Latest CV version: **here**

Yury Olshanskiy

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Education

May 2024	Ph.D. in Finance Group, MIT Sloan School of Management
2020	M.S. in Management Research, MIT
	GPA 5.0/5.0 Specialization: Finance (Macro Asset Pricing track)
2016	M.A. in Economics, New Economic School
	summa cum laude Specializations: Finance, Industrial Organization
2014	Diploma in Mathematics, Moscow State University
	with honors Specialization: Probability Theory

References

Hui Chen
Nomura
Professor of Finance
MIT Sloan School of Management
(617) 324-3896
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Leonid Kogan (Chair)
Nippon Telegraph and Telephone
Professor of Finance
MIT Sloan School of Management
(617) 253-2289
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Jiang Wang
Mizuho Financial Group
Professor of Finance
MIT Sloan School of Management
(617) 253-2632
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Research Interests:

Financial Economics	Primary: Asset Pricing; Market Microstructure; Big Data Other: Financial Econometrics and ML; Macro Finance; Household Finance

Job Market Paper: Stock Explosiveness and Silent "Squeezes"

Abstract: *This paper investigates abnormal behavior in individual stocks using two decades of U.S. stock market high-frequency data. It identifies hundreds of thousands of short episodes where stocks exhibit explosive behavior, deviating from the unit-root null hypothesis. These phenomena span multiple days, differ from typical return movements, and affect a wide range of stocks, including liquid and large-cap stocks. Explosive episodes account for a considerable portion of stocks' idiosyncratic variance. These are transitional episodes with substantial partial reversal, providing predictable and tradable returns, setting them apart from large overnight and high-frequency jumps. I analyze stocks and their susceptibility to explosive behavior in connection with aggregate market fluctuations. Explosive episodes involve significant buying and selling pressure along with trading volume. To explain explosive price movements, the paper introduces a model involving inelastic buyers, insiders, and competitive sellers. It emphasizes the role of explosions in price discovery process and addresses the observed reversal. The frequency, severity, and reversal of explosiveness are explained by the expected size of inelastic demands, the knowledge possessed by a representative insider, and frequency of seeing both in the market. Using short interest dissemination dates, empirical tests validate the model's predictions, indicating a higher likelihood of explosive behavior in stocks with substantial reported short interest.*

Working Papers:

Market Events and Variation in Factor Structure (with Roman Sigalov)

Abstract: *We study the stability of factor structure by analyzing its variation on different market events. We start by documenting variation in distributions, means, volatilities, and correlations, in a set of characteristics managed long-short portfolios on the weeks with large market moves, leading earnings announcements, and FOMC announcements with unexpected shocks to interest rates. This variation manifests in differences in factors extracted using characteristics based on statistical methods that we document using Instrumented PCA. The factor structure shows variation in the factor loadings and in the distribution of factors itself. We propose two ways of capturing event-specific variation in the factor structure. The first method, Treatment-IPCA, estimates orthogonal factors specific to the events we consider. We find significant premia associated with the treatment factors. The second method, Boosted- IPCA allows us to test the differential importance of firm characteristics in describing the cross-section of stock returns on market events relative to base periods.*

Oligopolistic Market Making and Inventory Heterogeneity

Abstract: *This paper explores market making under imperfect competition using a novel dataset on individual-level intraday market making. A novel dataset detailing individual-level intraday market making activities prompts new inquiries into various liquidity aspects. Fixed Effects estimation at aggregate and account levels confirm the significant impact of inventory distribution on market makers' activity and overall liquidity. I propose a dynamic duopoly market making model where inventory distribution shapes agents' strategic behavior and observed liquidity provision. Tight capital constraints lead to a "resting" market maker behavior, while relaxed constraints correlate with a wider bid-ask spread in response to inventory imbalances. Analyzing a grim-trigger non-Markov equilibrium, I find that collusive behavior among market makers raises liquidity prices but reduces their variability.*

Work in Progress:

Silent "Squeezes," Speaking Delta?

