

## CHOICE OF BASIS FOR DIVIDEND ILLUSTRATIONS

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### ABSTRACT

The paper analyzes the merits of various bases for illustrating ordinary life insurance dividends. Consideration is given to dividend histories, current allocation, current experience, and forecasts. The investment generation method is touched upon. A principal conclusion is that current dividend allocation is the preferred method, with current experience to be used where current allocation is not available or appropriate for illustration. More attention should be given to disclosure, and to discipline to ensure that illustrations are comparable, represent actual performance, and are understood by the public.

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### INTRODUCTION

THE Society of Actuaries' Committee on Cost Comparison Methods (Special) published its report, *Philosophies in the Computation and Dissemination of Dividend Illustrations*, in September, 1974. This report marked the introductory stages of a current period of interest in and discussion of life insurance dividends. It is a valuable source of facts, opinion, and regulation on the subject.

The present paper addresses primarily the choice of a basis for dividend illustrations. In the process, historical antecedents are examined and existing regulations reviewed. The purposes of dividend illustrations are identified, to serve as guides for evaluating possible methods of illustration.

The role of dividend histories is discussed, and illustration on the basis of actual current dividend allocation is considered. The concept of illustrating on the basis of current experience and the possibility of experience forecasting for dividend illustrations are examined. A basis for illustrating dividends in connection with investment generation allocation is suggested. Finally, the author's conclusions are presented, with comments on disclosure in connection with dividend illustrations.

### NATURE OF DIVIDENDS

It is a principle of participating insurance that sufficient margin be maintained so that each class of contracts is reasonably likely to be self-supporting. The premium is established on a conservative basis. The

contract may apply for long periods of time, during which mortality levels will change and investment yields and expense levels will fluctuate as the economy goes through its cycles. The purpose of participating insurance is to provide life insurance at a price that is commensurate with cost as experience emerges. The dividend provides the means.

Gross premiums must be adequate to carry most blocks of business without support from other blocks. The level of participating premiums varies from era to era and from company to company. During some eras there is greater uncertainty than in others, and larger margins are required. Company managements have different views of the extent of possible future adversity and the need for premium margins.

The total amount of dividends distributed is the amount available after meeting the need for retained surplus. The effect of management judgment is therefore felt in dividend allocation as companies attempt to meet their surplus objectives in accordance with their accounting practices.

Once the total amount of distributable surplus has been determined, dividends must be allocated to policies. A common method is the "contribution plan," aptly described by Maclean and Marshall in their 1937 textbook as follows:<sup>1</sup> "The contribution plan, which is the method of surplus distribution usually employed in the United States and Canada, is based on the principle of returning to each policyholder that part of the divisible surplus which may be considered as having been contributed by him."

The text then proceeds immediately to the development of what has been called the "three-factor formula." This dividend formula consists of three parts: (1) excess interest on the reserve; (2) excess of loading over allocated expenses; and (3) saving from favorable mortality experience. However, the principle expressed in the preceding definition is quite general and not limited necessarily to this particular formula.

Neither the contribution plan nor the three-factor formula is used universally in dividend allocation today. However, the contribution plan principle is very dominant, and the three-factor formula and variations based on it are the most common basic dividend distribution formulas in the United States and Canada today.

#### HISTORICAL ANTECEDENTS

Since dividends are basic to participating insurance, dividend illustrations have been a factor in the sales process from the beginning. As an

<sup>1</sup> J. B. Maclean and E. W. Marshall, *Distribution of Surplus* (Actuarial Studies, No. 6) (New York: Actuarial Society of America, 1937).

introduction to the subject, we might review some of the developments in the early years of one of the trade publications.

In 1888, A. J. Flitcraft published the first edition of *The Life Insurance Manual*, one of the forerunners of today's *Best's Flitcraft Compend*. This publication contained sample policies, premiums, benefits, and non-forfeiture values. Companion publications contained dividend information; eventually these were merged into the *Manual*, and the publication survived until 1932.

*The Flitcraft Compend* was first published in 1914 and contained a synopsis of contract provisions, premiums, and cash values. From its inception, the *Compend* also contained some dividend information. Flitcraft, Inc., was acquired by the A. M. Best Company in 1947, and the publication eventually became entitled *Best's Flitcraft Compend*.

In Flitcraft's 1907-9 publications, actual dividends payable during the publication year were shown for policies issued from one to as many as ten years prior to the year of publication. Corresponding premiums and net costs also were shown, year by year. In these early publications "net cost" meant premium minus dividend. There was no uniformity in the number of consecutive issue years shown for the different companies. For some companies, only the dividend on a policy issued one year prior was shown, whereas for others the figures were shown for policies issued up to ten years prior. In the period 1910-17, there was a trend toward ten-year actual dividend histories. The dividends and net costs were shown year by year. This period also saw the development of the concept of "cost if policy is surrendered," that is, the calculation for a stated period of the total premiums minus total dividends minus cash value. With the passage of time, the dividend presentation became standardized into the type of display that is common today: dividends year by year for ten or twenty years, ten- or twenty-year totals, and ten- or twenty-year average payments and "traditional net costs."

The references have been to actual dividend histories. If the insurance contracts issued today are the same (in provisions, premiums, and values) as those issued, say, ten years ago, and if the dividend scale has been unchanged during the period, then a ten-year dividend history is the same as a current dividend scale illustration.

Ten-year current dividend scale illustrations first were shown in Flitcraft publications in 1918. These illustrations, however, consisted of a listing of the actual dividends payable on policies issued in each of the previous ten years. Since most or all companies in the United States had been using the same American Experience Table contract for at least ten years, the dividend illustrations shown were, in effect, like those of

many companies today. This was a natural bridge from illustration on the basis of histories to illustration on the basis of current allocation or current experience.

By 1921, twenty-year current scale illustrations had replaced the ten-year. Since these twenty-year illustrations listed the actual dividend payable on policies issued in each of the prior twenty years and since most companies had not been using the American Experience Table for the full twenty-year period, the illustrations generally represented the current scale for only a limited number of years. Because of this, the yearly net cost (premium minus dividend) was shown, but not summary figures for periods of years.

By about 1930, twenty-year actual dividend histories were common, as were twenty-year illustrations on the current scale. Since by then companies had been on the American Experience Table for the full twenty years, a twenty-year summary based on current scale illustrations was added, but this did not reflect the cash value. Until 1932, the premium minus dividend for each year continued to be labeled "net cost."

In its first issue in 1914, *The Fliccraft Compend* showed five-year histories and five-year current scale dividend illustrations, but not cash values. Subsequent developments in the *Compend* paralleled those in the more complete publication. The original illustrations were described as being "based on the 1914 dividend schedule" and "neither estimates nor guarantees."

Thus the foundations of dividend illustrations were well rooted in actual dividend histories and actual company performance. These foundations prevailed even in the face of certain difficulties. The illustrations often did not relate to contracts currently being issued (as to provisions, premiums, and cash values). Historical conditions were sometimes more favorable and sometimes less favorable than current prevailing conditions. For example, the after-tax portfolio rates of one company have been as follows:

Year	Rate	Year	Rate
1880.....	5.5%	1930.....	5.0%
1885.....	5.6	1935.....	4.0
1890.....	5.4	1940.....	3.7
1895.....	5.4	1945.....	3.3
1900.....	4.3	1950.....	3.0
1905.....	4.5	1955.....	3.4
1910.....	4.7	1960.....	3.8
1915.....	4.8	1965.....	4.2
1920.....	4.9	1970.....	4.6
1925.....	5.1	1975.....	5.3

Thus, an 1895 history was generally representative of 1895 performance but would have been too optimistic as a forecast. A 1955 history (twenty-year) was generally representative of then current experience but would have been too pessimistic as a forecast of the next twenty years.

Practical forces led to a transition from illustrations of historical performances on prior contracts to illustrations of current allocation and experience on contracts currently issued. Current performance remained as the central principle, and forecasts were not used.

#### OPINION

Among the earlier records of discussion of dividend illustrations, we find references in *TASA*, XIII, 307; XVIII, 101; and XX, 162. These discussions related to contemporary rulings, either at the insurance department or the state court level, that actual dividends amounting to less than illustrated dividends were not to be allowed. The tenor of the actuarial discussion was that such rulings could not be justified by the general principles of contract and that they should not become established. The actuaries were vindicated by history; dividend illustrations are not guarantees.

In his presidential address, William C. MacDonald (*TASA*, XIV, 8) stressed the need for maintenance of "substantial surplus reserves" under annual distribution systems. This concern stemmed from the thought that there would be a temptation to maintain dividends at too high a level if conditions became less favorable in the future. Here we see an indication that indeed dividend illustrations are to be connected directly to dividend payout, and a recognition of concern among company managements that the companies would be able to perform at the level required by the dividend illustrations.

Oliver Perron in a discussion of a paper (*RAIA*, XXII, 19) expressed the thought that, if the dividends payable during the current year on policies of various durations were published instead of illustrations, such dividends would reflect current earnings, and an undue emphasis or dependence on future experience would be avoided. This concern was typical of the early 1930s, when there was pressure to illustrate dividends higher than current actual payout because of the extremely adverse investment and other experience then being encountered. H. L. Feay, in an informal discussion on surplus distribution (*RAIA*, XXII, 305) made an additional comment testifying to the pressures of the time. He suggested that, if for the current year a company reduced its dividend apportionment to a percentage of the previous scale, it should not be permitted to illustrate higher dividends than those based on that per-

centage of scale unless it also showed that the entire illustration would be using that current percentage.

