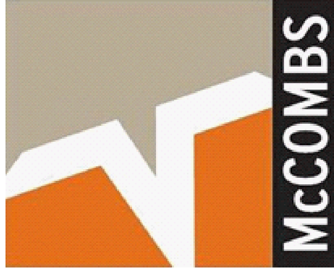

Finance 395

Asset Pricing Theory

Spring 2019

Monday 2:00 - 5:00pm GSB 5.154

Instructor

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Overview

This course is meant to be an introduction to the theory of asset pricing, and is intended for first-year PhD students in finance. We will discuss a wide range of topics ranging from no

arbitrage, state prices, consumption-based asset pricing, and factor models to more special topics including heterogeneous agent models, asymmetric information, behavioral finance, and macrofinance. Though the course will emphasize static and discrete-time frameworks, we will also cover some of the basics of continuous-time.

Textbooks

Textbooks are recommended as supplementary material but are not required. Bolded papers on the reading list are the expected reading for each class. Toward the topics portion of the course, more emphasis will be placed on certain papers from the reading list.

- John Y. Campbell, Andrew Lo, and A. Craig MacKinlay, The Econometrics of Financial Markets, Princeton University Press, 1997
- Campbell, John Y. and Luis M. Viceira, Strategic Asset Allocation: Portfolio Choice for Long-Term Investors, Oxford University Press, 2002
- Cochrane, John H., Asset Pricing, Princeton University Press, revised ed., 2005
- Duffie, Darrel, Dynamic Asset Pricing Theory, Third Edition, Princeton University Press, 2001
- Skiadas, Costis Asset Pricing Theory, Princeton University Press, 2009

Course Requirements and Grades

The overall grade is calculated based on the following weighting scheme:

Midterm (30%), Final Exam (20%), Homework (25%), Research Assignment (15%), Participation (10%)

Midterm

There will be a 2.5 hour midterm in class on Monday, March 11. No textbooks, formula sheets, or calculators will be allowed for the exam.

Homework

There will be weekly homework assignments of up to 5 problems. These can be found at the end of each set of lecture notes. You are responsible for completing all problems to receive credit for the assignment. Your grade, $\checkmark+$, $\checkmark$, or $\checkmark-$, will be based on your 4 best responses. Homeworks are due at the beginning of the following class.

Research Assignment

At the final day of class, there will be a three page (double-spaced, size 12 font) paper due that describes a research project that could be undertaken in asset pricing theory. The goal is to motivate a research idea, based on a topic we saw in the course, conduct a short literature review, and write down a preliminary theoretical model and its asset pricing implications. You are encouraged to talk with the teaching assistant about potential topics once we reach the topics section of the course. It is difficult to construct a novel mechanism, especially given the short length of the paper, so ideally one would find an application of one of the models we discuss in explaining some empirical phenomenon. I will emphasize that this is a theory, and not an empirical, exercise.

On the last day of class, each student will be required to present his or her research assignment to the class in a seminar style presentation with slides. This counts toward the participation part of the final grade. Each student will also be responsible for discussing another student's paper. This will also count toward participation.

Appeal Policy

Since the teaching assistant will grade all weekly assignments and exams, all appeals of grades should first be addressed to the teaching assistant in writing within one week. Appeals of research assignments should be addressed to the instructor. Verbal appeals will not be accepted, and you must provide a written statement about where and why there is a problem. Please note that we reserve the right to regrade the entire exam or assignment as part of the regrade process. Exams or assignments written in pencil cannot be regraded.

