Jiaxi Li

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Education

The University of North Carolina at Chapel Hill August 2021 - Present

Ph.D. in ***Economics*** (**GPA** 4.0; Field: ***Financial Econometrics, Asset Pricing***)

Relevant Courses: Advanced Micro, Macro and Econometrics, Time Series, Micro Econometrics, International Monetary Economics, Asset Pricing Series (Consumption-based, Production-based, Theoretical, and Empirical), Advanced Empirical Finance

The University of Chicago September 2018 – August 2019

Master of Arts in ***Economics*** (**GPA** 3.69) | **Honor**: MAPSS Scholarship

Relevant Courses: Theory of Financial Decisions, Advanced Econometrics (Machine Learning), Time Series Forecasting, Asset Pricing, Financial Statistics, Behavioral Finance, Data Analysis with R

The University of North Carolina at Chapel Hill August 2014 - May 2018

Bachelor of Science in ***Applied Mathematics*** (**GPA**: 3.92) & ***Economics*** (**GPA**: 3.90), Minor in ***Statistics and Analytics***, Credential in ***Quantitative Financial Economics***

Honor: Graduate with Distinction, Dean's List, Economics Honor's Thesis, Herbert Brown Mayo Fund in Economics

The University of Tübingen (Germany Exchange) March 2017 - July 2017

Major: ***German Studies*** **&** ***Economics and Business Administration*** **(German Grading System:** 1.2**) | Honor**: Baden-Württemberg Stipendium

Relevant Courses: China prior to the 19th Party Conference (in German), Advanced Labor Economics

Research Experience

Missing Financial Data: Filling the Tensor Blanks | R, Missing Data, Tensor PCA April 2024 – Present

Coauthor with Prof. Andrii Babii, Prof. Eric Ghysels and Junsu Pan

- Imputed missing financial data using the Tensor PCA method developed by Babii et al. (2022) through cluster computing
- Demonstrated that combining Tensor PCA with backward information improves the accuracy of imputations during non-crisis period

A Tensor PCA Analysis on Intraday Returns | R, Factor Model, Tensor PCA, Simulation

May 2023 – April 2024

Field Paper Requirement for Economics Ph.D., advisors: Prof. Eric Ghysels and Prof. Andrii Babii, additional committee member: Prof. Peter Hansen

- Utilized API and SQL commands in R to extract data from the CRSP, TAQ, and COMPUSTAT databases
- Estimated a low-rank factor model for intraday stock returns using the Tensor PCA developed by Babii et. al. (2022)
- Demonstrated through simulations that the combination of small sample sizes, severe intraday heteroskedasticity, and high noise levels can result in significant bias in the estimation
- Established that a weighted version of Tensor PCA can alleviate this issue in both simulations and real data analysis
- Proposed a sequential estimation method for Tensor PCA and demonstrated its improved explanatory power in both simulations and real data analysis
- Available at: https://jiaxili1995.github.io/

Improved Estimates of Industry Equity Capital Costs | R, Factor Model, Shiny App

December 2019 – December 2021

Coauthor with Prof. Mike Aguilar and Prof. Robert Connolly

- Showed that most of the uncertainty regarding ECC estimates comes from the factor risk premia, as opposed to factor exposures
- Integrated the STL filter with the Fama-French Factor Model to remove seasonal pattern and time-series noise resulting in reduced estimation noise in the estimated Industry Equity Capital Cost
- Created and deployed a Shiny app to automate the calculation of factor analysis (https://lijiaxi.shinyapps.io/REITs_app/)
- Available at: https://ssrn.com/abstract=3742221

Do ESG Shocks Affect Stock Prices? | MATLAB, Event Study October 2018 – August 2019

