

# LIFE OFFICES: WHAT ARE THEY WORTH?

## CHOOSING THE RIGHT VALUATION POLICY

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*The unique characteristics of life insurance companies present valuers with special problems when assessing their market value. There are choices of method—and traps for the unwary.*

**T**he recent capital-raising scheme proposed by the National Mutual Life Association of Australasia Limited and the ANZ Bank has focused the attention of the investment community on methods of assessing the earnings and value of life-insurance companies.

It is expected that in future life-insurance companies will need to raise substantial amounts of capital to support the predicted growth of their business. This is particularly true of superannuation business: the government has been encouraging participation in superannuation and has foreshadowed increases in contribution levels.

While some capital may be provided by overseas parents or listed Australian parents, in many cases the life industry may look to public fund-raising. However, if the industry is to raise this capital efficiently and at an acceptable cost, it will have to provide an improved level of financial disclosure so that investment analysts and investors can better understand the operations of life offices.

An illustration of the wide range of values which can be attributed to life-insurance companies is provided by the listed Battery Group Limited. The accounts of Battery Group for the year to September 30, 1989 (before the more recent activity which surrounded its attempt to dispose of subsidiaries), record the

value of life-insurance companies owned by the group (Regal Life and Occidental Life) at \$160 million, in accordance with an independent actuarial valuation. These assets represent 76 per cent of the stated value of the Battery Group's shareholders' equity of \$210 million (or \$1.66 per share) shown on the company's balance sheet.

However, in the period from July 1, 1989, to June 30, 1990 (also before the aborted sale of the insurance companies), shares traded in the sharemarket at prices ranging between \$0.10 and \$0.55 per share, being 6 per cent to 33 per cent of the value of shareholders' equity, which corresponds to the independent actuarial valuation recorded in the company's accounts.

Clearly, this variation is much wider than that commonly observed in the valuation of companies in many other industries, even after allowing for the difference which would normally be expected between the value of the company as a whole and the value of minority shareholdings.

Further, the difference in value before December 31, 1989, cannot be attributed to concerns about Battery Group's exposure to the Linter Group, as these did not

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emerge until early in 1990.

In placing a value on a life-insurance company, actuaries usually use *appraisal value* techniques which are akin to discounted cashflow valuation methods. It is not immediately apparent how such values compare with price/earnings methods commonly used in other industries.

A recent example was the appraisal valuation published in the Pearl Assurance defence document in response to the bid by the Australian Mutual Provident Society. It is interesting that AMP acquired Pearl at a price lower than the appraisal value.

While these examples may suggest that actuaries view life companies with rose-tinted glasses, there have been many other situations where the two methods have provided similar answers, and some cases where the actuarial valuations have been considerably lower than those determined on price/earnings methods.

This article explores the use of the two techniques in valuing a life-insurance company and concludes that both methods have something to offer.

## Life insurance legislation

Life insurance companies must be registered under the Life Insurance Act. The Act has provisions relating to:

- supervision of the industry by the Insurance and Superannuation Commission (ISC);
- the operation of statutory funds;
- prudential requirements including investment restrictions and reserving requirements;
- the form of published life insurance accounts;
- limitations on transfers of profits to shareholders;
- other matters generally aimed at protecting policyholders.

The Life Act has been operating since 1945 and has been successful in that no life-insurance company has failed in that time. However, changes to the Act have been slow and in many respects it is now out of date. A review of the Act now in progress may result in major changes within the next two years.

The Act applies to both mutual

and proprietary life insurance offices and the term "life-insurance company" in this article covers both groups. While capital-raising may seem to be mainly relevant to proprietary companies, the ANZ-NM proposal shows the issues can also be important for mutual offices.

## Statutory funds

Each life-insurance company is required under the Act to establish at least one *statutory fund* and many companies have established several. Statutory funds are akin to trust funds which are maintained as separate funds with separate assets to provide benefits to the policyholders of the particular fund. Most companies also have a separate *shareholders fund* or *general fund* to maintain the capital and retained profits of the company.

