

## Curriculum Vita

### Leonid Kogan

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### Education

Ph.D., finance	MIT	1999
Ph.D., mechanics	Cornell University	1995
M.Sc., mechanics/ applied mathematics	Moscow State University	1993

### Employment

MIT	Chair of the Finance Group	2017-present
MIT	Nippon Telephone and Telegraph Professor of Management	2007-present
Lehman Brothers	Senior Researcher	2007-2008
MIT	Associate Professor with tenure	2004-2007
MIT	Associate Professor	2003-2004
MIT	Assistant Professor	2001-2003
University of Pennsylvania	Assistant Professor	1999-2001

## Honors and Awards

- 2014 Amundi Smith Breeden Prize (first prize) for the best paper published in *Journal of Finance*. Awarded for “Growth Opportunities, Technology Shocks, and Asset Prices,” with D. Papanikolaou.
- Best paper award at the 2013 Red Rock Finance Conference. Awarded for “Measuring the “Dark Matter” in Asset Pricing Models,” with H. Chen and W. Dou.
- 2013 Crowell Memorial Prize (second prize), PanAgora Asset Management. Awarded for “Technological Innovation, Resource Allocation, and Growth,” with D. Papanikolaou, A. Seru, and N. Stoffman.
- Runner up for the 2013 Whitebox Prize for Best Financial Research. Awarded for “Mutual Fund Trading Pressure: Firm-Level Stock Price Impact and Timing of SEOs,” with M. Khan and G. Serafeim.
- Best paper award at the 2011 Utah Winter Finance Conference. Awarded for “Displacement Risk and Asset Returns,” with N. Garleanu and S. Panageas. Previously circulated under the title “The Demographics of Innovation and Asset Returns.”
- 2007 Crowell Memorial Prize (first prize), PanAgora Asset Management. Awarded for “Durability of Output and the Cross-Section of Stock Returns,” with J. Gomes and M. Yogo.
- 2006 Smith Breeden Prize (first prize) for the best paper published in *Journal of Finance* in areas other than corporate finance. Awarded for “The Price Impact and Survival of Irrational Traders,” with S. Ross, J. Wang and M. Westerfield.
- Research Associate, National Bureau of Economic Research, since 2006.
- FAME Research Prize for “The Price Impact and Survival of Irrational Traders,” with S. Ross, J. Wang and M. Westerfield, 2004.
- Gutmann Center Research Fellow, 2004.
- Invited to the Review of Economic Studies Tour, 1999.
- Lehman Brothers Fellowship for Research Excellence in Finance, First Prize, 1998.

## Professional Membership and Activities

Member of Jury, BlackRock’s Applied Research Award	2016
Founder and organizer, bi-annual MIT-FARFE Capital Markets Research Workshop for PhD students in finance and economics	2013-2017
Editor, <i>Review of Financial Studies</i>	2013-2015
Editorial board member, <i>The Critical Finance Review</i>	2011-present
Associate Editor, <i>Management Science</i>	2008-2011
Editorial Board, <i>Mathematics and Financial Economics</i>	2007-2014
Research Associate, National Bureau of Economic Research	2006-present

Faculty Research Fellow, National Bureau of Economic Research	2001-2006
Member of Jury, Lehman Brothers Fellowship for Research Excellence in Finance	2005
Member, American Finance Association	1999-present
Member, Western Finance Association	1999-present

Referee for *Applied Mathematical Finance*, *Econometrica*, *Journal of Economic Dynamics and Control*, *Journal of Economic Theory*, *Journal of Finance*, *Journal of Financial Economics*, *Journal of Financial Markets*, *Journal of Political Economy*, *Mathematical Finance*, *Quantitative Finance*, *Review of Financial Studies*

### Subjects Taught

Finance Theory (15.415)	2014-present, 2010-2011
Introduction to Financial Economics (15.470, 15.416)	2015, 2017-present, 2016
Financial Engineering (15.460)	2016
Advanced Financial Economics I (15.440J)	2009-present, 2005-2007
Finance Research Practicum (15.977)	2011
Analytics of Finance (15.450)	2010-2012
Finance Theory I (15.401)	2002-2007
Speculative Markets (Wharton School)	2000-2001

