**Reinsurance News**
March 2017
Issue 87

# The Social Impact of the Actuarial Profession

By Anthony Asher

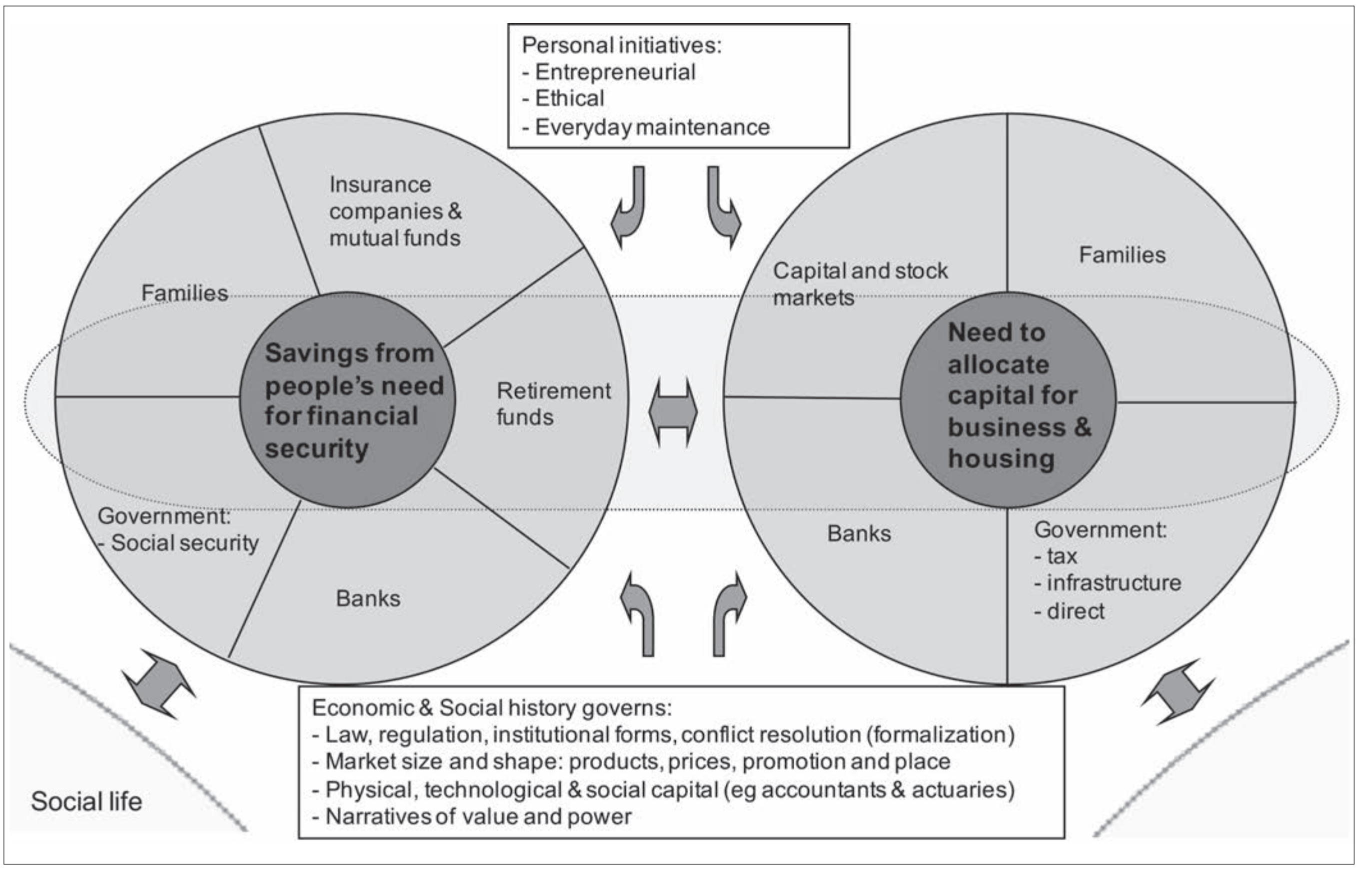
SOA currently describes actuaries as experts in "measuring and managing risk to improve financial outcomes." To that I would add a specific focus on the financial sector. This is where we work as actuaries, where we are recognized as experts and where there are evidently huge needs.[1]

Consider the size and scope of the sector, as illustrated in Figure 1. Taking the helicopter view, the two parts of the sector can be seen as two rotors. The first consists of the institutions and structures that raise money and create financial security. The other consists of the structures that invest the money. While actuaries mainly work on the first, the success and efficiency of the second is critical to the success of our work, and we cannot ignore it.

