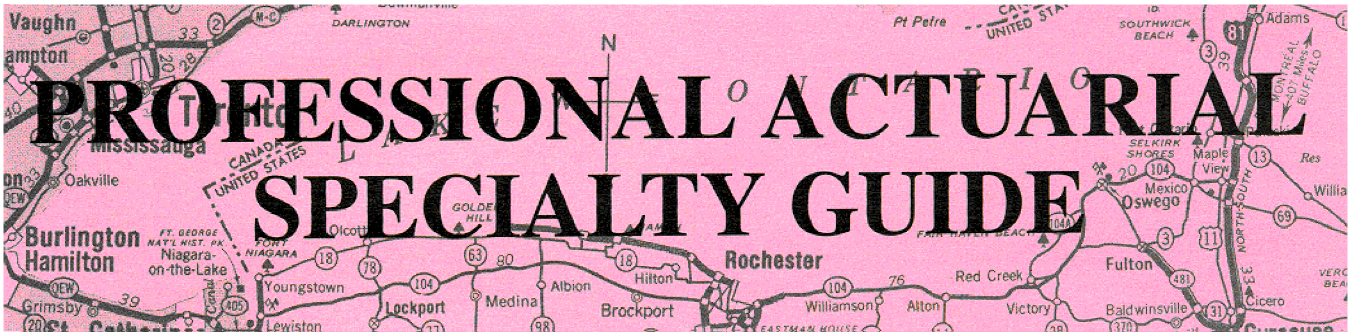
S O C I E T Y O F A C T U A R I E S

PROFESSIONAL ACTUARIAL SPECIALTY GUIDE



ANNUITIES IN THE UNITED STATES

Overview

In recent years, individual and group annuities have been the fastest growing segments of the life and health insurance industry. Individual and group annuity premiums have grown from an insignificant part of insurers premium totals prior to the 1980s to a major part of new premium income for the industry as a whole. Further, individual and group annuities account for a majority of the total life insurance industry's reserves.

Reasons for the growth in annuities in recent times are: favorable demographics as the population ages and the need for retirement savings alternatives grows, advantageous current and historical tax treatment relative to other financial instruments, attractive rates of return, and expansion in the distribution outlets for annuities. Annuities are now sold through stockbrokers, banks, direct mail, and career insurance agents.

The dramatic rise in the popularity of annuities has led to stepped-up regulation (nonforfeiture, valuation, and financial reporting), creative product design (modified guarantee annuities, nonsurrenderable products), sophisticated investment and asset-liability strategies, and new tax provisions. Securities regulators have increased their scrutiny of variable annuities.

Management of fixed-annuity business requires prudent asset management practices, coupled with matching of asset and liability cash flows. The presence of substantial investment risks has caused regulators and rating agencies to define relatively high capital requirements for insurers fixed annuities.

Annuities can be characterized in many different ways. The most common distinctions are as follows:

Deferred versus Immediate. Deferred annuities are often thought of as annuities in an accumulation mode, in which contributions made are earning a rate of return that builds the value of the annuity fund. Immediate annuities are often thought of as annuities in the payout mode, in which a single contribution is made in return for a series of periodic payments at future times. Examples of immediate annuities include terminal funding annuities and many structured settlement annuities.

Single-Premium versus Flexible-Premium Annuities. Deferred annuities can be funded via a single contribution using single-premium deferred annuities (SPDAs) or may permit subsequent deposits at the policyowner's discretion using flexible-premium deferred annuities (FPDAs). Immediate annuities are almost always funded via one premium using single-premium immediate annuities (SPIAs).

Group versus Individual Annuities. The owner of an annuity policy may be an individual or a group. Group policyowners often exist in the pension and employee benefits markets. Group annuities may be allocated or unallocated. Unallocated contracts typically do not define a separately identifiable fund balance for each participant within the group—only an overall pooled fund balance exists. Allocated contracts do define a separately identifiable fund balance for each participant. Examples of group annuity contracts are guaranteed investment contracts (GICs) and deposit administration contracts. *Fixed versus Variable Annuities*. Fixed annuities earn a rate of return declared by the insurance company based upon its own general account portfolio returns and competitive conditions. Credited interest rates may be guaranteed for specified periods. Accordingly, at times, the credited

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interest rate may not exactly reflect the insurer's portfolio yield. With variable annuities, policyholder assets are invested in underlying mutual funds, and therefore the rate of return on the annuity reflects the precise performance of the supporting assets backing the annuity, which are segregated from the insurer's general asset account. In times of high interest rates, fixed annuities are relatively more popular products, while in low-interest-rate environments, variable annuities usually perform relatively better.

