Mengheng Li

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Research interests

Business cycle and inflation dynamics; high-dimensional time series econometrics; Nonlinear and non-Gaussian state space models; Econometrics of climate change

Positions

2020-	**Senior Lecturer**. Economics Discipline Group, UTS Busines School, University of Technology Sydney, Australia
2018-2020	**Lecturer**. Economics Discipline Group, UTS Busines School, University of Technology Sydney, Australia
2017-2018	**Research Economist**. Department of Econometrics and Models, Economic Research and Policy Division, the Dutch Central Bank (EU Group), Netherlands

Other affiliations

2024-	**Foundation member**. Australian and New Zealand Association of Econometricians, Australia
2023-	**Core member**. Centre for Climate Risk and Resilience, University of Technology Sydney, Australia
2019-	**Research associate**. Centre for Applied Macroeconomic Analysis, Australian National University, Australia

Education

2015-2018	**Ph.D. in Econometrics**. VU University Amsterdam and Tinbergen Institute Committee: prof.S.J. Koopman; prof.A. Lucas; prof.D.J.C. van Dijk; prof.S.J.G. van Wijnbergen; prof.C.G.H. Diks; prof.A. Harvey; dr.P. Gorgi; dr.H. Karabiyik Title: *Essays on time series models with unobserved components and their applications in applied macroeconomics*
2016	**Visiting Ph.D.**. Discipline of Business Analytics, The University of Sydney Business School
2013-2015	**M.Phil. in Economics**. University of Amsterdam and Tinbergen Institute, *cum laude*
2010-2013	**B.Sc. in Econometrics and Operations Research**. Tilburg University, *cum laude*

Research

Publications

12. **M. Li** (2025). **A particle-Kalman double filtering method for state space models with superposed latent states**. *Journal of Financial Econometrics*, forthcoming.

11. J. Sung, X. Shi, T. Sven and **M. Li** (2025). **Chinese natural gas phase-out pathways: A novel hybrid scenario-based projection approach to achieve net zero**. *Energy*, 328: 136387.

10. G. Kapoor, N. Wichitaksorn, **M. Li** and W. Zhang (2025). **Forecasting half-hourly electricity prices using a mixed-frequency structural VAR framework**. *Econometrics* 13(1): 2.

9. **M. Li** and D. Cummins (2025). **Constrain equilibrium climate sensitivity via Bayesian composite likelihood**. *Advances in Econometrics*, forthcoming.

8. B. Fu, **M. Li**, and Q. Haque (2025). **Exchange rates, interest parity, and time-varying regressions**. *Journal of Applied Econometrics*, 0: 1-15.

7. **M. Li** and I. Mendieta-Muñoz (2024). **Dynamic hysteresis effects**. *Journal of Economic Dynamics and Control* 163, 104870.

6. **M. Li** and M. Scharth (2022). **Leverage, asymmetry and heavy tails in the high-dimensional factor stochastic volatility model**. *Journal of Business & Economic Statistics* 40(1), 285-301.

5. **M. Li** and S.J. Koopman (2021). **Unobserved components with stochastic volatility in U.S. inflation: Estimation and signal extraction**. *Journal of Applied Econometrics* 36(5), 614-627.

4. **M. Li** and I. Mendieta-Muñoz (2021). **Bayesian analysis of unobserved components and identification via heteroskedasticity**. *Studies in Nonlinear Dynamics & Econometrics* 26(3), 337-359.

3. **M. Li** and I. Mendieta-Muñoz (2020). **Are long-run output growth rates falling?**. *Metroeconomica* 71(1), 204-234.

2. **M. Li**, R. Lit, S.J. Koopman and D. Petrova (2020). **Long-term forecasting of El Niño events using dynamic factor simulations**. *Journal of Econometrics* 214(1), 46-66.

1. P. Gorgi, S.J.Koopman and **M. Li** (2019). **Forecasting economic time series using score-driven models with mixed-data sampling**. *International Journal of Forecasting* 35(4), 1735-1747.

Working papers and R&Rs

M. Li and I. Mendieta-Muñoz. **Unpacking trend inflation: Evidence from a factor correlated unobserved components model of sticky and flexible prices**.

M. Li and W. Sijp. **A Bayesian graph Laplacian approach with stochastic weights**

for ultra-dimensional panels with irregular sparsity.

