FANG LI

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EDUCATION

University of Alberta | Edmonton, Alberta   **September 2021 - July 2024 (Expected)**
Ph.D. Candidate in Economics (GPA: 4.0/4.0)

- **Dissertation:** Essays in Macroeconomics and Corporate Finance
- **Research Interests:** Empirical Macroeconomics, Dynamic Stochastic General Equilibrium (DSGE) models
- **Core Courses:** Structural VAR Analysis and Shock Estimation, Design and Estimation of RBC and New Keynesian Models, Bayesian VARs and Sign Restriction Identification, Advanced Topics in Macro Finance
- **Scholarship:** Alberta Graduate Excellence Scholarship (2023)
- **Notes:** I transferred from the University of Delaware (Delaware, Newark) as a Ph.D. student in Economics and Quantitative Economics (GPA: 3.95/4.0). I successfully passed the Ph.D. comprehensive exam at the University of Delaware, receiving a 'high pass' in both the microeconomics and macroeconomics sections. In addition to my economics courses, I earned an A in ELEG815 (Statistical Learning) and CISC684 (Machine Learning).

Xiamen University | Xiamen, China   **September 2014 - June 2017**
Master of Science in Economics

- **Awards:** Outstanding Graduates (2017)
- **Scholarship:** National Scholarship for Graduate Students – Ministry of Education, China (2015)

Wuhan University | Wuhan, China   **September 2010 - June 2014**
Bachelor of Science in Finance and Bachelor of Law (minor)

INDUSTRIAL EXPERIENCE

Manulife Insurance | Hong Kong SAR, China   **May - August 2022**
Investment Advisor, Summer Intern

- Conducted portfolio analysis to assist 20+ clients in making informed investment decisions with strategic advice on asset allocation.
- Assessed risk exposure and performance metrics to support the development of investment proposals for high-value clients.
- Provided advisory services to clients and successfully built trust by leveraging subject matter expertise in finance and economics.
- Supported the Quant Research Team in driving the adoption of data analytics tools and advanced econometric techniques.
- Utilized statistical programming skills to help the Investment Advisory Team in revamping their analytical abilities and software.
- Gained well-rounded experience and exposure in the financial industry through cross-functional collaboration and job shadowing.
- Received compliments from the Regional Director for taking the initiative to host a professional development seminar on the application and best practices of Machine Learning and statistical programming in financial analysis.

Guosen Securities Co., Ltd. | Shenzhen, China   **June - December 2016**
IPO Analyst (Intern), Investment Banking Division

- Mentored by senior officers at the second largest investment bank in China, which generates an annual revenue of 6.8 billion.
- Worked in a team to investigate the IPO prospectus and performed financial due diligence for a multi-billion-dollar cybersecurity firm.
- Led walk through tests to evaluate internal processes for potential risks, scrutinize process adequacy, and improve oversights.
- Demonstrated proficiency in financial modeling, particularly IPO and equity valuation, showcasing strong business and technical acumen.
- Conducted financial due diligence, with a specific focus on validating accounts receivable, to guarantee the precision and legitimacy.
- Hosted a "Lunch and Learn" training session to help cross-functional team members learn more about IPO and financial modelling.
- Showed the ability to excel under high pressure in a fast-paced environment and developed a high level of business professionalism.

TECHNICAL SKILLS

- **Programming**: Python, C++, Matlab, MySQL, LaTeX
- **Tools**: git, STATA, Dynare
- **Libraries**: backtrader, Scikit-Learn, Scrapy/scrapy-redis, statsmodels, PyTorch, financepy
- **Statistics**: Structural Vector Autoregression modelling, Perturbation method, General Linear Model, Fama-Macbeth regression, Statistical/ Machine Learning methods, Feature Engineering

CERTIFICATES

- CFA candidate (passed level III exam)

PROJECTS

PySVAR

- I developed a Python library for Structural Vector Autoregression (SVAR) estimation. The primary feature of this library facilitates SVAR model estimation in a manner akin to using sklearn. This enhancement simplifies the process for researchers, allowing them to utilize multiple identification methods in SVAR modeling more easily.
- Github: https://github.com/fangli-DX3906/PySVAR

