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The following paper postulates that

- current actuarial funding methods for defined benefit retirement benefit plans are dying because the methods do not provide stable contributions in current conditions,

- independent life insurance companies are dying because their managements prefer to issue investment policies instead of life insurance policies, because previously hidden charges are becoming exposed and because of an increasingly dissatisfied public and

  the independent actuarial profession is dying because it will be absorbed by the accounting profession.

T.P.D.

Introduction

No, the heading of this paper is not "Total and Permanent Disablement". TPD here means "Three Prospective Deaths".

The three prospective deaths considered are:

- the death of current actuarial funding methods for defined benefit retirement benefit plans
- the death of independent life insurance companies and
- the death of the independent actuarial profession.

Notwithstanding the different application of the initials, this paper nevertheless **does** in effect deal with total and permanent disablement, leading to the three deaths mentioned above.

Contemplate this scene. George Blake, chief executive, and Beryl Schmidt, human resources manager of your favourite client, know they have a problem. What's more, they know what it is. Better still they know they need your help and they know what they want you to do to resolve it. That's the kind of client I like.

What happens when you are asked to help in this kind of situation? No doubt you apply all your years of actuarial training and experience to its solution. You decide what needs to be done. You know you are right. Now you have to tell your client and convince them that they should put your solution into effect. This might be getting an increase in the pension plan contribution rate at the very time when the employer is losing money. It might be retrenching half a life insurance client company's staff because the expense rate is way out of hand. Do you have problems convincing your client to put your solution into effect?

Unfortunately very few actuarial courses include salesmanship. Have you ever got help from a sales organisation to sell the client the solution? Probably not. You find your own way of doing it. I believe that a common approach is to find reasons that the client will accept. Not having your technical expertise (which is why they came to you in the first place) reasons which are obvious to you may not be acceptable to the client. You have to find acceptable reasons. You have to rationalise your solution. You include all the points which support your solution. Being human, you are inclined to omit points which would suggest your solution is inappropriate. I am willing to bet that there are hundreds, even thousands, of actuarial reports in existence which contain rationalisations of their recommendations and may or may not include the real reasons.

This paper has been prepared on similar lines. I say 'similar', not 'the same', because this paper does not contain any rationalised solutions of the three problems it outlines. In fact it does not contain much at all in the way of solutions. Instead of rationalising a solution or solutions, it rationalises the existence of the three problems. For the most part it deliberately omits contrary reasons or rationalisations.

Readers of this paper will come from various countries and many will not be fully familiar with Australian practice, so I have tried to resist the temptation to illustrate the points made in this paper by detailed reference to the Australian situation. On the other hand in order to avoid readers remaining in a vacuum, I have felt it necessary here and there to make some practical references and for the most part have used the Australian situation for this purpose. Nevertheless, I hope and believe that the situations described are general enough to be applicable at least to most or all other English-speaking countries and possibly to other countries. I am looking forward to discovering the extent to which, if at all, the views expressed in this paper apply to other countries.

In most of the reports or papers I have written, it has been my hope that both my reasons and my rationalisations would be accepted. This is the first paper I have written where I hope readers and the discussion will convince me that I am wrong. I am hoping that my three problems are actually non-existent so that the lingering deaths I foresee are simply evidence of my own imminent TPD.

The Death of Defined Benefit Retirement Benefit Plan Funding Methods

Note that this section of the paper deals with the death of retirement benefit plan **funding methods.** It does not deal with funding media or with the decline in the popularity of defined benefit retirement benefit plans due to interference from enlightened governments and to other causes.

When I was learning in the UK how to fund defined benefit plans, the market rate of interest was around 2.5% p.a.. Investment rate stability was the order of the day. A change of .5% p.a. in the market rate taking a year to occur would have produced a crisis. I learnt about the "aggregate" method of funding defined benefit plans, the "entry age normal" method, the "attained age normal" method and the single premium or accrued benefit method.

Inflation was already around in those days. My mentors considered it sacrilege to allow specifically for it in costing. It was often spoken about in hushed tones. "If we recognise that it exists, it won't go away."