W. Sijp and **M. Li**. **The effect of nearby listings on house sale price in Sydney**.

J. Sung, X. Shi, **M. Li** and S. Teske. **Short- and long-term effects of key drivers in China's natural gas market**. *Centre for Climate Risk and Resilience Working Paper*: 2024-02

H. Guo and **M. Li**. **Matching climatic variability with financial and economic fluctuations using fused machine learning for high-dimensional spatial temporal data**.

T. Huynh and **M. Li**. **Not all temperature shocks are alike: Disentangling climate and weather shocks and their effects on inflation in Australia**.

A. Chernulich, **M. Li** and E. McGinn. **Does the Fed say it all? Textual analysis of public communications and private discussions**. *UTS Business School EDG Working Paper*: 2024-01.

M. Li and I. Hindrayanto. **Looking for the stars: Estimating the natural rate of interest**. *UTS Business School EDG Working Paper*: 2018-51.

Work in progress

A general-purpose scalable MCMC sampler powered by variational autoencoder

Dynamically scaled autoregressive models: Estimation and forecasting

Business cycle and growth implications of climatic heat stress

The short- and long-term effect of global oil shocks on atmospheric CO_2 concentration

Teaching

2024	Studio I: Foundation (*)	University of Technology Sydney
2024-2025	Contemporary Economic Perspectives (Capstone) (**)	University of Technology Sydney
2023	Advanced Macroeconomics I (*)	University of Technology Sydney
2021-2025	Time Series Econometrics (**)	University of Technology Sydney
2020-2024	Advanced Econometrics I (*)	University of Technology Sydney
2018-2022	Business Statistics (**)	University of Technology Sydney
2017	Introduction to Time Series Analysis (**)	VU University Amsterdam
2016,2017	Business Statistics, TA (**)	VU University Amsterdam
2015,2016	Business Mathematics, TA (**)	VU University Amsterdam
2016	Time Series Econometrics, TA (*)	VU University Amsterdam
2015	Advanced Econometrics III, TA (*)	Tinbergen Institute
2014	Principles of Programming in Econometrics, TA (*)	Tinbergen Institute
2013	Econometrics 2, TA (**)	Tilburg University

(*): graduate; (**): undergraduate

Services

Departmental services

2021-2024	Graduate international exchange programs assessment committee (University of Technology Sydney)
2021-2024	Multiple failure sanction committee; Undergraduate international exchange programs assessment committee; Cross-faculty collaboration scheme application committee (University of Technology Sydney)
2020	Recruitment decision committee; Recruitment interview committee; Departmental research committee (University of Technology Sydney)
2019	Coordinator of 26134 Business Statistics; Departmental seminar coordinator; Departmental research committee (University of Technology Sydney)
2018	PhD committee (University of Technology Sydney)

Media engagement

2024	Phillips, H. **Politicking bad for sovereignty of RBA, says economist**. *Central News*, 25 Sep.

External engagement

2020-2023	Design and delivery of UTS short course *Impact Evaluation* (2×)

Journal referee

2025	Journal of Business & Economic Statistics; European Journal of Operational Research; Economic Record;
2024	Journal of Econometrics; International Journal of Forecasting; Macroeconomic Dynamics; New Zealand Economic Papers
2023	Journal of Business & Economic Statistics; Journal of Time Series Analysis
2022	Journal of Business & Economic Statistics; Journal of Economic Dynamics and Control; Economic Modelling; Australian Economic Papers; Journal of Applied Econometrics
2021	European Economic Review; Macroeconomic Dynamics; Journal of Economic Dynamics and Control
2020	Bayesian Analysis; Journal of Time Series Analysis
2019	Empirical Economics; Journal of Applied Econometrics
2018	Journal of Time Series Analysis; The Econometrics Journal
2017	Economic Inquiry

HDR & PhD supervision and assessment

2024-	Macroeconometric analysis of climate change. Candidate: Hongbo Guo (University of Technology Sydney). Supervisor.
2023-	Bayesian econometric models for climate, economy, and their interactions. Candidate: Tan Dat Huynh (University of Technology Sydney). Supervisor.

2019-2022	Credit markets and the macroeconomy. Candidate: Juan Zurita (University of Technology Sydney). Co-supervisor.
2018-2020	Three Applications of time-varying parameter models to macroeconomics. Candidate: Bowen Fu (University of Technology Sydney). Co-supervisor.
2025	An investigation of the abnormality term in the pricing of U.S. business assets. Candidate: Kuangyu Sang (The University of Queensland). External assessor.
2025	Machine and deep learning in energy-economy models. Candidate: Edward Sung (University of Technology Sydney). External assessor.
2023	Analytic methods in finance with applications to portfolio and risk management. Candidate: Rewat Khanthaporn (Auckland University of Technology). External assessor.

