Fourth Edition

Life Insurance

Theory and Practice

Robert I. Mehr
Sandra G. Gustavson

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Robert I. Mehr
University of Illinois

Sandra G. Gustavson
University of Georgia

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A PREFATORY LETTER

Robert I. Mehr
101 W. Windsor Road #1102
Urbana, Illinois 61801

Sandra G. Gustavson
72 Sandalwood Circle
Lawrenceville, Georgia 30245

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Dear Reader:

Britain's popular TV star, Frank Muir, in his book *An Irreverant and Thoroughly Incomplete Social History of Almost Everything* (New York: Stein and Day, 1976, p. *xi*) wrote:

> Having to write a preface after labouring for five years to produce the book is an unnerving experience and something of an anticlimax; rather like an elephant who has succeeded at long last in giving birth to her calf being then required to balance a bun on her head.

We do not share that opinion. Rather, we view the writing of a preface as an opportunity to chat with our readers about the book on an informal basis. That is why we choose to use the format of a prefatory letter instead of the traditional preface. The primary purpose of this letter is to give you our objectives for this fourth edition and to thank the people who helped us accomplish these goals.

A major objective for this revision was to update the material. Even though it has been only three years since the third edition was published, changes affecting the financial services industries have occurred so quickly that the task of updating the book was indeed challenging.

One of the most important developments impacting on this edition is the greatly expanded emphasis on financial planning in many segments of society. This concept, in which investments, trusts, and insurance policies are viewed as financial planning *tools*, is certainly not new. Readers of previous editions of this text will remember that we have always urged students to view life and health insurance contracts in relation to individual situations rather than as isolated arrangements. In keeping with industry developments, we have expanded this emphasis and made the link between insurance and financial planning even more explicit for this fourth edition. For example, the chapter on life insurance programming found in previous editions has been eliminated and replaced with discussions and illustrations about handling life and health risks as part of the overall financial planning process. However, this book is primarily about life and health insurance—it is not meant to be a complete text on financial planning products, services, and techniques. The two areas of insurance and financial planning are interrelated, but they are each so vast that one book cannot possibly provide a complete treatment of both topics. Insurance can be a very effective tool when it is understood and used appropriately within the broader context of financial planning. Our goal in this text is to facilitate the understanding necessary for using life and health insurance efficiently and effectively in this manner.

Concurrent with the increased importance of financial planning has been a proliferation of new life and health insurance products. The third edition of this book recognized universal life insurance as a major insurance form; the treatment of universal life in this fourth edition has been expanded with the addition of numerous examples and illustrations to make the presentation more useful to the reader. Considerable discussion is also provided for other newly developed life insurance products, including variable universal life, interest-sensitive whole life, and indeterminate premium life. In the health area, we have added or expanded sections on preferred provider organizations (PPOs), nursing home care coverage, hospice insurance, mental health coverage, and organ transplant protection.

As always, numerous legislative developments have occurred since the previous edition of this book was published. The Tax Reform Act of 1984 brought about many changes that affected portions of this text. That law enacted a new definition of life insurance for tax purposes, completely changed the way life insurers are taxed on their income, and amended several portions of the tax code affecting employee benefit plans. Additional changes impacting on employee benefits were also brought about when the Retirement Equity Act of 1984 was passed. The fourth edition of this text incorporates not only these changes but also those enacted by the Consolidated Omnibus Budget Reconciliation Act of 1986 (COBRA) and the Single Employer Pension Plan Amendments Act of 1986. Both laws primarily affect the employee benefits portions of the book. As the fourth edition went to press, the authors realized that portions of it might be outdated even prior to publication, depending on the timing of additional expected tax reform legislation. Such are the realities of textbook publishing in an era of seemingly constant legislative change. We empathize with readers who find the rapid pace of change distressing, but we also believe that such an environment makes the insurance industry a very exciting one to study.

Our compelling desire to discuss all of the new ideas and practices without economizing in the treatment of essential basic topics, however, has resulted in a book longer than other life insurance textbooks. If the professor and students attempt to cover this book in one undergraduate course, then, to paraphrase Bacon, parts of the book are simply to be tasted, other parts are solely to be swallowed, and only a small part is to be chewed and digested. It is up to the professor, after determining where individual interests lie, to order the portions in quantities that satisfy the tastes and appetites of the students. That the length of the book is an advantage rather than a limitation should be quickly recognized, because a close parallel exists between textbook content and insurance. It is true for both that it is better to have it and not need it than to need it and not have it.

