

**TRANSACTIONS OF SOCIETY OF ACTUARIES
1987 VOL. 39**

**REPORT OF THE TASK FORCE
ON MUTUAL LIFE INSURANCE COMPANY CONVERSION***

I. INTRODUCTION

This Report presents the results of a three-year study by a Task Force of the Society of Actuaries. The charge to the Task Force was "To examine the actuarial issues involved in converting a mutual life insurance company to a stock form of ownership, and to produce a record of its examination." In order to accomplish its assigned task, the Task Force found it necessary to consider the conversion process in a broad way and not to limit the scope of its analyses to strictly actuarial issues.

Early in its work, the Task Force recognized that a conversion is a voluntary action by a company, the terms of which must be approved, explicitly or implicitly, by the other interested parties, namely, the participating policyholders and, if equity capital is being raised in the public market or the company is being acquired, the new investors. In summary, these conditions are the following:

- The company will undertake the conversion only if it can achieve the structural and organizational objectives it seeks, one of which frequently will be the raising of adequate new capital;
- participating policyholders are satisfied that the converted company will be operated in a manner that will not impair and, if possible, will enhance its ability to meet its contractual obligations, the conversion action will not materially affect their policy dividends, and they will receive fair value for the cancellation of their membership rights; and
- the investors are satisfied that the company will offer a market rate of return on their investment, through shareholder dividends and stock appreciation.

The work of the Task Force concentrated on three principal aspects of a mutual life insurance company conversion:

1. maintenance of reasonable policyholder dividend expectations,
2. the aggregate amount of compensation to policyholders in exchange for their membership rights, and
3. the allocation of this aggregate amount of compensation among participating policyholders.

*Harry D. Garber, *Chairperson*, Michael H. Berkowitz, Michael J. Cowell, John H. Elken, Charles Greeley, Curtis E. Huntington, Robin B. Leckie, Robert D. Lowden, A. Douglas Murch, James J. Murphy, Henry B. Ramsey, Jr., Lewis P. Roth, Robert D. Shapiro, Walter Shur, Edward J. Slaby, Stephen L. Smith, James A. Tilley, and James L. Wertheimer.

The principal findings in these three areas are summarized in the subsections below.

Maintenance of Reasonable Policyholder Dividend Expectations

The Task Force recommends that the maintenance of reasonable policyholder dividend expectations be achieved by establishing a closed accounting branch for dividend purposes. The assets initially allocated to this closed branch would be in an amount which, together with future premiums, would be sufficient to pay the (then) current scale of dividends if the (then) current experience continued. The closed branch would be dedicated to policyholders; none of the funds would ever revert to shareholders. The Task Force believes that a closed branch is appropriate for most individual coverages, and its establishment would facilitate the acceptance of conversion plans.

Aggregate Amount of Compensation to Policyholders in Exchange for the Cancellation of Their Membership Rights

The Task Force reached two very important conclusions concerning the aggregate amount of compensation to policyholders in exchange for the cancellation of their membership rights:

1. The Task Force believes that no accepted and recognized actuarial or scientific basis for the determination of aggregate compensation to policyholders for the cancellation of their membership rights has been established, either in the ongoing financial operations of mutual life insurance companies or by previous conversions and liquidations of mutual life insurance companies.
2. Furthermore, as a result of its work, the Task Force has come to believe that it would be very difficult, if not impossible, to develop an actuarial or scientific basis for the determination of aggregate compensation to policyholders which could be accepted and recognized at this time. It is clear that, regardless of the form of conversion, the real value of the aggregate compensation to policyholders will depend to a significant degree on the converted company's market value (that is, the assessment of the company's worth by outside investors). There is no recognized and accepted actuarial or scientific basis for the determination of market values and, even if there were, the results would depend to a large degree on specific company circumstances and could not be generalized.

The Task Force analyzed the relationship between the aggregate amount of compensation available to policyholders and a variety of different company and market circumstances, and different (including zero) capital raising objectives. We were struck by the wide range of results possible for the

value of the aggregate compensation to policyholders under these different conditions. In these circumstances, the Task Force believes that it is inappropriate for a demutualization statute to establish a fixed or formula amount of compensation to policyholders. Rather, we suggest that such a statute contain separate provisions for the various types of conversions and, where the conversion involves a concurrent public offering, the statute should provide a safe harbor amount which would assure a converting company that it could proceed if the aggregate compensation to policyholders equaled or exceeded that value. In addition, there should be provision for regulatory review where the proposed aggregate compensation to policyholders is less than the safe harbor amount, to permit conversions which may, nevertheless, be in the best interests of all the interested parties.

*Allocation of Aggregate Amount of Compensation
Among Participating Policyholders*

The Task Force recommends that such an allocation be based primarily on the relative contributions of policyholders to the surplus of the company. It further recommends that the measure of policyholder contributions to surplus be taken as the assets accumulated by such policyholders, less the amounts required to be placed in the closed branch on their behalf. This is a new measure developed by the Task Force which we believe is most appropriate for this purpose.

In order to provide a sound theoretical basis for some of its conclusions, the Task Force developed a computer model of a mutual company's financial operations. Appendix I presents the assumptions underlying the development of the model together with some results from its operation.

Through the use of the model, together with an examination of the financial operations of the mutual companies represented on the Task Force, we concluded that most mutual companies use an entity capital financial management approach (under which classes of policyholders make permanent contributions to the capital of the company). We believe that this approach is superior to the revolving fund approach (under which classes of policyholders do not make permanent contributions to capital). Our work in this area is summarized in Appendix 2.

II. BACKGROUND

This is the report of the Society of Actuaries Task Force on Mutual Life Insurance Company Conversion. The Task Force was appointed in July 1984

with the following charge: "To examine the actuarial issues involved in converting a mutual life insurance company to a stock form of ownership, and to produce a record of its examination."

The subject has proven to be exceedingly interesting and demanding. Over a period of more than two years, the Task Force met monthly and established committees that met between meetings of the full Task Force.

There have been relatively few conversions of mutual insurance companies, and most of them have been conversions of property and casualty companies. The life company conversions completed before the Task Force came into being involved relatively small companies and/or immediate acquisition by another company, so that many of the issues a large multiline mutual company would encounter in a conversion to an independent stock company were new. The Union Mutual conversion occurred during the lifetime of the Task Force. Many of the concepts reflected in that conversion and many of the practical problems encountered in its implementation have been helpful to the Task Force in the development of this report.

The law, in most of the states that have any law on this subject, is the same as or has been derived from the law applicable to conversions of property and casualty companies, and is rudimentary in form. Furthermore, the overall theory of mutual company financial operations has been the subject of only two papers in the Society's *Transactions*,¹ with, as evidenced by the discussions, considerable divergence of views among actuaries. In these circumstances, the Task Force undertook this work with little guidance and limited precedents, and much of the work has been in the nature of a learning process for the Task Force members.

An interim report was issued in August, 1985. Our work since then has confirmed and extended most of the preliminary conclusions of the interim report. This report is complete; no reference to earlier reports is required.

The Task Force was asked in its letter of appointment to have its "proceedings be perceived as being as open as possible." Toward this end we have sought breadth in the membership of the Task Force; we have established committees with members who are not on the Task Force; we have invited interested actuaries to attend our meetings; and we held open committee meetings during the Society's 1985 and 1986 annual meetings.

¹Leckie, Robin B. "Some Actuarial Considerations for Mutual Companies," *TSA*, XXXI (1979):187-259.

Trowbridge, Charles L. "Theory of Surplus in a Mutual Insurance Organization," *TSA*, XIX (1967):216-266.

III. BROAD CONCEPTS AND CONSIDERATIONS IN THE CONVERSION PROCESS

The Task Force started without a prescribed agenda and its first task was to identify the essential issues.²

In the identification of issues to be studied and in the subsequent examinations of these issues, the Task Force recognized that companies wishing to convert may be in different circumstances and that conversions might take one of several forms. The Task Force considered three conversion forms:

1. a conversion in which there is an initial public offering (of common stock) as a part of the conversion action,
2. a conversion in which the converted company is acquired immediately by another company, and
3. a conversion in which no new capital is raised in the conversion action and the converting company is not acquired.

This latter form includes so-called two-step conversions in which the conversion and a subsequent action to raise equity capital through a public offering are distinct and separate actions. Because conversions involving initial public offerings of common stock involve the full range of issues, we concentrated most of our attention on this form. Most of our analyses and recommendations are general, however, and are applicable to all three forms. If this is not the case, the text will identify the nature of the differences.

Regardless of the form of conversion, the Task Force recognized that a conversion is a voluntary action (on the part of the converting mutual company) which must be approved explicitly or implicitly by the other groups that are parties to the action: the participating policyholders and, in the case of a conversion that involves raising additional equity capital or acquisition by another company, the new, nonpolicyholder investor(s). Given that the process must involve the voluntary consent (meeting of the minds) of these interested parties, the Task Force sought to identify the relevant questions through an examination of the interests and reasonable expectations of the several parties to a conversion action.

Interests and Expectations of Interested Parties

The primary interest of the company is its long-term growth and survival.

²In keeping with the charge to the Task Force, our concentration has been on actuarial issues. In certain cases (particularly the issue of the aggregate amount to be allowed to policyholders for cancellation of their membership rights), our inquiry and observations have extended somewhat beyond the boundaries of actuarial science. We recognize that these are extensions of our charge, but we believe they are necessary if we are to obtain and convey a full understanding of this subject.

A necessary condition is that the company be able to generate and retain sufficient capital to permit it to enter, to expand and to compete in its selected markets, and to maintain, securely, its ability to meet its obligations to policyholders. If the management and directors of a company conclude that its continuation as a mutual company will not permit the generation and retention of sufficient equity capital to assure safety of financial operations, competitive pricing and its future growth and development, a conversion should be considered. A conversion action, one of whose principal purposes is to gain access to the equity capital markets, will be undertaken only if the company believes that it will be able

- to have a successful common stock offering at the time of the conversion action or at another time of its choosing,
- to establish a public market in its stock, and
- to obtain corporate structure flexibility (through the formation of an upstream non-insurance holding company) and other advantages of a conversion action.

A company that did not contemplate the need to access the equity capital markets in the near term might undertake a conversion action if it were able to achieve structural flexibility through such an action. In the case of a company whose conversion strategy depends on its acquisition by another entity, the key question is whether the applicable conversion law and regulatory processes will permit it to be acquired on terms that will be attractive to the entity company and satisfactory to its participating policyholders.

Current participating policyholders have two types of interests and expectations. The first concerns their insurance coverages. The expectation here is that the converted company will be operated in a manner that will not impair and, if possible, will enhance its ability to meet its contractual obligations and that the conversion action will not adversely affect policy dividends provided under their participating policies. The second type of interest and expectation of participating policyholders concerns their membership rights. The expectation of policyholders is that in any conversion action they would receive fair value for the cancellation of these membership rights.³

In conversions in which equity capital is raised at the time of or after the conversion, a third interested group consists of investors who purchase stock. Because these investors are seeking a good return on their investment in the converted company and there are numerous other investment opportunities available, these investors will have no interest in purchasing the equity of a

³Membership rights include, principally, the rights to receive dividends, to elect directors and to receive the net value of the company in the event of its liquidation. The cancellation of these rights in a conversion action does not, however, cancel the participating policyholders' contract rights to receive dividends.

converted company unless they believe that the company will offer a market rate of return on the investment (through shareholder dividends and appreciation). For purposes of this analysis an acquiring company can be considered as an investor, though one with both a greater interest in and a greater ability to control the return on its investment.

In summary, a conversion action involving an initial public offering of common stock will be possible and successful only if the reasonable expectations of the three interested groups are met. These expectations are that

- the company believes it will be able to gain access to the equity capital it requires and it will obtain its other conversion goals,
- policyholders believe their guaranteed benefits will be met, the converted company will maintain their reasonable dividend expectations and they will receive fair value for cancellation of their membership rights, and
- investors believe they will receive a market rate of return on their investment.

Three conditions must exist if these expectations are to be met. These are that

1. the earnings record and prospects of the company and the general capital market conditions permit it to achieve its capital-raising goals;
2. the particulars of the conversion plan reasonably satisfy the policyholders' objectives;
3. the applicable demutualization laws, regulations and methodologies permit the reasonable expectations of all three of the interested parties to be met.

The third condition is particularly important; if it is not satisfied, these laws, regulations and methodologies will thwart the result that they were intended to permit, a successful conversion.

Specific Issues Studied by Task Force

The Task Force concluded that its scope should be broad. Accordingly, we have sought to have our analyses, insights, observations and conclusions applicable to all salient elements of the conversion process, from the design of demutualization laws and regulations to the development of company conversion plans. Given the great breadth of subject material, the Task Force found that it could not address both the development of theory, concepts and principles and the details of the many actuarial practice activities identified in our study. We chose to concentrate on the former.

As to the specific issues, the Task Force concluded that it should focus on three major topics. The first concerns the actuarial aspects involved in

assuring that the reasonable dividend expectations of participating policyholders will be met by the converted company. This subject is discussed in Section IV. The second topic concerns the issues involved in establishing the aggregate amount of consideration to be awarded to policyholders in the conversion action in exchange for cancellation of their membership rights. This topic is discussed in Section V. The final topic on which the Task Force focused concerns the analytical techniques and methods of allocating the aggregate amount of consideration among the eligible policyholders. This topic is covered in Section VI.

The Task Force also considered two other topics: conversion accounting and demutualization experience outside the United States. These topics are discussed briefly at the end of the report.

The Task Force spent a considerable amount of time and effort constructing a computer model of mutual company financial operations for use in its study of conversion methodologies and selecting and analyzing an appropriate conceptual model of mutual company financial operations. This work is described briefly in the next two subsections and more extensively in the related appendices.

Model of Mutual Company Financial Operations

Early in its work, the Task Force concluded that it was essential to develop a computer model to enable it to better understand certain aspects of mutual life company financial operations and to test various hypotheses concerning the conversion process. A report describing the model and presenting some of its results was issued in 1986 under the title "Interim Report to Task Force on Mutual Life Insurance Company Conversion from its Individual Life and Annuity Subcommittee." A copy of this report with such formatting and other changes as were required to make it an appendix of this report is attached as Appendix 1.

Mutual Company Capital Management

At an early stage in its study of mutual life insurance company conversion, the Task Force decided to analyze the financial management principles and practices used by mutual companies and to focus, in particular, on the principles employed in the management of a mutual company's capital structure. Our purpose was to identify, if possible, a model of mutual company financial operations that could be used as a base in our consideration of the several subjects covered in this report, including the provision for post-conversion

dividends on participating policies and the compensation to participating policyholders for cancellation of their membership rights (in the aggregate and individually). The two principal models considered were the entity capital model (in which the classes of participating policyholders make permanent contributions to the capital of the company) and the revolving fund model (in which classes of participating policyholders do not make permanent contributions to capital). We selected the entity capital model as the capital management model that best characterizes the financial operations of the companies with which the members of the Task Force were associated and, we believe, most other mutual companies as well. Both of these capital approaches are described and compared in Appendix 2. In addition, this appendix presents some implications of the entity capital approach in the conversion process. The most important of these implications for purposes of this report are the following:

- The term, “maintenance of reasonable policyholder dividend expectations,” can clearly be defined as payment of the current dividend scale (including terminal dividends) if current experience continues.
- The accumulated capital of the company at the time of conversion will have been contributed, in part, by in-force participating policyholders and, in part, by other policyholders (that is, participating policyholders whose policies are no longer in force and nonparticipating policyholders, in force and terminated).
- Any valuable consideration given to members in a conversion action as compensation for cancellation of their membership rights has no counterpart in the ongoing financial operations of a mutual company, and there is no recognized basis in precedent, experience or membership expectations for the determination of such valuable consideration.

IV. ACTUARIAL ISSUES RELATING TO THE MAINTENANCE OF POLICY GUARANTEES AND REASONABLE POLICYHOLDER DIVIDEND EXPECTATIONS

The Task Force believes that the conversion action should not reduce the ability of the company to meet policy guarantees nor should it materially impair the ability of the company to meet the reasonable dividend expectations of policyholders with participating contracts. The reasons are both theoretical and practical. By providing access to the equity capital markets, conversion should serve, at least potentially, to strengthen the company financially. Similarly, the conversion plan should be designed to provide assurance that the policyholders’ reasonable dividend expectations (that is, the continuation of the current dividend scale if current experience continues)

will be met. If the conversion plan is deficient in this respect, policyholders will be required, in voting on the plan, to weigh the benefit of the compensation offered for the cancellation of their membership rights against the potential of reduced dividends. As a practical matter, therefore, a mechanism that will provide assurance of meeting policyholders' reasonable dividend expectations will probably be a minimum requirement both for regulatory approval of a conversion plan and for obtaining the approval of members.

The Task Force considered several mechanisms to help assure policyholder guarantees and dividend expectations. Three methods seem to have merit:

1. The establishment of a closed branch for specified groups of participating policies and the allocation to this closed branch of sufficient assets to assure payment of the current scale of dividends (in addition to the contractual guarantees) if current experience continues. These assets would be committed to providing benefits and dividends to policies included in the branch. One closed branch could be established for all classes of business or separate closed branches could be established for different classes.

In general, no new policies would be written in a closed branch after conversion, although some additions might be required to satisfy existing contractual obligations.

2. A second method would be to establish branches similar in form and operations to the participating branches of stock companies. If the converting mutual company were to follow this method, the amount of assets placed initially in such a branch would have to be sufficient not only to maintain dividend expectations and contractual obligations, but also to permit the company to withdraw a portion of the predividend earnings of the branch in accordance with a formula specified in the conversion plan.
3. A third method would be to continue to operate the business without setting up a separate branch and to rely on competition and internally established accounting techniques to achieve fair dividend treatment.

The Task Force believes that the third method is probably the most appropriate one for insurance and pension coverages sold to corporate customers, particularly large customers. These coverages tend to be continuing and individually experience rated, and competition will largely assure appropriate dividend treatment. For individual coverages, which by their nature involve a significant sharing of risks, a method that would clearly segregate experience seems to be required.

After considering the merits of the first two methods, the Task Force concluded that for individual policyholders the first method, the closed branch,

appeared to be the most promising route and presented the most clear-cut formulation of actuarial questions and issues. The principal reasons are that the objective of the method is clearly defined and the method involves an allocation of assets necessary to meet that objective. We believe this method could be more easily understood and accepted by policyholders than a method in which profits are withdrawn from the participating policyholders' fund after conversion. The results of our examination of the closed branch method are described in the following paragraphs.

The closed branch is a mechanism designed to help assure the guaranteed benefits and reasonable dividend expectations of participating policyholders by setting aside in the closed branch sufficient assets for this purpose. As this mechanism may not be appropriate and effective for all lines of business, decisions must be made as to which particular classes of policies are to be included in the closed branch and which classes are to be excluded. To the extent that these decisions are not preempted or prescribed by statute, the following criteria might be used:

- If for a class of policies there is an expectation of substantial policy dividends and the company has significant discretion as to whether those dividends are paid and in what amounts, the class should probably be included in the closed branch.
- If the dividend structure for a class of policies is based more on broad averaging of costs than on policy-by-policy experience rating, the class should probably be included in the closed branch. Policies experience-rated largely on an individual basis should probably not be included in the closed branch.
- Classes of policies included in the closed branch should be expected to diminish in size with the passage of time and to eventually disappear. Any class of policies not expected to diminish over time is probably not suited for inclusion in the closed branch.

The application of these criteria to the several classes of business of a life insurance company is presented in Appendix 3.

The establishment of such a closed branch presents many new actuarial issues relating both to the establishment of the branch in the conversion action and to the ongoing operation of such a branch.

Among these issues are the following:

- What total amount of assets and which specific assets should be placed in the closed branch initially?
- What expense and other charges should be made to the closed branch as a part of its ongoing operations?
- What schedule of reviews of the financial position of the closed branch and adjustments of dividend scales will be necessary to assure that, on the one hand, the

branch retains sufficient funds to meet claim requirements and dividend levels consistent with emerging experience and that, on the other hand, the branch does not accumulate "excess" assets resulting in "tontine" dividend levels for long-term survivors of the closed branch?

- What new actuarial techniques might these reviews involve?

Appendix 4 presents and discusses these and the other issues that the Task Force has identified with respect to the establishment and maintenance of such a closed branch and, in the case of certain issues, presents the conclusions of the Task Force.

An important and somewhat related set of issues concerns the need for actuarial opinions and determinations required at the time of conversion with regard to the closed branch and the participating policies not included in the closed branch and, after conversion, with regard to subsequent determinations for the closed branch. The purpose and scope of such actuarial opinions will need to be specified and the appropriate actuarial organizations will need to develop applicable qualification standards, as well as principles and standards of practice, for individuals signing such actuarial opinions. This subject is also discussed in Appendix 4.

The Task Force did not have time to carry out a more detailed examination of a stock company type of participating branch approach. The exploration of the actuarial issues of such an approach would depend to an important extent on whether or not such a branch would be closed to new business and on the definition of profits to be withdrawn. For example, a branch to which no new business is added and which is expected to produce a specific stream of profits involves precisely the same actuarial issues as the closed branch. (The profit stream in this case is merely a stream of payments to be provided for in establishing the amount of assets required initially in the closed branch.)

V. POLICYHOLDERS' MEMBERSHIP VALUES — AGGREGATE AMOUNT

In addition to establishing a mechanism to help assure that contractual obligations and reasonable dividend expectations will be met, the conversion plan will likely provide that participating policyholders of a converting company receive equity shares of the converting company (or, in lieu of shares, substantially equivalent amounts of cash, additional insurance benefits or other considerations) as compensation for cancellation of their membership rights. The applicable conversion law will require such a provision in virtually every case. But even if not required by the conversion law, the Task

Force believes that compensation to existing policyholders for cancellation of their membership rights would be an integral part of virtually every successful conversion plan. This subject is considered and discussed in the remaining paragraphs in this section.

Because this subject is so fundamental to the conversions in which new equity capital is raised or the converted company is acquired, we studied it extensively and devote much of our report to it, even though our analyses demonstrated that it is not solely an actuarial issue. We believe that our analyses and observations contain insights that would be useful in the shaping of conversion laws and regulations and in the design of conversion plans.

The Task Force believes that the following six statements and their accompanying expansions and explanations bear, importantly, on the issue of aggregate policyholder compensation:

1. The capital of mutual life insurance companies has been generated primarily from amounts retained from participating policyholders. Under the entity capital approach, which the Task Force endorses, these "implicit or explicit" capital charges are permanent contributions.
2. At the time of conversion, the capital of a mutual life insurance company will have been contributed in part by participating policyholders whose coverage is then in force and in part by participating policyholders whose coverage is no longer in force or by nonparticipating policyholders. This is a clear consequence of the entity capital method of capital management.
3. The membership rights of participating policyholders in a mutual life insurance company include, principally, the right to receive policy dividends and the right to elect the company's directors. These rights are not identified with any specific ownership interest, in the aggregate or member by member.
4. In the unlikely event of the liquidation of a mutual life insurance company, state law typically requires the distribution of the net residue (after the satisfaction of all obligations) to participating policyholders. Task Force members do not know of any situations in which such a liquidation has occurred.
5. Policyholders in a mutual life insurance company would expect to receive guaranteed benefits and policy dividends; maturity or surrender of the contract would ordinarily bring no expected compensation for the simultaneous termination of membership rights (termination dividends would be considered as policy dividends for this purpose). Therefore, any valuable consideration given to members in a conversion action as compensation for cancellation of their membership rights has no counterpart in the ongoing operations of a company, and there is no recognized basis in precedent, experience or membership expectations for the determination of such valuable consideration.
6. A mutual life insurance company cannot, by definition, have a public market value before conversion.

