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VALUING A LIFE INSURANCE COMPANY

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THE purpose of this paper is to present some of the factors to be considered and approaches which might be employed in valuing a life insurance company.

Investors in increasing numbers have been focusing their attention on companies engaged in one way or another in the life insurance business. Indicative of this interest has been the phenomenal growth in the number of life insurance companies in the United States and Canada. At the end of World War II there were about 500 companies. Today there are nearly 1,500 legal reserve life insurance companies, most of them small stock companies. In addition there are a myriad number of fraternal societies, assessment companies, mutual aid associations, and burial societies.

Concomitant with the growth in the number of small stock companies has been an increase in the number of mergers and sales of life insurance companies. Many stock companies started with insufficient surplus or dissipated surplus too quickly. A corporate consolidation is often the only sound remedy. The method employed is more often a merger rather than a sale. The buyer prefers to trade a highly appreciated stock. The seller often would not get stockholder approval if he accepted cash. Agreeing on the actual worth of a company is probably the most difficult aspect of the bargaining. This is an area that increasingly is being brought within the purview of the actuary.

Primarily we are here concerned with stock life insurance companies, although the principles to some extent are also applicable to mutual life insurance companies. The complexity of the life insurance business is such that specially adopted techniques are essential. No single standard can be applied indiscriminately. Each company presents its own problems and, therefore, demands individual attention.

**REASONS FOR DETERMINING THE VALUE OF A
LIFE INSURANCE COMPANY**

The need to place a value on the outstanding stock usually dictates the valuing of a life insurance company.

Valuing a life insurance company is frequently needed in the following situations:

- a) in the sale or merger of a life company;
- b) in determining the reasonableness of the market price of a particular life insurance stock;
- c) in the mutualization or demutualization of a life company;
- d) in determining the reasonableness of the offering price of a new issue of stock;
- e) in order to trace changes in the company's intrinsic worth;
- f) in the payment of gift and estate taxes, particularly with reference to an inactively traded stock;
- g) in the selling or reinsurance of a block of in-force business (only an examination of the particular business in force is called for here).

GROWTH IN THE NUMBER OF COMPANIES

What has brought about this tremendous growth in the number of life insurance companies in a little less than two decades?

The ingredients that go to make up a profitable picture all seemed to jell in the decade following World War II:

- a) mortality improved dramatically;
- b) interest rates began to climb steadily upward;
- c) government insurance, for the first time, made millions of servicemen and their beneficiaries aware of the role of life insurance and made them think in terms of \$10,000 instead of \$1,000;
- d) the birth rate increased sharply, emphasizing the original *raison d'être* of life insurance;
- e) the rise in personal income tax rates made the tax advantages of life insurance highly relevant;
- f) life insurance companies were in a special income tax position.

A life insurance company has some unique and very attractive features as an investment. Whereas it takes a large capital investment to set up almost any manufacturing process, the legal requirement of most states for incorporating a life insurance company ranges between \$150,000 and \$750,000. (Of course, the legal minimum is rarely a prudent level.) Mature life insurance companies operate on a relatively small capitalization, utilizing funds which are entrusted to them for safekeeping. There is no funded debt, and rarely any preferred stock.

Life insurance growth patterns seem to be less affected by economic cycles than those of other industries. The fact that sales are consummated in relatively small units to scattered individuals adds to this stability. We do not have a government contract being suddenly dropped or added. Rate wars in the usual sense are almost unheard of although competition

is stiff. Industry-wide use of the same statutory valuation tables tends to define minimum premiums. There is no product inventory capable of depreciating or becoming obsolete. Innovations in products evolve slowly and can quickly be copied.

EXAMINATION OF THE COMPANY

Before setting a value, various aspects of a company's operations must be examined.

Assets

Determining the quality and value of the assets securing a company's liabilities, capital stock and surplus is rather straightforward. Most bonds and stocks are valued in the annual statement on the basis specified by the National Association of Insurance Commissioners. However, an investor will often value bonds using market value or an amortization schedule based on a higher interest rate. Each of these alternate approaches will generally produce asset values differing considerably from statement values.

Assets requiring careful analysis are real estate, large mortgage loans, and direct placements. Determining the value of the home office building is sometimes a problem. The assets listed in Schedule X may have significant value. The correctness of the due and deferred premiums should be examined. Certain portions of the nonadmitted assets may also be of value to the investor. Thus monies due from a foreign reinsurer may be considered an inadmissible asset in the annual statement if such reinsurer is not licensed in the state of domicile. Assets (machines, desks, alterations to buildings, etc.) which have been expensed, through Exhibit 5, and are thus not shown as a nonadmitted asset, may be of significant value.

Liabilities

Policy reserves usually constitute over 90% of all liabilities. Therefore, an examination into the adequacy of the reserve basis of all benefits is imperative. This is particularly true of Accident and Health insurance, where the guideposts are less definite. In setting the life reserve basis, companies today have a choice of interest rate, mortality table, and valuation method. A change of $\frac{1}{2}\%$ in the valuation interest rate may change life insurance reserves by approximately 5%. The increase in reserves on going from a preliminary term valuation method to a net level premium method may be estimated by using the revaluation formula set forth in Section 818 (c) of the 1959 tax code. This last item is most important because the new life insurance tax code has induced many com-

panies to consider strengthening their reserves to a net level premium method. The use of mean reserve factors assumes a relatively uniform distribution of in-force policies. The propriety of this assumption should be explored.

Just how much of a company's statement liabilities should properly be considered surplus and vice versa is not always clear. Particular items to be reviewed in this respect are deficiency reserves, reserves for future settlement options, mandatory security valuation reserve, group contingency and other special reserves, reserve strengthening requirements, liabilities for unpaid expenses and taxes, liabilities for incurred but unreported claims and provisions for future policyholders' dividends. A large block of nonparticipating business valued at a high interest rate may be a danger. Surplus allocated to participating policyholders is not stockholder surplus. On the other hand, monies once allocated for special purposes but now no longer considered relevant may possibly be released to surplus. Thus with the current rise in interest earnings, monies set aside for future reserve strengthening may no longer be needed. However, the implications of such a move—actuarial, financial, and statutory—are far-reaching and should be thoroughly explored.

Earnings

Our goal here is to proceed from annual statement earnings to true earnings. Only after the effect of capital gains and losses, past service pension plan contributions, "non-admitted" expenditures, deficiency reserve increases, reserve strengthening and other unusual gains or losses have been placed in proper perspective, would we be in a position to project true earnings.

In any discussion of earnings, we can hardly proceed without examining the effect of the 1959 Federal Income Tax Act. Formerly the income tax was essentially a charge against investment income and was so treated in any projection of earnings. Today, particularly for the stock company, underwriting gains are taxed. As such, whenever we discuss earnings, we must clearly understand whether it is before or after taxes.

Each line of business should be separately examined. Each facet of the composite picture—mortality, morbidity, interest, lapse rates, and expenses—should be analyzed and significant trends noted. Following are some of the areas to be explored and questions to be asked.

What has been the company's underwriting and claim philosophy?
May a substantial volume of guaranteed issue or "liberal underwriting" affect future mortality or morbidity significantly?