Grants and Awards

2024	UTS Collaboration Scheme ($45,646AUD) Project: Maximizing energy recovery from wastewater through removing a key barrier for autotrophic nitrogen removal
2022	UTS Business School Research Grant ($9,951AUD) Project: *Economic implications of climatic heat wave*
2019	Best Paper Award of the INFER Annual Conference ($2,000USD) Paper title: *Are long-run output growth rates falling?*
2017	Award of the 10th Annual SoFiE Conference ($500USD)
2016	Award of 2016 Chicago JSM Conference ($800USD)

Conferences and Workshops

2025	European Seminar on Bayesian Econometrics (ESOBE) (Melbourne)
2024	Australasian Meeting of the Econometric Society (Melbourne); 9th Workshop on Continuing Education in Macroeconometrics (Adelaide); Times Series & Forecasting Symposium (Sydney); Meeting of the Australia New Zealand Econometrics Study Group (Melbourne)
2023	NBER-NSF Seminar on Bayesian Inference in Econometrics and Statistics (Philadelphia); European Seminar on Bayesian Econometrics (Glasgow); Australasian Meeting of the Econometric Society (Virtual); 8th Workshop on Continuing Education in Macroeconometrics (Melbourne); Times Series & Forecasting Symposium (Sydney); Meeting of the Australasian Macroeconomics Society (Sydney); Workshop of Virtual Australia Macro Studies (Sydney)
2022	Asian Meeting of the Econometric Society (Shenzhen); Australasian Meeting of the Econometric Society (Virtual); 7th Workshop on Continuing Education in Macroeconometrics (Melbourne); Times Series & Forecasting Symposium (Sydney); Meeting of the Australasian Macroeconomics Society (Sydney); Workshop of Virtual Australia Macro Studies (Sydney)

2021	European Seminar on Bayesian Econometrics (Virtual); International Association for Applied Econometrics Annual Conference (Virtual); NBER NSF Seminar on Bayesian Inference in Econometrics and Statistics (Virtual); Asian Meeting of the Econometric Society (Virtual); Sydney Macro Reading Group Workshop (Virtual); International Symposium on Forecasting (Virtual); Annual Meeting of the Society for Economic Dynamics
2020	12th Econometric Society World Congress (Virtual); 28th Annual Symposium of the Society for Nonlinear Dynamics and Econometrics (Virtual); Sydney Macro Reading Group Workshop (Virtual)
2019	6th Workshop on Continuing Education in Macroeconometrics (Sydney); Reserve Bank of Australia Quantitative Macroeconomic Workshop (Sydney); III Conference on Advances in Applied Macro-Finance (Melbourne); Sydney Macro Reading Group Workshop (Sydney); Time Series & Forecasting Symposium (Sydney); Asian Meeting of the Econometric Society (Xiamen); Melbourne Bayesian Econometrics Workshop (Melbourne); Computation and Econometrics Workshop (Tokyo)
2018	Workshop on Bayesian Methods in Finance (Singapore); Time Series & Forecasting Symposium (Sydney); Sydney Macro Reading Group Workshop (Sydney); International Symposium on Forecasting (Colorado Boulder); Asian Meeting of the Econometric Society (Seoul); 12th RCEA Bayesian Workshop (Rimini); China Meeting of the Econometric Society (Shanghai); 2nd Workshop on Financial Econometrics and Empirical Modeling of Financial Markets (Kiel)
2017	Royal Economic Society PhD Meetings (London); European Conference of Econom[etr]ics Community (Amsterdam); Central Bank Forecasting Conference (St. Louis); European Seminar on Bayesian Econometrics (Maastricht); China International Finance Conference (Hangzhou); International Association for Applied Econometrics Annual Conference (Sapporo); The Society for Financial Econometrics Annual Conference (New York); International Conference on Econometrics and Statistics (Hong Kong)
2016	The Rhenish Multivariate Time Series Econometrics (Rotterdam); International Conference on Computational and Financial Econometrics (Seville); Conference on Econometric Models of Climate Change (Aarhus); American Statistical Association JSM Business and Economics Session (Chicago)

Personal

Chinese citizen; Australian permanent resident.