Appraisal of a General Insurance Company

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Introduction

The general insurance industry in India has gone around a full circle in its history over the years. Having started in the a private sector way back in the nineteenth century, the industry received a major jolt just over thirty years ago, when it underwent a major acquisition through a process of nationalisation. The private industry then became a public industry. Five large general insurance companies including a reinsurer, came into existence to handle the entire market business in India. Business of all the private insurers was merged into four direct writing companies. Incidentally, life insurance business of 245 Indian and foreign insurers was taken over earlier, in the year 1956, to form the Life Insurance Corporation of India.
Changes in the Government policies brought about liberalisation in the insurance industry in the year 2000 and the insurance business was thrown open to private enterprise to compete with the existing public sector insurers. Foreign players are now permitted to enter the market but only with a maximum of 26% participation in the equity. There are now only 8 general insurers in the private sector but the number should increase in the coming years. These new players are now gradually increasing their share of the total market premium and have been able to get to over one fourth of the total gross premium income in India.

The Insurance Regulatory & Development Authority {IRDA} oversees the insurance business in India. The IRDA regulations have now carved out an essential role for the actuaries in general insurance business. Each insurer must have an Appointed Actuary {AA}, who is a Fellow of the Actuarial Society of India aged not over 70 years. The IRDA approves the appointment each year. As of now, the AA is required only to certify the IBNR & IBNER claim reserves but it is evident that this role is set to expand in the near future.

Only one transfer of business has recently occurred on the life side in the new environment. However, similar developments should be expected in the future as private players would be aiming to increase their market shares in the face of stiff competition. The general insurance market in India has for long been regulated by premium tariffs for most of the business. These tariffs are set to be abolished mostly by the end of this year, which should make the business very competitive and, inter alia, considerably enlarge the scope for actuarial input.

The appraisal value exercise in connection with acquisition or merger should now be expected to become important. Further, Indian non - insurance entities currently have major participation in the equity of of almost all the new players - they are permitted to hold as much as 74% of an insurer's shareholding. Thus, any new business house or financial company including banks, which may get interested in participating in insurance business, would need to seek a study of insurance profitability through a detailed appraisal value exercise.Thus, the actuary will have a major and essential role to play in this field.

Appraisal : Valuation of the business of a GI company

The appraisal value of a company is the sum of the present values of the future earnings streams generated by the operations of the company at appropriate discount rates. It is a practical calculation of the present value of a company's projected streams of net earnings from all sources at appropriate risk discount rates.

The appraisal value is a practical calculation. The purpose and context of the valuation is critical. Depending on the context of valuation, qualitative judgement on issues such as proven

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track record of results, quality of management, organisation and systems and their ability to cope with growth, and potential market profitability and growth all need to be considered. For practical calculation, the appraisal value may be separated into three constituent parts:

- Adjusted net asset value;
- Other value arising from past written business;
- The valuation of future written business.

Uses of Appraisal Value Calculations

The main purpose, to which appraised values are put in a valuation for merger and acquisition activity, is to obtain a reasonably objective assessment prior to a purchase, sale or merger. Oobviously, the insurance company management has more to do than calculate an appraisal value, but the financial evaluation of an insurance operation enables the management to identify the problem, if any, and to do something about it.
A full appraisal or valuation of a general insurance company is a complex matter, involving a great many calculations. It is, therefore, convenient to break the value down into a number of components. Not all problems in valuing an insurance company are known, let alone solved. Nor is it likely that they ever will be, since each is unique. The split is into net assets and goodwill. Since the boundary between these two is largely a question of definition, net assets may be defined as that part of the value, which relates to the policies, which have already been written, while goodwill relates to policies, which will be written in future, including renewals of existing policies. The total of these is the value of the total future earnings of the insurer. This value, and also its components, clearly depends upon context, particularly on the plans, which a particular purchaser may have for its acquisition.

The starting point for net assets is the value disclosed in the insurer's published accounts. The following components of value are:

Net Assets: Balance sheet value + Valuation adjustments
Goodwill: Value of Renewal business + Value of Future New business

These would normally be calculated on a going - concern basis, assuming that the existing management of the insurer continues as before. This gives the value of the insurer to its existing owners and is an important reference point. Another reference point is the break - up value. This includes nothing for goodwill and calculates adjustments to the balance sheet value on the basis that –

assets are sold at market values, existing policies are cancelled and claims are settled or otherwise disposed of at a fair value.

This is a reasonable minimum value for the insurer and would be given serious attention if the value of goodwill is negative or the balance sheet values overstated. It is sometimes used as the base value, instead of the balance sheet value.

Purposes

An appraisal is most often needed in context of a transfer of ownership by way of merger or takeover, but can also be valuable for management accounting, project evaluation, performance assessment, assessing security and assessing the value of insurance company shares.

A. Merger or Takeover

The ownership of a general insurance company may change hands through a merger or takeover. Merger occurs when two general insurers combine to form a larger company. Merger implies a degree of equality, as often when both insurers have common owners. A takeover is

more one - sided affair, in which an insurer is purchased, often by another insurer. Takeovers can be friendly, where the insurer to be purchased is a willing participant, or hostile. In practice, there is little to distinguish between a merger and friendly takeover, where the usual mechanism is the takeover of one insurer by the other.

The maximum that a purchaser could reasonably be expected to pay would be the value of the insurer to that purchaser expecting increased profitability. This would take into account any benefits to result from the takeover. Unless this value is higher than the going concern value, the transaction is unlikely to occur.
This is seen as arising from:

Expenses
Insurance markets offer little scope for product differentiation and are highly competitive. In such a market, including one under premium tariffs, a low cost producer has a substantial competitive advantage. Lower costs can feed directly into either lower premium rates for the same profit margin or higher profits for the same premiums.

