

# KANGYING ZHOU

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## EDUCATION

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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

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Asset pricing, machine learning, natural language processing

## REFERENCES

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

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

**Stefano Giglio**  
Frederic D. Wolfe  
Professor of Finance and Management  
[stefano.giglio@yale.edu](mailto:stefano.giglio@yale.edu)

**Tobias J. Moskowitz**  
Dean Takahashi '80 B.A., '83 M.P.P.M.  
Professor of Finance  
[tobias.moskowitz@yale.edu](mailto:tobias.moskowitz@yale.edu)

## JOB MARKET PAPER

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### 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 toward 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

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### **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

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### **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.

## WORK IN PROGRESS

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### **Heterogeneous Investor Exposure to Media Narratives**

### **The Publication Effect in Belief Formation**

with Ping Gong

### **Vector Autoregressions with Virtue of Complexity**

## TEACHING EXPERIENCE

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**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

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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

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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

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### 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

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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

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### **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