Discussion continued in 1935 and 1936 (*RAIA*, XXIV, 95, and XXV, 351). Some companies were making dividend illustrations on the basis of actual histories, which were more favorable than dividends based on current experience. Some actuaries felt that, if actual histories were used as a basis for illustration in such circumstances, then illustrations based on the current scale should be given too. There were other expressions of concern about the basis of dividend illustrations. One actuary felt that more should be put into contingency funds in the early policy years and that later dividends would be declared "not just with regard to current rates of interest and mortality, but also with regard to the strength of the contingency fund and to probable future economic conditions." Are such thoughts also appropriate in today's era of escalating expenses and fluctuating surplus ratios?

The era of concern about dividend illustrations in the presence of adverse economic trends did not come to an end until about 1950. Since that time, economic trends have been favorable, owing primarily to the effect of escalating investment yield rates. Perhaps one more quote from the era of adversity is appropriate. Henry H. Jackson's writing on surplus distribution remains one of the landmarks of the literature. In 1946 (*RAIA*, XXXV, 162) he said that the "projection of dividend scales beyond the year for which they are declared is never truly justified and can mean little or nothing in our changeful world." In the context, "projection" did not mean illustration of dividends for various durations of the policy in the future but rather referred to the projection of the scale itself in the sense of a forecast. Perhaps one has to live through a full, long-term cycle of ups and downs before appreciating the full significance of this statement.

Robert T. Jackson's paper "Some Observations on Ordinary Dividends" was published in 1959 (*TSA*, XI, 764). The first paragraph of the paper is remarkable as a microcosm of the subject. The first sentence states: "Dividend apportionment may well be the actuary's most important job in a mutual company." Presumably the only other candidate for honors is solvency, which is often taken for granted. The first part of the second sentence begins: "In the short run, the scale applicable to current business will have a substantial effect on sales . . ." Thus we see the press of mundane and material affairs upon principle. The sentence concludes as follows: ". . . in the long run, the ability of the company to carry out its dividend projections, barring obviously adverse conditions, will affect its reputation and prestige."

The substance is clear, although the back of the mind is troubled as to the meaning of "dividend projections." Are we to interpret an illustration as a forecast to be lived up to, or is this rather a reference to an everyday marketplace interpretation even though something else is intended by the "projector"?

In the main, Robert Jackson's paper deals with dividend allocation, not illustration. In his discussion, Allen Mayerson raises hypothetical questions that come closer to the illustration aspect: How much obligation does the actuary have to determine and use the company's actual experience in the dividend scale, even if his company's competitive position suffers? If a scale has been in effect for a long time and is found to be out of line with experience, should he "attempt to redress the past"? Those questions are perhaps a fitting bridge to the present era, which was introduced with a discussion in 1973 (*TSA*, XXV, D173) and the publication in 1974 of the Society's Special Committee Report, *Philosophies in the Computation and Dissemination of Dividend Illustrations*. The report is rich in information. It was based on a survey that solicited actuarial opinion and information on actual practice in dividend illustration. Some of the findings are highlighted below: the numbers in parentheses refer to pages in the text of the report.

Dividends are commonly illustrated only for twenty years or to age 65. (7)

The most common "caveats" accompanying dividend illustrations are the following:

"Dividends are shown on the basis of the current scale, which is not an estimate or guarantee of future dividends" (twenty-six companies). (8)

"Dividends are shown on the basis of the current scale, which is not a guarantee of future dividends" (twenty-one companies). (8)

Forty-one of the eighty-eight insurance companies responding in the survey reported having paid lower dividends than illustrated. (13)

Seventy-one percent of mutual company actuaries believed the public was sufficiently aware of the nonguaranteed nature of dividends, while only 28 percent of the stock company actuaries believed this. (15)

Dividend scales of forty-one of eighty-eight companies were based on current experience, generally unaltered for possible or probable future changes, while the scales of forty-three companies were based on different assumptions. Of these forty-three companies, some used expected future experience, and some used that less a safety margin; rarely were all of the experience factors adjusted. (31)

Current mortality experience usually was not adjusted, but persistency experience often was. Expense rates were about evenly divided as between those that were higher than current experience and those that were lower. (32)

It was common for the interest rate for dividend illustrations to vary either from current experience or from the rate actually used for current dividend scale payments on existing business. The variations sometimes were conservative and at other times were based on a forecast of improved earnings. (33)

Twenty-five percent of the actuaries responding supported the view that illustrations should represent only current experience. (37)

One of these commented: "Likelihood of payment should influence the actuary to cut back illustrations if the future is bleak, but not to improve illustrations if the future is bright. An illustrative dividend scale should be based on current circumstances adjusted for known adverse changes." (38)

At the same time, 65 percent of the respondents expressed interest in the use of dividend projections rather than illustrations based on current scale. Many of these, however, took this position out of a concern for the downward rather than the upward side. (39)

Even among actuaries who took the position that illustrations should be based on current experience, several felt that the actuary making the illustration should have reasonable confidence that the illustrated scale would be realized at least for the first two years. Among other actuaries, a large majority felt the actuary should be virtually certain that nothing less would be paid for the next two years, and more than a majority felt the actuary should be reasonably confident that nothing less would be paid for the next five years. (41)

Competitive position generally receives serious consideration in the pricing of policies, but not, as a general rule, to the detriment of the company's general philosophy as to equity among classes of policyholders. (48)

Nearly all the respondents agreed that dividend illustrations could be manipulated to produce favorable cost comparison results. The most frequently mentioned method was that of steepening the slope of the dividend scale; the accentuation of terminal dividends also was referred to. (49)

Most respondents thought that heightened emphasis on cost comparisons would add to pressures for more liberal dividend illustrations. "Actuaries must resist, but expect, pressure to treat classes unevenly or to paper over the facts." "Pressure . . . is not good if actuaries as a group respond to this pressure by making changes which result either in inequities among generations of policyholders or serious financial consequences." "These pressures would all be aimed at improving the cost picture on current issues, whether at the expense of surplus or (more likely) at the expense of existing policyowners." "The pressure would come from sales and possibly other management to devise dividend scales that would include dividends for later policy years that are higher than are likely to be paid based on current dividend scale factors." "Unless the regulatory authorities put some teeth into the actuary's position on certifying a dividend scale, the pressures involved will exist as heretofore and the actuary will deal with them to the extent he is able." (52-55)

A large majority was opposed to the establishment of a method prescribed by regulatory authorities or by an actuarial body for calculating and illustrating



dividends. However, nearly half felt that there was a need for the establishment of a method for the *use* of dividend illustrations. (55-57)

In summary, the report reflects to a large degree the historical preference for dividend illustrations based on actual performance, past or present, and the predominant concern of actuaries with the possibility that dividend illustrations may not be realized. Yet it also indicates that there are dividend illustrations now in use that are based on forecasts of more favorable operating factors than are being obtained currently. Dividend comparisons by buyers today may be meaningful (and many are), but there is no assurance that illustrations are comparable.

#### REGULATION

Existing regulation was well surveyed and summarized in Appendix A of the 1974 report. For the purposes of this paper it will suffice to give a general indication of the nature and content of such regulation.

Typically, laws provide that there may be no misrepresentation or false or misleading statements about dividends or share of surplus to be received or previously paid on similar policies. Several states have laws that in various ways prohibit attempts to assure or guarantee dividends.

The former Wisconsin statute provided further that no figures involving illustrated dividends could be used unless they "shall be a mathematical calculation based upon assumptions of the policy and dividend scale in actual use, nor unless each edition thereof shall be numbered serially and a copy thereof has been filed with the Commissioner." This was replaced by a much more broadly worded statute, and there is no specific administrative rule currently in effect.

New York law prohibits incomplete comparisons. A valid comparison must take into account any dividends "allowed by the insurer . . . at the date of the comparison."

Regulations of the states typically provide that "the illustration or projection is based on the experience currently used by the company for dividends or upon a scale adopted by the company" (Alabama). Usually the regulation also prohibits attempts to assure or guarantee the dividend. Some also provide that the dividend illustration must be accompanied by language that asserts that the dividends are not guaranteed, or that they are based on current experience, or that they are a refund of part of the premium paid and are subject to periodic change.

Kentucky and Maryland also provide that a dividend illustration may not be made unless it has been filed with the insurance department.

Generally, however, the thrust of the regulations is simply that there may be no misrepresentations, that dividends shall be presented as not

guaranteed, and (often) that the dividends shall be based on "current scale" or "current experience." There is no definition of these terms and little, if any, attempt to enforce the regulations in any rigorous sense.

The term "misleading" has become a prominent adjective in regulations on cost disclosure and comparison. It appears in some statutes and regulations on dividends, and might become even more prominent in new regulations. While the concept of prohibiting "misleading" material is a good one to embrace in regulations, the simple use of the word itself may not be so good. Misrepresentation can be judged on objective grounds (a statement is true or not), but the question of whether a statement is misleading is one whose answer is considerably less specific and probably subjective as well.

#### PURPOSE AND CRITERIA

Business practice and actuarial opinion reflect a general belief that illustrations should be based on actual results and that dividend histories, while valid and useful, have some limitations. By the 1930s, current dividend scale illustrations had become the accepted mode, but with the proviso that they should be based on actual current performance.

Dividends are an essential feature of a participating contract and may differ greatly from company to company and from time to time. The buyer is entitled to and needs information about them. Also, the company is entitled to present its product in a reasonable light and not on the most unfavorable basis, as would be the case if contractual premiums and cash values were the only information available. Dividend illustrations, if based on actual dividend payments, can show the company's past performance. In this way, illustrations can be useful to a buyer as a matter of perspective and as a means of evaluating a record of past performance. Another purpose of illustrations is to show current performance. Since a premise of participating insurance is that coverage will be provided at cost, the buyer appropriately is interested in actual current performance. A dividend illustration on this basis also provides meaningful information.

