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SYNOPSES

SOME THOUGHTS ON PENSION SCHEME DESIGN

BY P. N. THORNTON

(*Synopsis of a paper presented to the Society on 18 November 1986*)

THE paper covers three main aspects of occupational pension scheme design:

—how to design a scheme;
—existing designs, their shortcomings and their virtues;
—new designs for the future.

It was originally sparked off by the apparent polarization of debate on pension scheme design into 'Money Purchase' and 'Final Salary' planes. Apart from the lack of attention given to the 'Career Average Revalued Earnings' design for occupational schemes, might there not be new designs to meet the changing demands of society?

The paper first examines the employer's objectives in establishing a scheme and the employees' requirements from a scheme. There is an apparent conflict between the different concepts of 'providing for members' needs', providing 'a reward for services' and enabling employees to 'identify with their pension assets' and the pension scheme designer has to attempt to resolve this.

A comparison of the relative attractions of final salary and money purchase designs then leads to the conclusion, amongst others, that a combination of both types is attractive. The features of hybrid final salary/money purchase schemes, where the value of final salary benefits on the normal scale are underpinned by a money purchase minimum based on the accumulation of members' contributions and part of the employer's contribution, are then examined, although it is noted that the potential costs could be significant.

The paper then moves on to consider the Career Average Revalued Earnings design of scheme, where each year's benefit accrual is revalued to retirement according to a chosen index. It is suggested that such schemes have advantages over other designs, particularly for manual workers, part-timers, and early leavers. It is also noted that the way in which each year's accrual is defined can readily be amended if necessary in such schemes, which makes them very flexible. The scope for choosing different bases for the revaluation is examined, and the suitability of this design for industry-wide schemes noted.

The paper concludes with a review of some outmoded scheme designs which might be worth bringing up to date for current requirements, and a round up of the aspects of scheme design of most concern to employers at the time of writing. These include equal treatment of men and women, retirement ages, and the effect

on schemes of members opting out, or in, under the choices to be given to them in April 1988.

In the paper it is suggested that whilst it is for employers to take decisions on pension scheme design, actuaries have an important role to play in encouraging their clients to review and improve the design of the schemes.

A LOOK AT EQUITY, BONUSES AND PROFITS USING AN OB PROFITABILITY MODEL

BY H. D. WHITE, F.I.A.

(Synopsis of a paper presented to the Society on 20 January 1987)

THE paper used modern profitability testing techniques to put a recently maturing with-profit policy under the microscope. The author asked some provocative questions about traditional actuarial practice.

In the first place he demonstrated the need for a high level of equity backing in order to justify current with-profit performance. He then went on to discuss the incidence of equity investment. He demonstrated the pooled interest approach does not give good results as it is distinctly advantageous to invest completely in equities at the commencement of a policy and only move into fixed interests investments closer to maturity. Despite the recent bull market this would have produced maturity values 20% better than those obtainable under a traditional pooled interest approach. Pooling gives a slow build-up of assets in early years.

Given that most offices now have high equity backing current bonus structures were questioned. The author suggested the nature of the assets justifies a high level of final bonus and a slow build-up of reversionary bonus with a low rate of bonus on sum assured. The paper pointed out that if investment conditions deteriorated existing business and particularly short-term policies would currently be guaranteeing an unjustifiably high level of existing reversionary bonus. This would give rise to inequitable losses and impose restraints on future investment policy and performance.

Other assumptions that affected profitability such as taxation, expenses and surrenders were considered. The most financially important of these were the surrender rates and surrender basis. Historically surrender rates have been lower than at present, but surrender bases were profitable and built up profits for survivors. Due to increased reversionary bonuses current surrender values are now much higher and give cause for concern. These could lead to poor performance and an uncompetitive life insurance industry in the future.

The paper concluded that offices had pursued an appropriate high equity investment policy, but were behind the times with their reversionary bonus policies. Too high levels of reversionary bonuses were giving too generous

surrender values; reducing our competitive performance by holding back reserves; and were likely to produce serious problems of inequity and even losses if there was a deterioration in the equity market. The current taxation structure of life business was likely to put it in an uncompetitive position compared to other financial competitors for long-term business.

FINAL PAY PENSION SCHEMES—DEFERRED PAY OR COMPANY PROVIDED BENEFIT?

BY A. R. ESCOLME

(Synopsis of a paper presented to the Society on 3 February 1987)

THE paper is concerned solely with funded pension schemes of the final or final average salary type. The following is a brief summary of the arguments and conclusions it contains.