The boxes emphasize that the institutions (some of which are listed in the bottom box) do not spontaneously evolve. The influence of single individuals is obviously small, but we all have a role that can be enhanced when we act together. The theme of this article is that we make our social impact by building or modifying structures: in private, public and non-profit sectors.

We can remind ourselves that a flourishing financial sector offers significant benefits. I like to quote the biblical references "helping widows and orphans in their distress" (James 1:27) and "a widow should be enrolled if she is at least 60" (I

Figure 1.
The Structure of the Financial Sector




Source: Taken from Anthony Asher, *Working Ethically in Finance: Clarifying Our Vocation* (Business Expert Press, 2015).

Timothy 5:9). Helping the distressed is an ethical as well as a structural issue.

But the sector also contributes to a higher standard of living. This depends on productivity, which in turn requires specialization. A flourishing financial sector supports specialization by

- facilitating payments and providing short-term finance where necessary to allow people to trade;
- creating capital markets for large and long-term projects, diversifying risk; and
- protecting against risks by providing insurance.

Conversely, there is evidence[2] that a dysfunctional financial sector can impose considerable costs on society:

- If it overservices and overcharges its customers, it creates easy money for the unscrupulous. This diverts energy and resources from productive activity and concentrates wealth in the hands of an undeserving few, who become excessively influential.
- If it proliferates products that are unnecessarily complex, it can create financial uncertainty. Examples are unsustainable promises in some insurance and bank guarantees.
- If it fails to develop useful innovations and equitable structures, it increases financial insecurity and fails society.

We obviously have an ethical obligation to address dysfunctionality and injustice where we see it. This article, however, looks at some of the opportunities to develop new products and services that will enhance the private financial sector.

## FINANCIAL SECURITY

For the left-hand rotor depicted in Figure 1, one can consider the following possibilities.

### Enhancing Income Security

We can start with the traditional insurance needs for death and disability insurance. In a modern knowledge economy, there is less need for some products.

- Housework no longer has to be full time, and widows can find jobs relatively easily. There is, therefore, less need for life insurance.
- Physical impairments seldom prevent people from earning. Cover for physical injuries, particularly dismemberment cover, is archaic. Lump-sum disability contracts are perverse in that they disincentivize what should be the focus of claims management, which is rehabilitation.
- Accident covers should not be sold, as they mislead people into thinking that they are adequately covered.

There is a need for product redesign to provide the wherewithal for rehabilitation. Insurance coverage should as far as possible be MECE (cover all risks in a mutually exclusive and comprehensively exhaustive way; i.e., no gaps and overlaps). The innovative linking of premiums to healthy behavior is a spectacular way of adding new value.

Perhaps the main challenge is insurance against unemployment. To offer more cover, we need to increase our knowledge of labor market dynamics. The more we know, the more we can insure and the more advice we can give. I feel particularly for students who build up large debts with limited anecdotal information as to demand and supply about their future careers.

I also like the idea of developing income-contingent and human capital contracts that can hedge part of people's future income risks. Human capital contracts exchange a fixed proportion of future income for cash. They are available to a limited extent for tertiary education. I believe that they have potential for housing finance and would make great investments for pensioners.[3]

### Funding Retirement

Retirement is another traditional actuarial field where we could be more active. For defined benefit funds, we need to press harder to ensure that they are sustainable and that cuts in benefits or increases in contributions are fairly distributed. For defined contribution funds and private saving, we need to find ways of providing better advice that helps people to spread income over their lifetimes and respond appropriately to investment market volatility. Here it is important to acknowledge liquidity constraints in earlier years. I welcome comments on our attempts to do so at *www.draftfinplancalc.com*.