Qualified versus Nonqualified Annuities. Qualified annuities are issued in connection with tax-advantaged programs such as Individual Retirement Accounts (IRAs, Simplified Employee Pensions (SEPs), Keoghs, 401(k) plans, and tax-sheltered programs under Internal Revenue Code Section 403(b). These annuities generally permit the initial deduction of premiums from taxable income. Nonqualified annuities are issued without the tax advantage of a tax deduction of the original deposit, which the tax-qualified annuities enjoy, although the accumulating earnings of a nonqualified annuity are still tax-deferred. Regulation and tax treatment of qualified annuities have generally been more favorable that of nonqualified annuities.

Actuary's Role

There are a number of different roles that actuaries assume in the management of annuity lines of business. The primary ones are: (1) The *product development and pricing actuary* assesses the needs of the marketplace, develops creative products that comply with existing regulations, and evaluates the financial returns of such products using established insurer profitability measures; (2) The *investment actuary* establishes crediting and investment strategies for the annuity line, based upon the impact of such strategies on duration, convexity, cash-flow matching, overall liquidity, etc.; (3) The *valuation actuary* determines adequate statutory reserve levels and surplus needs and reserves defined under generally accepted accounting principles (GAAP) for the annuity line of business, taking into account current regulation and results of cash-flow testing; (4) The *tax actuary* stays abreast of the current tax treatment of annuities from both the policyholder's and company's perspective and assists in the formation of tax strategies; (5) The *financial reporting actuary* guides the appropriate statutory and GAAP financial statement reporting for annuities by staying current on pronouncements and changes issued by the National Association of Insurance Commissioners (NAIC), the Financial Accounting Standards Board, the Department of Labor, and the Securities and Exchange Commission (SEC).

Introduction

The subject of annuities is very broad and could conceivably include more topics than would be manageable in a specialty guide of this type. This specialty guide concentrates on references that relate to U.S. annuities. Only a few sources pertain to Canadian annuities. Although similarities exist in product design between U.S. and Canadian annuities, regulation and taxation are different. This guide also focuses on areas that we believe are specific to the subject of annuities and touches upon related issues such as investments and pensions more lightly. Covered more thoroughly in separate guides.

The presentation that follows is organized along functional lines, rather than product or market lines. The main functional divisions are:

1. Product Development and Pricing
2. Valuation and Surplus Considerations
3. Financial Considerations
4. Marketing
5. Product Taxation
6. Investments and Asset/Liability Management.

A basic description and discussion of annuities can be found in the following reference sources:

Black, Kenneth, and Harold Skipper, Jr., "Annuity and Special-Purpose Policies and Benefits." In *Life Insurance*, 12th ed. Englewood Cliffs, N.J.: Prentice Hall, 1994, p. 147.

The portion of the textbook above contains a general introductory description of annuities. It introduces the concepts of deferred versus immediate annuities, group versus individual annuities, SPDAs versus FPDAs, and other basic concepts.

Level: Basic Pages: 30

McGill, Daniel M., "Retirement Benefits," p. 128; "Adjustment of Pensions for Inflation and Productivity Gains," p. 204; "Actuarial Cost Factors," p. 239; and "Unallocated Funding Instruments," p. 550. In *Fundamentals of Private Pensions*, 6th ed. Homewood, Ill.: Irwin, 1989.

This textbook contains several chapters that provide an overview of the funding role that group annuities play in the pension marketplace. Both the structure of group annuities and their uses are covered.

Level: Intermediate Pages: 129

Product Development and Pricing

As the annuity market has grown, the amount of new product development activity has increased dramatically. Today's product designs attempt to balance the issues of market need, competitiveness, minimal surplus strain, and profitability. Actuaries pricing annuities today must be cognizant of the impact on profits of the interaction between asset and liability cash flows. Although still relatively small, the amount of available annuity experience data is increasing.

