

WILLIAM THOMAS ZIEMBA  
Alumni Professor of Financial Modeling  
and Stochastic Optimization, Emeritus  
University of British Columbia, Vancouver  
and  
Distinguished Visiting Research Associate,  
Systemic Risk Centre, London School of Economics, UK

Curriculum Vitae and List of Publications  
June 2018

**Education:** University of California, Berkeley, Ph.D.(Business Administration), Essays on Stochastic Programming and the Theory of Economic Policy, 1969

**Academic Position:** University of British Columbia, July 1968-Dec 2006, then Emeritus Part-time Visiting Professor at universities listed below

***Visiting Professorships (ordered by first visit)***

UC, Berkeley, January 1973, January 1978-79

Stanford University, April 1973, 1985

Visiting Scholar, IIASA, Laxenburg, Austria, August 1981; October 1984, September 1997

UCLA, Sept-June 1982

Yamaichi Visiting Professor of Finance, Tsukuba University, Japan, August 1988-July 1989

Visiting Professor of Finance, London School of Economics, 1993; Distinguished Visiting Research Associate, Systemic Risk Centre, London School of Economics, UK, Fall 2013, April 2014, Fall 2014, April 2015, Fall 2015, Spring 2016, Summer 2017, Fall 2017

Warwick University, February - March 1993

University of St. Gallen, June 1994

University of Chicago, Spring 1996

National University of Singapore (Cycle and Carriage Chair) September - October 1997

University of Bergamo, October 1997, May 1999, July 2002, May 2004, May, Oct 2006, April 2007, May 2008, June 2009, May 2015, May 2017

Judge Institute of Management Studies, University of Cambridge (Arthur Anderson Chair) January - April 1998

University of Catania, Sicily, May 1999

ISMA Centre, Reading University, April 2000

Imperial College Management School, May-June 2000

University of Cyprus May 2001, March-April 2012

Helsinki School of Economics, September 2002

Oxford University, July 2002, March 2004, 2005, Jan-Feb 2006, 2007, 2008, March 2009, 2010

Nomura Visiting Professor of Mathematical Finance, St. Catherine's College, Oxford University, January-June 2003

Swiss Banking Institute, University of Zurich, June 2003, June-July, 2003, Nov 2006, June 2008, March 2011, Nov 2012, June 2013, Sept-Oct 2017

Visiting Professor of Finance, Massachusetts Institute of Technology, January-June, 2005

Visiting Professor of Statistics, University of Washington, Seattle, November 2005

Visiting Professor of Finance, ICMA, University of Reading February, March 2007, 2008, 2009, 2011-13  
(Regular 20% Professor for 2011-2014)

EDHEC, Nice, March 2006

Luiss Guido Carlo University, Rome, April-May 2006 and 2007, October 2009, and May 2012

University of Edinburgh, Mathematics Department, March 2007

Visiting Professor of Economics, University of Toulouse, May-June 2009

NTU, Business School, Singapore, April-May 2009

Visiting Professor of Finance, Imperial College Business School, June 2009

Sabanci University, Istanbul, June 2010, June 2011, June 2012, June 2013

Hallsworth Visiting Professor of Finance, University of Manchester, Nov 2012

### **Academic or Professional Awards:**

Seagram-Bronfman Business Faculty Research Fellow, 1972-73

Canadian Council Leave Fellowship, 1978

Social Sciences & Humanities Research Council Leave Fellowship, 1984

Co-winner of Second Prize 1993 Franz Edelman Award for the Practice of Management Science with research team from the Frank Russell Company for The Russell-Yasuda Asset-Liability Management Model

Gold medal for contributions to Financial Modeling, Technical University of Crete, 1996

Faculty of Commerce: Research Prize for Practice, 1998

Named one of the ten pioneers who helped develop the field of stochastic programming at the 10<sup>th</sup> International Conference on Stochastic Programming, Tucson, Arizona, October 2004

Winner Battle of the Quants Futures Contest 2015 in New York

### *Referee for professional journals:*

Management Science: Theory; Management Science: Application; SIAM Journal; SIAM Review; U.B.C. Journal of Business; Operations Research; Opsearch; INFOR; Mathematics of Operations Research; Utilities Mathematica; Journal of Industrial Engineering; Journal of Optimization Theory and Applications; Journal of Financial and Quantitative Analysis; Journal of Finance; Mathematical Programming; Economic Inquiry; OMEGA; Economic Journal; International Review of Financial Analysis; Contemporary Policy Issues, American Economic Review, Applied Mathematical Finance, Journal of Economic Dynamics and Control, Manchester Quarterly, Journal of Political Economy, Annals of Operations Research, Interfaces, Journal of Futures Markets, Economica, Financial Analysts Journal, Journal of Banking and Finance, Quantitative Finance, and American Mathematical Monthly

### *Referee for book publishers:*

Academic Press, Inc., Holden-Day, Harper and Row Inc., Holt Rinehart Winston Inc., John Wiley and Sons Inc., Basil Blackwell, Kluwer Publishers, Baltzer Science Publishers, Cambridge University Press and Princeton University Press

### *Referee for tenure and promotion cases:*

Brandeis, University of Chicago, Harvard, Tel-Aviv University, Stanford, University of Florida, University of Ottawa, New York University, Technion, Yale, the University of California, Berkeley, the Hebrew University, the University of Missouri, St. Louis, Santa Clara University, University of Wisconsin, University of Hong Kong, Canterbury University, Australian National University, University of Sydney, University of Pennsylvania, Southern Methodist University, Simon Fraser University, University of Woolagong (New Zealand), the London School of Economics, Dalhousie University, University of Waterloo, Clemson University, Princeton University, Rutgers University, Bilkent University, National University of Singapore, University of Florida, Cass Business School, KAIST in Korea

**Program Advisor:**

Financial Studies Graduate Program at HSB - Nowy, Sacz, Poland; Inaugural lecturer, October 1998  
 Banking Institute, University of Cyprus, 1996-2012  
 Financial Engineering Centre, National University of Singapore, 1999 –  
 RBC Centre for Risk Management, Dalhousie University, 2004-

**Editorships:**

*CORS-INFOR*, Editor, January 1979-July 1981.