Merging of organisations seeks to gain economies of scale by eliminating one set of management, computers and associated staff. Thus, large firms have economies of scale in terms of labour cost, which is the most significant production factor for delivering insurance services. IT systems and compatability will have a major impact on both the success and costs of merger. The speed and ease with which IT systems can be integrated or data transferred onto a single system will be a major determinant in whether the hoped for economiies of scale actually ever appear on time and at significant levels.

The insurance law in India stipulates limitation of expenses that an insurer could incur in course of a financial year. An insurer may see an advantage from a merger to enable it to better comply with this regulation.

Distribution Channels
A motive for merger or takeover can be to gain wider access to the market. The aim may be either to access new distribution channels or to gain a greater share of existing channels. Benefits may be expected where two insurers operate in different geographical areas, use different distribution channels or write different lines through the same channels.

Capital
There are several reasons why a general insurer needs capital. Claim - paying ability is of paramount importance, for the policyholder. Other reasons for capital could include the desire to maintain dividend payments during periods of unprofitability, the desire to have potential to invest in other projects, such as acquisitive growth, and need to support other risks.

Volatility of international insurance and reinsurance is such that a company must have a certain minimum capital base to be viable and to be able to withstand the shocks. Two insurers, each with a mild shortage of capital, can sometimes combine to form a single entity which is adequately capitalised. Thus, a more substantial reason for mergers and acquisitions lies in the efficient use of capital.

An insurer which has experienced rapid expansion or suffered major losses on its underwriting may find that it has insufficient capital to support its risk and meeting statutory solvency requirements. Such an insurer is a suitable target for takeover by an insurer or entity, which has surplus capital. Conversely, an insurer with surplus capital may become a target for a company, which can make better use of the capital. A more subtle need for capital arises when the reinsurance market hardens. As reinsurance rates rise, the amount of reinsurance, which a small or medium insurer can afford, falls unless it has a sound capital base.

The insurer's capital position is an important aspect of its valuation. Under - capitalisation is often regarded as synonymous with a high risk of insolvency. A company with small capital base can suffer sever restrictions to its options without necessarily risking insolvency. As a starting point, therefore, such restrictions may be treated as a reduction to a deterministic value, and perhaps it may be necessary for the purchaser to inject additional capital, over and above the nominal purchase price. From the purchaser's point of view, this is part of the purchase price and must be justified in terms of the enhanced value of the insurer after the injection.

Cost of capital

The term cost of capital may be used to mean the value of the shortfall in net earnings between the risk return required by shareholders and actual investment return. It may also be taken to mean the risk return required by shareholders, who will require a larger return on their funds partly because the capital is being exposed to the risk of loss in the insurance business and partly because it could be used more profitably elsewhere. Apart from the investment constraints, by regulations or otherwise, the shareholders' funds are exposed to risk of loss if unprofitable business is written, or unforeseen calamities occur. This risk must be compensated for by an additional return, which means that earnings generated by shareholders' investment must be discounted at a higher rate than if the investment were held separately.

Company Size

Large companies can usually recruit able employees with professional knowledge relatively easily compared with small firms and give them competitive remuneration s a result, large companies are expected to perform better relative to small firms mall firms may have very volatile earnings compared to large insurers, which normally have a greater capacity to deal with adverse market fluctuations.

B. Management

For a large multi - national insurance group, operating in many different environments, consistent valuations of different branches and for the different operating units at the regional or divisional structure, can be used to assess capital needs, rates of return and performance. It can also provide a basis of performance - related remuneration for senior executives. This has the considerable merit that it provides a direct measure of the value of the services, say, of the chief executive of an overseas branch.

The appraisal process can be useful in evaluating the merits of proposed new projects, such as a move into new line of business or geographical region as also to provide a basis for assessing the performance of such projects.

An appraisal can form the basis for an independent assessment of an insurer's ability to meet claims or its general financial strength. Such an exercise is carried out by a number of rating agencies and would be of particular interest to brokers, shareholders and potential shareholders and insured’s.

C. Assessment of the Value of an Insurer's Shares

For a going - concern, the share price is usually based on dividends, prospects of dividend growth and short - term speculative considerations rather than the underlying profits. An appraisal can provide an independent assessment of the value of an insurer's shares, as would be of interest to investors or to securities analysts and, hence the wider investing public. The difference between the calculated and market values can be particularly revealing.

Process of Transfer

The normal mechanism for a transfer of ownership is required to be followed in respect of

merger or acquision here would be a number of valuations of potential targets using published information, in order to select the most suitable one. Assuming that the results of the initial approximate valuations are favorable, a more detailed analysis would normally be made. Once an agreement is reached between the two parties and terms of transfer are mutually agreed, the legal action including regulatory approval for the merger would be formalised
The first step by the purchaser in any transfer of ownership is often an approximate valuation, to establish whether it is worthwhile to proceed with the cost and effort of a full valuation. The question of an acquisition may only be conceptual if the purchaser is not already involved in the insurance industry, a preliminary step may be to analyse the profitability and strength of the industry .This will give an indication of the long-term prospects for such an investment and will be helpful in assessing the merits of a particular insurer.

Even with a detailed investigation and valuation, the estimated value of an insurer is highly uncertain. An approximate valuation will be far less reliable and will usually raise more questions than answers. An approximate valuation, which is not heavily qualified on account of uncertainty, should be rejected out of hand as incompetent. With millions of dollars at stake on the basis of little better than informed guesswork, hostile takeover is not a game for the faint - hearted. In any case prior to finalisation, an independent expert opinion would normally be sought by the concerned parties or at the instance of the regulator.

The Role of the Actuary
Actuarial expertise is an essential part of the valuation in advising a purchaser or seller in an acquisition. For the actuary, there is no real difference from the normal standard of professional responsibility, as an expert forming judgement, in matters involving uncertainty in respect of the future events.