Life-insurance policies may be written as "participating", that is, sharing in the profits of the life-insurance company, or "non-participating". The amount which may be transferred out of a statutory fund in respect of participating policies is limited under the Life Act to 25 per cent of the value of bonuses paid to the participating policyholders.

This means that profits retained within a statutory fund may belong partly to shareholders and partly to policyholders, so their value to shareholders needs careful consideration.

## Life-insurance policies

The policy document is the legal agreement between the life-insurance company and the policyholder. Policies in their various forms provide for the payment of benefits and provision of services by the life-insurance company in return for the payment of a single premium or a series of premiums by the policyholder.

Policy wordings vary substantially between companies and between products offered by each company. Investment benefits may be unit-linked or based on regular interest credits (capital guaranteed) and in either case there may be guaranteed minimum returns. Insurance cover may be level, increasing or decreasing and premium rates may or may not be guaranteed.

Expense charges may be fixed or variable.

Part of the value of a life-insurance company is the value of future profits from existing business, so a valuer of the company must understand the profit dynamics and expected lifetimes of the policies on the books, as well as the potential costs of any guarantees. This is true whichever valuation method is used.

## Administration and acquisition costs

When a life-insurance company writes a new policy, it is usual for the first-year administration and acquisition costs to exceed the first-year charges to the policyholder. The premium rates for such policies are set so that these excess first-year costs are recovered from profits in subsequent years. Allowance is made in the pricing calculations for the policyholders who voluntarily discontinue their policies.

Initially the life-insurance company incurs a loss through writing the policy, but if the pricing assumptions are borne out, the company is compensated for the initial loss by having an asset equal to the future profit margins built into the premium rates. This asset may be a major part of the value placed on the company.

Details of commission and other acquisition costs are not generally included in policy documents, so reference is also needed to agency and compensation manuals to obtain this information.

## Statutory accounting and reserving

The nature of life insurance requires reserves to be established for the future liabilities of policies in force. The change in those reserves over a period is one of the expenses of that period. Establishing the reserves at a particular time requires a valuation of the future liabilities expected to arise from the contracts in force. The value of the liabilities of a life office at any given date, being the present value of future claims which will be made on the life office, cannot be determined exactly, because the extent and likelihood of these claims over extended periods into the future is always uncertain. Indeed, most of these liabilities do not generally appear on the compa-