Dividend illustrations are used for comparing similar contracts. The buyer may want to shop or obtain an idea of comparative value. The dividend can be incorporated into comparison indexes for this purpose. This is a long-standing and significant usage about which there currently is heightened regulatory interest.

Dividend illustrations also can be used for a forecast of what might happen in the future, or can be interpreted as such a forecast. In fact, the public commonly may interpret illustrations in this way. Interest rates over the last three decades have moved ever higher, and dividend histories have been more favorable than the initial dividend illustrations.

This tends to support the public impression, and the industry has suffered no discomfort—yet.

There is, however, a significant distinction between “projection” on the basis of the current scale, and “forecast.” The latter term implies illustrative dividends based on an active, intentional forecast of future economic environment and company operating factors. The history of the business shows a long-standing concern over “optimistic projections,” or the use of current experience when the future appears more adverse than the present, and over the lack of comparability when projections based on other than current experience are used.

In summary, the following six purposes of dividend illustrations can be identified:

1. To give a representation of the dividends, which provide the essential means of carrying out the purpose of the participating contract.
2. To give an indication of the cost of a participating contract on a basis other than the most adverse.
3. To show a past record.
4. To reflect current company performance.
5. To permit comparisons.
6. To forecast future dividends.

All of these are valid purposes that are significant to the life insurance buyer. In reducing these purposes to main criteria for evaluating different approaches for dividend illustrations, the comparability of similar contracts is paramount and is always of potential interest to the buyer. The high degree of importance of this criterion springs from public and regulatory interests. Another important criterion is whether the illustration reflects a company's actual performance. Like the first, this is a major standard. A provider of goods should compete in terms of performance. This is essential to the public interest.

A third main criterion is the likelihood of fulfillment of the dividend illustration. Under what conditions would the actual dividends be more than the illustrated, or less? Is this presented to the public appropriately, and can the public have a reasonable understanding of it? A fourth criterion is whether the illustration reflects past performance. While this is interesting and useful information to the buyer, this criterion is ancillary to the others. If the first three needs are met, the importance of this fourth one diminishes, and the first two purposes of dividend illustrations from the given list likely will be well served in the process.

There are several general bases for illustrating dividends. Broadly, these are past experience (histories), current allocation (using actual

dividend payment factors), current experience (an elaboration of the actual allocation concept when those factors themselves are not appropriate), and forecast experience. These are examined in the following sections.

#### ACTUAL DIVIDEND HISTORIES

As the historical review indicates, dividend illustrations had their antecedents in the showing of actual dividend histories. These, of course, are the means of showing actual past performance.

The limitation of dividend histories has been noted. Unless contracts currently being offered for sale are the same as those offered in the past, illustrative dividends based on histories will not relate to the contract currently being offered. Moreover, the dividends actually paid in the past reflected the economic environment and the company's performance in the past. They are arguably less predictive of the future than dividend illustrations based on current experience or on a forecast of the future. One may say "arguably less" predictive because the composite result of twenty past years actually might be a better prediction of the future than a forecast that springs solely from a snapshot of current experience and because the quality of a forecast always may be questioned.

In general, however, an illustration based either on current experience or a "reasonable forecast" would be more effective for predicting future dividends than an illustration based on past history. On the other hand, cost rankings based on dividend histories are the prime means, and an excellent means, of identifying historically efficient providers of insurance services. Thus, cost indexes based on actual dividend histories can have significance for the ranking of a company's probable future performance against that of a number of other companies under similar contracts. For example, suppose that, in a ranking of 100 contracts based on past histories, Company A's contracts rank in the fifth decile and Company B's contracts rank in the first decile. *Prima facie*, Company B's would appear to be a better value than Company A's, but this statement is subject to refutation by the presentation of evidence regarding changes in operating environment, management, etc., that may have changed the circumstances of Companies A and B. Among the problems in making life insurance cost comparisons based on actual cost histories, of course, are the difficulties in making such refutations or in countering them, and the difficulties in reducing the results to a standardized measure. It is nonetheless true that there is useful information to be gained by a comparison of indexes based on actual dividend histories.

Dividend history comparisons sometimes have been used in an attempt to "validate" current dividend scale illustrations. For instance, much may be made of the fact that for a given company the actual dividends have been substantially greater than the dividends that were illustrated years ago when the contract was issued, while for another company the actual dividends over the same period have been less favorable than the original illustrations. Some useful information can be obtained in this way. For example, suppose that, in a ranking of cost comparison indexes of 100 companies on the basis of current dividend scale illustrations, Company A is in the first decile while Company B is in the fifth decile. At the same time, using cost indexes based on actual dividend histories, Company B is in the first decile while Company A is in the fifth. In that situation, one would conclude either that something significant has happened to the operating characteristics of Companies A and B or that the current dividend scale illustrations for the two companies have different bases. While this may be interesting information and might properly influence the buyer's opinion of a company's performance or his choice of companies, there is a degree of subjectivity in interpreting the results and a direct application of them is difficult.

In conclusion, the availability of actual dividend histories serves a useful purpose. Historical performance is recognized. Current dividend scale rankings are supported or called in question. Because of the other attributes of histories, however, an attempt to satisfy the criteria for dividend illustrations should be sought first through one of the other possible bases.

#### CURRENT ALLOCATION

The history of dividend illustrations shows that originally the basis used was that of current dividend allocation, as exemplified particularly in actual dividend histories. However, histories relate to contracts that may not be issued currently, and moreover there was a desire to illustrate dividends beyond those policy years in which dividends actually were being paid. These dividends were based on the same experience factors used in determining the dividends actually payable. Such dividends are "current allocation" or "current experience" dividends. The concepts of current allocation and current experience are very similar, but useful distinctions can be made.

Dividends can be allocated on the basis of experience factors different from those currently being experienced. If the differences are significant, the contribution principle is violated. If the differences are significant for all classes of business, the company will either generate excess surplus or become insolvent.

If the basis of current allocation is actually substantially different from current experience, should such a basis be used for illustration? The criterion of comparability might or might not be met by doing so. The criterion of actual performance would be met in one sense, but not in the most literal sense. Finally, the criterion of likelihood of fulfillment is difficult to test. Clearly, if current allocation departs significantly from current experience, the logical inconsistencies inherent in the situation make it very difficult to meet the criteria that have been set down for illustrations. At the very least, there should be additional disclosure in some meaningful way about the bases of both allocation and illustration.

In the more normal and desirable situation, current allocation is consistent with current experience. The reference here is to policies now in force, involving various contract forms, rate scales, and durations. New questions arise. Are these actual payments consistent with current series illustrations? If they are not, should they be? Should there be a test to see whether they are? Should the illustrated dividends be made to conform, or are there reasons why dividends on current issues might be different? What is current experience for new business, and should it be distinguished from current allocation on present business? We have a host of questions for which we would like a simple, general answer.

To get to the heart of the matter, let us hypothecate an "equation of adjustment." We will write an equation with one member applying to a policy in force at a specified duration, with the dividend as actually paid. The other member will be for a policy currently being issued, with an illustrated dividend for the same duration. Many such equations are possible; here is one:

$$\frac{(CV_{i-1}^P + G^P)(1 + i') - (CV_i^P + AD_i^P)}{1,000 - CV_i^P} = \frac{(CV_{i-1}^C + G^C)(1 + i') - (CV_i^C + AD_i^A)}{1,000 - CV_i^C}$$

Here  $CV$  refers to cash value,  $G$  to gross premium, and  $AD$  to annual dividend. The superscript  $P$  denotes values being paid on contracts issued in prior years, and the superscript  $C$  refers to current illustration basis. The superscript  $A$  indicates the adjusted dividend to be calculated by this equation of adjustment. The process uses premiums and cash values for currently issued policies in the right-hand member of the equation. The values in the left-hand member are those for the most similar policy currently in force.

Why this particular equation of adjustment? Some will recognize it as one used in recent years by Professor Joseph Belth of the University of Indiana to represent the "price of protection." Others will see it as analogous to the equation of two rates of mortality. Replace cash values by reserves, gross premiums by valuation net premiums, use the valuation rate of interest, let dividends be zero, and the form reduces to that of the tabular rate of mortality. Using the form with gross premiums, cash values, and dividends, and introducing a dividend interest rate, it becomes a rate of mortality with expenses factored in (including any effect of the change in cash values, the effect of lapses, profits, etc.).

Other equations of adjustment are possible. For example, omit the division by the amount at risk. Now envision a time series of twenty values of each of the members, and accumulate them with interest from their given duration to the end of the twenty-year period. Then divide by a forborne annuity certain. The two members become interest-adjusted cost indexes. Rather than focusing on one given duration, we could make the adjustment so as to equate these indexes. If the division by the amount at risk were omitted and the interest rate in the formula set equal to zero, the members would become traditional ledger costs or, if summed, traditional twenty-year net costs. Indeed, many equations of adjustment are possible.

The equation has been labeled an equation of adjustment. The implied intent is to adjust the illustrated dividends so that they are consistent with those paid. We also could approach the matter from the viewpoint of testing rather than adjustment. Do the differences implied by the "adjusted dividends" lead to a conclusion that the illustrated dividends are not on the same basis of current experience as the paid dividends?

Whether the intention is one of adjustment or testing, the following questions arise: Is the process valid? Should such adjustments be made? Is such a test sound? Let us continue to address the subject under the specific terms of the equation above. There is, after all, some appealing rationale for such an equation. There is also an appealing rationale (to some, perhaps more appealing) for an equation formed by eliminating the division by the amount at risk and summing over some period such as ten or twenty years, either with or without interest, in order to have the adjusted dividends or the test of the illustrated dividends in terms of a twenty-year average instead of for any one particular year.