Tentative Syllabus

1. Mathematical Preliminaries

a. Notation

b. Linear Algebra and Projection Theory

c. Information and Random Variables

d. Static and Dynamic Optimization

f. Continuous-time Basics

g. Campbell-Viceira approximation

2. Utility Theory and Choice Under Uncertainty

a. Utility theory

b. Risk aversion

c. Tractable utility functions

d. Rabin critique

e. General principles of portfolio choice

f. Portfolio choice with different utility functions

3. Fundamentals of Asset Pricing and Present Value Analysis

a. Market Efficiency

b. Present Value Models

c. Rational Bubbles

d. Historical Record on Bubbles

e. Market Efficiency Revisted

4. Arbitrage and the Stochastic Discount Factor

a. No Arbitrage and the Stochastic Discount Factor

b. Risk-Return Decomposition and Bounds on SDF

c. Complete Markets

d. Incomplete Markets

e. Utility Maximization and Euler Equations

f. Ross Recovery Theorem

g. Multi-Factor Models and Nominal SDF

5. Portfolio Choice, CAPM, and APT

a. Static portfolio choice

b. Mutual Fund Theorem

c. Capital Asset Pricing Model

d. Arbitrage Pricing Theory

e. Dynamic Portfolio Choice and ICAPM

6. Consumption-Based Asset Pricing
a. Consumption-based Asset Pricing Puzzles
b. Epstein-Zin Preferences and Long-Run Risk
c. Ambiguity Aversion
d. Habit Formation
e. Investor Heterogeneity
f. Consumption in Equilibrium Asset Pricing

7. Production-based Asset Pricing
a. Q-Theory of Investment
b. Investment and Spanning the SDF
c. Production and Firm Characteristics
d. Production in General Equilibrium

8. Heterogeneous Agent Models
a. Socially optimal market structure with limited markets
b. Constrained inefficiency of incomplete markets
c. Limitations because of borrowing and collateral constraints

9. Behavioral Finance and Bubbles
a. A World of Puzzles
b. Introduction to Behavioral Finance
c. Biases in Behavior and Preferences
d. Biases in Belief Formation and Information Processing

10. Macro Finance
a. Introduction
b. Credit Constraints
c. Liquidity Demand
d. Intermediary Asset Pricing
e. Political Uncertainty

11. Asymmetric Information and Market Microstructure

a. Modeling Information

b. Agreeing to Disagree and No Trade Theorem

c. Static Models of Asymmetric Information

d. Dynamic Models of Asymmetric Information

e. Asset Pricing with Asymmetric Information

f. Real Effects

12. Limits to Arbitrage

a. Noise Trader Risk

b. Performance-based Arbitrage

c. Margin Consraints

d. Coordination Failure

13. TBA

14. Student presentations on research assignment

<u>Readings</u>

<u>1. Mathematical Preliminaries</u>

Campbell and Viceira Section 2.1.3.

Duffie Chapters 3 and 4

Genotte, Gerard, Optimal Portfolio Choice Under Incomplete Information, Journal of Finance 41 (1986), 733-746.

<u>2. Utility Theory and Choice Under Uncertainty</u>

Abel, Andrew B., Asset Prices under Habit Formation and Catching up with the Joneses, American Economic Review 80(2) (1990), 38-42.

Arrow, Kenneth, The Theory of Risk Aversion, in Essays in the Theory of Risk Bearing, Markham (1971).

Barberis, Nicholas, Ming Huang, and Richard H. Thaler, Individual Preferences, Monetary Gambles, and Stock Market Participation: A Case for Narrow Framing, American Economic Review 96 (2006), 1069-1090.

Basak, Suleyman and Georgy Chabakauri, Dynamic Mean-Variance Asset Allocation, Review of Financial Studies 23 (2012), 2970-3016.

Campbell, John Y. and John Cochrane, By Force of Habit: A Consumption-Based Explanation of Aggregate Stock Market Behavior, Journal of Political Economy 107(2) (1999), 205-251.

Chetty, Raj and Adam Szeidl, Consumption Commitments and Risk Preferences, Quarterly Journal of Economics 122(2) (2007), 831-877.

Condie, Scott and Jayant Ganguli, Ambiguity and rational expectations equilibria, Review of Economic Studies, 78 (2012), 821–845.

Dow, James and Sérgio Ribeiro da Costa Werlang, Uncertainty Aversion, Risk Aversion, and the Optimal Choice of Portfolio, Econometrica, 60 (1992), 197-204.

Epstein, Larry G. and Martin Schneider, Recursive Multiple-priors, Journal of Economic Theory 113, 1 (2003), 1–31

Epstein, Larry G. and Stanley E. Zin, Substitution, Risk Aversion, and the Temporal Behavior of Consumption and Asset Returns: A Theoretical Framework, Econometrica 57(4) (1989), 937-969.