### Ph.D. Student Dissertation Committees

- Lu Zhang (2002; University of Rochester)
- Dmitry Livdan (2003; University of Houston)
- Mark Westerfield (2004; USC)
- Igor Makarov (2006; Chair; London Business School)
- Dimitris Papanikolaou (2007; Chair; Northwestern University)
- Oleg Rytchkov (2007; Temple University)
- Shawn Staker (2009; Chair; Deutsche Bank)
- Weiyang Qiu (2010; Citigroup)
- Kan Huang (2011; Two Sigma Investments)
- Fernando Duarte (2011; Chair; New York Federal Reserve Bank)
- Mary Tian (2011; Chair; Federal Reserve Board of Governors in Washington DC)
- Sahar Parsa (2011; Tufts University)
- Ngoc-Khanh Tran (2012; Chair; Washington University in St. Luis)

- Eung Jun Brandon Lee (2013; Chair; Goldman Sachs)
- Yichuan Li (2013; Rutgers University)
- Vu Anh Huynh (2014; Goldman Sachs)
- Zhe Zhu (2014; Munich Re)
- Indrajit Mitra (2015; Chair; University of Michigan)
- Yu Xu (2015; University of Hong Kong)
- Wei Dou (2017; Wharton School)
- Victor Duarte (2018; Chair; Dallas Fed)
- Seung Kwak (2018; Chair; The Federal Reserve Board)
- Yixing Chen (2018; Co-chair; University of Rochester)
- Shomesh Chaudhuri (2018; Post-Doc, MIT)

### **Working Papers**

- Kogan, L., D. Papanikolaou, L. Schmidt, and J. Song, 2018, “Technological Innovation and the Distribution of Labor Income Growth.”
- H. Chen, Dou, W., L. Kogan, 2018, “Measuring the “Dark Matter” in Asset Pricing Models.” Winner, best paper award at the 2013 Red Rock Finance Conference.
- Kogan, L., I. Mitra, 2018, “Accuracy Verification for Numerical Solutions of Equilibrium Models.”
- Kogan, L., J. Li, H. Zhang, 2018, “A Unified Economic Explanation for Profitability Premium and Value Premium.”
- Fanti, G., L. Kogan, S. Oh, K. Ruan, P. Viswanath, G. Wang, 2018, “Compounding of Wealth in Proof-of-Stake Cryptocurrencies.”

### **Permanent Working Papers**

- Haugh, M., L. Kogan, Z. Wu, 2006, “Portfolio Optimization with Position Constraints: an Approximate Dynamic Programming Approach.”
- Kogan, L., T. Wang, 2003, “A Simple Theory of Asset Pricing under Model Uncertainty.”
- Kogan, L., R. Uppal, 2001, “Risk Aversion and Optimal Portfolio Policies in Partial and General Equilibrium Economies.”

### **Publications**

- Kogan, L., D. Papanikolaou, N. Stoffman, 2018, “Left Behind: Creative Destruction, Inequality, and the Stock Market,” *Journal of Political Economy*, forthcoming.

- Kogan, L., D. Papanikolaou, 2018, "Equilibrium Analysis of Asset Prices: Lessons from CIR and APT," *Journal of Portfolio Management*, 44, 59—69.
- Kogan, L., D. Papanikolaou, A. Seru, and N. Stoffman, 2017, "Technological Innovation, Resource Allocation, and Growth." *Quarterly Journal of Economics*, 132, 665–712.
- Kogan, L., S. Ross, J. Wang, and M. Westerfield, 2017, "Market Selection." *Journal of Economic Theory*, 168, 209-236.
- Kogan, L., D. Papanikolaou, 2014, "Growth Opportunities, Technology Shocks, and Asset Prices." *Journal of Finance*, 69, 675-718. 2014 Amundi Smith Breeden Prize (first prize) for the best paper published in *Journal of Finance*.
- Huynh, V., L. Kogan, E. Frazzoli, 2014, "A Martingale Approach and Time-Consistent Sampling-Based Algorithms for Risk Management in Stochastic Optimal Control." *Decision and Control (CDC)*, 2014 IEEE 53rd Annual Conference, 1858 - 1865.
- Kogan, L., D. Papanikolaou, 2013, "Firm Characteristics and Stock Returns: The Role of Investment-Specific Shocks." *Review of Financial Studies*, 26, 2718-2759.
- Kogan, L., D. Papanikolaou, 2012, "Economic Activity of Firms and Asset Prices." *Annual Review of Financial Economics*, 4, 361-384.
- Garleanu, N., L. Kogan, S. Panageas, 2012, "Displacement Risk and Asset Returns." *Journal of Financial Economics*, 105, 491-510. Best paper award at the 2011 Utah Winter Finance Conference. Previously circulated under the title "The Demographics of Innovation and Asset Returns."
- Khan, M., L. Kogan, G. Serafeim, 2012, "Mutual Fund Trading Pressure: Firm-Level Stock Price Impact and Timing of SEOs." *Journal of Finance*, 67, 1371-1395. Runner up for the 2013 Whitebox Prize for Best Financial Research.
- Kogan, L. D. Papanikolaou, 2010. "Growth Opportunities and Technology Shocks." *American Economic Review*, P&P, 100, 532-536.
- Gomes, J., Kogan, L., and M. Yogo, 2009, "Durability of Output and the Cross-Section of Stock Returns," *Journal of Political Economy*, 117, 941-986. 2007 Crowell Memorial Prize (first prize).
- Kogan, L., D. Livdan, A. Yaron, 2008, "Oil Futures Prices in a Production Economy with Investment Constraints," *Journal of Finance* 64, 1345-1375.
- Kogan, L., 2008, "A Dynamic Default Correlation Model," *Quantitative Credit Research Quarterly Q2/3, Lehman Brothers*.
- Kogan, L., V. Konstantinovskiy, 2008, "Commodity Futures and Inflation," *Global Relative Value, Lehman Brothers*.
- Kogan, L., M. Haugh, 2007, "Duality Theory and Approximate Dynamic Programming for Pricing American Options and Portfolio Optimization," in *Handbooks in Operations Research and Management Science: Financial Engineering*, 15, Ch. 23. (Eds.: J. Birge, V. Linetsky). Elsevier, North-Holland.

