



Actuarial Challenges in Defined Contribution Schemes

*Prepared by
Ramani (SG) Venkatramani & Victor Chandra
Promontory Australasia, Sydney*

Presented to the Actuaries Institute
Financial Services Forum
30 April – 1 May 2012
Melbourne

*This paper has been prepared for Actuaries Institute 2012 Financial Services Forum.
The Institute Council wishes it to be understood that opinions put forward herein are not necessarily those of
the Institute and the Council is not responsible for those opinions.*

© Promontory Financial Group
Ramani (SG) Venkatramani &
Victor Chandra

The Institute will ensure that all reproductions of the paper
acknowledge the Author/s as the author/s, and include the above
copyright statement:

Institute of Actuaries of Australia

ABN 69 000 423 656

Level 7, 4 Martin Place, Sydney NSW Australia 2000

t +61 (0) 2 9233 3466 f +61 (0) 2 9233 3446

e actuaries@actuaries.asn.au w www.actuaries.asn.au

Actuarial challenges in Defined Contribution Schemes

Ramani (SG) Venkatramani & Victor Chandra

Promontory Australasia (Sydney)

Financial Services Forum, Actuaries Institute
Melbourne, 30 April 2012

1. Introduction

Traditionally, actuaries have been in the forefront of defined benefit (DB) superannuation schemes, advising on a range of matters.

In contrast, the actuary's role in accumulation or defined contribution (DC) schemes has been limited. In many cases actuaries have played no role at all. In our view, this lack of actuarial involvement can be explained by a number of reasons – most notably, the legal ability in DC schemes to adjust member liabilities automatically, as asset values move up or down, therefore limiting the 'need' to 'immunise' asset/liability movements. The traditional thinking has been that members bear all the risks and rewards and receive whatever outcomes are produced at retirement.

In this paper, we argue that things have now changed drastically and that the traditional thinking must be challenged. In particular, expectations from superannuation members, the Government, regulators and other interested industry participants have slowly but surely recognised that a DC system that forces contributions and entails significant tax concessions should not, under reasonable circumstances, be left to require members to bear all risks over the many decades of membership. Policy-makers and the industry together can surely do better to protect superannuation members (particularly those close to or past retirement) from catastrophic incidents that were vividly illustrated during the global financial crisis (GFC).

This paper argues that the actuarial profession must proactively engage in the debate and contribute to the solutions that the changed environment requires. It is qualified to do so. We posit that enhanced actuarial input in DC plans is both necessary and desirable in the best interests of beneficiaries. Indeed, robust and forward-looking public policy would demand it.

2. The traditional actuarial role in DB

In Australia and other parts of the world, it is normal for actuarial advice to be sought in a range of matters in DB schemes. These include:

- benefit design at scheme inception as well as in response to changing member / employee expectations, employer financial situation and regulatory and legal requirements;
- liability valuation at periodical intervals (usually triennial) to assess whether accrued liabilities in respect of past service as well as expected future service could be met by fund assets and expected future contributions in the context of the current surplus / deficit; this is done as an integral part of setting future contribution rates having regard to membership movements, salary increases, investment returns and costs;

- formulation of investment strategies, to align them with the expected liability profile; for example, if pensions have to be indexed to cost-of-living increases, the asset mix should reflect an ability to move with inflation;
- remediation of solvency concerns, by dialling up contribution rates / frequency and reviewing investments, as well as signalling the need to reconsider benefits (subject to governing rules) so that the remaining beneficiaries do not suffer relative to earlier recipients;
- insurance coverage – its existence, adequacy as well as counter-party risks, especially to ensure that promised benefits could be met as they arise with fund reserves or insurance payouts, with no material mismatch between liabilities payable and claimable;
- repatriation of surplus to employers – after ascertaining ongoing solvency outlook and considering less aggressive options such as contribution holidays;
- fund mergers when differential solvency positions and resulting member security must be assessed to achieve equity between different member classes as well as the interests of employer-sponsors;
- eventual closures – when assets need to be allocated equitably among members having regard to governing rules; and
- supporting advice in relation to anti-detriment claims, given the complexity involved in the calculations.

APRA has also encouraged more frequent asset valuations as well as actuarial measurement of liabilities in volatile times (e.g. in 2000 as well during the GFC, or when employer-sponsors in particular industries were under financial stress). Supplementing this, actuarial advice in regard to broader risk management has also been increasingly sought. This includes, for example, advice on liquidity management, a subject to which APRA had drawn the industry's attention to several times over recent years¹.

It is fair to say that the profession has served the DB sector well, given employer support, a stable superannuation system and prudent operations. As DB plans could be reduced under the Australian regime to a DC-type reliance on fund assets alone (when the employer is unable or unwilling to inject funds), the rare incidence of DB failures has been commendable.

3. Structural changes in superannuation in Australia

The significant structural shift that has occurred over recent decades in Australia from DB to DC plans has been well-documented. Around the world, the shift has been similar.

