A realistic view of value

The modern approach to appraising life insurance companies

Valuing life insurance companies is a complicated process. RICHARD BURROWS and CARY HELENIUS discuss and compare two methods – one traditional, the other more modern and transparent.

The conventional method of valuing any stock or bond is to discount, at an appropriate rate of interest, the future expected income stream. In the case of a listed equity share, a proportion of the attaching imputation credits is generally included in the income stream which is discounted at a risk discount rate (generally calculated using the capital asset pricing model [CAPM]).

The valuation methods for life insurance companies are no different from those used for any other equity share. However, life insurance companies do have some unique characteristics that affect the valuation. In particular, the cashflows of life insurance companies are highly complex, emerge over a long time horizon and consequently require a sophisticated projection model to assess the value; and are subject to distortions because capital adequacy requirements must be allowed for in the analysis. Assets set aside to cover capital adequacy requirements are invested in a mixed portfolio including equities. The capital gains/losses on these assets will come through to the bottom line, thereby distorting earnings.

As the investment return (including capital gains and losses) on the shareholders’ assets forms part of the total earnings of the company, it is not appropriate to apply a price/earnings ratio (which is basically a proxy for discounting future earnings) to the total earnings of an insurance company. To do so can give totally misleading results. Figure 1 shows that in a typical company total earnings can fluctuate widely because of capital gains/losses. Operating earnings, on the other hand, are generally quite stable.

It is mainly for this reason that appraisal value techniques have been used to value life insurance companies.

Figure 2 demonstrates that the market is willing to accept a reasonably stated appraisal value, combined with appropriate disclosure of assumptions, as a suitable assessment of value, as evidenced by the appraisal value correlating remarkably well with the actual market capitalisation.

This paper discusses two ways to develop an appraisal value of a life insurance company: the traditional method, and a more up-to-date method, the realistic earnings method, which is based on the realistic margins on service (MoS) earnings. Both methods should
lead to the same appraisal value; however, the former is quite actuarial and “black box” in approach, while the latter is much more in line with the valuation method generally used to value any security.

Figure 3 compares the components of value for the two methods.

RISK DISCOUNT RATES AND CAPM
Many highly technical papers have been written about appropriate interest rates to discount future earnings. Suffice to say that CAPM is the method generally used to develop a risk discount rate for valuation purposes. The CAPM formula for the risk rate of return R is:

\[ R = R_f + \beta (R_m - R_f) \]

where

- \( R_f \) = risk-free rate
- \( R_m \) = market rate
- \( \beta \) = Beta or the riskiness of the stock under consideration relative to the riskiness of the market.

Note that \( R_m - R_f \) is generally known as the market or equity risk premium, tax is an important consideration, and gearing is relevant.

APPRAISAL VALUES
Traditional method

Appraisal values are calculated by valuing the after-tax earnings emerging each year after allowing for the statutory or capital adequacy reserves to be set up. These earnings are valued by building a sophisticated projection model and discounting the earnings plus a proportion of the attaching imputation credits (usually 70%) at a risk rate of return.

The appraisal value is calculated as three separate components: the statutory net worth (or the free assets after allowing for capital adequacy); the value of the after-tax earnings (after allowing for statutory capital adequacy reserves) emerging from business in force; and the value of after-tax earnings (after allowing for statutory capital adequacy reserves) expected to emerge on the future new sales.

The statutory net worth plus the value of the business in force is known as the embedded value and the value of future
new sales is known as the goodwill. This definition of goodwill differs from the definition of goodwill for normal trading companies. In this case, the value is defined as the net tangible assets of the company plus goodwill, where goodwill represents all of the intangible assets – ie, the present value of all future expected after-tax profits. The embedded value concept was developed because the highly conservative statutory accounting basis gives rise to very small tangible net assets for most life companies, and consequently a large intangible asset bases or goodwill component.

The traditional method is the method that most life insurance companies currently use when publishing appraisal or embedded values.