Co-Editor, July 1981- September 1982.

*Management Science*, Department of Finance

Associate Editor, September 1980-November 1982

Departmental Editor, November 1982 - September 1992

The department had eleven associate editors and handled about 50 papers a year. A special issue of the *Journal on financial modelling* jointly edited with Stavros Zenios of the Wharton School appeared in November 1992.

**Series Editor**

**Handbooks in Finance, North Holland-Elsevier 1999** – WTZ co-edited three of the 11 handbooks produced in the series during 2006-2013, These include handbooks on *Heavy Tailed Distributions in Finance* edited by S.T. Rachev, 2003 and *Asset and Liability Management, Volume 1: Theory and Methodology* 2006 and *ALM, Volume 2: Applications and Case Studies, 2007* edited by S.A. Zenios and W.T. Ziemba,, *Equity Risk Premium* edited by R. Mehra 2007, *Empirical Corporate Finance, Vol 1, 2007* edited by E. Eckbo and *Financial Intermediation and Banking* edited by A.V. Thakor and A.W.A. Boot, 2008. D.B. Hausch and W.T. Ziemba, *Sports and Lottery Markets*, Y. Ait-Shalia and L. Hansen, 2011) *Financial Economics* (2 volumes), and T. Hansen and K. Shenk-Hoppe (2011) *Financial Markets, Dynamics and Evolution*

**Advisory Editors:** Kenneth J. Arrow, Stanford University, George C. Constantinides, University of Chicago, B. Espen Eckbo, Dartmouth College, Harry M. Markowitz, University of California, San Diego, Robert C. Merton, Harvard University, Merton Miller, University of Chicago, Stewart C. Myers, Massachusetts Institute of Technology, Paul A. Samuelson, Massachusetts Institute of Technology, and William F. Sharpe, Stanford University

**Handbooks in Financial Economics, World Scientific 2009** – This series of 10-30 volumes succeeds, with minor changes, the North Holland Elsevier series with no repeats.

Ten handbooks have been published or are under contract including Leonard C MacLean, E O Thorp and W T Ziemba (eds) *The Kelly capital growth criterion: theory and practice*, 2010 (hardback) and 2011 (paperback); *Handbook on the fundamentals of financial decision making* in two volumes, 2013, edited by Leonard C. MacLean and W. T. Ziemba and *Handbook of Futures Models* (with T. Mallaris) in 2015, *Handbook on the Economics of Wine*, edited by O. Ashenfelter, O. Gergaud, K. Storchmann and W T Ziemba in 2018 and Memorial Handbooks for Marida Bertocchi (Rita D'Eclesia, Stavros Zenios and William Ziemba, eds) and Jitka Dupacova (Milos Kopa, Roger Wets and William Ziemba, eds) are in progress for 2018

**Advisory Editors:** Kenneth J. Arrow, Stanford University, George C. Constantinides, University of Chicago, B. Espen Eckbo, Dartmouth College, Robert C. Merton, MIT, Stewart C. Myers, MIT.

**Books in Finance, World Scientific 2009** – This series of books is intended to provide up to date presentations of key topics in finance through single and multiple authored monographs, collected works of noted scholars, surveys of defined subfields of finance, research reference volumes written or edited, textbooks and other publications. Twelve books are now published or are under contract, including B28, B29, B30, B31, B34 that I was involved with.

**Advisory Editors:** Greg Connor, National University of Ireland, Maynooth, George Constantinides, Booth Graduate School of Business, University of Chicago, Espen Eckbo, Tuck School of Business, Dartmouth College, Hans Föllmer, Humboldt University, Christian Gollier, Toulouse School of Economics, Thorsten Hens, University of Zurich, Robert Jarrow, Cornell University, Hayne Leland, Haas School of Business, UC Berkeley, Haim Levy, Hebrew University, John Mulvey, Princeton University, Marti Subrahmanyam, Stern School of Business, NYU

**Consultant to:**

Yamaichi Research Institute, Tokyo, August 1988-December 1989, on worldwide security market anomalies and portfolio strategy

Edward O. Thorp and Associates, on Global Investment Strategies, December 1990-1996

Gordon Capital Corporation, on Global Investment Strategies, 1990-91

Frank Russell Company, on Global Asset Allocation and Portfolio Management Research, June 1989-April 1998

Buchanan Partners, on Global Investment Strategies, London, England, March 1992 - April 1994

Morgan Stanley, New York, on U.S. and global investment strategies, March 1993

Market Research, Nassau, Bahamas, October 1996 – July 2000

Credit Swiss First Boston, London, December 1999

Innovest (Siemens Austria Pension Plan), Vienna, December 1999- July 2001

Gruppo Uni Credit, Milan, January, 1999- July 2001

SCA Insurance, Dallas on sports insurance guarantees, August 2001-March 2006

ORS, Alba, Italy, August 2000 – 2005

Mansion on lottery strategies, January 2004-2010

IS Partners, Zurich, October 2005-January 2006

RAB Capital, Hedge Funds, London, February 2006 to March 2007

Canyon Capital Advisors, LLC, Los Angeles, February 2007

Matcap, 2009-present Investment strategies

Betfair, 2010-2013 Theory of investing

Ibis Management LLC, Investment strategies February-August 2010

Fidelity Investments, Boston, Investment strategies August 2011

Ketchum Capital, Chicago, Investment strategies March 2012 - April 2018

Expert witness for Hong Kong legal court cases, 2014 -

Hong Kong racetrack betting modelling, 2016-17

**RESEARCH ACTIVITIES****Cluster Chair**

Finance and Economics Sessions, 19<sup>TH</sup> Mathematical Programming Society Meeting, Rio de Janeiro, Brazil, July-August 2006