With traditional life time employment giving way to a large number of jobs in a person's career, and the need for portability of retirement savings across jobs (and at

¹ See for example, APRA's *Insight* Issue 1, 2010. An APRA survey conducted in 2008/09, also found that the DB section in many hybrid schemes was being used as a virtual 'line of credit' to help manage fund liquidity. APRA emphasized the need to ensure equity between DB and DC members, given the difference in the financial promises. Several funds found it useful to obtain actuarial advice in this regard.

times, across national boundaries), DC has proved the natural choice for employers and employees alike. Multiple memberships are more conducive to DC than DB.

Employers have also expressed their preference for the certainty available in paying pre-determined contributions at regular intervals under DC schemes without exposing themselves to ongoing investment risk. Accounting standards (which have required changes in retirement liabilities to be brought into employer accounts, thereby potentially overshadowing employer performance) have also been another factor that has contributed to DC dominance.

Against this background, the level of market sophistication and the public's expectations of DC schemes have grown over time. Increasing compulsion (hard and soft) has exacerbated the pressure on policy-makers to create a climate whereby a decent retirement standard using privately funded superannuation pensions (claimed as the target) would be met. In short, public expectations of DC funds ('you get what you get') are moving towards a DB type arrangement ('if you defer a portion of your current earnings towards retirement, you are more likely to be secure, instead of relying on the age pension')². After all, the general public has been exhorted to self-fund their retirement through additional savings such as non-concessional contributions and salary sacrifice to super, as well as working after reaching the traditional retirement age.

Unfortunately, the GFC illustrated that actual experience can fall drastically short of expectations. Substantial falls in retirement savings close to or after working age can have catastrophic consequences for retirees who, in turn, may have limited understanding of the risks or circumstances that led to such consequences³. If sufficient numbers are affected, there are likely to be broader consequences for government and society at large.

Social cohesion could be further stressed given the growing concerns that the age pension alone is insufficient to meet member expectations for post-retirement living standards. The lack of other clear safety mechanisms to address potential shortfalls, and the onerous burden of unfunded social security in future generations as a result of the 'ageing population', add to the challenges facing the system.

Clearly, greater security and certainty is needed. This has been recognised by the raft of reforms that are currently being introduced in the regulatory framework for superannuation in Australia. These include:

- greater powers for APRA including the power to make Prudential Standards in superannuation;
- reforms stemming out of the 'Cooper review' including industry-wide operational risk reserves;
- changes to the provision and regulation of 'Financial Advice' and
- measures to improve financial literacy.

While Australia is doing much in strengthening its superannuation system, there is still significant work left.

² It is not difficult to think of solvency deficits in DC schemes, if regard is had to the expected retirement outcomes on which the current retirement savers have been brought up (rather than the legally feasible and minimalist approach of writing down member balances). Life actuaries familiar with 'reasonable policy holder expectations' will notice the similarity here.

³ This reflects one of the critical challenges in our DC system, whereby risks and choices are transferred onto the shoulders of individuals who may not have an adequate understanding of them.

Improved risk management in superannuation, increased resilience of the system through additional capital support (not a feature in superannuation in the past, unlike other prudentially regulated industries) and better management of member expectations through education and financial literacy will be critical to the reforms. While actuaries can (and have continued to) play a role in each of these areas in the past, there is clearly an opportunity for further engagement by the profession.

4. Re-thinking the role of the actuary

In our view, the global trend towards defined contributions arising from a range of pressures, and the gradual demise of defined benefit plans has forever altered the landscape. It is no longer possible to merely rely on the legal and accounting construct that in DC schemes, liabilities can be adjusted according to assets.

As the GFC illustrated, member retirement savings are subject to the whims of market movements with potentially devastating impacts for post-retirement living. Policy-makers need to think of such eventualities and strive to minimise drastic reductions. Without removing the current ability to dial up or down member balances in DC during normal times, the industry needs to consider mechanisms that can reduce the impact of future crises⁴.

In the superannuation industry, concerted action by way of better risk management can position the industry to ward off the impacts of recurrent major falls in savings. Actuaries have a role here.

Actuaries help people understand and manage financial uncertainty. In DB schemes – the uncertainty lies in the inputs (employer contributions). In DC schemes, the financial uncertainty is in the outcome (member benefits). A natural application of our skill set is helping industry understand and manage the financial uncertainty in member benefits.

By virtue of their professional training and practical work, actuaries are well-placed to analyse and manage asset liability mismatches. Think of Frank Reddington's immunisation theory in regard to life insurers issuing non-participating policies. If member expectations of a secure retirement are to be facilitated, DC funds must consider how aligned or otherwise their assets are to delivering expected outcomes.

Actuaries are also well-versed in preparing holistic assessments of the inter-relationships between various financial risks in life, general and DB super industries. We regularly deal with complex issues involving data integrity, cross-subsidisation and equity. We are also used to dealing with issues and related controls around the appropriate segregation of funds in life insurance statutory funds – an issue that is likely to become more relevant in DC schemes when the introduction of the default MySuper product will demand clearer segregation between default and choice products.

Clearly, there are areas where our skills can help develop appropriate solutions to the challenges facing our DC system.