There are two extreme or 'pure' types of final pay scheme, which I call Deferred Pay and Company Benefit Schemes.

Generally, employers (and employees, journalists and politicians) are unaware of the distinctions between the two types of scheme. Consequently many employers with final pay schemes have not considered which type of scheme, or just what compromise between the two, they want to operate.

This gives rise to some confusion of thought and action which in turn causes and has caused conflict with scheme members and their representatives. (The lack of recognition of the two types of scheme may also have given rise to some confusion of thought among accountants, journalists and politicians.)

Actuaries and other pension scheme practitioners would render a service to their corporate clients if they led clients to consider the two types of scheme in their extreme or pure form, the advantages and disadvantages of each and the client's preferences having regard to corporate personnel and financial policies.

In practical terms it might not be possible, or in some instances it might be undesirable, for the client to transform his existing final pay scheme into one or other the two extreme forms. Nevertheless, a consideration of the two types of scheme could well result in clearer objective setting by the employer in relation to this scheme and in particular to the setting of clearer communications objectives, with a resulting reduction in potential misunderstanding and conflict.

The paper contains a number of examples of conflict and confusion of thought which have arisen with final pay schemes. The examples provide a context for the

detailed definition of the two types of final salary scheme which is done by reference to 15 key points applicable to final pay schemes.

The author believes that thinking about final pay schemes in these ways leads to useful conclusions about such things as how the employer should communicate the schemes to members, accounting for pension costs in company accounts and the issues involved in mergers and take-overs.

THE EXPANDING UNIVERSE

BY A. J. FROST

(Synopsis of a paper presented to the Society on 17 February 1987)

IN February 1987 I led a discussion at a meeting of the Staple Inn Actuarial Society on 'The Expanding Universe'. This was an oblique reference to the Big Bang that had engulfed the City and on which I had written intermittently since late 1985. After referring briefly to the history leading to the changes I wrote some thoughts on the new groupings in the City, the conflicts likely to arise, the changes in practice, the changes to remuneration of the various parties, the technological requirements, and the growing internationalization of the financial market place. On each occasion that I have written, events have occurred afterwards with bewildering speed. In a synopsis such as this (written in July 1987) it would be fruitless to attempt to summarize developments in any detail.

Even now the rule books of the new regulatory bodies such as LAUTRO, IMRO and FIMBRA are being written. These organizations, and their rule books, are the product of a revolution in the financial services market which has been proceeding in parallel with changes to the Stock Exchange. The latter has transmogrified during the past few years in seeking to retain its position on the world financial stage. The consequence of the changes to its own code of practice is manifested in the new conglomerates now scattered across London—no longer just the City of London. A number of players have, however, already withdrawn from gilt and equity market making. Foreign ownership and access to a greater capital base seems to be the end result for a number of traditionally British niche businesses.

One of the new roles to emerge as a result of the legislation has been that of the compliance officer. There has been need of them already. Let us hope the expanding universe of players and products does not produce a steady stream of causes celebres. Changes in practice have been extensive and no more so than in the gilt market where the basis of issuing stock has been enlarged to include an auction system. Pressures on costs have become apparent in the new groupings as expected which help to explain the scaling down of several operations established within the last year.

For the reader wishing to keep up with events the pages of financial journals will, I am sure, continue to contain the best and worst of the changes wrought over the last few years. The young market-maker of 1987 earning a small fortune and driving a Porsche, the ultimate yuppie, may seem an illusory and transient being. Who knows? Perhaps some of those who started the process of 'deregulation' and liberalization of financial markets were true visionaries. For most of us the pace has been staggering. The objective for us all should be the preservation of standards in order to protect the hard-earned savings or premiums of the millions of policy-holders, unitholders or pension fund members entrusted to our industry.

THE FINANCIAL SERVICES ACT

BY J. P. BANNON, B.Sc., F.I.A. AND M. D. MOULE, B.Sc., F.I.A.

(*Synopsis of a paper presented to the Society on 17 March, 1987*)

THIS paper discusses the Financial Services Act, 1986 (the Act). The Act has major implications for many within the actuarial profession since it regulates many of the areas with which actuaries have traditionally been concerned.

The Act regulates investment business, including life assurance business. Most of the provisions of the Act are to be brought into force by regulation, by one or more 'Designated Agencies'. In practice there is to be one Designated Agency—the Securities and Investments Board (SIB).