What has been the investment return on the entire portfolio and on

new investments? What has been the effect of capital gains and losses? What portion of investment income comes from the stockholder accounts (capital and surplus funds)?

A company's net gain or loss from surrenders is affected not only by persistency rates, but also by the level of cash values. Early lapses, particularly on high cash value plans, work a hardship on a company since new business cost must be spread over a narrower base. How does the company fare in this respect? What lapse rate might be expected after a basic change in the corporate structure? There is evidence that the lapse rate of policies after such a fundamental change often rises significantly. Will agents continue to service their policyholders or rather will they attempt to take them away to another company?

As far as expenses are concerned, the central question is the operating efficiency of management. What has been the trend of unit expenses? Are company operations properly mechanized (or are they overmechanized)? What will be the effect of the contemplated purchase, merger, or reinsurance on expenses?

A company's pattern of earnings is very much affected by the rate at which it is growing. A company that is growing slowly will soon accumulate a proportionately large inventory of renewal business which finances the new business and contributes to surplus. Sudden changes in the pattern of new business production have a decided effect on new business strain and therefore on the operating statement. A rapidly growing company is, in essence, a new company each year in that there is a relatively small backlog of in-force business to support the new production. For a relatively new company, rapid growth means the postponement of the time of getting into the black. If the new business is good, then a fast growing company even with an annual operating deficit may be doing extremely well.

Obviously, however, just a large volume of business is not enough; it must be profitable business. Here there may arise a conflict between stockholders and company executives. Some investors arbitrarily give a price tag of \$20 or \$30 a thousand to life insurance in force without regard to the inherent worth of the business. Thus large production of unprofitable business may temporarily boost a company's stock price while in fact it really erodes the company's long-run earning capacity. Unfortunately management is sometimes judged more by market quotations than by more meaningful, if more complex, indexes of the company's real progress.

A company's retention is significant. What are the financial implications of the reinsurance approach and the recapture arrangements? To

what extent are future earnings affected by coinsurance agreements? What are the federal income tax implications? What portion of the in-force business is reinsured? How will the company's retention be affected by the prospective merger?

Home Office Personnel

The caliber of management may be a vital factor in the examination of a company. How effectively is management utilizing its personnel? How smoothly can the present management be merged into the organization chart of a would-be parent company? What are the moral obligations to employees who no longer fit into the new scheme of things, yet who in previous years rendered faithful service? What are the financial implications of existing pension plans, employment contracts, stock options? How much of the pension plan's initial past service liability has been funded?

Agency Establishment

The agency operation of any life insurance company is the prime source of future growth and earnings. All aspects of the agency system should be examined, such as contracts, vesting, stock options, territorial rights, compensation, fringe benefits, training program, turnover rate, office leases. An analysis of new and in-force business by agency and type of producer is needed. A primary question is the permanency of the agency force. Will the men remain and how will they fit in, following a merger? Is the company dependent on a few large producers?

Group Insurance

Group insurance has become perhaps the most competitive field in life insurance today. Profits in Group Accident and Health have often been forced down to a nonexistent level. Reasons for maintaining such a line are often indirect ones, such as "additional tool for agents." Results fluctuate greatly from year to year. Large group cases are often "controlled" and as such may not stay with a company once the ownership changes. The important question to be asked is: "What is the probability of maintaining a black balance?"

Participating Business

What are the respective proportions of participating and nonparticipating policies? The annual earnings that stockholders can derive from participating policies are usually limited by statute or company charter. The profit margin on participating policies used to be considerably smaller than the earnings on nonparticipating policies. However, business is

today much more competitive and the spread of earnings has narrowed considerably.

Capital and Surplus

The stockholders' equity (capital and surplus) must be taken into consideration. Assume, for example, that each additional \$1,000,000 of surplus brings in an additional \$40,000 of interest. Two new companies may be doing equally well in terms of actual earnings in their early years. However, if Company A had an initial investment of \$6,000,000, whereas Company B started with \$1,000,000, Company A would have \$200,000 additional income each year. Thus Company A might show a gain from operations of \$150,000 while Company B would show a loss of \$50,000, even though both companies were doing equally well. Clearly it is misleading to look solely at earnings without relating these to a company's capital and surplus.

SETTING A VALUE

General

An investment in a life insurance company should be an investment in future earning power. This is, of course, the same criterion as is used in buying the stock of any industrial corporation. Investors are seeking a reasonable return (dividends or capital appreciation) on their invested capital.

However, it often is more difficult to determine earnings for a life insurance company than it is for an industrial corporation of comparable size. For the life company no simple formula will suffice. A life insurance company must adopt a long-range outlook since the earnings on any block of policies are not known until the period of the contract has expired. However, certain approximate methods may be used in order to estimate future earnings.

It is clearly improper to take the "earnings" as reported in the published annual statement and multiply by some "times earnings" factor, since the gains revealed in the annual statement do not necessarily represent the real earnings of the company. This becomes even more apparent in considering a relatively new life insurance company. Since the company is still operating at a deficit or else has only recently emerged therefrom, the "times earnings" approach is meaningless. Is the company dissipating surplus or accumulating it? The annual statement will not answer this fundamental question.

Simply stated the problems are:

1. How does one proceed from annual statement gains to true earnings?
How are federal income taxes being treated?

2. How does one project true earnings?
3. How many years of projected earnings should be discounted?
4. What discount rates should be used? The discount rate ultimately used should be consistent with the interest rate used in valuing the assets of the company.

The intangibles and approximations are many; nevertheless, projections do have the advantage of showing the impact of changes in the more important parameters, *i.e.*, interest rate, lapse rate, production level, years, etc. This is vital, since, when we talk about merger or purchase, we are talking about changing virtually every aspect of a company.

Considering the many eventualities which may render the estimate invalid, it is only prudent to wish to recover the original investment within a reasonable period.

Definitions

In the following discussions, the author will be using these definitions:

- (1) Statement book value is capital plus statement surplus.
- (2) Adjusted book value is capital plus adjusted surplus, where adjusted surplus involves a recomputation of statement surplus by taking into consideration:
 - a) a revaluation of assets,
 - b) a recalculation of company liabilities taking into consideration contingency reserves, deficiency reserves, mandatory security valuation reserve, certain portions of the nonadmitted assets, untaxed Phase 3 profits, etc.
- (3) Liquidating value is
 - a) adjusted book value plus
 - b) value of in-force business.
- (4) Going concern value is
 - a) liquidating value plus
 - b) value of future production, which value is a function of management, agency system and reputation.

Various Approaches

Common to all approaches is setting the adjusted book value. This is a task in itself. For the determination of liquidating value or the going concern value, either of two basic approaches may be employed—gross premium valuation, or profit valuation. Gross premium valuation sets a value on the in-force business. Then a value may have to be assigned to the agency organization, management, good will, etc. Profit valuation projects earnings as a whole. Each approach requires considerable judg-

ment and insight into the operations of a company. Which method is used depends on the purpose of the study, information available, size and complexity of the company, availability of computers, time and money allocated to the study, and ability of the analyst.

Of prime consideration is the information available. If management desires to determine the value of its own company, it will probably have on hand a substantial amount of information from a variety of sources. It will, no doubt, have various asset share calculations on which to draw. It is a considerably different matter when an outside investor is trying to determine the value of a company. However, by examining the methods which "insiders" may employ, it is possible to develop an approach that would be feasible for an outsider.