With adequate data and proper investigations, an actuarial report can remove and explain a considerable amount of uncertainty. As part of any such report, an actuary would necessarily draw attention to sensitivity of the values to reasonable variations in parameters of various future scenarios It is necessary to formally link the actuary's data checks into the due diligence process .Where the actuary might normally make reasonableness checks, the actuary and the auditor must coordinate their efforts to ensure that all of the data relied on by the actuary are appropriately checked.

The general insurance Appointed Actuary in India currently has a strictly limited professional role. However, with the expected detariffing of premium rates, the AA should be expected to be responsible for data checks and to certify the premium rates. In fact, the Regulations do stipulate AA's other responsibilities with regard to insurer solvency and financial condition and other important areas and the same should become implemented in the none too distant future. However, as for a merger, the AA would be required to examine and deal with all the appraisal value calculations and other relevant aspects concerning the insurers involved in the transaction his would considerably increase actuarial input in general insurance business and bring to the fore not only the role of the general insurance AA but also that of general insurance actuarial consultancy.

Data
For an appraisal value exercise, a large volume of reliable industry and insurer specific data are essential The public sector insurers in India, which have been around in the market for several years, would have considerable market statistics representing a major part of the total business The new players on the other hand, would have data only for about four years. The IRDA have been urging the market to compile business statistics for their own sake and for the benefit of the industry as a whole.

The main sources of information are the annual reports of the insurer and industry statistics

usually published by the insurance regulator Additional information would be available from the public returns, copies of which may be obtained from the regulatory office. The notes to the accounts should be read carefully and figures brought, as far as possible, onto a consistent basis Most of the detail, which would otherwise be useful, however, would be in the confidential returns.

The statistics should be collected for five to seven years rends in all these items should be carefully examined Premiums and claims, particularly, should give a good indication between them whether the business has been growing and its profitability Explanations should be sought for any discontinuities or unusual trends.

Key Insurance Statistics

Written premiums
Data should be collected in respect of: Number of Policies, Number of Clients, Average Sum Insured and Premium per policy, Persistency rate, Currency, etc., according to Type of product, Direct & Reinsurance business, Type of industry, Distribution Channel, Geographical location and Total gross and net premium income.

Claims Paid & Outstanding
Data should be collected in respect of: Number of Claims by age and delay in settlement, Average amount of claim including claim settlement expenses, Comparisons of paid claims with corresponding outstanding claim provisions .separately for IBNR claim provision, Comparison with outstanding claim provision at the end of the preceding year, Litigation cases, Reopened claims, Direct s & reinsurance business, according to Type of product, Direct & Reinsurance business, Type of industry, Distribution Channel and Geographical location and gross and net claims.

In particular, it is important to examine each line of business separately, rather than to attempt a global assessment. It is essential to assess outstanding claims in as much detail and depth as is practicable, because these provisions constitute the largest item in the balance sheet and is one item with the greatest potential for disaster. The reserves are often uncertain, such that the difference between an optimistic and a pessimistic view may be the difference between extreme financial strength and insolvency. They must make due allowance for IBNR claims, claims development and settlement expenses. Outstanding claims reserve is considered riskier than ordinary long - term corporate debt, since neither the magnitude nor the timing of the cash flow is known. In India, discounting of outstanding claim provisions is not permitted.

Unexpired Risks
This assessment should be made on a product-by-product basis. The unexpired risks reserve may be taken as sum of the unearned premium and the premium deficiency reserves. This reserve assumes that it would be sufficient to meet the amount of future claims including the related expenses incurred in the future**.**

The unearned premium is that part of the premium that relates to the unexpired period of the risk on existing policies. This may be more or less than is required to pay for that unexpired risk. Normal accounting procedure is to assume that incidence of risk is uniform over the term of the policy. Premium is taken as earned in proportion to the period the policy has been in force. In most cases this would be a good approximation.

There are two conventions for the calculation of unearned premium.

(i) One reduces the premium by an allowance for commission and other initial policy expenses prior to calculating the pro - rata unearned premium, which would be the case in India, as the

entire acquisition expenses are required to be debited in the accounts of the financial year in which they are incurred.

(ii) The other uses the whole premium but sets up an asset for deferred acquisition expenses, which is run off on the same pro - rata basis as the premium.

A premium deficiency provision is required on top of the unearned premium reserve, where current premiums are expected to be inadequate.

RATIOS

Incurred Loss Ratio

This is the ratio of incurred claims to earned premiums. The ratio should be calculated separately for each class of business and the trends over the past years carefully studied. The reliability of this ratio depends on many factors; inter alia, the level of claim settlement expenses and adequacy of the outstanding claim provisions. Changes in reserving standards especially for long - tail business can cause large disturbances. It is also usually possible, given good knowledge of the market and a reasonable feel of the insurer's business, to make some judgment based on the level of the loss ratio.

The incurred loss ratio should be calculated both gross and net of reinsurance. The difference would reflect the impact of reinsurance on the insurer's results.

Reserving Ratio

This is the ratio of outstanding to paid claims. The main determinant of this ratio should be the mix of long and short-term business. It is also affected by reserving standards. Changes in the trend in this ratio could result from a change in either of these. If the mix of business has been stable for an extended period, then a change most probably reflects a strengthening or weakening of long tail reserving standards.

Commission Ratio

This is the ratio of commission to written premium. The gross ratio includes the level of commission paid. Exchange commission on proportional reinsurance is essentially a pricing mechanism, which effectively includes allowances for commission and expenses incurred by the direct insurer on the reinsured business. Non - proportional reinsurance is normally priced directly. Unless more detail is available, commission ratios based on net figures may be more confusing than helpful.

Expense Ratio

Ideally, two separate ratios should be worked out, namely, the ratio of underwriting expenses (excluding commission) to written premiums and the ratio of claim management expenses to claim payments.