It is clear that, before conversion, a mutual life insurance company has neither an established market value nor an accepted way of defining ownership interests. These values must necessarily emerge as a part of the conversion process itself, and as the analyses in this section demonstrate clearly, they are affected importantly by the company's circumstances and the general state of the public equity markets. They may also be affected, to some extent, by the form of the conversion. Our analysis is focused on conversions in which a public market is established, new shareholders acquire an ownership position in the company through the sale of equity, and participating policyholders acquire the remaining ownership interest (plus, perhaps, cash or other consideration) in exchange for cancellation of their membership rights. We took this approach because we believed that this form of conversion illustrated all of the relationships involved. Later in the section there is a discussion of the extent to which this analysis is applicable to the other forms of conversion.

Analysis of Conversions with Concurrent Initial Public Offering

In our analysis we sought to integrate the perspectives of the three interested parties to a conversion (the company, its participating policyholders and the new shareholders) and to answer the question, "What is the appropriate aggregate amount of compensation to participating policyholders in circumstances in which a conversion could be effected?" This question is most relevant because conversion is an action undertaken voluntarily by a mutual company and there will be no conversion (and no compensation to policyholders) if the requirements of the other interested parties are not also satisfied.

The interrelationships of the financial interests of the three parties that will exist at the time of a successful conversion action (other than the interest of policyholders in the protection of guaranteed policy rights and in a mechanism to help assure that their reasonable dividend expectations will be met) can be described mathematically in the following expression:

$$\begin{aligned} \text{Policyholders' equity value (A) + New shareholders' equity value (B)} \\ = \text{Company's market value (C)}. \end{aligned} \quad (1)$$

This is an obvious and necessary formulation in which

(A) is the market value of the shares awarded to policyholders in the conversion process for surrender of their membership rights (and excluding any amounts paid to policyholders in cash or additional benefits),

- (B) is the market value of the equity stock purchased by new shareholders (including any purchased by policyholders through exercise of preemptive rights), and
- (C) is the total market equity value of the converted company (which is equal to the offering price of the common stock times the number of shares outstanding).

The following paragraphs discuss some of the interrelationships and implications of this expression.

The first important aspect of this expression is that it is based entirely on market values. To raise equity capital, the company must sell common stock in public markets. The prices at which such sales are made reflect not only the company's book value but, more importantly, the company's earnings record and trends, the market's view of the industry's prospects and the company's strategic positioning, the market's general price/earnings level, and so on. (The market valuation may be higher, lower or about the same as the company's book value.) Therefore, in fashioning its conversion plan the company will have to recognize the current general state of the stock markets, the likely evaluation of the company by these markets, the amount of equity capital which the company wishes to raise, and the amount to be awarded to policyholders in exchange for surrender of their membership rights.

The second key factor to recognize is that at the time of conversion the per share value of the stock purchased by new shareholders (including any policyholders who purchased stock on the same terms as the new shareholders) must equal the original issue price of the stock.

The third important aspect is to recognize that there is an interrelationship between the amount of new capital raised (the new shareholders' equity in the expression) and the company's market value. In fact, each dollar of new capital will increase the total market value of the converting company by an amount which depends principally on the market evaluation of the use to which the company will put the additional capital.

One further point on this subject. In a conversion action the market will make only one judgment (coincident with the new equity offering) and not two judgments (one before the equity offering and one after). In these circumstances, therefore, it is important to recognize that while the value of the equity shares awarded policyholders in a conversion action could depend on the amount of capital raised, the specific relationship cannot be determined. In particular, no valid conclusions can be drawn in a completed or prospective conversion action as to whether the amount of new equity capital

raised diluted policyholder interests (and by how much) nor as to whether a larger (or smaller) amount would have had a materially different effect.

Note that this analysis excludes any provision for the initial public offering underwriting discount and for the conversion expenses, both of which will be sizable. In the following formulas and illustrations these omissions overstate the amount of equity available to policyholders and/or the amount of capital that could be raised. The Task Force does not believe, however, these omissions affect its conclusions to a material degree.

Given this general background, the Task Force explored the interrelationships among the factors involved, particularly the interrelationships between aggregate amount of compensation to policyholders, the amount of new capital raised and the market evaluation of the company. To do so, the Task Force defined the following terms:

Policyholder
Compensation

Ratio (*PCR*) = the ratio of the aggregate amount of policyholders' consideration (*PC*) to the preconversion GAAP book value (*PREBV*).⁴

New Capital Ratio = the ratio of the net amount of new capital raised in the conversion (that is, new capital, *IPO*, less cash payments to policyholders, *PCC*) to the preconversion GAAP book value (*PREBV*).

Market Value Ratio = the ratio of the postconversion market value (*POMV*) of the converted company to its GAAP postconversion book value (*POBV*).

Given these definitions, the terms in Expression 1, at the point of conversion, may be described as follows:

(A) Policyholders' equity value = $PC - PCC$

(B) New shareholders' equity value = IPO

⁴In this analysis it is assumed that policyholder's compensation is received in the form of cash or equity shares and that no compensation is received in benefits or in another form.

$$\begin{aligned} \text{(C) Company's market value} &= MVR (POBV) \\ &= MVR (PREBV + IPO - PCC). \end{aligned}$$

Note that the postconversion GAAP book value is equal to the preconversion value plus the amount raised in the initial public offering less the policyholders' consideration amounts paid in cash.

Expression 1 may now be restated as follows:

$$(PC - PCC) + (IPO) = MVR (PREBV + IPO - PCC). \quad (2)$$

Rearranging the terms results in the following expressions:

$$PC + (IPO - PCC) = MVR (PREBV) + MVR (IPO - PCC) \quad (3)$$

and

$$PC + (IPO - PCC) (1 - MVR) = MVR (PREBV). \quad (4)$$

If both sides of Expression 4 are divided by the amount of the pre-conversion book value ($PREBV$), the result is:

$$\frac{PC}{PREBV} + \left(\frac{IPO - PCC}{PREBV} \right) (1 - MVR) = MVR. \quad (5)$$

Substituting appropriately the terms PCR and NCR , we have the following expressions:

$$PCR + NCR (1 - MVR) = MVR, \quad (6)$$

or

$$PCR = MVR - NCR (1 - MVR). \quad (7)$$

Note some observations about Expression 7:

1. If the Market Value Ratio (MVR) is greater than 100 percent (that is, the market value exceeds the GAAP book value), the right-hand expression will exceed 100 percent and the compensation to policyholders will exceed preconversion GAAP book value.
2. If MVR is equal to 100 percent, PCR will equal 100 percent (and the compensation to policyholders will equal preconversion GAAP book value).
3. If MVR is less than 100 percent, PCR will be less than 100 percent and the available compensation to policyholders will be less than preconversion GAAP book value. Furthermore, the available compensation will also be related to the amount of capital being raised. Some illustrative values for PCR are the following:

TABLE 1
POLICYHOLDER COMPENSATION RATIO (PCR)

MVR	NCR=0% ⁵	NCR=25%	NCR=50%	NCR=75%	NCR=100%
50%	50.0%	37.5%	25%	12.5%	0.0%
70	70.0	62.5	55	47.5	40.0
90	90.0	87.5	85	82.5	80.0

If the *PCR* for the converting company has been fixed by the applicable conversion law, the converting company needs to consider the impact that the state of the capital markets and the evaluation by the markets of its value and prospects might have on the amount of capital it can raise. To do this, we transform Expression 7 into a form in which *NCR* is the dependent variable and *PCR* and *MVR* are the independent variables. This expression is

$$NCR = \frac{MVR - PCR}{(1 - MVR)} \quad (8)$$

Note some observations about Expression 8:

1. If the Policyholder Compensation Ratio (*PCR*) equals or exceeds the Market Value Ratio (*MVR*), no new capital can be raised.
2. As the *MVR* approaches 100 percent, the New Capital Ratio (*NCR*) rises very rapidly. Some illustrative results for *NCR* are shown below:

TABLE 2
NEW CAPITAL RATIO (NCR)

MVR	PCR=50%	PCR=60%	PCR=70%	PCR=80%	PCR=90%
90%	400%	300%	200%	100%	0%
70	67	33	0	0	0
50	0	0	0	0	0

Before presenting conclusions from these analyses, it is important to understand their nature and limitations. First, these formulas and results illustrate the relationships that must exist for a given set of conditions at the time a conversion takes place. As such, this approach can be quite helpful in illustrating and understanding the fundamental relationships involved, but it cannot be used, except in a general way, to reach conclusions about what the effects of particular courses of action might be. The reason is that in a dynamic world there are interrelationships among the factors. In particular,

⁵Note that these are the market values of the compensation to policyholders when no new capital is raised.

MVR (the ratio of market value to book value after conversion) may depend importantly on the relative size of *NCR* (the net percentage increase in book capital resulting from the conversion and the initial public offering). Thus, in Table 1, it cannot be assumed that a company with an *MVR* of 70 percent, an *NCR* of 25 percent and a resulting *PCR* of 62.5 percent would have to reduce the *PCR* to 55 percent if it sought to double the increase in book capital (that is, *NCR* = 50 percent). Such an action would affect the *MVR*, and therefore, the resulting *PCR* value cannot be predicted. What this table does support, however, is the notion that if there are two converting companies which, after their conversions, have *MVRs* of 70 percent, the company that increased its book value by 25 percent must have a *PCR* of 62.5 percent, while the company that increased its book value by 50 percent must have a *PCR* of 55 percent. This comment is particularly relevant to Table 2, showing the *NCR* for given combinations of *MVR* and *PCR*. A company could not expect, except in the most unusual circumstances, to double or triple its book value without decreasing its market to book relationship.

The first salient conclusion to be drawn from this analysis is that the aggregate amount of compensation to policyholders which will allow the company to achieve its new capital objectives depends importantly on market conditions and on the market's perception of the company; such compensation is greater for a company which is accorded a higher *MVR* by the market. This is true regardless of the amount of capital raised.

The second conclusion is that for a company which can achieve a post-conversion *MVR* of close to 100 percent, both the amount of compensation for policyholders and the amount of capital that can be raised through a public offering is materially greater than for a company with a smaller resulting *MVR*. The third conclusion is that the relative amount of compensation to policyholders could vary significantly from company to company depending on the applicable combinations of the relative amount of capital raised and the market's evaluation of the company under the then current market conditions.

Finally, a point that bears repeating, the market will make only one judgment in a conversion — at the time stock is sold publicly. Because the increase in capital resulting from the sale of stock will, in all likelihood, have increased the value of the converting company by an unmeasurable amount, no valid conclusions can be drawn from these analyses as to the impact that raising more or less equity would have had on policyholders' compensation.

Conversions without Concurrent Initial Public Offering

To what extent do these conclusions apply to the other forms of conversion? Consider first a conversion in which no additional equity is raised and participating policyholders acquire the entire ownership position (plus, possibly, cash or other compensation) in exchange for cancellation of their membership rights. This form of conversion might be the first step of a two-step conversion in which the second step involves the raising of additional capital through the public sale of an equity interest in the company. When the conversion occurs, policyholders would, as a practical matter, receive the entire market value of the company in exchange for the cancellation of their membership rights. While this form of conversion raises questions as to the type and allocation of the compensation to policyholders, it does not involve issues as to the total amount of such compensation. An equity interest in the converted company received by policyholders has no value until it can be sold. The company employing this form of conversion will be under considerable pressure to establish a public market in stock at an early date. When it does, regardless of whether a market is being established to permit policyholder/shareholders to dispose of their stock or to raise equity capital as the second step of a two-step conversion, the preceding analyses, illustrations and conclusions are directly applicable. The only major difference is that the date for measurement and analysis purposes is the date of public market establishment or offering and not the original conversion date.

With respect to conversions in which the converted company is immediately acquired by another entity, the analytical process is more complex. Participating policyholders will usually receive cash or other consideration in exchange for cancellation of their membership rights in this form of conversion. In addition, the purchase price will include a "control premium" over the fair market value as compensation for the added value of control. Despite these differences, Expression 7 is applicable, although *MVR* should be determined by using the acquisition cost as the new shareholders' equity value (*IPO*) and as the company's market value.

Conversion Legislation and Regulations

The Task Force did not carry its analyses of the subject of the aggregate amount of compensation to participating policyholders into the design of conversion legislation and regulations. Based on our work, we would offer the following observations:

- We believe that there is no entitlement of policyholders to any specific value and that book value measures of policyholder contributions are not appropriate measures of value in a world in which market-determined values are the ultimate standard.
- Because, as we have shown, allowable policyholder compensation (as a percentage of preconversion book value) can vary greatly depending on market conditions and on the converting company's capital needs, the applicable law should permit the policyholder compensation, at least in some manner, to be established in recognition of specific market and company circumstances in order to permit many conversions that might benefit both the company and its participating policyholders.
- Because most mutual companies historically have not needed to achieve market level rates of earnings on capital (after policyholder dividends) and because the establishment of the closed branch may adversely impact pro-forma GAAP earnings, it is likely that many, if not most, mutual life company conversions will take place on a below-book-value basis (that is, *MVR* will be less than 100 percent). It is extremely important, therefore, that the aggregate policyholder compensation requirements of conversion laws/regulations not, effectively, preclude conversions in which market value is less than book value. For example, a requirement that policyholders receive compensation equal to GAAP preconversion book value would preclude a conversion unless the company's postconversion market value at least equaled its book value.
- The conversion process is complex for the company, which must develop a plan without sure knowledge of the actual market conditions in which the conversion will take place, and for the regulatory authorities, who must review and approve the plan with the same absence of certainty.

In these circumstances, the Task Force would suggest that the legislation offer different conversion options, covering the different forms of conversion. One option would cover a conversion in which no new capital is required immediately; in this case the entire value of the converting company would be distributed to participating policyholders at the time of conversion and additional capital could be raised months or years later as a separate step. A second option would cover the case in which the converted company is acquired immediately by another entity. A third option would cover conversions with an immediate public offering. As our analyses indicate, we do not believe that legislation can specify the aggregate amount of compensation to policyholders for each case. We believe, however, that it would be helpful and appropriate to establish minimum standards for the aggregate amount of compensation to participating policyholders for the cancellation of their membership rights. Such a legislative approach would be in the nature of a safe harbor. It would assure both the company and the regulators that, as long as the aggregate compensation to policyholders in the conversion plan met this minimum standard, the aggregate compensation element

of the plan would be satisfactory and the regulatory review would be concentrated on other elements of the plan.

A safe harbor minimum might be defined as a specified amount plus an additional amount that reflects the success of the public offering. The first element could be defined as a percentage of the company's preconversion book value or as a percentage of the aggregate contributions of policyholders to the company's entity capital. The second item might be expressed as a percentage of the expected public offering amount. The key requirements are that the minimum standard provide a reasonable amount of compensation to policyholders, but not be so large and commanding that in many cases it will require the company to scale down the amount of equity capital sought to a level below that believed by its management and directors to be required or will require the company to forego or to postpone a desirable conversion.

Even with an appropriate safe harbor minimum, there will be situations in which the minimum may be so large as to prevent a desirable conversion. Therefore, this option should also contain a provision permitting conversions in which the aggregate compensation to policyholders is less than the applicable safe harbor minimum if a regulatory review establishes that the aggregate amount of compensation to policyholders is reasonable in the light of company circumstances and market conditions.

The key point to recognize, in the design of conversion legislation and regulations, is that there is no single "right answer" that fits all circumstances. Accordingly, the law and regulations must be sufficiently flexible to permit companies in different circumstances to convert. The required flexibility can be achieved through the availability of different forms of conversion and by structuring a safe harbor minimum compensation to policyholders in a conversion involving a concurrent public offering in a manner that joins the interests of the participating policyholders and the converting company.

VI. POLICYHOLDER MEMBERSHIP VALUES — INDIVIDUAL AMOUNTS

Once the aggregate amount of the policyholders' membership values is determined, this value must be allocated among eligible policyholders. As a practical matter and as a matter of perceived equity, the Task Force believes that most companies will choose to determine the membership values allocated to individual members in a manner that reflects the relative contributions of the members to accumulated capital; in addition, these values might reflect some compensation for the cancellation of the less tangible attributes of membership, the right to vote for directors, and so on. The

measurement of policyholders' contributions is the subject on which actuarial science can shed the most light. The Task Force has explored, in depth, the theory and methods involved in the allocation to members of the aggregate amount of policyholder conversion compensation and believes that this work represents a significant contribution to the knowledge in this area. Our conclusions are described in the next few paragraphs.

In determining the policyholders' contributions, the generalized formula which the Task Force recommends is that the policyholders' contribution be determined as the excess of

- (1) the amount of assets accumulated in the company with respect to that policy (or group of policies) including any assets derived from implicit or explicit capital charges over
- (2) the amount(s) required with future premiums to mature the policy (or group of policies) and to pay policyholder dividends.

For purposes of (1), the assets accumulated reflect premiums and investment income less claims, dividends, expenses and taxes.

The determination of the amount of assets accumulated for a policy or group of policies involves actual experience. There are a few philosophical questions and more than a few practical questions that merit some attention. Two of the more important philosophical questions are: What is the proper relationship between the determination of assets accumulated and the historical treatment of various types of earnings and loss items in the dividend scale? And, how should gains and losses on surrenders and other voluntary terminations be handled in the asset accumulations for in-force policies? Our conclusion with respect to the first question is that the asset accumulations for mutual company conversion actions should be made on the same basis as the historical dividend processes. With respect to the second question, the most straightforward approach, and the one that is easiest to implement and to understand, is an approach in which the asset accumulations are determined on the assumption that the gain or loss on voluntary terminations should not be credited or charged to in-force policies. Other approaches have reasonable theoretical justification. This subject is discussed in the second half of Appendix 5, and the results are illustrated for three different approaches. The Task Force does not believe that any of the three approaches discussed is superior, in theory, to the others. At the same time it must be observed that Approach 1 is the easiest to implement, most understandable to nonactuaries, and usually will produce the largest accumulations for in-force policies.

Finally, some considerations to be taken into account in establishing the assumptions used in the accumulated asset calculations are discussed at the end of Appendix 5. In general, the view of the Task Force is that these calculations should be based on actual historical experience as it would have been analyzed and applied year-by-year in the dividend decisions.

Although there are many possible broad approaches to the determination of the amounts required, the Task Force identified three general approaches as having possible application in the measurement of policyholders' contributions in the conversion process. These three approaches are discussed in the following paragraphs.

The first approach is to set the amount required equal to the amount of statutory reserves and liabilities. The second approach would define the amount required as the amount that, with future premiums, would be sufficient to meet policy guarantees and to pay dividends on the current scale if current experience continues. The third approach would define the amount required as the amount determined for the second approach plus an additional amount to provide an appropriate (and defined) level of earnings to the enterprise.

The first approach was once thought to be the most appropriate and, possibly, the only approach to be used in conversion value determinations. This approach would also be consistent with those conversion statutes where the aggregate membership value is based largely on statutory surplus. In the view of the Task Force the amounts determined using this approach would only by chance represent a good measure for individual policies of the amounts that are required with future premiums to mature the policy (or group of policies) and to pay policyholder dividends. This approach has an additional serious deficiency as a conversion allocation methodology because it will produce negative contributions for most of a company's current individual policyholders. Therefore, it is not a useful method and, in addition, the Task Force does not believe that it produces a theoretically correct measure of policyholder contributions, in the aggregate or policy-by-policy. For these reasons, the Task Force did not believe that there was any reason to explore this first approach in greater detail.

With respect to the second approach, the Task Force believes that the initial amount of assets in the closed branch is probably the best measure of the assets required to meet the contractual guarantees and the dividends that would be payable if current experience continues. If this definition of amounts

required is used, the policyholders' contribution turns out to be "the accumulated value of past contributions to surplus plus the present value of future contributions to surplus."

This second approach has three major advantages as a measurement of policyholders' contributions. The first advantage is that it is easy to describe and understand. The second advantage is that, because of the interrelationship between the policyholders' contribution determination and the amount of closed branch assets, it assures that the policyholder will receive full credit, in dividends or in the basis of allocating the aggregate amount of policyholder compensation, for the amount of assets that the policyholder has contributed to the converting company and that will not be required for policy benefits, expenses and taxes. The third advantage is that this approach will produce positive values at all durations if the policy or policy class is expected ultimately to make a contribution to surplus.

Note that the second approach to determining amounts required cannot appropriately be used for group insurance or for other lines of business which are continuing in nature and for which a closed branch operation is not appropriate.

The Task Force believes the third approach would be the method used for lines of business not included in the closed branch. This is discussed in more detail in Appendix 6. The Task Force also believes this approach could be used with a stock company participating branch dividend methodology, as described previously in Sections III and IV. The Task Force did not develop this methodology but believes it is worthy of some additional study. We believe that this study needs to cover only the earnings element because the other elements have already been covered by the work on the closed branch.

VII. ACCOUNTING ISSUES

The converting company would have to prepare financial statements on a GAAP (Generally Accepted Accounting Principles) basis. If the converting company uses a closed branch approach to the management of its pre-conversion participating business, the GAAP standards and practices applied to the converting company would not differ materially from those generally applicable to stock life insurance companies, except for the treatment of the closed branch business. For the closed branch business, initial indications are that public accountants will agree that the GAAP liabilities should be equal to the amount of closed branch assets (measured on a GAAP basis) unless tests show that the amount of assets in the closed branch, together with premium income, is insufficient to pay guaranteed benefits. The GAAP

earnings on closed branch business will be zero, unless the closed branch has been established and funded on a basis that specifically provides for a defined earnings flow.

The likely GAAP treatment of the closed branch will result both in GAAP capital being larger on the date of conversion and in future GAAP earnings being smaller than they would have been if a closed branch had not been established. This result will affect the company's apparent return on equity, and it may reduce the attractiveness of the stock to investors in the converted company. This disadvantage would not apply to segments of business not included in a closed branch because the present value of future earnings on such segments would not be brought into GAAP equity at conversion.

The statutory earnings with respect to closed branch business must be worked out on a state-by-state basis or by the National Association of Insurance Commissioners (NAIC). The basic question is the degree to which the closed branch asset total (as measured on a statutory basis) should be recognized as a satisfactory measure of liabilities for the business in the closed branch. The general approach to statutory accounting weighs heavily against such a change in practice, but there is no precedent for a closed branch operation. The Task Force undertook no further work on this subject.

A committee formed by the Task Force addressed the issue of management financial statements of mutual life insurance companies and has produced a separate report on that subject which was published by the Financial Reporting Section in 1987.⁶ This committee comprised a number of members of the Task Force plus representatives from a number of other mutual companies and consultants interested in this subject. Much of the discussion in that report complements or supplements discussion of related concepts in the Task Force Report and is suggested reading for anyone wishing a fuller understanding of the rationale underlying the conclusions presented in the Task Force Report.