**Realistic earnings method**

MoS or realistic (Australian GAAP) accounting has changed the picture. The net tangible assets are now much larger and in some cases can actually exceed the embedded value. This is because under the MoS approach there is no allowance for the cost of capital. The move to a realistic accounting basis does raise questions about the need to produce traditional embedded value calculations. An alternative way of expressing the appraisal value under a MoS (or any realistic accounting) regime is:

- MoS net assets
- less the cost of capital
- plus the value of all future operating earnings (ie, earnings excluding the investment earnings on the net assets) arising on both the businesses in force and future expected new sales.

Under this method, the third item is termed goodwill, which is consistent with the terminology used for any company. It should be noted that the realistic earnings method would give the same appraisal value as the traditional method, the only difference being the way in which the components of value are put together.

This method also has the advantage of being made more transparent and understandable to the financial community. The definition of appraisal value becomes the value of net tangible assets, less the cost of capital plus goodwill. The cost of capital must be deducted because the net tangible assets are not distributable (because the bulk of these are required for capital adequacy purposes). The cost of holding this capital is equal to the interest loss (the risk rate of return less the net earned rate) on the capital adequacy requirement.

Provided the capital adequacy requirement is known, then an estimate of the appraisal value can be made. In order to make a precise estimate of the cost of capital, an indication of the run-off of capital adequacy is also required.

Unfortunately, at present neither the capital adequacy nor the run-off of capital adequacy is required to be published. These are vital pieces of information because, *inter alia*, a dividend cannot be paid if a company does not meet its capital adequacy requirement. Clearly, capital adequacy should be published under a full disclosure regime.

**VALUE OF NET ASSETS**

**Traditional method**

The statutory net worth is the difference between the total assets at market value, less the policy reserves on a statutory basis. However, as the statutory basis no longer applies in Australia, net worth becomes assets less the MoS/realistic policy reserves. In published appraisal values, the cost of holding capital adequacy reserves can be deducted from either the MoS net assets or from the value of in-force.

**Realistic earnings method**

The net assets are simply differences between the total assets at market value less the MoS/realistic policy reserves as stated in the balance sheet.

**VALUE OF IN-FORCE/COST OF CAPITAL**

The definition of the value of in-force will depend on how goodwill is defined.

**Traditional method**

Under this method, goodwill is defined as only the value of future sales. Therefore, the value of in-force is defined as the present value of the after-tax earnings that emerge on the business in force. If the cost of capital has not been deducted from the net assets above, then it must be deducted from the value of the in-force. For some companies this may lead to a negative value for the in-force business. The value of net assets plus the value of in-force is generally referred to as the embedded value. Many life insurance companies publish the embedded value.

**Realistic earnings method**

Under this method, goodwill is defined as the discounted value of future earnings from both the business in force and the new sales. Therefore, the value of in-force business does not feature in this method as it is included in the definition of goodwill. The cost of holding capital adequacy, however, must still be recognised somewhere, either as a deduction from the net assets of from the goodwill.
the discount rate, then the multiplier to apply to one year’s sales approaches infinity. This is because there is no restriction on the term of the analysis and future sales are effectively being valued in perpetuity. Clearly, this is not a sensible result and for this reason the term over which the analysis is performed is generally restricted to at most 20 years. In Table 1(b), the term is effectively restricted to 10 years by the assumption of a 10% simple profit deterioration factor each year, so that after 10 years the profit deteriorates to zero.

The traditional way of assessing goodwill is highly simplistic. The future profit margins that emerge on both existing business in force and future sales is highly dependent on the prevailing economic conditions. For example, sales volume and lapse rates of unit-linked businesses will be severely affected by a downturn in the economic cycle. Margin squeeze will be affected by growth in the market and entry/exit of competitors. Different segments of the market will grow at different rates. It is therefore vital to understand companies’ strategies to determine whether they are in growth markets or markets subject to margin squeeze or other influences. It is not possible to wrap up all of these variables into a simple multiplier.