Provided the mix and volume of business has been stable, the choice of denominator is not crucial. The traditional choice is written premium, but earned premium may suit an insurer's mix of business better.

Earned Interest Rate

This is the ratio of investment earnings to the mean value of assets. Depending on the asset mix, this should be compared with some combination of fixed interest, equity and property yields. This comparison should give some indication of the quality of investment management. The asset mix is often indicated in the notes to the accounts. These notes, together with the split of assets and liabilities between current and non- current, will also give some indication of the extent of mismatching.

Solvency Ratio
The numerator for the solvency ratio is the difference between total assets and total net liabilities. Perhaps the natural denominator is technical provision. Other denominators, which may also be used, are premiums and outstanding claims, because of the place these two have in statutory minimum solvency margin. Trends in solvency ratios are also informative, even though they are subject to distortion by changes in the adequacy of provisions.

Basic Features
It is suggested that the concerned insurers should be examined with reference to different characteristics as follows:

- Size (large / medium - sized / small)
- Volume - growth rate (rapid / slow)
- Ratios of long - tail / short - tail business
- Product range (mono - line / multi - line)
- Territory (own country / multi - national)
- Expense including commission analysis
- Comparison of paid claim amounts with corresponding claim provisions;
- Review of premium & other retrospective reserves;
- Reinsurance programme -- reliance (past and present) on outward reinsurance (light / heavy);
- Asset portfolio (concentrated / diversified) & Allocation of assets; Investment yield analysis;
- Organisational & systems analysis; Market analysis.

Solvency
Solvency margin is one of the indicators of financial soundness. Insurance firms with higher solvency margins are considered to be sounder financially. The insurer performance may be improved through a higher solvency margin, as better risks are attracted to the more stable insurers, and these insurers are better able to achieve higher premium revenues.
The concept of financial strength covers not only the sufficiency of the excess of assets over liabilities necessary to ensure that claim payments are made as they fall due, but also the ability of the insurer to remain solvent in statutory terms as further business is written. However, since the solvency margin is the difference between two monetary amounts (assets and liabilities), each of which is susceptible to variation, there can rarely, if ever, be an absolute guarantee of solvency.

The solvency margin is directly affected by the adequacy or otherwise of the insurer's technical provisions and by any problems in the market valuation of the assets. It nevertheless provides good indication of an insurer's financial strength. It helps that, more often than not, the adequacy of the provisions is strongly correlated with solvency. Strong insurers are mostly stronger than they look and weak ones are often weaker.

Reinsurance
Reinsurance dependence is complicated by insurer type. For instance, a specialist insurer would need to purchase more reinsurance than a personal line insurer. The specialist insurers usually cover volatile classes of business and write varied risks. The business of low claim frequency, high claim severity, is more volatile, less predictable, and has worse losses than a personal lines book of high claim frequency, low claim severity. As a result they rely on reinsurance to a large extent in order to stabilise their results and take on larger risks, which cannot be justified by their capital base alone.

Since there is also a cost for reinsurance, determining an appropriate retention level is important for general insurers, which have to strike a balance between decreasing insolvency risk and reducing potential profitability. Although it increases operational stability, increasing

reinsurance dependence, i.e., lowering the retention level reduces the potential profitability. Therefore, reinsurance dependence may be negatively related to performance.

Asset Structure
A company's asset structure is usually kept stable. Although a change in asset structure may be a consequence of regulation, which may or may not impact performance of a well managed company, a dramatic change in asset structure might indicate that the insurer is experiencing financial difficulty in paying claims. It may lose some, or even most, of the value of its assets if it cannot readily find buyers. Thus, insurers with stable asset structure would be expected to outperform those with unstable asset structures

Adjusted Net Asst Value
For appraisal value calculations, the approach of valuing the assets at market values is usually most appropriate. In certain contexts, present values of projected earnings at chosen risk discount rates may be more appropriate.

The starting point for the asset valuation is the asset side of the balance sheet. Normally the investments should be shown at market value and this adjustment must be made if they are not. Other assets will typically be shown at book value (purchase price, written down or some other basis) and must be adjusted to market or realisable value. The net value needs to be adjusted to allow for the value of any asset not expected to generate net earnings levels implicit in a market valuation or at realisable value or other chosen valuation basis which may be dependent on the purpose of valuation. An allocation of assets to the insurance liabilities is required, which may be called insurance assets. Also, to be added are the valuation of any net earnings or expenses not capitalised into the balance sheet. Cash and current account balances can be taken at face value and current liabilities can be netted with current assets.

Further, most of the adjustments would have tax implications. The tax effect of all adjustments must be taken into account. For both going concern and break-up bases, the purpose of these adjustments is to bring the value of all assets onto a market value basis.

Valuation Adjustments
The published accounts may include reserves (such as an asset fluctuation reserve), which must be added to shareholders' funds. It is also necessary to adjust the balance sheet value to a basis appropriate to the context within which valuation is being made, and that the adjusted value should be an estimate (in the sense of a statistical expected value) within that context. In effect, this calls for a joint valuation of assets and liabilities. More usually, however, the assets and liabilities will be valued separately.

Other Ajustments
A prospective purchaser may also have reason to make further adjustments to the value of assets and liabilities. On the assets side, for example, it may see a particular strategic value in certain assets. On the liabilities side, it may consider that it can improve the standard of claim management and / or reduce administrative expenses. Such adjustments may not be included in an initial offer, but could well influence the purchaser in its decision.

Valuation of Liabilities
The starting point is the balance sheet. Apart from the technical liabilities, namely, the unearned premiums, premium deficiency and outstanding claims, the main liabilities are usually reinsurance creditors and employee entitlements. Other liability items include tax and dividends and are usually small and short term.

The policy liabilities are usually the largest items in the balance sheet and the area where the actuary should make the greatest contribution to the valuation process. They are also the area

where the largest adjustments to the balance sheet figures may be needed.