Gilboa, Itzhak and David Schmeidler, Maxmin Expected Utility with Nonunique Prior, Journal of Mathematical Economics 18 (1989), 141-153.

Gollier, Christian, The Economics of Risk and Time, MIT Press, 2001, Ch 1-3.

Hansen, Lars Peter and Thomas J. Sargent, Robust Control and Model Uncertainty, American Economic Review 91 (2001), 60-66.

Hansen, Lars Peter and Thomas J. Sargent, Risk, Uncertainty, and Value, Working Paper University of Chicago and NYU (2013).

Hansen, Lars Peter and Thomas J. Sargent, Uncertainty Prices when Beliefs are Tenuous, working paper (2016)

Kahneman, Daniel and Amos Tversky, Prospect Theory: An Analysis of Decision under Risk, Econometrica 47(2) (1979), 263-291.

Kimball, Miles, Precautionary Saving in the Small and in the Large, Econometrica 58 (1990), 53-73.

Kreps, David M., Notes on the Theory of Choice, Westview Press, 1988.

Kreps, David M. and Evan. L. Porteus, Temporal Resolution of Uncertainty and Dynamic Choice Theory, Econometrica 46(1) (1978), 185-200.

Mankiw, N. Gregory, and Stephen P. Zeldes, The Consumption of Stockholders and Non-stockholders, Journal of Financial Economics 29.1 (1991), 97-112.

Pratt, John W., Risk Aversion in the Small and in the Large, Econometrica 32 (1964), 122-136.

Rabin, Matthew, Risk Aversion and Expected Utility Theory: A Calibration Theorem, Econometrica 68 (2000), 1281-1292.

Rothschild, Michael and Joseph E. Stiglitz, Increasing Risk I: A Definition, Journal of Economic Theory 2 (1970), 225-243.

Samuelson, Paul, Why We Should Not Make Mean Log of Wealth Big Though Years to Act are Long, Journal of Banking and Finance (1979), 305-307.

3. Market Efficiency and Present Value Analysis

Campbell, Lo, and MacKinlay Chapter 7

Abreu, Dilip, and Markus K. Brunnermeier, Bubbles and crashes, Econometrica 71.1 (2003): 173-204.

Acharya, Viral V. and Lasse H. Pedersen, Asset Pricing with Liquidity Risk, Journal of Financial Economics 77 (2005), 375-410.

Asness, Clifford S., Tobias Moskowitz, and Lasse Pedersen, Value and Momentum Everywhere, Journal of Finance 68.3 (2013), 929-985.

Bernard, Victor L., and Jacob K. Thomas, Post-earnings-announcement drift: delayed price response or risk premium?, Journal of Accounting Research (1989), 1-36.

Board of Governors of the Federal Reserve System, Banking and Monetary Statistics, Washington D.C.: U.S. Government Printing Office (1943).

Bondt, Werner FM, and Richard Thaler, Does the stock market overreact?, The Journal of Finance 40.3 (1985), 793-805.

Campbell, John Y., A Variance Decomposition for Stock Returns, Economic Journal 101 (1991), 157-179.

Campbell, John Y. and Robert J. Shiller, The Dividend-Price Ratio and Expectations of Future Dividends and Discount Rates, Review of Financial Studies 1 (1988), 195-228.

Campbell, John Y. and Tuomo Vuolteenaho, Bad Beta, Good Beta, American Economic Review 94.5 (2004), 1249-1275.

Cohen, Randolph, Christopher Polk, and Tuomo Vuolteenaho, The Price is (Almost) Right, Journal of Finance 64 (2009), 2739-2782.

DeFusco, Anthony, Charles Nathanson, and Eric Zwick, Speculative Dynamics of Prices and Volume, mimeo Kellogg and University of Chicago (2016).

Diba, B. T., and H. I. Grossman, The Theory of Rational Bubbles in Stock Prices, Economic Journal 98.392 (1988), 746-754.

Fama, Eugene and Kenneth French, The Cross-Section of Expected Stock Returns, Journal of Finance 47.2 (1992), 427-465.

