CURRICULUM VITAE

PERSONAL DATA

Full Name:	CHAN Wai Sum
Affiliation:	Department of Finance, The Chinese University of Hong Kong
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EDUCATION

Ph.D. in Applied Statistics (1986-1989), Fox School of Business, Temple University, U.S.A.
(*Thesis Supervisor: Professor William W. S. Wei*)

M.Sc. in Applied Statistics (1986-1988), Fox School of Business, Temple University, U.S.A.

M.Phil. in Statistics (1984-1986), Faculty of Science, The Chinese University of Hong Kong
(*Thesis Supervisor: Professor Howell Tong*)

B.B.A. in Accounting (1980-1984), Faculty of Business Administration, The Chinese University of Hong Kong

PROFESSIONAL EXPERIENCE

Professor, Department of Finance, School of Business, The Chinese University of Hong Kong, 09/2005 – present

Associate Professor, Department of Statistics and Actuarial Science, The University of Hong Kong, 07/1998 – 08/2005

Senior Lecturer, Department of Statistics and Applied Probability, National University of Singapore, 07/1997 – 08/2000

Visiting Professor, Department of Statistics and Actuarial Science, University of Waterloo, Canada, 01/1996 – 12/1996

Senior Lecturer, Department of Economics and Statistics, National University of Singapore, 07/1994 – 06/1997

Lecturer, Department of Economics and Statistics, National University of Singapore, 07/1989 – 06/1994

PROFESSIONAL QUALIFICATIONS

Honorary Fellow, Institute and Faculty of Actuaries, U.K., since 2014 (Designation: HonFIA)
Fellow, Society of Actuaries, U.S.A., since 1995 (Designation: F.S.A.)
Fellow, Royal Statistical Society, U.K., since 1990 (Designation: F.R.S.S.)
Fellow, Singapore Actuarial Society, Singapore, since 1996
Fellow, Actuarial Society of Hong Kong, Hong Kong, since 2001
Fellow, Modelling and Simulation Society of Australia & New Zealand, since 2017
Chartered Statistician, U.K., since 1998 (Designation: C.Stat.)
Chartered Enterprise Risk Analyst, U.S.A., since 2008 (Designation: C.E.R.A.)

EDITORIAL DUTIES

- **Co-Editor**, *North American Actuarial Journal* (Taylor & Francis)
- **Subject Editor**, *Journal of International Financial Markets, Institutions and Money* (Elsevier)
- **Subject Editor**, *Emerging Markets Review* (Elsevier)
- **Associate Editor**, *Finance Research Letters* (Elsevier)

MAIN RESEARCH INTERESTS

- Insurance and Actuarial Science
- Longevity Risk Management
- Statistics and Econometrics
- Law and Economics
- Empirical Finance

PUBLICATIONS

Refereed Journal Articles

2018

1. Chan, K.L.T. and Chan W.S. "Developing an Optimal Strategy for a Maximization Dice Game," *College Mathematics Journal*, (Accepted for Publication).

2. Cheung, K.C.K., Chan, W.S., Chou, K.L. and Lau, M.K.W. "Evaluating the Effectiveness and Efficiency of Hong Kong Welfare Programs in Reducing Child Poverty,'' *Children & Society* (Accepted for Publication).

3. Kwong, K.S., Tse, Y.K. and Chan, W.S. "Singapore's LIFE Program: Actuarial Framework, Longevity Risk and Impact of Annuity Fund Return,'' *Singapore Economic Review*, (Accepted for Publication).

2017

4. Li, J.S.H., Chan, W.S. and Zhou, R. "Semi-Coherent Multi-Population Mortality Modeling: The Impact on Longevity Risk Securitization," *Journal of Risk and Insurance*, 2017, 84(3), 1025-1065.

5. Chan, F.W.H., Chan, W.S. and Li, J.S.H. "Assessing Personal Injury Liabilities in China from National to Provincial Level: An International Comparative Analysis," *Asian Journal of Law and Economics*, 2017, 8(2), 1-20.

6. Chu, C.W., Chan, K.L.T., Chan, W.S. and Kwong, K.S. "Multiple-Solution Problems in a Statistics Classroom: An Example," *International Journal of Mathematical Education in Science and Technology*, 48(8), 1249-1261.

7. Kwong, K.S., Tse, Y.K. and Chan, W.S. "Enhancing Singapore's Pension Scheme: A Blueprint for Further Flexibility," 2017, *Risks*, 5(2), 25-42.

2016

8. Chan, W.S., Li, J.S.H., Zhou, K.Q. and Zhou, R. "Towards a Large and Liquid Longevity Market: A Graphical Population Basis Risk Metric," *The Geneva Papers on Risk and Insurance - Issues and Practice*, 2016, 41, 118-127.

2015

9. Li, J.S.H., Ng, A.C.Y. and Chan, W.S. "Managing Financial Risk in Chinese Stock Markets: Option Pricing and Modeling under a Multivariate Threshold Autoregression," *International Review of Economics and Finance*, 2015, 40, 217-230.

10. Chan, W.S., Cheung, S.H., Chow, W.K. and Zhang, L.X. “A Robust Test for Threshold-type Non-linearity in Multivariate Time-Series Analysis,” *Journal of Forecasting*, 2015, 34, 441-454.

11. Chan, F.W.H., Chan, W.S. and Li, J.S.H. “Using Actuarial Evidence in Singapore and Hong Kong: A Sequel to 'Lai Wee Lian Revisited',” *Hong Kong Law Journal*, 2015, 45, 499-516.

12. Yu, K.M., Chou, K.L., Chan, W.S., Wu, A.M., Zhu, A.Y.F., Lou, V.W.Q., “Perceived Retirement Savings Adequacy in Hong Kong: An Interdisciplinary Financial Planning Model,” *Ageing & Society*, 2015, 35, 1565-1586.