Overall Profit is central to the valuation but is subject to variations in accounting treatment from company to company, so that trends in profit are more informative than attempting comparisons against other insurers or industry aggregates.

The information obtained from examination of these trends and ratios, together with general background knowledge of the market and the insurer, forms the basis for a subjective judgment of the financial strength and general health of the insurer. The analysis will usually raise a number of questions, which would need to be answered in order to come to firm conclusions. It may be possible to find answers to some of these, but others would require the active cooperation of the insurer.

Delays in Emergence of Profit or Loss

A feature of insurance company is the substantial delay in emergence of a declarable profit or loss in written business. Also, there is often considerable uncertainty as to the amount expected to emerge. Separate detailed considerations of the various insurance, investment and other operations of an insurance company would be obvious refinement.

Often the value reflects issues other than a company's economic value or its ability to generate future profit. These issues include general market pressures, scarcity value, negotiating skills of the parties, as well as complex issues of potential synergies or conflicts between the buyer and the company and its current management, regulatory pressure on a company in trouble. Much depends on availability of information to allow depth of analysis for reasonable assumptions to be made.

Current business

The starting point is an assessment of historical profitability. Traditional accounting measures of profit may be misleading, because they mix results of successive years and are too heavily affected by year-to-year variations in reserving standards. The more reliable measure of insurance profitability is given by a comparison of written premium and incurred costs on an underwriting year basis, but a reasonable approximation is given by a comparison of earned premium and incurred costs on an accident year basis.

For this purpose, the incurred cost incorporates commission, underwriting, policy and claim administration costs, reinsurance premiums, net claim payments and the latest estimates of net outstanding claims, all discounted to the average date of receipt of premium. It may also be necessary to consider gross profitability. A particular purchaser may be interested in how the results would have looked under a different reinsurance regime. This would be handled by broad approximation.

The other component is investment profit, which comprises investment earnings on shareholders' funds, plus surplus earnings on the assets backing the liabilities, over and above what has been allowed for in the calculation of insurance profit. Historical insurance profitability should be analysed by the class of business, partly because the underlying picture can be distorted by portfolio changes. It may be possible to enhance the value of goodwill, for example, by discounting unprofitable lines.

Trends taken from this analysis of estimated profit margins, together with general knowledge of market conditions and specific knowledge of the insurer's underwriting standards, provide a good basis for understanding the profitability of the current business.

Other Value Arising from Past Written Business
The earnings (surplus or deficiency) arising from the insurance liabilities reflected in the balance sheet need to be taken into account. Claim reserves should be assessed on a prospective basis and any surplus or deficit, together with timing of the release or strengthening, identified. Unexpired risks reserves should be reviewed in terms of the ultimate claim payments expected to be made and the timing of their recognition in the accounts.

Investment income attributable to reserves and any claims handling expenses need to be projected and valued at an appropriate risk discount rate for insurance operation. This includes any surplus or deficit in insurance reserves and requires an assessment on prospective basis of all claims reserves, premium reserves and insurance funds for both past and future exposure periods representing business written in the past. It also includes the value of future investment income attributable, based on the insurance assets and how they may change as the reserves run off, any expenses not reserved for but attributable to the administration of the payment of net claims, and other expense items arising from the run - off of the balance sheet.

The timing of the emergence of each of the earning streams, net of tax attributable, is taken into account, then discounting is applied at selected risk discount rates appropriate to the insurance operation, after having regard to the capital allocated to the insurance operations and the purpose and context of the valuation.

Value of Future Business, Goodwill
The value of an insurer depends on the profits which it will generate on future business. These profits can be assessed on two bases, depending on the purpose of the valuation. The first assumes that current management policies will continue. This is the value which would be adopted by an independent analyst, or which would be used as the basis for an offer by a prospective purchaser.

A prospective purchaser would normally have in mind certain changes, usually including amalgamation into its own business, and would also value goodwill on this basis. The difference between these two values will be a key element in the decision whether to pursue the bid or to walk away. For an internal valuation, current management may also have certain changes in mind, particularly if the status quo valuation shows an inadequate goodwill value.

The main elements in assessing the value of goodwill are:

(i) Prospective profitability of current business
(ii) Future growth
(iii) Risk and volatility of profit
(iv) Capital requirements.

The value of goodwill is the present value of projected future profits. The additional value arising from future written business is based on the expected additional net earnings arising from future written business, usually including renewal business discounted at appropriate risk discount rates.

The projection of net earnings takes account of each of the elements of profitability, including premium, commission, other expenses, claims, investment income, reinsurance and any other item of revenue. Each element is allowed to vary for short - term structural changes and underwriting cycles. The longer term view of profitability and growth takes account of the company in the context of the market in which it operates and averaging of cyclical profitability.

Typically, the calculations are performed for each class of business separately and taken net of tax. The timing of emergence of profit is allowed for, as are the current levels of production and future potential growth. The resultant net earnings stream is discounted at the selected risk discount rates for the insurance operations.

Reductions from this value should be made for the cost of any restrictions to investment policy and the return needed to cover capital allocated to the insurance operation, if judged appropriate. In addition, reduction for under - capitalisation and risk of adverse catastrophic experience, not incorporated in the projection of earnings above, should also be made.

Present values are taken at risk discount rates appropriate for the level of uncertainty surrounding the various future streams of net earnings and the purpose of the valuation. Earnings are taken net of tax. As an extension of this concept, it is simple to define the value of an insurance company as the present value of its future earnings in exactly the same way.