Sessions on Capital Growth Theory and Practice, XI International Conference on Stochastic Programming, Vienna, August, 2007

Session, Banking, Risk management and Credit Risk, International Risk Management Conference, Florence, Italy, June 2010

Session on Stochastic Programming Models in Finance, 12<sup>th</sup> International Conference on Stochastic Programming, Halifax, August 2010

Co-organizer, Stochastic Optimization Session in Finance, Bonn Workshop, May 27-29, 2013

**Research Areas:**

Incentives in Hedge Fund Management  
Risk Control of Investment and Hedge Fund Portfolios  
Global Asset Allocation

Asset and Liability Management for Insurance Companies, Pension Funds, Wealthy Individuals and Retirement  
Stochastic Programming Applications in Finance  
Worldwide Security Market Valuation

Portfolio Theory and Management  
 Programmed Trading  
 Mathematics of Investment and Gambling  
 Sports Betting and Insurance  
 Efficient and Inefficient Security Markets  
 Option and Warrant Pricing  
 Arbitrage Theory and Arbitrage Pricing  
 Dynamic Portfolio Theory and Applications  
 Financial Planning

Risk Aversion, Risk Measures and Stochastic  
 Dominance  
 Stochastic Programming Theory  
 Applications of Mathematical Programming  
 Japanese and Asian Financial Markets  
 Land and Stock Prices in Japan and Asia  
 Japanese Derivative Markets  
 Energy Policy Modeling  
 Information Analysis  
 Financial Market bubble exit and entry strategies

## PUBLICATIONS

### B – Selected Books, Published and In Progress

- B1. Ziemba, W.T., Vickson, R.G., Eds. (1975) *Stochastic Optimization Models in Finance*, Academic Press, July, 744 pages (388 pages reprinted and 356 pages new). 2<sup>nd</sup> edition with new preface, World Scientific, Singapore, 2006.
- B2. Ziemba, W.T., Akatay, A., Schwartz, S.L. (1979) *Turkish Flat Weaves*, Scorpion Publications Ltd., London, 144 pages.
- B3. Ziemba, W.T., Schwartz, S.L., Koenigsberg, E., Eds. (1980) *Energy Policy Modeling: United States and Canadian Experiences; Vol. I: Specialized Energy Policy Models*, Martinus Nijhoff Publishing, Boston, April, 396 pages.
- B4. Ziemba, W.T., Schwartz, S.L., Eds. (1980) *Energy Policy Modeling: United States and Canadian Experiences: Vol. II: Integrative Energy Policy Models*, Martinus Nijhoff Publishing, Boston, May, 378 pages.
- B5. Schaible, S., Ziemba, W.T., Eds. (1981) *Generalized Concavity in Optimization and Economics*, Academic Press, November, 780 pages.
- B6. Hausch, D.B., Ziemba, W.T., (1984) *Beat the Racetrack*, Harcourt, Brace and Jovanovich (432 pages); revised and expanded 2<sup>nd</sup> edition, William Morrow, 1987, 524 pages.
- B7. Ziemba, W.T., Hausch, D.B. (1985) *Betting at the Racetrack*, Dr. Z Investments, Los Angeles, November, 176 pages; 2nd edition, Norris Strauss, New York, November 1986, 140 pages.
- B8. Ziemba, W.T., Brumelle, S.L., Gautier, A., Schwartz, S.L. (1986) *Dr. Z's 6/49 Lotto Guidebook*, Dr. Z Investments, Los Angeles, June, 124 pages
- B9. Amershi, A., Feltham, J., Ziemba, W.T., Eds. (1988) *Economic Analysis of Information and Contracts: Essays in Honour of John E. Butterworth*, Kluwer Academic Publishers, Boston, July, 415 pages.
- B10. Ziemba, W.T. and Schwartz, S.L. (1991) *Invest Japan: The Structure, Performance and Opportunities of Japan's Stock, Bond and Fund Markets*, Probus Publishing, Chicago, November, 596 pages
- B11. Ziemba, W.T., Bailey, W., Hamao, Y., Eds. (1991), *Japanese Financial Market Research*, North Holland Publishers, Amsterdam, December, 616 pages.
- B12. Ziemba, W.T., Schwartz, S.L., *Power Japan: How and Why the Japanese Economy Works*, Probus Publishing, Chicago, August 1992, 385 pages.
- B13. Hausch, D.B., Lo, V., Ziemba, W.T., Eds., (1994) *Efficiency of Racetrack Betting Markets*, Academic Press, 648 pages, reprinted in 2008 by World Scientific with a new preface.
- B14. Jarrow, R.A., Maksimovic, V., Ziemba, W.T., Eds. (1995) *Finance*, North Holland Handbook Series, December, 1165 pages. Reprinted in Japanese, 1998, and in Chinese, 2002.
- B15. Keim, D.B., Ziemba, W.T., Eds. (2000) *Security Market Imperfections in World Wide Equity Markets*, Cambridge University Press, 531 pages (reprinted in Chinese, 2003).