Gross Premium Valuation

If, in analyzing a particular in-force policy, we apply "realistic" rates of mortality, interest, lapse, and expense, we can project the future earnings of this particular plan, age, duration cell. This process is the essence of a gross premium valuation. By an examination of the in-force business suitably broken down by plan, issue age, duration, amount, etc., certain key plan, age, year of issue combinations can be determined as being representative of the business as a whole. Thus by the use of a model office projection, an otherwise gargantuan task is reduced to more manageable proportions, but it is always a sizable one involving many assumptions and many calculations.

In a gross premium valuation, annual earnings may be projected for as many years as is thought practical and desirable. The sophisticated investor can then capitalize future earnings at whatever rate he deems appropriate. Profits are the end product of a gross premium valuation and it should be noted that, whereas minor changes in the basic assumptions may not significantly affect the fund (reserve plus surplus), comparatively small changes in the realistic assumptions will usually affect the profit picture very considerably. Thus, if reserves are based on $2\frac{1}{2}\%$ interest, earnings are drastically affected by the decision to use a projected interest figure of 3% , $3\frac{1}{2}\%$, or 4% . A comparable situation may exist when minor changes are made in the other parameters. This problem is clearly illustrated in Vineberg's¹ and Rydgren's² papers. Mr. Rydgren showed:

. . . that under ordinary life policies five years in force on the date of reinsurance, the present value of seven years' profits is more than doubled by assuming a

¹"The Worth of Business," by H. E. Vineberg, *RAIA* IV.

²"Value of Business Reinsured in Bulk," by A. A. Rydgren, *TASA* XXII.

mortality of 100% of that expected according to the American Men Select Table of Mortality instead of 110%, interest at 5½% instead of 5%, and continuous renewal commissions of 3%, instead of nine renewal commissions of 5%. Such a variation in profit caused by so slight a variation in mortality, interest and renewal commission assumptions is truly astonishing. It demonstrates most forcibly the value, if not the necessity, of making an exhaustive study of the group of business under consideration before fixing upon the price to be paid for it.

Lidstone Formula

Mr. Arthur Pedoe,³ in presenting Lidstone's formula for the present value of the profits of a policy, demonstrated that: "The present value of the total future profits of a policy is R less R'' ", namely the valuation reserve less the reserve based on experience rates of interest and mortality and with a premium valued of the gross premium deloaded for expenses." As a further refinement, experience rates of persistency can be incorporated.

Under Lidstone's present value approach, "experience" commutation columns can be prepared and a model office calculation carried out. Under this variation of a gross premium valuation, the present value of profits is the answer, as there is no year-by-year projection of earnings.

Agency Establishment

Along with placing a value on the existing business of a company, one must value the agency force and the management if a "going concern" value is to be derived. A mere statement of this task is enough to make one pause and ask if this approach is practicable. Placing a value of X dollars per agency or agent is often just self-deception. Certainly the monies already invested in a particular agency are not necessarily an indication of its intrinsic worth to the company.

If one must place a value on the agency establishment, one might proceed by making a gross premium valuation of a projected sales pattern of new business (plan, issue age, and amount distributions) less the net development outlay required. In estimating earnings on such future new business, a key element would be the period of years chosen.

Rules of Thumb

Many rules of thumb have been used from time to time in order to quickly estimate the value of in-force business. In essence they are supposed to be a layman's gross premium valuation. The following is a typical schedule:

³ "Lidstone's Formula for the Present Value of the Profits of a Policy," by Arthur Pedoe, *TSA X*.

Permanent plans (net level premium reserves)	\$20 to \$25 per \$1,000
Permanent plans (modified reserves)	\$15 to \$20 per \$1,000
Term plans	\$5 to \$7.50 per \$1,000
Group Life	\$2 to \$5 per \$1,000
Industrial	\$15 to \$20 per \$1,000 or 30 to 40 times the amount of weekly pre- mium debit.

Any attempt to derive an average yardstick for the value of in-force business, or for the amount which can be allocated to get it, is usually futile, self-deceiving, and dangerous. As someone so well said, "Each \$1,000 of business was not created equal." At best, rules of thumb are indications of values and not values themselves. The true value can be established only by an analysis of the company's earnings potential.

To point up the absurdity of the yardstick approach, one has only to ask the following questions:

1. In the "dollars per thousand" approach, what does one do about decreasing term plans, increasing term plans, family plans, accident and health, hospital, major medical, etc.? Sometimes in order to help solve this problem, values are assigned per dollar of annualized premium. With this approach, weights of 50% are applied to individual accident and health, and weights of 25% are assigned to group life, group accident and health, individual hospital and major medical. Sometimes values of cancelable accident and health are expressed as a percentage of unearned premium reserve and values of noncancelable (or guaranteed renewable) accident and health are expressed as a percentage of annual premium.
2. Why is the same value applied to a 20 year endowment in its 19th policy year as to a whole life policy in its second policy year? Why give the same value to high minimum amount plans, minimum deposit plans, substandard issue, franchise policies, and guaranteed issue plans as to "garden variety" policies? Should we treat renewable term, convertible and nonrenewable term, nonrenewable and nonconvertible term all the same? Policies issued at the higher issue ages often have a greater earnings potential; why not take account of this factor? Why not give a lower value to business still in its first policy year? Why not take average policy size into account? Most administrative procedures are independent of policy size. Therefore, to a point, expenses per \$1,000 of insurance vary inversely with policy size.
3. How does one adjust for reinsured business? The profit potential of reinsured or coinsured business can range from below zero to that ap-

proaching retained business. This aspect is particularly important with respect to the newer companies where the proportion of reinsured business is high.

4. Since arbitrary weights are applied, why not come out with a loss leader and issue \$100,000,000 of this business? At \$20 per \$1,000 the company has an added value of \$2,000,000 even though the business is probably worth less than nothing. This is absurd, yet, unfortunately for the industry, there are some persons promoting companies with this in mind.

In summary the use of rules of thumb should be considered only

- (1) when the value is composed primarily of book value,
- (2) when very roughly estimating an order of magnitude, or
- (3) perhaps when two companies with comparable policy distribution and inherent per policy profit are contemplating a merger.

The first situation—net worth composed primarily of book value—is realized most often in the analysis of a new company. Since the in-force business is relatively unimportant, any error in assigning a value to this phase of a company's operation will not be of overriding significance. Thus, if we assign certain arbitrary unit values to a company with \$1,000,000 of capital and surplus and \$25,000,000 of in-force, we get the following picture:

Shares of Stock Outstanding	Book Value of Stock	Life Insurance in Force	Value per \$1,000 Assigned to In-Force Business	Net Worth of Company per Share
100,000.....	\$10	\$25,000,000	\$10	\$12.50
100,000.....	10	25,000,000	20	15.00
100,000.....	10	25,000,000	30	17.50

However, multiplying the in-force by ten gives a far more dramatic swing:

Shares of Stock Outstanding	Book Value of Stock	Life Insurance in Force	Value per \$1,000 Assigned to In-Force Business	Net Worth of Company per Share
100,000.....	\$10	\$250,000,000	\$10	\$35.00
100,000.....	10	250,000,000	20	60.00
100,000.....	10	250,000,000	30	85.00

The danger in blindly applying factors is apparent. The desired degree of refinement of any estimate reflects the importance of the item to be estimated.

