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Degrees
B.Soc.Sc. (Honours, Economics and Statistics), Hong Kong University, 1974
M.Sc. (Statistics), London School of Economics, 1976
Ph.D. (Econometrics), London School of Economics, 1981

Professional Qualification
Fellow, Society of Actuaries

Positions Held
Research Assistant, London School of Economics, 1976 - 1977
Research Officer, London School of Economics, 1977 - 1981
Lecturer, Polytechnic of Central London, 1981 - 1982
Lecturer, National University of Singapore, 1982 - 1986
Senior Lecturer, National University of Singapore, 1987 - 1993
Associate Professor, National University of Singapore, 1994 - 1999
Professor, National University of Singapore, 1999 - 2001
Adjunct Professor, Department of Economics, National University of Singapore, 2001 – 2006

Visiting Positions
Visiting Scholar, Center for Southeast Asian Studies, Kyoto University, 1986
Visiting Fellow, Statistics Department, Australian National University, 1987
Visiting Scholar, Department of Economics, University of Illinois at Urbana-Champaign, 1988 - 1989
Consultant of Business School, Hong Kong Baptist University, June 1998
Consultant of Business School, Hong Kong Baptist University, August 2001
Visiting Professor, Department of Finance, Chinese University of Hong Kong, September – December 2013.
Visiting Professor, Department of Mathematics, Hong Kong University of Science and Technology, May 2015.

Research Interests
Financial Econometrics
Actuarial Science

Honours
Distinguished Author Award, *Journal of Applied Econometrics*

Publications

Journal Articles

(1) "Edgeworth approximations in first order stochastic difference equations with exogenous variables", *Journal of Econometrics*, **20**, 1982, 175 - 195.

(2) "On calculating the Edgeworth approximate distribution of an econometric estimator or test statistic", *Economics Letters*, **12**, 1983, 239 - 242.

(3) "Testing linear and log-linear regressions with autocorrelated errors", *Economics Letters*, **14**, 1984, 333 - 337.

(4) "A physical interpretation of the maximum likelihood estimation of a linear functional relationship model", Y.V. Hui and Y.K. Tse, *The Statistician*, **33**, 1984, 239 - 242.

(5) "Edgeworth approximation for t-ratios of 2SLS estimates of a dynamic model", *Communications in Statistics B*, **13**, 1984, 603 - 618.

(6) "An empirical comparison of small sample distributions of estimators of the first order autoregression", *Journal of Statistical Computation and Simulation*, **19**, 1984, 227 - 236.

(7) "Testing for linear and log-linear regressions with heteroscedasticity", *Economics Letters*, **16**, 1984, 63 - 69.

(8) "Testing for heteroscedasticity in a dynamic simultaneous equation model", Y.K. Tse and C.T. Phoon, *Communications in Statistics A*, **14**, 1985, 1283 - 1300.

(9) "Some modified versions of Durbin's h-statistic", *The Review of Economics and Statistics*, **67**, 1985, 534 - 538.

(10) "The spot and forward exchange rates: some empirical evidence of Singapore", *Applied Economics*, **18**, 1986, 319 - 331.

(11) "Outlier detection in linear models: a comparative study in simple linear regression", U. Balasooriya and Y.K. Tse, *Communications in Statistics A*, **15**, 1986, 3589 - 3598.

(12) "A note on Sargan densities", *Journal of Econometrics*, **34**, 1987, 349 - 354.

(13) "A diagnostic test for the multinomial logit model", *Journal of Business and Economic Statistics*, **5**, 1987, 283 - 286.

(14) "An empirical comparison of some statistics for identifying outliers and influential observations in linear regression models", U. Balasooriya, Y.K. Tse and Y.S. Liew, *Journal of Applied Statistics*, **14**, 1987, 177 - 184.

(15) "Assessing Lund's critical values for testing for outliers in linear regression models", *Journal of Applied Statistics*, **15**, 1988, 363 - 366.

(16) "A sequential testing procedure for outliers and structural change", M. McAleer and Y.K. Tse, *Econometric Reviews*, **7**, 1988, 103 - 111.

(17) "Exact maximum likelihood estimation of vector ARMA processes", Y.K. Tse and Y.M. Tse, *Advances in Statistical Analysis and Statistical Computing*, **2**, 1989, 71 - 84.

(18) "A proportional random utility approach to qualitative response models", *Journal of Business and Economic Statistics*, **7**, 1989, 61 - 68.

(19) "Technical efficiency measures for Malaysian food manufacturing industry", K.P. Kalirajan and Y.K. Tse, *The Developing Economies*, **27**, 1989, 174 - 184.