- B16. Ziemba, W.T., Mulvey, J.M., Eds (1998)., *Asset and Liability Management from a Global Perspective*, Cambridge University Press, 665 pages, and in Chinese, 2003. [A review by Ton Vorst is in the *Journal of Finance*]
- B17. Wets, R.J.B., Ziemba, W.T., Eds.,(1999) *Stochastic Programming - State of the Art 1998*, (main lectures VIII International Conference on Stochastic Programming), Baltzer Science Publishers BV (Special Issue Annals of Operations Research), March, 285 pages.
- B18. Birge, J.B., Edirishinghe, N.C.P., Ziemba, W.T., Eds. (2001) *Research in Stochastic Programming* (selected, refereed papers from the VIII International Conference on Stochastic Programming), Baltzer Science Publishers BV (Special Issue Annals of Operations Research), June, 306 pages.
- B19. Ziemba, W.T. (2003), *The Stochastic Programming Approach to Asset Liability and Wealth Management*, AIMR, December, 192 pages plus 72-page appendix. [A review by Alan King is in *Interfaces* April 2006]
- B20. Wallace, S.W., Ziemba, W.T., Eds (2005). *Applications of Stochastic Programming*, SIAM - Mathematical Programming Society Series on Optimization, 707 pages.
- B21. Zenios, S.A., Ziemba, W.T., Eds, (2006) *Handbook of Asset and Liability Modeling*, North Holland Volume 1: *Theory and Methodology*, pages 1-487.  
Volume 2: *Applicaitons and Case Studies*, June 2007, pages 489-1147.
- B22. Ziemba, R.E.S. and Ziemba, W.T., (2007) *Scenarios for Risk Management and Global Investment Strategies*, Wiley, November, in UK and January 2008 in US, 315 pages.
- B23. Hausch, D. B., Ziemba, W.T., Eds, (2008) *Handbook of Sports and Lottery Markets*, North Holland Handbooks in Finance Series, September, 536 pages.
- B24. MacLean, L.C., E. O. Thorp, Ziemba, W.T., Eds., (2011) *The Kelly Capital Growth Criterion: Theory and Practice*, World Scientific, (hardback) 2012 (paperback), 853 pages.
- B25. Bertocchi, M., Schwartz, S.L., Ziemba, W.T., Eds. (2010) *Optimizing the Aging, Retirement and Pensions Dilemma*, Wiley, February, 411 pages; 2<sup>nd</sup> Edition 2015.
- B26. MacLean, L.C., Ziemba, W.T., Eds. (2013) *Handbook of the Fundamentals of Financial Decision Making* (2 volumes), World Scientific, 891 pages.
- B27. Ziemba, R.E.S., Ziemba, W.T. (2013) *Investing in the Modern Age*, some Wilmott columns revised and expanded, 2007-2012, World Scientific (hardback and paperback), 563 pages.
- B28. Ziemba, W.T. (2012) *Calendar Anomalies and Arbitrage*, World Scientific, 586 pages.
- B29. Gassman, H. I. and W. T. Ziemba, Eds. (2012) *Stochastic Programming Applications in Finance, Energy and Production*, World Scientific, 518 pages.
- B30. Mallarias, A.G., Ziemba, W.T. Eds. (2015) *Handbook of Futures Markets*, World Scientific.
- B31. Ziemba, W.T., *Collected Works* (5 volumes) to include volumes on Portfolio Theory and Applications, Asset Liability Management, and Stochastic Programming: Theory and Applications, World Scientific, in preparation.
- B32. Ziemba, W.T. (ed) (2016) *Great investment ideas*, World Scientific
- B33. Ziemba, W. T. (2017) *The adventures of a modern renaissance academic in gambling and investment*, World Scientific
- B34. Ziemba, W. T. (2018) *Exotic betting at the racetrack*, World Scientific, in press
- B35. MacLean, L.C , Ziemba, W. T. (eds) (2017) *Problems in the theory of financial decision making and stochastic optimization models in finance*, World Scientific
- B36. Ziemba, W.T., Lleo, S. and Zhitlukhin, M (2017) *Stock market crashes: predictable and unpredictable and what to do about them*, World Scientific
- B37. Ashenfelter, O. Gergaud, O, Storchmann, K and Ziemba, W T (eds) (2018) *Handbook of the Economics of Wine*, World Scientific

- B38. Edirishinghe, N., MacLean, L.C. and Ziemba, W.T. (eds) (2018) *Handbook of portfolio theory and applications, Two Volumes*, World Scientific, forthcoming
- B39. Guerard, J and Ziemba, W.T. (2018) *Handbook of applied investment research*, World Scientific, forthcoming
- B40. D'Ecclesia, R., Zenios, S. and Ziemba, .T. (2018) *Memorial volume to honor Marida Bertocchi*, World Scientific, forthcoming
- B41. Ziemba, W.T. and MacLean, L.C. (2018) *NFL Guidebook*, forthcoming.
- B42. MacLean, L.C. and Ziemba, W.T. (2019) *Sports statistics: benchmarking individual and team performance*, forthcoming