ML Projects

- In this project, I hand-coded several machine learning models from scratch and provided corresponding applications. These models include SVM, perceptron, and a neural network for handwritten digit recognition. The project also includes the use of K-means for image compression and segmentation.
- Github: https://github.com/fangli-DX3906/mini-ML-projects

Heterogeneous Agents Resources & toolKit (HARK) | University of Delaware   **June - Spetember 2020**

Assistant to Dr. Matthew White

- I actively contributed to the development of the master branch of the Heterogeneous Agents Resources and toolKit (HARK). My work involved programming search models using Python, which included a model featuring non-separable additive disutility of search and another model incorporating a discrete state for unemployment benefits.
- Github: https://github.com/fangli-DX3906/HARK

WORKING PAPERS

Identifying the Demand and Supply Shocks

- (Joint Paper with Dr. Marco Brianti) We developed an efficient method, the generalized penalty function approach, for identifying demand and supply shocks. This method, while bearing similarities to the sign restriction approach, also incorporates quantitative information. It is applicable in any scenario where sign restriction is valid. The effectiveness of this method has been proven on a simulated dataset generated by a DSGE (Dynamic Stochastic General Equilibrium) model: the estimated shocks and the actual shocks are highly correlated and our method demonstrates robustness across a range of model specifications. Additionally, this method is computationally efficient and adaptable to Bayesian approaches.

Corporate Cash, Investment, and Uncertainty

- (Job Market Paper) Using firm-level data from Compustat, FISD, and TRACE datasets, I empirically discovered that the correlation between firm investment levels and cash flow diminishes when the aggregate uncertainty level is high. Conversely, the correlation between firm cash dividend distributions and cash flow increases under these conditions. This finding is somewhat counter-intuitive. I interpret this phenomenon as shareholders extracting resources from the firm during periods of high uncertainty and behaving myopic. To elucidate this mechanism, I developed a DSGE model, which demonstrates that shareholder myopia leads to welfare loss for society.

Identifying Oil Uncertainty Shocks

- (In progress) I utilize a novel method to identify 'oil uncertainty shock' by imposing a specific sign on the response of the volatility ratio to various uncertainty shocks. Through impulse response analysis, variance decomposition, and historical decomposition, I have demonstrated that these shocks remain economic significance, even when accounting for aggregate uncertainty. Finally, I validate my method using a simulated dataset from a DSGE model with oil sector. The simulation study reveals a high correlation between the actual and estimated shocks, showing the method's accuracy.

TEACHING EXPERIENCE

University of Alberta | Alberta, Canada   **September 2021 - December 2023**

Graduate Teaching Assistant, Department of Economics

- Managed assignment and exam grading with a commitment to maintaining high academic standards and ensuring fair evaluation.
- Hosted office hours and discussion sessions to help students develop a solid understanding of advanced Economics concepts.

University of Delaware | Newark, Delaware, United States   **September 2019 - May 2021**

Graduate Teaching Assistant, Alfred Lerner College of Business and Economics

- Led weekly discussion sessions for four PhD-level courses in Microeconomics Theory and Econometrics, fostering an engaging and interactive learning environment for over students and supporting their academic growth through regular evaluation and feedback.
- Accumulated 8 hours of monthly office hours for a total of 20 hours per semester to address students' inquiries and learning needs.

Southern University of Science and Technology | Shenzhen, China   **June 2017 − January 2018**

Research Assistant and Lab Instructor, Department of Finance

- Processed extensive financial data using CRSP, TRACE, and Compustat financial databases, involving approximately 30k data points.
- Collected, cleaned, and analyzed financial data in asset pricing and corporate finance, ensuring data accuracy and relevance.
- Delivered programming instruction in MATLAB and STATA to graduate-level students in Quantitative Investment and undergraduate-level students in Introduction to Econometrics, enhancing their quantitative analysis skills.

REFERENCES

Dr. Marco Brianti (advisor)
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