Risk Discount Rates
Mergers and acquisitions commit capital to a venture which must earn a sufficient rate of return for its owners, the shareholders. Conventionally, a risk - adjusted rate of return is used. This rate may be broken down into four parts:

- A risk - free interest rate -- normally the return on suitable term government bonds.
- A market equity risk premium -- the additional expected return of the equity market over risk - free assets that reflect the additional risk associated with equities.
- An additional risk premium to reflect any additional uncertainty and variability of the cash flows involved. This may be positive or negative.
- A tax adjustment -- the discount rate is netted down, if needed, to reflect the future tax liabilities of the company. Tax of investment returns and on cash flows to the shareholders needs to be considered.

Often a single discount rate is used, which may be a weighted average of several risk - adjusted yields. Using a single rate is computationally easier and helps calculations simple, but will mask some of the features of the portfolio particularly to sensitivity and extreme event testing. For relatively homogeneous portfolios, a single risk discount rate may be acceptable, but for for more heterogeneous blocks of business a number of risk adjusted interest rates would be more appropriate. The time constraints on work during a merger or acquisition may prevent this more complex approach being used. One relatively straightforward way to illustrate the sensivity is to use three different interest rate scenarios: an optimistic; a realistic; and a pessimistic scenario.

Thus, the risk discount rates allow essentially for three distinct factors:

(a) The time value of money;

(b) The tying up of capital in restricted classes of investment or other items that could be used elsewhere. As there is scarcity of capital resources, there is need to add margins to rates in (a);

(c) Risk of loss. Given that the returns are uncertain and could easily be negative, the capital provider will require an additional return to compensate for this.

Going concern v. Break up values
It is possible to consider a value of a company on break - up value basis. A company can have a greater value on a break - up value basis than on a going concern basis, usually when the management is not doing a good job and unless the situations can be turned around serious consideration should be given to break - up value or run - off.
Many quoted companies are standing at a discount to their published asset values, which tends to suggest that the break - up values are greater than appraisal values. This would suggest that the industry is vulnerable to non - insurance related takeover or possible purchase by overseas predators.

The gap between the stock market valuation and an appraised valuation implies either that the market considers the returns produced by the industry to be unattractive in relation to the

capital employed, or alternatively, that there is excess capital within the industry.

Insurer Type

Company performance in general insurance market may be influenced by insurer type specialist insurer, multi - line insurer, composite insurer and reinsurer, perhaps because insurers of different types have different risk exposures and scope economies. Take composite insurers as an example. Although such firms have an opportunity to cross sell all general insurance products to their life policyholders and can reduce underwriting risk by selling multiple type of policies, they may face a more complex mix of risk exposures than pure general insurers. Hence the net expected effect of insurer type on company performance is indeterminate.

Policyholder v. Shareholder funds

All the explicit free reserves and capital are regarded shareholder funds. The balance of the assets is taken as policyholder funds. The shareholder funds provide the risk capital. Anything that would disappear when all the liabilities were run off, should be regarded as policyholder asset. Where there is a delay in emergence of some of shareholder funds, the role of the shareholder and policyholder funds is blurred.

The shareholder funds are invested in equities and property, subject to any necessary liquidity constraints, which are unlikely to be great for a large, established and well capitalized company. Policyholder assets are often invested in short - term fixed interest securities including deposits.

Capital Allocation

An insurance company's management often finds it a useful exercise to behave as if the business units were miniature insurance companies, having to manage their affairs with a notional allocation of the company's overall capital. In this context, a 'business unit' represents some management grouping, and could be a subsidiary, branch, line of business, distribution channel or even major client or intermediary relationship.

Capital allocation is often intended to focus local managers' attention on underwriting as an investment decision. Managers' decision to underwrite an individual policy or to be in a certain line of business commits the company's capital to all the potential costs that will arise, including those of claims and their administration, in the same way as an investment decision commits capital to the investment project.

The benefits of capital allocation are:

- to give local managers a sense of the financial commitments of the company or group;
- to indicate to local managers the extent to which they are permitted to put the company or group's capital at risk without reference to corporate management; and
- to give reasoned way of measuring and perhaps rewarding, performance relative to the risks undertaken.

However, capital allocation is not the only way of achieving these benefits, and, indeed, should be additional to, rather than instead of, the normal controls necessary to ensure competence of local management.

Future Growth in Profitability

This is one of the more difficult areas to assess. Future growth in profitability can come from a number of sources, including:

- Inflationary growth
- Inflationary growth, while important, is really only staying in the same place. This includes all changes in the cost of cover, whether due to economic inflation, or structural changes in the risk. There is often some lag in the recognition of these

changes in the premium rate.

- Increased real volume of business due to increased real premium rates.
- Better underwriting -- better selection of risks, retentions and reinsurance arrangements.
- Other factors having bearing on future profits are business name, market image and dominance, the target markets and means of distribution, synergies between the insurer and its prospective purchaser, whether within the insurance industry or across industry boundaries, expertise of the insurer's staff and the quality of its computer system leading to better general and claim management

If management has been performing well, the main scope for real growth lies in real increases in premium rates or the volume of business. In assessing the potential real growth, it is helpful to analyse past growth into its components. Examination of measures of exposure, estimates of the incurred cost of claims, and premium income for each line of business should provide a sound background against which the insurer's (or the prospective purchaser's) medium term business plan can be assessed. Also crucial to the assessment are an understanding of the insurer's place in the market and of the market cycle.

5) Better investment performance. It is generally believed that affiliated investments would increase the insolvency risk of parent companies and may lead to decreased performance.

All of these need to be investigated and evaluated. In combining these factors into a projection of future profits, care is needed to retain an overall sense of realism. It is all too easy to combine a number of elements, each of which is slightly optimistic, into a forecast, which is massively optimistic. Such forecasts are seldom realised. In assessing the reality of future profit forecasts, it is helpful to divide projected future profits into a number of parts. Profits in respect of current policies are part of the value of existing business and are excluded from this exercise.