Under the Act no one may carry on investment business unless authorized, or exempted. Authorization will normally be obtained by being a member of a Self Regulatory Organization (SRO) or by being registered as a friendly society or by being an insurance company transacting long-term business. Certain institutions such as the Bank of England and Lloyds are classed as exempt. Company representatives who work for companies already authorized are also classed as exempt.

SRO's include LAUTRO (Life Assurance and Unit Trust Regulatory Organization) covering retail marketing by life companies, friendly societies and unit trusts, and FIMBRA (Financial Intermediaries Managers and Brokers Regulatory Association) covering independent intermediaries giving life insurance and unit trust advice.

In order to obtain authorization from the SIB an SRO must show that its rules and regulations are at least as rigorous as those of the SIB. In particular an SRO's rules must include detailed conduct of business rules.

An important feature of the SIB's policy is polarization. This term refers to the fact that under the SIB rules an authorized person giving investment advice must be *either* an independent intermediary *or* a company representative. An

independent intermediary will not be permitted to support a small number of life offices unless he can satisfy the relevant SRO that he is at all times giving best advice; a company representative will be committing a criminal offence if he places business with any company other than his own.

The Act has major implications for financial institutions. Those life companies currently selling through independent intermediaries may have to consider other means of marketing if their products/bonus record are not competitive. Those companies which have paid commission to intermediaries at higher than normal industry levels will have to reconsider their marketing strategy. The different commission rates which will become applicable will result in redesigning/recosting products. Increased product disclosure may result in profit and expense margins coming under increased pressure, possibly offset to some extent by lower overall commission rates. It will be unlikely that any new life office will attempt to enter the intermediary market. Companies which sell through a direct sales force will ensure that they can offer a complete product range since their salesmen will be unable to sell other companies' products.

Insurance brokers, particularly the smaller firms, may decide to become company representatives if they consider the remuneration package offered by a life office is attractive compared with broker earnings (on LAUTRO commission scales). However, independent intermediaries may benefit from introductions from unauthorized firms, for instance accountants or solicitors, which have not established their own independent intermediary operations.

Banks and building societies are particularly affected by polarization and will have to decide whether to act as independent intermediaries or become fully tied.

The paper concludes by noting that whilst the Act represents a long overdue rationalization and overhaul of the U.K. investment regulatory system there will inevitably be additional costs, ultimately to be borne by the consumer.

SUMMARIES OF RESEARCH DISCUSSION PAPERS

(Copies of these papers may be borrowed from the Institute Library)

BIAS IN DECREMENTAL RATE ESTIMATES

BY L. A. ROBERTS

(Paper No. 38 deposited in the Library in March 1986)

THE extent of bias in period and cohort estimates of decremental rates depends upon both the shape of the survival function l_x and the distribution of exposure over the rate interval.

Bias is approximately minimized when exposure is uniform over the rate interval, and can increase markedly with uneven exposure. A consequence is that cohort estimates do not minimize bias when competing decrements operate unevenly over the rate interval, although cohort estimates can still be expected in general to minimize mean square error.

The ratio of the proportional bias in the initial rate estimate to that in the central rate estimate is relatively insensitive to the distribution of entrants and competing decrements; it does however depend strongly upon the curvature of the survival function. When a survival function is either concave, or convex with a lower curvature than the exponential, initial decremental rate estimates are more biased than central rate estimates; the converse is the case when the survival curve is more convex than the Balducci function. An important conclusion is that when the force of decrement is decreasing with age, m type rates should be estimated from data, and q type rates deduced from the m estimates if they are required.

Illustrations are provided from some standard U.K. life tables.

ACQUIRED IMMUNE DEFICIENCY SYNDROME (AIDS)

BY C. D. DAYKIN, M.A., F.I.A., F.S.S

(Paper No. 39 deposited in the Library in April 1987)

THE potential impact of Acquired Immune Deficiency Syndrome (AIDS) is such as to be of considerable concern to actuaries. Many aspects are, of course, subject to a considerable degree of uncertainty, since the spread of the disease is still in its

early stages. This paper considers such information as is available to enable some preliminary estimates of the possible effects to be made, through the construction of a model of the spread of the virus and the deaths from AIDS.

While insufficient information is available at the present time to make any firm projections, the paper considers the possible implications for insurance companies, and concludes that substantial increases in premium rates and valuation reserves for temporary and whole life assurances may be required. It also recommends that the Institute sets up a Working Party to monitor the development of AIDS and to publicise its findings.