Myong Jong Shin

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Skills Summary

- Time-Series Econometrics, Financial and Macroeconomic forecasting.
- Hypothesis testing, Statistical Theory, A/B testing, RCT, Power analysis, Out-of-Sample testing.
- Machine Learning (Dimension reduction, Regularization, Ensemble Methods, Neural Network • models), Gradient boosting, Cross-Validation, NLP.
- Macroeconomic modeling, DSGE (Dynamic Stochastic General Equilibrium) modelling.
- Programming: Python, STATA, R, MATLAB, C/C++, MS Office, LaTeX.
- High-performance computing (Linux) for handling big data and computationally intensive code.
- Experience using data terminals of Bloomberg, DataStream, Wharton Research Data Services.
- Native proficiency in English and Korean. •

Experience

JPMorgan Chase, New York City

May 2023 – Present Quantitative Modeling Sr. Associate, Model Risk Governance and Review (MRGR)

- Reviewed machine learning (ML) models used for anti-money laundering (AML) applications within JPMorgan Chase; these models are required to be reviewed prior to usage under federal AML regulations and JPMorgan Chase business needs.
- Assessed ML models used in production for their statistical soundness, ML interpretability, and estimation assumptions.
- Developed benchmark models around tree-based ML models and state-of-the-art NLP models.

Journal Reviewer

Provided journal reviews for the "Econometric Reviews".

Indiana University Bloomington

Associate Instructor

Taught undergraduate business statistics courses and graduate financial econometrics courses which include giving lectures, designing tests and assignments, and grading.

Teaching Assistant

Provided recitations for advanced econometrics courses for Ph.D. students.

Education

Indiana University Bloomington

Ph.D. in Economics Sept 2016 – December 2023 Dissertation title: Three essays on model comparisons in finance and macroeconomics Recipient of Indiana University Graduate Assistantship, and H. Crawford Graduate Top-up Fellowship

Indiana University Bloomington

Master of Arts in Economics

Soongsil University

Bachelor of Arts in Economics **Recipient of Soongsil Scholarship**

Research Papers

Empirical investigation on supervised machine learning models predicting equity risk premium (journal submission circulating)

Sept 2018 – May 2022

Jan 2024 – Present

Sept 2016 – March 2019

March 2010 – Dec 2015

Taylor & Francis

- 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 (journal submission circulating)

- 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.