

CHEN WANG

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Personal Information

Date of Birth: 14 March, 1986
Chinese Citizen
Permanent Resident of Singapore

Contact Information

Faculty of Economics, University of Cambridge
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Research Interests

Econometrics, Applied Econometrics, Large Dimensional Statistical Inference

Academic Positions

Research Associate 2015 – Present
Cambridge–INET Institute, Faculty of Economics, University of Cambridge

Teaching Assistant/Instructor 2014/2015
Department of Statistics and Applied Probability, National University of Singapore

Education

Ph.D. in Statistics 2014
National University of Singapore
Thesis: Spectral analysis of a symmetrized auto-cross covariance matrix
Supervisor: Professor Zhidong Bai

B.Sc. with First Class Honours 2010
National University of Singapore

References

Professor Alexei Onatski Faculty of Economics University of Cambridge Email: ao319@cam.ac.uk	Professor Zhidong Bai School of Mathematics and Statistics Northeast Normal University Email: baizd@nenu.edu.cn	Professor Oliver Linton Faculty of Economics University of Cambridge Email: obl20@cam.ac.uk
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Job Market Paper

“Alternative asymptotics for cointegration tests in large VARs” (with Alexei Onatski). Forthcoming in *Econometrica*.

Publication

“Limiting spectral distribution of a symmetrized auto-cross covariance matrix”
Annals of Applied Probability, 24 (2014), 1199 – 1225 (with B. S. Jin, Z. D. Bai, K. K. Nair and M. C. Harding).

“Strong limit of the extreme eigenvalues of a symmetrized auto-cross covariance matrix”
Annals of Applied Probability, 25 (2015), 3624 – 3683 (with B. S. Jin, Z. D. Bai, K. K. Nair and M. C. Harding).

“A note on the limiting spectral distribution of a symmetrized auto-cross covariance matrix”
Statistics and Probability Letters, 96 (2015), 333 – 340 (with Z. D. Bai).

“On testing the equality of high dimensional mean vectors with unequal covariance matrices”
Annals of the Institute of Statistical Mathematics, 69 (2017), 365 – 387 (with J. Hu, Z. D. Bai and W. Wang).

“Multi-sample test for high-dimensional covariance matrices”
Communications in Statistics - Theory and Methods, DOI: 10.1080/03610926.2017.1350272 (with C. Zhang, Z. D. Bai and J. Hu).

Working Paper

“Extreme canonical correlations and high-dimensional cointegration analysis” (with Alexei Onatski).
Revised and Resubmitted to *Journal of Econometrics*.

Johansen's (1998, 1991) trace test for no cointegration is based on the squared sample canonical correlations between a random walk and its own innovations. Onatski and Wang (2017) show that the empirical distribution of such squared canonical correlations weakly converges to the Wachter distribution as the sample size and the dimensionality of the random walk go to infinity proportionally. In this paper we prove that, in addition, the extreme squared correlations almost surely converge to the upper and lower boundaries of the support of the Wachter distribution. This result yields strong laws of large numbers for the averages of functions of the squared canonical correlations that may be discontinuous and unbounded outside the support of the Wachter distribution. In particular, we establish the a.s. limit of the scaled Johansen's trace statistic, which has a logarithmic singularity at unity. We use this limit to derive a previously unknown analytic expression for the Bartlett-type correction coefficient for Johansen's test in a high-dimensional environment.

Work in Progress

CLT for high-dimensional cointegration analysis (with Alexei Onatski)

Spectrum of large Cramér-von Mises matrices (with Alexei Onatski)

Order determination of large dimensional dynamic factor model (with Z. D. Bai and M. C. Harding)

Refereeing

Journal of Econometrics

Teaching

Lecturer, National University of Singapore

ST2131/MA2216 Probability

Spring 2014, Spring 2015

Teaching Assistant, National University of Singapore

ST2131/MA2216 Probability

Spring 2011, Spring 2014, Spring 2015

ST2334 Probability and Statistics

Spring 2012, Spring 2013, Fall 2014

ST3236/MA3238 Stochastic Processes I

Fall 2012, Fall 2013

ST2137 Computer Aided Data Analysis

Fall 2011

Presentations

10th ICSA International Conference, China

December 2016

Cambridge-INET Conference on Big Data Big Methods, UK

September 2015

Symposium on Big Data Analysing Methods and their Applications, China

September 2015

1st Lilac International Conference on Application of Statistics, China

July 2015

10th Chinese Annual Meeting of Probability and Statistics, China

October 2014

4th Singapore Conference on Statistical Science, Singapore

February 2014

29th European Meeting of Statisticians, Hungary

July 2013

4th IMS-China International Conference, China

June 2013

Honours and Awards

Cambridge-INET Institute Postdoctoral Research Fellowship

2015 – Present

University of Cambridge

President's Graduate Fellowship

2010 – 2013

National University of Singapore

Outstanding Teaching Assistant Award

2012, 2013

Faculty of Science, National University of Singapore

Undergraduate Scholarship

2006 – 2010

Singapore Ministry of Education

Dean's List Award

2007, 2008, 2009

Faculty of Science, National University of Singapore

Singapore Mathematical Olympiad Golden Award

2005

Singapore Mathematical Society, Singapore

Languages

English (Fluent), Chinese (Native)