Kenwin Maung

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Education

Ph.D. in Economics, University of Rochester	2018 – 2023 (expected)
B.A. in Global Political Economy, Waseda University	2014 – 2018

Research Fields

High-Dimensional Econometrics, Structural Changes in Time Series, Quantitative Finance

Working Papers

Time-varying Forecast Combination for High-Dimensional Data (with Chen, B.).
Revise and resubmit at Journal of Econometrics.

In this paper, we propose a new nonparametric estimator of time-varying forecast combination weights. When the number of individual forecasts is small, we study the asymptotic properties of the local linear estimator. When the number of candidate forecasts exceeds or diverges with the sample size, we consider penalized local linear estimation with the group SCAD penalty. We show that the estimator exhibits the oracle property and correctly selects relevant forecasts with probability approaching one. Simulations indicate that the proposed estimators outperform existing combination schemes when structural changes exist. Two empirical studies on inflation forecasting and equity premium prediction highlight the merits of our approach relative to other popular methods.

Estimating High-Dimensional Markov-Switching VARs.
Best Ph.D. presentation at the 23rd Dynamic Econometrics conference.

Maximum likelihood estimation of large Markov-switching vector autoregressions (MS-VARs) can be challenging or infeasible due to parameter proliferation. To accommodate situations where dimensionality may be of comparable order to or exceeds the sample size, we adopt a sparse framework and propose two penalized maximum likelihood estimators with either the Lasso or the smoothly clipped absolute deviation (SCAD) penalty. We show that both estimators are estimation consistent, while the SCAD estimator also selects relevant parameters with probability approaching one. A modified EM-algorithm is developed for the case of Gaussian errors and simulations show that the algorithm exhibits desirable finite

sample performance. In an application to short-horizon return predictability in the US, we estimate a 15 variable 2-state MS-VAR(1) and obtain the often reported counter-cyclicality in predictability. The variable selection property of our estimators helps to identify predictors that contribute strongly to predictability during economic contractions but are otherwise irrelevant in expansions. Furthermore, out-of-sample analyses indicate that large MS-VARs can significantly outperform "hard-to-beat" predictors like the historical average.

Work in Progress

A Residual-based Test of Markov-Switching Cointegration: Pairs Trading with Regimes.

Pairs traders generate excess returns by capitalizing on the mispricing of a stock relative to another, for which an equilibrium relationship between them is known to exist. Cointegration is a natural framework to study the mean-reverting spreads of these stocks. Due to idiosyncratic shocks however, it is possible that the cointegrating relationship breaks down or changes, leading to regime-switching behavior in the spread. We conduct simulations and an empirical application to show that it sub-optimal to ignore such dynamics and to trade with agnostic rules. To identify such situations, we propose a locally optimal residual-based test of Markov-switching cointegration, together with a finite-sample correction for power using the Cochrane-Orcutt procedure. We derive the asymptotic null distribution of the test statistic and show that a bootstrap-based inference is valid. Applying our test to the US stock market indicates that roughly 10% of within-industry pairs exhibit Markov-switching cointegration, which suggests that the scenario is not uncommon.

Other Work (Public Health)

Estimating the Direct and Spill-Over Impacts of Mass Gatherings on COVID-19 Transmission. (lead co-author with Lim, J. T., Tan, S. T., Suan, E. O., Lim, J. M., Koo, J. R., Sun, H., Park, M., Cook, R. A., Dickens, B. S. L)
PLoS Computational Biology (2021)

Gender Differences in Countries' Adaptation to Societal Ageing: An International Cross-Sectional Comparison. (with Chen, C., Rowe, J. W., Research Network on an Ageing Society)
Forthcoming at The Lancet Healthy Longevity

Teaching Experience

Summer 2021	Instructor for Econometrics camp (Ph.D.), University of Rochester
Summer 2021	Instructor for Economic Statistics, University of Rochester
Spring 2021	TA for Econometrics II (Ph.D. sequence), University of Rochester
Fall 2020	TA for Economic Statistics, University of Rochester
Summer 2017	TA for Maximum Likelihood, Waseda University

Research Experience

2019-2020	RA for *Chen Bin*, Department of Economics, University of Rochester.
2018	RA for *Cynthia Chen*, Saw Swee Hock School of Public Health, National University of Singapore.
2017-2018	RA for *Fumio Hayashi*, National Graduate Institute for Policy Studies.
2016-2018	RA for *Junko Koeda*, Waseda University.

Skills

Computer: R (main), Python, Stata, MATLAB.

Language: English (Native), Mandarin (Conversational), Japanese (Conversational).

Awards and Fellowships

PEPR Grant, Wallis Institute of Political Economy, University of Rochester, 2018

Summer Research Grant, University of Rochester, 2018

Graduate Fellowship and Tuition Scholarship, University of Rochester, 2018-present

Mizuho International Exchange Foundation Scholarship, Mizuho International Foundation, 2015-2017

Matsumoto Kaoru International Scholarship, Waseda University, 2014-2015

Conference Presentations

2021: 23rd Dynamic Econometrics; China Meeting of the Econometric Society