There is one still unspecified parameter in the equation, namely, the interest rate. The choice of that rate is critical to the process. In the 1960s the problem would have suggested an easy answer: use the com-

pany's portfolio earned rate, or the dividend scale interest rate for current payout. Under present-day conditions, there are at least the following three complications:

1. Investment year allocation for new and recent business.
2. The possibility that new and recent business may have a higher reserve interest rate, and thus incur lower income tax expense and be charged less tax expense as a percentage of reserves.
3. The possibility that new and recent business may have a higher policy loan interest rate and thus a higher allocation of investment yield.

In the search for an interest rate or rates to use in the equation, we will consider for present purposes only rates internal to the insurance company (e.g., dividend scale) rather than those external to it (e.g., AA bonds). Given the basic form of equation for adjusting or testing, what is to be done if the interest rate on the illustrated basis differs from that on the paid basis? If we use the two rates, each on its own side of the equation, we adjust the dividend to equate "risk costs." If we use one or the other rate on both sides of the equation, the difference in rates is reflected in the adjusted dividend (or amount of difference to be reconciled by the test). However, in the process the simple concept of equating risk costs is greatly distorted; how could we continue to say that the basis of the test is to equate risk costs?

Here is a dilemma. It is reminiscent of the uncertainty principle of physics. You may stipulate an interest rate and drive out a risk cost, or you may stipulate a risk cost and drive out an interest rate. However, whatever you do for one determines the other on the basis of the stipulation.

Nevertheless, we have made some progress, for if the paid and illustrated sides of the equation of adjustment are each based on its own interest rate we have a way of checking whether the other factors (claims, expense, profit, and anything else) are on a similar basis in the paid and illustrated versions.

Thus, in various situations the tester might attest to the following:

1. The bases of paid and illustrated dividends do not differ materially.
2. The bases of claims and expenses do not differ materially, but the paid scale interest rate is  $X$  and the illustrated rate is  $Y$  because . . . .
3. The bases of claims and expenses differ by  $X$  percent because . . . , but the interest rates are the same.
4. The bases of claims and expenses differ by  $X$  because . . . , and further the paid scale interest rate is  $Y$  and the illustrated rate is  $Z$  because . . . .



In summary, the equation may provide a means of adjustment or testing and a means of articulation of differences. However, it does not say whether those differences are justified or whether the adjustments should be made. Thus, we come to these general questions: Are there valid reasons for the differences? Which adjustments should be made? Just what test is it that has been failed?

Manifestly, the experience bases for new and old business may differ. The dissimilarity may be due to one of the reasons given previously (differences in taxes or policy loan interest rate) or to other reasons, such as differences in any of the following: average policy size, type of market reached, expenses, contract provisions that have more than the usual significance, mortality underwriting standards, persistency, pace of amortization of initial expenses, or surplus objectives. Thus, the illustrated dividends may fail the test for one of two general reasons. Perhaps it is because the paid dividends are on a current experience basis and the illustrated dividends are on some other basis. The test in that case would have had a useful result. On the other hand, perhaps the difference in dividends is due to differences in experience between new and old business. In that case, the illustrated dividends may be a valid representation of current experience for the new policy, even though they may differ significantly from the dividends for in-force business. We have no way of telling which reason applies; that would require further analysis into the various components of experience for both existing and new business. Therefore, we do not have carte blanche in applying such tests, but must evaluate the results in the light of all the factors.

We shall conclude this discussion of dividend illustrations on the basis of current allocation with the general statement that, if the current experience for new business is the same in all its particulars as that under existing business, the current allocation basis will meet the criteria for dividend illustrations having to do with comparability and performance. The criterion of likelihood of fulfillment, however, has not been addressed. We now shall discuss the situation where current experience for new business differs from that for existing business.

#### CURRENT EXPERIENCE

Since "current experience" for new issues may be different (though the issues are not yet mature, or even experienced at all) from that for old, the term needs further definition. In that regard, there is one significant principle to be mentioned at the outset: if the company experiences

rates of mortality, expense, termination, and investment yield equal to those used in dividend illustration, it will have the capacity to pay the illustrated dividends without affecting surplus materially. This is analogous to the statement that the company can afford to pay dividends based on current experience to its in-force business. It is a concomitant of following the contribution principle.

Current experience will govern closely the factors used in determining dividends currently paid on existing business. The simplest definition of current experience would be in terms of those factors of mortality, interest, and expense used in determining dividends currently payable (current allocation). Yet at times this type of definition may not be valid or applicable. There may be no such factors that are appropriate for the illustration of dividends because anticipated mortality, lapses, or expenses of the new business are clearly different from those now experienced on any block business in force. Or, a company may use different investment yield rates for different eras of business, and there may be a question as to the rate to be applied to current issues.

For these reasons it is desirable to elaborate further on the meaning of "current experience," keeping in mind the importance of adherence to factors in actual use for the payment of current dividends, where such factors are applicable. Also important is the principle of being able to pay those dividends that are illustrated, if "current experience" continues. In the treatment that follows, the factors will be discussed under various categories of operating experience.

### *Claims*

The premium for participating insurance allows for claims on a conservative basis. The dividend releases the margin over actual experience. For illustrative dividend purposes, "current experience mortality" should mean a table of mortality rates constructed from an analysis of claim experience in a recent past period on insurance contracts with similar provisions and underwriting. "Recent past" usually will mean within five years, although the period may be longer. Whether a secular trend is favorable or unfavorable, "current experience" (if it is to remain meaningful and understandable) should not allow for projection beyond the middle of the period for which the dividend scale may reasonably be expected to apply.

The company's experience on similar contracts subject to similar underwriting standards may be statistically unreliable or even non-existent. In that case, the current experience mortality table may be taken from other experience of the company or from industry expe-

rience, with modifications as appropriate in order to make the table a more likely representation of the experience to be expected under the contract.

According to this definition, only modest projections of the future should be made, and unsuitable modifications of current experience on the grounds of contractual, market, or economic differences should be avoided. For example, for this purpose it would not be appropriate to adopt for a new "preferred risk" policy a table involving significantly lower mortality than under current standard underwriting experience, if the actual changes in underwriting requirements and standards were unlikely to produce such an improvement in experience. Also, it would be unsuitable to use, for a new renewable term policy, a table with lower mortality than under recent industry experience on term insurance with similar renewal and conversion provisions on the grounds that the buyers of the contract would have different renewal characteristics than those in the marketplace generally, or that economic circumstances would be different in the future marketplace. In summary, current mortality experience for dividend illustration purposes means recent actual experience whenever possible. Modification of actual experience, whether of the particular company or the industry, should be made on a conservative basis.

Where current actual experience is not available and it is necessary to adopt or adapt the experience from another source, there obviously can be differences in actuarial judgment as to what is reasonable, suitable, or conservative. If a statement about the mortality basis of a dividend illustration is made by an actuary who is a member of an actuarial organization, the standards and discipline of the organization should combine to produce suitable and meaningful bases. If a regulatory agency were to adopt regulation on the subject and were to rely for interpretation on the opinion of a similar professional actuary, disagreement would be rare and should be reconciled with dominant consideration given to the public interest.

#### *Investment Yield*

The premium for participating insurance allows for investment yield on a conservative basis. The dividend releases the excess of the current experience yield over the yield assumed in the premium basis. For the purpose of illustrative dividends, current experience as to investment yield means an interest rate derived from investment portfolio earnings of a recent past period. (This portion of the analysis is restricted to situations where dividends are allocated on a portfolio rate basis. Where

allocation is by an investment year or generation method, a different set of considerations and problems arise that are treated under a separate heading. Here, "recent past" usually will mean the last one to three years, although again the period may be longer. Whether the secular trend in portfolio earnings rate is favorable or unfavorable, current experience should not allow for projection beyond the middle of the period for which the current dividend scale may reasonably be expected to apply.

The portfolio rate used in allocating dividends may reflect the policy loan rate and the proportion borrowed on a given block of business. The interest rate used for current experience illustrations should be determined in a manner consistent with the treatment to be given in the allocation of dividends for the illustrated policy, using a proportion of loans determined from experience on similar business.

Capital gains and losses are part of investment yield. Under statutory accounting they do not generally flow through the operating statement. Whether these gains are reflected directly or indirectly in dividend allocation, and the method by which this is done, will vary from company to company and from time to time. The determination of an interest rate to be used for current experience dividend illustrations should take account of capital gains or losses in a manner consistent with that used for actual current allocation. Any modifications or alterations should be made in a way that has a conservative effect on the amount of dividends illustrated.

In the current era federal income taxes are related closely to investment yield and to such items as reserve basis and tax status (qualified or nonqualified). They commonly are reflected through a reduced interest rate in the dividend formula or by making a stipulated expense charge expressed as a percentage of reserves or assets. The basis for illustrative dividends should reflect the actual current tax level, and its derivation should be consistent with the process of actual dividend allocation.

Participating insurance contracts are generally allocated the investment yield arising from the reserves on those contracts. In addition to reserves on participating contracts, companies have other assets: surplus, mandatory securities valuation reserve, dividend liability, reserves on nonparticipating contracts, and various other items. In practice, all or part of these earnings may be allocated to participating contracts, and appropriate direct charges may be made for profit or surplus objectives. Alternatively, these earnings may be set aside for profit or surplus objectives, and different charges may be made in the dividend formula for these objectives. The interest rate for current dividend scale illustra-

tion should be determined in a manner consistent with that used for determining the rate for the actual allocation of dividends.

