Jiezheng Wei

Address: 90 Stamford Rd, Singapore, 178903
E-mail: jzwei.2022@phdecons.smu.edu.sg
Website: https://jiezhengwei.github.io/
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Education

Ph.D., Economics, Singapore Management University 2022–present
Thesis: AI and High-Frequency Analysis for Monetary Policy Shocks.
Committee: Jia Li (Chair), Andrew J. Patton, Yichong Zhang, Qiyuan Li.
M.Sc., Economics, The Chinese University of Hong Kong, Shenzhen 2019–2021
B.Sc., Economics, Central University of Finance and Economics 2013–2017

Research Interests

Econometrics, AI for Economics.

Working Papers

1. **Job Market Paper:** "Weak Identification in News-jump Regressions."

   Abstract. News-jump regressions are high-frequency event-study regressions under infill asymptotics. When news-jumps in explanatory variables over narrow observation windows are of the same magnitude as diffusive background noise, the regression coefficient is weakly identified, invalidating least-squares estimation and inference. I develop identification-robust inference based on Anderson–Rubin tests and derive, in a Gaussian limit experiment arising from the jump-diffusion process, a minimal sufficient and complete statistic for jumps, thereby enabling powerful conditional inference. In applications, I invert the proposed robust tests to revisit the empirical questions of Nakamura and Steinsson (2018) using minute-by-minute data, assess the effects of oil shocks triggered by the Russia–Ukraine and Iran wars, and examine the dependence of news-driven ETF jumps on market-index jumps.

2. "Identifying Monetary Policy Shock with Large Language Models," with Sen Zhang.

   Abstract. We use large language models to measure sentiment indicators from pre-FOMC briefing materials and form Federal Reserve staff aggregate expectations about the US economy. The resulting low-dimensional AI-based measurement captures economically meaningful information by letting AI read semantic context while avoiding regularization bias

caused by high dimensionality. As a complement to the existing narrative approaches, our AI-based monetary policy shocks provide a reasonable alternative for downstream impulse response analysis.

3. "Honest Inference for High-Dimensional Linear Models," with Dennis Lim, Jonathan H. W. Tan and Pengjin Min.

   Abstract. We propose a heteroskedasticity-robust and dimention-adaptive test for multiple linear restrictions in sparse high-dimensional linear regression models. It combines desparsified LASSO estimation with a ridge-regularized quadratic form statistic and critical values that adapt to the restriction dimension. Under stated regularity conditions, our approach is asymptotically valid under a fixed or diverging number of restrictions without specifying the asymptotic regime in advance. Our random-design theory allows independent non-identically distributed covari- ate rows with marginal sub-Weibull tails and heteroskedastic errors satisfying finite polynomial moments. Monte Carlo simulations demonstrate improved finite-sample size control relative to conventional Wald tests, particularly as the number of restrictions increases.

Work in Progress

1. "Evaluating AI Forecasts on Future Sport Events," with Jia Li and Andrew J. Patton.

   Abstract. We construct an ex-ante, timestamp-verified panel of one-day-ahead forecasts using frontier LLMs on sports events, which allows us to completely avoid lookahead bias. This real-time dataset enables us to answer following questions: (i) Do LLM forecasters outperform the betting markets benchmark? (ii) Are LLM forecasters rational? (iii) Are more advanced (expensive) LLMs better forecasters? We accordingly answer these questions by evaluating the LLM forecasts on proper score functions, calibration, and panel analysis.

2. "A Fixed-k Bipower Jump Test," with Jia Li, Qiyuan Li, and Andrew J. Patton.

   Abstract. We develop a jump test for Itô semimartingales observed at high frequency based on the ratio of untruncated realized variance to bipower variation within a block of k consecutive returns, where k is held fixed. Under infill asymptotics, the limiting distribution of the proposed test is asymptotically pivotal under the null of no jumps, according to a coupling result inherited from the driving Brownian diffusion, and therefore delivers favorable statistical properties over short time windows. Monte Carlo experiments calibrated to empirical financial data show that the proposed test attains essentially nominal size for small k. The framework provides a single, tuning-free, block-localized price jump detector that plugs directly into the broader apparatus of fixed-k volatility inference in Bollerslev, Li, and Liao (2021) and the bipower jump test of Barndorff-Nielsen and Shephard (2006).

Presentations

2026	The Third Annual Conference of the Greater Bay Econometrics Study Group.
2023-26	SMU Econometrics Workshop.
2024	SMU Applied Micro Reading Group and SMU Students Econometrics Workshop.
2021	International Conference on Smart Finance, CUHK-Shenzhen.

Research Experience

Research assistant for Prof. Jia Li, Singapore Management University, 2024 - 2026.

Teaching Experience

Singapore Management University
- TA, Time Series Econometrics (PG), 2026
- TA, Econometric Analysis (PG), 2025
- TA, Intermediate Econometrics (UG), 2025
- TA, Panel Data Analysis (UG), 2023
- TA, Real Estate Economics (UG), 2023, 2025

The Chinese University of Hong Kong, Shenzhen
- TA, Applied Probability and Stochastic Processes in Business (UG), 2022
- TA, Machine Learning in Business (UG), 2021, 2022
- TA, Basic Statistics (UG), 2021
- TA, Advanced Econometrics (PG), 2020

Awards & Honors

Singapore Management University - China Scholarship Council Joint Fellowship, 2022 - 2026.
Presidential Award for Outstanding Master's Students, CUHK-Shenzhen, 2021.
Dean's List, School of Management and Economics, CUHK-Shenzhen, 2021.
First Class Scholarship for Academic Excellence and Dean's List, CUHK-Shenzhen, 2021.

Work Experience

2021-22	Research Associate, SME, The Chinese University of Hong Kong, Shenzhen.
2017-19	Associate, Beijing Dusheng Investment Fund (LP), Beijing, China.

Other Services

2024 - 25 Executive Committee, Graduate Research Student Society, SMU.

Others

AI experience: Claude Code, ChatGPT/Codex, AI API.
Programming skills: Python, R, Matlab, LaTeX.
Languages: English (fluent), Chinese (native).
Hobbies: fitness, badminton, classic music, cook.