VIII. DEMUTUALIZATION OUTSIDE THE UNITED STATES

The Task Force has found that the complex actuarial issues associated with demutualization cannot be considered in isolation from other considerations, such as regulatory framework, legal precedents, financial market operations, and accounting principles. The Task Force has attempted to be

⁶LIFE INSURANCE COMPANY FINANCIAL REPORTING SECTION COUNCIL. *Report of the Committee on Accounting Principles for Management Financial Statements of Mutual Life Insurance Companies*. Itasca, Ill.: Society of Actuaries, January 14, 1987.

governed by actuarial concepts in arriving at the conclusions discussed in this report; however, it is acknowledged that these concepts have been heavily influenced by principles and practices in the United States.

At the time of this writing, no major demutualization has been attempted in Canada, nor is there any provision in the federal insurance laws for demutualization. However, Canadian law does have provisions for the transfer of business between companies. This law provides a key role for an independent actuary whose responsibility is to assure policyholders and the government, and sometimes the courts, that participating policyholders are well served by the transaction. It is quite possible that in Canada and other British Commonwealth countries the actuarial principles and the laws might place primary emphasis on the protection of the future expectations of policyholders and less emphasis on fair membership, or equity, value than that implied in the recommendations of the Task Force.

In Canada, at this time, the federal statutory basis of valuation is also the accepted GAAP standard for both stock and mutual companies and for participating and nonparticipating business of both types of companies. The role of the valuation actuary is critical in ensuring that the valuation is appropriate for both purposes and is acceptable to both regulators and accountants. Therefore, this leads to a somewhat different accounting model from that which would apply in the United States.

APPENDIX 1

MODEL OF MUTUAL LIFE INSURANCE COMPANY FINANCIAL OPERATIONS

Part 1

This appendix presents the modeling work done by the subcommittee (working with Millman & Robertson).

The Task Force needed a tool to use in judging the effectiveness and appropriateness of different concepts and methods which might be applied in the conversion of a mutual life insurance company to a stock corporation. For this purpose, the subcommittee built a model company from scratch, rather than trying to exhaustively examine a real company with its own unique (and partially unknown) history. To simplify analysis, the model

assumes a single economic (and tax) environment with no changes in experience factors over the lifetime of the model company. The model uses a dynamic dividend-setting process which incorporates the surplus constraints faced by real companies. Despite the artificiality implied (by the use of "constant") assumptions, the model has proven to be very useful in our work.

The model has been helpful in the following specific ways:

1. To examine (under alternative theories of attribution) the source of surplus by different generations of policyholders (that is, issue years) in a mutual company.
2. To examine (under alternative theories of attribution) how much surplus has been developed by policyholders in force and how much surplus has been developed by terminated policyholders.
3. To illustrate the effects of different company growth rates.
4. To illustrate the future operations of a closed branch created to help assure that the reasonable dividend expectations of participating policyholders will be obtained after a conversion.
5. To illustrate the effects of different methods of allocation of the aggregate policyholder consideration required to be paid upon demutualization.
6. To illustrate the effects of different conversion accounting approaches.
7. To illustrate the effects of different conversion approaches.
8. To explore the ways in which a mutual company builds and maintains its capital structure.

Our work with the model company concentrated primarily on items 1 through 5 and 8 cited above; very little was done on items 6 and 7.

I. MODEL DESIGN

This section highlights a few of the more important assumptions used in the design of the model. Part 2 of this appendix contains a complete statement of assumptions.

The model company operates 75 years as a mutual life insurance company and then converts to a stock form of ownership. The model company issues only whole life contracts before conversion, and the whole life product never changes over the 75-year period except for dividend scale changes.

The inflation rate is assumed to be 5 percent. The company has a steady 8 percent growth rate in face amount of new business issued. The company earns net investment income of 8.65 percent on nonloaned assets. The tax law is the DEFRA tax law as enacted in 1984.

The company maintains a constant 5 percent ratio of surplus to reserves using two mechanisms. In its early years the company borrows surplus and

pays the interest earned on this surplus to the lender. In the early years, until the company has a 5 percent surplus ratio without counting the borrowed surplus, the company pays a standard dividend scale (shown in Part 2 of this appendix). After the surplus note is repaid from the company's internal earnings, the company is able to increase its dividend scale and still maintain its surplus at 5 percent of reserves.

The real growth rate in new business issued for the model company is 2.9 percent (the net of an 8 percent normal growth rate and a 5 percent inflation rate). One might ask whether the 2.9 percent real growth rate assumption is plausible. To test this, we looked at the history of nine large mutual companies for the 75-year period from 1909 to 1984. We looked at the growth rates in individual life insurance reserves, in individual life insurance face amounts, and in total company assets. The 75-year (geometric) average inflation rate in the Consumer Price Index between 1909 and 1984 has been 3.25 percent annually. The real growth rate (after factoring out the 3.25 percent inflation) for these nine companies ranges from:

- 0 percent to 4 percent for individual life insurance reserves,
- 1 percent to 4.5 percent for individual life insurance face amounts, and
- 0.7 percent to 6.2 percent for total company assets.

The new business growth rate is the rate toward which the growth rate of in-force business moves; therefore, the relationship between the growth rate and inflation rate in the model does fall within the range of the real growth rates of the nine large mutual life insurance companies. We conclude that the growth rate assumption is plausible in the economic environment assumed.

The model company is an instructive tool, but is not necessarily representative of the history and current structure of any particular company. Not only have experience factors and tax laws varied over the years for real companies, but actual company results may not be consistent with the model company results developed in the balance of this paper for other reasons such as recent growth in other lines of business (including nonparticipating universal life insurance), faster or slower than average growth in later years and higher than average lapses in later years. Therefore, actuaries should be cautious in using these results in specific company situations.

II. PROJECTION RESULTS FOR TOTAL COMPANY

We projected the model company for its first 75 years (to the date when it converts). In Part 4 of Appendix 1, Tables A through C contain the results for the company since inception.

In Table A the statutory summary of operations by decade (five years only in the final column) is presented. In Table B the balance sheet, in 10-year intervals starting with the fifth year, is displayed. The growth of the surplus loan over several years and repayment over the following years is evident in Table B. The surplus note is paid off within 35 years. After 40 years, we allowed the dividends to differ from the standard scale by a single factor applied to all dividends paid in that year. The factor was set to increase the dividend liability so as to reduce the surplus to 5 percent of reserves. The single factor adjustment was a simplifying technique, used in lieu of a more precise three-factor formula, to achieve

- immediate adjustment of surplus to the target level.
- adjustments of dividends which in the aggregate approximate those which would have been derived by a more precise technique.

Table C shows the modifications to the dividend scale. Over the last 30 years before demutualization, the applicable dividend modification is a fairly flat extra 15 percent.

III. ANALYSIS OF FINANCIAL RESULTS BY YEAR OF ISSUE AND BY SURVIVORS VERSUS TERMINATED CONTRACTS

The total company model was developed issue-year-by-issue-year, permitting us to analyze the financial results by issue years. In Table D the face amounts of insurance by generation (issue year or issue year grouping) are presented: The amounts issued (Column 1), the amounts still in force at the conversion date, which is the end of the 75th year (Column 2), and the difference in Column 4 being the amounts issued but since terminated (by death, maturity or surrender) before the conversion date. Except for the most recent six years' issues, the majority of issues have already terminated (that is, Column 4 is larger than Column 2 except for issue years 70-75). Of the total amount issued, 45 percent is in force and 55 percent has terminated. Column 3 of Table D represents a cumulative distribution by face amount for the contracts in force; 54 percent of all face amounts in force were issued within the most recent five years; 77 percent of all face amounts in force were issued within the most recent ten years; 96 percent of all face amounts in force were issued within the most recent 22 years. The distribution by policies would be less heavily concentrated in the most recent years than the distribution by face amount.

In Appendix 5 three possible approaches to the attribution of gains and losses on termination are discussed. The approach examined in Appendix 5

is Approach 1: To charge in-force policies with the cost of insurance, but not with any gains or losses arising from terminations.

In Table E the assets, liabilities, and surplus arising from contracts in force are displayed, including terminated contracts and all contracts analyzed by issue year. Over 90 percent of the current total assets arose from the contracts in force. However, the required statutory reserves and liabilities are greater than the assets arising solely from the contracts in force. Survivors, as a group, have negative surplus because the net new business strain on recent issues still in force is greater than the positive surplus generated by the (fewer) survivors from less recently issued contracts. More than 100 percent of the company's statutory surplus came from contracts that are now terminated.

Tables F, G, and H present some data on terminated contracts that were issued during the first 58 years of the operation of the model company. We study terminated contracts separately because the final amount of their contributions to surplus is known. Survivors are still receiving dividends, and their final contributions to surplus are not known. Column 1 of all three tables contains the assets left with the company (that is, the permanent contributions to surplus) by terminated contracts. These amounts are taken from the next to last column in Table E. The following columns compare the permanent contributions to surplus by terminators to the cumulative premium paid by these policyholders (in Table F), to the cumulative face amounts insured on these policyholders (in Table G), and to the cumulative gross income (premium and net investment income) attributable to these policyholders (in Table H).

The last two columns in Table F (Columns 4 and 5) display the level percentage of premium that would accumulate to the surplus shown if that premium were accumulated at 2.4668 percent and 5.4668 percent, the after-tax rates with and without the equity tax, respectively. Similarly, the last two columns in Table G display the level amount per \$1,000 face amount per year that would accumulate to the surplus shown if those amounts were accumulated at 2.4668 percent and 5.4668 percent. Finally, the last two columns in Table H display the level percentage of gross income that would accumulate to the surplus shown if those amounts were accumulated at 2.4668 percent and 5.4668 percent.

Contracts issued in the first year received the standard dividend scale for 40 years. Only those contracts persisting beyond 40 years received an improved dividend scale. In contrast, contracts issued in year 41 received the improved dividend scale in all years. Because more than 90 percent of the

contracts issued in year 41 have terminated before the date of demutualization, the 4.3 percent (in Column 4 of Table F for contracts issued in years 39–43) would not change much in the next 40 years if the company were to continue operating as it did in year 75. Thus, the difference between the 9.5 percent of premium contribution to surplus (by contracts issued in year one) and the 4.3 percent of premium contribution to surplus (by contracts issued in year 41) is the price paid by the original insureds to help build the surplus of the company. Similar interpretations apply to the comparable lines under Column 4 of Tables G and H.

Column 4 in each of the Tables F, G and H contains a comparison of the permanent contribution to surplus with a quantity accumulated at the interest rate at which surplus accumulates after all taxes, including the equity tax. Once an issue year group has completely terminated, the Column 4 ratio will not change because both the numerator and the denominator increase at 2.4668 percent annually. The values in Column 5 of these tables exclude the effect of the equity tax. The differences between entries in Columns 4 and 5 show the financial effect of the equity tax.

If a company (operating under a tax law that has no equity tax) managed its affairs to have contributions to surplus by issue year identical to those in Column 1 — which is not implausible for a company with the same growth and the same statutory surplus requirements as the model company studied here — then the entries in Columns 5 of Tables F, G and H represent the permanent contributions to surplus by terminated contracts in relation to premium, face amount and gross income. These columns suggest that the original insureds of these companies made permanent contributions to surplus that can be measured as 1.5 percent to 2 percent of premium, or as 35¢ to 50¢ per \$1,000 face amount per year, or as 1 percent to 1.5 percent of gross income.

Once the surplus has been built up, more recently issued contracts are leaving less permanent contributions to surplus; the dividend scale is more generous.

Table G shows permanent contributions to surplus in relation to amounts insured. One should be careful to recognize the difference between this basis and the basis used by states such as New York to limit the profit which stock life insurers may transfer from the participating branch to the stockholder branch. Stock life insurers may transfer annually the greater of 10 percent of predividend profits and 50¢ per \$1,000 face amount. However, stock life insurers may also retain amounts of surplus in the participating branch, and

the surplus thus retained in the participating branch can help support new business strain, relieving stockholders of that burden.

Table H makes its comparisons of surplus to gross income. Of all the income generated by the contracts issued in a year, most of it goes to pay death benefits, surrender benefits, expenses or taxes. Only the small proportion shown in Column 4 or in Column 5, depending on the tax law, goes to build the capital structure (surplus) of the company.

IV. CLOSED BRANCH OPERATIONS

When the company converts to a stock company, it may wish to place the existing participating policyholders in a closed branch with enough assets, together with future premiums, to pay all benefits, expenses, taxes and dividends (on the current scale) if current experience continues.

We have projected the closed branch using the following current assumptions:

1. The premiums, cash values, and policy loan rates (as specified in Part 2 of this appendix) remain as guaranteed.
2. The net investment income rate, policy loan utilization rate, mortality rates, lapse rates, commission rates, and percentage of premium expense rates are the same as specified in Part 2 of this appendix.
3. No new business is added to the closed branch.
4. Unit expense rates, other than percentage of premium expense rates, increased 5 percent annually after conversion. As of the date of conversion, these expense rates are the expense rates given in Part 2 of this appendix increased 5 percent per year for 74 years. (Whether "current experience" should mean "current unit expenses with no inflation" or "current unit expenses with current inflation rates applied" would depend upon, among other things, a particular company's dividend practices.)
5. Taxes are paid at 36.8 percent of the increase in the excess of assets over tax basis reserves; no equity tax is charged.
6. The dividend scale used throughout the closed branch period is the scale in effect at the date of conversion.

Under these assumptions the initial assets necessary to fund the closed branch are \$1,830.6 million (\$519.4 million of policy loans and \$1,311.2 million of other invested assets), as shown in Table I.

In Table I the cash flows of the closed branch after conversion are also shown.

Table I (Detail) contains the cash flows from both the initial (nonpolicy loan) investments and the reinvestments on lines A.1, A.2, and A.3. The

maturities reflect the investment history of the company, which bought only 10-year bonds. In the final 20 years (at least 55 years after the conversion) some bonds have to be sold (at par), or money has to be borrowed, to pay required insurance cash flows in certain years; in reality a company would not be locked into buying only 10-year bonds at all times, thus avoiding the subsequent need to sell bonds. In Table I (Detail) the required cash flow is obtained by borrowing at the same 8.65 percent interest rate; this produces negative investment maturities 10 years later when the loans are repaid.

Lines A.4 through A.11 show the insurance cash flow items (including policy loans). Line A.12 is the net cash flow (from both investments and insurance) available for reinvestment in 10-year bonds. Sections B, C, and D present noncash items for reference. Line C.5 (the excess of assets over statutory liabilities in the closed branch) is initially negative and increases to zero over 75 years.

Table I (Summary) contains highlights of lines A.11, A.2, A.1, and A.12 from from Table I (Detail). This summary emphasizes that the net cash flow is positive until the closed branch nears its end.

Table J contains a comparison of the assets accumulated to date by the contracts in force (Column 1 of Table E, reproduced as Column 1 in Table J) with the assets required initially to fund the closed branch (Column 2 in Table J). The difference between these two columns (Column 3 in Table J) is the aggregate amount (for all participating policyholders) of the policyholders' contributions determined according to the second (and preferred) approach described in Section VI of the report. The difference between the two columns for any generation is the current value of all past and all future contributions to surplus by the policies in force.

For the model company, whose experience always matched its pricing assumptions, for every issue year, the accumulated assets on contracts in force exceed the prospectively required assets on the same contracts.

To illustrate the relative size of this measurement of policyholder contributions, Column 5 of Table J represents each issue year's policyholder interest divided by the face amounts now in force that were issued in that year. Another illustration of relative size appears in Column 7: each issue year's policyholder interest is divided by the cash values in force. As suggested elsewhere in the report, the numerical results of Table J are not necessarily applicable to any particular company.

The assets needed to maintain the current dividend scale (Column 2 of Table J) are less than the statutory reserves and liabilities (shown in Table E) because

- the dividend scale and the cash value structure have provision for recovery of unamortized initial acquisition expenses, and
- the dividend scale has an implicit provision for the cost of capital which is not charged explicitly against the closed branch.

V. ALTERNATIVE GROWTH RATE

To test the sensitivity of the results obtained to the particular growth rate assumed, the subcommittee developed a second model company with a 5 percent growth rate in new face amount issued. (This implies no growth in number of contracts sold, only in average face amounts.) We assumed that such a slow growth company would have somewhat higher expense rates, a lower net investment income rate, and a higher ratio of surplus to reserves. (See Part 2 of this appendix for the details.) The 5 percent growth company can still remain competitive, paying in most years approximately the same dividend scale as the 8 percent growth company.

Tables AA, BB, CC, DD, EE, FF, GG, HH, II, and JJ in Part 4 of this appendix are for the 5 percent growth company and are comparable to Tables A through J in Part 3 (of this appendix) for the 8 percent growth company.*

As one would expect, the 5 percent growth company has a smaller proportion of recently issued business than has the 8 percent growth company. Table DD shows 69 percent of the business in force was issued within the last 10 years, in contrast to 77 percent in Table D for the 8 percent growth company. Only 36 percent of all contracts ever issued by the 5 percent growth company are still in force, in contrast to 45 percent for the 8 percent growth company.

The lower new business strain in the slower growth company creates less difference between the surplus accumulated by survivors and the total company surplus as seen by comparing Tables E and EE. The amounts are smaller in the smaller company, but the proportions are similar. For example, the assets left by terminated contracts are still roughly twice the statutory surplus in the 5 percent growth company, just as in the 8 percent growth company.

Tables FF, GG and HH use accumulations at 2.056 percent and 5.056 percent, the after-tax rates (with and without the equity tax) available to a company earning 8 percent. The faster growth company earned somewhat higher rates. The slower growth company carried a larger surplus in relation

*The current dividend scale for the closed branch of the 5 percent growth company is 114.5 percent of the standard dividend scale, rather than 114.66 percent.

to reserves than did the 8 percent growth company, but the slower growth company had less new business strain. Both paid similar dividends to policyholders. Thus, the policyholder's net cost was the same at both companies.

The relatively older business in the closed branch of the slow growth company means that there is less difference between the assets accumulated by survivors and the assets needed for the closed branch in the slow growth company; compare Tables J and JJ. Accordingly, the aggregate amount of the policyholders' contributions is much smaller in the case of the slower growth company than in the case of the vigorously growing company.

Part 2

MODEL COMPANY ASSUMPTIONS

ENVIRONMENT

Net investment income:	8.65% on invested but nonloaned assets (but 8% for the slower growth company).
Policy loan utilization:	25% of cash values are loaned.
Inflation:	5% annually in policy size of new business issued and in expenses other than percentage of premium expenses.
Income taxes:	36.8% of the tax basis gain from operations (i.e., statutory gain plus increase in statutory reserve and dividend liability minus increase in tax basis reserve) plus 3% of the end of year tax basis surplus (the latter term is applied only through the conversion date).

COMPANY HISTORY

New business sold:	10,000 units of \$1,000 face amount sold in the first (single) calendar year, increasing thereafter at 8% (5% for slower growth company). The first 65 years' business is modeled as 13 years of issue, each 5 years apart. Since each group is assumed issued at its midpoint, the midpoint of the first generation in the model is called year one. The conversion occurs 75 years later (end of year 75).
Distribution of units sold:	30% age 25 40% age 40 30% age 55
Surplus policy:	Assets are borrowed as needed in order for surplus to be 5% of reserves (7% of reserves for the slower growth company) in the first 40 years. Borrowed surplus is repaid as soon as possible (consistent with the criterion above) together with any interest (net of any tax) earned on the amount borrowed.

MODEL COMPANY ASSUMPTIONS—Continued

Dividend philosophy:	For first four decades, pay standard dividends. Thereafter, increase or decrease dividends from standard scale to move surplus to target 5% of reserves (but 7% of reserves for the slower growth company). See the end of Part 2 of this appendix for standard dividend scale. See Part 3 of this appendix for asset share surpluses based on standard dividend scale and asset share surpluses based on dividend scale increased to 115% of standard.				
PRODUCT					
Plan:	Whole life — male Age Nearest Birthday (ANB)				
Average size:	\$50,000 inflating 5% annually for new issues.				
Premium, annual per unit:	Age 25:	\$11.02			
	Age 40:	\$19.43			
	Age 55:	\$38.24			
	plus \$25 policy fee per policy per year.				
Cash values per unit:	Duration				
	Age	1	2	3	4
	25	\$0	\$ 0	\$ 7	\$15
	40	0	6	22	37
	55	0	17	44	71
	Cash values grade into 4.5% 1958 CSO continuous functions CRVM terminal reserves by end of 20th year.				
Reserves:	Statutory:	4% 1958 CSO continuous functions CRVM.			
	Tax:	6% 1958 CSO continuous functions CRVM but not less than cash values.			
Policy loan interest rate:	7%				
Expenses	Year		% Premium		
Percent of premium (commissions, premium taxes, etc.)	1		93.0%		
	2		14.0		
	3-5		13.0		
	6-8		12.5		
	9+		7.5		
Per policy:*	At issue:	age 25	\$106.250		
		age 40	\$123.250		
		age 55	\$133.875		
	Annually:	\$36.125			
Per claim:*	\$21.25				
Per surrender:*	\$8.50				
Mortality rate:	70% of 1965-70 male ANB select and ultimate intercompany study; all benefits taken in cash.				
Lapse rate:	100% of Linton B; all benefits taken in cash.				

MODEL COMPANY ASSUMPTIONS—Continued

Dividend per unit (Standard Scale)	Duration	Issue Age		
		25	40	55
	1	\$ 0.00	\$ 0.00	\$ 0.00
	2	1.75	2.07	3.84
	3	1.86	2.35	5.29
	5	2.14	2.95	8.18
	10	2.93	4.78	15.58
	15	3.39	7.05	19.46
	20	4.16	9.60	22.81
	30	7.01	15.90	25.53
	40	12.15	21.35	31.06
	50	17.54	25.25	—

*As specified above, these expenses inflate 5 percent per year after the first year. The expense rates for the slower growth company are 117.65% of these expense rates (other than Percent Premium).

Part 3

This part of the appendix presents the asset share surpluses in relation to reserves in force, developed by blocks of business with the experience specified in Part 2 if the company always pays the equity tax and if the dividend scale were always a single multiple (either 100% or 115%) of the standard dividend scale.

A measure of the aggregate effect of both experience assumptions and dividend scale is the asset share surplus development. Underlying the surplus development in the model company is the surplus development for a block of business issued in a single year. This appendix shows the aggregate effect of the assumptions in Part 2 for a block of business issued in a single year under two assumptions:

1. that the dividend scale was always a single multiple of the standard scale shown in Part 2, and
2. that the company was always a mutual company paying both the gains tax and the equity tax (either of which will be negative if its base is negative).

As explained in Part 2, the dividend formula used in the model was not set from year-to-year using a three-factor formula, but rather it was set as a simple multiple of a standard dividend scale, which had been paid in the first 40 years. Thus, the model company's dividend formula will not be as equitable among issue ages and issue years as would be a more complex dividend formula.