For individual annuities, the deferred-annuity market continues to grow significantly, despite recent periods of low interest rates. In response, the market has emphasized variable annuities, for which returns have been relatively more attractive. Fixed product designs have traditionally emphasized one-year interest rate guarantees, shorter surrender charges, and no (or small) fees. Recent product designs have begun to emphasize increased protection from interest rate risk. Immediate-annuity product creativity has increased, although the immediate-annuity market is still small relative to the deferred-annuity market.

In group annuities, the long-term trend of moving toward unbundled products with fewer insurance company guarantees continues. The majority of new product development activity has centered on defined-contribution plans, particularly with developments of synthetic and alternative GIC products. GICs are contracts with fixed, relatively short contract periods that offer guaranteed rates of return for the length of the period. For defined-benefit plans, the single-premium group annuity product continues its decline as pension legislation makes capturing reversions of excess plan assets very difficult. Various forms of participating separate account annuities have been developed, primarily for the very large single-premium group annuity situations. Some insurance companies have made successful transitions to fee-for-service investment management business as traditional products, such as immediate participation guarantee (IPG) contracts, lose favor.

Greenlee, N. A., "Practical Aspects of Nonsurrenderable Annuities," *Product Development News* No. 29 (June 1991): p. 1.

This article furnishes a brief overview of individual annuities that provide limited or no lump-sum surrenders. Specifically, the article discusses product design characteristics, regulatory issues, and reserve topics.

Level: Intermediate — Pages: 2

Lowery, Randy, "CD Annuities," *Product Development News* No. 22 (September 1989): p. 13.

This article focuses on a specific type of individual annuity product sold predominantly in the stockbroker and financial institution marketplace. These products are similar to certificates of deposits in that the surrender charge period and the interest rate guarantee period coincide. Also, contracts can be renewed at a new interest rate for the same or different guarantee period. Such products have come under recent regulatory scrutiny.

Level: Intermediate — Pages: 2

McKernan, Edward, "Product Profile—The Two-Tiered Annuity," *Product Development News* No. 23 (January 1990): p. 6.

This article describes the mechanics and regulatory issues of products that allow for two separate "tracks" of cash accumulation—one for an annuitization value and one for a lump-sum surrender value. Certain recent regulatory issues have emerged that may reduce the attractiveness of such products.

Level: Intermediate — Pages: 2

Harbin, Roger, "Structured Settlements," *Society of Actuaries Study Note 441-28-91*. Schaumburg, Ill.: 1991.

This study note describes the product design, pricing, marketing, and financial considerations of structured settlement annuities. This market is a specialized niche involving the sale of customized annuities in connection with bodily injury, wrongful death, etc. actions. Tax benefits of structured settlements provide advantages over lump-sum settlements.

Level: Basic — Pages: 34

Modungo, Victor J., "Terminal Funding," *Transactions of the Society of Actuaries* Vol. XXXVIII (1986): p. 169.

This paper provides an introduction to the marketing and pricing of terminal funding group annuities (also called pension buyouts), which are used to buy out all or a portion of liabilities under a terminating (or ongoing) pension plan. The discussion also covers mortality discussions for terminal funding contracts, investment strategies, and administration.

Level: Intermediate — Pages: 35

"Annuity Product Development Update," *Record of the Society of Actuaries* Vol. 16, No. 3 (1990): p. 1663; Vol. 17, No. 2 (1991): p. 705.

"Trends in Annuity Product Design," *Record of the Society of Actuaries* Vol. 14, No. 2 (1988): p. 653.

"Annuity Product Developments," *Record of the Society of Actuaries* Vol. 15, No. 2 (1989): p. 487.

These four transcripts of recent Society of Actuaries panel discussions cover a wide array of topics related to current annuity product developments. These include:

1. Annuitization bonuses
2. Nonforfeiture law changes
3. The role of cash-flow testing in annuity design
4. Market value-adjusted (MVA) annuities
5. Variable annuities
6. Immediate annuity trends
7. CD, MVA, and two-tiered designs
8. Status of annuity markets
9. Taxation of annuities

Level: Intermediate Page: 77

"Immediate Annuities—Product Development Considerations," *Record of the Society of Actuaries* Vol. 14, No. 4A (1988): p. 2047; Vol. 17, No. 1 (1991): p. 49.

These two transcripts of recent Society of Actuaries panel discussions focus on the product design considerations of immediate annuities—contracts with payouts beginning within 13 months of issue. Subjects covered include the SPIA market, pricing considerations (particularly mortality assumptions), reserve considerations, reinsurance, and investment concerns.

