

Myong Jong (MJ) Shin

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Education

Indiana University Bloomington (Indiana University Graduate Assistantship, H. Crawford Graduate Top-up Fellowship)
Ph.D. Candidate in Economics (F1-visa, STEM certified 3-year OPT) Sept 2016 – expected June 2023
Dissertation: Essays on model comparison in finance and macroeconomics

Indiana University Bloomington

Master of Arts in Economics

Sept 2016 – March 2019

Soongsil University

Bachelor of Arts in Economics (received Soongsil Scholarship)

March 2010 – Dec 2015

Experience

Indiana University Bloomington

Sept 2018 – May 2022

- Associate Instructor: Taught undergraduate business statistics courses and a graduate financial econometrics course which include giving lectures, designing tests and assignments, and grading.
- Teaching Assistant: Provided recitations for advanced econometrics course for Ph.D. students.

Research Papers

Empirical investigation on supervised machine learning models predicting equity risk premium (JMP)

- Examined the predictive performance of ML (Supervised Machine Learning) models in forecasting multi-horizon firm-level equity risk premiums in the US stock market from January 1987 to December 2019 using big economic/financial data from CRSP, January 1960 to December 2019.
- Forecasted monthly, quarterly, semi-annual, and annual returns with Principal component regression, Partial least squares, LASSO, Ridge, Elastic net, and Random Forest ML models using python libraries and MATLAB.
- Evaluated models for their predictive ability using the test of Superior Predictive Ability, the Model Confidence Set, and the test of Conditional Superior Predictive Ability that evaluates forecasts conditional on a priori chosen variable indicative of the state of the US macroeconomy or US financial markets.
- Models with good predictability are different for each US industry sector. E.g., the random forest has a good out-of-sample fit for firms in *Finance, Insurance, and Real Estate* sector, but it has a bad fit for *Public Administration and Nonclassifiable* sector.

Projects

Evaluation of supervised machine learning models predicting equity risk premium in South Korea

- Examined the predictive performance of ML (Supervised Machine Learning) models in forecasting monthly firm-level equity risk premiums for the South Korea stock market.
- Data from Worldscope used for forecasting an extensive collection of firms to avoid survival bias. Models for forecasting and tests for evaluating were chosen similar to JMP.
- No model has distinctively good predictability over another, and weekly and monthly price trends contribute the most to the mean decrease in I2 impurity for the random forest model.

Test of equal predictive ability with HAR standard error for forecasting US industrial production growth and inflation

- Investigated autoregressive distributed lag (ADL) models for their predictive ability in forecasting US economic growth and Inflation.
- Used heteroscedasticity and autocorrelation robust (HAR) standard error for the test of Equal Predictive Ability to improve the size and power of the test when the sample size is small.
- Using US monthly FRED-MD data, we see more conservative test results with fewer ADL models having better predictability than the benchmark autoregressive model.

Skills Summary

- Time-Series Econometrics, Supervised Machine Learning methods (Dimension reduction, Regularization, Ensemble Methods, Neural Net), Gradient boosting, Out-of-Sample testing, Financial and Macroeconomic Forecasting, and Cross-Validation.
- Programming: Python, STATA, R, MATLAB, C/C++, MS Excel, MS word, LaTeX.
- High-performance computing for handling big data and computationally intensive code.
- Experience using Bloomberg, DataStream, and Wharton Research Data Services.
- Language: Fluent in English (latest TOEFL 117/120) and Korean.
- Leadership experience from participating in various field training exercises, leading squads, and handling radio communications for the 30th Armored Brigade, Republic of Korea Army.