13. Yu, K.M., Wu, A.M., Chan, W.S., Chou, K.L., “Gender Differences in Financial Literacy among Hong Kong Workers,” *Educational Gerontology*, 2015, 41, 315-326.

2014

14. Zhang, L.X., Hu, F., Cheung, S.H. and Chan, W.S. “Asymptotic Properties of Multi-color Randomly Reinforced Polya Urn,” *Advances in Applied Probability*, 2014, 46, 585-602. .

15. Chou, K.L., Chan, W.S., Wu, A.M., Chan, A.C.M., Lam T.Y.S., Zhu, A.Y.F., “Social and Psychological Barriers to Private Retirement Savings in Hong Kong,” *Journal of Aging & Social Policy*, 2014, 26, 309-323.

16. Cheung, S.H., Zhang, L.X., Hu, F., and Chan, W.S. “Covariate-Adjusted Response-Adaptive Designs for Generalized Linear Models,” *Journal of Statistical Planning and Inference*, 2014, 149, 152-161.

17. Chan, W.S., Li, J.S.H. and Li, J.K.K. “The CBD Mortality Indexes: Modeling and Applications,” *North American Actuarial Journal*, 2014, 18, 38-58.

18. Chan, F.W.H., Chan, W.S. “Using Actuarial Tables in Matrimonial Financial Disputes: Duxbury Calculation in the Hong Kong Context,” *Hong Kong Lawyer*, 2014, May, 34-40.

2013

19. Li, J.S.H., Ng, A.C.Y. and Chan, W.S. "Stochastic Life Table Forecasting: a Time-Simultaneous Fan Chart Application," *Mathematics and Computers in Simulation* 93, 98-107.

20. Ng, A.C.Y., Li, J.S.H. and Chan, W.S. "Pricing Options on Stocks Denominated in Different Currencies: Theory and Illustrations," *North American Journal of Economics and Finance*, 2013, 26, 339-354.

2012

21. Chan, F.W.H., Chan, W.S. and Li, J.S.H. "Actuarial Assessment of Damages in Personal Injury Litigation: How Precise Are We?" *Law, Probability and Risk*, 2012, 11, 25-39.

2011

22. Zhang, L.X., Hu, F., Cheung, S.H. and Chan, W.S. "Immigrated Urn Models - Theoretical Properties and Applications," *Annals of Statistics*, 2011, 39, 643-671.

23. Li, J.S.H., Ng, A.C.Y. and Chan, W.S. "On the Calibration of Mortality Forward Curves", *Journal of Futures Markets*, 2011, 31, 947-970.

24. Li, J.S.H. and Chan, W.S. "Time-Simultaneous Prediction Bands: A New Look at the Uncertainty Involved in Forecasting Mortality," *Insurance: Mathematics and Economics*, 2011, 49, 81-88.

25. Li, J.S.H., Ng, A.C.Y. and Chan, W.S. "Modeling Old-Age Mortality Risk for the Populations of Australia and New Zealand: An Extreme Value Approach," *Mathematics and Computers in Simulation*, 2011, 81, 1325-1333.

26. Chung, A.H.L., Chan, W.S. and Batten, J.A. "Threshold Non-Linear Dynamics between Hang Seng Stock Index and Futures Returns," *European Journal of Finance*, 2011, 17, 471-486.

27. Li, J.S.H., Chan, W.S. and Cheung, S.H. "Structural Changes in the Lee-Carter Mortality Indexes: Detection and Implications," *North American Actuarial Journal*, 2011, 15, 13-31.

28. Ng, A.C.Y., Li, J.S.H. and Chan, W.S. "Modeling Investment Guarantees in Japan: A Risk-Neutral GARCH Approach," *International Review of Financial Analysis*, 2011, 20, 20-26.

29. Chan, W.S. and Kung, K.C. "On Robust Testing and Modelling of Threshold-Type Non-Linearity in ASEAN Foreign Exchange Markets," *Asia-Pacific Journal of Risk and Insurance*, 2011, Vol.5:Iss. 2, Article 3.

2010

30. Chan, W.S., Chan, F.W.H. and Li, J.S.H. "A Threshold Formula for Indexing the Discount Rate for Actuarial Assessment of Damages in Personal Injury Litigation," *Journal of Personal Injury Law*, 2010, 3, 139-146.
31. Chan, F.W.H, Chan, W.S. and Li, J.S.H. "An Actuarial Approach to Assessing Personal Injury Compensations in Singapore: Theory and Practice," *Singapore Economic Review*, 2010, 55, 705-731.

32. Chung, A.H.L., Chan, W.S. and Batten, J.A. "Modelling the US Swap Spread," *Research in Finance*, 2010, 26, 155-181.

33. Chung, A.H.L., Chan, W.S. "Impact of Credit Spreads, Monetary Policy and Convergence Trading on Swap Spreads," *International Review of Financial Analysis*, 2010, 19, 118-126.

34. Tse, Y.K. and Chan, W.S. "The Lead-Lag Relationship between the S&P500 Spot and Futures Markets: An Intraday-data Analysis Using Threshold Regression Model," *Japanese Economic Review*, 2010, 61(1), 133-144.

2009

35. Hung, K.C., Cheung, S.H., Chan, W.S. and Zhang, L.X. "On a Robust Test for SETAR-Type Non-Linearity in Time Series Analysis," *Journal of Forecasting*, 2009, 28, 445-464.

36. Wong, A.C.S., Chan, W.S. and Kam, P.L. "A Student *t*-mixture Autoregressive Model with Applications to Heavy-Tailed Financial Data," *Biometrika*, 2009, 96, 751-760.

37. Zhang, L.X., Chan, W.S., Cheung, S.H. and Hung, K.C. "A Note on the Consistency of a Robust Estimator for Threshold Autoregressive Processes," *Statistics and Probability Letters*, 2009, 79, 807-813.