Level: Intermediate Pages: 32

"Market-Value Adjusted Products," *Record of the Society of Actuaries* Vol. 12, No. 2 (1986): p. 1141; Vol. 12, No. 3 (1986): p. 1141.

These two transcripts of recent Society of Actuaries panel discussions highlight considerations of MVA annuity products. These are deferred-annuity contracts that apply an adjustment (either upward or downward) to surrendered values if surrender occurs before the end of a chosen guarantee period. Such adjustments recognize the gain or loss to an insurer due to interest rate changes on sales of fixed-income assets to meet redemption requests.

Level: Intermediate Pages: 55

Carney, Gregory, "Variable Annuities," *Society of Actuaries Study Note 441-31-92*. Schaumburg Ill.: 1992.

This actuarial study note provides a comprehensive overview of the variable annuity market and products. Specifically, the study note discusses marketing, product design, regulation (state and SEC), administration, taxation, and reserve issues. Recent developments in the variable annuity market at the SEC level may render some of the sections on SEC regulation dated, depending upon the outcome.

Level: Intermediate Pages: 52

Annuity Experience Committee, "Group Annuity Mortality," *Transactions, Society of Actuaries Reports on Mortality, Morbidity and Other Experience* (1988-89-90): p. 59.

Committee on Life Insurance Expected Experience, *Individual Annuitant Mortality Study: Policy Years 1980—1988*. Ottawa, Ont.: Canadian Institute of Actuaries, June 1990.

Teitelbaum, Naftali, "The Effects of Mortality on Individual Annuities," *Transactions of the Society of Actuaries* Vol. XL (1988): p. 653.

Cox, Samuel H., Laporte, Paul D., et al., "Single-Premium Deferred-Annuity Persistency Study," *Transactions, Society of Actuaries Reports on Mortality, Morbidity and Other Experience* (1991-92): p. 281.

These sources provide experience data for use in pricing deferred and immediate annuities. The first three sources relate to U.S. and Canadian annuitant mortality, while the fourth is the recently released persistency study on U.S. SPDA contracts.

Level: Intermediate Pages: 318

"Standard Nonforfeiture Law for Individual Deferred Annuities." Kansas City, Mo.: National Association of Insurance Commissioners, 1976.

This model law, currently in effect in all states, defines minimum annuitization and cash values and restrictions on surrender charges. It also specifies procedural and disclosure requirements.

Level: Basic Pages: 4

"Report of Resource Group to Develop Model Annuity Nonforfeiture Laws," Resource Group to Develop Model Annuity Nonforfeiture Laws. Kansas City, Mo.: National Association of Insurance Commissioners, June 1993.

This report of an industry task force working in conjunction with the NAIC recommends certain revisions to the current nonforfeiture law for individual deferred annuities. Note that, at this time, the revisions are merely proposals, which are subject to change.

Level: Intermediate | Pages: 14

LaBelle, Richard F., "Individual Product Innovations in Canada," *Society of Actuaries Study Note 340-29-87*. Schaumburg, Ill.: 1987.

This study note describes recent annuity product design issues in the Canadian market.

Level: Basic | Pages: 3

Stiefel, John D., III, "The Guaranteed Investment Contract (GIC)," *Transactions of the Society of Actuaries* Vol. XXXVI (1984): p. 527.

This paper provides a concise overview of GICs and their inherent risks. It begins with the definition of a GIC and traces the GIC's evolution from the IPG. The discussion continues with the advantages and disadvantages of buying a GIC over an IPG or other type of investment. The risks and problems faced by the insurance company offering GICs are then presented, along with suggested solutions and risk management strategies.

Level: Basic | Pages: 52

Walker, Kenneth L., *Guaranteed Investment Contracts: Risk Analysis and Portfolio Strategies*, 2nd ed. Homewood, Ill.: Irwin, 1992.

This textbook provides a broad sampling of a variety of GIC topics, including chapters on: historical development of the GIC, accounting issues, pricing, underwriting, and asset/liability management. In addition, the appendixes cover principal insurance regulations and include a chart of historical GIC rates.

