

HAO YANG

PhD Candidate in Finance at Swiss Finance Institute and USI Lugano

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References

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Patrick Gagliardini
Professor
Swiss Finance Institute
USI Lugano
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Education

Swiss Finance Institute & USI Lugano, Switzerland, 2020 - 2025
Ph.D. Student in Finance
Advisor: Prof. Antonio Mele

University of California Berkeley, USA, 2024
Visiting Scholar at Haas School of Business
Sponsor: Prof. Christine Parlour

Toulouse School of Economics, France, 2018 - 2020
Master in Economics

Central University of Finance and Economics, China, 2014 - 2018
Bachelor in Economics

Research Interests

AI in Finance, Market Microstructure, Asset Pricing.

Job Market Paper

[AI Coordination and Self-Fulfilling Financial Crises](#)

Presented at: CEPR-Toulouse 17th Digital Economics Conference (scheduled), Warwick Finance Brownbag (scheduled), SFI Job Market Workshop Zurich, Inter-Finance PhD Seminar, USI Lugano Brownbag

I explore how AI-driven trading interactions can trigger financial crises and how to regulate them. Using the speculative attack framework à la Morris and Shin (1998), I analyze how multiple traders, powered by artificial intelligence (specifically Q-learning algorithms), coordinate their attack actions and potentially trigger crises. I demonstrate that AI-driven trading may more effectively coordinate with others and trigger convergence on the crisis equilibrium compared to human trading, and I identify the specific conditions under which this occurs. I find the following regulatory solution: enhancing market transparency through accurate private information can effectively reduce the likelihood of AI-driven crises.

Working Papers

[Asset Pricing with Ambiguous Price Signal](#)

Presented at: German Finance Association Aachen, SFI Research Day Gerzensee, IRMC Bocconi, RBCF Amsterdam, USI Lugano Brownbag

I revisit learning from equilibrium prices under Knightian uncertainty (or Ambiguity) in the limit order market, using Vives (2014)'s framework. I examine how uninformed traders cautiously interpret prices, given uncertainty about informed traders' presence. Under Knightian uncertainty, prices reveal informed trading activity. Normal (abnormal) prices indicate higher (lower) informed trading. Prices may react asymmetrically to news: negative news often causes overreactions with reduced liquidity, while positive news typically leads to under-reactions, except for exceptionally favorable news. Knightian uncertainty also provides a micro-foundation for demand (in)elasticity, as discussed by Gabaix and Koijen (2021). I find that reducing ambiguity doesn't consistently enhance uninformed traders' expected profits, as ambiguity levels have nonlinear and non-monotonic effects.

A Theory of Speculation on Unclear Fundamental

Presented at: HEC Paris PhD Workshop

I develop a robust speculative equilibrium for assets with unclear fundamentals, where both the asset's value and its distribution are uncertain. In a limit order market with negligible individual price impact, speculators receive private signals about the asset and must infer others' signals from observed prices, facing uncertainty about their own and others' prior beliefs. Using iterated reasoning, I derive Bayesian Nash equilibrium that incorporate this uncertainty. This equilibrium demonstrate that such uncertainty supports both momentum and contrarian trading strategies, explaining phenomena like upward-sloping demand curves, persistent momentum strategies, and cross-sectional trading variation without relying on behavioral biases.

Academic Conferences

2025 CEPR-Toulouse 17th Digital Economics Conference
2024 Warwick Business School, USI Lugano, SFI Job Market Workshop Zurich, Inter-Finance PhD Seminar, HEC Paris Finance PhD Workshop in Honor of Denis Gromb, Finance Theory Group Summer Conference (UPF Barcelona †), DGF German Finance Association (Aachen), IRMC Bocconi, PhD Block seminar on Information in Capital Markets (Zurich), Research in Behavioral Finance Conference (Amsterdam)
2023 Swiss Finance Institute Research Day (Gerzensee), USI Lugano Brown Bag
2022 USI Lugano Brown Bag
(† = invited workshop or attendance without a presentation.)

Honors

USI Doc Mobility Grant 2024
Graduate scholarship of the Swiss Finance Institute 2020 - 2021

Teaching

Class Teacher for master's courses at USI Lugano
Fixed Income Securities and Credit Markets 2021 - 2024
Student satisfaction: 8.50/10.00
Financial Stability 2021 - 2024
Student satisfaction: 9.25/10.00

Paper Discussion

Can Misinformation be Tolerated? Analyzing the Role of Disinformation in the Formation and Evolution of Market Bubbles (by T. Herzing, and M. Muck) 2024
How Algorithmic Stablecoins Fail (by G. Kurovskiy, and N. Rostova) 2023

Skills

Languages: Chinese (*native*), English (*fluent*)
Computer: Python, Julia, Stata, \LaTeX