Fama, Eugene and Kenneth French, Common Risk Factors in the Returns on Stocks and Bonds, Journal of Financial Economics 33.1 (1993), 3-56.

Fama, Eugene and Kenneth French, Value versus Growth: The International Evidence, Journal of Finance 53.6 (1998), 1975-1999.

Farhi, Emmanuel and Jean Tirole, Bubbly Liquidity, Review of Economic Studies 79.2 (2011), 678-706.

Garber, P., Famous First Bubbles: The Fundamentals of Early Mania, Cambridge, Ma: MIT Press, 1st ed (1980).

Geanakoplos, John, The Leverage Cycle.In D. Acemoglu, K. Rogoff and M. Woodford, eds., NBER Macroeconomic Annual 2009, vol. 24, 1-65, University of Chicago Press, 2010.

Gorton, Gary, and Guillermo Ordoñez, Collateral crises, The American Economic Review 104.2 (2014), 343-378.

Griffin, John M., Nicholas H. Hirschey, and Patrick J. Kelly, How Important is the Financial Media in Global Markets?, Review of Financial Studies 24.12, 3941-3992.

Harvey, Campbell, Yan Liu, and Heqing Zhu, ...and the Cross-Section of Expected Returns, Review of Financial Studies 29.1 (2015), 5-68.

Hirschey, M., How Much is a Tulip Worth?, Financial Analysts Journal 54.4 (1998), 11-17.

Jegadeesh, Narasimhan, and Sheridan Titman, Returns to buying winners and selling losers: Implications for stock market efficiency, The Journal of Finance 48.1 (1993), 65-91.

Kimball, Miles S., Precautionary Savings in the Small and in the Large, Econometrica 58.1 (1990), 53-73.

Martin, Alberto and Jaume Ventura, Economic Growth with Bubbles, American Economic Review 102.6 (2012), 3033-3058.

Mintz, Ilse, The Deterioration in the Quality of Foreign Bonds Issued in the United States, 1920-1930, New York: NBER (1951).

New York Stock Exchange, Year Book, 1930-1931, New York (1931).

Pastor, Lubos and Robert Stambaugh, Liquidity Risk and Expected Stock Returns, Journal of Political Economy 111 (2003), 642-685.

Pastor, Lubos and Pietro Veronesi, Stock Valuation and Learning About Profitability, Journal of Finance 58 (2003), 1749-1789.

Pastor, Lubos and Pietro Veronesi, Was There a Nasdaq Bubble in the Late 1990's?, Journal of Financial Economics 81 (2006), 61-100.

Petersen, Mitchell A., Estimating Standard Errors in Finance Panel Data Sets: Comparing Approaches, Review of Financial Studies 22(1) (2009), 435-480.

Pierce, Phyllis, The Dow Jones Averages, 1885-1985, Homewood: Dow Jones-Irwin (1986).

Tirole, Jean, Asset Bubbles and Overlapping Generations, Econometrica 53.6 (1985), 1499-1528.

Vuolteenaho, Tuomo, What Drives Firm-Level Stock Returns?, Journal of Finance 57.1, (2002), 233-264.

West, Kenneth D., Dividend Innovations and Stock Price Volatility, Econometrica 56.1 (1988), 37-61.

White, Eugene, The Stock Market Boom and Crash of 1929 Revisited, Journal of Economic Perspectives 4.2 (1990), 67-83.

Xiong, Wei and Jialin Yu, The Chinese Warrants Bubble, American Economic Review 101.6 (2011), 2723-2753.

4. Arbitrage and the Stochastic Discount Factor

Cochrane Chapters 3-4, 6-8, and Section 20.2

Duffie Chapter 2

Alvarez, Fernando and Urban Jermann, Using Asset Prices to Measure the Persistence of the Marginal Utility of Wealth, Econometrica 73 (2005), 1977-2016.

Backus, David, Mikhail Chernov, and Ian Martin, Disasters Implied by Equity Index Options, Journal of Finance 66(6) (2009), 1969-2012.

Borovicka, Jaroslav, Lars Peter Hansen, and Jose A. Scheinkman, Misspecified Recovery, Journal of Finance 71(6) (2016), 2493-2544.

