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LIST OF ACRONYMS

AAA	American Academy of Actuaries
AAE	allowance for acquisition expenses
ABC	activity-based costing
ABM	activity-based management
AcSB	Accounting Standards Board (Canada)
AICPA	American Institute of Certified Public Accountants
ALAE	allocated loss adjustment expense
ALM	asset/liability management
AORC	agent-owned reinsurance company
ASB	Actuarial Standards Board (U.S.)
ASO	administrative services only
BPA	business processing alliance
BPO	business process outsourcing
CALM	Canadian Asset Liability Method
CARVM	Commissioners Annuity Reserve Valuation Method
CEO	chief executive officer
CFO	chief financial officer
CIA	Canadian Institute of Actuaries
CICA	Canadian Institute of Chartered Accountants
CIO	chief information officer
CLHIA	Canadian Life and Health Insurance Association
COLI	corporate-owned life insurance
COO	chief operating officer
COSO	Committee of Sponsoring Organizations
CPD	collaborative product development

CRM	customer relationship management
CRO	chief risk officer
CRVM	Commissioners Reserve Valuation Method
CSO	Commissioners Standard Ordinary
CTE	conditional tail expectation
DAC	deferred acquisition cost
DCAT	dynamic capital adequacy testing
DFA	dynamic financial analysis
DFCA	dynamic financial condition analysis
DMAIC	defining, measuring, analyzing, improving, and controlling
DOC	deferred origination cost
DPF	discretionary participation feature
DST	dynamic solvency testing
DTC	deferred transaction cost
EEV	European embedded value
EGM	expected gross margin
EGP	expected gross profit
ERM	enterprise risk management
EV	embedded value
FASB	Financial Accounting Standards Board
FTE	full-time equivalent
GAAP	Generally Accepted Accounting Principles
GAAS	Generally Accepted Auditing Standards
GRET	Generally Recognized Expense Table
H-GAAP	historical GAAP
HMO	health maintenance organization
IAA	International Actuarial Association
IAASB	International Auditing and Attestation Standards Board
IAIS	International Association of Insurance Supervisors

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IASB	International Accounting Standards Board
IBNR	incurred but not reported
IFRS	International Financial Reporting Standards
IMO	independent marketing organization
ISA	International Standards of Auditing
IT	information technology
KPI	key performance indicator
LAE	loss adjustment expense
LAT	liability adequacy testing or liability adequacy test
LIMRA	Life Insurance Management & Research Association
LOMA	Life Office Management Association
MD&A	Management Discussion and Analysis of Financial Condition and Results of Operations
MfAD	margin for adverse deviation
MGA	managing general agency
MP	macropricing
MPM	macropricing management
MVM	market value margin
NAIC	National Association of Insurance Commissioners
OECD	Organization for Economic Cooperation and Development
OSFI	Office of the Superintendent of Financial Institutions
PAD	provision for adverse deviation
PB	Practice Bulletin
PCAOB	Public Company Accounting Oversight Board
P-GAAP	purchase-GAAP
PRE	policyholders' reasonable expectation
PVFP	present value of future profits
R&D	research and development
SAP	statutory accounting principles

SBU	strategic business unit
SEC	Securities and Exchange Commission
SFAS	Statement of Financial Accounting Standards
SoA	Society of Actuaries
SOX	Sarbanes-Oxley Act of 2002
TPA	third-party administrator
TQM	total quality management
TVaR	tail value at risk
ULAE	unallocated loss adjustment expense
URR	unearned revenue reserve
VaR	value at risk
VOBA	value of business acquired
XML	extensible markup language

FOREWORD

Many insurance products have failed to meet their pricing return expectations as a result of higher than expected expenses. More and more often, actuaries are being asked to assist in resolving these expense differences and to develop long-term projections of expenses, not only for pricing, but also for projections of reserve adequacy. In the future, it is likely that U.S. actuaries will be called upon to develop accurate projections of future expenses in the process of establishing reserves within a principle-based framework. In all of these areas, actuaries could use greater guidance and understanding of the principles of expense analysis.