5. Applying actuarial skills to DC schemes

There are a number of areas, in our view, that particularly stand out as presenting opportunities for greater actuarial input in DC schemes.

⁴ Using an unlikely medical analogy, think of epidemics in the modern society. It is not possible to guarantee that they would not occur, even in the most sophisticated regime. But this is no reason why steps must not be taken to minimise the incidence and impact of such events.

The first relates to product design and innovation. In our view, the superannuation industry in Australia has not done much by way of product innovation, perhaps cocooned by the benefits of superannuation guarantee and tax concessions. It is an oversimplification to believe that only DB schemes require design advice, especially as the current super reforms have highlighted the imperative for product innovation in superannuation. Further innovation is needed, particularly in income stream products given the longevity issues facing Australia. New products will demand robust analysis to ensure that they deliver intended outcomes. Greater attention to benefit design will also avoid costly errors and help in meeting the higher expectations of all retirement plans (including innovative pension products).

Second, with the established trend towards investment choice, careful planning of investment menus and switching options will be called for. In our view, there is a role for actuarial thinking in the financial advice process. Typically, financial plans are developed using median assumptions and hence, a financial plan is expected to fail 50% of the time. Actuaries can help reframe the financial advice question to ask members what level of certainty of outcomes they would like to achieve in retirement, and then assist funds develop strategies to better meet member objectives.

Third, actuaries are well-placed to respond to the segregation and equity issues that will become more prevalent with the growing trend in investment choice, and the introduction of the default MySuper in Australia. This includes ensuring that crediting rate / unit pricing systems are rigorous and subject to appropriate sample checks⁵. It also includes assisting with the fair allocation of costs between products, and assisting in balancing the competing goals of administrative simplicity and cost.

Fourth is risk and capital management. The GFC showed the importance of stress-testing for liquidity and asset valuations. Operational risk modelling and the estimation of residual risk exposures (after accounting for controls and insurance) will be required to estimate risk reserves. As each fund has to estimate its own reserve, expert advice is essential. The requirements that APRA will introduce in this area will provide further impetus for appropriate methodologies to be developed in measuring reserves⁶.

Actuaries can assist in these and other emerging risk areas with their training. Given the convergence we have seen in regulatory tools between various finance professions (actuaries, accountants, internal auditors, CFAs, tax experts, corporate finance experts), however, it is clear that we will need to work with other experts to obtain the best outcome for funds and members. Clearly there will be matters such as tax and law where, as occurs now, where reliance has to be placed on other professionals.

6. Regulatory imprimatur

Actuarial advice in regard to DC plans is generally not mandated by law in Australia (except for un-segregated pension funds or anti-detriment claims). But given the need to facilitate better risk controls over DC as the dominant type of retirement

⁵ Anecdotally, errors in calculating member entitlements seem to arise from time to time in all providers as markets, risks and systems change.

⁶ A note of warning to the industry: in the banking industry, the Basel capital requirements were standard for decades. Even with recent developments, however, only a few 'advanced' banks with sufficient risk data and resources have been allowed to formulate their own internal capital models. Contrast this with superannuation: the introduction of operational risk reserves (a form of capital) may see each fund being asked to develop an approach that determines appropriate risk reserves in accordance with their risk profile. The onus on trustees and their advisers will be substantial and can only grow over time.

savings vehicle, such input will become more established once it is seen to deliver value.

The profession should not wait for the regulatory move, but take the initiative in demonstrating value.

An important development is the work done through the Institute's Guidance: *Practice Guideline [499.05] Financial Condition Reporting for Superannuation Funds*. This is a welcome initiative.

7. Next steps

Large DC funds that are leaders in the industry should be approached to initiate the process of better risk advice and management. Either for each individual risk, or in a time series for select risks, actuarial assessment of financial impact would add value to trustees.

A comprehensive Financial Condition Report (FCR) undertaken say once in three years analysing the inter-relationships of various risks at a given point in time will assist pro-active planning. This will be relevant to complex funds, those with ongoing mergers and consolidation and hybrid funds.

Actuaries need to draw on the expertise available from other professions where appropriate. Practical workshops will be useful.

Once the value of such professional assistance is known to the market, we are confident that the regulators will also place weight on such input and risk-rate trustees accordingly. Given the interest of policy-makers in averting the impact of market meltdowns on the superannuation system and maintaining public confidence, such advice should, in time, become the norm.

This will not, of course, be easy. There is an understandable resistance to introducing new requirements which members will ultimately pay for. The Productivity Commission's Regulation Impact Statement requirements are quite rigorous. In normal times, it would be difficult to see the value of planning for a crisis ('if it ain't broke, why fix it'). But the confidence such advice will engender for trustees, beneficiaries and policy-makers and, in turn the system, should, over time, make it worthwhile.

8. Conclusion

The far-reaching changes in superannuation in Australia have afforded a valuable opportunity for actuaries to play an important role in DC schemes in securing the financial future of beneficiaries. The rising expectations of retiring members require such involvement.

While the detail will vary, many of the considerations apply in all national agendas.

Can the profession rise to the challenge?