38. Chan, W.S., Wong, A.C.S. and Chung, H.L. "Modelling Australian Interest Rate Swap Spreads by Mixture Autoregressive Conditional Heteroscedastic Processes," *Mathematics and Computers in Simulation*, 2009, 79, 2779-2786.

39. Chan, W.S., Zhang, L.X. and Cheung, S.H. "Temporal Aggregation of Markov Switching Financial Return Models," *Applied Stochastic Models in Business and Industry*, 2009, 25, 359-383.

2008

40. Hu F., Zhang L.X., Cheung S.H. and Chan W.S. "Doubly Adaptive Biased Coin Designs with Delayed Responses," The *Canadian Journal of Statistics*, 36, 541-599.

41. Chan, W.S., Cheung, S.H., Zhang, L.X. and Wu, K.H. "Temporal Aggregation of Equity Return Time-Series Models," *Mathematics and Computers in Simulation*, 78, 172–180.

42. Chan, W.S. and Chan, Y.T. "A Note on the Autocorrelation Properties of Temporally Aggregated Markov Switching Gaussian Models," *Statistics and Probability Letters*, 78, 728–735.

2007

43. Zhang, L.X., Hu, F., Cheung, S.H. and Chan, W.S., "Asymptotic Properties of Covariate-Adjusted Response-Adaptive Designs," *Annals of Statistics*, 2007, 35, 1166–1182.

44. Leung, G.M., Tin, K.Y.K. and Chan, W.S., "Hong Kong's Health Spending Projections Through 2033," *Health Policy*, 2007, 81, 93–101.

45. Li, S.H. and Chan, W.S., "The Lee-Carter Model for Forecasting Mortality, Revisited," *North American Actuarial Journal*, 2007, 11, 68-89.

46. Zhang, L.X., Chan, W.S., Cheung, S.H. and Hu, F. "A Generalized Drop-the-Loser Urn For Clinical Trials with Delayed Responses," *Statistica Sinica*, 2007, 17, 387-409.

2006

47. Chan, W.S. “Outliers in Nonstationary Time-Series,” *Journal of Quantitative Economics*, 2006, 4, 75 – 83.

48. Chan, W.S. and Zhang L., “Direct Derivation of Finite-Time Ruin Probabilities in the Discrete Risk Model with Exponential or Geometric Claims,” *North American Actuarial Journal*, 2006, 10(4), 269–279.

49. Chan, F.W.H. and Chan, W.S., “An Empirical Inquiry into the Recent Trends of Personal Injury Compensation in Hong Kong,” *The Business Review*, 2006, 5(1), 194–200.

50. Chan, W.S., Ng, W.M. and Tong, H., “On a Simple Graphical Approach to Modelling Economic Fluctuations with an Application to the UK Price Inflation, 1265–2005,” *Annals of Actuarial Science*, 2006, 1(1), 103–128.

51. Wong, I.O.L., Chan, W.S., Choi, S., Lo, S.V., and Leung, G.M, “Moral Hazard or Realised Access to Care? Empirical Observations in Hong Kong,” *Health Policy*, 2006, 75(3), 251–261.

2005

52. Wong, A.C.S. and Chan, W.S., “Mixture Gaussian Time Series Modelling of Long-Term Market Returns,” *North American Actuarial Journal*, 2005, 9(4), 83–94.

53. Li, S.H. and Chan, W.S., “Outlier Analysis and Mortality Forecasting: the United Kingdom and Scandinavian Countries,” *Scandinavian Actuarial Journal*, 2005, 3, 187–211.

54. Ghani A.C., Donnelly, C.A., Cox, D.R., Griffin, J.T., Fraser, C., Ho, L.M., Chan, W.S., Lam, T.H., Anderson, R.M., Hedley, A.J., and Leung, G.M. “Methods for Estimating the Case Fatality Ratio for a Novel Emerging Infectious Disease,” *The American Journal of Epidemiology*, 2005, 162, 479–486.

55. Chan, W.S. and S.H. Cheung, “A Bivariate Threshold Time Series Model for Analyzing Australian Interest Rates,” *Mathematics and Computers in Simulation*, 2005, 68, 429–437.

56. Leung, G.M., Wong, I.O.L., Chan, W.S., Choi, S. and Lo, S.V., “The Ecology of Health Care in Hong Kong,” *Social Science and Medicine*, 2005, 61, 577–590.

2004

57. Chan, W.S., Wong, A.C.S. and Tong, H. “Some Non-linear Threshold Autoregressive Time Series Models for Actuarial Use,” *North American Actuarial Journal*, 2004, 8 (4), 37–61.

58. Hui, M.Y.Y. and Chan, W.S., “A Search for the Root Causes of the Underdevelopment of the Hong Kong Annuity Market,” *The Geneva Papers on Risk and Insurance*, 2004, 23, 439–453.

59. Chan, W.S. and Ng, M.W., “Robustness of Alternative Non-linearity Tests for SETAR Models,” *Journal of Forecasting*, 2004, 23, 215–231.

60. Li, S.H. and Chan, W.S., “Estimation of Complete Period Life Tables for Singaporeans,” *Journal of Actuarial Practice,* 2004, 11, 129–146.

61. Chan, W.S., Li, S.H. and Fong, P.W., “An Actuarial Analysis of Long-Term Care Demand in Hong Kong,” *Geriatrics and Gerontology International*, 2004, 4, S143–145.

62. Chan, F.W.H. and Chan, W.S., “How Well Do Judges Understand Money? The Reform of Personal Injury Compensation in Hong Kong,” *The Tort Law Review*, 2004, 12, 176–181.

63. Chan, F.W.H. and Chan, W.S., “A Paradigm Shift in Personal Injury Litigation in Hong Kong - the Actuarial Perspectives,” *The Business Review*, 2004, 2(1), 200–205.