While there may be some debate about the principal purpose of defined benefit plan funding, there is little doubt that determination of a stable employer contribution rate is at or near the top of the list. A substantial change in the employer contribution rate as a percentage of member salaries might have been due to events specific to the fund such as an increase in benefits, or a radical change in the composition of the membership, but not to general economic conditions.

Actuaries professed to have the tools to ensure stability of the employer contribution rate. They produced funding methods which were appropriate in the economic conditions then prevailing. In the 1970s those economic conditions changed and the funding methods began to fail. Because of unexpectedly high interest rates, unexpectedly high rates of inflation and widely fluctuating and at times negative real rates of return, employer contribution stability crumbled.

Nevertheless the actuarial profession's traditional methods of funding continue to be used and have been producing ridiculous results. In many funds where the fund assets represented a high proportion of the total

actuarial liabilities, high investment returns substantially reduced the employer contribution rate. Sometimes the assets exceeded the total liabilities so that the need for a contribution of course disappeared entirely, i.e the "contribution holiday".

I quote from a letter from Richard Abramson which appears in the March 1994 edition of the UK's "The Actuary":

> *One of the problems about pension scheme funding is that the myth has grown up that it is a long term matter. We all know, and most of us have indeed taught others, that pension funds' liabilities extend over many decades and that it is the long term that matters. However we have not succeeded in producing long-term stability of contributions..... Three years without dividend increases, and our valuation assumptions are shot through, leading to a large drop in surplus and an even larger increase in contribution requirement.*

Why has the actuarial profession not produced funding methods which are appropriate in the new conditions? Why do we continue to use methods which no longer achieve the desired objectives?

For example, consider a defined benefit plan where the new entrant funding method has been adopted. Using a particular set of actuarial assumptions the contribution for the average entry age of 28 is 10% of pay. After allowing for this contribution the residual actuarial liability is spread over 20 years and called a "past service" contribution. However the actuarial assumptions will not be correct notwithstanding that the actuary has used to the utmost all his or her considerable judgment and experience.

Had the future been known so that the contribution could have been calculated accurately, the new entrant contribution rate would have been 6% of pay say, or alternatively it might have been 14%. What is the point of recommending a new entrant rate as a percentage of members' pay plus a separate 'past service' contribution over twenty years when the basic new entrant rate itself is so approximate?

I long ago came to the conclusion that of the known funding methods only the aggregate funding method is acceptable, because at least it provides the simplest

and most understandable result for the employer. This does not mean that I am ecstatic about it, for the reasons outlined above. I have consoled myself with the thought that as yet no better method has been devised but I have always hoped that the inventiveness of the profession's members, perhaps combined with the power of modern computers, would produce an effective response.

As far as I know, no effective new methods have been devised. Perhaps there are no possible methods. Perhaps we should recognise this. Is it unprofessional to continue to use methods which economic conditions have rendered inappropriate?

Apart from this, we still continue to adopt procedures which non-actuaries might well imagine were designed specifically to mislead the uninitiated and to maintain the aura of mystery with which the profession is often associated. For example the practice at a fund valuation of assuming that the previously determined contribution rate will continue so that an "actuarial surplus" or "actuarial deficiency" arises, is commonplace and often misunderstood and I believe it to have arisen originally by contemplation of the problem by minds indoctrinated and contaminated by life insurance practices. It was unnecessary to create this misunderstanding. The employer wants to know if the contribution rate should change and, if so, by how much. Why not tell him directly?

In my opinion it is the aura of mystery combined with the professionalism of retirement benefit plan actuaries, and the trust which this engenders in clients, which so far has prevented the profession from attack on its funding calculations. The trouble is that actuarial preoccupation with "doing it right" results in it being necessary to demonstrate to the client the appropriateness of what has been done, notwithstanding that often the client is unable to understand the technical and very valid explanation.

We should be trained that a particular actuarial approach should not be used unless it is capable of explanation to the client. I fear that unless client communication is introduced into actuarial training - and I see no signs that it will be - the death of past devised actuarial funding methods for defined benefit pension plans cannot be postponed for too many future decades.

The Death of Life Insurance companies.

By "life insurance company" I mean an independent company established to write life insurance business. By "independent" I mean that the company is **not** part of a financial group, established as a company for technical convenience to embrace the group's life insurance undertakings.