Because the asset share surplus discussed here (in Part 3) is studied for blocks of business rather than for individual policies, the surplus or deficit left by terminating policies remains in the asset share surplus. In contrast,

the methodology used elsewhere in the report to determine the assets accumulated by policies in force regards the surplus or deficit left by terminating policies as associated with those terminating policies.

If the dividends paid were always 100 percent of the standard scale, the asset share surplus to reserve ratio depends on the investment and expense experience of the company as follows:

RATIO OF ASSET SHARE SURPLUS TO RESERVES
(AFTER ALL TAXES AND AFTER DIVIDENDS AT 100% OF STANDARD)

Issue Age	At End of Calendar Year <i>N</i> (Policy Duration $N - \frac{1}{2}$)	Better Investment and Expense Experience (From 8% Growth Company)	Poorer Investment and Expense Experience (From 5% Growth Company)
25	5	-21.1%	-24.7%
	10	-5.8	-10.1
	15	+3.8	-1.8
	20	+13.0	+5.5
	25	+22.9	+13.0
	30	+34.9	+21.4
40	5	-13.9%	-16.3%
	10	-2.7	-6.0
	15	+6.2	+1.3
	20	+14.9	+7.9
	25	+26.1	+15.8
	30	+42.7	+27.1
55	5	-8.7%	-10.5%
	10	-1.8	-4.9
	15	+5.1	-0.1
	20	+14.2	+5.9
	25	+31.1	+16.5
	30	+69.0	+39.9

If the dividends paid were always 115 percent of the standard scale (that is, the dividend scale as of the date of conversion), the asset share surplus to reserve ratio depends on the investment and expense experience of the company as follows:

**RATIO OF ASSET SHARE SURPLUS TO RESERVES
(AFTER ALL TAXES AND AFTER DIVIDENDS AT 115% OF STANDARD)**

Issue Age	At End of Calendar Year <i>N</i> (Policy Duration $N - \frac{1}{2}$)	Better Investment and Expense Experience (From 8% Growth Company)	Poorer Investment and Expense Experience (From 5% Growth Company)
25	5	-23.9%	-27.4%
	10	-9.2	-13.4
	15	-0.2	-5.7
	20	+8.2	+1.0
	25	+17.2	+7.5
	30	+27.6	+14.5
40	5	-15.8%	-18.2%
	10	-5.4	-8.7
	15	+2.4	-2.4
	20	+9.8	+2.9
	25	+18.9	+8.9
	30	+32.2	+17.1
55	5	-11.4%	-13.2%
	10	-6.6	-9.6
	15	-2.3	-7.1
	20	+2.9	-5.1
	25	+12.4	-1.3
	30	+33.9	+7.0

Part 4

**TABLE A
MODEL COMPANY SUMMARY OF OPERATIONS
(8% Growth Company)
(\$ Millions)**

	Years							
	1-10	11-20	21-30	31-40	41-50	51-60	61-70	71-75 (five years only)
Premium Income	\$15.5	\$45.2	\$104.0	\$227.5	\$492.2	\$1,063.1	\$2,413.5	\$2,045.7
Net Investment Income*	2.4	13.7	40.9	99.2	219.4	474.8	1,027.8	892.6
Death Benefits	1.4	6.7	19.6	47.3	105.6	229.9	500.8	434.7
Surrender and Endowment Benefits	1.5	7.5	20.4	47.1	103.5	224.3	484.9	420.0
Increase in Reserves	7.3	19.8	41.4	85.7	181.7	390.5	867.8	739.9
Commission and Agency Expense	4.3	10.1	22.2	48.2	104.1	224.7	582.0	468.7
Administrative Expense	1.2	3.5	8.4	18.7	40.7	88.2	207.7	173.6
Cash Dividends Paid	1.7	7.8	20.3	46.1	118.4	249.4	537.8	468.7
Increase in Dividend Liabilities	0.4	0.8	1.7	3.6	14.0	24.4	35.5	36.5
Federal Income Tax	0.5	2.3	7.7	20.5	39.2	87.0	181.4	159.1
Net Gain	(0.4)	0.4	3.2	9.5	4.4	19.5	43.4	37.1

*Interest earned on assets corresponding to surplus note is offset by interest paid on surplus note, which is charged against this Net Investment Income line.

TABLE B
MODEL COMPANY BALANCE SHEET
(8% Growth Company)
(\$ Millions)

	End of Year							
	5	15	25	35	45	55	65	75
Assets								
Non-Policy Loans	\$2.2	\$13.4	\$38.3	\$ 91.0	\$201.8	\$437.0	\$ 964.6	\$2,050.9
Policy Loans	0.5	3.4	10.0	23.5	51.8	112.4	245.0	519.4
Total	2.7	16.8	48.3	114.5	253.6	549.4	1,209.6	2,570.3
Liabilities								
Reserves	2.4	15.3	44.2	103.5	228.0	494.2	1,096.9	2,334.1
Dividend Liability	0.2	0.7	1.9	4.4	14.2	30.5	57.4	116.9
Federal Income Tax Liability	0.0	0.0	0.0	0.0	0.0	0.0	0.4	2.6
Total	2.6	16.0	46.1	107.9	242.2	524.7	1,154.7	2,453.6
Surplus Note	0.4	1.4	1.3	0.1	0.0	0.0	0.0	0.0
Unassigned Surplus	(0.3)	(0.6)	0.9	6.5	11.4	24.7	54.9	116.7

TABLE C
MODIFICATIONS TO DIVIDEND SCALE
(8% Growth Company)

Year	Dividend Paid (\$ Millions)	Standard Dividend (\$ Millions)	Ratio
41 - 45	49.3	40.7	121%
46 - 50	69.1	60.0	115
51 - 55	100.7	88.3	114
56 - 60	148.7	129.8	115
61 - 65	213.1	190.7	112
66 - 70	324.7	278.1	117
71 - 75	468.7	407.5	115

TABLE D
FACE AMOUNT OF INSURANCE AS OF CONVERSION DATE
(8% Growth Company)
(\$ Millions)

Issue Year	(1) Total Issued	In Force on Conversion Date		(4) = (1)-(2) Terminated Prior to Conversion
		(2) Amount	(3) Cumulative Distribution	
1 - 3	59	0.01	100%	59
4 - 8	86	0.10	100	86
9 - 13	127	0.30	100	127
14 - 18	186	1.00	100	185
19 - 23	273	3.00	100	270
24 - 28	402	8.00	100	394
29 - 33	590	21.00	100	569
34 - 38	867	49.00	100	818
39 - 43	1,274	109.00	100	1,165
44 - 48	1,873	233.00	99	1,640
49 - 53	2,752	478.00	98	2,274
54 - 58	4,043	944.00	96	3,099
59 - 63	5,940	1,811.00	91	4,129
64	1,488	532.00	82	956
65	1,607	608.00	80	999
66	1,735	694.00	77	1,041
67	1,874	797.00	74	1,077
68	2,024	917.00	70	1,107
69	2,186	1,062.00	65	1,124
70	2,361	1,241.00	60	1,120
71	2,550	1,461.00	54	1,089
72	2,754	1,734.00	47	1,020
73	2,974	2,086.00	39	888
74	3,212	2,565.00	29	647
75	<u>3,469</u>	<u>3,467.00</u>	17	<u>2</u>
Total	46,706 (100%)	20,821 (45%)		25,885 (55%)

TABLE E
ASSETS, LIABILITIES, AND SURPLUS AT CONVERSION BY ISSUE YEAR
(8% Growth Company)
(\$ Millions)

Issue Year	Assets Accumulated by			Reserves and Liabilities In Force	Surplus Accumulated by		
	Contracts In Force	Terminated Contracts	All Contracts		Contracts In Force	Terminated Contracts	All Contracts
1 - 3	0.02	7.0	7.0	0.01	0.01	7.0	7.0
4 - 8	0.10	9.0	9.1	0.10	0.05	9.0	9.0
9 - 13	0.40	11.4	11.8	0.30	0.10	11.4	11.5
14 - 18	1.40	14.0	15.4	0.90	0.50	14.0	14.5
19 - 23	3.70	16.9	20.6	2.60	1.10	16.9	18.0
24 - 28	8.80	19.5	28.3	6.40	2.40	19.5	21.9
29 - 33	19.70	21.1	40.8	14.90	4.80	21.1	25.9
34 - 38	40.10	21.2	61.3	31.90	8.20	21.2	29.4
39 - 43	76.20	20.7	96.9	63.70	12.50	20.7	33.2
44 - 48	136.60	20.6	157.2	120.10	16.50	20.6	37.1
49 - 53	226.00	17.6	243.6	209.80	16.20	17.6	33.8
54 - 58	341.70	14.1	355.8	333.70	8.00	14.1	22.1
59 - 63	465.10	11.4	476.5	477.20	- 12.10	11.4	- 0.7
64	104.40	1.8	106.2	110.50	- 6.10	1.8	- 4.3
65	106.90	1.8	108.7	114.50	- 7.60	1.8	- 5.8
66	108.70	1.7	110.4	118.00	- 9.30	1.7	- 7.6
67	109.70	1.7	111.4	120.70	- 11.00	1.7	- 9.3
68	108.30	1.7	110.0	121.10	- 12.80	1.7	- 11.1
69	106.30	1.6	107.9	120.40	- 14.10	1.6	- 12.5
70	102.40	1.3	103.7	117.80	- 15.40	1.3	- 14.1
71	94.30	1.1	95.4	111.10	- 16.80	1.1	- 15.7
72	82.10	0.7	82.8	100.20	- 18.10	0.7	- 17.4
73	65.10	0.1	65.2	83.30	- 18.20	0.1	- 18.1
74	52.90	- 1.1	51.8	69.80	- 16.90	- 1.1	- 18.0
75	- 7.50	-	- 7.5	4.60	- 12.10	-	- 12.1
Total	2,353.40 (92%)	216.9 (8%)	2,570.3 (100%)	2,453.60	- 100.20	216.9	+ 116.7

TABLE F
TERMINATORS' CONTRIBUTIONS TO SURPLUS
AS OF DATE OF DEMUTUALIZATION IN RELATION TO PREMIUM
(8% Growth Company)

Issue Year	(1) Terminators' Surplus on Date of Demutualization (\$ Millions)	(2) Value of Terminators' Premium Accumulated at 2.4668%* (\$ Millions)	(3) Value of Terminators' Premium Accumulated at 5.4668%* (\$ Millions)	(4) = (1)/(2) Contribution to Surplus as a Percentage of Premium at 2.4668%*	(5) = (1)/(3) Contribution to Surplus as a Percentage of Premium at 5.4668%*
1 - 3	7.0	73.6	497.0	9.5%**	1.4%**
4 - 8	9.0	95.6	559.5	9.4 **	1.6 **
9 - 13	11.4	123.9	628.1	9.2 **	1.8 **
14 - 18	14.0	159.9	703.0	8.8 **	2.0 **
19 - 23	16.9	205.5	784.5	8.2 **	2.2 **
24 - 28	19.5	261.7	869.2	7.5 **	2.2 **
29 - 33	21.1	327.8	950.4	6.4 **	2.2 **
34 - 38	21.2	402.4	1,021.6	5.3 **	2.1 **
39 - 43	20.7	479.1	1,069.5	4.3	1.9
44 - 48	20.6	546.2	1,078.0	3.8	1.9
49 - 53	17.6	591.9	1,037.5	3.0	1.7
54 - 58	14.1	605.2	945.3	2.3	1.5

*Premium is accumulated at after-tax interest rates, with and without the equity tax, which is estimated as 3%:

$$2.4668\% = 8.65\% [1 - 46\%(80\%)] - 3\%$$

$$5.4668\% = 8.65\% [1 - 46\%(80\%)]$$

**Contracts issued before year 39 received lower dividends (in years at least through year 40) than other contracts (issued in later years) received at comparable durations since issue date.

TABLE G
TERMINATORS' CONTRIBUTIONS TO SURPLUS
AS OF DATE OF DEMUTUALIZATION
IN RELATION TO FACE AMOUNTS
(8% Growth Company)

Issue Year	(1) Terminators' Surplus on Date of Demutualization (\$ Millions)	(2) Value of Face Amounts (in Billions) Exposed per Year by Terminators Accumulated at 2.4668%*	(3) Value of Face Amounts (in Billions) Exposed per Year by Terminators Accumulated at 5.4668%*	(4) = (1)/(2) Level Con- tribution to Surplus per \$1,000 Face Amount at 2.4668%*	(5) = (1)/(3) Level Con- tribution to Surplus per \$1,000 Face Amount at 5.4668%*
1 - 3	7.0	\$ 3.2	\$21.3	\$2.19**	\$0.33**
4 - 8	9.0	4.2	24.0	2.14**	0.37**
9 - 13	11.4	5.4	26.9	2.11**	0.42**
14 - 18	14.0	7.0	30.0	2.00**	0.47**
19 - 23	16.9	8.9	33.3	1.90**	0.51**
24 - 28	19.5	11.2	36.5	1.75**	0.53**
29 - 33	21.1	13.9	39.5	1.52**	0.53**
34 - 38	21.2	16.8	42.0	1.26**	0.50**
39 - 43	20.7	19.8	43.6	1.05	0.47
44 - 48	20.6	22.4	43.7	0.92	0.47
49 - 53	17.6	24.3	42.1	0.72	0.42
54 - 58	14.1	25.0	38.6	0.56	0.37

*Face amount is accumulated at after-tax interest rates, with and without the equity tax, which is estimated as 3%:

$$2.4668\% = 8.65\% [1 - 46\%(80\%)] - 3\%$$

$$5.4668\% = 8.65\% [1 - 46\%(80\%)]$$

**Contracts issued before year 39 received lower dividends (in years at least through year 40) than other contracts (issued in later years) received at comparable durations since issue date.

TABLE H
 TERMINATORS' CONTRIBUTIONS TO SURPLUS
 AS OF DATE OF DEMUTUALIZATION
 IN RELATION TO GROSS INCOME
 (8% Growth Company)

Issue Year	(1) Terminators' Surplus on Date of Demutualization (\$ Millions)	(2) Value of Terminators' Gross Income Accumulated at 2.4668%* (\$ Millions)	(3) Value of Terminators' Gross Income Accumulated at 5.4668%* (\$ Millions)	(4) = (1)/(2) Contribution to Surplus as a Percentage of Gross Income at 2.4668%*	(5) = (1)/(3) Contribution to Surplus as a Percentage of Gross Income at 5.4668%*
1 - 3	7.0	151.6	808.5	4.6%**	0.9%**
4 - 8	9.0	192.5	905.4	4.7 **	1.0 **
9 - 13	11.4	243.1	1,009.2	4.7 **	1.1 **
14 - 18	14.0	304.3	1,118.0	4.6 **	1.3 **
19 - 23	16.9	377.6	1,230.4	4.5 **	1.4 **
24 - 28	19.5	461.9	1,338.0	4.2 **	1.5 **
29 - 33	21.1	551.6	1,426.0	3.8 **	1.5 **
34 - 38	21.2	642.0	1,484.8	3.3 **	1.4 **
39 - 43	20.7	725.7	1,503.5	2.9 **	1.4
44 - 48	20.6	788.1	1,466.9	2.6	1.4
49 - 53	17.6	804.8	1,351.7	2.2	1.3
54 - 58	14.1	772.2	1,172.4	1.8	1.2

*Gross income is accumulated at after-tax interest rates, with and without the equity tax, which is estimated as 3%:

2.4668% = 8.65% [1 - 46%(80%)] - 3%

5.4668% = 8.65% [1 - 46%(80%)]

**Contracts issued before year 39 received lower dividends (in years at least through year 40) than other contracts (issued in later years) received at comparable durations since issue date.

TABLE I (Summary)
 CLOSED BRANCH CASH FLOWS
 (8% Growth Before Conversion Date)
 (\$ Millions)

Year	(1) Insurance Cash Outflow = Benefits + Expenses + Cash Dividends + Federal Income Tax + Increase in Policy Loans - Policy Loan Interest - Premiums	Investment Cash Inflows from Non-Policy Loan Assets (Including Reinvestments)		(4) = (2) + (3) - (1) Net Cash Inflow
		(2) Maturities	(3) Investment Income	
1	- 17.0	60.3	114.1	191.5
2	23.4	162.6	123.8	263.0
3	46.6	85.2	131.5	170.1
4	66.8	107.5	138.0	178.6
5	84.5	103.6	143.4	162.5
6	100.1	90.5	147.8	138.2
7	112.3	245.2	151.4	284.3
8	123.9	129.8	154.3	160.3
9	135.1	152.1	156.5	173.4
10	145.5	174.4	157.9	186.8
11-15	840.2	965.7	786.7	912.2
16-20	933.2	943.1	731.8	741.6
21-25	914.3	912.2	628.6	626.5
26-30	813.0	741.6	503.1	431.7
31-35	668.0	626.5	377.3	335.9
36-45	880.1	767.6	440.3	327.8
46-55	392.6	327.7	165.7	100.8
56-65	124.7	100.8	41.0	17.1
66-75	22.1	17.1	5.0	0.0

TABLE I (DETAIL)
 CLOSED BRANCH PROJECTION
 (8% Growth Historically)
 (\$ Millions)

	Years					
	0	1	2	3	4	5
Cash Flow of Investments						
1. Non-policy Loan Interest	—	114.1	123.8	131.5	138.0	143.4
2. Non-policy Loan Investment Maturities	—	60.3	162.6	85.2	107.5	103.6
3. Cash Flow of Investments = 1 + 2	—	174.4	286.4	216.7	245.4	247.0
Cash Flow of Insurance						
4. Premium	—	426.5	391.8	362.7	337.4	315.1
5. Policy Loan Interest	—	36.5	39.2	41.6	43.6	45.2
6. Benefits (Death, Surrender, Endowment)	—	212.1	224.2	234.3	241.1	246.2
7. Expenses (Commission, Agency, Administrative and Premium Tax)	—	68.8	62.4	57.4	52.9	48.8
8. Cash Dividends	—	116.9	126.2	127.7	128.7	129.0
9. Federal Income Tax	—	7.0	2.6	— 0.5	— 1.3	— 0.6
10. Increase in Policy Loans	—	41.2	38.9	31.9	26.4	21.4
11. Cash Flow of Insurance = 4 + 5 - (6 + 7 + 8 + 9 + 10)	—	17.0	— 23.4	— 46.6	— 66.8	— 84.5
12. Total Cash Flow (Investments and Insurance) = 3 + 11	—	191.5	263.0	170.1	178.6	162.5
Statutory Accrual Items						
1. Increase in Statutory Reserves	—	172.6	139.5	113.4	92.0	73.6
2. Increase in Dividend Liability	—	9.4	1.5	0.9	0.4	— 0.2
Statutory Balance Sheet at the End of the Period						
1. Non-policy Loan Assets	1,311.2	1,442.4	1,542.8	1,627.7	1,698.8	1,757.7
2. Policy Loan Assets	519.4	560.6	599.5	631.4	657.9	679.3
3. Statutory Reserve	2,334.1	2,506.7	2,646.2	2,759.6	2,851.6	2,925.3
4. Dividend Liability	116.8	126.2	127.7	127.7	129.0	128.8
5. Net of 1 + 2 - (3 + 4)	— 620.3	— 630.0	— 631.7	— 629.2	— 624.0	— 617.1
Tax Information						
1. Increase in Tax Reserves	—	160.3	134.8	117.7	99.8	81.3
2. Tax Reserves at the End of the Period	2,159.7	2,320.0	2,454.7	2,572.4	2,672.2	2,753.5

TABLE I (DETAIL) — Continued

	Years					
	6	7	8	9	10	11-15
Cash Flow of Investments						
1. Non-policy Loan Interest	147.8	151.4	154.3	156.5	157.9	786.7
2. Non-policy Loan Investment Maturities	90.5	245.2	129.8	152.1	174.4	965.7
3. Cash Flow of Investments = 1 + 2	238.3	396.6	284.1	308.5	332.3	1,752.4
Cash Flow of Insurance						
4. Premium	295.1	277.0	260.3	244.7	230.1	955.9
5. Policy Loan Interest	46.5	47.6	48.3	48.9	49.2	243.8
6. Benefits (Death, Surrender, Endowment)	250.5	252.3	254.7	257.2	259.5	1,311.8
7. Expenses (Commission, Agency, Administrative and Premium Tax)	45.2	41.8	38.5	37.1	35.9	161.4
8. Cash Dividends	128.9	128.2	127.1	125.4	123.2	572.3
9. Federal Income Tax	0.1	1.3	2.3	2.5	3.0	22.2
10. Increase in Policy Loans	17.0	13.3	9.9	6.5	3.3	— 27.8
11. Cash Flow of Insurance = 4 + 5 - (6 + 7 + 8 + 9 + 10)	— 100.1	— 112.3	— 123.9	— 135.1	— 145.5	— 840.2
12. Total Cash Flow (Investments and Insurance) = 3 + 11	138.2	284.3	160.3	173.4	186.8	912.2
Statutory Accrual Items						
1. Increase in Statutory Reserves	57.0	43.4	29.6	16.4	3.7	— 150.4
2. Increase in Dividend Liability	— 0.7	— 1.1	— 1.6	— 2.2	— 2.7	— 15.9
Statutory Balance Sheet at the End of the Period						
1. Non-policy Loan Assets	1,805.4	1,844.5	1,875.0	1,896.4	1,908.8	1,855.3
2. Policy Loan Assets	696.3	709.6	719.5	725.9	729.2	701.4
3. Statutory Reserve	2,982.2	3,025.7	3,055.3	3,071.7	3,075.3	2,924.9
4. Dividend Liability	128.2	127.0	125.4	123.2	120.5	104.5
5. Net of 1 + 2 - (3 + 4)	— 608.6	— 598.6	— 586.2	— 572.6	— 557.8	— 472.8
Tax Information						
1. Increase in Tax Reserves	64.6	50.1	36.4	23.6	10.5	— 119.5
2. Tax Reserves at the End of the Period	2,818.1	2,868.2	2,904.5	2,928.1	2,938.6	2,819.2

