

**UNITED STATES**

**Society of Actuaries**

**NORTH AMERICAN ACTUARIAL JOURNAL**

**Contents of the April 2000, Volume 4, Number 2 Issue by the Society of Actuaries**

**Feature Articles**

Investment Policy for Defined-Contribution Pension Scheme Members Close to Retirement: An Analysis of the "Lifestyle" Concept <i>Philip Booth, F.I.A., F.S.S., and Yakoub Yakoubov</i>	1
Calculating Funding Premiums for Universal Life Insurance <i>Calvin D. Cherry, F.S.A.</i>	20
Pricing Dynamic Investment Fund Protection <i>Hans U. Gerber, A.S.A., Ph.D., and Gérard Pafumi, Ph.D.</i>	28
Investing for Retirement: Optimal Capital Growth and Dynamic Asset Allocation <i>Hans U. Gerber, A.S.A., Ph.D., and Elias S.W. Shiu, A.S.A., Ph.D.</i>	42
Hedging and Reserving for Single-Premium Segregated Fund Contracts <i>Mary R. Hardy, A.S.A., F.I.A., Ph.D.</i>	63
Pricing Term Insurance in the Presence of a Family History of Breast or Ovarian Cancer <i>Jean Lemaire, A.S.A., Ph.D., Krupa Subramanian, A.S.A., Katrina Armstrong, M.D., and David A. Asch, M.D., M.B.A.</i>	75
Measuring Foreign Exchange Risk in Insurance Transactions <i>John I. Mange, F.S.A.</i>	88
Excess Mortality in Asia Associated with Cigarette Smoking <i>Robert J. Pokorski, M.D., F.A.C.P.</i>	101
Development of the Last-Year-of-Life Valuation Model for Retiree Medical Plans <i>Adam J. Reese, A.S.A., F.I.A., F.C.A.</i>	116
Managed Care and Performance Measurement: Implications for Insurance Markets <i>Dennis P. Scanlon, Ph.D., and Michael Chernew, Ph.D.</i>	128

**Departments**

<b><i>Discussions of Papers Already Published</i></b>	139
"Actuaries at the Dawn of the Computer Age" Discussion by Frank G. Reynolds	
"The Public Responsibility of Actuaries in American Pensions" Discussion by Clyde D. Beers	
"The Society of Actuaries Education and Examination System, 1949–1999" Discussion by Mark D.J. Evans	

6. *Table of Contents of Actuarial Journals / Tables des matières de revues actuarielles (anglais seulement)*

"Social Security–Adequacy, Equity, and Progressiveness: A Review of Criteria Based on Experience in Canada and the United States"

*Discussion by Dan Clark*

**Book Review**

146

Arbitrage Theory in Continuous Time,

*Reviewed by Samuel Cox*

Contents of the July 2000, Volume 4, Number 3 Issue by the Society of Actuaries

**Feature Articles**

Financial Services Integration: Fortune or Fiasco? The 1999 Bowles Symposium

Integration of Financial Services: Evidence from Australia

1

*Elisa A. Bain and Ian R. Harper*

Who Says Financial Services Integration is in Consumers' Best Interests?

20

*Joseph M. Belth*

The Integration of the Financial Services Industry: Where Are the Efficiencies

25

*Allen N. Berger*

The Integration of Financial Services in Europe

25

*Jean-Pierre Daniel*

The Role of Electronic Commerce in Financial Services Integration

64

*James R. Garven*

Financial Services Integration Worldwide: Promises and Pitfalls

71

*Harold D. Skipper Jr.*

Remarks on "Financial Services Integration: Right for Some, Wrong for Others?"

109

*Stephen D. Smith*

Integration of Financial Services: A Canadian Perspective

111

*Bob St. Jacques*

The State of the Industry: Meeting the Challenges of a New Millennium

113

*Robert Stein and Peter Porrino*

The Prudential Supervision of Financial Conglomerates in the European Union

121

*Michael Thom*

**Departments**

Discussions of Papers Already Published

139

"The Society of Actuaries Education and Examination System, 1949-1999"

*Discussion by Beda Chan*

**Book Review**

145

"Forecasting Retirement Needs and Retirement Wealth"