(20) "An algorithm for computing values of options on the maximum or minimum of several assets", P.P. Boyle and Y.K. Tse, *Journal of Financial and Quantitative Analysis*, **25**, 1990, 215 - 227.

(21) "Term structure of interest rates in the Singapore Asian Dollar Market", T.K.Y. Lee and Y.K. Tse, *Journal of Applied Econometrics*, **6**, 1991, 143 - 152.

(22) "Stock returns volatility in the Tokyo Stock Exchange", *Japan and the World Economy*, **3**, 1991, 285 - 298.

(23) "Selecting an index for a stock index futures contract: An analysis of the Singapore market", A. Tay and Y.K. Tse, *The Review of Futures Markets*, **10**, 1991, 412 - 431.

(24) "Tests for multiple outliers in an exponential sample", Y.K. Tse and U. Balasooriya, *Sankhya B*, **53**, 1991, 56 - 63.

(25) "Forecasting volatility in the Singapore stock Market", Y.K. Tse and S.H. Tung, *Asia Pacific Journal of Management*, **9**, 1992, 1 - 13.

(26) "MLE of some continuous time financial models: Some Monte Carlo results", *Mathematics and Computers in Simulation*, **33**, 1992, 575 - 580.

(27) "On the robustness of tests of outliers and functional form", M. McAleer and Y.K. Tse, *Journal of Applied Statistics*, **19**, 1992, 427 - 436.

(28) "Price-volume relation in stocks: A multiple time series analysis on the Singapore market", W.S. Chan and Y.K. Tse, *Asia Pacific Journal of Management*, **10**, 1993, 39 - 56.

(29) "Cross return predictability in Pacific Basin stock markets", W.S. Chan and Y.K. Tse, *Asia Pacific Journal of Management*, **11**, 1994, 289 - 303.

(30) "Stochastic behaviour of interest rates in Singapore", *Advances in Pacific Basin Financial Markets*, **1**, 1995, 255 - 276.

(31) "Interest rate models and option pricing: A sensitivity analysis", *Mathematics and Computers in Simulation*, **39**, 1995, 431 - 436.

(32) "Modelling reverse mortgages", *Asia Pacific Journal of Management*, **12**, 1995, 79 - 95.

(33) "Some international evidence on the stochastic behaviour of interest rates", *Journal of International Money and Finance*, **14**, 1995, 721 - 738.

(34) "Lead-lag relationship between spot and futures price of the Nikkei Stock Average", *Journal of Forecasting*, **14**, 1995, 553 - 563.

(35) "Nonlinear dynamics of the Nikkei Stock Average futures", *Financial Engineering and the Japanese Markets*, **2**, 1995, 181 - 195.

(36) "Long memory volatility in stock returns: Evidence from four Asia-Pacific markets", Y.K. Tse and Albert K.C. Tsui, *Research in Finance*: Supplement 2, 1996, 33 - 54.

(37) "Stock volatility and the impact of news: The case of four Asia-Pacific markets", Y.K. Tse and X.L. Zuo, *Advances in International Banking and Finance*, **2**, 1996, 115 - 137.

(38) "Testing for conditional heteroscedasticity: Some Monte Carlo results", Y.K. Tse and X.L. Zuo, *Journal of Statistical Computation and Simulation*, **58**, 1997, 237 - 253.

(39) "Conditional volatility in foreign exchange rates: Evidence from the Malaysian ringgit and Singapore dollar", Y.K. Tse and Albert K.C. Tsui, *Pacific-Basin Finance Journal*, **5**, 1997, 345 - 356.

(40) "The cointegration of Asian currencies revisited", Y.K. Tse and L.K. Ng, *Japan and the World Economy*, **9**, 1997, 109 - 114.

(41) "Short-term interest rate models and the generation of interest rate scenarios", *Mathematics and Computers in Simulation*, **43**, 1997, 475 - 480.

(42) "The conditional heteroscedasticity of the Yen-Dollar exchange rates", *Journal of Applied Econometrics*, **13**, 1998, 49 - 55.

(43) "An empirical analysis of the stochastic behaviour of short-term interest rates in Singapore", *Asian Economic Journal*, **12**, 1998, 23 - 34.

(44) "Hedging time-varying downside risk", Donald Lien and Y.K. Tse, *Journal of Futures Markets*, **18**, 1998, 705 - 722.

(45) "Interest rate spreads and the prediction of real economic activity: The case of Singapore", *The Developing Economies*, **36**, 1998, 289 - 304.

