

MEASUREMENT OF THE PACE OF FUNDING

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INTRODUCTION

This note refers to the actuarial review of a final salary superannuation plan, and broadly outlines a new approach.

The normal actuarial valuation has been based on one of the generally accepted actuarial cost methods, using reasonable actuarial assumptions. The basic mathematical model used in the assessment of liabilities and the valuation of future contributions has been the multiple-decrement or service table, and the actuary has used a variety of methods for valuing assets.

More recently, there has been an emphasis on projections.

PREDICTING THE FUTURE — ASSUMPTIONS

These methods all rely on assumptions: reasonable, realistic or best-estimate assumptions about the future. However, in turbulent economic times, there can be no realistic assumptions as to future interest rates or future rates of salary increase.

Economists cannot agree as to the future of the economy at large, and it is even more difficult to predict the impact of the future economy on one particular economic unit such as a superannuation plan.

The conventional wisdom agrees that future assumptions are extremely difficult to make; that assumptions vary from actuary to actuary; and that assumptions will in any case be wrong. However, conventional wisdom then makes the extraordinary assertion that, despite these difficulties we must try. Must we?

AN ANALOGY : COMPANY ACCOUNTS

The annual accounts of a company are not based on assumptions as to future costs and future revenues. They are not prepared on a discounted cash flow basis. Yet the company is a continuing entity in the same way as is the superannuation plan. Furthermore, the company's accounts are read by, and in many cases prepared by, the same company executives who make the decisions on the superannuation plan.

In perspective, the company's superannuation contribution is but one cost appearing in the profit and loss account.

"Look, our Johnny is the only one in step." Is the actuary the only one in step?

MEASURING THE PACE OF FUNDING

In order to understand the progress of the fund, it is necessary to define the pace of funding. This requires a clear differentiation between:

- (a) the objective measurement of where the fund is at a particular time; and

- (b) the subjective opinion of where the fund is going.

A crude measure of the pace of funding would be the ratio of market value of assets to the cash value of vested accrued benefits. However, such a measure would be volatile and would not make allowance for the accruing cost of unvested benefits.

For Australian conditions an appropriate measure of pace of funding is an asset-backing index in which the value of liabilities is based on the present value of accrued retirement benefits, calculated without adjustment for decrements, and subject to a minimum value for each individual member. This minimum value is the individual's cash resignation or other vested benefit. Assets are valued according to adjusted market value, where the adjustment is based on a consistent objective method of smoothing market values.

An asset-backing index of 100 represents assets equal in value to accrued retirement benefits with no discounting applied.

An asset-backing index of zero represents assets equal in value to accrued retirement benefits discounted at 10% per annum.

The index varies between zero and 100 according to the rate at which liabilities need to be discounted in order that the value of liabilities be the same as the value of assets.

A discount rate of zero broadly corresponds to an assumption that the rate of increase in salaries is equal to the rate of interest. The discount rate incorporated in the definition of the asset-backing index is thus a real rate for an ongoing fund. From the viewpoint of potential termination, the asset-backing index provides a broad indication of the level of benefits which would be available to members if the fund were to wind-up.

The pace of funding is measured by first assuming that liabilities are equal to assets, a truism in conventional accounting terms. Given this accounting equality, what then is the valuation basis? The reply to this question provides a measure of the pace of funding when the valuation basis is expressed in terms of its single most important variable: the real rate of return, or in conventional terminology, the excess of the earning rate on investments over the rate of salary increases. Not a prediction, but a determined quantity!

More detail on the asset-backing index used in Australian conditions is set out in my paper "The Actuarial Review of a Superannuation Plan" which was presented to the Institute of Actuaries of Australia and New Zealand in October, 1975.

However, it is the overriding idea which is important: that is, the need to measure the pace of funding. The progress of the fund can then be assessed in terms of the level, trend and volatility of the pace of funding.

The measure of the pace of funding needs to be designed with a view to permanence. As a result it should be sufficiently robust to cover a wide range of possible economic circumstances. Furthermore it should be consistent with accounting and audit requirements. As such there would be flexibility in the basis of accrual of liabilities to allow for varying circumstances. The valuation of assets would be similarly flexible.

These flexibilities would not create confusion as they have counterparts in the concepts associated with the preparation of company accounts.

COMMUNICATION

Communication problems are reduced if the company understands the inherent flexibility in the pace of funding. Concentration on this issue avoids the need to involve the client company in the setting of assumptions to be used in a complex mathematical exercise – surely a clear case where a little knowledge is a dangerous thing.

The client can also contribute to a discussion of the accrual system, particularly as it relates to the provision of past service benefits. The real financial constraints become apparent, as they can be readily appreciated in familiar accounting terms.

Communication between actuary and client is simplified.

DECISION-MAKING

The client company is the decision maker. Its decisions are based on the information and advice presented by the actuary, although to some extent its choices will be controlled by a variety of external influences, e.g. government regulations. But in general terms the actuary should advise the company of the results of the actuarial review in a meaningful way, that is, in terms which can be readily understood. The company can then make a business decision in much the same way as it makes other business decisions.

The actuarial literature on the subject of the funding of superannuation plans tends to emphasise the variability

of the company contributions. However, normally the company can more readily accept a changing level of funding (within limits) before contemplating an increase in contributions. Particularly in times of high inflation and economic uncertainty, a lowering of the pace of funding may be more appropriate than an increase in contributions. In such conditions, the traditional approach of anticipating future inflation may need to be reviewed.

To assist the client in his decision-making the actuary would carry out a gain and loss analysis for the period since the previous valuation and project the future progress of the fund using the methods and assumptions he thought relevant. In subsequent actuarial reviews the actual progress of the fund would be compared with projected progress thus giving an indication of the level of conservatism involved with the projection over the review period.

SUMMARY

The first impression gained from the above outline may be that I am suggesting a standardised valuation method which reduces the level of professional judgement required of the actuary. This is not the case.

The actuarial review of a superannuation plan is a control process, and a control process requires a yardstick to measure progress. The variable in the final salary plan is the pace of funding and an appropriate measure must be defined.

The measurement of the pace of funding provides a compromise between the conflicting objectives of the measurement of solvency and the stabilisation of the company contribution rate. As a result it is possible to adopt an active valuation while retaining the benefits of a passive valuation system.

The demand for actuarial judgement is not lessened. The actuary will continue to analyse the progress of the fund, to determine suitable corrective action and to advise the client. An overall perspective is maintained and actuarial judgement is concentrated in a different, and in my view, more significant direction.