*Reviewed by Robert J. Myers, F.S.A.*

**THE ACTUARY**

**List of Contents: April 2000, May 2000, June 2000**

***The Actuary, Vol. 34, No. 4, April 2000***

Editorial: <i>by Janet M. Carstens</i>	2
Perspective: 1988 and 2000 visions <i>by Robert D. Shapiro</i>	3
Kentucky health care reform <i>by Carl Westman</i>	6
Big Tent survey results <i>by Linda Delgadillo</i>	8
Opinion: Big fish in small pond vs. small fish in big lake <i>by Armand de Palo</i>	9
What's new on the Web <i>by Peggy Grillot</i>	10
Academic Relations white paper ready <i>by Cecilia Green</i>	11
Spring education opportunities	12
E&E Corner	13
Dear Editor	14
Actucrostic	16

***The Actuary, Vol. 34, No. 5, May 2000***

Editorial: Why all actuaries should care about issues of an aging society <i>by Anna M. Rappaport</i>	2
Retirement 2000: Retirement policy concerns <i>by Richard G. Schreitmueller</i>	3
Demographics and changing retirement patterns	6
Design issues in retirement plans	8
Special status of aging women	10
Privatizing social benefit programs	12
Financial risks associated with aging	13
Mutual recognition agreement <i>by A. Norman Crowder</i>	14
Minority recruiting <i>by Kelly Mayo</i>	15
Research Corner	16

6. *Table of Contents of Actuarial Journals / Tables des matières de revues actuarielles (anglais seulement)*

Dear Editor	17
Puzzle	20
<b><i>The Actuary, Vol. 34, No. 6, June 2000</i></b>	
Editorial: The times they are a-changin' <i>by Godfrey Perrott</i>	2
Demutualization Life after demutualization <i>by Donna Steigerwald</i>	6
The mutual insurance concept: One company's point of view <i>by Stephen H. Frankel</i>	8
Employers face tough questions on demutualization distribution <i>by Rich Fuerstenberg and Bill Brossman</i>	10
The formation of a mutual company in the 1990s <i>by John Herzfeld</i>	12
Public Service Honor Roll	14
Lighter side: Pet insurance <i>by Linda Heacox</i>	15
Book Review: Forecasting retirement needs/wealth <i>by Peter Hardcastle and Bob Pryor</i>	16
Research corner	17
Dear Editor	18
Puzzle	20
<b><i>The Actuary, Vol. 34, No. 7, September 2000</i></b>	
Editorial: Our aging society <i>by Anna M. Rappaport</i>	2
Retirement income	
Waiting to buy an immediate annuity <i>by Dick Schreitmueller</i>	8
Post-retirement risks research <i>by Eric Sondergeld</i>	10
2000 Annuity Conference	11
Retirement Needs Framework Web page	11
Terry Savage on buying annuities, LTC insurance <i>by Donna Steigerwald</i>	12
Social Security annual report	14
Exam results <i>by Cecilia Green</i>	15

6. *Table of Contents of Actuarial Journals / Tables des matières de revues actuarielles (anglais seulement)*

Awards, honors	16
Annual meeting	17
Dear Editor	18
Puzzle	20

**ARCH RESEARCH CLEARING HOUSE**

**2000.1**

**CONTENTS**

Editor's Comments	vii
Conference Coordinator's Comments	viii
Program	x
List of Participants	xiv
Conference Announcement	xxiii
A Realistic Simulation of a Fixed Income Portfolio Irwin Vanderhoof	1
Pricing of Credit Derivatives David Li	5
The Effective Duration of Liabilities for Property-Liability Insurers Richard W. Gorvett and Steven P. D'Arcy	7
A Class of Distortion Operators for Pricing Financial and Insurance Risks Shaun Wang	19
An Interest Rate Generator for Argentina Sarah L.M. Christiansen	45
Optimal Capital Growth and Dynamic Asset Allocation Hans U. Gerber and Elias S.W. Shiu	53
Modeling Interest Rates in Cash-Flow Testing Using Resampling Methodologies Krzysztof M. Ostaszewski and Grzegorz A. Rempala	87
Joint Task Force on Academic Relations James Hickman and Steve Radcliffe	111
Adaptive Nonlinear Modes Arnold F. Shapiro and R. Paul Gorman	137
Dependence in the Individual Risk Model Étienne Marceau, Hélène Cossette, Patrice Gaillardetz, and Jacques Rioux	157
Summary of Social Security Administration Projections of the OASDI System Edward W. (Jed) Frees	177

6. *Table of Contents of Actuarial Journals / Tables des matières de revues actuarielles (anglais seulement)*