The Australian Macquarie Dictionary defines both "life assurance" and "life insurance" as

> *Insurance providing payment of a specific sum of money to a named beneficiary upon the death of the assured, or to the assured or to a named beneficiary should the assured reach a specified age.*

The Australian Life Insurance Act in effect defines life insurance as "insuring payment of money on death (not being death by accident or specified sickness only) or on the happening of any contingency dependent on the termination or continuance of human life." Thus life annuities are included.

These definitions support my view that a contract which relates only to investment is not, and cannot be, a life insurance policy.

Forty years ago Australian life insurance business consisted almost entirely of endowment insurances and whole of life insurances. These policies were commonly used by life insurance companies as the funding medium for employer retirement benefit plans. (Yes, even whole of life insurance policies!)

In the mid-1960s a movement began towards the use of investment contracts with separate life insurance cover for employer retirement benefit plans. This "unbundling" extended over the next 10 - 15 years into personal policies, encouraged by a statutory reserving requirement which became increasingly onerous for whole life and endowment policies as market rates of interest rose, but which was not so onerous for other types of policies.

At first various devices were adopted to write investment contracts in such a way that they complied, or at least appeared to comply, with the definition of life insurance business. With time, as it became

realised that the authorities were not insistent on strict compliance with the definition, these practices were mitigated and finally abandoned. Today life insurance companies appear to ignore the definition.

So the Australian life insurance industry now writes

- life insurance business and also
- investment business.

As is common when the stock market crashes, following the Australian crash in 1987, a demand for secure fixed interest investment arose. Life insurance companies catered for this demand by the issue of so-called "capital guaranteed" policies, sometimes with interest rates guaranteed up to one year in advance. Many offices did not foresee the imminent property slump or the reduction in interest rates and were caught paying interest rates which exceeded their investment earnings. Further, because the business was sold principally through intermediaries rewarded through commission (hereinafter called "agents"), this development was accompanied by strenuous attempts to give these agents the same commission as if they had sold endowment or whole of life insurances. To avoid losses on early termination of investment contracts, it was necessary to introduce surrender charges into the investment contracts.

Exposure of full details of these charges to the prospective policyholder would have prejudiced the chances of completion of most prospective sales. Consequent reluctance by the company and the sales force to reveal all these details to the prospective policyholder resulted in non-disclosure or inaccurate disclosure of some important policy provisions at the time of sale. When these provisions came to light on subsequent desire to surrender the life insurance industry received considerable adverse publicity, much of it from the pens of gradually enlightened financial journalists.

A Trade Practices Commission inquiry into life insurance in 1992 criticised adversely the lack of information supplied to prospective policyholders and also the fact that 21% of ordinary savings policies were discontinued by the end of the first two policy years. Figures at this level have been around for so long that actuaries, including me, have come to regard them as normal. This is to be regretted.

While adverse criticism of policy conditions, particularly surrender values, has been a feature of life insurance as long as I can remember, the industry seems to me to be held much lower in public esteem than it has ever been, due to consumer reaction resulting from better knowledge, including a belief that the agent's reward is too high. It's a long cry from the days when the Prudential in England voluntarily and beneficially started paying reversionary bonuses (on what until then had been non-profit policies) because the premiums had been too high.

Pressure in Australia for reform of the life insurance industry from the Trade Practices Commission, consumer bodies and the Insurance and Superannuation Commission (which administers the Australian Life Insurance Act) has resulted in a requirement for life insurance companies to disclose to prospective policyholders the amounts of the agent's commission and all other charges in clear and unambiguous language. Agents are leaving the industry in large numbers.

In recent years many banks have either taken over existing life insurers or have established their own life insurance outlets. Large volume sales have been made through bank branches to the exclusion of traditional agents. At the same time the bank's other expense costs are spread over a wider business base so that the costs of bank life insurance operations appear to be lower than those of traditional life insurance companies.

From 1 January 1994 new regulations have been introduced requiring among other things that intending policyholders of investment policies be given a plain English description of the policy conditions including expense charges and commission payable to the agent and also a statement of projected benefits.