Master's Thesis in Economics, advisor: Prof. Eugene Fama

- Matched CRSP and RepRisk into a joint Dataset, which contained daily information of 2048 US public listed firms from 2006 to 2018 with 13508 rate changing events
- Implemented Event Study technique with the Market Model to measure the Abnormal Return generated by ESG rate changes
- Developed an event-window methodology to address uncertainties associated with event dates
- Showed that on average an ESG upgrade would generate a 0.78% abnormal return during the event window and a downgrade would generate a -0.67% abnormal return during the event window
- Demonstrated that RepRisk Rating delivers financially meaningful ESG information

The Timing of Marriage Matching | MATLAB, Simulation September 2017 - May 2018

Bachelor Honor's Thesis in Economics, advisor: Prof. Stephen Lich-Tyler

- Developed the "Pizzazz" Marriage Matching Model and used Monte Carlo Simulation to estimate the optimal matching timing
- Demonstrated with a simplified example and verified through simulation that reducing penalties for delayed marriage and increasing the male-to-female ratio both contribute to longer marriage delays

Does Chinese Monetary Policy React to Her Stock Market? | MATLAB, Vector Autoregression
May 2016 - August 2016

Summer Research for Herbert Brown Mayo Fund in Economics, advisor: Prof. Mike Aguilar

- Applied Vector Autoregression to address the simultaneous causality issue and assess the impact of Chinese stock market returns on China's monetary policy rate
- Estimated the effect of stock market returns on the policy rate controlling multiple macroeconomic variables, evaluating the relationship at daily, weekly, and monthly frequencies
- Found no statistically significant evidence indicating that the Chinese Monetary Authority adjusted its policy to influence the stock market

Working Experience

Market Observatory Project | R December 2020 – January 2023

Co-founder of the Market Observatory Project with Prof. Mike Aguilar; Scientific Project Manager

- Assisted fellow Research Assistants with statistical concepts and R coding to create handbooks for current market status
- Standardized the data cleaning process using a pipeline and Beamer presentation output format in R
- Enhanced code efficiency through parallel processing, resulting in reduced code size and execution time

Quancheng Online Tutoring (formerly Easyke Online Tutoring) September 2019 - Present

Tutor

- Tutored more than 2000 hours of advanced college-level Economics, Finance, and Mathematics courses with 9.99 satisfaction, including some master and PhD level economics courses
- Awarded "Tutor of the Month" more than five times, a testament to the outstanding teaching quality and high student satisfaction
- Motivated and guided students to apply theoretical models for analyzing current events, including the Trade War, fiscal and monetary policies, the Coronavirus pandemic, and fluctuations in financial markets
- Led students to gain a deep understanding of advanced concepts through inquiry-based and personalized learning approaches
- Developed comprehensive lesson plans and post-lesson assessments for over 2,000 classes

Teaching Experience

- Undergraduate Learning Assistant:
  - Econ 420: Intermediate Macro Economics (Fall 2016, Fall 2017)
  - Math 232: Calculus II (Fall 2016)
- Teaching Assistant:
  - Econ 25000: Introduction to Finance (UChicago, Spring 2019)
  - Econ 701: Mathematical Economics (PhD-level, Fall 2022, Fall 2023)
  - Econ 400: Introduction to Econometrics (Spring 2023, Fall 2024)
  - Econ 101: Introduction to Economics (Spring 2024)
  - Econ 771: Advanced Econometrics (PhD-level, Upcoming Spring 2025)

Skills

- Certification: Achieved CFA Level I in December 2019
- Languages:
  - Proficient: Mandarin and English
  - Intermediate: German
- Computer Languages:
  - Proficient: R, Python, MATLAB, Latex (Overleaf, R), GitHub and Excel
  - Intermediate: Julia, SQL, Stata and Mathematica
- Data Skills:
  - Statistical Analysis, Machine Learning, Tensor PCA, Time-series Modeling, Financial Data Analysis, Policy Analysis
  - Web Scraping and API (R), Macro Finance Modeling (MATLAB, DYNARE), Shiny App (R; sample: https://lijiaxi.shinyapps.io/trade_shiny/), Beamer Presentation (R)
- Others: Public Speaking, Critical Thinking, Problem Solving, Quick Learning, Teaching and Teamwork