64. Cheung, S. H., Kwong, K. S., Chan, W. S. and Leung, S. P., “Multiple Comparisons with a Control in Families with Both One-sided and Two-sided Hypotheses,” *Statistics in Medicine*, 2004, 23, 2975–2988.

65. Kwong, K.S., Cheung, S.H. and Chan, W.S., “Multiple Testing to Establish Superiority/Equivalence of a New Treatment Compared with k Standard Treatments for Unbalanced Designs,” *Biometrics*, 2004, 60, 491–498.

2003

66. Chan, W.S., Cheung, S.H. and Wu, K.H., "Multiple Forecasts with Autoregressive Time Series Models: Cases Studies," *Mathematics and Computers in Simulation*, 2004, 64, 421–430.

67. Chan, W.S., Yang, H. and Zhang, L., "Some Results on Ruin Probabilities in a Two-dimensional Risk Model," *Insurance, Mathematics and Economics*, 2003, 32, 345–358.

68. Chan, W.S. and Chan F.W.H., "On Selection of the Discount Rate for Actuarial Assessment of Damages in Personal Injury Litigation in Hong Kong," *Law, Probability and Risk*, 2003, 2, 15–24.

69. Chan, W.S. and Chan F.W.H., "A Loglinear Analysis of Legal Representation Statistics on Hearings of Civil Cases in the District Court of Hong Kong," *Hong Kong Law Journal*, 2003, 33, 523–542.

2002

70. Chan, W.S., "Stochastic Investment Modelling: A Multiple Time Series Approach," *British Actuarial Journal*, 2002, 8, 545–591.

71. Chan, W.S. and Liu, W.N., "Diagnosing Shocks in Markets of Southeast Asia, Australia and New Zealand," *Mathematics and Computers in Simulation*, 2002, 59, 223–232.

72. Bacon-Shone, J.H., Chan, W.S., Leung, G.M. and Yeung, R.Y.T., "Viability of the Health Protection Account in Hong Kong," *Hong Kong Medical Journal*, 2002, 8, 384–385.

2001

73. Chan, W.S., "The First Mandated Social Security Pension Scheme in Hong Kong", *Benefits: A Journal of Social Security Research, Policy & Practice*, 2001, 32, 15–21.

74. Chan, W.S., "Teaching the Concept of Breakdown Point in Linear Regression Analysis," *International Journal of Mathematical Education in Science and Technology*, 2001, 32, 745–748.

75. Ng, E.T.M. and Chan, W.S., "Some Seasonal Unit Root Tests with a Maintained Broken Trend," *Journal of Applied Statistical Science*, 2001, 10, 259–277.

2000

76. Lo, W.C. and Chan, W.S., “Diagnosing Shocks in Stock Market Returns of Greater China,” *Multinational Finance Journal*, 2000, 4, 269–288.

77. Chan, W.S. and Chan, F.W.H., “Lai Wee Lian Revisited - Should Actuarial Tables be Used for the Assessment of Damages in Personal Injury Litigation in Singapore?” *Singapore Journal of Legal Studies*, 2000, 364–378.

78. Chan, W.S., “Modelling Corporate Bond Default Risk: A Multiple Time Series Approach,” *Journal of Actuarial Practice*, 2000, 8, 211–235.

79. Chan, F.W.H. and Chan, W.S., “Actuarial Assessment of Damages in Personal Injury Litigation: the Hong Kong Position and the Comparative International Aspects,” *The Hong Kong Law Journal*, 2000, 30, 272–289.

80. Chan, F.W.H. and Chan, W.S., “Actuarial Assessment of Damages in Hong Kong Personal Injury Litigation: Chan Pui Ki (an infant) v Leung On,” *International Journal of Evidence and Proof*, 2000, 4, No. 3, 194–203.

1999

81. Chan, W.S., Lo, H. and Cheung, S.H., “Return Transmission Among Stock Markets of the Greater China,” *Mathematics and Computers in Simulation*, 1999, 48, 511–518.

82. Chan, W.S., “A Multivariate Stochastic Investment Model for Analysing Investment Strategies,” *Singapore International Insurance and Actuarial Journal*, 1999, 3, No. 1, 51–64.

83. Chan, W.S., “A Comparison of Some of Pattern Identification Methods for Order Determination of Mixed ARMA Models,” *Statistics and Probability Letters*, 1999, 42, No.1, 69–79.

84. Chan, W.S., Cheung, S.H. and Wu, K.H., “On Exact Joint Forecast Regions for Vector Autoregressive Models,” *Journal of Applied Statistics*, 1999, 26, 35–44.

1998

85. Chan, W.S., “Forecasting Australian Retail Price Inflation: A Multiple Time Series Approach,” *Australian Actuarial Journal*, 1998, 2, 127–141.

86. Chan, W.S. and Wang, S., “The Wilkie Model for Retail Price Inflation Revisited,” *British Actuarial Journal*, 1998, 637–652.

87. Chan, W.S., “Outlier Analysis of Annual Retail Price Inflation: A Cross-Country Study,” *Journal of Actuarial Practice*, 1998, 149–172.

88. Chan, W.S. and Chen, Z.G., “A Statistical Approach for Disaggregating Mixed-Frequency Economic Time Series Data,” *Advances in Econometrics*, 1998, 13, 21–45.

89. Cheung, S.H., Wu, K.H. and Chan, W.S., “Exact Simultaneous Prediction Intervals for Autoregressive Integrated Moving Average Models,” *Computational Statistics and Data Analysis*, 1998, 28, 297–306.

90. Chan, W.S. and Chung, R.K., “Payment Systems in Singapore,” *Treasury Management Association Journal*, 1998, 18, 48–51.

1997

91. Koong, C.S., Tsui, A.K. and Chan, W.S., “On Tests for Long Memory in Pacific Basin Stock Returns,” *Mathematics and Computers in Simulation*, 1997, 43, 445–449.