Level: Basic | Pages: 286

Valuation and Surplus Considerations

A major consideration in the management of annuity business is the degree to which sizable reserves must be established to support contractual obligations, thus creating a significant investment of a company's surplus. Recent product designs have resulted in the need for clarification of standard minimum reserve laws (for example, variable annuities, two-tiered annuities). Ongoing activity at a regulatory level is attempting to clarify these issues. The valuation actuary concept, whereby an actuary must consider the assets supporting the liabilities when opining on reserve adequacy, is especially important for companies active in annuity lines of business. Such cash-flow testing may indicate the need for insurers to hold reserves in excess of the formula reserves defined by statute. The Professional Actuarial Specialty Guide on Statutory Financial Reporting and the Valuation Actuary should also be reviewed for additional source material.

Claire, Donna "Description of New York Regulation 126," *Society of Actuaries Study Note 443-84-88*, and "Amendments to New York Regulation 126," *Society of Actuaries Study Note 443-85-89*. Schaumburg, Ill., 1989.

These actuarial study notes describe the history, mechanics and interest of New York's Regulation 126, which requires that insurers selling certain types of interest-sensitive contracts perform asset adequacy tests. This has relevance to annuities, since this product line is specifically identified as falling under the Regulation 126 requirements.

Level: Intermediate | Pages: 37

Tullis, Mark, and Paul Polkinghorn, "Valuation of Annuities," p. 65, "Cash-Flow Testing," p. 133. In *Valuation of Liabilities*, 2nd ed. Winsted, Conn.: ACTEX Publications, 1992.

This textbook describes statutory valuation theory and application for a variety of products, including annuities. Discussions related to annuity contracts include the Commissioners Annuity Reserve Valuation Method (CARVM), change in fund versus issue year methods, curtate versus continuous approaches, plan type interest rate selection, and valuation of ancillary benefits.

Level: Intermediate | Pages: 45

"Reserves for Structured Settlements and Similar Annuities," *Record of the Society of Actuaries* Vol. 16, No. 2 (1990): p. 1077.

"Reserves for Structured Settlements and Similar Reporting Annuities," *Record of the Society of Actuaries* Vol. 16, No. 3 (1990): p. 1777.

These two transcripts of panel discussions cover a number of issues related to reserve techniques on individual immediate annuities. Most notably, the discussions focus on the impact and interpretation of Actuarial Guidelines IX-A and IX-B, one relating to the appropriate valuation interest rate to be used and the other to treatment of substandard cases (structured settlements most significantly).

Level: Intermediate Pages: 62

"Valuation of Single-Premium Annuity Products: Valuation Technique Paper No. 9, Draft of Canadian Institute of Actuaries," Ottawa, Ont.: Canadian Institute of Actuaries, May 1993.

This research paper discusses basis valuation principles for GICs and single-premium guarantee annuities, including assumption-setting and provision for adverse deviation.

Level: Basic Pages: 8

Jaffe, Jay M., "The Application of the Commissioners Annuity Reserve Method to Fixed Single-Premium Deferred Annuities," *Transactions of the Society of Actuaries* Vol. XXXIV (1982): p. 103.

This paper introduces some of the basic principles of CARVM. Although much has occurred since this paper was originally authored in the way of annuity valuation, a significant portion of this paper is still timely and relevant. Specific topics covered include reserves for excess interest guarantees, excess death benefit reserves, and reserve considerations for partial withdrawals.

Level: Basic Pages: 52

American Academy of Actuaries Task Force on Annuity Valuation, "Practical Application of Reserving for Contemporary Annuity Products." Washington, D.C.: American Academy of Actuaries, November 1991.

This document discusses the views of an industry task force on appropriate reserve techniques on today's annuity products. Specifically, it addresses reserves for ancillary benefits, the intent of CARVM, continuous versus curtate, etc. It should not be viewed as establishing any regulatory position.

Level: Intermediate Pages: 19

"Status Report of Annuity Valuation Advisory Working Group," Kansas City, Mo.: National Association of Insurance Commissioners, December 1992.

This reference includes two status reports as of late 1992 of subgroups of the Annuity Valuation Advisory Working Group, one for accumulation products and one for payout annuities. Both status reports propose changes to current reserve practices for deferred and immediate annuities.

Level: Intermediate Pages: 18

Financial Considerations

Annuity financial results must be reported according to the requirements of statutory (NAIC) accounting rules. In addition, certain insurance companies also report results on a GAAP basis. Revised GAAP rules enacted in 1988 impose new requirements on reporting earnings and balance sheet entries for deferred and immediate annuities.