The most secure are profits in respect of renewals of existing policies. The renewal rate can be assessed on the basis of past experience and might, typically, be around 75 to 85 percent. for business written through intermediaries, however, the renewal rate immediately following a takeover will depend on how those intermediaries regard the new owners. It can be argued that some profits should not be counted in assessing goodwill. Profits on renewals derive from the insurer, while new business will be due, to a lesser or greater extent, to the efforts of the purchaser. It would be wrong to include, in the valuation, profits, which are based on the efforts of the new owner.

Less secure are profits in respect of the normal flow of new business to maintain a constant real volume of business. This, too, will depend on the relationship between the new owners and any intermediaries. The maintenance of a historical pattern of real growth is rather less secure again, particularly in the medium to long term.

Finally, any further growth in profits, beyond these levels, should be regarded as speculative.

Synergy

In valuing a company, it may be necessary to consider value added to the net assets by the insurance operation and assumptions about how the company will manage its operations, including distribution, systems, administration, etc. In effect, where the addition of a new operation increases value, then there is synergy between the old and new operations and where value decreases, there is conflict.

In the short term a merger or acquisition may reduce shareholder value. The short term loss of value is expected to be offset by long term gains from expense reductions and other synergies.

The value of the expected expense, revenue and other synergies is often the main reason for merger or acquisition. This is the primary reason why the purchase price in many acquisitions is in excess of a @pure@ appraisal value that makes no allowance for those post acquisition synergies.

Underwriting Cycle

Many lines of general insurance normally exhibit a cycle in underwriting profits known as the underwriting cycle. The position in the underwriting cycle represents the state of the insurance market. For instance, in a hard market underwriting results improve because premium rates rise. The performance of general insurers is usually impacted by a large number of factors, such as reserve deterioration, catastrophes, investment return on assets, etc.

General insurers have to strive to boost profitability through improved underwriting, especially when investment performance is poor. In other words good underwriting results usually go with weak investment returns. One of the possible reasons is that management stops pushing the underwriting side as hard when its assets returns are healthy, and hence underwriters are less concerned about volume and they focus more on profitable business. Thus, the net effect of the underwriting cycle on the overall performance of a general insurer is indeterminate.

A dramatic change in a firm's underwriting operations may indicate that the company is at a turning point in its development. For instance, a general insurer depends on insurance premiums as funds for investment, and engages in the so - called 'cash flow underwriting' to attempt to survive its financial difficulties. However, this is not necessarily the case. An unusual increase in the premium volume could indicate favorable business expansion; if it is accompanied by adequate reserving, profitable operations and stable products mix.

The underwriting cycle generally has a great impact on an insurer's underwriting operations. When the market is hard (soft), the supply of coverage is reduced (increased), and premium rates are high (low). Based on the above, there is no prior expectation about the direction of the relationship between performance and stability of underwriting operations.

Stability of underwriting operation is measured as the difference of gross premiums written between the current year and the prior year, divided by gross premiums written in the prior year. The lower the value, the more stable the underwriting operation. Since underwriting is a core business of a general insurer, underwriting profitability plays an important role in company performance. Other things being equal, firms with good underwriting results would be expected to achieve better overall financial performance.

UNCERTAINTY

Insurance is a risk business and uncertainty is a fundamental characteristic of insurance business. Broad categories of uncertainty may be distinguished –

(i) Uncertainty about the true amount and incidence of the existing liabilities. The events giving rise to claims have already occurred but it is impossible to estimate precisely what the cost of the claims will be or when they will be settled. Apart from having less than complete knowledge about the claims themselves, there will be uncertainty about future inflation and the impact which this will have on the claim settlement process and uncertainty about future developments in the Courts. There will also be claims which have been incurred but have not been reported at the date of drawing up any accounts or returns, in respect of which no information will be available.

One response to this uncertainty has been for the purchaser to require warranties as to the value of items such as outstanding claims and unexpired

risks. These are to be reassessed some time (often after three years) after the takeover is complete and. If necessary, the purchase price is adjusted in the new owner's favour or, less often, in either direction.

(ii) Uncertainty about the adequacy of the assets to meet liabilities as they fall due. Asset uncertainty may fall into two categories. The first relates to the realisable value of the assets. This may depend on when the assets have to be realised and could well be significantly more or less than the value shown in the accounts. This will not usually be of much concern with an ongoing business but is of some importance if a run - off basis of assessment is used.

(iii) Uncertainty about the profitability (or unprofitability) of future premiums and unexpired portions of past premiums in relation to insured events that have yet to occur. This will depend on a great many factors, although all may be characterised in terms of difficulty of setting the right price in advance for the assumption of the risks. The adequacy of the premiums will be affected by market pressures, which determine what rates can be charged, and by what happens to the risks that are insured.

Uncertainty in relation to existing liabilities may be the security of the reinsurance arrangements and the extent to which full recovery of reinsured amounts may be expected.

(iv) Also unknown is the future level of expenses, both the expenses of running the business and the claim settlement expenses. These will depend on a number of factors, including inflation, the volume of business written and the effectiveness of management control.

(v) In addition, there will be risks of fraud and incompetent management. These are essentially unquantifiable but probably account for quite a high proportion of insurers in difficulties.

Risk Concepts

Risk is difficult to define, but could be described as the possibility that events will develop worse than planned. The management does not know the incidence and quantum of claims and hence what premium to charge, nor how much to reserve, nor what investment return will be received. Both the variability and uncertainty are important in understanding risk.

Insurance Risks

The most important risk factor is the uncertainty of claims costs. Additional risks are volatility in the economic valuation of assets, the creditworthiness of debtors and future expense levels. To some extent, under - reserving for past business is likely to be associated with under - estimation of required premium levels on future business.

Trends and cycles contribute to the overall risks. The perils which give rise to insurance claim, the forces behind them are not static, but change over time. The causes of change may be legal, technological, social, economic, fiscal, political or environmental. The effect of these changes may be retrospective as well as prospective. The changes can be exhibited as trends or cycles, and it is often difficult to distinguish between the two.