#### **J – Selected Published Journal Articles**

- J1 Ziemba, W.T., (1969) A Myopic Capital Budgeting Model, *Journal of Financial and Quantitative Analysis* IV: 305-328.
- J2 Ziemba, W.T., (1970) Computational Algorithms for Convex Stochastic Programmes with Simple Recourse, *Operations Research* XVIII: 414-431.
- J3 Ziemba, W.T., (1970) Stochastic Programming Models of Dynamic Planning Problems," *Economic Computation and Economic Cybernetics (Studies and Research)* 3: 67-85.
- J4 Ziemba, W.T. (1971) Transforming Stochastic Dynamic Programming Problems into Nonlinear Programmes, *Management Science* XVIII: 450-462.
- J5 Ziemba, W.T. (1971) Duality Relations, Certainty Equivalents and Bounds for Convex Stochastic Programmes with Simple Recourse, *Cahiers du Centre d'Etudes de Recherche Operationnelle* XIII: 85-97.
- J6 Ziemba, W.T. (1971) A Note on Economic Policy under Uncertainty, *Socio Economic Planning Sciences* V: 407-410.
- J7 Forbes, J.D., Ziemba, W.T. (1971) Estimation of Super Market Drawing Power: An Extension of Location Theory and Practice, *Annals of Regional Science* V: 112-125.
- J8 Warburton, A., Ziemba, W.T. (1971) Convex Inversion, *Journal of Mathematical Analysis and Application* XXXIV: 58-66.
- J9 Ziemba, W.T. (1972) Solving Nonlinear Programming Problems with Stochastic Objective Functions, *Journal of Financial and Quantitative Analysis* VII: 1809-1827.
- J10 Ziemba, W.T., (1972) Note on 'Optimal Growth Portfolios when Returns are Serially Correlated', *Journal of Financial and Quantitative Analysis* VII: 1995-2000.
- J11 Ziemba, W.T., Parkan, C., Brooks-Hill, F.J. (1974) Calculation of Investment Portfolios with Risk Free Borrowing and Lending, *Management Science* XXI: 209-222.
- J12 Ziemba, W.T., Butterworth, J.E. (1974) Bounds on the Value of Information in Uncertain Decision Problems, *Stochastics* IV: 1-18.
- J13 Ziemba, W.T. (1974) Note on the Behavior of a Firm Subject to Stochastic Regulatory Review, *Bell Journal of Economics and Management Sciences*: 710-712.
- J14 Ohlson, J.A., Ziemba, W.T. (1976) Optimal Portfolio Policies for an Investor with a Power Utility Function Facing a Log Normal Securities Market, *Journal of Financial and Quantitative Analysis* XI: 57-71.
- J15 Huang, C.C., Wehrung, D.A., Ziemba, W.T. (1976) A Homogeneous Distribution Problem with Applications to Finance, *Management Science* XXIII: 297-304.
- J16 Ziemba, W.T., (1977) Multiperiod Consumption-Investment Decisions: Further Comments, *American Economic Review* LXVII: 766-767.

- J17 Huang, C.C., Vertinsky, I., Ziemba, W.T. (1977) Sharp Bounds on the Value of Perfect Information, *Operations Research XXV*: 128-139.
- J18 Huang, C.C., Ziemba, W.T., Ben-Tal, A. (1977) Bounds on the Expectation of a Convex Function of a Random Variable: With Applications to Stochastic Programming, *Operations Research XXV*: 315-325.
- J19 Huang, C.C., Vertinsky, I., Ziemba, W.T. (1978) On Multiperiod Stochastic Dominance, *Journal of Financial and Quantitative Analysis XIII*: 1-13.
- J20 Kira, D., Ziemba, W.T., (1980) The Demand for a Risky Asset, *Management Science XXVI*: 1158-1165
- J21 Kallberg, J.G., Ziemba, W.T. (1979) On the Robustness of the Arrow-Pratt Risk Aversion Index, *Economic Letters II*: 21-26.
- J22 Hausch, D.G., Ziemba, W.T., Rubinstein, M.E. (1981) Efficiency of the Market for Racetrack Betting, *Management Science XXVII*: 1435-1452.
- J23 Kallberg, J.G., White, R., Ziemba, W.T., (1982) Short Term Financial Planning Under Uncertainty, *Management Science XXVIII*: 670-682.
- J24 Hausch, D.B., Ziemba, W.T. (1983) Bounds on the Value of Information in Uncertain Decision Problems, II, *Stochastics X*: 181-217.
- J25 Kallberg, J.G., Ziemba, W.T., (1983) Comparison of Alternative Utility Functions in Portfolio Selection Problems, *Management Science XXIX*: 1257-1276.
- J26 Judah, S., Ziemba, W.T., (1983) Three Person Baccarat, *Operations Research Letters II*: 187-192
- J27 Schwartz, S.L., Fuller, D., Ziemba, W.T. (1985) Long Run Effects of the National Energy Agreements, *Energy Journal VI*: 63-77.
- J28 Hausch, D.B., Ziemba, W.T. (1985) Transactions Costs, Entries and Extent of Inefficiencies in a Racetrack Betting Model, *Management Science XXXI*: 381-394.
- J29 Schaible, S., Ziemba, W.T. (1986) On the Concavity of the Sum of Lognormals in Lognormal Approximation in Portfolio Theory," *Zeitschrift fur Operations Research XXIX*: 161-186.
- J30 Gassmann, H., Ziemba, W.T. (1986) A Tight Upper Bound for the Expectation of a Convex Function of a Multivariate Random Variable, *Mathematical Programming Study, Recent Advances in Stochastic Programming XXVII*: 39-53.
- J31 Kusy, M.I., Ziemba, W.T. (1986) A Bank Asset and Liability Management Model, *Operations Research XXXIV*: 356-376.
- J32 Sick G., Ziemba, W.T. (1986) Review of 'Arbitrage Theory: Introductory Lectures on Arbitrage-Based Financial Asset Pricing by J.E.M. Wilhelm" *European Journal of Operations Research XXVII*: 255-256.
- J33 Ziemba, W.T., Canfield, B., Fauman, B. (1987) Efficient Market Adjustment of Odds Prices to Reflect Track Biases, *Management Science XXXIII*: 1428-1439.
- J34 Ziemba, W.T. (1988) Synopsis of 'Playing the Turn of the Year Effect with Index Futures"', *OR/MS Today XV*: 37-38.
- J35 Clark, R., Ziemba, W.T. (1988) Playing the Turn-of-the-Year Effect with Index Futures, *Operations Research XXXV*: 799-813.
- J36 Thaler, R.H., Ziemba, W.T. (1988) Parimutuel Betting Markets: Racetracks and Lotteries, *Journal of Economic Perspectives II*: 161-174.
- J37 Ziemba, W.T. (1988) Discussion of 'The Buying and Selling Behavior of Individual Investors at the Turn of the Year' by Jay R. Ritter, *Journal of Finance XLIII*: 717-719.