A Comprehensive Model for the Pricing of Warranty Insurance Jeffrey McSweeney, Rajesh Barnwal, and J.C. Hankins	229
Year 2000 and Beyond: SOA Course 7—A Preview Warren Luckner	239
The Puzzle of Human Aging and Longevity Esther Portnoy	247
Decomposition of Generalized Gini Coefficients S. David Promislow and Virginia R. Young	253
Research Questions Arising from the GATT Mortality Study Tom Edwalds	263
Canadian Pensioners Mortality 1983–1992 Study Louis Adam	271
Valuing Pension Entitlements on Marriage Breakdown in Canada Robin Damm	273
Efficient Amortization of Actuarial Gains and Losses in Pension Plans M. Iqbal Owadally and Steven Haberman	275
Retirement: A Multi-Phased Transition Robert L. Brown	319
A Proposed Unified Valuation System David Sandberg	337
S-Curve Reserve for Universal Life Lone-Young Yee	339
Pension Plan Surplus: What to Give and How to Give It Claire Bilodeau	349
A Stochastic Definition of Future Shares Jose Garrido and Rodrigo Arias	351
Valuing Equity-Indexed Annuities Serena Tiong	353
Ruin Probabilities in Life Insurance Benny Levikson, E. Frostig and S. Haberman	355
Bridging Theory and Practice Stuart Klugman	365
Credibility—From the Eyes of the Customer Mike Round	367
Credibility Evaluation and the Tails of the Exponential Dispersion Family Zinoviyy Landsman and Udi E. Makov	387

6. *Table of Contents of Actuarial Journals / Tables des matières de revues actuarielles (anglais seulement)*

Risk Drivers Revealed: Quantile Regression Steven Craighead	397
Renewal and Non-Homogeneous Poisson Processes with Periodic Intensities Manuel Morales	415
Actuarial Modeling with MCMC and BUGS David Scollnik	429
Asymptotics in the Subexponential Case Diego Hernandez-Rangel	499
Estimating Between Line Correlations Generated by Parameter Uncertainty Glenn Meyers	509
Is Mortality Improvement in Our Future? Scott Haglund, Joan Hentschel, Mark Rowley, and Linda Wilson	535
Dependent Causes of Death Emiliano A. Valdez	547
The Distribution of Insurance Benefits with Frailty Emiliano A. Valdez and George Wong	575
On Robustness in Risk Theory Jacques Rioux and Étienne Marceau	595
Valuation of Equity-Indexed Annuities X. Sheldon Lin	623
Internet Based Empirical Study on Insurance Companies in Austria Thomas Benesch	627

### **SECTION NEWSLETTERS**

A Special Interest Section is a group of Society members organized to study and discuss their common function and professional interests and to contribute information to the actuarial profession. Sections are successful because their members get involved. They are structured but flexible so as to be responsive both to the needs of the profession and to the specific needs of their members. Society members can discuss their special interests at the Section level with other members and still be served professionally through the Society structure.

Sections publish newsletters and special reports, plan Society meetings and seminars, hold breakfasts and luncheons with guest speakers at Society meetings and support actuarial research efforts. Section members are eligible to vote in Council elections and to hold office in the Section to which they belong.

People in the actuarial profession and related fields in the United States, Canada, and other countries who are not members of the Society of Actuaries have the opportunity to take advantage of these special interest groups. Nonmembers can subscribe to one or more special interest Sections in order to receive their mailings and to be invited to

6. *Table of Contents of Actuarial Journals / Tables des matières de revues actuarielles (anglais seulement)*

participate in seminars and other Section-sponsored programs. It is a good opportunity to keep abreast to actuarial advancements and activities in North America.

Section	\$
Actuary of the Future Section	
Computer Science Section	
Education & Research Section	
Futurism Section	
Health Section	
Individual Life Insurance and Annuity	
Product Development Section	
International Section	
Investment Section	
Life Insurance Company Financial Reporting Section	10.00
Long Term Care Insurance Section	
Management & Personal Development	
Nontraditional Marketing Section	
Pension Section	
Reinsurance Section	
Smaller Insurance Company Section	

**EDUCATION AND RESEARCH SECTION**

**Expanding Horizons, August 2000, Issue #22**

And Now...A Word from the Editor by Patricia Pruitt	1
Foundations for a Future by Edward W. (Jed) Frees	1
SOA Discussion Forums Now Online by Peggy Grillot	3
Plan Ahead for ARC	4
E&R Section Council Meeting, Minutes -- May 9, 2000 by Judy Yore	5
Time Well Spent-- Spring Meeting Sessions on Education by Patricia Pruitt	6
Actuarial Science Faculty Position	7
Record 1999 Sessions for Education and Research Specialty Track on the Web as of June 2000	8
Expanding Horizons Online	8
Letter to the Editor	9
A View from the Chair...Improving Relations with Academia by Sarah Christiansen	10