Actuaries have developed very sophisticated models of mortality, morbidity, capital market processes, and policyholder behavior (dynamic lapses and premiums). It is time to bring the same high-quality standards of practice to expense management and analysis that have been built around these other key drivers of profitability. *A Comprehensive Guide to Measuring and Managing LIFE INSURANCE COMPANY EXPENSES* will prove to be a very useful reference for the in-depth knowledge necessary to build more accurate and sophisticated expense models, particularly those with forward-looking properties such as principle-based valuation, cash flow testing, and risk analysis. It will also be useful in improving expense-related metrics.

The use of this text should not be limited to actuaries, as it provides many helpful ideas and techniques for expense management practice. A thorough understanding of expenses is necessary to manage the life cycle of an insurance product effectively in the following areas:

- Setting initial and future premium rates
- Determining capital needs
- Managing nonguaranteed elements and dividends
- Evaluating the need for business process changes and their impacts
- Making decisions to terminate a product or product line.

Without a thorough and disciplined approach, expense decisions are too often a political process that can have an adverse effect on the health of a business and its employees.

This text is perceived as a reference work, not as a book to be read from cover to cover. However, the first five chapters provide an excellent background in expense concepts as applied to an insurance organization and are recommended reading for those who do not have a thorough understanding of these topics. The practitioner should review this material and then reference specific chapters for more detailed areas of interest.

The Dynamic Solvency Task Force and the SOA Product Development and Financial Reporting Sections sponsored development of this manuscript. It started as a “Call for Papers” in 1997, to address a perceived need for improved approaches and consistent standards in analyzing expenses and for forecasting expense risks within the context of dynamic solvency projections. Sam had a keen interest in these topics, and his paper “Expenses and Pricing” had the broadest scope of the papers submitted for review. He had developed an extensive collection of material with the idea that it might be published someday. The Project Oversight Group realized that rather than simply publishing the paper as written, there was a great opportunity to meet a need for a “current, comprehensive single source to guide actuaries in establishing, coordinating and evaluating future expense levels” as stated in the SOA funding request. To achieve this new goal would require the addition of new sections and some extensive rewriting.

The editing was supported by a number of dedicated volunteers (principally Mike Eckman, Tim Harris, Tom Herget, Paul Strong, and Steve Sorrentino) who worked on this project for a number of years. Even though many sections were removed, the manuscript expanded sixfold in size. It seemed that there was always one more chapter or paragraph that needed to be added for completeness and to cover new standards of financial practice that were developing within the industry. Additional examples, a greatly expanded bibliography, and a glossary also were added for completeness. I thank Sam for being so patient with the group of editors and for his perseverance on this project.

A draft copy of this text was referenced in recommending standards for expense projections in a principle-based valuation process for the American Academy of Actuaries Universal Life Working Group (now the Life Reserves Work Group).

Clifford Angstman, FSA, MAAA
Chairman
SOA Project Oversight Group on Expenses

PREFACE

Intended Audience

The original intended audience of the material in this book consisted primarily of actuaries involved in pricing insurance and related contracts offered by life and health insurance companies. This material was then expanded to address some of the issues that actuaries involved in the financial reporting process. It therefore seemed natural that to better cover these topics, the issues of expense information and the allocation of expenses were natural subjects to include as well. When I incorporated concepts such as market-based and target pricing, it also became natural to address certain aspects of the management of expenses and expense information to be used for management purposes. With these expansions of the original intent, I hope that much of the material now included here can be used by a wider audience, including others working for insurance companies.

Although actuaries sometimes are not looked to as experts in expense detail and analysis, I have found that almost every actuary has become involved in this topic during his or her career. In one workshop on this and other topics that I participated in, I asked how many present actually had conducted an expense analysis. I was surprised when everyone's hand was raised. I believe that this is an important topic and one that every actuary and anyone else involved in the management of an insurance company should be familiar with, although the depth needed will vary with the individual's responsibilities. Based on their in-depth understanding of the business of insurance and insurance products, I believe that many actuaries are suited to expand their involvement in the analysis and management of expenses.