While a company basically may use a portfolio rate investment yield allocation rather than an investment generation method, it may for various reasons use a different interest rate for dividend allocation to different classes of business. Or, the interest rate used for dividend allocation to all business may be modestly higher or lower than the portfolio interest rate defined here for current experience illustrations. While consistency between rates for allocation and illustration is desirable, and primacy is normally given to the rate used for actual dividend payment, the current experience rate for illustrating dividends should not be larger than the current earned rate on the portfolio.

### *Expenses*

The premium for participating insurance provides for expenses on a conservative basis. The dividend refunds the margin over that needed for actual expenses.

The part of a dividend formula dealing with the expense charges often will be the lengthiest. In addition to the many variations in expense charges because of different series of contracts with different provisions issued at different times in the past, there also are questions of allocation of expenses to first year or renewal, or to one given contract or class of business as opposed to another. Expense analysis and allocation contain many scientific and objective elements, but a degree of subjectivity is also present. "Expenses" in this context also must reflect the effect of lapses, specifically the unamortized acquisition costs on account of early lapses. The expense charge structure will incorporate in some manner an amortization of those acquisition costs that as a practical matter cannot be charged against dividends in the early years of the policy.

Because of these many ramifications, complexities, and subjectivities, it is difficult to arrive at a specific definition of current experience expenses for dividend illustration purposes. In general, expense factors should be determined in a manner consistent with that used for actual dividend allocation. They should take account of the current expense level and of the schedule for amortization of initial acquisition expenses on currently issued contracts. As with mortality and interest, any projection should not extend beyond the middle of the period for which the current dividend scale may reasonably be expected to apply. The cost of lapses may be provided for explicitly in the dividend formula or implicitly in the expense factors. In any event, the cost should be determined using lapse rates derived either from current actual experience under similar

contracts, from other appropriate experience, or from an appropriate modification of other experience.

### *Evaluation and General Comments*

To a substantial degree, dividend illustrations on the basis defined would meet the criterion of comparability and would reflect a company's actual performance. It is possible that there would be variances from actual performance, but they would be minor in their impact. The basis of comparison would be current performance. Any lack of comparability would arise substantially from the fact that two companies might differ in future potential performance. The capacities of management may differ, an adverse trend may have begun for one company but with only a small current effect, or one company may be below its desired surplus level while the other may be above. Most of these are factors that must be measured outside of current experience, and some of them are subjective in their determination.

For any of the several factors on which the illustration is based, future experience may be expected to be more or less favorable than current experience. A competent forecast might be more accurate; this is the subject of the next section. Because of concern for the likelihood of fulfillment of current experience illustrations, their use should be buttressed in two ways. First, there should be statements to the public, prospective buyers, and sales forces that will serve to enhance the understanding of the nature of dividend illustrations. The dividends should be characterized as neither guarantees nor estimates of future results but as illustrations based on current experience. It also should be explained that actual dividends will be increased or decreased from the illustrations to the extent that claims, investment results, and expenses improve or deteriorate.

A second concern relates to the use of such illustrations in a period when current experience is clearly entering into a state of decline. For example, suppose that the yield on new investments has fallen from former levels and has continued on a reduced basis for two or three years, tending to reduce the portfolio interest rate, and that a continuation of this state of affairs seems likely for the future. Then, it may not be adequate simply to illustrate and disclose dividends on the basis of current experience. These conditions have prevailed and caused concern in the past, and they will occur again. It is desirable for actuaries to develop a body of thought and discipline on this point. The result may be the introduction of an element of forecasting in the definition of current experience illustrations.

It is likely that the moderate deficiencies of the current experience method in meeting the forecasting criterion can be alleviated. The method's attractiveness from the standpoint of the criteria of comparability and performance make it a desirable approach to dividend illustration and disclosure.

#### DIVIDEND FORECASTS

The illustration of dividends began with the showing of past dividend payment records. Because of difficulties encountered with that process, there was a transition to illustrations based on current experience. There is, however, generally less predictive reliability if current experience is used than if a reasonable forecast of future operating factors is made. With the passage of time, dividend illustration practices for some companies began to include an element of projection of future experience. With the generally improving experience of the last twenty-five years, the desire for a good competitive showing probably has contributed to a tendency toward illustrations based on factors more favorable than are supported by current experience.

The basic aim in using a dividend illustration based on forecast future experience is to improve predictability. The main concerns are those of continuing a relationship between dividend illustrations and actual performance, maintaining satisfactory comparability of cost and value under insurance contracts, and avoiding overly optimistic projections. Among other things, dividend illustrations are a rather prominent means by which an insurance company may enhance the attractiveness of its product. This is a strong force, and strong disciplines are needed to contain it while still achieving the desired criteria mentioned. There is a scale of difficulty in achieving such disciplines. It is relatively easy to avoid projections that are overly optimistic. It is more difficult to maintain a relationship between the projected experience and the company's actual current performance. It is even more difficult to maintain a satisfactory degree of comparability of cost and value under various insurance contracts.

In this section there will be no search for a discipline for projections based on future experience that is less favorable than current experience. Further study has been suggested of the situation where deteriorating future experience is anticipated. The analysis that follows of dividend illustrations based on projected experience is presented in relation to certain types of projections that have been suggested or used. The subject of dividends allocated in accordance with an investment generation method is treated under a separate heading.

*Projections without Control*

The projected dividends simply may assume a basis that is more favorable than the current. In the present era, this perhaps most commonly has involved more favorable investment yield. The 1974 report indicates that some companies may publish dividend illustrations that assume more favorable expense or lapse rates than are currently experienced. These projected experience illustrations are subject to the discipline of the company or the actuary who prepares them, but not to any discipline that is external or common to the industry. Without an external discipline there is no assurance of their predictive or performance-reflecting qualities, and without a common discipline they cannot meet the criterion of comparability.

*Projections Controlled by Performance*

Various means have been suggested for using company performance as a control in developing dividend illustrations based on projected experience. Measures of company performance in some cases are developed from financial statements or modifications of such statements. Comparisons between the dividends that actually have emerged and those originally illustrated usually are used in the process.

Controls based on a comparison of actual and illustrated dividends involve many of the difficulties mentioned in the analysis of illustrations based on actual dividend histories. Such controls are cumbersome to implement, and the connection between illustrated and historical dividends lacks immediacy. Also, a degree of subjectivity is unavoidable in the interpretation of the relationship between illustrated and historical dividends.

Such controls are theoretically possible, and suggestions for using them may continue to be made. Each would have to be evaluated in terms of its practicality and effectiveness. The author's view is that because of its problems this general approach cannot be recommended as superior to the use of current experience illustrations.

*Projections Controlled by External Measures*

The forecast of future experience would take current performance as a point of departure. Comparability and the avoidance of overoptimism would be achieved by imposing projection standards that modify current experience suitably. For example, the external standard might prohibit a decrease in claim cost, or an increase in investment yield, of more than a specified percentage amount, or might require a relationship between projected investment yield and projected expenses.

This process would reduce to some extent the ability of illustrations



to reflect performance. The process also would affect the predictive quality of illustrations to some degree by imposing a general standard of projection for each company. That indeed would be the quid pro quo for achieving better comparability. The process would require a new regulation in order to be effective. A new regulatory body would have to promulgate national standards of projection that would have to change with time in order to fit the changing future.

This process also cannot be recommended in preference to the use of current experience illustrations. Apart from its costs and limitations, there is the question of the accuracy of the forecasts. Henry Jackson's views of thirty years ago remain valid: "Projections of dividend scales beyond the year in which they are declared are never truly justified and can mean little or nothing in our changeful world." The basis of illustration should be current performance, not forecasts.

#### INVESTMENT GENERATION ALLOCATION

When dividends are allocated by an investment generation method, further considerations apply to the choice of the interest rate to be used in determining illustrated dividends.

The investment generation method may be an actual investment year method. The flow of funds associated with the contracts of each year is traced, and the investment earnings on these funds are allocated to the contracts issued in that year. In other cases, instead of using an individual year, a "generation" or "era" of contracts may be collected together and the same process followed. Or, the investment allocation might involve only a broad approximation of the effect of different yield rates on the funds flowing from contracts of each era.

If dividends will be allocated on some form of investment generation method, and if the interest rate used to illustrate dividends to a prospective buyer is the rate available on new investments of only the current year or a recent era, there are consequences in terms of the criteria of performance reflection, comparability, and forecasting. The illustration would reflect only the recent investment performance of the company instead of the investment performance over many years that would be reflected by an illustration based on the portfolio rate. The two illustrations would not be comparable, and there would be limitations in the predictive quality of the illustration based on the investment generation approach.

Since the "new-money rate" is volatile relative to the stable rate of the entire investment portfolio, there are shortcomings in making a twenty-year illustration based on only the results of new investments

in a most recent period. Particularly in the current era when investment yields are high, the yields are more likely to decline in the future than remain high. Should they continue to be high, or go higher, during the next twenty years, the increase in dividends over the amounts illustrated would be readily explainable to the buyer. Should new-money rates of the future decline, it would be difficult to explain or justify the illustration to the buyer.

If an actual projection or forecast were to be made, the dividends would have to reflect a succession of new-money rates throughout the period illustrated. This would give rise to the usual questions and problems relating to standards of projection, comparability, and deterioration in the ability to reflect performance.

To give sufficient recognition to the criteria of comparability and performance reflection, an illustration for an investment generation allocation contract should be made as follows: the investment rate used in illustrating a dividend payable, say, five years from now should be the rate used under the investment generation approach for dividends payable today on policies issued five years ago. A similar procedure should be followed for each year or grouping of years that comprises a generation or era as used in the allocation of dividends under the new contract.