(46) "Fractional cointegration and futures hedging", Donald Lien and Y.K. Tse, *Journal of Futures Markets*, **19**, 1999, 457 - 474.

(47) "No-cointegration test based on fractional differencing: Some Monte Carlo results", Y.K. Tse, V.V. Anh and Q. Tieng, *Journal of Statistical Planning and Inference*, **80**, 1999, 257 - 267.

(48) "Forecasting the Nikkei spot index with fractional cointegration", Donald Lien and Y.K. Tse, *Journal of Forecasting*, **18**, 1999, 259 - 273.

(49) "A note on diagnosing multivariate conditional heteroscedasticity models", Y.K. Tse and Albert K.C. Tsui, *Journal of Time Series Analysis*, **20**, 1999, 679 - 691.

(50) "Hedging downside risk with futures contracts", Donald Lien and Y.K. Tse, *Applied Financial Economics*, **10**, 2000, 163 -170.

(51) "Cointegration of stochastic multifractals with application to foreign exchange rates", V.V. Anh, Q.M. Tieng and Y.K. Tse, *International Transactions in Operational Research*, **7**, 2000, 349 - 363.

(52) "A note on the length effect of futures hedging", Donald Lien and Y.K. Tse, *Advances in Investment Analysis and Portfolio Management*, **7**, 2000, 131 - 143.

(53) "A test for constant correlations in a multivariate GARCH model", *Journal of Econometrics*, **98**, 2000, 107 - 127.

(54) "Hedging downside risk: Futures versus options", Donald Lien and Y.K. Tse, *International Review of Economics and Finance*, **10**, 2001, 159 - 169.

(55) "Local influence on bandwidth estimation for kernel smoothing", X.B. Zhang and Y.K. Tse, *Journal of Statistical Computation and Simulation*, **70**, 2001, 349 - 370.

(56) "Maximum likelihood estimation of the fractional differencing parameter in an ARFIMA Model using wavelets", Y.K. Tse, V.V. Anh and Q. Tieng, *Mathematics and Computers in Simulation*, **59**, 2002, 153 – 161.

(57) "The variance ratio test with stable Paretian errors", Y.K. Tse and X.B. Zhang, *Journal of Time Series Analysis*, **23**, 2002, 117 - 126.

(58) "Some recent developments in futures hedging", Donald Lien and Y.K. Tse, *Journal of Economic Surveys*, **16**, 2002, 357 - 396.

(59) "A multivariate GARCH model with time-varying correlations", Y.K. Tse and Albert K.C. Tsui, *Journal of Business and Economic Statistics*, **20**, 2002, 351 - 362.

(60) "Residual-based diagnostics for conditional heteroscedasticity models", *Econometrics Journal*, **5**, 2002, 358 - 373.

(61) "Evaluating the hedging performance of the constant-correlation GARCH model", Donald Lien, Y.K. Tse and Albert K.C. Tsui, *Applied Financial Economics*, **12**, 2002, 791 - 798.

(62) "Physical delivery versus cash settlement: An empirical study on the feeder cattle contract", Donald Lien and Y.K. Tse, *Journal of Empirical Finance*, **9**, 2002, 361 - 371.

(63) "Structural Change and Lead-Lag Relationship between the Nikkei Spot Index and Futures Price: A Genetic Programming Approach", Donald Lien, Y.K. Tse and Xibin Zhang, *Quantitative Finance*, **3**, 2003, 136 - 144.

(64) "The Impacts of Hong Kong's Currency Board Reforms on Its Interbank Market", Y.K. Tse and Paul S.L. Yip, *Journal of Banking and Finance*, **27**, 2003, 2273 - 2296.

(65) "A Small-Sample Overlapping Variance-Ratio Test", Y.K. Tse, K.W. Ng and X.B. Zhang, *Journal of Time Series Analysis*, **25**, 2004, 127 - 135.

(66) "A Monte Carlo Investigation of Some Tests for Stochastic Dominance", Y.K. Tse and Xibin Zhang, *Journal of Statistical Computation and Simulation*, **74**, 2004, 361 - 378.

(67) "Market segmentation and information values of earnings announcements: Some empirical evidence from an event study on the Chinese stock market", Y. Gao and Y.K. Tse, *International Review of Economics and Finance*, **13/14**, 2004, 455 – 474.

(68) "Estimation of Hyperbolic Diffusion using MCMC Method", Y.K. Tse, Xibin Zhang and Jun Yu, *Quantitative Finance*, **4**, 2004, 158 - 169.

(69) "Expectations Formation and Forecasting of Vehicle Demand: An Empirical Study of the Vehicle Quota Auctions in Singapore", Sing-Fat Chu, Winston T.H. Koh and Yiu Kuen Tse, *Transportation Research Part A*, **38**, 2004, 367 - 381.

