
MINGMELXIAO

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Education:

PhD candidate in Economics, University of Cambridge, 2019-2025 (expected)

Thesis: Essays on Empirical Asset Pricing and Financial Econometrics.

Supervisor: Professor Oliver Linton obl20@cam.ac.uk

Advisor: Professor Andrei Kirilenko a.kirilenko@jbs.cam.ac.uk

Interested Fields: Empirical asset pricing, Financial econometrics, Forecasting

MPhil in Economic Research (with Distinction): University of Cambridge, 2019

BSc Money Banking & Finance (Class I, Rank 1/292), University of Birmingham, 2018

BSc Finance (Research Institute of Economics and Management), Minor: Economics,

Southwestern University of Finance and Economics (SWUFE), 2018

Teaching Experiences:

2021-2022	Applied Econometrics – MPhil in Economics (with Dr Christopher Rauh & Dr Noriko Amano-Patiño)
2021-2022	Econometrics – Part IIA Undergraduate Economics (with Mr Oleg Kitov)
2020-2022	Econometrics – Diploma in Economics (with Dr Julius Vainora & Mr Oleg Kitov)

Research & Work Experiences:

6/2021-present	<u>Research contractor for the Financial Conduct Authority:</u> Researched ETF market microstructure effects on its mispricing.
6/2022-9/2022	<u>Fund Internship Program for International Monetary Fund:</u> Worked on a research paper on constrained inflation nowcast.
8/2017-9/2017	<u>Research Intern for China Galaxy Security:</u> Researched and presented pros and cons of China's new OTC market.
7/2017-8/2017	<u>Volunteer Surveyor for China Household Finance Survey:</u> Data Collection (incl. Interviews) and Statistical analysis for two cities and one rural community in Shanghai and Jiangsu.
6/2017-7/2017	<u>Editor Assistant in Sichuan Division for China Economic Weekly:</u> Interviewed 120 firms in China's new OTC market and reported.

Honors, Scholarships, Awards:

2021	Econometric Game 2021 (with 3 others representing Cambridge) Third Place
2019	CSC Cambridge International Scholarship
2018	CSC Cambridge Master's Scholarship
2018	University of Birmingham Economics Extended Essay Prize
2017-18	University of Birmingham Economics Undergraduate Final & Second Year Prize
2015	SWUFE Zhe Neng Enterprise Scholarship and Scientific Research Scholarship
2015	SWUFE First-Class Academic Scholarship

Research Papers Published:***“High-Dimensional Covariance Matrix Estimation: Shrinkage Toward a Diagonal Target”***

(2023) (with Sakai Ando) IMF Working Paper (Presented at ISF 2023)

This paper proposes a novel shrinkage estimator for high-dimensional covariance matrices by extending the Oracle Approximating Shrinkage (OAS) to target the diagonal elements of the sample covariance matrix. When the diagonal elements of the true covariance matrix exhibit substantial variation, our method reduces the Mean Squared Error, compared with OAS, which targets an average variance. The degree of improvement is higher when the true covariance matrix is sparser. Our method also outperforms other estimators based on a diagonal target under the normality assumption. We further propose an extended estimator that makes use of two targets: the average variance target and the diagonal target. This more flexible estimator improves upon the single-target estimators in all the scenarios discussed. The proposed estimators are applied to the problem of UK inflation forecast reconciliation and minimum variance portfolio selection to compare their performance with other benchmark methods.

Research Papers in Progress:***“Exchange Traded Fund Mispricing and Authorized Participants’ Inventory” (joint work with Andrei Kirilenko, Wladimir Kraus, and Oliver Linton) (Presented at the FCA) (JMP)***

Authorized Participants (APs), primarily market makers, possess the right to create and redeem Exchange Traded Funds (ETF) shares based on market demand. The important role they play in facilitating liquidity provision and eliminating ETF mispricing makes their behaviour crucial to the well-functioning of the ETF market. Using a novel regulatory dataset that covers the primary and secondary market transactions of 128 ETFs from 2018 to 2022, we identify a connection between mispricing (the difference between ETF prices and the Net Asset Value (NAV) of their underlying baskets) and AP’s inventory. We formulate a dynamic model that explains ETF mispricing with AP’s inventory management skills and market demand. Empirical findings are consistent with our model predictions in that the proposed factors are useful for explaining the observed mispricing on top of other common macro and fundamental factors in the ETFs and underlying markets. Our model is helpful for understanding the incentive structure of AP’s market making and arbitraging, as well as the mechanisms behind the significant mispricing observed in March 2020 across various ETF classes.

“GMM Estimation of Dynamic Panel Data Models with Invalid Moment Conditions - A Sparse Group Lasso Approach” (Presented at IAAE 2024)

This paper primarily focuses on the GMM estimation of dynamic panel data models, where many moment conditions have been proposed under various assumptions. These moment conditions grow quadratically with the number of time periods T , making it difficult for researchers to determine which assumptions are satisfied in practice. Additionally, the presence of too many moment conditions can adversely affect the performance of the estimator. To address this, we explore the use of the sparse group lasso method for selecting valid moment conditions from a pool of potentially invalid ones. This paper reviews and compares existing methods with the sparse group lasso approach and provides simulation results to evaluate their performance. The application of the sparse group lasso method in dynamic panel data estimation demonstrates improved performance over the adaptive elastic net GMM approach in MSE, bias and standard errors. It performs similarly to the popular AL methods except in the most high-dimensional cases where AL performs better. However, AL is much more computationally costly than the Sparse group lasso approach. In addition, I apply this method to examine the effects of different Non-Pharmaceutical Interventions (NPIs) on mobility and how mobility influences the transmission of Covid-19. The results reveal that the effectiveness of policy measures varies significantly depending on the demographic characteristics of different areas, highlighting the need for more tailored policy approaches to effectively contain the spread of Covid-19.

Seminars/Conference Presentations:

2024-06	International Association for Applied Econometrics (Xiamen)
2024-06	Cambridge Janeway Institute Financial Econometrics Conference
2023-06	International Symposium on Forecasting
Weekly	Cambridge Econometrics Group Workshops

Selected other activities:

2021	Data Science for All Women Program
2016	Birmingham ESL Novice Best Speaker and Grand-Finalist
2015	SWUFE Debating Society (English) President

Skills:

Computer	R, Python, Matlab, Eviews, Stata, Git
Languages	Mandarin (Native), English (Fluent), Spanish (Level I)

References:

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