Due to the recent growth in annuity sales and the associated surplus strain, many insurance companies have considered annuity reinsurance as a viable financial management tool.

Smith, Bradley, "*SFAS 97*—Investment Contracts," *Financial Reporter* No. 9 (August 1988): p. 11.

This article describes certain mechanics of the Financial Accounting Standards Board's ruling under *Statement of Financial Accounting Standards (SFAS) No. 97* with respect to annuity financial reporting.

Level: Intermediate Pages: 3

Brumbach, J., and D. Eckley, et al., "Revised GAAP Accounting for Universal Life, Limited Payment and Investment Contracts," *Society of Actuaries Study Note 443-88-89*. Schaumburg, Ill.: 1989, pp. 1–9, 15–47.

This actuarial study note describes the theory and application of *SFAS 97* to various kinds of insurance products. The annuity references include definitions of investment contracts versus universal life-type contracts, as well as examples of how the retrospective or prospective approaches could be applied to annuities.

Level: Intermediate Pages: 42

Accounting for Life Insurance and Annuity Products: Understanding and Implementing FASB Statement No. 97, New York: Ernst & Young, June 1988.

This accounting guide summarizes in considerable detail the techniques and rationale behind the revised GAAP accounting treatment of interest-sensitive products such as annuities. This source provides examples for annuity accounting for both deferred and immediate contracts.

Level: Intermediate Pages: 87

Ingram, David N., "Annuity Coinsurance." *Reinsurance Section News* No. 23 (June 1990): p. 7.

This article discusses the use of annuity coinsurance as a means for companies to lower surplus strain. Key issues such as investment compatibility, administration, and profitability are discussed.

Level: Intermediate Pages: 3

Tiller, John E., and Denise Fagerberg, "Annuity Reinsurance." In *Life, Health & Annuity Reinsurance*. Winsted, Conn.: ACTEX Publications, 1990, p. 383.

This comprehensive textbook on reinsurance also includes a discussion of various types of annuity reinsurance. Key issues such as coordination of investment practices and reporting are covered.

Level: Basic Pages: 12

Financial Accounting Standards Board, *Statement of Financial Accounting Standards No. 97*. "Accounting and Reporting by Insurance Enterprises for Certain Long-Duration Contracts and for Realized Gains on Losses from the Sale of Investments," Stamford, Conn.: December 1987.

This is the original statement from the FASB covering GAAP accounting for annuities and other life insurance products.

Level: Intermediate Pages: 32

"Pension Accounting Standards in North America," *Record of the Society of Actuaries* Vol. 14, No. 1 (1988): p. 19.

This reading deals with the operational impact of *FAS 87* and *88*: Are they meeting their objectives? The discussion begins with an overview and general comments about *FAS 87* and *88* and continues with a comparison to Canadian practices. Several specific examples about the impact on financial statements are provided from the experience of panel members and participants.

Level: Intermediate Pages: 17

White, Gerald I., "FASB Statement No. 87: Employers' Accounting for Pensions," CFA Candidate Readings. Charlottesville, V.A.: Institute of Chartered Financial Analysts, 1988.

This reading highlights the differences between *FAS 87* and APB 8 (Accounting Principles Board Opinion 8), the previous accounting standard, by examining the financial reports of several companies to illustrate sensitivity analyses on key variables: discount rate, rate of compensation increase, and return on assets.

Level: Intermediate Pages: 15

"*FAS 87, 88,* and *96*," *Record of the Society of Actuaries* Vol. 16, No. 1 (1990): p. 571.

This reading covers some of the practical problems associated with the implementation of the new FASB standards. The movement from an income statement focus to balance sheet accounting, and the resulting implications for discount rate and settlement rate assumptions, are discussed. Suggestions are offered regarding the statement handling of business purchase combinations. Also, the criteria for settlements, curtailments, and termination benefits are clarified. The panel discussion ends with a question and answer session addressing specific problems encountered by the discussion attendees.

Level: Advanced Pages: 22

Marketing

Individual and group annuity policies are distributed through a diverse (and increasing) number of outlets. The most common are: career insurance agents, stockbrokers, financial institutions, financial planners, employee benefit specialists, direct mail, structured settlement annuity specialists, and many others. Certain distribution arms tend to emphasize certain types of products (for example, stockbrokers market single-premium deferred annuities more than flexible-premium annuities).