(70) "Effects of Electronic Trading on the Hang Seng Index Futures Market", Joseph Fung, Donald Lien, Yiuman Tse and Yiu Kuen Tse, *International Review of Economics and Finance*, **14**, 2005, 415 - 425.

(71) "A Survey on Physical Delivery versus Cash Settlement in Futures Contracts", Donald Lien and Y.K. Tse, *International Review of Economics and Finance*, **15**, 2006, 15 - 29.

(72) “Exchange-Rate Systems and Interest-Rate Behaviour: The Experience of Hong Kong and Singapore”, Y.K. Tse and S.L. Yip, *International Review of Economics and Finance*, **15**, 2006, 212 - 227.

(73) "Modeling Firm-Size Distribution Using Box-Cox Heteroscedastic Regression", by Zhenlin Yang, Yiu Kuen Tse, **21**, 2006, *Journal of Applied Econometrics*, 641 – 653.

(74) "An Empirical Examination of IPO Underpricing in the Chinese A-share Market”, T. Yu and Y. K. Tse, *China Economic Review*, **4**, 2006, 363 – 382.

(75) "Functional Form and Spatial Dependence in Dynamic Panels", by Zhenlin Yang, C. W. Li, Yiu Kuen Tse, *Economics Letters*, **91**, 2006, 138 – 145.

(76) **"**Open versus Sealed-Bid Auctions: Testing for Revenue Equivalence under Singapore’s Vehicle Quota System**"**, by Winston T.H. Koh, Roberto S. Mariano, Yiu Kuen Tse, *Applied Economics*, **39**, 2007, 125 – 134.

(77) "A Corrected Plug-In Method for the Quantile Interval Construction through a Transformed Regression”, Zhenlin Yang and Y. K. Tse, *Journal of Business and Economic Statistics*, **25**, 2007, 356 – 376.

(78) "Direction-of-change Forecasts based on Conditional Variance, Skewness and Kurtosis Dynamics: International Evidence", P. F. Christoffersen, F. X. Diebold, R. S. Mariano, A. S. Tay and Y. K. Tse, *Journal of Financial Forecasting*, **1**, 2007, 1 – 24.

(79) "Statistics with Estimated Parameters”, Z.L. Yang, Y.K. Tse and Z.D. Bai, *Statistica Sinica*, **12**, 2007, 817 – 837.

(80) "Generalized LM Tests for Functional Form and Heteroscedasticity", Z.L. Yang and Y.K. Tse, *Econometrics Journal*, 2008, **11**, 349 – 376.

(81) "Using High-Frequency Transaction Data to Estimate the Probability of Informed Trading", Anthony Tay, Christopher Ting, Yiu Kuen Tse and Mitch Warachka, *Journal of Financial Econometrics*, 2009, **7**, 288 – 311.

(82) "The Lead-lag Relationship between the S&P 500 Spot and Futures Markets: An Intraday-data Analysis using Threshold Regression Model", Y.K. Tse and W.S. Chan, *Japanese Economic Review*, 2010, **61**, 133 – 144.

(83) "The Impact of Transaction Duration, Volume and Direction on Price Dynamics and Volatility", Anthony Tay, Christopher Ting, Yiu Kuen Tse and Mitch Warachka, *Quantitative Finance*, 2011, **11**, 447 – 457.

(84) "An Improved Test for Statistical Arbitrage", Robert Jarrow, Melvyn Teo, Yiu Kuen Tse and Mitch Warachka, *Journal of Financial Markets*, 2012, **15**, 47 – 80.

(85) "Estimation of High-Frequency Volatility: An Autoregressive Conditional Duration Approach", Yiu-Kuen Tse and Thomas Tao Yang, *Journal of Business and Economic Statistics*, 2012, **30**, 533 – 545.

(86) "Estimation of Time Varying Adjusted Probability of Informed Trading and Probability of Symmetric Order-Flow Shock", Daniel Preve and Yiu-Kuen Tse, *Journal of Applied Econometrics*, 2013, **28**, 1138 – 1152.

(87) "Improving Money's Worth Ratio Calculations: The Case of Singapore's Pension Annuities" Joelle H.Y. Fong, Jean Lemaire and Yiu-Kuen Tse, *Asia-Pacific Journal of Risk & Insurance*, 2014, **8**, 1 -- 26.

(88) "Intraday periodicity adjustments of transaction duration and their effects on high-frequency volatility estimation", Yiu-Kuen Tse and Yingjie Dong, *Journal of Empirical Finance*, 2014, **28**, 352 – 361.

