

KANGYING ZHOU

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EDUCATION

Ph.D. in Financial Economics, Yale University, 2019–2025 (Expected)
M.S. in Financial Mathematics, The University of Chicago, 2016–2017
B.S. in Economics, Huazhong University of Science and Technology, 2012–2016

RESEARCH INTERESTS

Asset Pricing, Machine Learning, Natural Language Processing

REFERENCES

Nicholas C. Barberis (co-Chair)
Stephen and Camille Schramm
Professor of Finance
nick.barberis@yale.edu

Bryan T. Kelly (co-Chair)
Frederick Frank '54 and Mary C. Tanner
Professor of Finance
bryan.kelly@yale.edu

Stefano Giglio
Frederic D. Wolfe
Professor of Finance and Management
stefano.giglio@yale.edu

William N. Goetzmann
Edwin J. Beinecke
Professor of Finance and Management Studies
william.goetzmann@yale.edu

Tobias J. Moskowitz
Dean Takahashi '80 B.A., '83 M.P.P.M.
Professor of Finance
tobias.moskowitz@yale.edu

JOB MARKET PAPER

Active Mutual Funds and Media Narratives

I investigate the impact of media narratives on the portfolio strategies of active equity mutual funds. Using 1.5 million Wall Street Journal articles from 1984 to 2023, I use ChatGPT to distill media narratives into 59 distinct topics, and quantify each ones time-varying attention and sentiment. I find that mutual funds increase their exposure to topics with high sentiment, but not necessarily to those with high attention. While this strategy leads to mutual fund underperformance, it also attracts investor flows. Topic-oriented exposures account for a large fraction of the variation in mutual fund tilts, and are a key driver of the negative alpha associated with active tilts.

PUBLICATIONS

The Virtue of Complexity in Return Prediction

with Bryan Kelly and Semyon Malamud

The Journal of Finance 79, no. 1 (2024): 459-503.

Much of the extant literature predicts market returns with “simple” models that use only a few parameters. Contrary to conventional wisdom, we theoretically prove that simple models severely understate return predictability compared to “complex” models in which the number of parameters *exceeds* the number of observations. We empirically document the virtue of complexity in US equity market return prediction. Our findings establish the rationale for modeling expected returns through machine learning.

WORKING PAPERS

The Virtue of Complexity Everywhere

with Bryan Kelly and Semyon Malamud

We investigate the performance of *non-linear* return prediction models in the high complexity regime, i.e., when the number of model parameters exceeds the number of observations. We document a “virtue of complexity”: Return prediction R^2 and optimal portfolio Sharpe ratio generally increase with model parameterization in all asset classes that we study (US equities, international equities, bonds, commodities, currencies, and interest rates). The virtue of complexity is present even in extremely data-scarce environments, e.g., for predictive models with less than twenty observations and tens of thousands of predictors. The empirical association between model complexity and out-of-sample model performance exhibits a striking consistency with theoretical predictions.

Robust Prediction after Structural Breaks

I propose a new modeling approach for time series prediction after structural breaks. The method incorporates a time trend variable into non-linear predictive models to effectively handle coefficient variations over time. By optimizing the bias-variance tradeoff, this approach significantly improves prediction accuracy and optimal portfolio Sharpe ratio compared to both linear and non-linear standard models. I construct Monte Carlo simulations to examine the finite sample performance of the proposed procedures. Empirically, the paper demonstrates improved prediction performance for U.S. equity market returns. These findings establish the robustness of machine learning predictions in the presence of structural breaks.

TEACHING EXPERIENCE

TA for Financial Econometrics and Machine Learning, Master’s level, 2022–2023

Instructor: Professor Bryan Kelly

TA for Empirical Asset Pricing, Ph.D. Level, 2021

Instructor: Professor Bryan Kelly

AWARDS

CIRF Lindner College of Business Research Excellence Award, 2022
Best Paper Award, Hong Kong Conference for Fintech, AI, and Big Data in Business, 2022
Bates-White Best Paper Award (Runner-up), SoFiE annual meeting, 2022
Stanford Institute for Theoretical Economics (SITE) Travel Grant, 2022
Wolfe Annual Global Quantitative and Macro Investment Conference Travel Grant, 2022
Adam Smith Workshop Travel Grant, 2022
Yale Graduate Fellowship, 2019–2024

PRESENTATIONS

2024 **Seminar:** Yale SOM ($\times 2$)

2023 **Conference:** AEA Annual Meeting at New Orleans, Deep Learning for Solving and Estimating Dynamic Models (DSE) at Lausanne
Seminar: Yale SOM ($\times 2$), Hong Kong University of Technology

2022 **Conference:** Stanford Institute for Theoretical Economics (SITE) on “New Frontiers in Asset Pricing”, SFS Cavalcade at University of North Carolina, WOLFE Annual Global Quantitative and Macro Investment Conference, China International Risk Forum (CIRF), Hong Kong Conference for Fintech, AI, and Big Data in Business, Research Symposium on Finance and Economics (RSFE)
Seminar: EPFL, Yale SOM ($\times 2$)

2021 **Seminar:** Yale SOM

SERVICE

Discussions

2022 *Does the Mad Money Show cause investors to go madly attentive?* (Kryzanowski and Rouhghalandari) at Research Symposium on Finance and Economics (RSFE)
E-commerce Livestream, Social Interaction, and Equity Returns (Chang and Cong) at CIRF

Referee

U.S. National Science Foundation (NSF)
Journal of Banking and Finance
Emerging Markets Review

WORKSHOP PARTICIPATION

- 2023 Deep Learning for Solving and Estimating Dynamic Models (DSE) Summer School
Ken Singleton Celebration at Stanford Graduate School of Business
- 2022 Adam Smith Asset Pricing Conference at INSEAD
Macro Finance Society Virtual Summer School
- 2021 NBER Entrepreneurship Research Boot Camp
NBER Economics of Artificial Intelligence (AI) Conference
- 2020 Princeton Financial Economics of Insurance Workshop

OTHER EMPLOYMENT

Bloomberg LP

Data Scientist in Chief Technology Office, 2019

Sheffield Asset Management, L.L.C.

Quantitative Analyst, 2018

The University of Chicago Booth School of Business

Research Assistant for Professor Dacheng Xiu, 2017-2019