As in previous editions, the text can be used in both introductory and advanced insurance courses. Chapters 1 through 13 provide an introduction to life insurance, health insurance, and employee benefits for the reader with no prior knowledge of these subjects. In addition to the basic life insurance course, the book may be used as an employee benefits text by assigning Chapters 5 and 12 through 18, plus cases and problems. It also may be used as a basic text for a course in life insurance planning by assigning Chapters 4, 7, 8, 11, 12, 13, 18 through 21, and parts of Chapters 9 and 10.

Previous editions of this text benefited from the thoughtful comments and suggestions of numerous individuals. Because many of these contributions remain and enhance the fourth edition, we reiterate our appreciation to several people for their past assistance. In this regard, we thank Scott E. Harrington, Joan A. Krueger, John H. Thornton, Leslie A. Hearn, Jerry Todd, Terry Rose, Gary L. Stone, Dalton Bigby, and Welton Farrar. We also thank two individuals who provided valuable suggestions regarding the fourth edition. They are Professor James Chastain of Howard University and Carol A. Jordan, an insurance Ph.D. student at The University of Georgia.

With the advent of microcomputers into the field of textbook manuscript preparation, it is possible to significantly reduce the number of people needed to assemble a manuscript prior to submission to the publisher. We benefited from this phenomenon in preparing the fourth edition of this book. However, we do need and want to thank two people for their help with several manuscript preparation tasks. George Trotti, an M.B.A. student at The University of Georgia, who is now employed with Fred S. James & Co. of California, provided invaluable assistance in locating obscure pieces of information and in performing several time-consuming computer-related chores. Ann Rudd, an insurance Ph.D. student at the University of Georgia, checked all the page proofs and assisted in updating the instructor's manual. The unfailing good humor and dependability of both these individuals were refreshing and greatly appreciated.

We believe that the fourth edition of our book is improved due to the contributions of each person named within this letter. At the same time, we accept full credit for giving those readers who find any errors of substance in the text the exhilarating intellectual experience produced by such discovery. "There are three difficulties in authorship—to write anything worth publishing—to find honest men [or women] to publish it—and to get sensible men [and women] to read it." We are confident that we are home free with our publisher. Beyond that, we hope for all concerned that the other difficulties have been overcome.

Sincerely yours,

Robert I. Mehr

Sandra G. Gustavson

■ CONTENTS

CHAPTER

1

The Nature and Scope of Life Insurance

Life insurance, one of the largest and most important industries in America, is a business with far-reaching social and economic implications. Its first concern is economic security. It provides individuals with an important financial planning tool through which they can obtain financial security for their families and businesses. It also serves the economy as an important channel through which capital is made available to business for economic growth. Life insurance affects everyone directly or indirectly and therefore merits the thoughtful attention of all who consider themselves knowledgeable in business, economics, or finance.

What does one need to know to become adequately informed about life insurance? A person must know a few basic principles from many different disciplines, including finance, economics, marketing, contract and agency law, accounting, management, actuarial science, government, and the behavioral sciences. Although this may seem intimidating, it is not, because the different disciplines fit together quite neatly. Although the pieces fit together, it is difficult to determine the order in which they should be developed. For example, to understand policy types thoroughly a person should know something about premium computations; but to comprehend premium computations, a person must know something about policy types. This interdependence also applies to other aspects of the field.

Thus, the basic question is where to begin. The bright student will say, "With Chapter 1!" but that does not solve the problem of Chapter 1 for the authors. Perhaps an appropriate beginning is to provide an overall view of life insurance—a short summary in advance. A full understanding of life insurance probably can be developed best by studying the forest before the trees. In this way the hope is that the student's probability of becoming lost in what might appear to be a wild, uncultivated land will be minimized.

■ BUYING INSURANCE VERSUS FINANCIAL PLANNING

Life and health insurance were once commonly considered isolated financial products designed to protect policyholders from the financial consequences of accidents, sickness, and premature death. Little attempt was usually made to integrate the study of insurance with an appreciation for its role within the complete array of products sold by all types of financial institutions. In recent years, however, it has become increasingly problematical to view life and health insurance products in isolation. Seen in their proper perspective, insurance arrangements are financial planning tools that often should be combined with other financial products to provide efficient, comprehensive plans for individuals and businesses. Insurance can be especially useful when it is necessary to design ways for attaining financial goals under a variety of uncertain future conditions. Some examples of problems for which the financial planner may find insurance useful are provided in the next several paragraphs.

If a major source of income for a family unit is eliminated due to death, disability, or other impairment of one or more family members, it will be necessary for the family to make economic and social adjustments. Sometimes these adjustments result in serious physical or psychological harm. A spouse might have to seek new or additional employment at the expense of other family responsibilities; the children might have to find work at the expense of formal education; the family members might have to accept charity from relatives, friends, or social agencies at the expense of independence and self-respect; and the family's living standard might be reduced to a level below that essential for health and happiness. Illness, death, unemployment, and old age are four basic threats to the continuation of earned income. The first three can occur any time during a person's life; a replacement for the resulting lost income is essential if the hardships of unsatisfactory economic adjustment are to be avoided.