Similar discomfort with life insurance operations has occurred in the UK. Some years ago a UK Treasury investigation discovered that a third of life insurance policies were discontinued in the first two policy years. In 1987 the Office of Fair Trading urged the industry to disclose commissions.

For years accountants and other critics of the life insurance industry have been dissatisfied with the argument of actuaries that it is not possible to work out the profit of a life insurance company until all the policies have gone off the books.

The desire of actuaries to use the terms "surplus" and "deficiency" because, they say, "profit" or "loss" is inappropriate and misleading, has for years been accepted because actuaries usually seem to be "right". After much mutual work in Australia by a committee of accountants and actuaries, an entirely new system of statutory life insurance reporting is about to be introduced.

From this new system will emerge annual figures for the profits of life insurance companies, thus proving that notwithstanding years of contention by actuaries that "it can't be done", not only can it be done but it is actually being done. It will be interesting to see what level of profits is disclosed under this new system, including whether companies previously thought to be profitable are found to be lossmakers, and vice versa.

For some years it has been my view that the life insurance industry has been misguided in pushing to one side its reason for existence, namely the writing of life insurance business for which, with a few minor exceptions, it has a monopoly. The craving of life insurance managements to write investment business in competition with other investment organisations who for various reasons have lower sales costs has resulted in the exposure of life insurance cost structures. We are often told, correctly, that life insurance has to be sold. It is ironic that the people with the greatest incentive to sell it - the agents - are having their charges disclosed, making it even more difficult to sell.

At the same time other life insurance company expenses are not being held in check. Very few Australian companies are operating with expenses within the expense margins allowed for in the premiums. In consequence many amalgamations or takeovers have taken place recently among smaller companies in Australia. It might be surmised that if it were not for the Australian Government's requirement to enforce ever greater contributions to funded retirement benefit plans, thus increasing money received by life insurance companies for investment, many more life insurance companies would be in difficulties.

In summary, life insurance companies are not well regarded, life insurance company mortality is at present very high and the average health of most of the survivors is poor.

With company deaths exceeding births and poor average health the prospects for extinction are great. I expect each death to come after a long and lingering illness. Then provision of life insurance will be taken over by financial institutions which offer life insurance as just one of their many financial services.

The Death of the Independent Actuarial Profession.

In 1926 a committee appointed by the Council of the Institute of Actuaries "to consider what action, if any, can be taken in the direction of extending the scope of the Actuarial profession" reported their "*opinion that enlargement of the scope of the actuarial profession is possible, particularly in connection with Accident Insurance, Investments, Building Societies, Trade and Political organisations and Government and Commercial statistical departments; indeed, in connection with all spheres of business calling for the use of modern statistical methods*".

In 1942 at an Institute discussion W. G. Bailey drew attention to "*three disturbing features of the present position:*

(1) The lack of employment of actuaries outside the (life insurance) industry.

(2) The little prominence achieved by actuaries in such a widely debated subject as Demography.

(3) The stagnation of our science."

If my prognostications about life insurance companies are correct, survival of the profession may depend on the extent to which actuaries transfer from life insurance companies to other fields and the extent to which the "stagnation of our science" has been overcome.

From the records of the then Institute of Actuaries of Australia and New Zealand it may be deduced that at 30 September 1964 only 17% of active Fellows were not engaged in life insurance.

Twenty-nine years later, i.e. at 30 September 1993, 64% of active Fellows did not regard life insurance work as their principal activity.

The UK Institute's records reveal a similar trend. For Fellows working in the UK the numbers engaged outside life insurance progressed from 8% in 1895 to around 25% throughout 1939-1955 and then rose to the present 50%.

In the US the trend also appears to have been similar.

It is consoling that the proportion of actuaries employed outside life insurance is rising with time. Taken alone, this would suggest that as life insurance companies die, substitute occupations are found by the actuaries that worked for them. Perhaps I have underrated the ability of actuaries to sell themselves.

However a more important development is in progress.

In 1934 A. T. Traversi, an Australian actuary, presented a paper "Where Actuary and Accountant Meet". He began:

> *Every actuary must at some time or other have come into touch with members of the honourable profession of accountancy in such mode as to experience some slight, if unnecessary, conflict of ideas. It is the misfortune of both that the field of the actuary, where dovetailing into that of the accountant, is most inadequately dealt with in accountancy text books. The actuary must necessarily understand accountancy, but on the contrary, the accountant, if relying on his text books only, is leaning upon a reed when dealing with life insurance and analogous accounts.*

While Traversi's words, if not his punctuation, are still applicable today, there have been significant changes.