Such dividend illustrations would be reflective of actual performance. They would be comparable to one another. They would produce twenty-year cost indexes that to a reasonable degree would be comparable to those for portfolio rate allocation contracts. Their predictive quality might not be as good as an actual forecast, but it would be better, all things considered, than that of an illustration based on only the most recent new-money rate.

#### SUMMARY AND CONCLUSIONS

The main criteria for evaluating the basis of dividend illustrations are comparability, reflection of actual performance, and likelihood of the illustrative dividends being realized in the future.

Dividend illustrations began as histories of actual performance. They readily were transformed into illustrations of actual performance on current issues, and then were extended to policy durations beyond those at which currently issued policies actually were in force. Because current allocation dividend formulas and factors did not always apply with equal validity to contracts issued in the past and those being issued at the time, the current allocation basis of illustration evolved further to

reflect the concept of current experience on current contracts, with an appropriate extension for the several durations illustrated.

In addition to histories, current allocation, and current experience, there is the possibility of dividend forecasts. Despite disclaimers currently in use, current allocation or experience illustrations are often interpreted by agents and the public not just as "projections under the current scale" but as forecasts of the future. The advantages of current allocation or experience in terms of comparability and performance reflection have to be weighed against the possibly better predictive quality of forecasts.

Since illustrations help to sell the product, discipline is essential. When current allocation is the basis, discipline is automatic. When current experience is the basis, considerable discipline is built in, and the rest is relatively easy to provide. When forecasts become the basis, discipline becomes cumbersome, elusive, and lacking in immediacy. Yet the forces that it must contain are very strong. Further, any discipline that is imposed effectively will impair substantially the degree to which the illustration satisfies the criteria of comparability and performance reflection.

The better course is to avoid forecasting and to have the discipline of current allocation or experience. If either of these are employed and experience does not change, the insurance company's financial results will enable it to pay the dividends that were illustrated. The illustrations will reflect actual performance and will be comparable to other similar illustrations. With this, the concept that the illustrations are based on current allocation or experience will be reinforced on the public. This is the best resolution of all the considerations.

While the preferred basis of illustration is current allocation, circumstances do not always permit this luxury. If for currently issued contracts the experience factors of the dividend scale are already observed to be different from those for previous business, or if the actuary believes that they will be different, then current experience should be the basis of illustration. This presents a need for additional discipline.

Investment generation allocation contracts and portfolio allocation contracts are not readily comparable. There should be more disclosure and discipline in illustration of dividends for investment generation method contracts. The best approach for illustrations for such contracts is still current allocation. As to investment yield, this approach means that dividends would be illustrated on the basis of current allocation for corresponding durations in force.

In general, there should be greater disclosure in connection with

dividends and dividend illustrations. This may take the form of disclosure from sellers to buyers in conjunction with illustrative material. It also may take the form of disclosure by sellers, through their actuaries, to regulators.

For years, dividend illustrations to buyers have been accompanied by a statement along the lines that the illustration is "neither a guarantee nor an estimate of future results." For too long, this language has dwelt on what the illustration is *not*. It is time for the language to state what the illustration *is*. The ideal statement would be a positive assertion, such as the following: "This illustration is based on current operating experience of the company; actual dividends in the future will vary from those illustrated in accordance with future experience of the company in claims, expenses, and investment yield."

Disclosure to buyers should be in simplest terms, and the language above attempts descriptiveness tempered by simplicity. However, other information also should be disclosed on an "exceptions reporting" basis. Thus, if dividends are not allocated on the "contribution principle," that fact should be disclosed. If illustrations cannot be reconciled to current dividend allocation or current experience, that should be disclosed. If dividends are allocated on an investment generation method using other than investment yield rates that correspond to those used in allocation for those durations, that also should be disclosed.

Disclosure by actuaries to management or to regulators need not be held at the simplest level. Moreover, it is possible to improve public disclosure through such filings as Schedule M of the statutory financial statement. The actuarial profession should devote energies to these tasks until there is a clear basis of understanding of dividend illustrations by their various users.

The time is right for attention to the quality, uniformity, and public understanding of dividend illustrations. We may be nearing the end of a long period of improvement in life insurance dividends. Also, in very recent years the industry has had its share of economic problems at the same time that there has been greater public attention to cost performance. The confluence of these forces should stimulate actuaries, managers, and regulators to action. Are dividend illustrations understood by the public? Are they uniformly comparable? Are they sometimes too optimistic, with an extra danger because of thirty years of ever more favorable results?

We have seen the problems of the past. Events may repeat, although never in exactly the same way. Surely the mistakes should not be exactly the same, or what is the good of history?

## ACKNOWLEDGMENTS

Many helpful criticisms and suggestions of other actuaries contributed to this paper. The preparation of a paper offers ample proof not only that we stand on the shoulders of our predecessors but also that we are much indebted to our contemporaries and greatly influenced by them. In particular, the author acknowledges the value of the stimulating discussions and ideas that have arisen from the work of the Society's Committee on Dividend Philosophy (Special). Opinions in this paper are not, of course, to be attributed to that committee or its members but are presented here as those of the author.



## DISCUSSION OF PRECEDING PAPER

PETER F. CHAPMAN:

Mr. Jensen's discussion of dividend forecasts and controls over their potential abuse does not mention the real world of de facto projection as it occurs daily in the marketplace. It is quite customary for agents to show prospects an illustrative dividend scale by the company some ten or twenty years earlier and a comparison between that scale and the dividends actually credited. Since the actual dividends have exceeded the illustrated scale with only a few exceptions, the company's ultra-conservatism is implied to the prospect together with the further hint that this will continue to be the case indefinitely.

In the opinion of many, we are entering an era when it will not be possible to continue to increase dividend scales to the extent to which they have been increased over the past several decades. There are even some serious students of the problem who are concerned about the long-range difficulty of maintaining the present scales. Something should be done, and done soon, to disabuse the public and the agents of the notion that the future necessarily will duplicate the past.

There is no readily apparent, simple solution. The Special Committee on Dividend Philosophy will render a conspicuous service to all actuaries if it will consider promulgating a set of guidelines that will specify when an admonition should be included in the illustration warning the prospect that the dividend scale may have to be reduced in the future. In view of both the intensely competitive marketplace and the actuary's responsibility to the insurance-buying public, the committee also should consider providing for disciplinary action against those members of the Society who ignore the guidelines flagrantly.

JOHN H. HARDING:

Mr. Jensen brings the reader through many intricate concepts in remarkably concise style, and my disagreements are few. This discussion is primarily an expansion of his concepts.

In his section on "Purpose and Criteria" for dividend illustration, he identifies three primary criteria: comparability of similar contracts, reflection of actual corporate performance, and the likelihood of fulfillment of the illustration. I would say that in modern usage there is only one primary purpose, and that is cost comparison. The use of dividend illustrations for cost comparison purposes incorporates the implicit

assumptions that the illustrations are indicative of actual corporate performance and that the likelihood of fulfillment of the illustrations is equal for all companies.

In cost disclosure regulation, there is a presumption that all companies illustrate their life insurance dividends on a comparable basis and that the competitive relationships established from those dividend illustrations will be indicative of current performance, and of final results when dividends actually are paid. Unfortunately, this is not so. Not all dividend illustrations fulfill these expectations. While many companies illustrate dividends based on current experience, many use other bases that are not comparable. Further, these bases do not have a similar likelihood of fulfillment and are not necessarily indicative of current corporate performance.

If there are two companies with equal current performance and equal prospects for paying future dividends, their dividend illustrations should place them close together in competitive standing. However, if one of those companies illustrates its dividends on the basis of what it currently can afford to pay and the other illustrates a forecast of what it may be able to pay in the future, the competitive standings can be far apart. In this way, the public is being misled and the basis of cost disclosure regulation is being abused.

The 1978 report of the Committee on Dividend Philosophy, while physically thin, indicates a promising direction in dealing with professionally acceptable practices for both dividend allocation and dividend illustration. However, defining these practices and developing a means for imposing uniformity will, as the report states, be a "lengthy evolutionary process." It obviously will take time to deal with the many issues, not the least of which are new-money allocation and illustration.

With respect to dividend illustration, that time is not available. There is tremendous pressure to abandon current experience illustrations in favor of forecasting dividends. I agree with Mr. Jensen's arguments that current experience dividend illustrations have greater potential for meeting satisfactorily the six purposes for dividend illustration, particularly fair comparison. The "lengthy evolutionary process" necessarily will force some companies that still use current experience illustrations to abandon them, unless each such company does what it can to promote the use of current experience illustrations.

However, even those companies that believe dividend forecasts to be preferable to any other method must be concerned with the protection and maintenance of a fair cost comparison system. We all can do something now to move toward fair comparison. That something is voluntary



disclosure of our bases of illustration. This paper includes the observation that for years we have emphasized what a dividend illustration is not, rather than what it is. We can disclose to the buyer now the basis of our dividend illustrations. If that basis is current experience, we can say that publicly. If it is new-money allocation, we can disclose that as well as how the forecast deviates from current experience.

My company has included such a disclosure in all its 1979 rate books. The statement is repeated here for two purposes. First, it can be used as a point of reference for any company considering a similar statement. Second, the part of this discussion that follows will use this three-paragraph statement to illustrate some of the implications of such a statement.

#### THE MEANING OF NATIONAL LIFE'S DIVIDEND ILLUSTRATIONS

Mutual life insurance companies *pay* to their current policyholders those dividends which they can afford, based on their current operating expenses, claims and investment earnings. National Life *illustrates* dividends on this same basis, rather than upon forecasts of future experience. That is, National Life's illustrated dividend scale is based upon its current level of expenses, claims and investment earnings, adjusted to reflect differences in policy guarantees.