- J38 Li, Y., Ziemba, W.T. (1989) Characterizations of Optimal Portfolios by Univariate and Multivariate Risk Aversion, *Management Science*, XXXV : 259-269.
- J39 Hausch, D.B., Ziemba, W.T. (1990) Arbitrage Strategies for Cross Track Betting on Major Horseraces, *Journal of Business*, LXIII, 61-78.
- J40 Hausch, D.B., Ziemba, W.T. (1990) Locks in Racetrack Minus Pools, *INTERFACES*, May-June, 41-48.
- J41 Li, Y., Ziemba, W.T. (1990) Rules for Diversification by All Risk Averters," *Journal of Economics and Business*, Fall special issue, 165-170.
- J42 Ziemba, W.T., Schwartz, S.L. (1991) The Growth in the Japanese Stock Market, 1949-90 and Prospects for the Future, *Managerial and Decision Economics*, 12 183-195.
- J43 Ziemba, W.T (1991) Fundamental Factors in Japanese Stock Returns, 1979 to 1989, *Investing*, Winter, 73-79.
- J44 MacLean, L.C., Ziemba, W.T (1991) Growth-Security Profiles in Capital Accumulation Under Risk, *Annals of Operations Research*, 31, 501-510.
- J45 Ziemba, W.T. (1991) Japanese Security Market Regularities: Monthly, Turn of the Month and Year, Holiday and Golden Week Effects, *Japan and the World Economy*, 3, 119-146
- J46 Edirishinghe, N.C.P., Ziemba, W.T. (1992) Bounds for Stochastic Programmes with Recourse, *Operations Research*, 40, 660-677.
- J47 Markowitz, H.M., Schaible, S., Ziemba, W.T. (1992) An Algorithm for Portfolio Selection in a Lognormal Market, *International Journal of Financial Analysis*, 1 (2): 109-113.
- J48 MacLean, L. C., W. T. Ziemba, and G. Blazenko (1992). Growth versus security in dynamic investment analysis. *Management Science* 38, 1562-85.
- J49 Ziemba, W.T. (1993) Comment on 'Why a Weekend Effect?' *Journal of Portfolio Management*, Winter, 93-99.
- J50 Chopra, V., Ziemba, W.T. (1993) The Effect of Errors in Mean and Co-Variance Estimates on Optimal Portfolio Choice, *Journal of Portfolio Management*, Winter 6-11.
- J51 Stone, D. Ziemba, W.T. (1993) Land and Stock Prices in Japan, *Journal of Economic Perspectives*, Summer, 149-165.
- J52 Ziemba, W.T. (1994) Worldwide Security Market Regularities, *European Journal of Operational Research*, 74, 198-229.
- J53 Li, Y., Ziemba, W.T. (1993) Univariate and Multivariate Measures of Risk Aversion and Risk Premiums," *Financial Engineering*, special issue of *Annals of Operations Research*, 45, 265-296.
- J54 Edirishinghe, N.C.P., Ziemba, W.T (1994) Bounds for Two-Stage Stochastic Programs with Fixed Recourse, *Mathematics of Operations Research*, 19, 292-313.
- J55 Cariño, D. et al., Ziemba, W.T. (1994) The Russell-Yasuda Kasai Model: An Asset/Liability Model for a Japanese Insurance Company Using Multistage Stochastic Programming, *INTERFACES*, January - February, (Edelman Prize issue), 29-49. (A story about this paper is in the March 31, 1991 issue of the *New York Times*.)
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- J91 MacLean, L.C., Consigli, G., Zhao, Y., Ziemba, W.T. (2011) Risk indicators in equity markets. *Mathematical Methods in Economics and Finance* 3(2): 101-118.
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- J100 MacLean, L.C., Zhao, Y. and Ziemba, W.T. (2012) Currency returns, market regimes and behavioral biases. *Annals of Finance* 9(2):249-269.
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#### **K – Selected Articles in Books**

- K1 MacLean, L.C., Zhao, Y., Ziemba, W.T. (2003) A process control approach to investment risk. *IEEE International Conference on Computational Intelligence for Financial Engineering*, 265-270.
- K2 MacLean, L.C., Ziemba, W.T. (2006) Capital growth theory and practice in *Handbook of Asset and Liability Modeling*, Volume 1: *Theory and Methodology*, S.A. Zenios, W.T. Ziemba (eds) in *Handbooks in Finance*, North Holland, 429-473.