The other insurance risks are:

- Inflation and currency mismatch.
- Exposure to catastrophic losses.
- Credit risk, Brokers' and Agents' balances, reinsurance recoveries.
- Fraud and mismanagement.

Run - Off Risk
Ceasing to accept either new or renewal business is an extreme case of fluctuation in business volumes. The potential that an insurance company at some time, may cease active underwriting will emphasize certain risks and expose new ones.

Inflation
Inflation plays a crucial role in insurance and has an adverse impact on many aspects of insurance operations, such as claims, expenses and technical provisions. Since it is predictable over the term of general insurance liabilities and expected inflation generally is taken into account when actuaries set premiums, inflation is unlikely to impact seriously on the performance of general insurers. Nevertheless, there can be unexpected high claims inflation in liability and personal injury claims despite otherwise low inflation.

Depending on an insurer's mix of business, these forms of inflation can affect the general insurance liabilities. If inflation is significantly greater than expected, it could cause insurers financial difficulty. As a result, general insurer performance would be negatively related to unexpected inflation.

Interest Rate Risk
Risk resulting from changes in interest rates is one of the main risks facing insurers. Interest rate change affects, not only the value of assets, but also the cost of claims. The higher the interest rate, the lower the asset value and the liability value. That is, interest rate change influences the value of assets and liabilities in the same direction. Moreover, the higher interest rates are, the higher claim inflation is likely to be, which means that claim costs increase. In addition, the impact of interest rate change on assets and liabilities is different if the two have different durati ons.

Government & Political Action
Government policy as also legislative 'reforms' and court judgements can have favourable or adverse impact on insurance operations.

Liquidity risk
Since the magnitude and timing of potential claim costs are uncertain, general insurance business is considered relatively risky compared to life business. General insurers, therefore, need higher liquidity to meet unexpected claim costs, especially those including the reinsurers that offer certain types of coverage of catastrophes such as flooding and earthquake. The insurer with more liquid assets would be relatively unlikely to expose itself to liquidity risk than would an insurer with less liquid assets. Thus, a positive relation would exist between insurer performance and its asset liquidity.

The overall capital requirement should include allowance for working capital (liquidity) to provide the ability to fund cash flows, and the contingency of going into run - off should not be ignored. A business not only needs to know that its total reserves are adequate, it also needs to be assured that its reserves would be available when they are required. The relationship between the timing of asset receipts and the likely timing of the liability outgo is, therefore, very important.

Operational Risk
It is essential that there is sound and prudent management and that the manager should be 'fit and proper person'. While shareholders can diversify their interests, policyholders generally cannot, and so it is presumed that insolvency risk is systematic and not diversifiable.

Group Risk
A general insurer which is a member of a group, on the one hand may get financial and other support from the parent and associated companies, but at the same time would be exposed to the risk of financial difficulty if these companies run into any problems.

Mitigation of Risk
Avoiding undue concentration of risk in business written, invested assets, in reinsurance ceded, diversification by country / economy, currency, industry, class of business written, types of assets, types of reinsurance and size of company. Since the circumstances of each insurer are unique, these risks should be used as a stimulant to thinking about risk, rather than as a definitive checklist.

Personnel & Employee Entitlements
The future plans of the existing board members and other senior management especially in a merger must be considered. Part of the merger process should be an analysis of the existing senior management in terms of contracts, age and career history. The credibility of the existing management teams in achieving 'merger of minds' and personal ambitions and also the projected cost savings from a merger can be fundamental to the success of a merger.

The principal employee entitlement liabilities are usually superannuation, long - service leave and accumulated annual and sick leave while the superannuation liability is usually held in a separate trust fund, the insurer may have either a legal or a moral obligation in respect of past service or other funding deficiencies.

Conclusions
The paper has attempted to bring out the significant role the actuary has to play in an appraisal value exercise involving complex calculations relevant to general insurance business in particular and certain aspects relating to investment of funds. The circumstances of each case would be unique and the calculations and the judgement thereon would require background of experience and insight not only in respect of general insurance business but also the market in the country, trends and economic conditions prevailing at the time when merger or acquisition is under consideration. The paper owes considerable support from some excellent papers in the JIA, BAJ and Student Society publications.

EXECUTIVE SUMMARY
The Indian insurance i ndustry has experienced two mammoth mergers in the form government takeovers - one of life insurance business in the year 1956 and the other for general insurance business in 1972. Since then there was no question of mergers except for possible merger of one or more of the four general insurance companies, which did not happen.

At the start of the current century, with the government's move towards liberlisation, Indian insurance industry has drastically changed with the advent of several private players, most of them being joint ventures between Indian non - insurance entities with foreign insurers. Mergers between two or more private insurers or public insurers or even between the two categories could not be ruled out in he future. In fact, one joint venture life insurer was recently taken over by another private company.

The Regulator, Insurance & Development Authority {IRDA} has, inter alia, made a significant move towards emphasising actuarial role in general insurance business by introducing the Appointed Actuary {AA} system. Arising mainly due to the proposed abolition of the tariffs by the end of the current year, the general insurance AA should soon gain significant prominence similar to that of the AA in life business.

The paper is a somewhat simplistic attempt, inter alia, to bring out the essential role of a

general insurance actuary in the matter of mergers and acquisitions as also for the use of insurer management, analysts and others. It is hoped that this paper will provide useful food for thought for more detail - based studies and research by general insurance actuaries in India. Though this paper is written with general insurance in view, the contents would apply to a large extent to life insurance business as well.

KEY WORDS
Appraisal Value - merger / acquisition / takeover- General Insurance Actuary- Risk Concept & Risks - Risk Discount Rates- Uncertainty - Underwriting Cycle - Solvency - Adjusted Net Asset Value.

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