Profit Valuation

A profit valuation projects earnings as a whole based on past experience. No examination of individual policies nor the creation of a variety of parameters is required. Essentially, estimated future profit is split into two segments: earnings produced by current in-force business, and earnings to be thrown off by future production. The former plus the adjusted book value gives the liquidating value; the two items plus adjusted book value gives the going concern value. The procedure is as follows:

1. Calculate the average annual profit attributed to renewal business. This involves breaking the annual statement "gain" into three parts: contribution to surplus from renewal business; surplus drain on account of new business; and surplus account items, such as interest earnings, on the capital and surplus, capital gains and losses, pension plan contributions, etc. Probably the most difficult element here is the breakdown of expenses into first year and renewal.
2. Calculate (in \$1,000 units) the amount of renewal business which produced this profit. This is, essentially, the in-force at the end of the previous year less one-half of the amount of insurance issued in the previous year.
3. Take the ratio of item 1 to item 2. This gives the renewal insurance earnings per \$1,000 of renewed insurance (*i.e.*, insurance more than one year in force). The final ratio used is the average of item 3 for the last few calendar years. This average we call V , the net renewal income per \$1,000 of renewed insurance.
4. The value of in-force life insurance per \$1,000 renewed insurance (V_n^{inf}) is calculated by

$$V_n^{\text{inf}} = V[1 + vp + (vp)^2 + \dots + (vp)^{n-1}],$$

where V is the net renewal income per \$1,000 of renewed insurance,
 v is the discount factor,
 p is the persistency rate, and
 n is the number of future years on which the investor wishes to base his investment.

For the sake of simplicity, the above formula makes use of a constant V , v , and p . In actual practice, the analyst will often vary the renewal profit, the discount rate, and the persistency rate. A major change in

management can bring about a tremendous increase in the lapse rate in the first year or so after such a change. The period n and the renewal profit V will vary for different classes of business, such as life, endowment, term, group, etc., if such a breakdown be made. The discount factor should be chosen with some thought given to the effect of federal income taxes.

5. The value of the in-force business is then computed by multiplying V_n^{inf} by the year-end in-force less one-half the previous year's issue.

In order to derive the going concern value V_n^{gc} we make the following calculation:

6. $N = V - Pc/(1 - L)$, where N is the net yearly income per \$1,000

TABLE 1

$$V_n^{\text{inf}} = V [1 + vp + (vp)^2 + \dots + (vp)^{n-1}]$$

V	p	n	i	V_n^{inf}
\$2.50	.90	5	.04	\$ 9.56
2.50	.90	10	.04	14.20
2.50	.90	20	.04	17.54
2.50	.90	10	0	16.28
2.50	.90	10	.10	11.90
2.50	.95	10	.04	17.21
2.50	.75	10	.04	8.63
1.50	.90	10	.04	8.52
4.00	.90	10	.04	22.72
1.50	.75	5	.10	4.02
4.00	.95	20	0	51.32

of renewed insurance after deducting the acquisition cost of new business,

c is the first year cost per \$1,000 of gross new business,

L is the first year lapse rate expressed as a decimal, and

P is the ratio of net new insurance to renewal insurance (*i.e.*, assumed yearly increases in renewal business) expressed as a decimal. In essence $Pc/(1 - L)$ can be viewed as the "plowing back" element. Thus this factor reduces the observed profit from V to N .

7. $V_n^{\text{gc}} = N[1 + v(1 + P) + v^2(1 + P)^2 + \dots + v^{n-1}(1 + P)^{n-1}]$. The comments given in (4) above with reference to varying the parameters are equally applicable here.
8. The going concern value is then computed by multiplying V_n^{gc} by the year-end in-force less one-half the previous year's issue.

Tables 1 and 2 illustrate the use of the above formulas. The variation

in profits produced by small changes in the parameters is vividly emphasized.

The Life Insurance Sales Research Bureau made use of this approach in an excellent treatise on "What Price Business."⁴

The profit valuation approach is most readily adapted by a company for its own use. However, the theory is equally applicable for use by an outside investor. Mr. William Breiby^{5, 6} made use of the foregoing approach (as an outside investor) in a lucid and comprehensive analysis of 117 stock life insurance companies. The only source of information he had available was the company's annual statements. Many assumptions had to be made, probably the most difficult of which was the breakdown of

TABLE 2

$$V_{\text{pr}}^n = N[1 + v(1 + P) + v^2(1 + P)^2 + \dots + v^{n-1}(1 + P)^{n-1}]$$

<i>V</i>	<i>i</i>	<i>c</i>	<i>L</i>	<i>P</i>	<i>N</i>	<i>n</i>	<i>V_{pr}ⁿ</i>
\$2.50	.04	\$12.00	.20	.10	\$ 1.00	10	\$ 13.04
2.50	.04	12.00	.20	.10	1.00	20	35.39
2.50	.04	12.00	.20	.05	1.75	10	18.28
2.50	.04	12.00	.20	.20	(-) 0.50	10	(-) 10.34
2.50	.04	12.00	.10	.10	1.17	10	15.26
2.50	.04	12.00	.30	.10	0.79	10	10.30
2.50	.04	8.00	.20	.10	1.50	10	19.56
2.50	.04	20.00	.20	.10	0	10	0
2.50	0	12.00	.20	.10	1.00	10	15.94
2.50	.10	12.00	.20	.10	1.00	10	10.00
1.50	.04	12.00	.20	.10	0	10	0
4.00	.04	12.00	.20	.10	2.50	10	32.60
1.50	.10	20.00	.30	.05	0.07	10	0.57
4.00	0	8.00	.10	.20	2.22	20	414.45

annual statement expenses into first year and renewal—a difficult task even for a company executive.

A less elegant approach involves estimating future profit on a gross basis. The estimated rate of growth can be according to any one of a wide variety of mathematical expressions.

Assuming a linear growth pattern and letting

F be the gross adjusted profit at the end of the current year,

R be the constant increase in profit each ensuing year,

v be the present value factor using interest rate *i*,

⁴ "What Price Business"—Life Insurance Sales Research Bureau, 1938.

⁵ "Valuing a Stock Life Insurance Company"—William Breiby, *The Spectator*, 1930.

⁶ "Evaluating 117 Stock Life Companies—30 Years Later"—William Breiby, *The Spectator*, March, 1959.

n be the number of years for which profit will be discounted, and PV be the present value of future profit, starting one year hence, then

$$\begin{aligned} PV &= Fv + (F + R)v^2 + (F + 2R)v^3 + \dots + (F + \overline{n-1}R)v^n \\ &= Fa_{\overline{n}|}^{(i)} + R(a_{\overline{n}|}^{(i)} - nv^n)/i \end{aligned}$$

As n approaches infinity, PV approaches $F/i + R/i^2$.