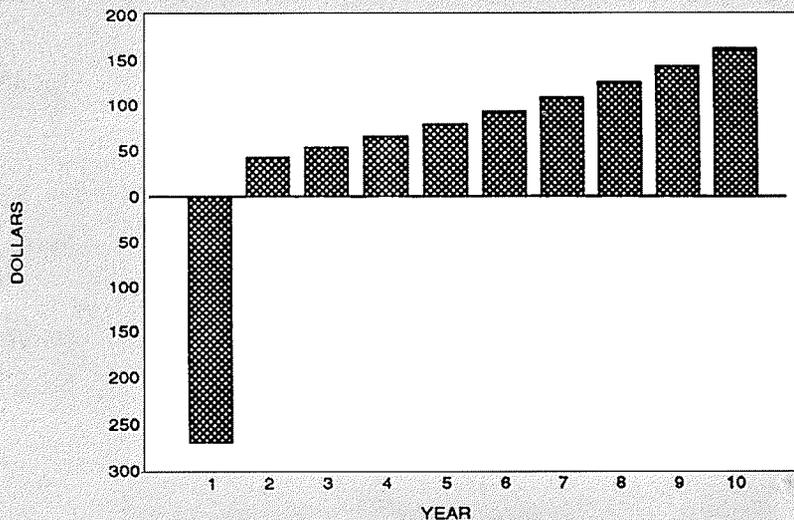


Figure 1  
Statutory Earnings

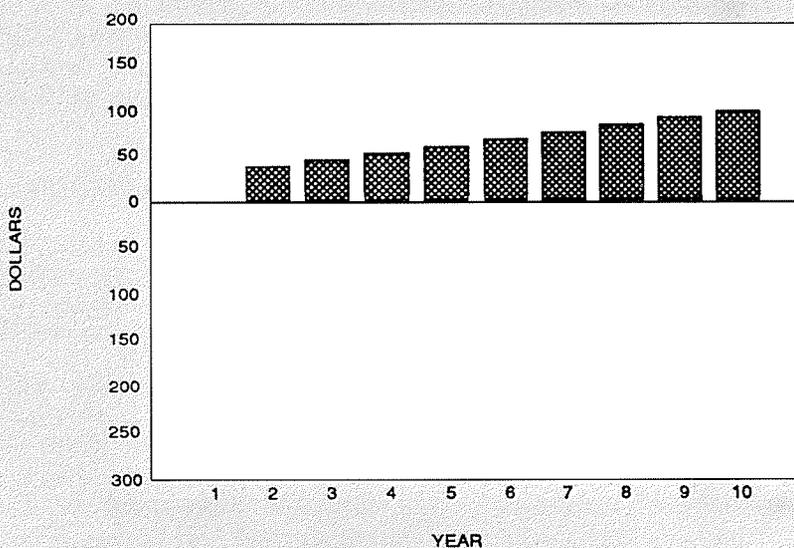


Figure 2  
Realistic Earnings

Generally speaking, the statutory basis produces a relatively conservative (high) valuation of liabilities, thereby deferring the release of profits. It requires, for example, that acquisition costs be expensed at the outset. This often results in an accounting "loss" for new policies written and an overall accounting "loss" for a rapidly growing company.

### "Realistic" accounting and reserving

The features of statutory accounts described above make them unhelpful in determining realistic earnings of the company. As a result, many life companies prepare separate accounts for internal management purposes and/or for consolidation into the accounts of a parent company on a "realistic" basis. The use of a realistic basis of valuation can involve considerable traps for the unwary.

The value of the liabilities, and hence the earnings emerging each year, are dependent on the assumptions used, and determination of the liability will be both subjective and sensitive to relatively small changes in those assumptions.

No matter what valuation methods are used, the total profits from a block of business, measured over the life of that block of business, will be the same. This is because the actual cashflows over the life of the business are unaffected by the reserves established from time to time. In other words, the valuation methods will affect the timing of the recognition of profits but not their total amount over time.

To illustrate this, we have developed a model of a simple 10-year life policy. The statutory earnings of the policy over its 10-year term may be represented by Figure 1 and the pattern of earnings under one type of realistic basis may be represented by Figure 2. In the US there are accounting standards (FAS 60 and FAS 97) covering realistic reporting by life companies. However, some aspects of the US standards make them inappropriate for Australia, and a local standard is not yet available. As a result, companies have adopted a variety of forms of realistic reporting. Because of the lack of uniformity these can be more difficult to interpret than the statutory accounts.

ny's balance sheet because they are not due and payable (except for reported-but-not-paid claims).

Assessing the likelihood of policy claims, whether they be through death, disablement, surrender or discontinuance of policies, and assessing the present value of these future claims, has traditionally been undertaken by actuaries. The assessment of the value of these liabilities depends on assumptions

about such factors as mortality, morbidity, expenses, future investment returns, rates of policy discontinuance and surrender, and taxation.

Under the Life Insurance Act, annual valuations of a life-insurance company's liabilities are required, on a statutory basis of assumptions, principally to demonstrate solvency, rather than to reveal the earnings of the life-insurance company.

The Australian Accounting Research Foundation is developing a standard for realistic reporting which, it is hoped, will ensure that life-company accounts are presented in a way which can be better understood by the market. This should facilitate the raising of capital by life companies.

## Taxation

A complex taxation regime applies to life companies. They are not taxed on profits, but primarily on their investment income—on the principle that life companies are a vehicle for pooled investment of the savings of individual policy-holders, so the relevant income base is the investment return rather than the revenue profit.