National Life's illustrated dividends are neither guarantees nor estimates for the future. Extensive testing has been done to demonstrate that if the levels of current experience were to remain unchanged throughout the period for which dividends are shown, National Life would be able to pay all dividends illustrated. Dividends actually paid in the future will differ from those illustrated to the extent that future expenses, claims and investment results differ from current experience.

Unlike its life insurance dividends, which are based upon the current average investment earnings for all of its life insurance policies, the dividends for National Life's flexible premium annuities are based upon earnings which are determined by year of investment. Therefore, illustrations of dividends resulting from payment of future flexible annuity premiums are based upon the earnings of investments made in the current year.

Any such statement necessarily will be incomplete if it is written primarily for public consumption. The important thing is to make sure that it is consistent with what might be said to an audience composed of our peers. The first sentence reaffirms Mr. Jensen's point that current allocation cannot deviate for long from current experience without undesirable consequences. The second sentence, which deals with dividend illustrations, emphasizes the fact that this company still uses current experience rather than forecasts for dividend illustration pur-

poses. This combination of statements implies that a temporary fluctuation in any of the experience elements that is not considered severe enough to change the parameters of dividend allocation does not force a change in the basis of illustration. However, at the very least, if it is suspected that the change in current experience is not temporary and will lead to some reduction in current allocation in the reasonably near future, either the basis of illustration should be modified downward or the suspected change should be disclosed.

The final sentence in the first paragraph refers to adjustment to reflect differences in policy guarantees. This phrase can cover a multitude of sins, but should not. It would appear entirely appropriate to modify dividend allocation to reflect the tax effects of different reserve interest rate guarantees. Different policy loan rates similarly should generate different dividend results where policy loan utilization is significant. However, a perplexing question can be whether the same loan utilization rate should be used for a high policy loan rate as for a low one, particularly when there is no current experience available on the high rate. In our case, we reduced the loan utilization rate materially in determining the appropriate dividend illustration when we introduced an 8 percent policy loan rate. In addition, after determining a different yield for a new class of policy loan interest rates, there is the problem of deciding on the effective tax rate for that yield. Is it appropriate to use the company's current average yield, which is materially affected by a lower loan interest rate?

Another example that is of current interest is the introduction of a nonsmoker or preferred risk classification. The characteristics of the policyholders who qualify for the new discount may be easier to determine than the characteristics of those who do not. However, when a standard mortality class is split into a superior and an inferior group, it is certain that the resultant mortality rates will straddle the experience that existed immediately preceding the split. In my view, it is entirely inappropriate, for example, for a company to introduce a nonsmoker discount into its rate structure without illustrating dividends for its smokers that are poorer than those currently allocated to classes that combine smokers and nonsmokers. The same rationale should be followed in the introduction of a preferred risk classification, unless it is demonstrable that previously the company was never selling to those who would have qualified for such a classification.

The second paragraph of the statement incorporates the traditional type of disclaimer with regard to dividend guarantees and estimates for the future. However, we do refer to the extensive testing that is done to

demonstrate that, if the levels of current experience did not change, the illustrated dividends could be payable. Naturally, one cannot preempt the board of directors and say that they would be paid. We make significant model-office tests to demonstrate that, if the current experience factors were to remain constant, the company would have adequate surplus if it paid the illustrated scale throughout the lifetime of the policies. This model office includes almost the entire life insurance portfolio of the company, and the level of surplus as a percentage of assets is observed over the entire period. This method produces some very interesting results if it is assumed that experience factors stay constant but illustrated dividends are increased. Any subsidization of new policyholders by old would result relatively soon in a failure to maintain adequate surplus levels.

We also prefer to use several rates of new-business growth without forecasting any economies of scale. This results in a more stringent test than using a constant rate of new business, since any misallocation in favor of new issues becomes apparent quickly. It also gives some confidence in times of an inflating economy that the growth in business needed to maintain existing unit expense levels is, in fact, achievable without surplus deterioration.

One final point with respect to a model office used in this way is rather interesting. This method simulates what would happen if all current experience factors remained the same for a significant period of time and dividend illustrations and allocations remained constant during that period. Thus, the simulation takes on the flavor of a dividend history in which both allocation and experience are constant over the period of observation, and proper forecast merges with current experience illustration.

The combination of our new dividend statement and a serious examination of the testing we have done has led us to consider two changes. First, it has been normal corporate practice for the last fifteen years to make sure that no dividend is ever less than that of the next most recently illustrated scale. In this period of generally improving dividend allocations this has not been particularly onerous, except in early policy years where the increase in expenses has more than offset improvements in interest and mortality. In the future, particularly where new issues are involved in such dividend action, this type of "pegging" will not be used unless the model office demonstrates that surplus in future years is not impaired materially.

The second point of departure will give us more difficulty. As is the case with many companies, illustrations for a new policy series introduced

during a calendar year generally are based on the dividend scale payable in the following calendar year. Since this practice is in conflict with the statement that dividends illustrated are on the same basis as dividends currently paid, we will probably abandon it. Therefore, future product series may not enjoy that temporary price advantage.

The final paragraph of the dividend statement defines more specifically what we mean by current investment experience. It identifies the fact that the investment element of our dividends is allocated by an average portfolio yield method for life insurance and by a new-money method for flexible premium annuities. Illustrations for flexible premium annuities are described as being based on the rate supportable by current new investment yields.

This practice is in conflict with Mr. Jensen's view of how a new-money allocation should be illustrated. Mr. Jensen's "mirror image" method is interesting but does not seem consistent with what current experience means. Further, a dividend actually paid in the future on an annuity consideration paid this year will be related far more closely to this year's new-money investment yield than to the current year's result of an investment made a number of years ago. While Mr. Jensen's method would have the effect of eliminating new-money allocation methods, it would not provide a pattern consistent with the world around us. Further, it would result in a severe misstatement in the wrong direction when new-money yields are declining.

Finally, what is the next step after voluntary disclosure of the basis of dividend illustration? If illustrations are not based on current experience, reasonable statements should be made about the prospective performance of the illustration basis relative to current experience. However, this still would leave interest-adjusted cost comparisons in a state of confusion. One solution might be to group illustrations by basis. It then would be just a short step to adjust empirically all other bases to a current experience basis in order to merge results for interest-adjusted cost comparison purposes.

JAMES P. LARKIN:

Mr. Jensen is to be commended for synthesizing in one paper the multiple ways by which mutual life insurance companies generate dividend illustrations.

I have extreme difficulty in separating the philosophy of annual surplus distribution by means of dividends from that of dividend illustrations prepared for inclusion in rate books and sales proposals. I sense that throughout much of his paper Mr. Jensen is providing a summary of

the ways found by actuaries to accomplish this very separation. This is not to say that he supports the distinction; rather, he is alerting the reader to the reality of what is happening to dividend illustrations because of marketing pressures.

The most traditional approach for dividend illustrations is to determine them from the company's classical three-factor formula. This procedure preserves an exact harmony between current surplus distribution practice and future surplus distribution theory. It forces the board of directors of a mutual company to treat alike all generations of policyholders. The choices as to the distribution interest rate, the actual mortality being experienced, and the expenses to be assessed are uniform. No class of policies is disadvantaged because of the favorable treatment accorded another class, whether new or old.

Mr. Jensen calls this attitude toward dividends the "current allocation" process. I would like to think that until fairly recently this was the only attitude taken by our profession. However, the 1974 Society report *Philosophies in the Computation and Dissemination of Dividend Illustrations* indicates a clear and sharp turn in the thinking of many actuaries.

Ignoring for the moment any consideration of the allocation of dividends by an investment generation method, we note that techniques seem to have been uncovered for improving illustrated dividends beyond the level of dividends currently paid by a company using the traditional contribution formula. Mr. Jensen's comments on the "current experience" process allude to slight changes toward this objective, while in the section on dividend forecasts he goes all the way and discusses the accomplishment of the desired objective.

Do we have an obligation to object to this change in direction? If our Society ought to establish a more rigorous standard than some of its members are now observing, pertinent questions include the following:

1. Why should the distribution rate for dividend illustrations vary from the rate actually used for current dividend scale payments on existing business? The thrust of this question is directed at the use of a higher rate in the illustrations by a company not employing the investment-year method in its dividend formula.
2. Why should the actuary's reasonable confidence that the illustrative scale will be realized be limited to the first two or five years? Why should it not extend for the lifetime of the cohort represented by the policy in question?
3. Why should we allow dividend illustrations to be manipulated to produce favorable cost comparison results? Does our code of professional ethics countenance such practices as the illustration of steeply climbing dividend scales or of terminal dividends that are designed for this purpose and are inconsistent with the nature of the contract?

4. While all of us will agree immediately that the likelihood of fulfillment is a main criterion for evaluating different approaches for dividend illustrations, can we not translate this into quantitative terms so that the criterion has true meaning?
5. What is the justification for using different dividend allocation interest rates for different classes of business?
6. Is it really true that "the basic aim in using a dividend illustration based on forecast future experience is to improve predictability"? Is not the actual purpose to respond to marketing pressures?
7. Is it proper for an actuary to prepare illustrations based on "projections without control"?
8. Should not the Society, especially in its study material, attempt to influence the younger actuaries in the direction of fairness in surplus distribution theory by offering distinct opinions on the impropriety of certain practices being followed by some of the older actuaries?