Assuming a geometric growth pattern and setting r equal to the annual rate of increase in profit, we have

$$\begin{aligned} PV &= Fv + F(1+r)v^2 + F(1+r)^2v^3 + \dots + F(1+r)^{n-1}v^n \\ &= \frac{F}{1+r} [v(1+r) + v^2(1+r)^2 + \dots + v^n(1+r)^n] \\ &= \frac{F}{1+r} \cdot a_{\overline{n}|}^{(j)}, \quad \text{where} \quad 1+j = \frac{1+i}{1+r}. \end{aligned}$$

While a geometric growth pattern may be realistic for relatively short periods, an investor should be extremely cautious when working with large values of n or r . Probably the correct growth pattern lies somewhere between these two basic curves.

Comparison of Indexes with Those of Other Companies

In order to arrive at a fair market value of a closely held company, some stock analysts attempt to determine how investors have regarded similarly situated companies whose stock is traded frequently enough to have a significant market value. The relationship of the market value of these comparable issues to certain "recognized measures of values" is charted. These "recognized measures of value" may include book value, investment income over reserve requirements, operating gains, net worth computed by applying rule-of-thumb factors. Varying weights are given to the "recognized measures of value." How much credence one can give to this approach is open to question, but it is an approach.

PRACTICAL CONSIDERATIONS

Many practical considerations affect the price which an investor may ultimately offer for a company.

1. Of paramount importance in any discussion of a company valuation are the many economic principles of pricing which may be pertinent. The fact that they have not been discussed here by no means lessens their applicability. This paper had, however, as its goal the presentation of additional guideposts applicable to the valuation of a life insurance company.

2. No discussion of what price a purchaser might offer for a life insurance company is complete without a thorough examination of the income tax implications. More often than not, these are the prime reasons for the transaction. Formerly, the implications were clear and easy to assess. Today a myriad of general regulations and decisions are equally applicable to the life insurance company in addition to the specific provisions of the 1959 code.

The annual statement reveals very little information about federal income taxes. The outside analyst has no way of knowing whether Phase 1 or Phase 2 taxes are being paid. In addition, it is impossible to say whether the Phase 3 tax has been paid on all of the earnings of the current year, some of the earnings of the current year, earnings of previous years, etc.

Many questions must be explored. Is there a tax loss carried forward? If so, what is its size and in which years did it originate? Are assets with large inherent capital gains likely to be sold in the near future? Are there any problems in continuing to qualify as a life insurance company for income tax purposes?

Many situations come to mind where the tax implications are not yet clearly defined.

- a) Merger through the exchange of stock.
- b) Purchase of stock for more or less permanent holding by the purchasers.
- c) Purchase of stock with liquidation or consolidation in mind.
- d) Purchase of the assets and business (*i.e.*, liabilities) of a company.
- e) Reinsurance of a block of business.

The price which a purchaser will have to pay for a company or a block of business is the price which represents its value not only to the purchaser, but rather to all other potential purchasers. Hence, a company which will be paying a Phase 1 or Phase 2 tax prior to consideration of other mergers or acquisitions and which can reduce its tax bill by such a maneuver will, in effect, set the price for the company or block of business under consideration.

The new 1959 income tax code treats the losses of a qualified new company more liberally in its loss carry-over provisions. The provisions of Section 812 (e) of the law may be of great financial importance in the corporate planning of a company.

3. Market price of outstanding stock.
4. The stock ownership of many small companies changes frequently. Management, consequently, is less stable and, therefore, past records

may not be helpful in predicting trends in future operation. The change in stock ownership currently considered may, in itself, initiate fundamental changes in management.

5. The age of a company's charter and the states in which it is licensed affect its value.
6. Always of significance to the potential purchaser of a block of stock is the pattern of stock distribution among stockholders. He would also want to know the stockholders with large holdings and the percentage of stock available.
7. The marketability of a company's stock always influences its trading value.
8. The interest of the directors in the company is of significance.
9. The suitability of a company stock for a public offering would enhance its attractiveness.
10. Certain life insurance companies may be particularly attractive to a fire-casualty company, over and above their worth to an ordinary investor.

CONCLUSIONS

It has been said that the value of in-force business or future profits is incapable of being determined, and that the only significant value is what a purchaser is willing to pay for it. There is no question that this is true to a certain extent, but then this is true in most parts of the business world. In addition, economic cycles, tax considerations, competition, world conditions, market psychology, government action, supply and demand, and stockholder pressure all affect an offering price to varying degrees. However, this does not negate the importance of a "scientific price."

The question might be turned around to ask, "What must we pay in order to meet some specific condition, which condition depends on our own particular requirements?" All purchases involve bargaining. It is one thing to offer X dollars for a company knowing that upon basis "a" the company is worth A , upon basis "b" the company is worth B , etc.; it is quite another situation to offer X dollars without having any idea as to a company's inherent value on any basis. The consequences of spending too much for business are all the more dangerous because they may be long deferred and are not always apparent.

The future is always difficult to gauge. Competition has forced unit profit margins down. The mushrooming of new companies has been, to some extent, responsible for this. However, larger volume, even with a lower unit profit, can, in the long run, be even more profitable. It must be emphasized, however, that while a dramatically improving mortality rate

covered a lot of mistakes in the past, we have no guarantee that the future will repeat the pattern. In addition the long-range implications of the shift in life insurance sales to the lower reserve policy forms is not clear.

However, the future does look bright for the life insurance industry as a whole. The population is increasing rapidly. Interest rates are satisfactory. Mortality can be expected to improve in the middle and later years, although at a slower pace. The public is being educated to think in terms of larger policies. How the individual company will fare depends on a variety of factors, the most important one being the caliber of its management and of its agency system.

This paper has been written in the hope that it will elicit comments, ideas, approaches on an aspect of our industry where the guide posts have been few and far between. In view of the rapid growth in the number of stock companies, it is quite apparent that this is an area requiring considerably more exploration.

DISCUSSION OF PRECEDING PAPER

ROBERT C. TOOKEY:

Mr. Gold is to be congratulated for composing his paper in such a general and understandable form. It will be very helpful to our firm in communicating with insurance executives and lay investors alike. The tables exhibiting the variations in values resulting from variations in underlying assumptions are indeed revealing and should do much to discourage the use of rules of thumb for valuing business in force.

I shall discuss the first two of the ten points raised in the section entitled Practical Considerations, (1) General Economic Principals of Pricing and (2) Tax Considerations.

General Economic Considerations

The urge to merge is as old as the hills, and it is stronger than ever judging from the high prices life insurance companies are bringing today. The well informed actuary should understand some of the general considerations of a nonactuarial nature, for the most part, that will justify, in the purchaser's mind, the premium (excess of purchase price over liquidation value) that can be paid for a life insurance company. These include, not necessarily in order of importance, the following:

A. Acceleration of Growth Pattern Resulting from Increase in Size and Ranking

Two \$100 million companies would rank 321 and 320 in the country as of December 31, 1960. By merging them into one \$200 million company, the rank is increased to 231. Similarly, two \$200 million companies would rise from 232 and 231 rankings to number 153 in the nation. This forward thrust gained from the "shot in the arm" of a merger is possibly the most valuable result of all. The premium paid for this thrust may be said to be the price paid for the one thing that normally cannot be bought—time. Agency building is a slow, sometimes frustrating, process particularly for the new company. If through a merger a company can advance in 1962 to the position it would normally occupy in 1967, it may be said to have bought five years of time. The value of this time, according to Mr. Gold's formula assuming a linear rate of growth, is simply the difference in the present value of profits using the 1967 basis in 1962, *i.e.*,

$$\Delta = \left(\frac{F + 5R}{i} + \frac{R}{i^2} \right) - \left(\frac{F}{i} + \frac{R}{i^2} \right) = \frac{5R}{i}.$$

This means that if the profits are increasing at an average annual rate of \$50,000, five years of time, with interest taken at 5%, are worth \$5 million. The limitations to this approach are obvious, but since the actual rate of growth lies between an arithmetic and a geometric progression, use of the arithmetic progression is conservative.