A firm's earnings depend on its management's effectiveness. Disability and death of key personnel can adversely affect a firm's net profit; adequate resources must be available if the firm is to regain its profit position. Further, some businesses are owned by a small number of people who are especially concerned about what will become of their ownership interests in the event that they die or become disabled. Successful financial planning requires making effective preloss arrangements to provide postloss resources needed to preserve a family or business unit's operating efficiency. Life and health insurance are tools available for this purpose. Through the judicious use of insurance a person can plan for the continuation of income if death, disability, or old age destroys the person's ability to earn a living, and a business can plan for the resources to offset potential losses if an owner or key employee becomes disabled or dies.

This book is about life and health insurance; much of it is written from a financial planning perspective, but it is *not* meant to be a complete text on financial planning products, services, and techniques. The two areas of insurance and financial planning are interrelated, but they are each so vast that one book cannot provide a complete treatment of both topics. Therefore, financial planning textbooks provide some discussion of life and health insurance, and insurance texts provide some treatment of the financial planning process. It is important, however, to remember that the terms *insurance* and *financial planning* are not synonymous. Insurance can be a very effective tool when understood and used appropriately within the broader context of financial planning. This book's goal is to facilitate the understanding necessary for using life and health insurance efficiently and effectively in this manner.

■ THE HUMAN LIFE VALUE CONCEPT

The human life value concept was developed to measure the economic value of life. Although some people in past years have argued that it provides a measure for determining how much insurance should be purchased on an individual life, its primary importance is in the economics of litigation involving wrongful deaths and injuries.

Measurement of Human Life Value

The two basic income sources are capital and labor. Capital earns interest, rent, or dividends; labor earns wages, salaries, fees, or commissions. If the owner of a building that houses a campus bar earns $30,000 rent yearly (net after taxes, depreciation, and insurance costs), the building is worth $300,000, assuming both a 10 percent capitalization rate and the receipt of rent indefinitely. An individual who earns $30,000 a year (net after taxes) also has an economic value measurable in dollars.

Workers' economic values are linear functions of their expected annual earnings less expected income taxes and personal maintenance expenses, given their expected working lives. Assume the following information about 25-year-old Stu Kingma:

Annual income	\$30,000
Expected annual income tax liability	8,000
Expected annual personal maintenance expenses	7,000
Estimated working life	36.9 years

Suppose also that Stu's future income, income taxes, and personal maintenance expenses will remain at their current levels.[1] Based on these assumptions, this man's family can expect to receive \$15,000 a year for 36.9 years from his continued life (\$30,000 − 8,000 − 7,000).[2] The dollar value of his life would be the amount that at the appropriate interest rate will provide \$15,000 annually, paid in 12 monthly installments (assuming that Stu is paid monthly), for 36.9 years. Tables showing the present value at various interest rates of one per annum payable in 12 monthly installments are published for use in making computations.[3] Assuming 8 percent to be appropriate, the present value of one per annum payable in 12 monthly installments for 36.9 years in 12.195. The present value of \$15,000 per year would be \$183,925 (12.195 × \$15,000), which would be the human life value in this example.

Life Insurance and Human Life Value

The determination of human life value is irrelevant to the study of life insurance as will soon become apparent. With respect to human life value, life insurance has two functions: (1) to contribute toward its conservation and (2) to protect against financial losses resulting from its destruction.

Life Conservation. Life insurers are concerned not only with people's lives but also with situations that affect the value of those lives. Just as fire insurers are interested in fire prevention, life insurers are interested in the prevention of accident, disease, and death. Life insurance has fostered and maintained medical research and health conservation activities directed toward preserving human life value. The recent focus has been on preventive medicine, biomedical research, and the health care

[1] These unrealistic assumptions are made to keep the illustration simple. One's future income will depend on inflation, growth, and career development. A person's future tax liability will depend on future income, the number of dependents and deductions, changes in federal and state income tax rates, and other variables. Personal maintenance expenses will depend on inflation, changes in taste, and so on.

[2] This figure is the work life expectancy for a 25-year-old male. See Howard N. Fullerton and James J. Byrne, "Length of Working Life for Men and Women, 1970," *Monthly Labor Review* 99, no. 2 (February 1976), p. 31. Work life expectancy reflects separations from the labor force due to all causes including death, disability, and retirement.

[3] The quantity tabulated is as follows:

$$\frac{1 - (1 + i)^{-n}}{p[(1 + i)^{1/p} - 1]}$$

where i is the interest rate, n is the number of years over which payments are to be made, and p is the number of payments per year.