Breeden, Douglas T. and Robert H. Litzenbergr, Prices of State-Contingent Claims Implicit in Option Prices, Journal of Business 51(4) (1978), 621-651.

Cox, John C. and Chi-fu Huang (1989), Optimal Consumption and Portfolio Policies when Assets Follow a Diffusion Process, Journal of Economic Theory 49, 33-83.

Debreu, Gerard, Theory of Value, John Wiley & Sons , New York (1952).

Hansen, Lars Peter and Ravi Jagannathan, Implications for Security Market Data for Models of Dynamic Economies, Journal of Political Economy 99 (1991), 225-262.

Hansen, Lars Peter and Jose' Scheinkman, Long-Term Risk: An Operator Approach, Econometrica 77 (2009), 177-234.

Lucas, Robert E., Asset Prices in an Exchange Economy, Econometrica 46 (1978), 1429-1445.

Martin, Ian, On the Valuation of Long-Dated Assets, Journal of Political Economy 120 (2012), 346-358.

Roll, Richard, A Critique of Asset Pricing Theory's Tests: Part 1, Journal of Financial Economics 4 (1976), 129-176.

Ross, Stephen A., The Arbitrage Theory of Capital Asset Pricing, Journal of Economic Theory 13 (1976), 341-360.

Ross, Stephen A., The Recovery Theorem, Journal of Finance 70 (2015), 615-648.

Shiller, Robert J., Consumption, Asset Markets and Macroeconomic Fluctuations, Carnegie-Rochester Conference Series on Public Policy 17 (1982), 203-238.

5. Portfolio Choice, CAPM, and APT

Campbell and Viceira Chapters 2-4, Section 6.1.1

Cochrane Chapters 5 & 9

Black, Fischer, Capital Market Equilibrium with Restricted Borrowing, Journal of Business 45 (1972), 444-454.

Campbell, John, Martin Lettau, Burton Malkiel, and Yexiao Xu, Have Individual Stocks Become More Volatile? An Empirical Exploration of Idiosyncratic Risk, Journal of Finance 56 (2001), 1-43

Canner, Niko, N. Gregory Mankiw, and David Weil, An Asset Allocation Puzzle, American Economic Review 87(1) (1997), 181-191.

Cox, John C. and Chi-fu Huang, Optimal Consumption and Portfolio Policies when Assets Follow a Diffusion Process, Journal of Economic Theory 49 (1989), 33-83.

DeMiguel, Victor, Lorenzo Garlappi, and Raman Uppal, Optimal versus Naïve Diversification: How Inefficient is the 1/N Portfolio Strategy?, Review of Financial Studies 22 (2009), 1915-1953.

Fama, Eugene F. and Kenneth R. French, Common Risk Factors in the Returns on Stocks and Bonds, Journal of Financial Economics 33 (1993), 3-56.

Fama, Eugene F. and Kenneth R. French, Multifactor Explanations of Asset Pricing Anomalies, Journal of Finance 51 (1996), 55-84.

Fama, Eugene F. and Kenneth R. French, The Capital Asset Pricing Model: Theory and Evidence, Journal of Economic Perspectives 18(3) (2004), 25-46.

Frazzini, Andrea and Lasse Heje Pedersen, Betting Against Beta, Journal of Financial Economics 111 (2014), 1-25.

Jegadeesh, Narasimhan and Sheridan Titman, Returns to Buying Winners and Selling Losers: Implications for Stock Market Efficiency, Journal of Finance 48 (1993), 65-92.

Lintner, John, The Valuation of Risky Asset and the Selection of Risky Investments in Stock Portfolios and Capital Budgets, Review of Economics and Statistics 47 (1965), 13-37.

Lewellen, Jonathan and Stefan Nagel, The Conditional CAPM Does Not Explain Asset-Pricing Anomalies, Journal of Financial Economics 82 (2006), 289-314.

Markowitz, Harry, Portfolio Selection, Journal of Finance 7 (1952), 77-91.

Merton, Robert C., Lifetime Portfolio Selection under Uncertainty: The Continuous-Time Case, Review of Economics and Statistics 51 (1969), 247-257

Merton, Robert, An Intertemporal Capital Asset Pricing Model, Econometrica 41 (1973), 867-887.