B. Acquisition of Agents

“Nothing ever happens until someone sells something,” says national sales authority, Red Motley, and this is perhaps more true of life insurance than of any other business. Agency development is a delicate, time-consuming process, and the competition for good manpower is indeed fierce. In no area are patience and good timing more important, and in no area is there greater temptation to spend money unwisely. Forced draft methods of recruiting inevitably lead to the acquisition of marginal agents and incurral of excessive financing charges, with the company left holding the bag of agents’ debit balances. The acquired company’s agency force provides a steady source of production and alleviates the burden of developmental expenses incurred in developing “scratch” agencies.

Retention of all the desirable agents of the acquired company would be a history-making feat in human engineering, but well worth the effort. Proper consideration of the agents’ rights under existing contracts and the continuation of at least some of the merchandise available under the acquired company’s rate book, will go a long way towards keeping the agency force.

C. Acquisition of Home Office Staff and Experience

This, of course, has both plus and minus facets and will depend upon the relative capacities of the staffs in the buying and selling companies. In some cases, the buying company will acquire an experienced staff which will fill some important vacancies. The well rounded home office manager, the seasoned underwriter, the dynamic agency director, welded into a team, are distinct assets to the merged corporate entity. However, in many cases the merger will result in a surplus of help and its inherent economies will be realized only after the passage of time, when normal turnover coupled with a curtailed rate of hiring would bring the total number of employees down to the level needed.

Determination of an accurate value of the key personnel of the acquired company is not possible, but a conservative working figure can be arrived at when one considers the cost of their replacement. To recruit an executive, a good head-hunting firm will charge 20% of the man’s annual salary plus its own out-of-pocket expenses. When costs of breaking in and risks of turnover are added to the hiring cost, a key men value of 50% of key men salaries would not seem unreasonable.

D. Access to Other States and Territories

This applies primarily to the new company that must be in business for a specified number of years and meet other requirements to become licensed outside of its state of domicile. Frequently the company will have a center of influence or a captive market in another state or it may seek entry into a more populous area to broaden its market. By gaining access to other states ahead of time, through purchase of a company licensed in these other states, the acquiring company can fill its pipelines ahead of schedule. A value might be assigned to early entry into other territories, using the same principle of purchasing time outlined in A above.

E. Acquisition of Good Will

The name and age of the acquired company have a definite though indeterminate value. When a new company can buy an old charter enabling it to place the words "established in 1892" after its name, it will improve its competitive position. The age of the company will also facilitate the recruiting of good agents. Competing agents from an established company tend to stress that they represent a seasoned, safe, and stable institution, whereas the new life insurance company needs many years to prove itself and thus anyone taking out a policy in such a company is incurring an unnecessary risk. The magic words, "established in 1892," help to counteract such statements.

F. Acquisition of Prospect List

After a new company has worked over its own stockholders market, it may often obtain new life insurance prospects from the existing policyholders of the acquired company. This is especially true where the acquired company has been relatively dormant so that its own agents have not gone back for "reloads" on old policyholders. A built-in prospect list is an excellent agent's recruiting tool and should also be valued as such. A recent persistency study (Norman Buck, *TSA XII*, 258) revealed that the quality of business written on existing policyholders is much greater than that written on new lives, *i.e.*, the first year lapse rate runs only about 60% as high.

G. Added Efficiency

This is particularly true in the case of the merger of two companies of approximately the same size. Doubling the number of units could make mechanization feasible and facilitate numerous other economies that would not be available to either company operating separately.

H. Added Risk-Taking Capacity

When two companies merge, the combined risk-taking capacity may permit an increase in retention limits and accompanying reduction in reinsurance. When the two companies are small and of approximately the same size, it might be possible to double the retention limit and recapture old reinsurance to the extent of the increase in retention. If substantial amounts of reinsurance are involved, a calculation should be made of the expected increase in profits since reinsurance costs run 25%, and up, of the profits that would otherwise accrue from the reinsured portions of the policies reinsured.

I. Avenue to Another Field

As in the case of the casualty company buying a life company to gain quick access to the life market, a life insurance company specializing in one kind of business may wish to diversify. A credit company may decide to develop ordinary life, an ordinary life company may wish to write accident and sickness insurance, and a company heavy on group may want to increase its percentage of ordinary. Purchase of another company active in the market the company wishes to enter is the fastest way to achieve this result. The purchase-of-time principle applicable to A above also applies here.

J. Asset Upgrading

An additional source of gain may become available through upgrading of assets. When the acquired company's assets are in low yield conservative bonds, the purchasing company's investment department may have a field day in switching them to higher yielding securities at very little increase in risk. There would also be some benefit from having larger sums of money available to put into investments with little increase in overhead.

Tax Considerations

It has been said that the price for the life insurance company will depend upon its value to that potential purchaser who can best use it, and this is particularly applicable from the standpoint of the tax position of both buyer and seller. Every potential purchaser must appraise the value of the company to itself, and should that value turn out to be much lower than the value of the same company to another purchaser in different circumstances, such prospective purchaser would best consider himself out of the running. Certainly a life company about to complete, for tax purposes, its second consecutive year as a nonlife company with the subse-

quent taxation of policyholders' surplus could afford to pay a high price for a block of business that would increase its proportion of life reserves above the 50 percent of total reserves level. An ideal marriage of convenience would be the merger of the company about to incur Phase 3 tax because policyholders' surplus would exceed the statutory limit, with a company about to lose a five year old loss carry-over. The analysis that follows is from the standpoint of a specific purchaser looking over a potential acquisition from his own point of view. In all cases, such a purchaser should check with his own tax advisor before taking any action, because even the Treasury Department has not formulated its policy on many points.

The acquisition can be handled in various ways with differing tax consequences. Occasionally a method with a less favorable consequence to the purchaser will still be the best approach if it makes the over-all transaction more palatable to the sellers so that the net total cost to the purchaser is reduced. Acquisitions may be classified as (1) taxable, and (2) nontaxable. In a nontaxable transaction, the tax attributes of the acquired company will continue whether or not it is liquidated. Such tax attributes are also important in a taxable acquisition of stock if it is intended to continue the operation of the company in its old corporate shell. Of particular importance are the following tax attributes.

A. Tax Basis of Company Assets

The higher the tax basis of investments, the less will be the future tax that will fall due when such assets are sold. Where investment assets have a higher basis than their current value, it might be advantageous for the company to sell these assets to offset the resulting gains realized from other sales. It is also important to know the value of assets as of December 31, 1958 because any gain on a sale will be taxed only on the basis of appreciation accrued after that date. The effect of depreciation allowances on assets used in insurance business is also important and any value arrived at for purchase purposes should be adjusted for the tax benefit or detriment from a relatively high or low basis in the underlying assets.