Organization of Book

This book has 21 chapters. Although in many respects they are interconnected, I have generally grouped them into the following segments:

1. *The basic elements* (Chapters 1 through 5). After discussing the objectives of expense analysis and this book in Chapter 1, core elements of planning and pricing, particularly market-based (target) pricing, cost-based pricing methodologies, and the relationship between target costing and active expense management, are described in Chapter 2. The significant interrelations that exist between planning, pricing, expenses, and performance measurement, both internal and external are described. Throughout the book, it can be seen that approaches to problem solving and analysis differ depending upon the experiences of those involved. Expense analysis is no exception, with some of these perspectives explored in Chapter 3.

Chapter 4 introduces some of the basic expense concepts that are used throughout the rest of the book, while Chapter 5 introduces expense analysis as a topic, including the fundamental context in which this book is applied, the business of insurance. In addition, because of the importance of information and corporate governance, the overall control environment and information risk factors are covered.

2. *Expense management* (Chapters 6 and 7). Chapter 6 addresses how effective expense management involves regular targeting, monitoring, and control of expenses, all in the context of corporate strategies. Measurement and targeting often are conducted through the budgeting process, reflecting expected productivity, expense control, and cost reduction efforts. Target costing often requires active expense management, the process of which is described in Chapter 7. The approaches described may or may not be effective for a particular organization and have gone in and out of style, yet some of their core principles can be useful in either comprehensive or selective applications. It is sometimes better to fit the method to the circumstances of the company, rather than assume that the method will solve all of the company's problems.
3. *The allocation, analysis, and projection of expenses and corresponding units* (Chapters 8 through 17). The primary focus of this section, the heart of the book, is the development and application of unit expenses and overhead expense pools. An introduction to this topic is given in Chapter 8, which also addresses the use and importance of expense models in expense analysis. A key element of any expense analysis is the allocation of expenses among categories, including product line, business unit, function, and process, considerations for which are included in Chapter 9. In deriving unit expenses, attention should be placed on proper identification, quantification, and relations between units and expenses, both of which are important. As explained in Chapter 10, expense drivers are those factors that influence the amount of expenses, while expense unit measures are those that are related to those expenses for a particular application.

Chapters 11 and 14 deal with two categories of expenses that are given special attention: (1) development expenses, including the resources used in the startup of a new company or product line, as well as expenses of discontinued operations, and (2) overhead expenses. Two families of overhead allocation methods are explored in Chapter 14 to derive expense pools, as are macropricing and marginal pricing.

After raw historical unit expense information and their components are gathered, they usually have to be adjusted to be useful, the process of which is discussed in Chapter 12. As described in Chapter 13, just as raw expenses have to be allocated to categories, the resulting categorized expenses then have to be allocated to units, be they drivers or unit expense measures; the chapter includes several examples, particularly of the important allocation between first and renewal units. Once adjusted, unit expenses and overhead expense pools are developed; in many applications they have to be projected to one or more future periods. Considerations in making these projections are given in Chapter 15, along with discussion of significant factors that might influence tomorrow's expense levels.

4. *Applications of expenses other than pricing and performance measurement* (Chapters 18 through 21). Although most of the content of Section 3 is applicable to all aspects of expense management, analysis, and its applications, several types of applications are given specific attention in Chapters 18 through 20. Expense-related information used in the selling process is described in Chapter 18, including practice in the United States, Canada, and the United Kingdom regarding sales and income illustrations, as well as compensation disclosure. A wide variety of financial reporting practice exists around the world for general purpose, regulatory, tax, and internal purposes; the first three, highly regulated, are described in Chapter 20, and various aspects of the fourth are given in Chapter 21.

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A description of U.S. and Canadian practice is in Chapter 19, with particular focus on their treatment of expenses. Their treatment in International Financial Reporting Standards is also discussed in that chapter, as are fair values, a relatively new development affecting insurance companies. Emerging international practice is important in that efforts at convergence, at least with respect to GAAP, are currently underway. Chapter 19 ends with a discussion of a company's control environment and financial reporting, made more important by several recent financial reporting scandals.