If our Society ought not to establish a rigorous standard for surplus distribution, the following questions about dividend illustrations need to be answered:

1. Should actuaries separate clearly illustrations of possible future dividends from certain present dividends?
2. Should the assumed interest distribution rate begin an annual climb in, say, the fifth policy year of perhaps five or more basis points, until an ultimate distribution rate is achieved? Since interest rates are likely to remain high, the reinvestment of a company's maturing asset portfolio will tend to raise the company's yield and hence its dividend distribution rate. Therefore, is it not probable that a gradual climb in the distribution rate is likely to occur, thereby justifying this assumption in dividend illustrations?  
Waiting a few years is convenient because it avoids any legal complications caused by using two different interest rates in the same dividend year for two essentially similar policies. An increase in the distribution rate when the reserves to which the higher rate will be applied are large will cause the later dividends to tilt upward. Also, within five years a new policy series probably will be introduced, thus allowing the actuary to close out this block. If a new series does not come out, certainly a change will be occurring within two or three years in the dividend formula for various reasons.
3. Should the table used to obtain the mortality element in the illustrated dividends recognize likely mortality improvements? Our industry has enjoyed at least a 10 percent mortality decrease over the three years from 1972/73 to 1975/76. Therefore, is it not probable that a gradual fall in mortality rates of 2 or 3 percent a year is likely to continue because of advances in the treatment of cardiovascular-renal problems and neoplasms, plus the yet to be achieved but almost certain improvement in general health due to the average American's current emphasis on physical exercise?

4. Although expenses have been accelerating significantly for many years, is it not probable that future cost control actions will justify the illustration of dividends based on expense rates that not only do not rise over time but are level or even of a slightly declining character?
5. May not actuaries properly omit asset share testing of the illustrated dividend scale because some of the improvements built into the scale will be paid for by future interest and mortality improvements?
6. Is not this process of forecasting improvements acceptable, since, if any one or several of them do not take place as assumed in the dividend illustrations, future dividends always can be cut?

This is my honest reaction to a serious problem that I feel all of us in mutual companies face. The change by at least one company domiciled in New York to the investment-year method in its dividends adds to my pessimism.

The report of the Committee on Dividend Philosophy arrived after this discussion had been written. The content of the report is encouraging. It seems that certain practices currently being used by some companies in developing dividend illustrations would be precluded. Most gratifying to see is the last sentence in the Opinion, which reads as follows: "However, when the policies for which dividends are being illustrated may be expected to belong to an experience factor class different from any experience factor class of policies with dividends currently payable, the dividends illustrated thereon may be based on such different experience factors—but only to an extent which can be justified by appropriate actuarial demonstration relying on current, *not future* [emphasis added], experience."

The recommended actuarial certificate on dividend computation should provide actuaries of mutual life insurance companies a degree of security comparable to that provided now by the required certification of reserves.

My last caveat pertains to the methods by which ingenious actuaries may attempt to demonstrate that their illustrated dividends for current issues are based on experience factors arising from current, not future, experience. The degrees of freedom should be defined more precisely in order to avoid inventive extrapolations.

E. J. MOORHEAD:

This discussion of Mr. Jensen's timely and instructive paper aims to analyze the author's expression "predictive reliability." How, even in hindsight, does one measure the reliability of a set of illustrations? What degree of such reliability is acceptable?

An example is readily at hand to display the problem and to demon-

strate one reasonable solution. It is to be found in *Best's Review*, December, 1977, pages 36-41, where actual results are compared with original illustrations for policies issued in 1957 by sixty-six of the largest life insurance companies ranked by ordinary insurance in force. Using the loose reasoning that buyers with some awareness of price attractiveness generally would have bought policies whose twenty-year interest-adjusted surrender cost indexes appeared to be favorable, I have used in Table 1 the figures for only those thirty-three policies whose indexes, as they originally would have been illustrated if the present method at 5 percent interest had been in use twenty years ago, were lower than the median.

The company numbers in Table 1 are in sequence according to the interest-adjusted indexes that would have been illustrated—from the lowest, \$7.29, to the highest, \$9.15.

First, we show the twentieth-year dividends, those illustrated compared with those paid in 1977. It is obvious that in absolute dollar terms there was no predictive reliability; the dividend paid was typically one-and-one-half times as large as that illustrated, and varied widely on both sides.

Next, we compare the cost indexes achieved with those that would have been illustrated. Enthusiasts for comparing these columns by a statistical measure of rank correlation—among which I am not numbered—probably would reach the conclusion that the predictive reliability (better in this case, I think, called the predictive *comparative* reliability, since all the actual indexes are lower than those illustrated) was at best moderate.

It seems to me, however, that reliability may be tested best by comparing the index achieved by each policy with the index achieved by the policy that, on the basis of the actual dividends, occupied the same rank as was occupied on the originally illustrated basis by the policy under review. For example, consider the policy of company 4. This company did not end up in fourth position—company 22 did. Therefore, we compare the index achieved by company 4 with the index achieved by company 22, that is, \$5.78 with \$6.48. The message of this comparison is that the index of company 4 turned out \$0.70 lower than if it had remained in its original fourth position. Companies 3 and 6 are examples of companies whose ranks on the actual basis were the same as those on the illustrated basis.

Since the interest-adjusted index is no better than a rough representation of comparative price attractiveness, the situations of the thirty-three policies can be shown best by applying a criterion that ignores small



**TABLE 1**  
**ANALYSIS OF PREDICTIVE RELIABILITY AND OF**  
**PREDICTIVE COMPARATIVE RELIABILITY**  
**WHOLE LIFE, \$10,000 POLICY, AGE 35,**  
**MALE, ISSUED IN 1957\***

COMPANY No.	DATA FROM Best's Review						
	20th-Year Dividends		20-Year Surrender Cost Indexes		Actual Index for Company with Col. 1 Rank (6)	"X" Indicates	
	Illustrated (2)	Actual (3)	Illustrated (4)	Actual (5)		(6) - (5) ≥ \$0.50 (7)	(5) - (6) ≥ \$0.50 (8)
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
1.....	\$ 8.41	\$14.09	\$7.29	\$6.01	\$5.78		
2.....	7.05	9.63	7.73	7.11	6.01		X
3.....	9.24	14.52	7.89	6.11	6.11		
4.....	11.78	20.00	8.08	5.78	6.48	X	
5.....	10.57	13.59	8.10	7.63	6.56		X
6.....	8.86	13.06	8.13	6.59	6.59		
7.....	10.60	14.50	8.17	6.62	6.59		
8.....	7.76	14.48	8.25	6.76	6.60		
9.....	8.34	13.50	8.26	6.82	6.62		
10.....	7.40	10.85	8.28	6.94	6.76		
11.....	8.96	13.68	8.29	6.56	6.82		
12.....	9.92	14.67	8.30	7.33	6.86		
13.....	10.85	15.77	8.32	7.07	6.90		
14.....	11.15	15.54	8.35	6.60	6.93		
15.....	9.47	9.92	8.41	8.25	6.94		X
16.....	8.03	12.00	8.45	7.10	6.94		
17.....	7.40	15.83	8.54	6.94	7.07		
18.....	7.29	8.79	8.57	9.06	7.10		X
19.....	9.29	16.69	8.68	6.90	7.11		
20.....	7.53	10.80	8.72	7.27	7.22		
21.....	10.05	13.14	8.73	7.78	7.27		X
22.....	16.06	23.82	8.77	6.48	7.30	X	
23.....	7.51	13.46	8.80	7.22	7.33		
24.....	11.81	16.18	8.81	7.49	7.40		
25.....	8.09	10.35	8.81	10.07	7.49		X
26.....	4.59	8.51	8.82	7.40	7.61		
27.....	6.53	8.97	8.82	8.19	7.63		X
28.....	10.74	14.99	8.87	7.78	7.67		
29.....	8.37	15.62	8.97	6.93	7.78	X	
30.....	8.72	14.71	9.04	7.61	7.78		
31.....	6.88	9.29	9.06	8.19	7.78		
32.....	9.85	11.22	9.06	8.07	7.85		
33.....	10.69	14.75	9.15	7.67	7.91		
No. of companies.....						3	7

\* Figures are for the 33 "superior" policies (among 66 policies in the study) measured by surrender cost index using 1957 dividend illustrations.

differences in indexes. In the last two columns of the table the criterion of significance that is used is \$0.50, which I regard as suitable in view of the imponderables. Only ten of the thirty-three policies showed results differing by at least \$0.50. Three of these, however, differed on the low side, so in only seven cases would there have been grounds for policy-holder disappointment with the relationship between the actual and originally illustrated results.

The conclusion thus is that the predictive reliability of that set of thirty-three illustrations was indeed poor, as it should have been in view of the large changes during the two decades in investment yields, mortality, and expenses. However, the predictive comparative reliability, which ought to be accepted as the acid test, was distinctly satisfactory. If actuaries, as a result of achieving and maintaining uniformity in their procedures for preparing illustrations, can continue to show as high a predictive comparative reliability as in this instance, the needs of the buying public will have been well served.

(AUTHOR'S REVIEW OF DISCUSSION)

RUSSELL R. JENSEN:

The *Transactions* is enriched considerably by the discussions of Messrs. Chapman, Harding, Larkin, and Moorhead. I am grateful for their thoughtful additions and commentaries on the paper. Their observations are indeed sufficient to stimulate an author to respond and to inquire further, yet one senses that this is enough for the present.

Much remains to be done. The Society's Committee on Dividend Philosophy continues, with further research into the subject. Counterpart committees have been formed by the American Academy of Actuaries and the Canadian Institute of Actuaries to assist in the formulation of adequate guidelines on dividend practices. It clearly is the sense of the actuarial community that further efforts can lead to a real and necessary service being provided to the general public.

It is a pleasure to close the current discussion on a note of progress and optimism. The profession has addressed a subject of great importance to it, the life insurance industry, and the public. These efforts must culminate in clearer standards for dividend illustrations. It remains my strong conviction that those standards should embrace the principle of illustration on the basis of current—not future—experience, and it is my expectation that this principle will be affirmed in forthcoming guidelines that will clarify these standards.