I also believe that there is merit in encouraging annuitization for many people:

- It provides longevity insurance not only for retirees but also for the family fortunes, which are depleted if the grandparents live longer than expected. The bequest motive is normally illogical; I suspect it is normally a rationalization for precautionary savings.
- Annuities protect against fraud and spending errors, which are increased by risks of dementia—one study indicates that more than 40 percent of us are likely to die with dementia.[4]

The benefits of annuitization increase with reducing life expectancy, so they would be more valuable to those with some disability—if we offered enhanced rates for impaired lives.

There are also opportunities in the design and sale of reverse mortgages to access housing wealth, particularly if they can include some equity participation to reduce risks.

### Idiosyncratic Costs

Property, casualty and health insurance also need to be MECE, with deductibles that increase as people accumulate assets. There are also challenges here to increase coverage for such events as flood and termite damage in domestic insurance.

The financial and health sectors intersect, and there are obvious challenges not just to increase coverage but also to enhance effectiveness and reduce costs. There is apparently much to do to build systems, and enhance culture, in order to identify the best procedures and learn from errors, thereby reducing tort claims.

Those planning for old age need more information about, and probably better ways of, managing health and long-term care costs.

### Dividing the Pie

The financial sector not only takes a large share of the national income; it also plays a significant role in allocating profits. Rewards do not necessarily go to the deserving. People can be lucky if there is significant demand for their particular skills, or get wealthy by extracting rents by lobbying, conspiracy or exploiting the ignorant. To the extent that we are involved in pricing decisions, actuaries have power to recommend fairer prices. We can also provide the more difficult analyses to show overservicing.

## FINANCIAL MARKETS

Actuaries could play a greater role in investment markets, as servants of institutional investors.

### More Appropriate Investments

One area is the design of investments more appropriate for retirement funding, of which the human capital instruments, mentioned above, could prove a template. Long-term investors do not want interest rate risks but do want low-risk inflation hedges.

Long-term investors also have minimal liquidity needs, which should provide opportunity for investments that capture the liquidity premium.

A pressing current problem is the need to ensure that companies use realistic discount rates to evaluate long-term projects. Evidence shows that organizations are focusing increasingly on the short-term metrics, and have not yet adapted to the low interest rates now prevailing.[5]

### Better Monitoring

Institutional investors often get a poor deal from investment managers, but that could be improved with better reporting and actuarial analyses.

- The costs of investment include stock brokerage, margins on cash deposits, and foreign exchange dealing that are often not reported. Insufficient consideration is given to the costs of raising capital, which also reduce investment returns.
- The extent of high-frequency trading suggests that it is exploiting predictable dealing by major market players. The market impact of trading, and comparisons of achieved process with daily volume weighted average price should also be monitored.

### Creating Stability

Long-term investors face less pressure to panic in investment bubbles and crashes. They should avoid creating situations in which they are forced sellers, which is often inherent in dynamic hedging. They can also create internal algorithms that allow for smoothing—although we need to ensure that contracts are fair to all parties.

Actuaries may have other ways to contribute to a greater understanding of the randomness of investment markets and create a better match between assets and liabilities.

### Capital Governance

As major shareholders, institutional investors play a major, if often reluctant, role in corporate governance.

One can envisage institutions that create a virtuous circle of accountability: members elect trustees, who vote for directors, who appoint staff, who become members. On its own, this would not be adequate to address agency risks, but it could provide a better environment, where energetic and courageous individuals ensured that companies were managed for the benefit of all stakeholders.

On another front, there is no need to gear companies highly where both debt and equity come from the same source. Australia's dividend imputation system is worth emulating in this respect, as it removes the tax advantages.

## MAKING AN IMPACT

### Professional Preparation

We are fortunate as actuaries to be part of a profession that has high technical standards and inducts us into a community with strong ethical values. Of the four cardinal virtues, we can agree that our professional development is strong in self-control and wisdom.

