Risk Management Institute

RMI Research Workshop Series

	Session 1	Session 2
Speaker:	Professor Ruey S. Tsay University of Chicago	Professor Johan Walden UC-Berkeley
Title:	Effects of Non-Synchronous Trading and Estimation of Realized Covariance in High Frequency	Revisiting Asset Pricing Anomalies in an Exchange Economy
Date / Time:	6th November 2009, 3.00pm – 4.10pm	6th November 2009, 4.45pm – 5.55pm
Venue:	I^3 Building, 21 Heng Mui Keng Terrace, Seminar Room Level 1 [Map]	
Chair-person:	Professor Sun Defeng, National University of Singapore	

Light refreshments will be served during the break (4.10pm – 4.45pm)

Session 1: Abstract

It is well-known that asset returns, especially those in high frequency, are subject to the effect of market microstructure. Many studies consider the issues of estimating realized volatility in the presence of microstructure noise. Furthermore, non-synchronous trading may introduce erroneous serial and cross-sectional dependence, and it raises important issues in estimating realized covariance matrix. In this talk, we investigate the effect of non-synchronous trading in high-frequency finance and propose a statistical method to synchronize trading of multiple assets and to remove the effect of market microstructure noise. Our results on the effect of non-synchronous trading generalize those of Lo and MacKinlay (1990). The proposed method to overcome the difficulties of non-synchronous trading makes use of Markov chain Monte Carlos (MCMC) methods. The method enables us to analyze realized covariance matrix of multiple asset returns, including assets that are not heavily traded. We use some TAQ data of NYSE to demonstrate the efficacy of the proposed method. Our investigation shows that non-synchronous trading is the leading effect of market microstructure noises. The talk is based on the following two working papers: (1)Non-synchronous trading and high-frequency beta (joint with J.H. Yeh of the Department of Finance, National Central University, Taiwan).(2)Sychronizing asynchronously traded financial assets for realized covariance (joint with J.H. Yeh and C.M. Kuan of the National Taiwan University). [Only preliminary draft is available.]

About the speaker

Ruey S. Tsay is H.G.B. Alexander Professor of Econometrics & Statistics, Booth School of Business, University of Chicago. He earned his PhD from the University of Wisconsin-Madison in 1982 and was with Carnegie Mellon University before joining Chicago in 1989. His research interest is in financial econometrics, forecasting, time-series analysis and Bayesian inference with Markov chain Monte Carlo methods. He served as co-editor of the Journal of Business and Economic Statistics from 1995 to 1997. He is currently a department editor of the Journal of Forecasting and co-editor of the Probability and Statistics Book Series of Wiley. Professor Tsay published widely in leading econometric and statistical journals, and his book Analysis of Financial Time Series (2nd edition, 2005, Wiley) is well received. He is an elected member of Academia Sinica, Taiwan, and a fellow of the American Statistical Association & the Institute of Mathematical Statistics. He also serves on advisory committee of several research institutes.

Session 2: Abstract

Several well-known asset pricing anomalies arise when simple endowment economies are calibrated to real data. We show that many of these anomalies are largely mitigated, and even disappear, if we endow the representative agent with an arbitrarily small minimum consumption level. We illustrate this point in a standard Lucas exchange economy with power utility and lognormal consumption growth. Insuring the agent's consumption allows us to solve the model for parameter values where the standard model is not defined. For such parameter values, disasters are much more important for the representative investor, and the equity premium therefore higher, even though the consumption process is less risky than in the standard model. Our model yields reasonable risk premia, Sharpe ratios and discount rates; excess price volatility; a high market price-dividend ratio and an upward sloping term structure. Technically, our model leads to nonlinear price functions, and quite different price dynamics than in the standard model. The model is tractable, and we derive closed form solutions for all variables of interest. We also establish that the results can be generalized.

About the speaker

Johan Walden is an Assistant Professor of Finance at University of California at Berkeley, Haas School of Business. He received his Ph.D. in financial economics from Yale University. Professor Walden's research is focused on theoretical asset pricing and on risk management with heavy-tailed risks, and he has published articles on these topics in leading journals, e.g., in the Review of Financial Studies and the Journal of Risk and Insurance. Recently, Professor Walden assisted the Congressional Oversight Panel in assessing the Federal Reserve Board's Supervisory Capital Assessment Program. Previously, Professor Walden worked as a management consultant at McKinsey & Company, and as a Postdoctoral research associate at Yale Department of Mathematics. He also has a Ph.D. and Docentship in applied mathematics from Uppsala University, Sweden. He teaches finance to MBA students at Haas and has won multiple teaching awards.

For more information on all our workshops & seminars, please visit Risk Management Institute website. Registration is not required. For enquiries, please contact Geraldine Wong at 6516 3380. RMI affiliated researchers are strongly encouraged to attend the workshops.