TABLE I (DETAIL) — *Continued*

	Years					
	16-20	21-25	26-30	31-35	36-40	41-45
Cash Flow of Investments						
1. Non-policy Loan Interest	731.8	628.6	503.1	377.3	265.9	174.4
2. Non-policy Loan Investment Maturities	943.1	912.2	741.6	626.5	431.7	335.9
3. Cash Flow of Investments = 1 + 2	1,674.9	1,540.9	1,244.7	1,003.8	691.7	510.2
Cash Flow of Insurance						
4. Premium	681.0	464.1	300.5	184.7	108.1	59.6
5. Policy Loan Interest	224.3	190.0	149.7	110.5	76.7	49.6
6. Benefits (Death, Surrender, Endowment)	1,270.4	1,148.4	967.3	764.7	570.1	404.3
7. Expenses (Commission, Agency, Administrative and Premium Tax)	134.3	109.6	87.4	67.8	51.1	36.7
8. Cash Dividends	485.4	389.1	297.7	217.3	150.6	97.5
9. Federal Income Tax	32.4	35.7	31.1	22.7	15.1	9.0
10. Increase in Policy Loans	- 83.9	- 114.4	- 120.2	- 109.4	- 90.4	- 69.8
11. Cash Flow of Insurance = 4 + 5 - (6 + 7 + 8 + 9 + 10)	- 933.2	- 914.3	- 813.0	- 668.0	- 511.6	- 368.5
12. Total Cash Flow (Investments and Insurance) = 3 + 11	741.6	626.5	431.7	335.9	186.0	141.7
Statutory Accrual Items						
1. Increase in Statutory Reserves	- 366.6	- 482.3	- 502.1	- 453.5	- 372.5	- 286.5
2. Increase in Dividend Liability	- 19.0	- 18.9	- 17.0	- 14.5	- 11.7	- 9.0
Statutory Balance Sheet at the End of the Period						
1. Non-policy Loan Assets	1,653.8	1,368.1	1,058.2	767.6	521.9	327.7
2. Policy Loan Assets	617.5	503.1	382.9	273.5	183.1	113.3
3. Statutory Reserve	2,558.3	2,076.0	1,573.9	1,120.4	747.9	461.4
4. Dividend Liability	85.5	66.6	49.6	35.0	23.4	14.3
5. Net of 1 + 2 - (3 + 4)	- 372.5	- 271.4	- 182.4	- 114.3	- 66.2	- 34.7
Tax Information						
1. Increase in Tax Reserves	- 341.0	- 461.4	- 483.4	- 439.0	- 362.0	- 279.4
2. Tax Reserves at the End of the Period	2,478.2	2,016.8	1,533.3	1,094.4	732.3	452.9

TABLE I (DETAIL) — *Continued*

	Years					
	46-50	51-55	56-60	61-65	66-70	71-75
Cash Flow of Investments						
1. Non-policy Loan Interest	106.2	59.5	29.0	12.0	4.2	0.8
2. Non-policy Loan Investment Maturities	186.0	141.7	50.7	50.1	— 6.3	23.4
3. Cash Flow of Investments = 1 + 2	292.2	201.2	79.7	62.1	— 2.1	24.2
Cash Flow of Insurance						
4. Premium	31.3	15.3	6.6	2.5	0.8	0.1
5. Policy Loan Interest	29.7	16.5	7.9	3.3	1.1	0.2
6. Benefits (Death, Surrender, Endowment)	261.9	163.6	94.0	42.9	18.4	6.5
7. Expenses (Commission, Agency, Administrative and Premium Tax)	25.1	16.0	9.0	4.4	1.7	0.4
8. Cash Dividends	58.6	32.9	16.1	6.6	2.4	0.6
9. Federal Income Tax	4.7	2.2	0.7	— 0.4	— 0.1	0.0
10. Increase in Policy Loans	— 47.7	— 31.6	— 19.3	— 9.0	— 4.1	— 1.5
11. Cash Flow of Insurance = 4 + 5 — (6 + 7 + 8 + 9 + 10)	— 241.5	— 151.1	— 86.0	— 38.7	— 16.6	— 5.5
12. Total Cash Flow (Investments and Insurance) = 3 + 11	50.7	50.1	— 6.3	23.4	— 18.7	18.7
Statutory Accrual Items						
1. Increase in Statutory Reserves	— 195.1	— 128.8	— 78.2	— 36.6	— 16.5	— 6.2
2. Increase in Dividend Liability	— 6.0	— 4.0	— 2.5	— 1.1	— 0.5	— 0.2
Statutory Balance Sheet at the End of the Period						
1. Non-policy Loan Assets	192.4	100.8	43.8	17.1	4.7	0.0
2. Policy Loan Assets	65.6	33.9	14.7	5.6	1.5	0.0
3. Statutory Reserve	266.3	137.4	59.3	22.7	6.2	0.0
4. Dividend Liability	8.3	4.3	1.9	0.7	0.2	0.0
5. Net of 1 + 2 — (3 + 4)	— 16.6	— 7.1	— 2.7	— 0.7	— 0.2	0.0
Tax Information						
1. Increase in Tax Reserves	— 191.1	— 126.9	— 77.4	— 35.0	— 16.3	— 6.2
2. Tax Reserves at the End of the Period	261.8	134.9	57.5	22.5	6.2	0.0

TABLE J
ASSETS ACCUMULATED VERSUS ASSETS NEEDED ON CONTRACTS IN FORCE
(8% Growth Company)

Issue Year	(1) Assets Accumulated by Contracts In Force (\$ Millions)	(2) Assets Needed for Closed Branch (\$ Millions)	(3) Excess Assets (Accumulated over Needed) (\$ Millions)	(4) Face Amount In Force (\$ Millions)	(5) = $\frac{1,000(3)}{(4)}$ Excess Assets per \$1,000 Face Amount In Force	Cash Value In Force (\$ Millions)	(7) = $\frac{100(3)}{(6)}$ Ratio of Excess Assets to Cash Value In Force
1 - 3	0.02	0.01	0.01	0.01	\$793	0.01	79%
4 - 8	0.10	0.10	0.05	0.10	669	0.10	74
9 - 13	0.40	0.30	0.17	0.30	573	0.30	67
14 - 18	1.40	0.90	0.50	1.00	478	0.90	58
19 - 23	3.70	2.40	1.30	3.00	408	2.50	53
24 - 28	8.80	5.90	2.90	8.00	345	6.00	48
29 - 33	19.70	13.60	6.10	21.00	288	14.10	43
34 - 38	40.10	28.60	11.50	49.00	233	30.20	38
39 - 43	76.20	56.10	20.10	109.00	184	59.90	34
44 - 48	136.60	103.80	32.80	233.00	141	112.40	29
49 - 53	226.00	177.70	48.30	478.00	101	195.00	25
54 - 58	341.70	277.20	64.60	944.00	68	307.70	21
59 - 63	465.10	384.70	80.40	1,811.00	44	429.90	19
64	104.40	86.60	17.80	532.00	33	97.30	18
65	106.90	88.80	18.10	608.00	30	100.10	18
66	108.70	89.80	18.90	694.00	27	101.60	19
67	109.70	89.90	19.80	797.00	25	102.00	19
68	108.30	88.50	19.80	917.00	22	101.40	20
69	106.30	86.00	20.30	1,062.00	19	98.60	21
70	102.40	81.30	21.10	1,241.00	17	93.10	23
71	94.30	73.20	21.10	1,461.00	14	84.70	25
72	82.10	60.60	21.50	1,734.00	12	70.20	31
73	65.10	42.60	22.50	2,086.00	11	50.20	45
74	52.90	16.90	36.00	2,565.00	14	19.20	187
75	- 7.50	- 24.90	17.30	3,467.00	5	0.00	-
Total	2,353.40	1,830.60	522.90	20,821.00	\$ 25	2,077.40	25%

Part 5

TABLE AA
MODEL COMPANY SUMMARY OF OPERATIONS
(5% Growth Company)
(\$ Millions)

	Years							71-75 (five years only)
	1-10	11-20	21-30	31-40	41-50	51-60	61-70	
Premium Income	\$13.6	\$32.4	\$58.3	\$97.5	\$159.8	\$260.6	\$441.5	\$306.7
Net Investment Income*	2.0	10.0	24.6	47.8	83.9	139.3	228.2	162.8
Death Benefits	1.3	5.2	13.1	25.6	44.7	74.3	122.3	87.2
Surrender and Endowment Benefits	1.4	5.9	13.3	24.3	41.2	67.7	110.9	78.9
Increase in Reserves	6.5	13.9	21.4	31.7	48.7	77.7	129.7	90.1
Commission and Agency Expense	3.8	6.8	11.4	18.8	30.7	49.9	94.5	61.7
Administrative Expense	1.2	2.9	5.4	9.4	15.7	25.8	44.9	30.8
Cash Dividends Paid	1.5	6.0	12.9	23.0	40.0	72.0	117.7	84.4
Increase in Dividend Liabilities	0.3	0.6	0.8	1.2	3.7	4.3	4.4	4.1
Federal Income Tax	0.3	1.2	3.4	7.8	14.7	22.6	36.0	25.9
Net Gain	(0.7)	(0.1)	1.2	3.5	4.3	5.6	9.3	6.4

*Interest earned on assets corresponding to surplus note is offset by interest paid on surplus note, which is charged against this Net Investment Income line.

TABLE BB
MODEL COMPANY BALANCE SHEET
(5% Growth Company)
(\$ Millions)

	End of Year							
	5	15	25	35	45	55	65	75
Assets								
Non-policy Loans	\$2.1	\$11.2	\$26.5	\$49.3	\$ 84.0	\$139.8	\$231.4	\$373.4
Policy Loans	0.5	2.8	6.9	12.8	21.9	36.1	59.2	95.4
Total	2.6	14.0	33.4	62.1	105.9	175.9	290.6	468.8
Liabilities								
Reserves	2.3	12.5	30.0	56.0	95.1	156.4	260.0	419.7
Dividend Liability	0.1	0.6	1.3	2.2	4.2	8.5	12.4	19.4
Federal Income Tax Liability	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3
Total	2.4	13.1	31.3	58.2	99.3	164.9	272.4	439.4
Surplus Note	0.5	1.7	2.5	2.0	0.0	0.0	0.0	0.0
Unassigned Surplus	(0.3)	(0.8)	(0.4)	1.9	6.6	11.0	18.2	29.4

TABLE CC
 MODIFICATIONS TO DIVIDEND SCALE
 (5% Growth Company)

Year	Dividend Paid (\$ Millions)	Standard Dividend (\$ Millions)	Ratio
41 - 45	16.9	16.9	100%
46 - 50	23.1	21.7	107
51 - 55	31.5	27.8	113
56 - 60	40.5	35.5	114
61 - 65	50.7	45.3	112
66 - 70	67.0	57.7	116
71 - 75	84.4	73.5	115

TABLE DD
 FACE AMOUNT OF INSURANCE AS OF CONVERSION DATE
 (5% Growth Company)
 (\$ Millions)

Issue Year	(1) Total Issued	In Force on Conversion Date		(4) = (1) - (2) Terminated Prior to Conversion
		(2) Amount	(3) Cumulative Distribution	
1 - 3	55	0.01	100%	55
4 - 8	71	0.06	100	71
9 - 13	90	0.20	100	90
14 - 18	115	0.70	100	114
19 - 23	147	2.00	100	145
24 - 28	187	4.00	100	183
29 - 33	239	9.00	100	230
34 - 38	305	17.00	99	288
39 - 43	389	33.00	99	356
44 - 48	496	62.00	98	434
49 - 53	634	110.00	96	524
54 - 58	809	189.00	92	620
59 - 63	1,032	315.00	86	717
64	238	85.00	75	153
65	250	95.00	72	155
66	263	105.00	69	158
67	276	117.00	66	159
68	290	131.00	62	159
69	304	148.00	57	156
70	319	168.00	52	151
71	335	192.00	47	143
72	352	222.00	40	130
73	370	259.00	33	111
74	388	310.00	24	78
75	408	408.00	14	0
Total	8,362 (100%)	2,982.00 (36%)		5,380 (64%)

TABLE EE
 ASSETS, LIABILITIES, AND SURPLUS AT CONVERSION BY ISSUE YEAR
 (5% Growth Company)
 (\$ Millions)

Issue Year	Assets Accumulated by			Reserves and Liabilities In Force	Surplus Accumulated by		
	Contracts In Force	Terminated Contracts	All Contracts		Contracts In Force	Terminated Contracts	All Contracts
1 - 3	0.02	3.7	3.7	0.02	0.00	3.7	3.7
4 - 8	0.10	4.2	4.3	0.06	0.02	4.2	4.2
9 - 13	0.30	4.7	5.0	0.20	0.10	4.7	4.8
14 - 18	0.70	5.3	6.0	0.60	0.10	5.3	5.4
19 - 23	1.70	5.7	7.4	1.40	0.30	5.7	6.0
24 - 28	3.50	6.0	9.5	3.00	0.50	6.0	6.5
29 - 33	6.90	5.9	12.8	6.00	0.90	5.9	6.8
34 - 38	12.50	5.5	18.0	11.20	1.30	5.5	6.8
39 - 43	20.90	4.6	25.5	19.40	1.50	4.6	6.1
44 - 48	32.80	3.7	36.5	31.80	1.00	3.7	4.7
49 - 53	47.90	3.1	51.0	48.30	- 0.40	3.1	2.7
54 - 58	63.70	2.8	66.5	66.70	- 3.00	2.8	- 0.2
59 - 63	76.30	2.6	78.9	82.90	- 6.60	2.6	- 4.0
64	15.90	0.5	16.4	17.70	- 1.80	0.5	- 1.3
65	15.90	0.4	16.3	17.80	- 1.90	0.4	- 1.5
66	15.80	0.4	16.2	17.90	- 2.10	0.4	- 1.7
67	15.50	0.4	15.9	17.80	- 2.30	0.4	- 1.9
68	14.90	0.4	15.3	17.30	- 2.40	0.4	- 2.0
69	14.20	0.4	14.6	16.70	- 2.50	0.4	- 2.1
70	13.30	0.3	13.6	15.90	- 2.60	0.3	- 2.3
71	12.00	0.2	12.2	14.60	- 2.60	0.2	- 2.4
72	10.00	0.2	10.2	12.70	- 2.70	0.2	- 2.5
73	7.70	0.1	7.8	10.30	- 2.60	0.1	- 2.5
74	6.50	- 0.1	6.4	8.70	- 2.20	- 0.1	- 2.3
75	- 1.20	-	- 1.2	0.40	- 1.60	-	1.6
Total	407.80 (87%)	61.0 (13%)	468.8 (100%)	439.40	-31.60	61.0	29.4

TABLE FF
 TERMINATORS' CONTRIBUTIONS TO SURPLUS
 AS OF DATE OF DEMUTUALIZATION
 IN RELATION TO PREMIUM
 (5% Growth Company)

Issue Year	(1) Terminators' Surplus on Date of Demutualization (\$ Millions)	(2) Value of Terminators' Premium Accumu- lated at 2.056%* (\$ Millions)	(3) Value of Terminators' Premium Accumu- lated at 5.056%* (\$ Millions)	(4) = (1)/(2) Contribution to Surplus as a Percentage of Premium at 2.056%*	(5) = (1)/(3) Contribution to Surplus as a Percentage of Premium at 5.056%*
1 - 3	3.7	53.3	360.0	6.9%	1.0%
4 - 8	4.2	61.4	358.7	6.8	1.2
9 - 13	4.7	70.6	357.0	6.7	1.3
14 - 18	5.3	80.8	354.2	6.6	1.5
19 - 23	5.7	91.9	349.8	6.2	1.6
24 - 28	6.0	103.6	343.2	5.8	1.7
29 - 33	5.9	114.8	332.0	5.1	1.8
34 - 38	5.5	124.7	315.7	4.4	1.7
39 - 43	4.6	131.2	292.3	3.5	1.6
44 - 48	3.7	132.0	260.3	2.8	1.4
49 - 53	3.1	126.3	221.2	2.5	1.4
54 - 58	2.8	113.9	177.9	2.5	1.6

*Premium is accumulated at after-tax interest rates, with and without the equity tax, which is estimated as 3%:
 2.056% = 8% [1 - 46% (80%)] - 3%
 5.056% = 8% [1 - 46% (80%)]

TABLE GG
 TERMINATORS' CONTRIBUTIONS TO SURPLUS
 AS OF DATE OF DEMUTUALIZATION
 IN RELATION TO FACE AMOUNTS
 (5% Growth Company)

Issue Year	(1) Terminators' Surplus on Date of Demutualization (\$ Millions)	(2) Value of Face Amounts (in Billions) Exposed per Year by Terminators Accumulated at 2.056%*	(3) Value of Face Amounts (in Billions) Exposed per Year by Terminators Accumulated at 5.056%*	(4) = (1)/(2) Level Con- tribution to Surplus per \$1,000 Face Amount at 2.056%*	(5) = (1)/(3) Level Con- tribution to Surplus per \$1,000 Face Amount at 5.056%*
1 - 3	3.7	\$2.4	\$15.5	\$1.54	\$0.24
4 - 8	4.2	2.7	15.4	1.56	0.27
9 - 13	4.7	3.1	15.3	1.52	0.31
14 - 18	5.3	3.5	15.2	1.51	0.35
19 - 23	5.7	4.0	14.9	1.42	0.38
24 - 28	6.0	4.5	14.5	1.33	0.41
29 - 33	5.9	4.9	13.8	1.20	0.43
34 - 38	5.5	5.2	13.0	1.06	0.42
39 - 43	4.6	5.4	11.9	0.85	0.39
44 - 48	3.7	5.4	10.6	0.69	0.35
49 - 53	3.1	5.2	9.0	0.60	0.34
54 - 58	2.8	4.7	7.3	0.60	0.38

*Face amount is accumulated at after-tax interest rates, with and without the equity tax, which is estimated as 3%:

2.056% = 8% [1 - 46%(80%)] - 3%

5.056% = 8% [1 - 46%(80%)]

TABLE HH
TERMINATORS' CONTRIBUTIONS TO SURPLUS
AS OF DATE OF DEMUTUALIZATION
IN RELATION TO GROSS INCOME
(5% Growth Company)

Issue Year	(1) Terminators' Surplus on Date of Demutualization (\$ Millions)	(2) Value of Terminators' Gross Income Accumulated at 2.056%* (\$ Millions)	(3) Value of Terminators' Gross Income Accumulated at 5.056%* (\$ Millions)	(4) = (1)/(2) Contribution to Surplus as a Percentage of Gross Income at 2.056%*	(5) = (1)/(3) Contribution to Surplus as a Percentage of Gross Income at 5.056%*
1 - 3	3.7	101.0	559.2	3.7%	0.7%
4 - 8	4.2	114.4	555.2	3.7	0.8
9 - 13	4.7	129.0	550.0	3.6	0.9
14 - 18	5.3	144.3	541.3	3.7	1.0
19 - 23	5.7	160.0	529.3	3.6	1.1
24 - 28	6.0	174.8	511.8	3.4	1.2
29 - 33	5.9	186.6	485.5	3.2	1.2
34 - 38	5.5	193.9	450.1	2.8	1.2
39 - 43	4.6	194.2	403.7	2.4	1.1
44 - 48	3.7	185.4	346.3	2.0	1.1
49 - 53	3.1	168.0	282.9	1.8	1.1
54 - 58	2.8	143.1	217.6	2.0	1.3

*Gross income is accumulated at after-tax interest rates, with and without the equity tax, which is estimated as 3%:

2.056% = 8% [1 - 46%(80%)] - 3%

5.056% = 8% [1 - 46%(80%)]

TABLE II (Summary)
 CLOSED BRANCH CASH FLOWS
 (5% Growth Before Conversion Date)
 (\$ Millions)

Year	(1) Insurance Cash Outflow = Benefits + Expenses + Cash Dividends + Federal Income Tax + Increase in Policy Loans - Policy Loan Interest - Premiums	Investment Cash Inflows from Non-Policy Loan Assets (Including Reinvestments)		(4) = (2) + (3) - (1) Net Cash Inflow
		(2) Maturities	(3) Investment Income	
1	6.2	11.5	21.1	26.4
2	11.1	40.9	22.1	51.9
3	14.1	16.9	22.9	25.7
4	16.6	23.2	23.5	30.1
5	18.8	20.0	24.0	25.2
6	20.9	21.1	24.3	24.6
7	22.2	54.3	24.5	56.6
8	23.5	21.6	24.7	22.8
9	24.8	28.0	24.7	27.9
10	26.0	29.6	24.6	28.2
11-15	141.6	159.3	119.3	136.9
16-20	147.6	160.1	106.9	119.3
21-25	138.8	136.9	89.2	87.3
26-30	119.9	119.3	69.7	69.1
31-35	96.4	87.3	51.2	42.1
36-45	123.6	111.2	58.2	45.8
46-55	53.4	45.8	21.2	13.5
56-65	16.4	13.6	5.1	2.3
66-75	2.8	2.2	0.6	0.0

TABLE II (DETAIL)
 CLOSED BRANCH PROJECTION
 (5% Growth Historically)
 (\$ Millions)

	Years					
	0	1	2	3	4	5
Cash Flow of Investments						
1. Non-policy Loan Interest	—	21.1	22.1	22.9	23.5	24.0
2. Non-policy Loan Investment Maturities	—	11.5	40.9	16.9	23.2	20.0
3. Cash Flow of Investments = 1 + 2	—	32.6	63.0	39.8	46.7	44.0
Cash Flow of Insurance						
4. Premium	—	61.0	56.2	52.1	48.5	45.3
5. Policy Loan Interest	—	6.6	6.9	7.2	7.4	7.5
6. Benefits (Death, Surrender, Endowment)	—	38.3	39.4	40.5	41.2	41.7
7. Expenses (Commission, Agency, Administrative and Premium Tax)	—	10.6	9.7	9.0	8.4	7.8
8. Cash Dividends	—	19.4	20.4	20.4	20.4	20.3
9. Federal Income Tax	—	0.9	0.4	0.0	— 0.2	— 0.1
10. Increase in Policy Loans	—	4.7	4.3	3.4	2.6	2.0
11. Cash Flow of Insurance = 4 + 5 - (6 + 7 + 8 + 9 + 10)	—	— 6.2	— 11.1	— 14.1	— 16.6	— 18.8
12. Total Cash Flow (Investments and Insurance) = 3 + 11	—	26.4	51.9	25.7	30.1	25.2
Statutory Accrual Items						
1. Increase in Statutory Reserves	—	19.2	15.0	11.5	8.6	6.0
2. Increase in Dividend Liability	—	1.0	0.0	0.0	— 0.1	— 0.2
Statutory Balance Sheet at the End of the Period						
1. Non-policy Loan Assets	267.2	282.1	293.1	301.9	308.8	314.0
2. Policy Loan Assets	95.4	100.1	104.4	107.8	110.5	112.4
3. Statutory Reserve	419.8	439.0	454.0	465.5	474.0	480.1
4. Dividend Liability	19.4	20.4	20.4	20.4	20.3	20.1
5. Net of 1 + 2 - (3 + 4)	— 76.6	— 77.1	— 76.9	— 76.1	— 75.0	— 73.8
Tax Information						
1. Increase in Tax Reserves	—	18.1	14.7	12.3	9.8	7.2
2. Tax Reserves at the End of the Period	392.6	410.7	425.3	437.6	447.4	454.7