Whereas there are probably around 10,000 actuaries in the world, the number of accountants might be 100 times as many. Further, whereas actuaries' activities are mainly limited to involvement with particular financial institutions, accountants are involved in every type of commercial enterprise.

The need to be a "jack of all trades" in the accountant's daily work may, as the well-known proverb suggests, result in a less than complete understanding of the fundamentals of the many businesses which require audit and associated work.

I have been fortunate to have worked with some partners of the larger accounting firms. Their ability to understand actuarial principles and their practical application has been remarkable. These people are the leaders of the accounting profession.

Just as actuaries apply judgment in their work, so are these top accountants experts at exercising judgment in the application of accounting principles and methods. However, it has to be said that the number of actuaries is so small, not because not many are required, but because to qualify as a Fellow a person needs to have particular attributes rarely found in the average person. Upon meeting a fellow actuary for the first time, there is usually no need to first establish the level of ability in order to communicate effectively, the level is taken for granted. But the numbers of accountants are so great, the range of abilities of accountants is considerable.

It is therefore not surprising that the accountants have found it expedient to devise rules, nowadays called "standards". These rules are necessarily general in application and have led in the past to some comical results when too rigidly applied, but all accountants are expected to comply with them.

In recent decades governments around the world have legislated to require accountants to prepare financial statements under guidelines or controls which those governments thought appropriate. Accounting bodies have developed more and more standards in order to cope with increasing requirements.

We now have a situation where accounting standards which impinge on financial institutions involving actuaries also impinge on the execution of the actuarial function and tend to limit actuarial freedom. Actuaries are trained to exercise judgment in carrying out their functions rather than to follow rules, and so have not had as many rules as the accountants.

I have the impression that, finding an unexpected lack of corresponding rules in the actuarial profession, accounting bodies regard actuarial bodies as lacking

adequate control over their members, believe that actuarial comment on proposed accounting rules is prejudiced and persevere with the introduction of their own rules in actuarial situations.

Perhaps the first accounting foray into matters previously confined to actuaries was in 1966 when the US APB No. 8 analysed methods of funding retirement benefit plans. We now have voluminous standards not only in the US but also in countries like Australia. Often local standards are modelled on the US standard, notwithstanding their non-applicability to local legislation and practice.

As accountants become more involved in actuarial matters, they have found the need to employ actuaries or to establish their own actuarial firms. While the original purpose might have been to assist work on their own clients, the situation is now developing where these firms and actuaries are acting like conventional actuarial consulting firms and have their own clientele. These accountant-allied actuarial consultancies are expanding at a remarkable rate. About 3% of active Australian actuaries work for them.

It seems to me that this development will continue and the activities of actuaries will become ever more closely involved with accounting bodies. Actuarial work will become more and more regarded by lay and accounting eyes as a specialised branch of accounting. This raises the question of how much longer we can expect accountants to be satisfied that actuaries set their own examinations and professional standards. It may well seem appropriate to outside observers, and to accountants themselves, that actuarial qualifications should be determined by examinations set as part of, and managed in the same way as, accounting examinations.

I conclude that there are two principal forces pulling the actuarial profession in two different directions. The first is the increasing proportion of Fellows who do not rely on life insurance to keep them occupied. The more this tendency continues, the greater is the prospect of the profession's survival. The second is the tendency for actuaries to become associated with accounting firms and for actuarial services to be offered and supplied by accounting firms. As a result, areas of actuarial endeavour are being influenced, changed, restricted and absorbed into accounting practices and standards. If this continues, actuarial training is likely to become a

specialised branch of accountancy training. I foresee that all budding actuaries will first be trained as accountants. Then, if they have the aptitude, they will be encouraged to specialise in the actuarial side.

The numbers of accountants being so great, and the machinery already in place for the setting of examinations, very little adjustment will be required to extend this machinery to cover the actuarial examinations.

This will mean the death of the independent actuarial profession.