**Realistic earnings method**

A better way to value goodwill is to develop a model that projects forward the emerging profits on both the in-force business and the expected future new business, allowing for margin squeeze, expected changes to economic conditions and differential growth rates. (Note that this method also changes the traditional definition of goodwill in that it includes earnings from in-force business.) In order to do this, each major product group must be segmented for growth rates and separately projected. Figure 4 shows the composition of the industry, indicating the importance of the sectors’ differing growth rates.

An economic model can be overlaid on the expected growth rates, as shown in Figure 5, to allow for the different profitability of business under various economic conditions. It is of great importance to assess the relative position of the starting point in the economic cycle when valuing new business; a simple multiple can be misleading if applied to new business profitability at a peak or trough in the cycle.

**EXPENSE OVERRUNS**

Appraisal values are generally calculated using expense loadings or allowances. These are built into the projection model for all product types. The total loadings allowed for in the model can be compared to the actual expenses. If the allowances are higher than the actual expenses then there is an expense underrun; if allowances are lower than actual there is an expense overrun.

Often life insurance companies will be in an expense overrun position, particularly with regard to new sales, and will project the expense overrun to reduce to zero over (say), a three-year period. The extent of the expense overrun must be allowed for by reducing the appraisal value by the

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**Table 1: Goodwill multiplier**

<table>
<thead>
<tr>
<th></th>
<th>(a) No margin squeeze</th>
<th>(b) Annual margin squeeze of 10% simple</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Risk discount rate</strong></td>
<td><strong>Annual sales growth</strong></td>
<td><strong>Risk discount rate</strong></td>
</tr>
<tr>
<td>10%</td>
<td>10.0</td>
<td>10%</td>
</tr>
<tr>
<td>15%</td>
<td>6.7</td>
<td>15%</td>
</tr>
<tr>
<td>20%</td>
<td>5.0</td>
<td>20%</td>
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Note: A 9% growth assumption gives a multiplier of 100.

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**Figure 4: Segments of superannuation industry**

- **Industry Segments**
  - 7% Life Office
  - 13% Public Sector
  - 12% Master Fund
  - 23% Retail Non-Master Fund
  - 6% Corporate
  - 18% Self Managed
  - 21% Industry

- **Placings**
  - 1st Self Managed Funds with 33.7%
  - 2nd Master Funds with 27%
  - 3rd Industry Funds with 26.2%
discounted value of the after-tax overrun each future year.

**COMPLETING THE VALUATION**
It is also important to recognise that the appraisal value, albeit a significant determinant of value, is only one component of the valuation process. Rather than using simple rules of thumb which suggest that the life insurers tend to trade at multiples of embedded values, or alternatively that new business multiples in the order of 30 to 100 are suggested by a number of UK valuations, it is important to consider the various businesses in which the life insurer operates, outside of the traditional areas.

Valuations should be made for each of these components in addition to the assessment of the appraisal value. Figure 6 highlights the various components of value, which in aggregate make up the valuations for the listed life insurance groups.

**CREATING SHAREHOLDER WEALTH**
Creating shareholder wealth is the most important objective for any listed company. Shareholder wealth is created by consistently increasing the share price. As demonstrated in Figure 2, appraisal values are the best indication over the long term of share price. Therefore, appraisal values underpin the calculations for shareholder wealth-creation analyses.

The traditional method of calculating appraisal values is complex and not easily understood. For this reason, the appraisal value has not historically been viewed as a good basis for shareholder wealth analysis. However, the realistic earnings method is a more transparent method and hence easier to understand. It also highlights the important linkage between capital allocation, the cost of capital and the impact on the appraisal value, an important issue in any shareholder wealth analysis.

**CONCLUSION**
Assessing the value of a life insurance company is complex, particularly under the traditional method. The move to realistic MoS reporting means that life insurance company accounts now fully disclose a realistic value for net assets, along with the expected profit margins for the various classes of business. Provided the cost of holding capital adequacy reserves is disclosed, then a reasonable assessment of the appraisal value can be made from published information using the realistic earnings method.

The realistic earnings method will give exactly the same answer as the traditional actuarial method of assessing the appraisal value of a life insurance company. The realistic earnings method is, however, much more transparent, easier to use and more in line with modern thinking on how to value a company.