TABLE II (DETAIL) — *Continued*

	Years					
	6	7	8	9	10	11-15
Cash Flow of Investments						
1. Non-policy Loan Interest	24.3	24.5	24.7	24.7	24.6	119.3
2. Non-policy Loan Investment Maturities	21.1	54.3	21.6	28.0	29.6	159.3
3. Cash Flow of Investments = 1 + 2	45.4	78.8	46.3	52.7	54.3	278.5
Cash Flow of Insurance						
4. Premium	42.4	39.8	37.3	35.0	32.9	135.6
5. Policy Loan Interest	7.7	7.7	7.8	7.8	7.8	37.5
6. Benefits (Death, Surrender, Endowment)	42.2	42.0	42.0	42.1	42.1	208.1
7. Expenses (Commission, Agency, Administrative and Premium Tax)	7.3	6.9	6.4	6.2	6.0	26.9
8. Cash Dividends	20.1	19.8	19.5	19.2	18.7	85.8
9. Federal Income Tax	0.0	0.1	0.2	0.2	0.3	2.2
10. Increase in Policy Loans	1.3	0.8	0.4	- 0.1	- 0.5	- 8.4
11. Cash Flow of Insurance = 4 + 5 - (6 + 7 + 8 + 9 + 10)	-20.9	-22.2	-23.5	-24.8	-26.0	-141.6
12. Total Cash Flow (Investments and Insurance) = 3 + 11	24.6	56.6	22.8	27.9	28.2	136.9
Statutory Accrual Items						
1. Increase in Statutory Reserves	3.6	1.9	0.0	- 1.8	- 3.5	- 39.2
2. Increase in Dividend Liability	- 0.3	- 0.3	- 0.4	- 0.4	- 0.5	- 2.8
Statutory Balance Sheet at the End of the Period						
1. Non-policy Loan Assets	317.4	319.7	320.9	320.7	319.3	297.0
2. Policy Loan Assets	113.7	114.6	115.0	114.9	114.4	106.0
3. Statutory Reserve	483.6	485.5	485.6	483.8	480.4	441.1
4. Dividend Liability	19.8	19.5	19.2	18.7	18.2	15.5
5. Net of 1 + 2 - (3 + 4)	- 72.3	-70.8	-68.9	-67.0	-64.9	- 53.6
Tax Information						
1. Increase in Tax Reserves	4.7	2.9	1.1	- 0.6	- 2.4	- 34.5
2. Tax Reserves at the End of the Period	459.4	462.4	463.4	462.8	460.4	425.8

TABLE II (DETAIL) — Continued

	Years					
	16-20	21-25	26-30	31-35	36-40	41-45
Cash Flow of Investments						
1. Non-policy Loan Interest	106.9	89.2	69.7	51.2	35.4	22.8
2. Non-policy Loan Investment Maturities	160.1	136.9	119.3	87.3	69.1	42.1
3. Cash Flow of Investments = 1 + 2	266.9	226.1	189.0	138.5	104.5	64.9
Cash Flow of Insurance						
4. Premium	95.5	64.3	41.2	25.1	14.5	7.9
5. Policy Loan Interest	33.4	27.6	21.3	15.5	10.6	6.7
6. Benefits (Death, Surrender, Endowment)	194.8	171.2	141.0	109.5	80.3	55.9
7. Expenses (Commission, Agency, Administrative and Premium Tax)	22.4	18.2	14.5	11.2	8.3	5.9
8. Cash Dividends	71.3	56.2	42.3	30.4	20.8	13.2
9. Federal Income Tax	3.3	3.5	2.9	1.9	1.1	0.5
10. Increase in Policy Loans	- 15.2	- 18.4	- 18.3	- 16.1	- 13.0	- 9.8
11. Cash Flow of Insurance = 4 + 5 - (6 + 7 + 8 + 9 + 10)	-147.6	-138.8	-119.9	- 96.4	- 72.4	-51.2
12. Total Cash Flow (Investments and Insurance) = 3 + 11	119.3	87.3	69.1	42.1	32.1	13.7
Statutory Accrual Items						
1. Increase in Statutory Reserves	- 65.5	- 77.2	- 76.2	- 66.6	- 53.3	-40.0
2. Increase in Dividend Liability	- 3.0	- 2.9	- 2.5	- 2.1	- 1.7	- 1.3
Statutory Balance Sheet at the End of the Period						
1. Non-policy Loan Assets	256.2	206.6	156.4	111.2	74.2	45.9
2. Policy Loan Assets	90.8	72.4	54.1	38.0	25.1	15.3
3. Statutory Reserve	375.7	298.4	222.3	155.6	102.3	62.3
4. Dividend Liability	12.4	9.5	7.0	4.9	3.2	1.9
5. Net of 1 + 2 - (3 + 4)	- 41.1	- 29.0	- 18.8	- 11.3	- 6.2	- 3.0
Tax Information						
1. Increase in Tax Reserves	- 61.6	- 74.1	- 73.5	- 64.6	- 51.9	-39.1
2. Tax Reserves at the End of the Period	364.2	290.2	216.7	152.1	100.2	61.1

TABLE II (DETAIL) — Continued

	Years					
	46-50	51-55	56-60	61-65	66-70	71-75
Cash Flow of Investments						
1. Non-policy Loan Interest	13.6	7.5	3.6	1.5	0.5	0.1
2. Non-policy Loan Investment Maturities	32.1	13.7	12.7	0.9	4.9	-2.7
3. Cash Flow of Investments = 1 + 2	45.8	21.2	16.2	2.4	5.4	2.6
Cash Flow of Insurance						
4. Premium	4.1	2.0	0.8	0.3	0.1	0.0
5. Policy Loan Interest	4.0	2.2	1.0	0.4	0.1	0.0
6. Benefits (Death, Surrender, Endowment)	35.8	21.9	12.3	5.6	2.3	0.8
7. Expenses (Commission, Agency, Administrative and Premium Tax)	4.0	2.5	1.4	0.7	0.3	0.1
8. Cash Dividends	7.8	4.3	2.1	0.8	0.3	0.1
9. Federal Income Tax	0.2	0.0	- 0.1	-0.1	0.0	0.0
10. Increase in Policy Loans	- 6.6	- 4.3	- 2.5	-1.2	-0.5	-0.2
11. Cash Flow of Insurance = 4 + 5 - (6 + 7 + 8 + 9 + 10)	-33.1	-20.1	-11.3	-5.1	-2.1	-0.7
12. Total Cash Flow (Investments and Insurance) = 3 + 11	12.7	0.9	4.9	-2.7	3.3	-3.3
Statutory Accrual Items						
1. Increase in Statutory Reserves	-26.9	-17.4	-10.3	-4.8	-2.1	-0.8
2. Increase in Dividend Liability	- 0.8	- 0.5	- 0.3	-0.1	-0.1	0.0
Statutory Balance Sheet at the End of the Period						
1. Non-policy Loan Assets	26.4	13.5	5.8	2.2	0.6	0.0
2. Policy Loan Assets	8.7	4.4	1.9	0.7	0.2	0.0
3. Statutory Reserve	35.3	17.9	7.6	2.9	0.8	0.0
4. Dividend Liability	1.1	0.6	0.2	0.1	0.0	0.0
5. Net of 1 + 2 - (3 + 4)	- 1.3	- 0.5	- 0.2	0.0	0.0	0.0
Tax Information						
1. Increase in Tax Reserves	-26.4	-17.1	-10.2	-4.6	-2.1	-0.8
2. Tax Reserves at the End of the Period	34.7	17.6	7.4	2.8	0.8	0.0

TABLE JJ
ASSETS ACCUMULATED VERSUS ASSETS NEEDED ON CONTRACTS IN FORCE
(5% Growth Company)

Issue Year	(1) Assets Accumulated by Contracts In Force (\$ Millions)	(2) Assets Needed for Closed Branch (\$ Millions)	(3) Excess Assets (Accumulated over Needed) (\$ Millions)	(4) Face Amount In Force (\$ Millions)	(5) = $\frac{1,000(3)}{(4)}$ Excess Assets per \$1,000 Face Amount In Force	Cash Value In Force (\$ Millions)	(7) = $100(3)/(6)$ Ratio of Excess Assets to Cash Value In Force
1 - 3	0.02	0.01	0.004	0.01	\$344	0.01	34%
4 - 8	0.10	0.10	0.020	0.06	282	0.05	31
9 - 13	0.30	0.20	0.050	0.20	259	0.20	30
14 - 18	0.70	0.60	0.150	0.70	224	0.60	27
19 - 23	1.70	1.30	0.400	2.00	205	1.30	27
24 - 28	3.50	2.80	0.700	4.00	180	2.90	25
29 - 33	6.90	5.60	1.300	9.00	145	5.80	23
34 - 38	12.50	10.30	2.200	17.00	127	10.90	21
39 - 43	20.90	17.70	3.200	33.00	96	18.30	18
44 - 48	32.80	28.50	4.300	62.00	70	29.80	14
49 - 53	47.90	42.50	5.400	110.00	49	44.90	12
54 - 58	63.70	57.80	5.900	189.00	31	61.50	10
59 - 63	76.30	70.30	6.000	315.00	19	74.70	8
64	14.90	14.70	1.200	85.00	14	15.60	8
65	15.90	14.70	1.200	95.00	13	15.60	8
66	15.80	14.50	1.300	105.00	12	15.40	8
67	15.50	14.20	1.300	117.00	11	15.00	9
68	14.90	13.70	1.200	131.00	9	14.50	9
69	14.20	13.00	1.200	148.00	8	13.70	9
70	13.30	12.10	1.200	168.00	7	12.60	9
71	12.00	10.80	1.200	192.00	6	11.10	11
72	10.00	9.00	1.000	222.00	5	9.00	12
73	7.70	6.50	1.200	259.00	5	6.20	19
74	6.50	3.30	3.200	310.00	10	2.30	137
75	-1.20	-1.60	0.400	408.00	1	0.00	—
Total	407.80	362.60	45.200	2,982.00	\$ 15	382.00	12%

APPENDIX 2

MUTUAL COMPANY CAPITAL MANGEMENT

Most authoritative papers on mutual life insurance company financial operations have focused primarily on the considerations involved in maintaining equity among policyholders. Few have sought to discuss this subject in a manner which fully integrates the diverse financial operations of mutual life insurance companies.*

*Some notable exceptions are: Leckie, *TSA XXXI*, and Trowbridge, *TSA XIX*.

In its work the Task Force needed to identify a financial model which could be considered to typify mutual company financial operations. It was understood in the selection of the typical model that it would not describe the financial operations of all mutual companies nor that it would describe the financial operations of each segment of those mutual companies which operated according to the typical model. We focused on accumulation and management of capital resources including, importantly, the interrelationship of this subject and policy pricing and dividends.

In our review we examined two general approaches to this subject: the entity capital approach in which participating policyholders make permanent contributions to the mutual company's surplus and the revolving fund approach in which policyholders do not make permanent contributions to surplus. (These approaches are described more fully later in this appendix.) This review involved principally an examination of the philosophies and operating practices of the companies represented on the Task Force. In addition, the Task Force tested its initial conclusions through the use of the model company described in Appendix 1.

The conclusion of our examination is that most mutual companies, in fact, employ the entity capital approach and that the changes in dividend scales that would be required to accommodate the revolving fund approach for the individual life insurance business are too severe to permit it to be used widely in today's competitive markets. Accordingly, the Task Force concluded that, for the purpose of developing the several methodologies required in a conversion action, we should assume mutual companies operate on the entity capital approach.

In the following sections we describe and analyze the entity capital model, which we believe represents the best descriptive model of overall mutual life insurance company financial operations. We then compare it to the revolving fund model. The final section presents some of the implications of the use of the entity capital approach for the several conversion elements.

MUTUAL LIFE INSURANCE COMPANY OBJECTIVES; IMPLICATIONS OF CURRENT ENVIRONMENT

The financial management of mutual life insurance companies involves many considerations common to the management of other businesses. In addition, there are some factors unique to mutual life companies.

Competition is a factor common to most businesses. It is an increasingly important element of the life insurance scene and comes from traditional and

nontraditional products and competitors. To compete successfully, a company must be able to maintain a competitive pricing structure in its targeted market segments. The maintenance of a competitive pricing structure requires, in turn, the achievement of relatively low distribution expense levels, operating expense levels, and claims cost levels as well as superior investment return levels, or some combination of these. What is required to achieve relatively strong performance in any of these areas could be the subject of separate papers. It is sufficient here to point out that, over the long term, the achievement of superior results in these competitive areas, more often than not, will require large investments in technology, equipment, facilities, and staff upgrading and the growth required to achieve the necessary scale effects on distribution costs and investment opportunities.

A second general business factor is the recognition that maintaining an ability to serve customer needs often requires major changes in products, services, and marketing approaches, and the pace of these required changes is accelerating. For example, there was a time when low- to moderate-income life insurance customers could be served by professional agents on a one-on-one basis. This need is now met more often through group insurance or other mass distribution approaches. Companies will often find it necessary to serve old markets through new products, new lines of business, new distribution systems, or subsidiary companies or in other, different ways.

A third general consideration is that a life insurance company must accumulate sufficient capital to assure its ability to continue in operation and to meet its contract obligations. With the increased volatility of financial markets and increased competitiveness, the needs of financial institutions for retained capital are relatively greater today than they have traditionally been.

Like other businesses, mutual life insurance companies must be competitive, adaptable and conscious of the importance of capital in sustaining and supporting their financial operations. Although not mentioned as a separate factor, growth is an essential element of continued viability. Without sustained growth, it is almost impossible to reduce unit operating costs, to achieve distribution efficiencies, to achieve the scale necessary to participate in certain investment opportunities, or to serve existing markets through new products, new distribution channels, and so on. The Task Force believes strongly that profitable growth does serve the interests of mutual company policyholders.

The business considerations that are peculiar to mutual life insurance companies stem from their basic nature, that of mutual enterprises. The first of

these considerations is that the enterprise must be operated in the interests of its members (policyholders). The second is that the required capital base must be accumulated almost entirely from capital charges made to policyholders.* A third consideration is the need to make each of the several types of charges and credits to policyholders (including the capital charges) in a way which preserves equity among and within the various policy classes.

DESCRIPTION OF THE ENTITY CAPITAL MODEL

The entity capital model is defined by three fundamental operating principles. The first principle is that the enterprise is a continuing entity whose capital base is considered to be the capital of the enterprise (not of individual policyholders or of the several lines) and is managed on an enterprise-wide basis. The second principle is that this capital is accumulated and deployed by the management and Board of Directors of the company in a manner that produces the best long-term financial result (in terms of benefits, cost of insurance coverage, and so on) for the existing and future policyholders in the participating lines of business. The third principle is that the actuarial structure of participating policies includes (implicitly or explicitly) a permanent contribution to entity capital, thereby assuring that there will be sufficient risk capital and new business financing for new policyholders in future years.

The entity capital of a life insurance company consists of statutory surplus plus the amount of capital which has been invested in new lines, new products, new businesses or growth of existing businesses and which is expected to be repaid in the future through charges made in the policy pricing and dividend structure. In measuring the capital charges made to policyholders under this approach, it is important to focus on the entire amount of entity capital, and not just on the amount of statutory capital.

The accumulation and use of capital in the interests of participating policyholders mandate that capital be accumulated only as necessary to assure the fulfillment of the company's insurance contracts or if it can be invested in the growth of existing businesses or in new businesses in a manner which is expected to benefit existing and future participating policyholders.

*It is theoretically possible for a mutual company with subsidiary companies to raise equity capital by selling interests in one or more such companies. Also, in Canada, at least one mutual life insurance company has issued preferred stock. These are exceptions, however, and for most mutual companies there are many novel and complex issues that would have to be resolved before such capital-raising could be done in a large way.

Under the entity capital model, policyholders make permanent contributions to entity capital through capital charges (explicit or implicit) in the actuarial structure of the policies. These permanent contributions provide the capital required for risk assumption and business investment purposes. (There may also be temporary contributions of capital which are returned through annual and terminal dividends in the later policy years.) In determining the aggregate capital charge levels for specific participating lines of business or the charges to be made to specific classes of participating policies, account is also taken of the risk involved and the amount of entity capital used. To assure that the entity capital approach will conform to basic principles of policyholder equity and expectations, the capital charges for each policy grouping should be determined in an equitable manner, and the general form of these charges should be relatively stable over a policy's lifetime.

A relatively brief inspection will demonstrate that the entity capital approach fits quite closely the business requirements of mutual life insurance companies. In particular, it combines the overall perspective necessary to manage a large diverse enterprise in a time of rapid change while permitting the preservation of the equitable cost assessments required for participating insurance.

COMPARISON OF ENTITY CAPITAL MODEL WITH THE REVOLVING FUND MODEL

Although the Task Force believes that the entity capital approach represents the typical model of mutual company financial operations, it is not believed to be a universal model. The Task Force discussed briefly the cooperative model. Our conclusion was that cooperatives are essentially a form of organization rather than a distinct financial model. Cooperatives are organized for different purposes and involve many different forms of financial arrangements among its members. Therefore, the Task Force concluded that there was little value in seeking to compare one or more forms of possible cooperative financial arrangements with the entity capital model. This section seeks to compare the entity capital approach to another possible model of mutual company financial operations: the revolving fund model.

In the pure form of the "revolving fund model" an insurance company conducts its financial operations in such a manner that the capital resident in the company at any time has been contributed solely by the then current classes of policyholders. The company's capital is considered to be a revolving fund to which each policy in a class contributes during its lifetime

and from which the amounts thus contributed (together with any net investment earnings thereon) are fully distributed to the class by the time the last policy in the class terminates. This theory has been described in a few actuarial papers and discussions as the appropriate theoretical model for mutual life insurance company financial operations.

The Task Force tested how the pricing and dividend structure would have to be modified in order to operate on a revolving fund approach. To do this, we modified the dividend scale for the 8 percent growth model company described in Appendix 1 so that a generation of new business would make no permanent contribution to surplus. As in the case of the entity capital model company, a constraint on the revolving fund model company is that statutory surplus for the company as a whole be maintained at 5 percent of reserves. The results of this study are described in the following paragraphs.

The following table shows the ultimate (stable) dividend scale for the entity capital company:

"ENTITY CAPITAL" DIVIDEND SCALE (at Conversion)
PER \$1,000 FACE AMOUNT UNIT IN FORCE

Duration	Issue Age		
	25	40	55
1	\$ 0.00	\$ 0.00	\$ 0.00
2	2.01	2.38	4.42
3	2.14	2.70	6.08
5	2.46	3.39	9.41
10	3.37	5.50	17.92
15	3.90	8.11	22.38
20	4.78	11.04	26.23
30	8.06	18.29	29.36
40	13.97	24.55	35.72
50	20.17	29.04	—

No terminal dividends are paid by the entity capital company.

As a first step, we assumed that the revolving fund company would pay a terminal dividend on death or surrender of \$2 per unit starting in policy year 12 and grading into \$25 per unit in policy year 20. The terminal dividend would be level (at \$25 per unit) in policy years 20 and later. Although results are shown only for the use of the specified terminal dividend scale, we tested other reasonable scales and obtained similar results. Using this terminal dividend scale, we solved for the annual dividend scale that would maintain the desired surplus ratio for the company as a whole and that would eventually return all surplus contributions and the net investment earnings thereon to the members of the policy class. To find a unique solution, we required the revised annual dividend scale to be an initial percentage of the entity

capital dividend scale in policy years 1 through 10, an ultimate percentage of the entity capital dividend scale in policy years 20 and later, and for policy years 11 through 19, percentages of the entity capital dividend scale grading linearly from the initial to the ultimate level. The solution is

- 46 percent of the entity capital dividend scale in policy years 1 through 10,
- 209 percent of the entity capital dividend scale in policy years 20 and later, and
- a percentage grading linearly from 46 percent to 209 percent of the entity capital dividend scale over policy years 10 through 20.

The following table shows the ratios of the asset share surpluses to reserves after all taxes and dividends are paid for various issue ages and policy durations. This table is similar to the corresponding 115 percent of standard table in Appendix 1. The Entity Capital Column is based on the ultimate (115 percent) dividend scale and assumes the expense and interest experience of an 8 percent growth company. The Revolving Fund Column is based on the same experience and interest assumptions as the Entity Capital Column, but reflects the adjusted dividend scale and the introduction of terminal dividends.

This analysis demonstrates it is theoretically possible to operate a company on the revolving fund financial model if the competitive markets will permit

RATIO OF ASSET SHARE SURPLUS TO RESERVES
(AFTER ALL TAXES AND DIVIDENDS)

Issue Age	At End of Calendar Year <i>N</i> (Policy Duration $N - \frac{1}{2}$)	Entity Capital Company	Revolving Fund Company
25	5	- 23.9%	- 12.3%
	10	- 9.2	+ 5.1
	15	- 0.2	+ 11.5
	20	+ 8.2	+ 11.6
	25	+ 17.2	+ 11.8
	30	+ 27.6	+ 13.0
40	5	- 15.8%	- 7.9%
	10	- 5.4	+ 5.9
	15	+ 2.4	+ 11.9
	20	+ 9.8	+ 10.1
	25	+ 18.9	+ 6.9
	30	+ 32.2	+ 4.1
55	5	- 11.4%	- 0.4%
	10	- 6.6	+ 13.2
	15	- 2.3	+ 17.0
	20	- 2.9	+ 10.6
	25	+ 12.4	+ 4.4
	30	+ 33.9	+ 0.7

the company to pay early year dividends that are low enough or to charge premiums that are high enough. The first question concerning the revolving fund approach is its practicality in a competitive marketplace. The Task Force believes that in competition with a product paying the entity capital dividend scale, a product paying the revolving fund dividend scale, with its sharply reduced dividends in the first 10 years, would be difficult to sell.

A second concern is the question of equity. As compared with an entity capital approach, a revolving fund approach appears to require a very much steepened dividend scale and the use of terminal dividends. In the specific application of the revolving fund philosophy presented in the test example above, there would be an increased cost of insurance under the revolving fund approach (as compared with the entity capital approach) for policies which terminate through death or surrender in the first 20 or so policy years; there would be a reduced cost of insurance for policyholders who persist beyond this period. In this example, specifically, only 30 percent of the policies issued at age 25, 28 percent of the policies issued at age 40, and 18 percent of the policies issued at age 55 would have lower costs on a 5 percent interest adjusted basis.

The Task Force recognizes that it is mathematically possible to design a revolving fund dividend structure under which the dividends to policyholders (regardless of when they terminated) would be equivalent in value to those provided under an entity capital approach, and we have made attempts to design such a structure. Although not exhaustive, these attempts confirmed our view that an equivalent revolving fund scale would rely, to an unprecedented degree, on termination dividends, would require an annual dividend scale with reduced dividends in the early years and a very different pattern throughout, or would require a combination of termination and reduced annual dividends throughout. These changes would be accentuated at higher growth rate levels. Although equity, like beauty, is in the eyes of the beholder, the Task Force has found no evidence to support the view that the revolving fund method provides a greater degree of equity than the entity capital method and some evidence to support the view that it might provide less equity.

A third concern is that it is difficult in a revolving fund approach to handle appropriately costs whose final measure cannot be established until many years after the period in which they were incurred. A prime example is federal income taxes whose ultimate level for any year will depend on subsequent audit and, perhaps, litigation.

Finally, it is difficult to apply the revolving fund theory broadly across lines of business, across classes within a line of business, or in the event of significant changes in the economic or business environment. In the revolving fund approach the focus of a company's management must be on the return to each class of policyholders of the capital contributions made by that class. This is a narrow and, essentially, short-term focus. There are clearly circumstances, for example, in which the constraint of the revolving fund discipline would require a company to forego capital investments which would significantly reduce future operating costs or increase future investment income.

As compared with the entity capital model, the Task Force believes that the pure revolving fund model could be used effectively in certain limited circumstances but that this approach could not be used as a general overall theory for mutual company financial operations.