Under recent tax legislation a reasonable proportion of expenses are now allowed as a deduction.

Superannuation business is taxed in a manner consistent with the taxation of superannuation funds and, accordingly, life companies collect tax in respect of some premiums, investment income and benefit payments. Immediate annuity business is exempt from tax.

The tax basis does not fit particularly well for proprietary companies writing mainly risk business (as distinct from investment-based business), as the tax basis is quite independent of the underlying profitability of the business.

## Actuarial appraisal value

An actuarial appraisal value of a life-insurance company is a specialised form of discounted cashflow valuation. It is a best estimate of the present value of expected returns to the shareholders on a going-concern basis.

An actuarial appraisal value embodies a calculation of the discounted value of all the future profits expected to emerge from the life-insurance company. In practice, the actuarial appraisal value is the accumulation of three elements of the value:

■ **Adjusted net worth:** The shareholders' interest in the excess of the assets over the current value of the policy-holders' reserves and other liabilities.

■ **Value of business in force:** The present value of the shareholders' portion of profits expected to emerge

from the in-force business.

**Value of future new business:** The present value of the shareholders' portion of profits expected to emerge on future sales.

Another common term in the valuation of life insurance companies is *embedded value*. The embedded value is the "value of the business in force" as described above and so is one part of the total appraisal value.

## The discount rate

The risk discount rate represents the required rate of return of the investor with due allowance for the expected "risk" level of the investment. There are various sources of risk which may have an impact on the earnings of a life-insurance company, including:

- outside economic forces;
- performance of management;
- risk inherent in insurance products.

In determining an actuarial appraisal value, an assessment is made of the worth of the after-tax residual earnings which the life-insurance company will generate. The most appropriate approach, under the current tax legislation, is to incorporate the tax basis in the projection, and to project after-tax earnings to be discounted at a net rate of return.

Over the past decade, annual risk discount rates varying from 10 per cent to 18 per cent after tax have been used in estimating actuarial appraisal values. The most commonly used rate over this period is 15 per cent, which appears to have been a widely accepted rate in a willing buyer/seller situation.

## Assumptions

The setting of the assumptions is one of the most difficult tasks of an actuarial appraisal value, requiring considerable judgment and expertise.

The assumptions should be realistic and based on the recent experience of the company. There should be no explicit margins for adverse deviations, as these are dealt with by the use of the risk discount rate.

The setting of assumptions requires predictions of the company's future course. It is important to achieve consistency over the long term in rates of interest, rates of

inflation and risk discount rates.

For companies which happen also to determine profit on some form of realistic reporting basis, it should be emphasised that the valuation basis for appraisal benefit purposes should still be the statutory basis and not the realistic basis. Otherwise an inconsistency in discounting realistic profits not distributable to shareholders would arise.

We note that no actuarial standard exists on this issue and that some actuarial appraisal values may not necessarily allow for the constraints on cash distributable to shareholders imposed by the statutory valuation basis.

## Adjusted net worth

The adjusted net worth is determined as the market value of the shareholders' interest in the free surplus in the statutory funds. This surplus may include surplus carried forward, contingency reserves and margins between market value and book value of assets (other than those nominally attributable to policyholder interests). Where market value exceeds book value, allowance is needed for deferred taxation on the excess.

## Value of business in force

The valuation of in-force business is carried out by a projection of all policies in a portfolio, or more often by a projection of a model of the portfolio.

The model is constructed by choosing a number of representative policies, called *model points*. For each model point a projection is developed of future cashflows, statutory reserves and profits, allowing for the features of each product, including charges, benefits, guarantees and tax.

These results are then aggregated for all model points and a composite projection of the profits of the company is developed. The projection takes into account the distribution of policies within statutory funds and the limitations (if any) on distributions in respect of profits from participating policies.

It is important to validate the model by checking the model revenue and valuation results against the company's published statistics and accounts.

