to a point where the expense inflation was so high that the entirety of premium

or contributions paid in by policyholders would be swallowed up by expenses. But, still the premium contribution was credited to each policyholder's notional account even though none were used to purchase assets. This happened because expenses were reviewed on a daily basis, whereas premiums were paid once per month such that 30 days later, the premium that would have been paid at the beginning of the month would have been long spent. This continued to the extent that life companies even started to disinvest assets bought using yesteryear policyholders' contributions to meet running costs. When you keep divesting, the growth of the underlying asset is negatively affected and in turn the indexing factor to update the matured liabilities is stifled, creating a vicious spiral.

Cross-generational transfer of wealth

The result of the above process was a swift transfer of wealth from the old generation to the young with devastating consequences. Conversions were done based on nominal sum assured values and the older generation got some pathetic USD values, the majority of them being zeros. The bulk of the assets remained with the younger and active policyholders.

I was a young analyst during these days of the conversion and I remember frantically trying to create some sort of index for my actuary to use in equating values for old policies versus the new policies.

Those were the lucky funds; the bulk of the conversions were done by non-actuaries who blindly applied simple proportions based on nominal values. The crisis created killed the insurance industry in Zimbabwe, which today is still rising from the ashes. A commission of inquiry was set up by the President of the country in 2015 to look into the issues.

I am tempted to say there will be a part 2 with more facts and figures but for now, I will end here.

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