IMPLICATIONS OF THE ENTITY CAPITAL MODEL ON POSSIBLE DEMUTUALIZATION PROCESSES AND STRUCTURES

Our discussions of the entity capital model have led us to the following conclusions with respect to the conversion process:

1. In the normal financial operations of a mutual life insurance company, policyholders of participating contracts would expect to receive policy dividends and guaranteed benefits. Maturity or surrender of the contract would ordinarily bring no other expected compensation for the simultaneous termination of membership rights. Termination dividends are considered as policy dividends in this analysis. Therefore, any valuable consideration given to members in a conversion action as compensation for cancellation of their membership rights has no counterpart in the ongoing financial operations of a mutual company and there is no recognized basis in precedent, experience or membership expectations for the determination of such valuable consideration.
2. Although the foregoing description of the entity capital approach states that the mutual company makes (explicit or implicit) capital charges through the actuarial structure of the policy, the observations of the Task Force members with respect to the practices of their companies is that at least some portion of these charges is an indistinguishable part of the actuarial pricing structure. Therefore, if the consideration given to policyholders for surrender of their membership is to be based (in whole or in part) on the actual capital charges made by the company, the figures will have to be derived from analyses comparing actual historical and projected cost and income levels with the applicable premium and dividend structure. This subject is discussed in greater length in Section VI of this report.
3. Regardless of the specific methodology selected to estimate the accumulated capital contributions for policyholders of different classes, the total capital of the company

at the time of conversion will usually be found to have been contributed in part by existing policyholders and in part by policyholders whose policies are no longer in force.

4. Using the entity capital approach, it is possible to assign a specific meaning to the concept of "the participating policyholders reasonable dividend expectations." The definition is that the reasonable dividend expectations of participating policyholders is a continuation of the current dividend scale if current experience continues and, if experience changes, equitable modifications of that scale.

APPENDIX 3

POLICIES INCLUDED IN CLOSED BRANCH

This appendix addresses the question of which policies or policy classes should be in a closed branch or branches. The report of the Task Force suggests three criteria for inclusion of business in a closed branch: substantial dividends, broad averaging of experience, and a diminishing number of policies over time. These criteria suggest the following general guidelines for inclusion or noninclusion of particular classes of policies in the closed branch:

Include:

- Participating individual life insurance policies, annuities and supplementary contracts in force on the conversion date.

Do Not Include:

- Participating individual life insurance policies, annuities or supplementary contracts that terminated before the conversion date.
- Nonparticipating policies or contracts, unless closely linked with participating policies that are in the closed branch.
- Participating group pension separate account business where participation consists of direct pass-through of investment experience under terms described in the contracts.
- Pension guaranteed interest contracts (even where written as participating) which provide guarantees of principal and interest with no expectation of dividends or other nonguaranteed elements.
- Participating group pension contracts and participating group life and health insurance policies which are individually experience rated and/or which involve, essentially, a direct pass through of experience (via a dividend formula or an annual investment year method allocations of investment income) and for which the experience rating process is sufficiently well understood by policyholders to provide assurance that their dividend expectations will be maintained after conversion.

Whether or not to include other participating group pension contracts, other participating group life and health insurance, and participating individual health insurance will depend upon the relative significance of

policyholders' expectations regarding policy dividends and other elements of participation.

APPENDIX 4

ESTABLISHMENT AND MAINTENANCE OF A CLOSED BRANCH

A mechanism for helping assure the maintenance of reasonable policyholder dividend expectations is to establish a closed branch for certain existing participating policies and to allocate to this closed branch sufficient assets to assure the payment of the current dividend scale (in addition to the contractual guarantees) if current experience continues. The assets would be committed to the closed branch; none of these assets would ever revert to the benefit of shareholders. This appendix presents the issues which the Task Force has identified and investigated with respect to the establishment and maintenance of such a closed branch.

The closed branch would not be a separate account in the legal sense. It might be a segment of the general account; at a minimum it is a clear identification that specific assets (or portions of such assets) have been assigned to the closed branch.

The assets assigned to the closed branch may be the entire amount of each asset, or they may be shares of assets owned by the general account. If the closed branch is large enough to permit reasonable diversification, the management of assets in the closed branch would be facilitated if the closed branch "owns" the entire amount of the assigned assets. *Notwithstanding the establishment of the closed branch, all the general account assets of the company stand behind the obligation of the company to pay the contractual benefits guaranteed by the policies in the branch. The principal effect of decisions made with respect to operation of the closed branch is on the amount and incidence of dividends paid on those policies included in the branch.*

The balance of this appendix is divided into six sections to deal with specific issues:

1. the overall amount of and the specific assets which should be placed in the closed branch initially,
2. the relationship of the initial selection of closed branch assets to the amount of future dividends,
3. the expense and other charges to be made to the closed branch after conversion as part of its ongoing operations,

4. the actuarial opinions with regard to equity and adequacy of closed branch assets at conversion,
5. the actuarial opinions with regard to equity and adequacy of ongoing closed branch financial operations,
6. historical precedents for closed branch operations.

1. ASSETS SET ASIDE TO FUND THE CLOSED BRANCH

The objective is to maintain reasonable dividend expectations by setting aside sufficient assets to provide cash flows (from anticipated investment income, maturities, sales or exchanges) which, with future premiums and a continuation of current conditions, are adequate to fund

- all policy benefits and dividends, the latter payable under the then current scale,
- any expenses and taxes that will be charged against the closed branch (see Section 3).

Definitions

All policy benefits: Appendix 3 discusses which broad types of policies should be placed in the closed branch. Decisions must also be made as to whether this term includes all benefits provided by these policies and successor policies. In the case of individual life insurance, for example, would the following be included in the closed branch?

- nonparticipating riders attached to par policies,
- policies that may be issued in the future under the provisions of "closed branch" policies (e.g., under guaranteed insurability options),
- supplementary contracts arising from terminations of policies in the closed branch, and
- insurance nonforfeiture options (extended term insurance may be nonparticipating) which may be reinstated to premium paying.

The Task Force believes that operation of the closed branch would be most effective if all elements of any policy belonging to the branch are treated as part of the branch. Riders, as well as policies issued in the future under options in current policies, would seem to meet this test. Supplementary contracts might or might not meet the test, depending on whether they are participating or nonparticipating and on the way the company has viewed and managed them financially. Policies on nonforfeiture options that might be reinstated probably should be included in the closed branch.

Current conditions: The Task Force believes that this term means the mortality, investment income, expense, taxes, lapse, and so on, experience consistent with the experience factors underlying the dividend scale that is applicable to closed branch policies when the closed branch is established. The experience assumptions used in determining the amount of assets required initially in the closed branch should reflect current conditions. With regard to the rates of interest assumed for the investments of future net cash flows, this definition of current conditions would require that the assumptions recognize the way in which investment income experience factors are being determined (portfolio vs. investment year) for the several classes of business involved and the current measures of the experience factors for the respective classes. Similarly, expense rate assumptions might include provision for future inflation consistent with the expense treatment implicit in the current dividend scale.

Maintain reasonable dividend expectations: Although this term is subject to many possible definitions, the Task Force believes that the definition of reasonable dividend expectations which conforms to the entity capital approach is that the present dividend scale will be continued if current experience continues and that, if experience changes, dividends will be adjusted to reflect, equitably, the effects of these changes.

A necessary condition for meeting this definition is that the assets selected initially for the closed branch be in an amount and character to permit the payment of the then current dividend scale (at the time of conversion) if the experience levels on which that scale is based (that is, current experience) continue. To meet the definition fully, it is also necessary to reflect, appropriately and equitably, changes in experience through dividend scale revisions in the ongoing management of the closed branch. The following are suggested criteria for postconversion dividend scale revisions for closed branch policies:

- The revised dividend scale is set such that the cash flows from premiums and assets (including reinvestments) approximate, under then current conditions, the sum of the policy benefits, chargeable expenses, and dividends (under the revised scale),
- The contribution principle is followed as the basis for revising the dividend scale, and
- As a corollary, the durational effect of the revision to the dividend scale is not distorted so as to create potentially a “tontine effect” for long-term policyholders or to reduce materially potential future dividends for these policyholders.

Primary Considerations in the Initial Selection of Investments for a Closed Branch

In general, the basic pool of assets from which to select assets to be placed in the closed branch are those assets that, at the time of conversion, are allocated to or are in general account segments established for the lines of business to be included in the closed branch, together with any additional assets held by the company in a separate corporate account or surplus segment.

To provide maximum continuity of dividend treatment, particularly in a "portfolio rate" company, the assets selected for the closed branch should have a pattern of future cash flows that matches as closely as possible the pattern of cash flows that would have occurred if the company had not demutualized and had continued to write participating business. This can only be approximated in the operation of the closed branch. In the early years, the closed branch will have insurance cash flows (premiums, less benefits, expenses and dividends) that are more positive than if the branch had remained open because the closed branch will not include new business. After a few years the reverse will be true.

In selecting assets, the converting company must recognize the need to balance the two objectives of stability of dividend scale and responsiveness to possible improved experience.

To the extent permitted by the constraints described below, assets could be selected initially for the closed branch in such a manner as to match the insurance cash flow requirements and therefore minimize the effects of future reinvestment on the closed branch, at least after the early years. The combination of insurance cash flow and investment income in the early years will ordinarily be positive in any case. This approach would have a stabilizing effect on dividends; the dividends will not increase in response to improved investment experience as much as they would have otherwise, but neither will the dividends decrease in response to deteriorating investment experience as much as they would have otherwise.

An approach involving shorter initial asset maturities and earlier reinvestment of assets in the closed fund might simulate more closely the open fund (or new money) effects that participating policyholders in a portfolio rate company could have expected in the absence of the conversion action. Such an approach would, however, expose closed branch policyholders to more reinvestment risk.

One possible approach is to stress responsiveness in the early years (when the fund has positive cash flow and most of the original policyholders are

still present) and shift gradually to stress stability in the later years, when insurance cash flow is negative and the policyholder group is shrinking rapidly.

Other Considerations Relating to the Selection of Investments for the Closed Branch

The closed branch should contain the policy loan asset for policies in the branch. The cash flow test set forth at the beginning of this section of the appendix must take into account cash flows, positive and negative, expected to result from the ongoing effects of policy loans and their repayment within the closed branch. Similarly, assumed cash flows associated with dividends should — especially in the case of direct recognition dividend formulas — take account of the effects of expected policy loans on dividend payments.

Should the company's current practice regarding allocation of investment income among lines of business be a factor in deciding which specific assets to select for the closed branch? Is the answer different depending on whether the company uses a segmentation method (which would permit the selection of whole assets from the segment) or an investment generation method or other method (which usually would not permit the assignment of whole assets to the closed branch)? Considerations include the following:

- the proportion which the business being placed in the closed branch represents the business of the entire company. In a company that consists principally of participating individual life business, the choice will be limited.
- effects on other lines of business. If the company has lines of business involving essentially a pass-through of investment performance to individually experience rated policyholders (for instance, group pension immediate participation guarantee business), it may not be possible to take a portion of their assets to establish the closed branch.
- the relationship between this issue and the issues discussed in Primary Considerations above. The individual life line may currently have assets (or shares of assets) that are appropriate for an open branch but not for a closed branch.

Projected asset cash flows must, in general, take into account the possibility of asset default as to principal or interest:

- If the risk of default is to be borne directly by the closed branch, provision for possible default losses should be reflected in the projected asset cash flows.
- If the risk of default is to be borne by the newly created stock company, it would be reasonable for the closed branch to pay a charge for this protection to the stock company; such a charge would be treated as an expense of the closed branch and would be provided for as such in the original projection of closed branch cash flows.

- A possible approach to the establishment of a small closed branch would be to provide the closed branch with assets of high quality and low risk of default, to reduce the degree of expected fluctuation in future asset cash flows.

As the objectives of the closed branch are to provide the greatest possible assurance of stability and continuity of postconversion dividend treatment and to insulate the dividend treatment of closed branch policyholders from the ongoing financial operations of the rest of the stock company, the Task Force believes that it would be inappropriate for investments other than bonds, mortgages and similar fixed yield investments to be allocated to the closed branch. Of particular concern are the following:

- Company occupied real estate: The yield on these assets is not always established on a market basis and the allocation bases may be arbitrary. Nevertheless, there may be circumstances in which it may be satisfactory to include company occupied real estate in a closed branch. A situation in which the rental charges to closed branch from company owned real estate closely approximate the amount of investment income credited (when the branch is established and for the then foreseeable future) represents such a circumstance. The key question is whether the inclusion of company owned real estate creates a material risk of dividend uncertainty and fluctuation for closed branch policyholders.
- Subsidiary companies: It is unlikely that investments in subsidiary companies would meet the closed branch objectives because the cash flow from such investments and the operations of the subsidiary companies would be under the management of the stock company.
- Common stocks of unaffiliated companies and real estate equity investments that do not raise the questions discussed above, but their full returns and cash flows will not be realized until their ultimate sale: Inclusion of these assets in the closed branch may complicate both the initial assessment of the amount of assets required and the ongoing dividend determination for the branch.

The total amount of assets selected for the closed branch could vary significantly, depending on whether the assets selected are low coupon bonds (issued long ago) or are high coupon bonds (issued more recently), and still satisfy the "cash flow" criterion set forth at the beginning of this section.

If the applicable state law or the converting insurer's conversion plan contemplates the determination of the aggregate amount of compensation to members and/or the allocation of that amount among members based on their contributions to equity and the measure of contribution employed for this purpose uses the accumulated assets minus closed branch assets methodology described in Section VI of the report, it is important to recognize that these values could be distorted if the average yield on the assets in the closed branch differs materially from the average current experience rates

underlying the current dividend scale. Accordingly, it is important that in this case the average yield on the assets in the closed branch meets this additional criterion.

Provision for Adverse Lapse Risk

The purpose of establishing a closed branch is, in a broad sense, to permit continuation of the company's preconversion dividend practices after the conversion. The initial allocation of assets for the closed branch is determined as the amount necessary (with future premiums) to pay guaranteed benefits and current scale dividends on the assumption that current experience levels will continue. As experience changes, over time, dividends would be revised accordingly and the original intent would be served. A problem may arise, however, if there is a change in experience which results almost solely from the conversion, itself, and the coincident establishment of the closed branch. The Task Force believes that there is one experience element for which the conversion process might cause a material change in the experience levels — lapses and surrenders. The effect of this problem is illustrated below:

Consider the illustrative financial operations presented in Appendix 1. The closed branch of the 8 percent growth company would have at the time of its establishment

\$1,830 million of assets	(because the economic environment is constant throughout the study period, this figure represents both a book value and a market value)
\$2,194 million of current obligations (as of the policy anniversaries)	(cash values plus the dividend liability; this is in the nature of a book value).

Clearly, in the extreme example of an immediate termination of all policies in the closed branch, there would be an asset shortfall (which would have to be made up from the rest of the assets of the company). A still extreme but more probable example would be additional surrenders in the first year after conversion equal to 10 percent of the initial in-force business. In this example, this level of excess surrenders would require either an increase of \$37 million (from \$1,830 million to \$1,867 million) in the initial

amount of assets included in the closed branch or a reduction of approximately 4 percent in all dividends payable after the first year of operation of the closed branch.

In the work leading to the determination of the amount of assets assigned to the closed branch, the company should test the effects of different levels of higher voluntary termination rates. The company may find it prudent to set aside some additional assets, as appropriate, to reduce the impact on policyholder dividends. (If the higher voluntary termination rates do not materialize, larger dividends will be paid to policyholders in the closed branch.) In addition to adding modestly to the total amount of assets in the closed branch, the company may wish, as well, to shorten the maturities of the closed branch assets.

Ongoing Asset Management

Having identified the specific assets to be placed in the closed branch initially, which may be whole assets and/or specified shares of identified general account assets, several issues regarding the ongoing asset management of the closed branch must be considered:

- In the investment of the closed branch cash flow, is it appropriate for the closed branch to participate in shares of specific investments with other general account segments? The Task Force believes the answer will often be yes, especially in view of the decreasing size of the closed branch after it is established.
- Because the closed branch will have short-term liquidity needs, is it appropriate for the closed branch to participate in a short-term asset pool managed on a company-wide basis? The Task Force believes that such participation could be cost-efficient.
- If, in any year, the closed branch generates negative cash flow, the branch, in effect, will have “borrowed” from other segments of the general account to cover such deficiencies. To avoid this, the closed branch could sell (on the open market) assets wholly owned, or it could sell (to other segments of the general account) the fractions of assets jointly owned with these other segments. If the closed branch is to “borrow,” procedures for setting interest rates and repayment schedules must be established. Companies have addressed this problem (implicitly or explicitly) in their Investment Year methods or Investment Segmentation plans. One common approach is to adopt the weighted average maturity structure and interest rate for all investments made in the period as the term of any interline loan made during the period. Other approaches may use explicit negotiations to set the loan term and interest rate of a interline loan.
- It may be appropriate to “swap” investments among the closed branch and other general account segments after the closed branch is established if this reduces transaction costs and benefits both accounts. However, care must be taken to demonstrate

that the closed branch is neither advantaged nor disadvantaged. If the stock company has assumed the default risk for the closed branch, it may be necessary for the converted company to buy, or swap for, closed branch assets that go into default.

2. ADJUSTMENTS IN DIVIDEND FORMULAS AFTER CONVERSION; RELATIONSHIP TO THE TYPE AND AMOUNT OF ASSETS SELECTED INITIALLY

Because the statutory value of the assets in the closed branch will not be equal to the amount of the corresponding statutory liabilities (in most cases the assets will be smaller), the dividend formula cannot be geared to pay out all statutory gains automatically. The goals for ongoing dividend formula decisions are

- to assure, as nearly as possible, that the fund's assets are exhausted when its liabilities are discharged and
- to maintain equity among members of the closed branch, particularly between those who terminate relatively early and those who terminate relatively late.

The basic test for the first goal is whether the then current dividend formula (or a proposed revision) can be maintained given the then current experience and assets. To help meet the second goal, the actuary may wish to use a gain and loss analysis not unlike that used by pension actuaries. Because these two goals are now paramount, the annual dividend setting process is not identical to the process before conversion. The following two points suggest some of the new aspects of the process after conversion.

The monitoring of experience factors serves two functions:

- It provides a basis for updated cash flow analyses and thus a determination of whether the dividend scale should be maintained, enhanced, or reduced.
- After the above determination is made, it provides information concerning the types of dividend formula changes that should be considered.

In general, mutual company policyholders are accustomed to a series of small changes in dividend scales (as opposed to abrupt changes). In addition, when companies have found it necessary to decrease dividend scales, they frequently provided that the absolute amount of a policyholder's dividend in the year following such a scale decrease will not be less than in the prior year. These customs have implications for the types of dividend scale changes that should be considered in the management of a closed branch, especially in its early years. On the one hand, it is important to reflect changing experience as it occurs (because failure to do so may create exaggerated effects, either positive or negative, to the policyholders who persist over the

long term). On the other hand, the interpretation of experience trends is difficult until a reasonable period of time has passed and, as noted, policyholder expectations may not be met by abrupt dividend scale changes. Among the devices that might be considered are

- the use of a terminal dividend scale (whether or not one was in effect prior to the creation of the closed branch) with the understanding that adjustments in that scale, either upward or downward, might be more frequent and/or more substantial than adjustments in the scale of annual dividends. In this manner, the terminal dividend scale could take up some of the slack caused by an actuary's understandable reluctance to immediately reflect all perceived experience factor changes in the annual dividend scale.
- if early experience is favorable, scale changes that tend to increase the *slope* of the dividend scale more than its current level, so that any future needed scale reductions would be unlikely to lower the absolute level of dividends (in comparison to the dividends paid in the prior year at an earlier duration).

3. WHAT EXPENSE AND OTHER CHARGES SHOULD BE MADE TO THE CLOSED BRANCH AS PART OF ITS ONGOING FINANCIAL OPERATIONS?

The fundamental principle for a participating policy is that it participate in the experience of the class of policies to which it belongs. Each company has an established framework which is used to determine the charges and credits to be made to each class. To the extent feasible, this framework should continue to be applied in selecting the experience charges to be made against the closed branch. In this way the relationship that the policyholders had with the company before conversion could be continued.

Several other important criteria are

- control. It will be necessary to audit the performance of this account, and thus, the rules for determining expenses and other charges to the closed branch and the accounting therefore must be subject to clear definition and determination.
- practicality. It would be unfortunate if these rules required such an elaborate administrative mechanism that the cost to the company and its policyholders is out of proportion to their value.
- effect on public perception. A decision to omit certain charges from the operation of the account will cause the starting balance to be smaller. This smaller amount needed in the account will mean that corresponding additional funds will have to be held outside the account as liabilities on the company's balance sheet in order to provide for the charges that will not be levied against the closed branch. Conversely, if charges against the closed branch are perceived by the public as ones not properly chargeable to the account, there may be resistance to the terms of the conversion plan.

Given the criteria above, consider several categories of charges:

- **Expense Charges:** There may be a considerable debate about the amount of maintenance expenses to be charged against the closed branch. The major issue concerns the portion of the expenses of the marketing organization which are allocated as renewal or maintenance expense, rather than as acquisition expense. It is desirable to continue to treat these expenses as renewal or maintenance expenses, if practical, because the dividend scale includes a charge for such expenses.

Although it is possible, by reducing the amount of assets allocated initially, to operate the closed branch without charging to it some or all of these maintenance expenses, this approach would considerably complicate the process. It would, for example, require the establishment of a liability for such charges outside the closed branch in order to avoid future drains on the company's capital from these expenses. In addition, it would leverage the impact on dividends of higher (or lower) than anticipated termination rates and variations in experience from those used in establishing the closed branch initially.

Of the various alternative treatments of maintenance expenses that might be adopted, the approach most consistent with the model of continued participation for the closed branch would be to make maintenance charges to the closed branch in a manner consistent with past practices and reflecting actual cost levels.

- **Federal Income Tax Charges:** There are two reasonable approaches to this charge. The first is to continue the preconversion treatment and to charge the closed branch with the share of the tax allocable to policies in the closed branch based on the company's then current tax allocation methods. In this case, the initial asset amount would be established anticipating the continuation of the tax allocation techniques in use by the company and of the present tax laws. If tax laws change, the closed branch should share in the resulting tax increase or tax decrease as it does in other experience.

The advantage of making tax charges is the continuing participation by participating policies in tax law: benefitting policyholders if taxes are reduced and charging them appropriately if taxes are increased.

Under the second approach the tax charge to the closed branch would be limited to the tax charges which the company would incur from the financial operations of the closed branch. Although, on a pretax basis, the closed branch will involve no net income to the company, there will usually be an excess (when the closed branch is established) of closed branch liabilities (on which tax has been deferred) over closed branch assets (on which tax has been paid). The run-off of this excess will produce taxable income to the company. The aggregate amount of such taxable income will be the tax accounting measure of the closed branch liabilities less the sum of the closed branch assets before any provision for taxes and the additional assets required to provide for the tax charge, both of the latter being measured on

a tax accounting basis. Under this approach the closed branch will not participate in future changes in tax laws.