1996

92. Cheung, S.H. and Chan, W.S., “Simultaneous Confidence Intervals for Pairwise Multiple Comparisons in a Two-Way Unbalanced Design,” *Biometrics*, 1996, 52, 463–472.

93. Chan, W.S., “Mang Kung Dice Game,” *Teaching Statistics*, 1996, 42–44.

1995

94. Chan, W.S., “Understanding the Effect of Time Series Outliers on Sample Autocorrelations,” *TEST: A Journal of the Spanish Society of Statistics and O.R.*, 1995, 179–186.

95. Chan, W.S., “Time Series Outliers and Spurious Autocorrelations,” *Journal of Applied Statistical Science*, 1995, 40–51.

96. Chan, W.S., “Outliers and Financial Time Series Modelling: A Cautionary Note,” *Mathematics and Computers in Simulation*, 1995, 39, 425–430.

97. Chan, W.S., “On Large-Sample Tests Concerning Proportions,” *Teaching Statistics*, 1995, 16–18.

1994

98. Chan, W.S. and Tse, Y.K., “Cross Return Predictability in Pacific Basin Stock Markets,” *Asia Pacific Journal of Management*, 1994, 11, 289–303.

99. Chan, W.S. and Cheung, S.H., “On Robust Estimation of Threshold Autoregressions,” *Journal of Forecasting*, 1994, 13, 37–49.

100. Chan, W.S. “On Portmanteau Goodness-of-Fit Tests in Robust Time Series Modelling,” *Computational Statistics*, 1994, 9, 301–310.

1993

101. Chan, W.S., “Disaggregation of Annual Time Series Data to Quarterly Figures: A Comparative Study,” *Journal of Forecasting*, 1993, 12, 677–688.

102. Chan, W.S. and Tse, Y.K., “Price-Volume Relation in Stocks: A Multiple Time Series Analysis,” *Asia Pacific Journal of Management*, 1993, 10, 39–56.

1992

103. Chan, W.S. and Wei, W.S., “A Comparison of Some Estimators of Time Series Autocorrelations,” *Computational Statistics & Data Analysis*, 1992, 14, 149–163.

104. Chan, W.S., “A Note on Time Series Model Specification in the Presence of Outliers,” *Journal of Applied Statistics*, 1992, 19, 117–124.

1986-1990

105. Chan, W.S., “On Tests for Nonlinearity in Hong Kong Stock Returns,” *Hong Kong Journal of Business Management*, 1990, 8, 1–11.

106. Chan, W.S. and Tong, H., “On Tests for Non-linearity in Time Series Analysis,” *Journal of Forecasting*, 1986, 217–228.

Refereed Book Chapters

107. Yeung, R.Y.T. and Chan, W.S., “Health Care Financing in Hong Kong”, in Hong Kong's Health System – Reflections, Perspectives and Visions, edited by GM Leung and J Bacon-Shone. Hong Kong: The University of Hong Kong Press, 2006, 435–446.

108. Chan, W.S., “Teaching the Concept of Breakdown Point in Simple Linear Regression,” in *Fundamentals of Marketing Research*, edited by N.K. Malhotra. Los Angeles: Sage Publications: 2007, Vol. IV, 265-268.

109. Chan, W.S., “Introduction to Basic Actuarial Principles”, in Actuarial Science -- Theory and Practice, edited by H Shang and A Tosseti, Beijing: Higher Education Press, 2002, 1–60.

110. Zhang, X.B., Tse, Y.K. and Chan, W.S., “Detecting Structural Changes using Genetic Programming with an Application to the Greater-China Stock Markets,” in *Statistics and Finance: An Interface*, edited by Chan et al., London: Imperial College Press, 2000, 370–384.

Non-Refereed Journal Articles

111. Chan, F.W.H., Chan, W.S. and Li, J.S.H. “Time to Review the Discount Rate in Personal Injury Claims,” *Law Society Gazette*, Dec Issue 2010.

Books Authored

1. 《金融與保險精算數學》，著者：陳偉森、謝耀權，機械工業出版社，2009 年 4 月。

2. *Financial Mathematics for Actuaries* [with Y.K. Tse], Second Version, World Scientific Publishing Company, 2017.

3. *Financial Mathematics for Actuaries* [with Y.K. Tse], Update Version, McGraw Hill, 2013.
This book is currently listed as one of the suggested textbooks in the FM Exam Syllabus published by the Society of Actuaries:
https://www.soa.org/education/exam-req/edu-exam-fm-detail.aspx

4. *Financial Mathematics for Actuaries* [with Y.K. Tse], McGraw Hill, 2011, pp.xvi+319.

5. *Financial and Actuarial Mathematics* [with Y.K. Tse], McGraw Hill, 2007, pp.xvi+335.

6. *Personal Injury Tables Singapore 2015 - Tables for the Calculation of Damages* [with Chan FHW and Li JSH], Sweet & Maxwell Asia, 2015.

7. *Personal Injury Tables Hong Kong 2013 - Tables for the Calculation of Damages (Third Edition)* [with Chan FHW, Li JSH; General Editor: N Sarony, QC, SC], Sweet & Maxwell Asia, 2013.

8. *Personal Injury Tables Hong Kong 2005 - Tables for the Calculation of Damages (Second Edition)* [with Chan FHW; General Editor: N Sarony, QC, SC], Sweet & Maxwell Asia, 2005, pp.xvii+255.

9. *Personal Injury Tables Hong Kong - Tables for the Calculation of Damages* [with Chan FHW; General Editor: N Sarony, QC, SC], Sweet & Maxwell Asia, 2003, pp. xvii+253.

Books Edited

10. *Statistics and Finance: An Interface* (edited with H. Tong and W.K. Li), Imperial College Press, U.K., 2000 (22 chapters, pp. x+384).