- Kogan, L., I. Makarov, and R. Uppal, 2007, "The Equity Risk Premium and the Riskfree Rate in an Economy with Borrowing Constraints." *Mathematics and Financial Economics* 1, 1-19. Lead article, inaugural issue.
- Kogan, L., S. Ross, J. Wang, and M. Westerfield, 2006, "The Price Impact and Survival of Irrational Traders." *Journal of Finance* 61, 195-229. 2006 Smith Breeden Prize (first prize) for the best paper published in Journal of Finance. 2004 FAME Research Prize.
- Haugh, M., Kogan, L., J. Wang, 2004, "Evaluating Portfolio Policies: A Duality Approach," *Operations Research* 54, 405-418.
- Kogan, L., 2004, "Asset Prices and Real Investment," *Journal of Financial Economics* 73, 411-432. Lead article.
- Haugh, M., and L. Kogan, 2004, "Pricing American Options: A Duality Approach," *Operations Research* 52, 258-270.
- Gomes, J., L. Kogan, and L. Zhang, 2003, "Equilibrium Cross-Section of Returns," *Journal of Political Economy* 111, 693-732. Lead article.
- Chan, Y., and L. Kogan, 2002, "Catching Up with the Joneses: Heterogeneous Preferences and the Dynamics of Asset Prices," *Journal of Political Economy* 110, 1255-1285.
- Kogan, L., 2001, "An Equilibrium Model of Irreversible Investment," *Journal of Financial Economics* 62, 201-245. Lead article.
- Bertsimas, D., L. Kogan, and A. Lo, 2001, "Hedging Derivative Securities and Incomplete Markets: An  $\epsilon$ -Arbitrage Approach," *Operations Research* 49, 372-397.
- Bertsimas, D., L. Kogan, and A. Lo, 2000, "When Is Time Continuous?" *Journal of Financial Economics* 55, 173-204.

### **Invited Oral Presentations**

- "Irreversible Real Investment and Asset Prices"
  - New York University, 1998
  - University of California at Los Angeles, 1999
  - University of Chicago, GSB, 1999
  - Northwestern University, 1999
  - Carnegie Mellon University, 1999
  - University of California at Berkeley, 1999
  - Wharton School, University of Pennsylvania, 1999
  - University of Rochester, 1999
  - Yale University, 1999
  - Columbia University, 1999
  - Washington University at St Louis, 1999