There are two other aspects of this choice which are important. The first is to recognize that, if policyholder contributions are being determined as the excess of accumulated assets over closed branch assets and closed branch assets are determined under the second (no direct tax charge) charge approach, membership values will be overstated. This is because of the discontinuity in the handling of taxes between the two terms of the contribution calculation. Therefore, a special adjustment in this calculation will be required to eliminate this overstatement. On the other hand, the use of the first method would, in the absence of a special adjustment, overstate the deferred tax liabilities on the converted company's GAAP balance sheet. This is because the liabilities for the closed branch will include provision for taxes to be paid in future years and these liabilities will be included (in whole or in part) in the company's deferred tax liability. If this method is used, some adjustment for this duplication would have to be reflected on the company's GAAP balance sheet.

Another issue under the subject of taxes has to do with the "add-on tax," which would not be applicable after conversion. A fair share of the "add-on tax" likely will have been incorporated in the costs assessed against current contracts in determining present dividend scales. The essential question is whether the change in applicability of this tax is to be treated as an experience change (and thus reflected in the initial postconversion dividend scale) or whether this change is the result of a corporate change (with any tax savings serving to increase the value of the company and, presumably, the aggregate amount of policyholder compensation). There is no philosophically correct approach to this question and it is not clear to the Task Force that either method is superior to the other in all cases. Although the Task Force believes that the use of this charge to enhance the value of the company will be superior in most cases, this judgment should be made taking into account the facts and circumstances of the case.

- Reinsurance: The effect of existing reinsurance contracts should continue to be reflected in the closed branch if the financial effect of reinsurance has been reflected in the dividend scale.

4. ACTUARIAL OPINIONS WITH REGARD TO EQUITY AND ADEQUACY OF CLOSED BRANCH ASSETS AT CONVERSION

The demutualization bill now under consideration by the New York State Legislature requires an actuarial opinion at the time of conversion by a qualified actuary as to

the reasonableness and sufficiency of the asset allocation ... in an amount which together with anticipated revenue from such business is reasonably expected to be

sufficient to support such business including, but not limited to, provision for payment of claims, expenses and taxes, and to provide for continuation of current payable dividend scales, if the experience underlying such scales continues and for adjustments in such scales if the experience changes.

The primary audience for this initial actuarial opinion is state regulators and the existing participating policyholders. It should be communicated in appropriate form (subject to safeguards such as in the proposed New York law to permit companies to shield proprietary information) to policyholders as part of the plan of reorganization.

Stockholders and the public are secondary audiences. If the assets in the closed branch are inadequate, the company may have to reduce dividends significantly or may have to make good the policy guarantees, with the resulting unfavorable publicity and impact on stockholder values.

The initial actuarial opinion would be based essentially on a gross premium valuation, plus a cash flow analysis. The net insurance cash flow would be the year-by-year projections of

- future claims, cash surrenders, net cost of reinsurance, expenses and taxes, plus
- future dividends on current scale, less
- future premiums.

These projected insurance cash flows would be compared with the investment cash flows from the assets assigned to the closed branch originally and from assets purchased subsequently for that branch.

Assumptions as to future levels of mortality, interest and expense ought to be based on the experience levels underlying the dividend scale at the time of conversion, except that the adequacy of the asset-liability cash flow coverage should be tested under reasonable variations in experience assumptions. Although margins for future adverse deviations are available through the dividend mechanism and, accordingly, there should be no need to introduce significant additional margins in the assumptions beyond current experience levels, it is important that possible effects of adverse deviations be tested to assure that the dividend mechanism can absorb such variations in experience. Consideration might be given to introducing small additional margins (for instance, 1 percent or 2 percent of assets) to help maintain current dividend levels through moderately adverse fluctuations in experience, particularly increased voluntary termination experience. If the membership value determinations involve closed branch measures, care must be taken to assure that there is an equitable relationship for each of the policy classes between the reductions in membership value (resulting from asset margins) and the possible risks for which margins have been established.

5. ACTUARIAL OPINIONS WITH REGARD TO EQUITY AND ADEQUACY OF ONGOING CLOSED BRANCH FINANCIAL OPERATIONS

Actuarial opinions with regard to the equity and adequacy of ongoing closed branch financial operations, if required, should focus on the relationship of closed branch assets to the then current dividend scales and on the need, if any, to revise those dividend scales. The analyses leading to an actuarial opinion should be performed every three years or, perhaps, even more frequently if experience is changing rapidly. Management would also be a primary audience for such opinions, but on a review basis, not on an approval basis as is the case with dividend scales currently.

The closed branch assets should be maintained as a fund with premiums and investment and other income credited from the assets and business assigned to it, but with claims, surrender benefits, net cost of reinsurance, expenses, taxes, and dividends charged as incurred. Certifications, if any, for this aspect of operation of the closed branch should be an accounting, rather than an actuarial, responsibility. In the analysis of closed branch experience, the actuary can evaluate changes in investment income, mortality, expense, and lapse experience and recommend changes in the dividend scale. In these analyses, the actuary cannot rely solely on statutory earnings as a guide to the appropriateness of the total payout of dividends. On a statutory basis — assuming the closed branch assets are less than the statutory reserves held for the business — there will be an initial deficit position which must be worked off by positive statutory earnings after dividends in the future. Here, as for the initial actuarial opinion, the ongoing adequacy of the closed branch assets should be based primarily on a gross premium valuation and a cash flow analysis.

6. HISTORICAL PRECEDENTS FOR CLOSED BRANCH OPERATIONS

The principal sources of historical precedents for closed branches of business are assumption reinsurance of business from insolvent companies. However, the best examples of such branches are probably the life insurance programs established for military veterans. The United States Government Life Insurance Program began January 1, 1919, to handle the insurance converted from the War Risk Term Insurance of World War I. Approximately 1,150,000 policies were issued before the program was closed to new issues in 1951; of these, 62,475 policies were still in force at the end of 1985. Comparable blocks of business exist for World War II and Korean

War Veterans. These closed branches have been operated to be self-supporting and to avoid tontine situations. However, they are not completely comparable to the closed branch suggested in the Task Force report because no administrative or sales expenses are charged to the veterans' business and because the blocks of business are probably more homogeneous with respect to product types, attained ages, and issue dates. On the other hand, they are comparable in that: an industry advisory group has had the role of "independent consulting actuary," as suggested by the Task Force report, and an occasional use of gross premium valuations combined with the regular monitoring of the pattern of emerging gains has kept the surplus at appropriate levels.

APPENDIX 5

POLICYHOLDERS' CONTRIBUTIONS — POLICIES INCLUDED IN CLOSED BRANCH

Discussed here are the issues involved in the determination of policyholders' contributions, that is, the actuarial component of membership values, for policies included in the closed branch. The treatment concentrates on the second approach described in Section VI of the report, the method in which the policyholders' contribution for a class of policies is defined as the excess of the assets accumulated with respect to the in-force policies in that class over the assets that, together with future premiums, are required to meet the policy guarantees and policyholder dividend expectations (if current experience continues). For policies in the closed branch, the latter item would be the assets initially included in the closed branch with respect to such policies. The focus of this appendix is the former item, the assets accumulated with respect to a class of in-force policies.

The Task Force explored three major categories of issues: the classes of business with membership rights that should be included in the calculation of policyholders' contributions (Section 1); the methods that should be used to calculate assets accumulated with respect to a class of in-force policies (Section 2); and the historical experience assumptions that should be used in the calculation of these asset accumulations (Section 3).

1. THE CLASSES OF BUSINESS WITH MEMBERSHIP RIGHTS

By law or by company charter, the vast majority of the converting company's policyholders will have membership rights and be eligible to receive

value for the cancellation of membership rights upon conversion to a stock company. Some with membership rights usually will not be placed in a closed branch (for instance, large group policyholders), and some without membership rights may be placed in a closed branch (for instance, those with policies issued after the conversion is announced but before the conversion is completed). Some classes within the individual lines (which will commonly be placed in a closed branch) that may offer the company some choice as to whether compensation for membership rights should be offered in the conversion plan are the following:

1. policyholders terminated by death, lapse or surrender in recent years,
2. policyholders with nonparticipating contracts such as immediate annuities,
3. policyholders on nonforfeiture options,
4. supplementary contractholders,
5. policies arising from conversions of group insurance coverage,
6. reinstated policies in force at the time of conversion,
7. reinstated policies whose reinstatement was effected after the conversion plan was announced,
8. policyholders in subsidiaries,
9. policyholders obtained through assumption reinsurance arrangements,
10. individual health policyholders with various renewal provisions, and
11. individuals on lifetime disability (monthly indemnity) claims whose underlying policy has already terminated on account of age.

The applicable conversion law may help in the resolution of these issues. Otherwise, if the distinction between participating and nonparticipating business is clear in practice and if voting rights follow that distinction, then the company may decide the issue of classes 2, 3, 4, 5, 6, 9, 10, and 11 using that distinction. With respect to class 1, setting a cutoff point for terminations may depend, in part, on the availability of information on past terminations in the company's records. It seems reasonable to exclude class 7 in order to exclude reinstatements made to profit from the conversion and to avoid diluting the interests of policyholders otherwise eligible. Recent terminations may be eligible anyway, under class 1. The treatment of class 8 (those in subsidiaries which likely have been issued on a nonparticipating basis) may depend on past statements made by the company.

2. THE METHODS THAT SHOULD BE USED TO CALCULATE ASSETS ACCUMULATED WITH RESPECT TO A CLASS OF IN-FORCE POLICIES

Once the classes of eligible policyholders are established, the actuary will build a model of in-force policies. A number of representative age-plan cells

should be selected for representative years of issue to constitute the model. In addition, the actuary should consider whether, for particular age-plan cells, further subdivisions are required because the assets accumulated for these cells could vary materially depending on characteristics such as the following:

1. Plans with high policy loan utilization versus plans with low policy loan utilization;
2. tax qualified versus nontax qualified;
3. career agent versus broker produced business;
4. simplified underwriting versus regular underwriting;
5. reserve basis; and
6. mortality basis (American Experience, 1941 CSO, 1958 CSO, 1980 CSO) when issued in the same year.

When defining model cells, the actuary has to decide when to expand and when to contract the current dividend scale experience classes.

As a general principle, the Task Force strongly believes that the determination of membership values upon conversion should not be an occasion to undo or to otherwise alter past dividend actions of the company.

Given this principle, to what extent should the actuary be permitted to create new experience classes in comparison to the company's past underwriting and dividend practices? That is, to what extent should the assumptions distinguish variables not used in the past to differentiate premiums or dividends? Examples might include investment year, policy size, policy loan utilization, tax basis and underwriting basis. The conclusion of the Task Force is that the actuary should use the dividend classes in effect in a past year when calculating the contribution to current assets made in that year.

On the other hand, to what extent should the actuary be permitted to consolidate old experience classes because past premium differences and dividend practices can be assumed to have equalized asset accumulations? Examples might include sex, substandard classes, premium mode, premium paying period, benefit period, and pattern of face amount. The conclusion of the Task Force is that a practical course should be taken unless there are clear, demonstrable and material distinctions that would be lost in such a consolidation.

The actuary needs to next consider the formula to calculate assets accumulated with respect to a class of in-force policies.

The calculation of aggregate assets accumulated with respect to a class of policies, *including both in-force and terminated policies of the class*, is relatively straightforward. Such assets are simply the accumulation of income items such as premiums and investment income, less the accumulation

of disbursement items such as death and surrender payments, dividends, expenses and taxes. The same methodology applied separately to the in-force policies and the terminated policies of a class would clearly be flawed because, for example, there are no deaths among the in-force policies and there would be no charges for cost of insurance. On the other hand, policies in the terminated class would have borne the full burden of death benefits paid. This illustrates the fact that the calculation of assets with respect to in-force policies of a class must involve charges or credits which take into account at least some aspects of the financial experience on terminated policies. The key question is how to charge the in-force and terminated policy groupings, respectively, for the costs of (in excess of accumulated assets) of surrender benefits and death claims.

The traditional treatment of death claims (that is, charging in-force policyholders with the cost of insurance) was accepted as appropriate by the Task Force; we believe, however, that the decision as to the extent to which surrender costs should be made against in-force policies is a judgmental one that should take into account all relevant factors, including, particularly, past pricing philosophy and practices. The Task Force makes no specific recommendation in this latter area, but, instead, seeks to illustrate the effect of different approaches.

Using data for the model company described in Appendix 1, the Task Force has illustrated in Table 5-1 the asset accumulation numbers under three different approaches to handling termination costs. These results are illustrative only and are not intended to be complete or determinative.

The starting point in the calculation is the accumulation of assets for in-force and terminated policies under a method which charges the costs of deaths and voluntary terminations only to the terminated policy grouping. As shown on Line 1 of Table 5-1, this mechanistic approach yields \$2,679 million in assets for in-force policies, an amount which is greater than the total assets in the model company (\$2,570.3 million). The assets accumulated by terminated policies, which are after deductions for the full amount of all death claims and surrenders, account for the difference, a negative \$108.7 million.

The First Approach

In-force policies are charged with the cost of insurance, that is, their share of the cost of death claims on policies terminated by death. This adjustment

TABLE 5-1
ASSETS ACCUMULATED AT CONVERSION
IN MODEL COMPANY
(\$ Millions)

Approach to Calculating Assets Accumulated with Respect to Policies In Force	Accumulated Assets		All Policies
	For Policies In Force	For Terminated Policies	
1. Mechanical Method	2,679.0	(108.7)	2,570.3
2. Cost of Insurance (COI) Charge	(325.6)	325.6	0.0
3. Approach 1: with COI Charge = 1. + 2.	2,353.4	216.9	2,570.3
4. Unamortization Acquisition Expense (UAE) Charge	(0.5)	0.5	0.0
5. Approach 2: with COI and UAE Charges = 3. + 4.	2,352.9	217.4	2,570.3
6. Approach 3:			
a. Accumulated Charges for the Cost of Capital	177.1	286.0	463.1*
b. Assets Assigned to Policies in Force (other than the assets corresponding to accumulated charges for the cost of capital)	2,107.2	0.0	2,107.2
c. Total Assets	2,284.3	286.0	2,570.3

*Of this amount, \$16 million is attributable to the payment of lower dividend levels in the early years of the model company's financial operations.

is shown on Line 2 of Table 5-1, where the charge also appears as a credit to the terminated policy assets. Line 3 shows that, after this \$325.6 million adjustment, the assets are \$2,353.4 million with respect to in-force policies and a positive \$216.9 million with respect to terminated policies. Approach 1 is used in Appendix 1.

Approach 1 handles death claim charges in an unexceptional manner. With respect to voluntary terminations, however, this approach assumes that surrender values paid are fully chargeable to the asset accumulations of terminated policies and that there is not and there should not be a charge to in-force policies for any excess of the surrender values allowed over the assets accumulated. It is, at least, an arguable point that the level of surrender values (like the death benefit amounts) is a contractual benefit which is chargeable to all policyholders and that the cost of surrender values paid in excess of assets accumulated should be spread broadly. The next two approaches, described below, use the same method of handling death benefits as Approach 1 but offer different ways in which to treat voluntary terminations. Each set of adjustments should be added to the results for Approach 1, but they are mutually exclusive.

The Second Approach

Under this approach, in-force policies are also charged with the losses from unamortized acquisition expenses upon lapse. The policy sold by the model company produces a small cash strain in the first year after issue because of the acquisition expenses. Under Approach 2, this strain is amortized over six years as a level percent of in-force premium. This means that when a policy terminates during this period, the unamortized acquisition expense is borne by the remaining policies. The accumulated effect of this on the policies in force at the time of conversion is \$0.5 million which is shown on Line 4 of Table 5-1. This approach may be added to Approach 1. Therefore, after making this charge to in-force policies, and the offsetting credit to terminated policies, assets accumulated are \$2,352.9 million with respect to in-force policies and \$217.4 million with respect to terminated policies.

The Third Approach

In the model company, policies issued in any given year will leave a permanent contribution to company surplus after they have all terminated. This contribution can be viewed as the "cost of capital." We can divide this contribution into two parts: the first part relates to the capital required at various durations to maintain the 5 percent surplus ratio, and the second part is a special contribution required to build surplus up to the required level, 5 percent of reserves.*

We measured the first part of the capital contribution at each duration for policies issued in a given year as a percentage of the capital used, which was defined as the excess of (a) over (b), where (a) was the sum of the statutory reserves plus the dividend liability plus the required surplus in the model (5 percent of statutory reserves), and (b) is the assets accumulated by in-force policies under Approach 3. The first part of the capital contribution approximates an annual contribution of 5.6 percent to 5.7 percent of existing capital.

Under Approach 3, the cumulative capital contributions are determined at the time a policy terminates and added to the terminated policy category; the resulting surplus/deficit on terminated policies is credited/charged to in-force policies.

*We can measure the special contribution as the after-tax gain derived from the difference between the lower dividend scale actually paid in the first 40 years and the almost 15 percent higher dividend scale which the company could afford to pay after it had built its surplus up to the required level.

Line 6a of Table 5-1 shows the accumulated assets from terminated policies under Approach 3, \$286.0 million, of which \$7.0 million is attributable to the special contributions to capital made in the first 40 years by policies now terminated. If the company were not to convert, the policies in force would have accumulated capital costs of \$177.1 million, as shown on Line 6a. Such policies would have generated an additional \$2,107.2 million assets needed to mature the policies and pay future capital costs, as shown on Line 6b. In total, as shown on Line 6c, the assets with respect to in-force policies are \$2,284.3 million.

Because few mutual companies will have had over the years a clear philosophy of capital charges reflected in their pricing, dividend and benefit structures, most companies wishing to employ Approach 3 will have to develop a measure of the cost of capital charges implicit in the actual pricing, dividend and benefit structures. This could be done by analyzing the relationship of the observed experience to the dividend factors over an extended period of time and developing a capital charge structure which reflects these relationships and approximates the observed financial results.

The numerical results in the table are sensitive to the assumptions and product design of the model and should not be used without careful analysis.

Technical Note

It is interesting that the 5.6 percent to 5.7 percent charge for the cost of capital can be derived by general reasoning as follows:

The growth rate was 8 percent in the model company. Once the company has reached a steady state (that is, once the policies from the first issue year with the youngest issue age reach attained age 100), one can analyze the ongoing cost of capital as the excess of the growth rate in surplus needed to maintain the ratio of surplus to reserves over the net after-tax interest rate earned on surplus, which is the rate at which surplus can grow without any capital cost contributions from in-force policies. The latter rate is just over 2.3 percent for the model company (because it pays the equity tax as well as a 36.8 percent tax on gains), so the cost of capital is between 5.6 percent and 5.7 percent of the capital used, once the company has reached a steady state. The cost of capital charges is accumulated at the same 2.3 percent.

3. THE ASSUMPTIONS ABOUT HISTORICAL EXPERIENCE
TO BE USED IN CALCULATING ASSETS ACCUMULATED
WITH RESPECT TO A POLICY OR CLASS OF POLICIES

The mortality assumption in the life insurance asset accumulation should reflect pooling of mortality risk because this is a risk from which the life insurance policyholder received protection. Mortality pooling on immediate annuity contract holders (the benefit of survivorship) also seems appropriate.

The asset accumulation should use investment rates of return based on the net investment income and net realized capital gains (losses) as allocated using the company's historical accounting methods. Consistent methods also should be applied to any unrealized capital gains (losses) included in admitted assets.

The recognition of policy loans may be directly to the policy, to the policy form or just to the line of business. The Task Force believes that prior year-by-year company practice in dividends should be a guide.

The cost of traditional reinsurance ceded (premiums paid less claims recovered) may be assessed either just against reinsured policies or against the whole block, depending on the equities as perceived by the actuary, as well as on practical considerations. Similar approaches may be taken with respect to internal reinsurance.

The asset accumulation may ignore large, one-time gains or losses not truly attributable to classes of policies to be placed in the closed branch, such as guarantee fund assessments, catastrophes, tax effects or bulk reinsurance, or a fund transfer between lines of business approved by the state regulators in years past. An example of the last item is a line of business which was shut down after accumulating a loss. To eliminate allocations of increasing amounts of negative investment income to that former line of business, the company may have transferred funds from another line to eliminate the negative surplus. In these circumstances, it is reasonable to assume that the dividends in the surviving line were smaller than they would have been without such transfer, and that the asset accumulations for that line should thus reflect both the lower actual dividends and the transfer of funds as a charge. Ideally, past dividend practices should govern, but it may be difficult in practice to decide whether or how to reflect in the asset accumulations one-time events for which there is no clear record of the results on the dividends paid.

The asset accumulation might include a credit for gains or riders such as accidental death or disability premium waiver. The question is whether it is

fair, practical or consistent with prior dividend practices to credit such rider gains to all policies or only to those policies with such riders.

The asset accumulation might include a credit for gains on dividend options not paid in cash. Again, the question is who gets such credits. For example, all policies could get some credit, or gains on paid-up dividend additions could be credited only to those policies currently having such additions. Past dividend practices should govern.

Charges to the asset accumulation for federal income (and other) taxes should follow historical allocation methods (or the tax charge in the dividend formula if an explicit tax charge has been consistently made).

The asset accumulation for participating lines should include a credit for gains on nonparticipating lines (perhaps in subsidiaries), at least to the extent these gains were reflected in past dividend practices.

Charges to the asset accumulation for commissions, premium taxes, other state taxes, investment expenses and administrative expenses are straightforward contractual or traditional allocations except to the extent certain issue expenses are capitalized and then amortized over time.

APPENDIX 6

DETERMINATION OF POLICYHOLDERS' CONTRIBUTIONS FOR POLICIES NOT INCLUDED IN A CLOSED BRANCH

Policyholders' contributions for participating policies not included in a closed branch should be determined on a basis consistent with determinations for policies within a closed branch. As stated earlier in the report, the Task Force recommends that such determinations be based on the excess of

1. the amounts of assets accumulated in the company with respect to the policies including any amounts derived from implicit or explicit capital charges, less
2. the amounts required, with future premiums to mature the policies and to pay dividends on a basis consistent with preconversion practices.

Determinations of assets accumulated for policies not included in a closed branch involve most of the issues raised in Appendix 4 with regard to policies within a closed branch.

In the particular case of group policies for which the company maintains policy-level experience funds for determining dividends, (1) may be derived from the experience funds adjusted to restore any deductions from the experience funds before the conversion date that were in the nature of capital charges.

As described in Appendix 4, restoration of past capital charges may be the most difficult issue to be resolved in determining (1). Past capital charges may have been made explicitly through identifiable risk charges or contributions to surplus, or may have been made implicitly, for example, through conservative experience charge or credit factors. If the implicit approach was used, determination of the amount of such risk charges or contributions to surplus may pose practical difficulties.

Whether explicit or implicit, risk charges or contributions to surplus were probably made in the past partly to fund identifiable current and past losses from other policies of the class or from other classes of policies and, therefore, only partly to accumulate capital for the company. To the extent that the amount of risk charges or contributions to surplus used to fund past losses can be documented and identified as such, that amount need not be restored to experience funds in the determination of (1). Any remaining portion of past risk charges or contributions to surplus, however, should be treated as past capital charges and restored to the policyholder experience funds in determining (1).

Determination of the amounts required, (2) above, for policies not included in the closed branch might be based on the statutory reserves and liabilities, provided that statutory reserves and liabilities are sufficient to provide for current scale dividends as well as contractual benefits.

Where the company maintains policy-level experience funds for determining dividends, (2) may be derived from the experience funds.