The introduction of the GIC manager has been a major development in the marketing of GICs. These intermediaries between the plan sponsors and the GIC providers have grown steadily to the point where the majority of plans currently use an intermediary of one type or another. The virtual monopoly the insurance industry held on marketing GICs has been broken, with banks and other financial service providers offering a host of competing book value products. On the defined-benefit side, insurance companies have lost market share as plans have moved away from bundled products such as the IPG contract.

Our research into available sources of annuity marketing reference sources indicates a relative lack of suitable material.

Crowe, K., "Banks and Annuities: A Natural Alliance," *Best's Review: Life/Health Insurance Edition* Vol. 90, No. 8 (December 1989): p. 46.

This article provides a description of the annuity marketing though financial institutions. Specifically, the discussion focuses on product characteristics, marketing structure, administrative considerations, marketing potential, and success stories.

Level: Basic Pages: 4

Streiff, Thomas F., and David Shapiro, "The History of Annuity Distribution." In *Annuities*. Chicago: Dearborn—R&R Newkirk Publishing, 1992, p. 11.

This book discusses a variety of annuity issues. The specific reference chosen relates to annuity distribution issues and the history of annuity distribution. However, the entire reference provides a good, basic introduction to annuities.

Level: Basic Pages: 7

Product Taxation

Annuity profits increase the taxable income of insurance companies, although in recent years annuities have received relatively favorable treatment (for example, qualified annuities, structured settlement annuities). Separate specialty guides on company taxation can provide references on that topic, including implicit treatment of annuities. Currently, individual deferred annuities in the accumulation phase receive favorable tax treatment (that is, deferral) at the policyholder level, recognizing their long-term retirement purpose. Recent legislative proposals have advocated less advantageous tax treatment, however.

"Treasury Issue Reports on Policy Justification for Current Tax Treatment of Insurance Products Recommends Significant New Tax Limits," *General Bulletin 4198*. Washington, D.C.: American Council of Life Insurance, April 1990.

This reference summarizes the findings of the Treasury's report on the current IRS tax treatment of annuity and life insurance contracts. Also attached is the Treasury report on annuity taxation, including recommendations for change.

Level: Intermediate Pages: 58

"Sec. 72. Annuities; Certain Proceeds of Endowment and Life Insurance Contracts, 1986 Code," Vol. 1, *Internal Revenue Code: Income, Estate, Gift, Employment and Excise Taxes, including Procedural and Administrative Provisions*. Chicago, Ill.: Commerce Clearing House, Inc., June 1993, p. 4510; also available from Prentice Hall.

The Internal Revenue Code and associated regulations provide the statutory basis for the Treasury's current tax treatment of individual annuities.

Level: Intermediate

Investments and Asset/Liability Management

In recent years, it has become clear that management of individual or group annuities must involve consideration of investment selection, credited interest rate strategies, and asset/liability management. Although annuities often have embedded life contingencies, the most significant risks to an insurer are investment-related. Liability cash flows are sensitive to credited rates in relation to competitor rates, changes in the overall interest rate environment, and the method and frequency of interest crediting. Asset cash flows are also sensitive to interest rate movements, the quality of the portfolio, contractual provisions within the securities, etc. Accordingly, stochastic testing of group and individual annuity (less important for variable contracts) cash flows is generally a necessity.

Griffin, Mark, "The Excess Spread Approach to Pricing and Valuing the SPDA," *Product Development News* No. 23 (January 1990): p. 1.

This article discusses an approach that can be used to price and manage an SPDA contract. It specifically refers to the interplay of asset/liability features such as callability, option-adjusted spreads, and development of crediting strategies. The article concludes with a SPDA pricing example.

Level: Advanced Pages: 7

"Matching of Insurance Company Pension Assets and Liabilities," *Record of the Society of Actuaries* Vol. 12, No. 1 (1986): p. 127.

This reading describes many of the asset and liability risks inherent in writing GICs, along with suggested risk management strategies. The liability discussion, in particular, provides an extensive list of issues to consider before entering the GIC market, although details about their relative impact are often omitted. Some risks are qualified via option pricing. Finally, volatility and convexity are addressed, in conjunction with strategies for balancing assets and liabilities.