- Princeton, Economics Department, 1999
  - University of Chicago, Economics Department, 1999
- “Catching Up with the Joneses: Heterogeneous Preferences and the Dynamics of Asset Prices”
  - London Business School, 2000
  - Platinum Hill Partners, CT, 2000
  - University of Texas at Austin, 2001
- “Equilibrium Cross-Section of Returns”
  - University of British Columbia, 2000
  - University of Chicago, GSB, 2001
  - UCLA, 2001
  - Stanford University, 2001
- “The Price Impact and Survival of Irrational Traders”
  - New York University, 2002
  - London Business School, 2002
  - University of Minnesota, 2002
  - University of Maryland, 2003
  - Stockholm School of Economics, 2003
  - Duke University, 2004
  - Oslo University, 2004
  - University of Vienna, 2004
  - Wharton School, 2004
  - University of Geneva, 2004
  - University of Lausanne, 2004
- “Pricing American Options: A Duality Approach”
  - Gutmann Center, University of Vienna, 2004
- “Durability of Output and the Cross-Section of Stock Returns”
  - Goldman Sachs Asset Management, 2006
  - Brigham Young University, 2006
- “Futures Prices in a Production Economy with Investment Constraints”
  - Center for Energy and Environmental Policy Research workshop, MIT, 2006.
- “Displacement Risk and Asset Returns.” Previously circulated under the title “The Demographics of Innovation and Asset Returns”
  - University of Lausanne, 2008
  - Boston University, 2008
  - London School of Economics, 2008
  - London Business School, 2008
  - Q-Group Meeting, Fall 2009
  - Columbia University, 2009
- “Growth Opportunities and Investment-Specific Technology Shocks”
  - SQA Meeting, New York, 2009
  - SITE Conference, Stanford University, 2009

- University of Texas, Austin, 2010
  - Boston University, 2011
- “Mutual Fund Trading Pressure: Firm-Level Stock Price Impact and Timing of SEOs”
  - London School of Economics, 2009
- “Firm Characteristics and Stock Returns: The Role of Investment-Specific Shocks”
  - University of Chicago, 2011
  - Princeton University, 2011
  - NYU, 2012
  - Catolica Lisbon, 2012
  - Bocconi University, 2012
  - Vienna Graduate School of Finance, 2012
  - Duke University, 2012
  - Imperial College Business School, 2012
  - Warwick Business School, 2012
  - D.E Shaw Group, 2013
- “Winners and Losers: Creative Destruction and the Stock Market”
  - Washington University, St. Louis, 2012
  - University of Geneva, 2013
  - University of Lausanne, 2013
  - Rice University, 2013
  - University of Connecticut, 2013
  - Barclays, 2014
  - Stockholm School of Economics, 2014
  - University of South Australia, 2014
  - University of New South Whales, 2014
  - University of Sydney, 2014
  - University of Technology Sydney, 2014
  - Magill University, 2014
  - Emory, 2015
  - Wharton, 2015
  - Georgetown University, 2015
  - University of Washington, Seattle, 2015
  - Swiss Finance Institute, Lugano, 2015
  - Erasmus University, Rotterdam, 2015
  - Copenhagen Business School, 2015
  - University of Miami, 2015
  - Monash University, Melbourne, 2016
  - Baruch College, 2016
  - HEC, Paris, 2016
  - Tinbergen Institute, Amsterdam, 2016
  - Catolica, Lisbon, 2016
  - University of Texas, Dallas, 2016



- University of Arizona, 2016
- Office of Financial Research, U.S. Department of the Treasury, 2016
- HKUST, Hong Kong, 2016
- CUHK, Hong Kong, 2016
- UHK, Hong Kong, 2016
- Georgia Tech, 2017
- “Technological Innovation, Resource Allocation, and Growth”
  - PanAgora Asset Management, 2013
  - SQA Meeting, New York, 2015
- “Measuring the “Dark Matter” in Asset Pricing Models”
  - Red Rock Finance Conference, Salt Lake City, 2013
  - London School of Economics, 2014
  - Collegio Carlo Alberto, 2014
  - Northwestern University, 2014
  - University of Chicago, 2014
  - Cheung Kong Graduate School of Business, 2014
  - Shanghai Advanced Institute of Finance, 2014
- “Accuracy Verification for Numerical Solutions of Equilibrium Models”
  - INSEAD, 2016
  - UC Berkeley, 2017
  - UCLA, 2017
- “Technological Innovation and the Distribution of Labor Income Growth”
  - Duke University, 2018
  - UNC, 2018
  - Stanford, 2018
  - USC, 2018
  - UIUC, 2018
  - Frankfurt School of Finance & Management, 2018
  - Goethe University Frankfurt, 2018
  - Luxembourg School of Finance, 2018