(89) "Intraday Value-at-Risk: An Asymmetric Autoregressive Conditional Duration Approach", Shouwei Liu and Yiu-Kuen Tse, *Journal of Econometrics*, 2015, **189**, 437 - 446.

(90) "On Estimating Market Microstructure Noise Variance", Yingjie Dong and Yiu-Kuen Tse, *Economics Letters*, 2017, **150**, 59 – 62.

(91) "Singapore's LIFE program: Actuarial framework, longevity risk and impact of annuity fund return", Koon-Shing Kwong, Yiu-Kuen Tse and Wai-Sum Chan, forthcoming in *Singapore Economic Review.*

(92) "Enhancing Singapore's pension scheme: A blueprint for further flexibility", Koon-Shing Kwong, Yiu-Kuen Tse and Wai-Sum Chan, forthcoming in the special issue "Designing post-retirement benefits in a demanding scenario" in *Risks.*

(93) "Business time sampling scheme with applications to semi-martingale hypothesis and estimating integrated volatility", Yingjie Dong and Yiu-Kuen Tse, forthcoming in *Econometrics.*

Books Authored

Know Your Interest: A Guide to Loans and Investment, Ridge Books, 1997.

Introductory Statistics, Hwee-Kwan Chow, Aurobindo Ghosh, Denis Leung and Yiu-Kuen Tse, Pearson, 2007.

Financial and Actuarial Mathematics, Wai-Sum Chan and Yiu-Kuen Tse, McGraw-Hill, 2007, Chinese translation published by China Machine Press, 2009.

Nonlife Actuarial Models: Theory, Methods and Evaluation, Cambridge University Press, 2009.

Financial Mathematics for Actuaries, Wai-Sum Chan and Yiu-Kuen Tse, McGraw-Hill, 2011, Updated edition, 2013.

Financial Mathematics for Actuaries, Wai-Sum Chan and Yiu-Kuen Tse, World Scientific Publishing Company, Second Edition, 2017.

Book Edited

Econometric Forecasting and High-Frequency Data Analysis, Roberto S. Mariano and Yiu-Kuen Tse, World Scientific, 2008.

Chapters in Books

(1) "Edgeworth approximations to the distributions of various test statistics", J.D. Sargan and Y.K. Tse, in E.G. Charatsis, ed, *Proceedings of the Econometric Society European Meeting 1979: Selected Econometric Papers in Memory of Stefan Valavanis*, 1981, 281 - 295, Amsterdam: North-Holland

(2) "Some experience of numerical computation of Edgeworth approximations", J.D. Sargan and Y.K. Tse, in E. Maasoumi, ed., chapter 7 in *Contributions to Econometrics: John Denis Sargan*, vol. 2, 1988, 158 - 171, Cambridge, U.K.: Cambridge University Press.

(3) "Edgeworth approximations for 2SLS estimates of a dynamic model", J.D. Sargan and Y.K. Tse, in E. Maasoumi, ed., chapter 8 in *Contributions to Econometrics: John Denis Sargan*, vol. 2, 1988, 172 - 181, Cambridge, U.K.: Cambridge University Press.

(4) "Price and volume in the Tokyo Stock Exchange", in W.T. Ziemba, W. Bailey and Y. Hamao, eds, *Japanese Financial Market Research*, 1991, 91 - 119, Amsterdam: North Holland.

(5) "Interest parity and dynamic capital mobility: The experience of Singapore", Y.K. Tse and K.S. Tan, in Takatoshi Ito and Anne O. Krueger, eds, *Financial Deregulation and Integration in East Asia*, 1996, 335 - 354, Chicago University Press: Chicago, IL.

(6) "Detecting structural changes using genetic programming with an application to the Greater-China stock markets", Y.K. Tse, X.B. Zhang and W.S. Chan, in W.S. Chan, W.K. Li and H. Tong, eds., *Statistics and Finance: An Interface*, 2000, 370 - 384, Imperial College Press: London.

(7) "Stochastic modelling of multifractal exchange rates", V.V. Anh, Q. Tieng and Y.K. Tse, in Y. Suzuki, S.J. Ovaska, T. Furuhashi, R. Roy and Y. Dote, eds., *Soft Computing in Industrial Applications*, 2000, Springer: London, 355 - 369.

Working Paper

(1) "The exchange rate system reform in China: US pressure, implicit gradual appreciation and explicit exchange rate bands", Paul S.L. Yip, Yiu-Kuen Tse and Yingjie Dong, submitted to *International Journal of Central Banking*.