The value of existing business is

derived by discounting the projected cashflow at the risk rate of return.

## Value of new business

Future new business is the most subjective and difficult element to value. In theory, the value of new business could be determined by projecting future new business sales and their resultant distributions. The results would be very sensitive to assumed volumes and mix of new business.

In practice, new business is often modelled by taking the present value of the expected profits at the point of issue for the latest year's new business, modified to reflect known changes that will occur in the future.

The value of new business is then determined as a multiple of this value. The multiplier chosen will depend upon the reputation of the life-insurance company, the likelihood of its continuance, the types of distribution outlets, the quality, size and maturity of the distribution outlets and the expected growth in future sales.

## Sensitivity tests

An appraisal value is dependent on the assumptions used and it is important to analyse the effect of differing assumptions.

Sensitivity tests may be made for assumptions that will have a major impact on the appraisal value including:

- discount rate;
- expense rates;
- rates of voluntary discontinuance of policies;
- investment earnings rate and bonus rates;
- shareholder percentage of surplus distribution.

In theory, there is no limit to the number of sensitivity tests that can be performed. In practice, by running a variety of carefully selected tests, a complete picture of the value of the in-force business can be built up.

## Sources of data

It is clear that substantial information is needed to carry out an actuarial valuation of a life-insurance company. Ideally the information includes accounts and policy

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statistics, detailed summaries of in-force policies, policy documents, agency manuals and details of investments.

This information is usually available where an appraisal value is calculated for inclusion in the consolidated accounts of a parent. However, it is often not available to a purchaser, or not available early enough to assist with a decision on whether to purchase.

In these situations it is possible to make estimates of the appraisal value of a company from published information, some details of current policies, and knowledge about other companies competing in the same market. Such valuations have some value to a purchaser, but their limitations must be clearly understood.

The appraisal value technique has the advantage of taking into account the features of the life-insurance company and known information about the policies in force. The data and assumptions can be tested and validated.

The disadvantages are a degree of subjectivity in valuing future new business and the difficulty of comparing an appraisal value of a life-insurance company with the value of companies in related and other industries.

## Valuation by capitalisation of maintainable earnings

Having considered the factors specific to life-insurance companies that are likely to affect their value and the inherent problems involved, it is instructive to compare an actuarial appraisal valuation derived from the process described above with the generally accepted method of valuation of a controlling interest in a business based on capitalisation

of future maintainable earnings.

The concept of capitalising the estimated future maintainable earnings of a company can be applied to life-insurance companies, but only if a realistic estimate of the maintainable earnings of the company has been derived. Generally speaking, the use of statutory earnings published in the annual financial accounts of the life office will not be appropriate for this purpose for the reasons explained earlier in this paper. In particular, published accounts will understate earnings when a company is growing strongly and overstate earnings when a company is not growing.

Maintainable earnings may also differ from reported earnings for many other reasons, including:

- reported earnings include earnings on participating policies which may not be attributable to shareholders;
- non-recurring profit-and-loss items included in reported earnings which need to be eliminated to derive future maintainable earnings;
- external factors such as changes in market conditions, interest rates, taxation, etc; and
- internal factors such as recent acquisitions, major changes to corporate strategy, changes to management, the financial effect of reinsurance, etc.

Adjustments which typically have to be made to reported earnings to assess the future maintainable earnings include:

- the deferral of acquisition costs over the life of a policy;
- changes in reserves to spread earnings more evenly across the life of a policy;
- changes in accounting policies or actuarial assumptions;
- changes in tax rates or allowance for tax losses or credits; and
- amortisation of goodwill (and other intangibles) arising from acquisitions.

Overall, the assessment of future maintainable earnings requires a detailed examination of the business and the industry. Generally, comparisons based on the capitalisation of earnings will not be appropriate where the comparative businesses, or the life-insurance company, have:

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- a history of losses or rapidly declining profits;
- a single year's profit in a high risk market or highly volatile profits from year to year;
- a low level of profitability compared to the value of net assets employed; or
- a minority parcel (only) being valued.