Chapter 20 describes the typical treatment of expenses in a wide variety of other application areas, categorized by those related to pricing, financial analysis, and other subjects. Last, expense information for internal management uses, relating to both internal and external measurement benchmarks, including communication aspects, is given in Chapter 21. Internal benchmarks included in a company's key performance indicators and balanced scorecard also are covered.

Origin of This Book

My initial exposure to these topics came as a result of various projects that I was responsible for when I was in charge of product development of individual life insurance products at Continental Assurance Company and an experience analysis unit when the actuarial functions of that company merged with the rest of the CNA Insurance Companies. That unit addressed all types of insurance products, including individual/personal lines and group/commercial distribution channels of life, health, and property/casualty insurance coverages. Whatever the product, expense measurement and analysis were always significant in one way or another.

My development of the material that became part of this book began during my four years as chairman of the Education Committee of the Society of Actuaries. During this period, it became clear to me that there was a lack of adequate comprehensive information regarding company expenses available to the practicing actuary. Although there was a relatively short educational study note (by John Fraser) on the basic Society education syllabus and many other study notes and articles that addressed elements of expense analysis and uses of expenses in developing pricing and financial reporting assumptions, these were not pulled together and approached the subject in an inconsistent and sometimes incomplete manner. Although much time has elapsed, and there have been some advances, including an enhanced Society study note by Norm Nodulman and two educational notes addressing expenses used for financial reporting purposes prepared by the Canadian Institute of Actuaries, it is somewhat surprising that this basic gap has not yet been fully filled. During that time I began my research that eventually culminated in this book.

ABOUT THE AUTHOR



SAM GUTTERMAN, FSA, FCAS, MAAA, FCA, FIA(HON), is a director and consulting actuary in the Chicago office of PricewaterhouseCoopers LLP. Previously he was employed by the CNA Insurance Companies. In total, Sam has over 35 years of actuarial experience serving the insurance industry, related entities, and government departments and agencies. He has had extensive experience with life, health, and property/casualty insurance coverages. Sam earned Bachelor's and Master's degrees from the University of Michigan.

He is a Fellow of the Society of Actuaries (FSA), Fellow of the Casualty Actuarial Society (FCAS), Member of the American Academy of Actuaries (MAAA), Fellow of the Conference of Consulting Actuaries (FCA), and Honorary Fellow of the Institute of Actuaries (HonFIA, U.K.). In addition, Sam is a member of the National Academy of Social Insurance and has CLU and CPCU designations.

Sam has been actively involved in professional activities, including the Society of Actuaries, Casualty Actuarial Society, American Academy of Actuaries, and International Actuarial Association. He was elected president of the Society of Actuaries, serving in 1995–96, and has held leadership positions in many committees, including co-chair of the Committee on Life Insurance Company Expenses and chair of the Social Insurance Committee, Education Committee, Planning Committee, Professionalism Committee, and Committee of Experience. Sam also has served on several committees of the International Actuarial Association, including being chair of its Committee on Insurance Accounting since 1997.

He served as a member of several U.S. government-sponsored expert technical panels: in 1990 on Social Security, in 1991 on the Future of Income Security and Health Care Financing, in 1992 on the military pension plan, and in 2000 as a consultant on the Medicare program. Sam has served as a member of the Insurance Working Group of the International Accounting Standards Board (IASB), Consultative Advisory Group of the International Auditing and Attestation Standards Board (IAASB) of the International Federation of Accountants (IFAC), and Present Value Steering Committee of the International Accounting Standards Committee (IASC).

He has served as a trustee of the Actuarial Foundation and the Actuarial Education and Research Fund and as president of the Chicago Actuarial Association and the Chicago Area Runners Association. In addition, he has served as an associate editor of the *North American Actuarial Journal* and department editor of *Contingencies*.

Sam lives in Glencoe, Illinois, with his wife Peggy and children Jordan and Zoe, all of whom he dedicates this book to.

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