Roll, Richard, A Critique of the Asset Pricing Theory's Tests: Part I, Journal of Financial Economics 4 (1976), 129-176

Ross, Stephen A., The Arbitrage Theory of Capital Asset Pricing, Journal of Economic Theory 13 (1976), 341-360.

Samuelson, Paul A., Lifetime Portfolio Selection by Dynamic Stochastic Programming, Review of Economics and Statistics 51 (1969), 239-246.

Sharpe, William F., Capital Asset Prices: A Theory of Market Equilibrium Under Conditions of Risk, Journal of Finance 19 (1964), 425-442.

6. Consumption-Based Asset Pricing

Abel, Andrew B., Asset Prices Under Habit Formation and Catching Up with the Joneses, American Economic Review 2 (1990), 38-42.

Anderson, Evan W., Lars Peter Hansen, and Thomas J. Sargent, A Quartet of Semigroups for Model Specification, Robustness, Prices of Risk, and Model Detection, Journal of the European Economic Association 1(1) (2003), 68-123.

Barro, Robert J., Rare Disasters and Asset Markets in the Twentieth Century, Quarterly Journal of Economics 121 (2006), 823-866.

Bansal, Ravi and Amir Yaron, Risk for the Long Run: a Potential Resolution of Asset Pricing Puzzles, Journal of Finance 59 (2004), 1481-1509.

Beeler, Jason and John Y. Campbell, The Long-Run Risks Model and Aggregate Asset Prices: An Empirical Assessment, Critical Finance Review 1 (2012), 141-182.

Breeden, Douglas, An Intertemporal Asset Pricing Model with Stochastic Consumption and Investment Opportunities, Journal of Financial Economics 7 (1979), 265-296.

Campbell, John Y., Consumption-Based Asset Pricing, in George Constantinides, Milton Harris, and Rene Stulz eds., Handbook of the Economics of Finance, Volume 1, North-Holland (2003).

Campbell, John Y. and John C. Cochrane, By Force of Habit: A Consumption-Based Explanation of Aggregate Stock Market Behavior, Journal of Political Economy 107 (1999), 205-251.

Constantinides, George, Habit Formation: A Resolution of the Equity Premium Puzzle, Journal of Political Economy 98 (1990), 519-543.

Constantinides, George M., John B. Donaldson, and Rajnish Mehra, Junior Can't Borrow: A New Perspective on the Equity Premium Puzzle, Quarterly Journal of Economics 117 (2002), 269-296.

Constantinides, George M. and Darrell Duffie, Asset Pricing with Heterogeneous Consumers, Journal of Political Economy 104 (1996), 219-240.

Epstein, Larry G. and Martin Schneider, Ambiguity, Information Quality, and Asset Pricing, Journal of Finance 63 (2008), 197-228.

Epstein, Larry G. and Stanley E. Zin, Substitution, Risk Aversion, and the Temporal Behavior of Consumption and Asset Returns, a Theoretical Framework, Econometrica 57 (1989), 937-969.

Gilboa, Itzhak and David Schmeidler, Maxmin Expected Utility with Nonunique Prior, Journal of Mathematical Economics 18 (1989), 141-153.

Grossman, Sanford J. and Robert J. Shiller, Consumption Correlatedness and Risk Measurement in Economies with Non-Traded Assets and Heterogeneous Information, Journal of Financial Economics 10 (1982), 195-210.

Hansen, Lars Peter and Thomas J. Sargent, Risk Sensitivity, Model Uncertainty, and Asset Pricing, Chapter 14 in Robustness, Princeton University Press (2008).

Kocherlakota, Narayana R., The Equity Premium: It's Still a Puzzle, Journal of Economic Literature 34 (1996), 42-71.

Lettau, Martin and Sydney Ludvigson, Consumption, Aggregate Wealth, and Expected Stock Returns, Journal of Finance 56 (2001), 815-849.

Lucas, Robert E., Asset Prices in an Exchange Economy, Econometrica 46 (1978), 1429-1445.