In the fully taxable purchase for cash of either assets or stock of a company followed by liquidation, the tax basis of the assets is immaterial since the acquiring company must put these assets on its own books at its cost. Generally the difference between value and tax basis is immaterial to the selling company and its stockholders, since with proper planning the selling company can avoid paying a tax on any appreciation which may have occurred. Careful attention must be paid to the formalities required by Sec. 337 of the Internal Revenue Code.

B. Policy Reserves

Common sense tells us that the company with low reserves for tax purposes will usually be a better buy from a tax standpoint than the same company on a higher reserve basis. This is because every dollar of reserves already on the books represents a dollar deduction that will not be available in the future, or alternatively, such dollar represents an added dollar of income in the future when the reserves are released upon maturity or termination of the policy.

C. Reserve Strengthening versus Preliminary Term Election

In a nontaxable transaction, the company that has strengthened reserves in the past, entitling it to the annual deductions over a ten year period, would be worth considerably more than the company which made a preliminary term election. This is because such a company would be using net level reserve figures in computing taxable income while at the same time receiving the benefit of the strengthening deductions over the remainder of the ten year period allowed for such deductions. However, the company that used the preliminary term election already has the reserves on a net level basis for tax purposes, although the difference between the actual reserves on the books as of the purchase date and the recomputed net level reserves for tax purposes will never become available as a deduction.

In a fully taxable acquisition, reserve elections of the old company disappear upon its liquidation. Any deferred taxes the company is paying on the installment method fall due.

D. Loss Carry-overs

In a fully taxable acquisition and in some tax-free transactions, past loss carry-overs may be extinguished. However, under certain circumstances the loss carry-overs of the acquired company may become available to its successor or remain available to itself. The potential purchaser must be very careful not to change the company's business. If the acquiring company is entitled to the eight year loss carry-over, it is very important to acquire it in such a manner that the eight year period will continue to apply. The eight year carry-over is destroyed automatically if a life insurance company becomes the holder of more than 50% of the voting stock of another corporation or if more than 50% of its own voting stock becomes held by another corporation or if it becomes party to a tax-free reorganization. Sometimes, with proper planning, the oldest loss carry-overs can be used up before the disqualifying transaction takes place. It is most important to closely examine the tax returns of the selling company

before arriving at a final judgment as to the availability of any loss carry-overs. A loss carry-over, if faultily determined, may be disallowed or drastically reduced following an audit by the Internal Revenue Service. It is also important to bear in mind that should there be a "short" taxable year (from date of merger to December 31), this period will be counted as a *full* taxable year for carry-over purposes.

E. Deferred Tax Installments in a Nontaxable Acquisition

A continuing obligation to the acquiring company would be the annual installments made by the selling company that resulted from the increase in the 1957 tax through redetermination on the accrual method. If the existence of the company is terminated in a taxable transaction, then the remaining installments of this tax liability become due with the final return.

F. Surplus Accounts

In a tax-free transaction, the shareholders' and policyholders' surplus of the acquired company (the transferee) can carry over to the acquiring company. Thus, the acquisition would have particular appeal if the acquiring company, low on shareholders' surplus, would otherwise have to invade the policyholders' surplus and incur a Phase 3 tax in order to pay its regular dividends. In the fully taxable acquisition, the amount of policyholders' surplus in the acquired company will be taxable under Phase 3 upon its liquidation. The price paid for the company must properly reflect the burden of the Phase 3 tax and on which party it falls.

G. Transferee Liability

The legal problem of transferee liability should be investigated in any acquisition whether taxable or nontaxable. The buyer may protect himself against unknown and contingent liabilities of the acquired company by having part of the purchase price placed in escrow with the understanding that if no unforeseen liabilities arise within a certain number of years, such escrow funds will be turned over to the sellers. If, on the other hand, such liabilities do arise, whatever portion of the escrowed funds is needed to meet the liabilities reverts to the buyer. If the acquired company is liquidated, these unforeseen liabilities will usually fall upon those persons who are stockholders of the liquidated company at the time of liquidation. If the purchaser liquidates the acquiring company, then he might be well advised to seek the protection of the escrow arrangement. On the other hand, it is frequently possible to cast the transaction in such a manner that it is the selling stockholders that liquidate the acquired company and must be responsible for any unforeseen liabilities. One way

to circumvent the problem of transferee liability is through acquisition of assets rather than stock.

H. Value Assigned to In-Force Business

The liquidation value of a company has been defined as the adjusted book value increased by the value of in-force business which is not represented by any assets but rather represents the present value of future profits to be earned from this block of business. It presents one of the most difficult tax problems in a taxable acquisition of a life insurance company. We hope that when the stock of the acquired company is bought, followed by liquidation, the price paid for the business in force may be booked as a deferred charge and amortized over the number of years over which it is expected that profits will be derived from this business. If, on the other hand, the acquisition takes the form of the reinsurance of all the selling company's business, the same result may hold true or the buying company may end up with an immediate deduction, depending upon the terms of the contract. The acquiring company's own tax position will determine which result is more desirable.

The tax treatment of the fully taxable transaction to the selling company with respect to the premium paid for the business in force will also depend on whether it is accomplished through purchase of stock or through reinsurance. When the stock is sold, the premium paid for the business in force is reflected in the cost of the stock to the acquiring company and the sellers would normally pay capital gains tax on their profits. On the other hand, if all of the old company's business is reinsured, the difference between the reserves assumed by the new company and the amount it receives to assume these reserves would normally be looked upon as ordinary income to the old company. However, it is possible that taxable income could be avoided by the selling company through adoption of a plan to liquidate under Sec. 337 of the Internal Revenue Code. If the liquidation of the old company is accomplished through a reinsurance transaction, it would be advisable to obtain a ruling from the I.R.S. that the reinsurance does not by itself result in taxable income in a Sec. 337 liquidation.

The premium paid for the company must be analyzed to make certain that it does not have a component attributable to good will. A payment for good will is not deductible either in the year paid or over a period of years. With careful handling of the transaction, the purchasing company should usually be able to deduct the entire premium paid for the acquired company.

The annual statement alone does not show the full tax facts. Additional

material needed would include copies of the company income tax returns for 1958 and after, and if loss carry-overs are involved, the tax returns for the years 1955 through 1957 should be obtained. The tax basis of assets that do not appear in the annual statement, such as furniture and fixtures and other not-admitted assets, would also be needed. The handling of agents' balances would also have to be studied.

Careful attention to all the tax aspects before a transaction is consummated can make a great difference in the price the purchaser could afford to pay for the company. Since the foregoing statements are of a general nature, the tax advisor should be consulted in each case before final action is taken.

RALPH H. NILES:

Mr. Gold is to be congratulated on a comprehensive and excellent treatment of a subject about which very little has appeared in actuarial literature. It is a subject which will become increasingly important to many life insurance companies during the next few years. As Mr. Gold has pointed out, many of the life insurance companies recently organized, upon being confronted with impaired surplus or capital, have solved their problems by merging or selling. But for every company that is forced to take such action, there are many who are actively interested in acquiring other companies or in effecting mergers on a favorable basis.

