Jiageng Liu

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Education

Ph.D. Finance, MIT	2021 –
M.S. Statistics, University of Chicago	2018 – 2019
B.S. Mathematics, *summa cum laude*, UCLA	2014 – 2017

Research

1. Anatomy of a Run: The Terra Luna Crash, 2023, with Igor Makarov and Antoinette Schoar. Available at SSRN.

   Abstract: Terra, the third largest cryptocurrency ecosystem after Bitcoin and Ethereum, collapsed in three days in May 2022 and wiped out $50 billion in valuation. At the center of the collapse was a run on a blockchain-based borrowing and lending protocol (Anchor) that promised high yields to its stablecoin (UST) depositors. Using detailed data from the Terra blockchain and trading data from exchanges, we show that the run on Terra was a complex phenomenon that happened across multiple chains and assets. It was unlikely due to concentrated market manipulation by a third party but instead was precipitated by growing concerns about the sustainability of the system. Once a few large holders of UST adjusted their positions on May 7th, 2022, other large traders followed. Blockchain technology allowed investors to monitor each other's actions and amplified the speed of the run. Wealthier and more sophisticated investors were the first to run and experienced much smaller losses. Poorer and less sophisticated investors ran later and had larger losses. The complexity of the system made it difficult even for insiders to understand the buildup of risk. Finally, we draw broader lessons about financial fragility in an environment where a regulatory safety net does not exist, pseudonymous transactions are publicly observable, and market participants are incentivized to monitor the financial health of the system.

2. Delayed and Distorted Price Discovery: Post-IPO Stocks in China, 2020.

   Abstract: I document that regulatory changes in the Chinese IPO market in 2013-14 distorted the price of new stocks and delayed price discovery. The rules impose a low P/E limit on the IPO price and restrict the daily price changes after listing. Under the new rules, prices go to the upper limit with little trading for about two weeks after the listing date. Although the listing prices are suppressed by the P/E limit, the prices at which trading starts are on average 15% to 30% higher than that before the rules. This translates to a 240 billion CNY higher valuation among post-IPO stocks, though the overvaluation reverses to the market median level over the first year after listing. A shift in IPO industry composition from high-P/E to low-P/E after the rule change is consistent with market distortion.

Publications

1. Variance-Reduced Stochastic Learning by Networked Agents under Random Reshuffling, with Kun Yuan, Bicheng Ying, and Ali H. Sayed, 2019. *IEEE Transactions on Signal Processing* 67(2), pp.351-366.

   Abstract: We propose a decentralized variance-reduced optimization algorithm for a collection of interacting agents that are connected by a graph topology. The diffusion-AVRG algorithm is shown to have linear convergence to the exact solution, and is more memory efficient than other alternative algorithms. When a batch implementation is employed, it is observed in simulations that diffusion-AVRG is more computationally efficient than exact diffusion or EXTRA, while maintaining almost the same communication efficiency.

Academic Positions

Research Assistant, MIT Sloan School of Management   2019 – 2021

1. Makarov, Igor, and Antoinette Schoar. *Blockchain analysis of the bitcoin market.* Working Paper No. w29396. National Bureau of Economic Research, 2021. R&R at *American Economic Review*.

2. Fishman, Michael J., Jonathan A. Parker, and Ludwig Straub. *A dynamic theory of lending standards.* Working Paper No. w27610. National Bureau of Economic Research, 2020.

Visiting Scholar, Shanghai University of Finance and Economics   2018

   with joint appointment at Cardinal Operations, Shanghai

Academic writing

Credit Card Offers Target Less-educated Consumers with More Shrouded and Backloaded Fees. *Draft for Antoinette Schoar. Duke FinReg Blog,* 2020. Link

Pandemics Depress the Economy, Public Health Interventions Do Not: Evidence from the 1918 Flu. *MIT GCFP briefs and blogs*, 2020. Link

Egyptian Hieroglyphs and Unsupervised Machine Translation. *UCLA Natural Language Processing blog series, 2017.* Link

Teaching

Teaching Assistant, MIT

   Managerial Finance (MBA, Rating: 6.4/7)

Teaching Assistant, Shanghai University of Finance and Economics

   Linear Algebra (undergraduate), Operations Research II (undergraduate)

Miscellaneous

Citizenship: China. F-1 visa status.

Languages: Mandarin (native), English (professional), Japanese (intermediary), Spanish (introductory)

Last updated: April 19, 2023