Martin, Ian, Consumption-Based Asset Pricing with Higher Cumulants, Review of Economic Studies 80 (2013), 745-773.

Mehra, Rajnish and Edward C. Prescott, The Equity Premium: A Puzzle?, Journal of Monetary Economics 15 (1985), 145-161.

Mehra, Rajnish and Edward C. Prescott, The Equity Premium: A Solution?, Journal of Monetary Economics 22 (1988), 133-136.

Parker, Jonathan and Christian Julliard, Consumption Risk and Cross-Sectional Returns, Journal of Political Economy 113 (2005), 185-222.

Vissing-Jorgensen, Annette, Limited Asset Market Participation and the Elasticity of Intertemporal Substitution, Journal of Political Economy 110 (2002), 825-853.

Wachter, Jessica, Can Time-Varying Risk of Rare Disasters Explain Aggregate Stock Market Volatility, Journal of Finance (2013), 987-1035.

Weil, Philippe, The Equity Premium Puzzle and the Risk-free Rate Puzzle, Journal of Monetary Economics 24 (1989), 401-421.

Weitzman, Martin L., Subjective Expectations and Asset-Return Puzzles, American Economic Review 97(4) (2007), 1102-1130.

7. Production-based Asset Pricing

Belo, Frederico, Production-based Measures of Risk for Asset Pricing, Journal of Monetary Economics 57 (2010), 146-163.

Bloom, Nicholas, The Impact of Uncertainty Shocks, Econometrica 77 (2009), 623-685.

Cochrane, John H., A Cross-Sectional Test of an Investment-Based Asset Pricing Model, Journal of Political Economy 104 (1996), 572-621.

Croce, Mariano, Long-run Productivity Risk: A New Hope for Production-Based Asset Pricing, Journal of Monetary Economics 66 (2014), 13-31.

Gomes, João F., Leonig Kogan, and Motohiro Yogo, Durability of Output and Expected Stock Returns, Journal of Political Economy 117 (2009), 941-986.

Jermann, Urban J., Asset Pricing in Production Economies, Journal of Monetary Economics 41 (1998), 257-275.

Jermann, Urban J., A Production-based Model for the Term Structure, Journal of Financial Economics 109 (2013), 293-306.

Kaltenbrunner, Georg and Lars Lochstoer, Long-Run Risk through Consumption Smoothing, Review of Financial Studies 23 (2010), 3190-3224.

Liu, Laura Xiaolei, Toni M. Whited, and Lu Zhang, Investment-Based Expected Stock Returns, Journal of Political Economy 117 (2009), 1105-1139.

Kogan, Leonid and Dimitris Papanikolaou, Economic Activity of Firms and Asset Prices, Annual Review of Financial Economics 4 (2012), 361-384.

Kogan, Leonid and Dimitris Papanikolaou, Growth Opportunities, Technology Shocks, and Asset Prices, Journal of Finance 69 (2014), 675-718.

Papanikolaou, Dimitris, Investment Shocks and Asset Prices, Journal of Political Economy 119 (2011), 639-685.

Zhang, Lu, The Value Premium, Journal of Finance 60 (2005), 67-103.

8. Heterogeneous Agent Models

Campbell, Chapter 10

Aiyagari, S Rao, Uninsured Idiosyncratic Risk and Aggregate Saving, The Quarterly Journal of Economics 109 (1994), 659–684.

Alvarez, Fernando and Urban Jermann, Efficiency, Equilibrium, and Asset Pricing with Risk of Default, Econometrica 68 (2000), 775-797.

Athanasoulis, Stefano and Robert Shiller, The Significance of the Market Portfolio, Review of Financial Studies 13 (2000), 301-329.

Bewley, Truman, Stationary Monetary Equilibrium with a Continuum of Independently Fluctuating Consumers, In Contributions to Mathematical Economics in Honor of Gerard Debreu. , ed. Werner Hildenbrand and Andreu Mas-Collel. Amsterdam:North-Holland (1986).

Chien, Yi Li, Harold Cole, and Hanno Lustig, A Multiplier Approach to Understanding the Macro Implications of Household Finance. Review of Economic Studies 78 (2011), 199-234.