6. *Table of Contents of Actuarial Journals / Tables des matières de revues actuarielles (anglais seulement)*

Reports from Research by Patricia Pruitt	11
---	----

**June 2000 Financial Reporter (Issue #42)**

Editor's Notes by Thomas Nace	1
An Actuarial Analysis of FAS 133 (Part 2) by Anson J. Glacy, Jr.	1
Chair's Corner by Mike McLaughlin	3
Highlights of the March 2000 NAIC Life and Health Actuarial Task Force Meeting by Donald P. Maves	4
Financial Section Seminars in 2000	5
Blazing the Path for a Unified Valuation System by David K. Sandberg	6
The "X" Factor -- Are You Ready? by Larry Gorski	14
CARVM Reserves for Variable Annuities with Guaranteed Living Benefits by James W. Lamson	15
Treasurer's Report by Larry Gorski	17
The Actuarial Opinion Model Regulation (AOMR) Takes Center Stage by Norman E. Hill	18
A Call For Contributors	21
An Update on International Accounting Standards for Insurance by Bruce Moore	23
Record Sessions for Financial Reporting Special Track on the Web	26
Own the past	27
Writer's Haven by Shirley Hwei-Chung Shao	28

**HEALTH SECTION**

**Health Section News, April 2000 , Issue #37**

APCs--They'll Change Outpatient Hospital Contracting by Pat Dunks & Nick Ortner	1
Chairperson's Corner by Bernard Rabinowitz	1

6. *Table of Contents of Actuarial Journals / Tables des matières de revues actuarielles (anglais seulement)*

Editor's Column by Jeff Miller	2
The Simple Logic of Health Care Inflation by Gerry G. Smedinghoff	4
Credibility Theory for the Health Actuary: The Need for an Inter-Company Experience Study by James M. Robinson	6
How Significantly Can Health Care Costs Really Be Impacted with Today's Approaches to Disease Management? by John E. Ragan	10
Be There or Be Square	11
Consumer-Driven Health Care by Stacey Muller	12
A Message from the President-Elect...Think NAAJ by Rob Brown	15
What Is the Unified Valuation System (UVS) and What Are its Origins? by Donna C. Novak	16
In Search of That Most Elusive Companion to the Health Actuary.Data by Richard A. Kipp	18
New Managed Care Risk-Based Capital by Donna C. Novak	20
Is that Your Final Answer? Face the Challenge of the Future by Lindsay R. Resnick	22
Disability Special Interest Group	23
Own the Past	28
<b>Health Section News, August 2000, Issue #38</b>	
A Health Insurance Insolvency Case Study by Bill Howard	1
Chairperson's Corner by Bernie Rabinowitz	1
Editor's Column by Jeff Miller	2
New Assessment Program for PPOs by Louis Lana	3
Benchmarking to Maximize Managed Care Performance by Sue McQuillian	4
Considerations in the Development of Area Factors by David Reichlinger	7

6. *Table of Contents of Actuarial Journals / Tables des matières de revues actuarielles (anglais seulement)*

Medical Aggregate Stop Loss Claim Frequencies by David Olsho and Mark McAllister	8
Association Group Disability Coverage: Past Lessons for a Profitable Future by Raza Zaidi and Steven Siegel	10
Why You Should Join the Long Term Care Insurance Section Now by Jim Glickman	12
Academy Health Practice Council Activities by Tom Wilder	13
What the Examination System Doesn't Teach About Health Insurance by Karl G. Volkmar	14
Don't Foget the Data by Robert Bachler	16
Disability in the New Millenium: A UK Perspective by Sue Elliott	17
HCFA & Medicare + Choice: Contract Year 2001 Changes by Anant Galande	19

**INTERNATIONAL SECTION**

**May 2000 International Section News**

Chairperson's Corner by Angelica Michail	1
Life Insurance Tax Down Under by Greg Martin	1
Editor's Note by Randy Makin	2
The SOA President Visits Georgia by A. Norman Crowder, III	7
India's Insurance Industry Marches toward Liberalization by Shiram P. Mulgund	8
6th Annual Conference of the International Association of Insurance Supervisors by Hans Wagner	11
Unit-Linked Products on the Rise by Hubert Mueller	14
New Lease on Life for Korea? by Paul Sinnott	18
Meeting Members' PD Requirement in Asia by Pat Kum	20
Minutes of the IAA Council Meeting Paris, France, Dec. 11, 1999	22