## Capitalisation

Two methods can be used to select an appropriate capitalisation rate. These are by reference to comparable companies and by reference to required rates of return on investment.

Using the comparable company approach, the capitalisation rate is derived from an examination of the terms of recent takeover bids and/or recent share trading in the stockmarket.

Put simply, if company X, a comparable company, sells on a prospective PER of 10 times, then, other things being equal, the subject company would be capitalised at the same rate.

Of course, other things are seldom equal in such comparisons. It is not sufficient to record the PERs of comparable companies, or companies in a similar industry, and to apply a PER derived by such a comparison (or by an arithmetical average) without examining in detail the factors affecting the PER of each of the companies and reconciling any material differences.

If the required-rate-of-return

method is used, the capitalisation rate is objectively determined by reference to the rates of return on various alternative forms of investment, as adjusted for the perceived degree of risk. Alternatively, depending on the purpose of the valuation, the purchaser's or vendor's own required rate of return may be used.

In this paper we have not attempted to address in detail methods of assessing appropriate rates of return, such as the widely used capital asset pricing model (CAPM).

Some factors that should be taken into account in assessing an appropriate capitalisation rate include:

- quality of the management and the likely continuity of management following any sale;
- nature of the distribution system and loyalty of intermediaries;
- the adequacy of reserves and the ability to live within the expense allowances in the premium rates;
- future prospects of the business, compared with those of its competition;
- negotiability of the shares being valued;
- the extent of any control premium to be imputed in the PER; and
- whether the price earnings ratio is based upon historical or prospective data.

The many adjustments possible in applying a capitalisation of maintainable earnings to a life-insurance company require substantial professional judgment and reliance on

expert actuarial advice in the assessment of maintainable earnings. The differences of opinion and treatment which can legitimately arise in this process are a potential weakness of the method. However, this problem can also arise with actuarial appraisal values.

The main advantage of the method is the measure of comparability it provides, if properly applied, with valuations established for other comparable businesses.

## Conclusion

The ultimate worth of any business is the amount someone is prepared to pay for it and this need not bear any relationship to the amount determined by the usual valuation methods.

In valuing life companies, no one method is clearly more appropriate than any other; in fact, different methods may be appropriate in different circumstances. Each method has its advantages and its inherent limitations, and the valuer must recognise these.

In the opinion of the authors, a valuer should use more than one method of valuing a life-insurance company and should be able to reconcile the differences in value obtained by the different methods. Although the valuer will not always be able to reconcile the values quantitatively, he should be able to understand qualitatively why the differences arose, and therefore decide whether his assessed value is appropriate. □

a realisation that Australia must improve its international competitiveness by improving productivity; in other words, improving output by raising the level of skills in the workforce.

At present, about 2.2 per cent of Australia's payroll is spent on training—but all of that is spent by only 22 per cent of employers. About 60 per cent of employers with payrolls over \$200,000 a year have no organised training programs.

Despite some essentially negative responses to the scheme, there does seem to be a genuine desire to encourage work-skills development in Australia.

However, acceptance of the gov-

ernment's initiatives has been somewhat tentative, partly because of uncertainty about definitions of such concepts as "eligible training", "structured training" and other elements of the scheme.

In fact, the scheme will work only if it is left to employers to determine what training should be undertaken by their employees. Only they know what particular skills development the staff needs.

In the people-intensive financial services industry there is already substantial employer expenditure on training. One Canberra mandarin told me that the government had no concerns about the level of training in this industry.

This situation is to some degree the result of the big input made to industry training by the Securities Institute's education courses. Subjects in the open-entry Certificate course and the graduate Diploma course, as well as recently introduced small group courses, qualify as eligible training for people in the securities industry.

Our present dependence on the cyclical agriculture, mining and tourism sectors means that we need the best-trained workforce we can get—both for the long-term development of our industrial and services sectors and to enable us to go aggressively after markets among our Asian neighbours.