- K3 Ziemba, W.T. (2007) The Russell Yasuda, InnoALM and related models for pensions, insurance companies and high net worth individuals in *Handbook of Asset and Liability Modeling*, Volume 2: *Applications and Case Studies*, S.A. Zenios, W.T. Ziemba (eds) in *Handbooks in Finance*, North Holland, 861-962.
- K4 Schwartz, S.L., Ziemba, W.T. (2007) ALM in social security, in *Handbook of Asset and Liability Modeling*, Volume 2: *Applications and Case Studies*, S.A. Zenios, W.T. Ziemba (eds) in *Handbooks in Finance*, North Holland, 1069-1117.
- K5 MacLean, L., Zhao, Y., Consigli, G., Ziemba, W.T. (2007). Estimating parameters in a pricing model with state dependent shocks. in *Handbook of Financial Engineering*, P.M. Paradolos and C. Zopounidis (Eds), Springer, 231-245.
- K6 Purnanandam, A, Warachka, M., Zhao, Y., Ziemba, W.T. (2007) Incorporating diversification into risk management, in *Advances in Risk Management*, G.N. Gregoriou (ed), Palgrave, pages 22-46.
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- K11 Ziemba, W.T. (2010) Ideas in asset liability management in the tradition of H.M. Markowitz in *Essays in Honor of H.M. Markowitz*, J. Guerard (ed), Springer, 213-258.
- K12 MacLean, L.C., Ziemba, W.T. (2010) The Kelly strategy, in *Encyclopedia of Quantitative Finance*, B. Cont (ed), 5 pages.
- K13 MacLean, L.C., Thorp, E.O., Zhao, Y., Ziemba, W.T. (2010) Medium term simulations of Kelly and fractional Kelly and proportional betting strategies in MacLean, L.C., E. O. Thorp, Ziemba, W.T., Eds., *The Kelly Capital Growth Criterion: Theory and Practice*, World Scientific, 543-561.
- K14 MacLean, L.C., Thorp, E.O., Ziemba, W.T. (2010) Good and bad Kelly properties in MacLean, L.C., E. O. Thorp, Ziemba, W.T., Eds., *The Kelly Capital Growth Criterion: Theory and Practice*, World Scientific, 563-572.
- K15 Ziemba, W.T., Vickson, R. (2010) Models of optimal capital accumulation and portfolio selection (modified from Ziemba, W.T., Vickson, R (2006) in MacLean, L.C., E. O. Thorp, Ziemba, W.T., Eds., *The Kelly Capital Growth Criterion: Theory and Practice*, World Scientific, 473-485.
- K16 Ziemba, W.T. (2010) Asset-liability management in R. Cont (Ed), *Handbook of Quantitative Finance*, Wiley, 20 pages.
- K17 Board, J.L., Sutcliffe, C.M.S., Ziemba, W.T. (2010) Portfolio theory mean-variance in S.I. Gass (ed) *Encyclopedia of Operations Research and Management Science*, 3<sup>rd</sup> Edition, Academic publishers, 12 pages.
- K18 Board, J.L., Sutcliffe, C.M.S., Ziemba, W.T. (2010) Financial markets in S.I. Gass (ed) *Encyclopedia of Operations Research and Management Science*, 3<sup>rd</sup> Edition, Academic publishers, 18 pages
- K19 Ziemba, W.T. and MacLean, L.C. (2011) Using the Kelly criterion for investment in M.I. Bertocchi, G. Consigli and M.A.H. Dempster (eds) *Stochastic Optimization Methods in Finance and Energy*, Springer, 3-20

- K20 MacLean, L.C., Zhao, Y. and Ziemba, W.T. (2011) Growth-security models and stochastic dominance in G. Infanger (ed) *Stochastic Programming: the State of the Art in Honor of George B. Dantzig*, Springer, 213-258
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- K22 MacLean, L.C. and Ziemba, W.T. (2013) The Kelly criterion with games of chance, L. Vaughn Williams and D.S. Siegal (eds), *Oxford Handbook of Economics of Gambling*, Oxford University Press, pp. 402-427.
- K23 Ziemba, W.T. (2013) Portfolio optimization in A. Bell, C. Brooks and M. Protopczuk (Eds), *Handbook of Research Methods and Applications in Empirical Finance*, Edward Elgar, pp 45-72.
- K24 Lleo, S and Ziemba, WT (2015) How to lose money in derivatives: examples from hedge funds and bank trading departments in A Mallaris and WT Ziemba (eds), *Handbook of Futures Markets*, World Scientific, forthcoming, 50 pages
- K25 Ziemba, W.T. (2015) Portfolio optimization: theory and practice, in K. Zopoundis (ed) *Quantitative Financial Risk Management: Theory and Practice*, The Frank Fabozzi Series, Wiley, 57 pages.
- K26 Ziegler, A. and W.T. Ziemba (2015) Returns from investing in S&P500 futures options, 1985-2010, in Mallarias, A.G., Ziemba, W.T. Eds. *Handbook of Futures Markets*, World Scientific, 643-688.
- K27 Lleo, S. and W.T. Ziemba (2015) The Swiss black swan bad scenario: is Switzerland another casualty of the eurozone crisis? in J. Guerard Ed *Portfolio construction, measurement and efficiency: essays in honor of Jack Treynor*, Springer, 389-420
- K28 Lleo, S. and Ziemba, W.T. (2015) How to lose money in derivatives: examples from hedge funds and bank trading departments, in A. Malliaris and W.T. Ziemba (Eds). *Handbook of Futures Markets*, World Scientific, 689-750

#### **W – Recent columns in *Wilmott Magazine***

- W1 *Risk Arbitrage in the Super Bowl and Playoffs and in the US Presidential Election and the Current Economic Outlook*, March 2012
- W2 *Investing Around the World: Perspective from Student Presenttions*, November 2012
- W3 *The Super Bowl and Playoffs 2013*, May 2013
- W4 *A Primer on Risk Measures* (with L.C. MacLean) January 2014
- W5 *Primer on Arbitrage and Asset Pricing* (with L.C. MacLean) March 2014
- W6 *the 2013-2014 NFL Playoffs and the Super Bowl*, May 2014
- W7 *Investing in Thoroughbred Race Horses*, July 2014
- W8 *The 2014 Triple Crown*, March 2015
- W9 *The 2015 Triple Crown*, July 2015
- W10 *Primer on Stochastic Dominance* (with L.C. MacLean) September 2015
- W11 *Primer on Utility Theory* (with L.C. MacLean) November 2015
- W12 *Dynamic Portfolio Theory* (with L.C. MacLean) March 2016
- W13 *The 2015-2016 NFL Seson, Playoffs and the Super Bowl*, May 2016
- W14 *Honor Code*, July 2016
- W15 *The 2016 Triple Crown*, September 2016
- W16 *Inefficiencies and Anomalies*, November 2016

