

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

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 business news into 59 distinct topics, and quantify the time-varying attention and sentiment associated with each one. I find that the topics that fund managers choose to have high exposure to are those with high sentiment, but not necessarily those with high attention. While this strategy leads to underperformance, it nonetheless attracts investor flows, which explains its use. Tilting to different topics explains a substantial part of the variation in the aggregate mutual fund active tilt, and is a key driver of the negative alpha associated with active tilt.

PUBLICATION

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 PAPER

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

This study proposes 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 bias-variance tradeoff, this approach significantly improves prediction accuracy and optimal portfolio Sharpe ratio compared to both linear and non-linear standard models. Results of Monte Carlo simulations are presented to examine the finite sample performances of the proposed procedures. Empirically, the paper demonstrates improved prediction performance in U.S. equity market return. These findings establish the rationale for the robustness of machine learning predictions with structural breaks.

WORK IN PROGRESS

Heterogeneous Institutions Rebalance to Corporate News

Publication Effect in Belief Formation

with Ping Gong

Vector Autoregressions with Virtue of Complexity

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

PRESENTATION

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

Discussion

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