RESEARCH GRANTS [SINCE 2005]

[A] Hong Kong Government Earmarked Competitive General Research Grants

1. **2017 --** Principal Investigator, On Temporal Aggregation of Some Non-Linear Time-Series Models, Reference Number: 440812, 01/12/2012 – 30/11/2014, HK$513,216.

2. **2016 --** Co-Investigator, Further Reforms in Hong Kong's Personal Injury Compensation: An Inquisitive Perspective, 01/09/2014 - 31/08/2017, HK$590,500.

3. **2015 --** Co-Investigator, Combating in-work Poverty in Hong Kong, 01/09/2014 - 31/08/2017, HK$968,000.

4. **2014 --** Co-Investigator, How to Increase the Demand for Annuity in Hong Kong: A Study of Middle-Aged Adults, Public Policy Research (PPR) Grant, 01/09/2014 – 31/08/2017, HK$ 767,917.

5. **2013 --** Co-Investigator, Universalism or Means-tested Benefits for Children and Single Mothers, 01/09/2013 – 31/08/2016, HK$ 1,592,500.

6. **2012 --** Principal Investigator, On Robust Tests for Nonlinearity in Multivariate Time-Series Analysis, 01/12/2012 – 30/11/2014, HK$345,436.

7. **2012 --** Co-Investigator, One Country, Two Systems and Three Disciplines: Interdisciplinary Research of Law, Economics and Actuarial Mathematics in Assessment of Personal Injury Damages in the People's Republic of China, 01/01/2013 – 31/12/2014, HK$440,550.

8. **2008 --** Co-Investigator, Actuarial Assessment of Damages in Personal Injury Litigations --- How Precise Are We? 01/12/2008 – 30/11/2010, HK$219,000.

9. **2006 --** Co-Investigator, Long-term Care Cost Drivers and Expenditure Projection to 2033, 01/12/2006 – 30/06/2017, HK$272,000.

10. **2005 --** Principal Investigator, Disturbances and Shifts in Human Longevity Trend: Implications for Planning Health Services and Financing Retirement Security, 15/10/2007 to 14/03/2008, HK$406,464.

[B] International Research Grants

11. **2011 --** Principal Investigator, A Comparative Assessment of Personal Injuries Compensation among Japan, Malaysia and Singapore, Research Grant from the Sumitomo Foundation (Japan), Project Number: 7010132, 01/03/2011 – 31/03/2012, ¥ 500,000.

12. **2008 --** Principal Investigator, On Robust Testing and Modelling of Nonlinear Stochastic Return Processes with Actuarial Applications, Committee on Knowledge Extension Research (USA), Project Number: 6902458, 15/06/2008 – 30/09/2011, US$12,000.

[C] University Internal Research Grants

13. **2012 --** Principal Investigator, On Robust Tests for Nonlinearity in Multivariate Time-Series Analysis, CUHK Direct Grant, Reference Number: 4440859, 01/12/2012 – 30/11/2014, HK$20,000.

14. **2012 --** Principal Investigator, Retirement Income in Hong Kong: A Further Investigation, CUHK Direct Grant, 01/01/2012 - 31/12/2012, HK$35,000.

15. **2011 --** Principal Investigator, Genetic Discrimination versus Actuarial Fairness, CUHK Direct Grant, 01/02/2011 - 31/01/2012, HK$50,000.

16. **2008 --** Principal Investigator, Principal Investigator, Annuitization of Hong Kong's Mandatory Provident Fund Accounts, CUHK Direct Grant, 31/12/2008 - 31/12/2009, HK$70,000.

17. **2007 --** Principal Investigator, Further Development on Stochastic Mortality Modelling in Actuarial Science, CUHK Direct Grant, 01/12/2007 - 30/11/2008, HK$84,153.80.

AWARDS AND HONORS

Teaching Awards

- CUHK Faculty Teaching Awards (various years)
- Econometric Society Australasian Meeting (ESAM-UTS) Prize for Econometric Teaching, 2007
- Poster Award in EXPO: Excellence Online, The Chinese University of Hong Kong, 2007
- Inaugural Teaching Excellence Award, National University of Singapore, 1993

Research Awards

- The 2006 *Edward A. Lew Research Award* (Second Prize), the Committee on Knowledge Extension Research (CKER) of the Society of Actuaries, USA

CONFERENCES

Selected Talks/Presentations

1. "Understanding the Two-Way Relationship between the ASX and NZX Indexes: A Vector Threshold Autoregressive Modeling Approach", the First International Conference on Econometrics and Statistics, Hong Kong, 15-17 June 2017.

2. "Standardizing the Giant: Mitigating Longevity Risk in China Through Capital Markets Solutions", College of Business & Economics, Australian National University, Canberra, Australia, May 8-13, 2016.

3. "Modeling Longevity Risk for Multiple Populations: The Role of a Roughness Penalty", *International Congress on Modelling and Simulation*, Gold Coast, Queensland, Australia, November 2015.

4. "An Overview of Actuarial Assessment of Damages in Personal Injury Litigation in Asia", The IFoA Asia Conference, Beijing, China, May 13-15, 2015.

5. "Semi-Coherent Multi-Population Mortality Modeling: The Impact on Longevity Risk Securitization", 2015 China International Conference on Insurance and Risk Management, Hangzhou, China, July 15-18, 2015.

6. "The Dynamics of Arbitrage", The First Conference on Recent Developments in Financial Econometrics and Applications, Deakin University, Victoria, Australia, December 4-5, 2014.

7. "Applications of Actuarial Risk Assessment in Hong Kong Courts", the 5th International Gerber-Shiu Workshop, Hong Kong, July 7-8, 2014.

8. “Understanding the Two-Way Relationship between the ASX and NZX Indexes: A Vector Threshold Autoregressive Modeling Approach”, *International Congress on Modelling and Simulation*, Adelaide, South Australia, December 2013.