Abstract: *This paper investigates the relationship between option markets and individual stocks in the context of "explosive" events. Utilizing aggregated metrics of outstanding open interest in options for the universe of U.S. common shares in conjunction with high-frequency stock data, I analyze the susceptibility of stocks to (1) subsequent abnormal returns and (2) explosive transitional price dynamics. The study leverages the floating nature of aggregate greeks, primarily delta, conditional on previously formed open interest in options. By examining fluctuations in these aggregate factors, I use them as endogenous shocks for further analysis of explosiveness and subsequent returns. The preliminary findings suggest that explosiveness and negative returns are more likely for stocks exposed to fluctuations in the aggregated greeks, aligning with similar findings related to short interest as presented in Olshanskiy (2023). In essence, the aggregated metrics in delta can be considered as a form of floating short interest. Along these lines, I develop a model that incorporates the fluctuation in inelastic demand due to prior fluctuations in price, resembling the mechanics of a "short squeeze".*

Option Market Making: Market Concentration and Inventory Risk (with Hui Chen)

Abstract: *This paper investigates market-making activities in a rapidly expanding market over a two-and-a-half-year period following the introduction of option contracts on a highly liquid ETF. Utilizing proprietary data on the high-frequency trading and quoting activities of all market participants, this study offers a unique platform for examining how competition in market making evolves. Initially, we present unorthodox evidence revealing that market makers accumulate substantial inventory positions, which includes positions held overnight, exposed to unhedged risk. Subsequently, we construct high-frequency measures of liquidity concentration that*

capture the degree of aggressiveness in liquidity provision by designated market makers and other active liquidity providers. Our findings indicate that this liquidity provision is correlated with trading volume and price quotations, with a significant dependence on the inventory positions of market makers. We observe that as the market matures, liquidity concentration gradually decreases, mainly for short-term contracts. Intriguingly, even during crisis periods, market makers do not vanish, and the overall liquidity concentration in the market does not experience substantial variations.

Social Interaction and Financial Decisions: a Network Approach (with Misha Galashin)

Abstract: *Stock market participation is currently low, but technological innovation could potentially bridge this gap. An open question persists regarding how the emergence of fintech technologies interacts with peer effects. To address this, we have partnered with a large telecom company to investigate the impact of a new retail investment product on stock market participation in a middle-income economy. We employ regression discontinuities around the rules governing past advertising allocation and utilize extensive social network data to examine the effect of advertising on product adoption and its propagation through the network. The environment provides a conducive laboratory for studying peer effects in portfolio formation and saving decisions.*

Belief Generators in Economic Models (2020, previous draft by request)

Abstract: *This article explores the concept that agents' disagreement is characterized by not only heterogeneity in their priors regarding the future states of an economy but also by differences in their knowledge about the existence of these states. To emphasize this distinction, it introduces belief generators that generate disagreement through a two-step process. Initially, they allocate a subset of states to an agent, followed by providing her with priors based on the assigned states. The paper illustrates how these belief generators create "systematic biases" in the economy, even when they are "naturally defined." It proposes qualitative methods for measuring these biases and, as a numerical example, applies the theoretical findings to enhance the basic calibration of the CCAPM model, incorporating disagreement about the first and second moments of the consumption growth process.*

Allocation of capital in a Limited Participation model (2020, previous draft by request)

Abstract: *This project develops a three-period model to examine the influence of financial frictions on households' (HHs) capital allocation between short-term and long-term projects. In this framework, a continuum of experts allocates their capital among various short-term and long-term projects and subsequently sells the claims on project returns to HHs within a competitive market. While the markets are complete, agents encounter distinct prices. HHs incur fees for participating in the market, which lead to distortions in market prices and, consequently, impact the ex-ante real allocation of capital. I have characterized the equilibrium of this model in closed-form, assuming agents have log-utilities. The comparative statics of this equilibrium provide insights into the significance of transaction costs for the real side of the economy and help assess why expectations regarding future transaction costs hold relevance.*

Previous Working Papers:

The Optimal Frequency of Trading with Continuous Information Flows (2018)

written under supervision of Anna Obizhaeva (refereed by Pete Kyle)

Abstract: *This paper investigates the impact of "discrete-time trading design," where an exchange trading day consists of batch auctions with fixed non-zero time intervals, involving trading at discrete times alongside continuous information flow. We examine a dynamic trading model featuring oligopolistic, symmetric, risk-averse, and relatively overconfident traders to explore the effects on social welfare and liquidity characteristics. Social welfare analysis, viewed from an individual trader's perspective, indicates that the implementation of "discrete-time trading design" leads to decreased trading aggressiveness and volume. The impact on social*

welfare depends on traders' beliefs about informativeness and disagreement levels, influencing the outcome positively or negatively.