The considerations that prompt this widespread interest include the following: (1) The need or desire for increased capitalization; (2) the desire to reduce unit costs through an immediate increase in the volume of insurance in force; (3) the desire to acquire an established agency force; (4) the belief that a purchase or merger will result in an immediate increase in the market value of the company's stock; (5) the desire to enter additional states.

Mr. Gold's discussion is directed primarily toward the actuarial problems involved in corporate consolidation. However, in such matters, as well as in many others, the actuary—and possibly this is particularly true of the consulting actuary serving small companies—finds himself called upon for advice in areas other than those which are strictly actuarial. The determination of the value of a company is only one aspect of the problems involved in a merger or sale, and if the actuary hopes to give advice and guidance, he must at least be aware of the other aspects and know where to look for additional help on problems beyond his jurisdiction. Attorneys, accountants and investment experts play an important role.

Mr. Gold has said that the most difficult aspect of bargaining is that of agreeing on the actual worth of the company. This may be true in the case

of negotiations between a willing seller and a willing buyer. However, in the case of two companies that would like to merge through an exchange of stock, the comparative values of the two stocks may be one of the easiest matters to decide.

The following are some of the other problems that may be met:

- (1) Name and location of the surviving corporation.
- (2) Personnel of the board of directors, management and office staff.
- (3) Problems that may result from outstanding stock warrants or options. There may be a question as to their legality.
- (4) Existing or potential lawsuits.
- (5) Problems arising from special insurance policies such as "profit-sharing plans," or policies providing for investment of coupons or other values in stocks or shares of mutual funds. In addition to the problems of valuing such policies, the S.E.C. has tended to classify them as investment securities and has taken action on at least one case.

Some of these problems may make a merger undesirable. Others may affect the price a prospective purchaser is willing to pay. And some of them may be difficult or impossible to resolve because a satisfactory agreement cannot be reached. Unless a solution can be found for such problems so that there remains a strong desire on both sides to get on with the "marriage ceremony," there is little point in spending time and money on a determination of the worth of either company.

Once the various problems have been solved and there exists an attitude of good faith and confidence on both sides, the determination of a satisfactory exchange rate can often be readily made. A rule-of-thumb approach is often satisfactory and possibly will result in as reliable figures as a comprehensive actuarial analysis.

In any valuation, there are certain areas where judgment must be exercised. The more refined the method adopted, the greater the number of areas where judgment must be used. Who can say whether less accurate results will be obtained by making a few broad decisions and applying a broad formula than by making many decisions involved in a more refined approach such as a "profit valuation"?

Mr. Gold has said that "the true value can be established only by an analysis of the company's earnings potential." However, it would seem that the "true value" can be established only by an analysis of the company's earnings as they develop, and, of course, a decision can't wait for that. We have to make an educated guess at the earnings potential and arrive at an estimate of what we consider the true value.

When a rule of thumb is adopted, it need not be a wild guess. It can be

based on previous actuarial analyses under average assumptions as to interest, mortality, persistency, gross premium, reserve basis, etc. Before applying a particular rule, an attempt should be made to determine whether these assumptions appear appropriate and, if not, to what extent the final results will be affected. Mr. Gold gave an illustration of factors which might be applied in a rule-of-thumb valuation. In some cases, it might be appropriate to make further breakdowns of the business, such as by participating and nonparticipating or by first year and renewal. Possibly, certain plans should be classified separately.

The questions which Mr. Gold raises as to the suitability of applying a rule of thumb are questions which must be answered in any method of valuation, and it doesn't take much reflection to realize the magnitude of the job of trying to work out a quantitative answer to each one. There is no single formula or combination of formulas that can be applied to all situations.

It may be that a combination of a gross premium valuation and a rule-of-thumb approach would be appropriate. If a company has issued most of its business on a single plan with only a few policies scattered among other plans, a detailed analysis might be made of the one plan and a rule of thumb applied to the others.

If there is similarity as to age, capital structure, size and class of business of the two merging companies, and where it seems reasonable that the same or a similar "rule of thumb" can be applied to both companies, the resulting ratio of the values of the stocks of the two companies will probably be affected only slightly by a change in the particular rule adopted.

For a small company which must employ the services of a consulting actuary, a comprehensive actuarial analysis of the value, either of its own business or of that of the other company, can be a comparatively costly matter, so that it is almost mandatory in such a case that a reasonable rule of thumb be adopted.

Mr. Gold has touched on most of the factors which must be considered in the valuation of a company regardless of what approach is used. There are certain items, however, which can stand further elaboration. As was mentioned, the value of real estate and particularly of the home office building can be a problem. If the value of such property bears a high ratio to the total assets of the company, it can even be a serious problem. In one recent case where two companies were considering a merger, the valuation of the home office property appeared to be the reason for a breakdown in negotiations. A current appraisal resulted in such a substantial reduction in the value as carried on the statement that the exchange ratio was affected materially.

Among the nonadmitted assets which should be considered is that of agents' debit balances. These should be reviewed carefully to determine whether, or to what extent, they can be considered as having value. If the agents that created the balances are no longer with the company, probably they should be written off as of no value. If, on the other hand, they were largely created by agents still under contract who are producing a reasonable volume of new business, it may be that there will be a substantial recovery.

In the determination of the "going concern value," it may be difficult to arrive at a reasonable value for an agency force. Possibly, it can be measured by past results, but it cannot always be determined whether the agency force will continue in service following a merger. Furthermore, a critical analysis of the results of a particular agency, allowing for costs of production, might show that the agency force is a liability rather than an asset.

In the case of a merger between a company that has a substantial loss carry-over for federal income tax and one that is currently paying a tax, some allowance should be made for the value of the loss carry-over. In this connection, care must be exercised to be sure that the form of the consolidation is such that the loss carry-over can be retained by the surviving corporation. This is a problem for the attorneys in planning the steps to be taken and in drafting the legal documents.

When it comes down to the point of attempting to arrive at a comparative value of the shares of stock of the two companies, there will in all probability be consideration on the part of one or both companies as to the comparison in the market values of the two stocks. In one recent merger of a small new company into an older company, the ratio was obtained by taking the stock of the older company at its current market value and the stock of the new company at its liquidation value. While a complete valuation of the stock of the older company was not made, it appeared that the market value was approximately twice the liquidation value. Although this approach may be open to question, it serves to illustrate one of the reasons for mergers mentioned above, and the trend of the market value following the merger suggests that there is some basis for that belief. At the latest quotation, the stock stood at approximately one and one-half times the value at time of merger.

Consideration, possibly, should also be given to a comparison of the exchange ratio of a proposed merger with the price for which a new issue of stock could be sold. If one of the primary objectives of a merger is to increase capital and surplus, possibly this could better be accomplished by

a new stock issue. But allowance should be made for the expense, time and trouble involved in a sale of stock.

Probably, the most important fact to remember is that each proposed corporate consolidation is unique and must be approached individually. Although there may be similarity to others in certain respects, there will most surely be special problems which must be uncovered and solved.

(AUTHOR'S REVIEW OF DISCUSSION)

MELVIN L. GOLD:

I would like to thank Messrs. Tookey and Niles for their discussion of my paper. Their comments have added considerably to the value of the paper as a point of reference.

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