- W17 *Using Zweig's Monetary and Momentum Models in the Modern Era* (with J. Swetye) January 2017
- W18 *The Road to Super Bowl 51*, May 2017
- W19 *The Pegasus World Cup*, July 2017
- W20 *The Dubai World Cup*, September 2017
- W21 *Sports Statistics: Rating Batters in Baseball* (with L.C. MacLean) November 2017
- W22 *Sell-in-May-and-Go-Away in the Equity Index Futures Markets* (with C. Dhabarov) November 2017
- W23 *Sports Stats II: Analytics* (with L.C. MacLean) January 2018
- W24 *Fortune's Formula*, March 2018
- W25 *A Walk Into Greatness*, March 2018
- W26 *Arbitrage and risk arbitrage in the Nikkei put warrant market*, May 2018
- W27 *The Pegasus World Cup II*, July 2018

#### **P – Papers Submitted for Publication**

- P1. MacLean, L.C., Zhao, Y., Ziemba, W.T., Intertemporal mean variance efficiency with Markovian state price density, submitted to *Journal of Banking and Finance*, 27 pages.,
- P2. Ziemba, W.T. What operations research can contribute to your personal financial situation including your retirement, solicited article for *Interfaces*, 22 pages.
- P3. Ghosh, S, Bhalla, G. and Ziemba, W.T. The January Barometer, 1926-2005, Technical Report, Sauder School of Business, submitted to *Financial Analysts Journal*, 22 pages.
- P4. Berge, K., Ziemba, W.T., The predictive ability of the bond and stock earnings yield differential in US and foreign markets, 1970-2005, Working paper, 40 pages.
- P5. Consigli, G., MacLean, L.C., Zhao, Y., Ziemba, W.T., Speculative bubbles: asset prices with yield dependent market corrections." submitted to *Journal of Financial Markets*, 20 pages.
- P6. Lleo, S, and Ziemba WT, Optimality of rogue traders, submitted to *American Economic Review*, 20 pages.
- P7. Gramm, M., Ziemba,W.T., Market efficiency of America's triple crown races, submitted to the *American Economic Review*,
- P8. Kim, W.C., Lee, Y and Ziemba, W.T. When is 1/N better than the optimal mean variance portfolio? submitted to *Review of Financial Studies*, 30 pages
- P9. Lleo, S., Markowitz, H and Ziemba, W.T. Is 60-40 on the efficient frontier? submitted to *American Economic Review*
- P10. Lleo, S. and Ziemba, W.T., Predicting Chinese stock market crashes, submitted to *Journal of Asset Management*
- P11. Lleo, S. and Ziemba, W.T., Can Warren Buffett also predict equity market downturns? submitted to *The European Journal of Finance*
- P12. Moffitt, S and Ziemba, W.T. , A risk arbitrage strategy for lotteries, submitted to *Mathematics of Operations Research*
- P13. Moffitt, S and Ziemba, W.T. , Does it pay to buy the pot in the Canadian 6/49 lotto? Implications for lottery design, submitted to *Applied Mathematical Finance*
- P14. MacLean, L.C., Ziemba, W.T. and Krogan A. Dominant batting seasons in baseball- the expected utility of performance, submitted to *Interfaces*

- P15. MacLean, L.C. and Ziemba, W.T. Team composition: are the best players on the best teams?
- P16. MacLean, L.C. and Ziemba, W.T. Measuring batting impact in baseball, submitted to *Operations Research*

### **Presentations at Universities**

- 2018 University of Calgary
- 2017 Imperial College, University of Florence, Concordia University, University of Toronto Fields Institute, University of Zurich
- 2016 Campus for Finance (WHU, Germany)
- 2015 University of Bergamo, London School of Economics, Zayed University, Chinese Academy of Science
- 2013 University of Sussex, University of Reims, Steklov Institute (Moscow), London School of Economics, Ketch Business School, Bordeaux, Koç University
- 2012 University of Cyprus, Luiss Guido Carli University, Korean Advanced Institute of Science and Technology, Financial Engineering (Taejan) and Business School (Seoul), University of Manchester
- 2011 Korean Advanced Institute of Science and Technology, Financial Engineering (Taejan) and Business School (Seoul), Stanford University, Koç University
- 2010 University of Economics, Stanford University Campus for Finance (WHU, Germany), Oxford University, Dalhousie University, University of Rome, University of Zurich, University of Reims
- 2009 Oxford University, ICMA Centre, University of Reading, Nanyang Technical University, Singapore, University of Toulouse, Princeton University
- 2008 Oxford University, ICMA Centre, University of Reading, University of Zurich, University of, University of Venice, University of Firenze, Dalhousie University
- 2007 Universities of Bergamo, Dalhousie, Chicago, Warwick, Reading, Oxford, Edinburgh, Wollongong (Australia), Southwestern (Chengdu, China)
- 2006 European Central Bank, Oxford University, University of Bergamo, London Business School, University of Verona, University of Venice, University of Zurich, Behang University (Beijing)
- 2005 University of Florida, Free University of Bolzano, University of Louisville, University of Washington (Statistics), ETH-Zurich, University of Zurich Economics and Finance; and second talk to Operations Research, University of Washington (IE Dept)
- 2004 Campus for Finance (WHU, Germany), Stanford University, Oxford University, Princeton University, University of Bergamo, Peoples' University of China, Beijing and University of Colorado
- 2003 London School of Economics, Helsinki School of Economics, Said Business School, Mathematical Finance Seminar, Stochastic Analysis Seminar and Differential Equations Seminar, Oxford University, Mathematical Finance and Stochastic Analysis Seminars Humboldt University, University of Zurich, University of Bergamo, and ETH-Zurich University



2002 Helsinki School of Economics, Imperial College, University of Southampton, Ecole Polytechnic, University of Bergamo and London School of Economics

2001 Princeton University, UCLA and University of Arizona

2000 and previous years

Stanford, Yale, Michigan, Yale, Chicago, Cornell, London Business School, Trinity College (Dublin), Cambridge, Oxford, NYU, Harvard, Berkeley, Zurich, St Gallen, Venice, Vienna, Bergamo, Hong Kong, Singapore, and others

See also listing of institutional investor talks and academic seminars 1989-2017.