6. *Table of Contents of Actuarial Journals / Tables des matières de revues actuarielles (anglais seulement)*

CII Publications Survey, SOA to Make Changes to Overseas Distribution of Publications	25
International Section Conference Call Jan. 5, 2000, 6:00 p.m.	29
Own the past	31
International Button by Peggy Grillot	32

**INVESTMENT SECTION**

**April 2000 Risks & Rewards --Issue #34**

Chairperson's Corner by Josephine E. Marks	1
Dynamically Hedging Insurance Product Risk by Marshall C. Greenbaum	1
Editor's Column by Nino Boezio	2
Projecting Budget Surpluses by Carl E. Walsh	9
The Funds Rate Target and Interest Rates by Daniel L. Thornton	12
Extracting Inflation Expectations from Bond Yields by Jim Sweeney	13
1996-97 Redington Prize Awarded	15
Bond Prices, Yields, and Convexity by Macro Advisors	16
Investment Section Council Meeting in San Francisco	17
A Message from the President-Elect...Think NAAJ by Rob Brown	19
Own the Past	20

**LONG-TERM CARE SECTION**

**Long-Term Care, April 2000**

A Primer on Some LTCI Pricing Challenges by Jim Berger & Yang Ho	1
2000 Annual Meeting Long-Term Care Insurance Sessions by Greg Gurlik	2
NAIC Activities by William C. Weller	3

6. *Table of Contents of Actuarial Journals / Tables des matières de revues actuarielles (anglais seulement)*

Suitability and Long-Term Care Insurance by Dearborn Financial Publishers	6
LTCI Contract Reserves Results of HIAA's 1999 Study by William C. Weller	10
LTCI Section Minutes - Breakfast Meeting, Tuesday, October 19th, 1999	13
Reinsurance for Long-Term Care Insurance by Garly L. Corliss	15
Federal Legislation Relating to Long-Term Care Insurance by Loida R. Abraham	17
Chairperson's Corner by James M. Glickman	19
Editor's Column by Bartley L. Munson	20
SOA Spring Meeting	20

**NONTRADITIONAL MARKETING SECTION  
Spring 2000, Issue #34, NewsDirect**

There's More Than One Way to Sell on the Internet by Howell Pugh	1
Chairperson's Corner by Carl E. Meier	1
Editor's Note by Joseph E. Brennan	5
Interest in Preneed Accelerating by Kevin Gough	6
Who's Afraid of the Big, Bad Internet? by Mark L. Trencher	8
NTM Section Council Meeting in San Francisco	10
Successful Bancassurance Programs: A Look Behind the Scenes by Kerry J. Kixmiller & James B. Smith, Jr.	11
Own the past	12
Credit Disability Mortality Tables	See Supplement

**PENSION SECTION  
March 2000 Pension Section News**

Chairperson's Corner by Colin England	1
Tax Assistance to Qualified Retirement Savings Plans: Deferral or Waiver? by Robert L. Brown	1

6. *Table of Contents of Actuarial Journals / Tables des matières de revues actuarielles (anglais seulement)*

Help Us Build a Hybrid Pension Plan Library	3
Summary of 2000 IRC, PBGC, Federal Income Tax, Social Security, and Medicare Amounts? by Heidi R. Dexter	7
The 1999 Technical Panel on Assumptions and Methods by Edward W. Frees	14
Office of the Joint Board Memorandum by Patrick McDonough	14
Rich's Ramblings by Joel I. Rich	15
Continuing Education Update for Pension Actuaries by Barb Choyke	16
A Message from the President-Elect... Think NAAJ by Rob Brown	18
Own the Past	19
Retirement Plans Experience Committee Meetings of February 9 & 22, 2000 by Edwin Husted	20
Fort Lauderdale Meeting in October 1999	20
<b>June 2000 Pension Section News, Issue #43</b>	
Excerpts from the PBGC Actuarial Valuation Report -- 1999 Fiscal Year by Joan M. Weiss	1
Chairperson's Corner by Colin England	1
Retirement Needs Framework	3
Data Quality -- Whose Job Is It? by Janice P. Bricker	6
Help Wanted	7
Study Note Corner	8
Record Sessions for Pension Specialty Track on the Web	9
The Simple Logic of Health Care Inflation by Gerry G. Smedinghoff	10
Continuing Education Update by Barb Choyke	12
Joint Board of the Enrollment of Actuaries News Release	12