9. “Disaggregation of Chinese Life Tables from National to Provincial Level, with an Application to Assessing Personal Injury Liabilities in China”, The Ninth International Longevity Risk and Capital Markets Solutions Conference, Beijing, China, September 6-7, 2013.

10. “One Country, Two Systems and Three Disciplines: Interdisciplinary Research of Law, Economics and Actuarial Mathematics in Assessment of Personal Injury Damages in the People's Republic of China”, SOA Annual Symposium, Shanghai, China, November 5-6, 2012.

11. “On Modelling Mortality Indices”, Longevity 8 Conference, Waterloo, Ontario, Canada, September 7-8, 2012.

12. “Time-Simultaneous Mortality Fan Charts: Construction and Applications” 16th International Congress on Insurance: Mathematics & Economics, Hong Kong, June 28-30, 2012.

13. “Time-Simultaneous Fan Charts: Applications to Stochastic Life Table Forecasting”, *International Congress on Modelling and Simulation*, Perth, Western Australia, December 2011.

14. “Time-Simultaneous Prediction Bands: A New Look at the Uncertainty Involved in Forecasting Mortality”, Statistics 2011 Canada, Concordia University, Montreal, Canada, July 1-4.2011.

15. “Simultaneous Prediction Intervals: An Application to Forecasting U.S. and Canadian Mortality”, Living to 100 Symposium, Florida, January 5-7, 2011.

16. “An Actuarial Approach to Assessing Personal Injury Compensations in Singapore: Theory and Practice,” The 3rd General Insurance Conference, Singapore Actuarial Society, Singapore, June 2, 2011.

17. “A Student t-mixture Autoregressive Model with Applications to Heavy-Tailed Financial Data”, The 2010 International Conference on Insurance and Actuarial, Chongqing University, China, June 5-7, 2010.

18. “A threshold formula for indexing the discount rate for actuarial assessment of damages in personal injury litigation”, the 14th International Congress on Insurance: Mathematics and Economics, University of Toronto, Canada, June 17- 19, 2010.

19. “Temporal aggregation of Markov switching financial return models”, International Conference on Statistical Analysis of Complex Data, Yunnan University, Kunming, China, July 1-3, 2010.

20. “One Country, Two Systems and Three Disciplines: Interdisciplinary Research of Law, Economics and Actuarial Mathematics in Assessment of Tort Damages”, the 6th Annual Meeting of the Asian Law and Economics Association, UIBE, Beijing, China, August 23-24 2010.

21. “Modeling Old-Age Mortality Risk for the Populations of Australia and New Zealand: An Extreme Value Approach,” *International Congress on Modelling and Simulation*, Cairns, Australia, July 2009.

22. “Modeling Investment Guarantees in Japan: A Risk-Neutral GARCH Approach”, the Third International Conference on Computational and Financial Econometrics (CFE 09) Grand Resort Hotel, Limassol, Cyprus, October 29-31, 2009.

23. “A Student t-mixture Autoregressive Model with Applications to Heavy-Tailed Financial Data”, Singapore Economic Review Conference (SERC 09) Singapore, August 6-8, 2009.

24. “On testing some non-nested time series models with equal low-order unconditional moments”, the Second International Workshop on Computational and Financial Econometrics, Neuchâtel, Switzerland, June 2008.

25. “A student *t*-mixture autoregressive model with applications to heavy-tailed financial data”, The Institute for Quantitative Finance and Insurance, University of Waterloo, January 2008.

26. “A research note on applying the statistical notion of confidence intervals in tort trial”, The Asian Law and Economics Association Annual Meeting, Academia Sinica, Taipei, August 2007.

27. “The Lee-Carter Model for Forecasting Mortality, Revisited”, The Shanghai -- Hong Kong Insurance and Actuarial Forum, Shanghai, August 2007.

28. “Temporal Aggregation of Equity Return Time-Series Models”, The Australasian Meeting of the Econometric Society, Brisbane, July 2007.

29. “Modelling Australian Interest Rate Swap Spreads by Mixture Autoregressive Conditional Heteroscedastic Processes,” *International Congress on Modelling and Simulation*, Christchurch, New Zealand, December 2007.

30. “Swap Spreads: The Invisible Hand Behind the Treasury Bond and Interest Rate Swap Market”, International Symposium on Financial Engineering, Jinan University, Guangzhou, June 2006.

31. “Exploring the Dynamics of the Treasury Bond and Interest Rate Swap Markets Using Bivariate Threshold Autoregressive Model”, The Third World Conference on Computational Statistics and Data Analysis, Limassol, Cyprus, October 2005.

32. “The Lee-Carter Model for Forecasting Mortality, Revisited”, Living to 100 and Beyond Symposium, Florida, January 2005.

33. “Temporal Aggregation of Equity Return Time-Series Models”, *International Congress on Modelling and Simulation*, Melbourne, December 2005.

34. “A Paradigm Shift in Personal Injury Litigation in Hong Kong -- the Actuarial Perspectives”, The Global Business & Finance Research Conference, London, July 2004.

35. “A Bivariate Threshold Time Series Model for Analyzing Australian Interest Rates”, *International Congress on Modelling and Simulation*, Queensland, Australia, July 2003.

36. “Mixture Gaussian Time Series Modelling of Long-Term Market Returns”, Stochastic Modelling Symposium, Toronto, September 2003.

37. “An actuarial analysis of long-term care demand in Hong Kong”, The 7th Asia/Oceania Regional Congress of Gerontology, Tokyo, Japan, November 2003.

38. “Multivariate Stochastic Actuarial Modelling”, The Second Conference in Actuarial Science & Finance in Samos, September, 2002.