Making an impact requires more. It requires a passion to right a particular wrong or create a particular value. It also requires the other cardinal virtues of courage to overcome setbacks and justice to ensure we do not harm others in the process. I think most actuaries do aspire to these; it would be good if we could share more about them.

Table 1.
Insights from Actuaries with Social Impact

| Questions | Adrian Gore, Founder, Discovery Group | Hugh Miller, Taylor Fry Government Analytics |
|---|---|---|
| Was the social impact of your work a prominent reason, or was it rather all part and parcel of a broader objective? | Discovery's Core Purpose is to "make people healthier and enhance and protect their lives" and is the foundation of the Vitality Shared-Value Insurance model, the mechanism through which we incentivize healthier behavior funded through the actuarial surplus created by it. | The rationale is two-pronged. The fiscal conservatives see the approach as a way of managing down long-term costs by early intervention. Others see it as a genuine way of improving the lives of needy, with a side benefit of being able to justify it economically. |
| Were there particular skills or approaches that you had as an actuary that you think were particularly valuable in making a social impact? | In 1994, the health insurance landscape was inefficient, unsustainable and on track to becoming unaffordable—and an actuarial foundation, and a nontraditional approach focusing on wellness and prevention, was crucial to finding an alternative. | Our models tend to be more individual and event focused. We first model how a person transitions in and out of welfare, and then add the cost. This is a bit different from some aggregate approaches that gloss over the underlying events. |
| Is there anything you would say to a group of actuaries considering how to increase their social impact? | I am a strong advocate of shared value, where the business model and social need are integrated and aligned; what is good for the business is good for society and the benefit is shared between all stakeholders. | There seems to be genuinely high interest in measuring the effect of social programs and ensuring practices are evidence-based. Actuaries are well placed to help. |

As a contribution to this sharing, Table 1 gives the views of two actuaries who have made a significant social impact.

## THE ULTIMATE PERSONAL CHALLENGE

Finally, what do you want to be remembered for? Peter Drucker quotes St. Augustine as saying that asking this question is the beginning of adulthood. Drucker goes on to say that you have not understood the question if you have an answer before age 25. On the other hand, if you cannot answer it by the time you are 50, you have wasted your life!

One answer to this question can be found by applying our strengths and passions to real needs in society. It is a privilege to be a member of a profession where many others are setting such great examples. Let us continue to encourage each other to do so. ■

Anthony Asher is Associate Professor in the School of Risk and Actuarial Studies at the University of New South Wales. He can be contacted at *a.asher@unsw.edu.au.*

**ENDNOTES**

1 This article is based on a presentation given to the Caribbean Actuarial Association in December 2016. An expansion of some of the ideas can be found in Anthony Asher, Working Ethically in Finance: Clarifying Our Vocation.

2 "Lord Turner: Admit It: A Bigger Financial System Is Not Necessarily a Better One, Independent, September 23, 2009, *http://www.independent.co.uk/voices/commentators/lord-turner-admit-it-a-bigger-financial-system-is-not-necessarily-a-better-one-1792108.html.*

3 Anthony Asher, "Salary Linked Home Finance: Reducing Interest Rate, Inflation and Idiosyncratic Salary Risks," Paper presented to the Institute of Actuaries of Australia, 2009 Biennial Convention, April 19–22, 2009, Sydney, *http://www.actuaries.asn.au/Library/Con09_paper_Asher_%20Salary%20Linked%20paper.pdf.*

4 Marco Carone, Masoud Asgharian, and Nicholas P. Jewell, "Estimating the Lifetime Risk of Dementia in the Canadian Elderly Population Using Cross-sectional Cohort Survival Data," Journal of the American Statistical Association 109, no. 505 (2014): 24–35, *https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4485460/.*

5 Andrew G. Haldane and Richard Davies, "The Short Long," Speech presented at the 29th Société Universitaire Européene de Recherches Financières Colloquium: New Paradigms in Money and Finance?, May 2011, Brussels, *http://www.bankofengland.co.uk/archive/Documents/historicpubs/speeches/2011/speech495.pdf.*