Teaching Experience:

Sept. 2019 - present:	**Teaching Assistant at MIT** (mainly semester classes included weekly recitations):
Winter 24	AI in Finance (Executive Elective)
Winter 23	AI in Finance (Executive Elective)
	all to Professor Hui Chen
Spring 23	Functional and Strategic Finance, 15.466 (MBA & MFin)
Spring 21	Functional and Strategic Finance, 15.466 (MBA & MFin)
Spring 20	Functional and Strategic Finance, 15.466 (MBA & MFin)
	all to Professor Robert C Merton
Spring 21	Foundations of Modern Finance 2 on Edx (Online MFin)
Fall 20	Foundations of Modern Finance 1 on Edx (Online MFin)
Summer 20	Foundations of Modern Finance, 15.415 (MFin)
	all to Professors Leonid Kogan and Jiang Wang
Fall 19	Asset Pricing, 15.470 (PhD students)
	to Professors Leonid Kogan and Lawrence Schmidt
Sept. 2015 - Dec. 2016:	**Teaching Assistant at NES** (Master's program, every course included 7 of my recitations):
Fall 16	Asset Pricing to Professor Patrick J. Kelly
Fall 16	Market Microstructure to Professor Anna Obizhaeva
Fall 16	Applied Microeconometrics to Professor Olga Kuzmina
Spring 16	Advanced Econometrics to Professor Stanislav Khrapov
Spring 16	Econometric analysis of panel data and time series to Professor Gunes Gokmen
Winter 16	Econometric analysis of cross-sectional data to Professor Grigory Kosenok
Fall 15	Probability Theory and Statistics to Professor Pavel Katyshev
Fall 15	Mathematics for Economists to Lecturer Sergei Golovan

Research Positions:

Aug. 2016 - Jul. 2017	Research Professional at Univeristy of Chicago Booth School of Business (in Chicago, with the Fama-Miller Center, since Feb. 2017: Primary work for Professor Anastasia Zakolyukina and coauthors)
2018	Research Assistant for Professor Hui Chen
2018	Research Assistant for Professor Leonid Kogan
2020	Research Assistant for Professor Larry Schmidt

Fellowship, Awards, and Grants:

2023	Fellowship of Mark Kritzman and Elizabeth Gorman Research Fund
2017-2023	MIT Sloan PhD Fellowship
2016	Outstanding Student Award, NES 2016. Best Student in specialization Industrial Organization, MAE 2016. Summa-cum-laude, MAE 2016
2016	Best Teaching Assistant Award, NES 2016.
2014-2016	NES Fellowship
2014	Diploma with Honor, MSU 2014

Diploma and MA theses:

2016	The Optimal Frequency of Trading for the Model with Continuous Information Flows. completed with special distinctions
2014	Dynamics of Random Populations with Local Interaction. completed with excellent grade

Workshops:

Princeton Initiative: Macro, Money and Finance Conference on September 6-9, 2019

Yale Summer School in Behavioral Finance 2019

Capital Markets Research Workshop, July 13-16, 2019

7th Lindau Meeting on Economic Sciences, 2022

Research talks:

MIT Finance Seminar, Fall 2023	Stock Explosiveness and Silent "Squeezes"
MIT Finance Workshop, Fall 2023	Stock Explosiveness and Silent "Squeezes"
MIT Finance Seminar, Fall 2022	Stock Explosiveness
MIT Finance Workshop, Fall 2021	Option Market Making: Market Concentration, and Inventory Risk
MIT Finance Workshop, Spr. 2021	Silent "Squeezes", Speaking Delta?
MIT Defence, Wint. 2020	Oligopolistic Market Making
MIT Finance Workshop, Fall 2019	Oligopolistic Market Making
NES conference 2016	The Optimal Design of Trading Frequency.
Lomonosov conf. 2014	A Stochastic comparison in the Problem of an Asymptotic Behavior of Contact Processes.
+various student seminars/reading groups	at MIT Sloan, MIT Econ, Chicago Booth, MIT/Harvard classes, NES

Other Academic Life:

Organizing Online Inter-Program PhD Seminar (Summer – Fall 2020):
(together with Maxwell Jacobson Miller and William Cassidy)

Organizing Sloan's PhD Finance Pre-Seminar: (Fall 2019 – Spring 2020)
(together with Pierre Jaffard)

Organizing Sloan's PhD Finance Pre-Seminar: (Spring 2022)
(together with Jiaheng Yu)

Additional information:

Computer skills	R (proficient), C++ (actively used), Python (act.us.), Matlab (act.us.), Julia, C, LaTeX(proficient), SQL, SAS (act.us.), Stata, Wolfram Mathematica, Git Version Control (act.us.), Apache Arrow, JAX, Numba
Other skills	Data Science: Machine Learning, Advanced Econometrics, Algrorithms