39. “Multiple Forecasts with Autoregressive Time Series Models: Case Studies”, *International Congress on Modelling and Simulation*, Canberra, Australia, December 2001.

40. “Diagnosing Shocks in Markets of Southeast Asia, Australia and New Zealand”, *International Congress on Modelling and Simulation*, Hamilton, New Zealand, December 1999.

Organizing International Research Conferences

1. Organized and chaired various sessions in various International Congresses on Modelling and Simulation (MODSIM, Australia and New Zealand) from 1993 to 2015.

2. Organized and chaired various sessions in various China International Conferences on Insurance and Risk Management (CICIRM, China) from 2010 to 2016.

3. Organized and chaired various sessions in various Insurance Risk and Finance Research Conferences (IRFRC, Singapore) from 2012 to 2016.

4. Chair, Session N8: Nonlinear Financial Time-Series Modelling, The 59th World Statistics Congress of the International Statistical Institute, Hong Kong, August 25-30, 2013.
5. Member of the Scientific Committee, the 2007 Hong Kong - Shanghai Insurance and Actuarial Forum, Shanghai, August 18-19, 2007.

6. Member of the organizing committee, International Symposium on Hong Kong's Health System: Reflections, Perspectives and Visions, Hong Kong, June 16-17, 2006.

7. Co-Chair, Program Committee, 2006 International Symposium on Financial Engineering, Chinese Academic of Sciences and Jinan University, June 2-5, 2006, Guangzhou, China.

8. Co-Chair, Session T16: Nonlinear Time-Series Modelling, The 3rd International Association for Statistical Computing (IASC) world conference on Computational Statistics and Data Analysis, Limassol, Cyprus, October 28-31, 2005.

9. Member of the organizing committee, the 5th International Chinese Statistical Association Conference, Hong Kong, 17-19, August 2001.

SERVICE

National Level

- International Consultant, Social Security Department, Ministry of Finance, People Republic of China, 2009-2010.

Hong Kong

- Member, Consultative Group on Voluntary Health Insurance Scheme, Food and Health Bureau, HKSAR Government, 2017.
- Non-Executive Director, Independent Insurance Authority, 2015-present.
- Associate Consultant for the project entitled "A Study on Future Development of Retirement Protection in Hong Kong", Central Policy Unit, HKSAR Government, 2013.
- Member, Working Group on Health Protection Scheme Health and Medical Development Advisory Committee, Food and Health Bureau, HKSAR Government, 2012-2014.
- Consultant for the project entitled "Overseas' Experience in Developing Reverse Mortgage for Retirement Protection", Elderly Commission, HKSAR Government, 2004.

University Level

- Chairman, Tender Board, The Chinese University of Hong Kong, 2015-present
- Member Trustee, University Staff Superannuation Schemes, 2011-present
- Member, Senate Committee on University Scholarships, 2015-2016
- Review Panel Member, University Undergraduate Programme Reviews, 2016-2017

College/Faculty Level

- Member, Faculty Board, CUHK School of Business, 2011-present
- Chung Chi College Coordinator, 2007-2015
- Members of the Committee on Integrated BBA Programme, 2008-2009
- Members of the Committee on Undergraduate Studies in Business, 2008-09

Departmental Level

- Member, Departmental Executive Committee, 2010-present
- Programme Director, BBA in Insurance, Finance and Actuarial Analysis, 2010 - 2011

SERVICE TO PROFESSION

- Member, Education Executive Committee, Society of Actuaries, USA, 01/2012-present
- Member, Research Executive Committee, Society of Actuaries, USA, 05/2012-present
- Member, Academic Advisory Committee of the China Center for Insurance and Risk Management (CCIRM) at Tsinghua University, Beijing, China, 06/2009-present.
- Professional Development (PD) Advisor, Society of Actuaries, 6 candidates, 01/2004-present
- Council Member, Actuarial Society of Hong Kong, 01/2001-12/2011
- Chairman, Education Committee, Actuarial Society of Hong Kong, 01/2001-12/2011
- Facilitator, Associateship Professionalism Course, Society of Actuaries, USA, 01/2001-present
- Common Core Faculty, Society of Actuaries Course 7 Seminar, Hong Kong, 2003-2007
- Member, China Committee, Actuarial Society of Hong Kong, 2003-2008
- Invigilator, Hong Kong Examination Centre, Chinese Actuarial Examinations, 09/2002-present
- Member, Membership Committee, International Chinese Statistical Association, 01-12/2002
- Director, Board of International Chinese Statistical Association, 01/2007-01/2009

EXTERNAL ACADEMIC ACTIVITIES

- External Examiner for BSc (Hons) Financial Analysis and BSc (Hons) Actuarial Analysis, Sunway University Business School, Malaysia, 09/2016 – present.
- External Examiner for one Ph.D. candidate at the University of Sydney, Australia, 09/2014.
- External Examiner for one Ph.D. candidate at the National University of Singapore, 06/2014.
- External Examiner for one Ph.D. candidate at the University of Melbourne, Australia, 06/2013.
- External Examiner for one Ph.D. candidate at the University of Waterloo, Canada, 05/2011.
- External Examiner for one Ph.D. candidate at the Feng Chia University, Taiwan, 08/2009.
- External Examiner for one Ph.D. candidate at the Hong Kong Polytechnic University, 06/2007.
- External Examiner for one M.Phil. candidate at the University of Hong Kong, 06/2007.
- External Assessor, Promotion to Professor, Department of Mathematics, Zhejiang University, (2 applications) 08/2010 and 08/2012.
- External Assessor, Hiring of Assistant Professors, School of Economics and Management, Tianjin University China, (8 applications) 08/2014 and 08/2016.
- Reviewer, National Sciences and Engineering Research Council of Canada (NSERC) Grants (2 applications), 11/2009.
- Reviewer, National Sciences and Engineering Research Council of Israel (NSERC) Grants (1 application), 01/2013.