Level: Intermediate Pages: 36

Clancy, Robert P.,"Option on Bonds and Applications to Product Pricing," *Transactions of the Society of Actuaries* Vol. XXXVII (1985): p. 97.

This paper presents a theoretical approach to bond option valuation and provides a computer model for performing such valuation (Appendix C). The theory is then applied to the determination of call risk on corporate bonds, and the pricing of deposit antiselection risk on GICs sold to employee savings plans.

Level: Advanced Pages: 30

Ternoey, Brian C., "GIC Portfolio Design," *Society of Actuaries Study Note 363-22-91*. Schaumburg, Ill.: 1991.

This SOA note describes the investment characteristics of a GIC and, in turn, the characteristics of a portfolio invested in GICs. It lists the investment strategies dictated by such characteristics and illustrates the use of these strategies in several simple portfolio designs. The note concludes with some miscellaneous GIC topics, including GIC alternatives and accounting issues.

Level: Basic Pages: 15

"Analyzing the Assets for Asset/Liability Management in Pension Plans," *Record of the Society of Actuaries* Vol. 15, No. 1 (1989): p. 219.

This reading begins with a technical discussion of one asset-forecasting model, the structural economic model. It goes on to note the importance of liabilities in asset management and presents some matching/funding strategies that address inflation. Five general types of asset allocation models are described briefly, and one company's strategy is presented in detail.

Level: Basic Pages: 17

Norris, Peter and Sheldon Epstein, "Finding the Immunizing Investment for Insurance Liabilities: The Case of the SPDA," *Society of Actuaries Study Note 380-22-91*. Schaumburg, Ill.: 1991.

This study note illustrates how asset selection and management can be used to immunize against certain liability risks. The SPDA is used as an example for illustrating how the process could be structured using option-pricing techniques. Terms such as duration, convexity, and market value are discussed.

Level: Intermediate Pages: 42

"Pricing and Investment Philosophy for Interest-Sensitive Products," *Record of the Society of Actuaries* Vol. 12, No. 2 (1986): p. 1265.

This panel discussion at a recent Society meeting focuses on the coordination of investment considerations and pricing methodologies inproduct pricing of interest-sensitive products, including annuities. Specific examples are provided.

Level: Intermediate Pages: 17

"Investment Considerations in Product Development," *Record of the Society of Actuaries* Vol. 13, No. 2 (1987): p. 939.

"Practical Aspects of Managing Investment Risks," *Record of the Society of Actuaries* Vol. 13, No. 3 (1987): p. 1252.

These transcripts of recent Society panel discussions focus on the quantification of investment risks in designing annuity products. The latter source discusses the nature of various investment risks in some detail.

Level: Advanced Pages: 53

"Integrating the Actuarial Investment Function," *Record of the Society of Actuaries* Vol. 13, No. 4B (1987): p. 2341.

This panel discussion at a recent SOA meeting concentrates on the issues associated with incorporating an actuarial investment function into a company's annuity management process. This involves integration of the asset and liability expertise.

Level: Intermediate Pages: 19

"Selecting an Investment Strategy," *Record of the Society of Actuaries* Vol. 17, No. 2 (1991): p. 533.

This transcript revolves around the choice of appropriate assets to support the liabilities of interest- sensitive products such as annuities. In particular, it stresses the importance of establishing a formal asset strategy based on appropriate cash-flow analysis and adhering to it in a disciplined fashion.

Level: Intermediate Pages: 11

"Measuring Interest Margins: Part 1. Asset Segmentation," *Record of the Society of Actuaries* Vol. 16, No. 2 (1990): p. 735; Vol. 16, No. 3 (1990): p. 1289.

"Measuring Interest Margins: Part 2. Asset Segmentation," *Record of the Society of Actuaries* Vol. 16, No. 2 (1990): p. 837; Vol. 16, No. 3 (1990): p. 1477.

"Measuring Interest Margins: Part 3. Asset Segmentation," *Record of the Society of Actuaries* Vol. 16, No. 2 (1990): p. 919; Vol. 16, No. 3 (1990): p. 1631.

These panel discussions attempt to describe methods that can be used to measure profitability on interest-sensitive business, such as annuities. Specific topics covered include asset segmentation and measurement of investment results and required interest.

Level: Intermediate Pages: 131

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