### **Presentations at Conferences and Professional Societies**

- “Irreversible Real Investment and Asset Prices,” Western Finance Association Meetings, 1999.
- Discussion, Western Finance Association Meetings, 1999.
- “Catching Up with the Joneses: Heterogeneous Preferences and the Dynamics of Asset Prices,”
  - Western Finance Association Meetings, 2000.
  - National Bureau of Economic Research Asset Pricing Meeting, Fall 2000

- Platinum Hill Partners, CT, 2000.
- “Risk Aversion and Optimal Portfolio Policies in Partial and General Equilibrium Economies,” Western Finance Association Meetings, 2000.
- “Equilibrium Cross-Section of Returns,” National Bureau of Economic Research Summer Institute, 2001.
- Discussion, American Finance Association Meetings, 2001.
- Discussion, Western Finance Association Meetings, 2001.
- “Pricing American Options: A Duality Approach,” Risk Conference, 2002.
- Discussion, American Finance Association Meetings, 2003.
- “The Survival and Price Impact of Irrational Traders,”
  - National Bureau of Economic Research Summer Institute, 2002.
  - Texas Finance Festival, 2003.
- Discussion, UBC Finance Conference, 2003.
- Two discussions, American Finance Association Meetings, 2004.
- Discussion, National Bureau of Economic Research Summer Institute, 2004.
- Discussion, National Bureau of Economic Research Fall Meetings, 2004.
- Discussion, American Finance Association Meetings, 2005.
- Discussion, Duke Finance Conference, 2005.
- Discussion, IDC Herzliya, 2005.
- Discussion, Western Finance Association Meetings, 2005.
- Discussion, National Bureau of Economic Research Fall Meetings, 2005.
- Discussion, Bureau of Economic Research, Universities Research Conference, 2005.
- Discussion, Western Finance Association Meetings, 2006.
- Discussion, National Bureau of Economic Research Summer Institute, 2006.
- “Futures Prices in a Production Economy with Investment Constraints,” Center for Energy and Environmental Policy Research workshop, MIT, 2006.
- Discussion, National Bureau of Economic Research Summer Institute, 2007.
- Discussion, Duke/UNC Asset Pricing Conference, 2007.
- “Growth Opportunities and Investment-Specific Technology Shocks,”
  - North American Econometric Society Meeting, 2009.
  - American Economic Association Meeting, 2010.
- Discussion, American Economic Association Meeting, 2010.
- Discussion, American Economic Association Meeting, 2011.
- Panel discussion, American Economic Association Meeting, 2011.
- Discussion, Texas Finance Festival, 2012.
- “Firm Characteristics and Stock Returns: The Role of Investment-Specific Shocks,”
  - University of British Columbia Summer Finance Conference, 2012
  - American Finance Association Meetings, San Diego 2013.
- Discussion, American Economic Association Meetings, San Diego 2013.

- “Measuring the “Dark Matter” in Asset Pricing Models.” Red Rock Finance Conference, 2013.
- “Economic Activity of Firms and Asset Prices.” Annual Review of Financial Economics Conference, Cambridge MA, 2013
- Discussion, American Finance Association Meetings, Philadelphia, 2014.
- “Accuracy Verification for Numerical Solutions of Equilibrium Models.”
  - Minnesota Macro-Asset Pricing Conference, 2013
  - Duke-UNC Asset Pricing Conference, 2014
  - Society for Economic Dynamics Annual Meeting, Toronto 2014
- “Technological Innovation: Winners and Losers.” QPS Advisory Council, Barclays, New York, 2014
- “Risk and Asset Composition.” European Summer Symposium in Financial Markets, Gerzensee, 2014.
- Discussion, American Finance Association Meetings, Boston, 2015.
- CME-MSRI Prize, panel discussion, 2015.
- Keynote address, “Technologic Innovation and the Stock Market,” 2016 Finance Down Under conference.
- Discussion, International Conference of Sovereign Bond Markets, New York, 2016.
- Discussion, Western Finance Association Meetings, 2016.
- Discussion, NBER Long Term Investing Conference, 2016.
- “Technological Innovation and the Distribution of Labor Income Growth,” Advances in Macro-Finance Tepper-LAEF Conference, Pittsburgh 2017.
- “Winners and Losers: Creative Destruction and the Stock Market,” AEA Meetings, 2017.
- Discussion, NBER Capital Markets and the Economy Meeting, Summer 2017.
- Discussion, Miami Behavioral Finance Conference, 2017.
- Discussion, American Finance Association Meetings, Philadelphia, 2018.
- Discussion, American Economic Association Meetings, Atlanta, 2019.