Chien, Yi Li and Hanno Lustig, The Market Price of Aggregate Risk and the Wealth Distribution, Review of Financial Studies 23 (2010), 1596-1650.

Constantinides, George M. and Darrell Duffie, Asset Pricing with Heterogeneous Consumers, Journal of Political Economy 104 (1996), 219-240.

Danthine, Jean-Pierre, John B. Donaldson, and Paolo Siconolfi, Distribution Risk and Equity Returns, in The Equity Risk Premium, North Holland Handbook of Finance Series, ed. (2006).

Davila, Julio, Jay H. Hong, Per Krusell, and Jose-Victor Rios-Rull, Constrained Efficiency in the Neoclassical Growth Model with Uninsurable Idiosyncratic Shocks, PIER Working Paper Archive 05-023, Penn Institute for Economic Research, Department of Economics, University of Pennsylvania (2005).

Favilukis, Jack, Inequality, Stock Market Participation, and the Equity Premium, Journal of Financial Economics 107, 740-759.

Gârleanu, Nicolae Leonid, Kogan, and Stavros Panageas, Displacement Risk and Asset Returns, Journal of Financial Economics 105 (2012), 491-510.

Gârleanu, Nicolae and Stavros Panageas, Young, Old, Conservative, and Bold: The Implications of Heterogeneity and Finite Lives for Asset Pricing, Journal of Political Economy 123 (2015), 670-685.

Geanakoplos, John, The Leverage Cycle.In D. Acemoglu, K. Rogoff and M. Woodford, eds., NBER Macroeconomic Annual 2009, vol. 24, 1-65, University of Chicago Press, 2010.

Geanakoplos, John and Heracles Polemarchakis, Existence, Regularity, and Constrained Suboptimality of Competitive Allocations When the Asset Market Is Incomplete, Cowles Foundation for Research in Economics Discussion Paper 764 (1985).

Gollier, Christian, Wealth Inequality and Asset Pricing, Review of Economic Studies 68 (2001), 181-203.

Grossman, Sanford J. and Robert J. Shiller, Consumption Correlatedness and Risk Measurement in Economies with Non-Traded Assets and Heterogeneous Information, Journal of Financial Economics 10 (1982), 195-210.

Hart, Oliver D., On the Optimality of Equilibrium when the Market Structure is Incomplete, Journal of Economic Theory 11 (1975), 418-443.

Harrison, J. Michael, and David M. Kreps, Speculative Investor Behavior in a Stock Market with Heterogeneous Expectations, The Quarterly Journal of Economics (1978), 323-336.

Huggett, Mark, The risk-free rate in heterogeneous-agent incomplete-insurance economies, Journal of Economic Dynamics and Control 17 (1993), 953–969.

Kocherlakota, Narayana and Luigi Pistaferri, Asset Pricing Implications of Pareto Optimality with Private Information, Journal of Political Economy 117 (2009), 555-590

Krueger, Dirk, Kurt Mitman, and Fabrizio Perri, Macroeconomics and Household Heterogeneity, mimeo NBER (2016).

Krusell, Per and Anthony A. Smith, Income and Wealth Heterogeneity in the Macroeconomy, Journal of Political Economy 106 (1998), 867-896.

Lustig, Hanno and Stijn Van Nieuwerburgh, Housing Collateral, Consumption Insurance and Risk Premia: an Empirical Perspective, Journal of Finance 60 (2005), 1167-1219.

Miller, Edward M. Risk, uncertainty, and divergence of opinion, The Journal of Finance 32.4 (1977), 1151-1168.

Pastor, Lubos and Pietro Veronesi, Income Inequality and Asset Prices Under Redistributive Taxation, mimeo University of Chicago (2015).

Stiglitz, Joseph E, The Inefficiency of the Stock Market Equilibrium, Review of Economic Studies 49 (1982), 241–61.

9. Behavioral Finance and Bubbles

Alpert, Marc, and Howard Raiffa, A progress report on the training of probability assessors.(1982).

Ang, Andrew, Robert J. Hodrick, Yuhang Xing, and Xiaoyan Zhang, The cross?section of volatility and expected returns, The Journal of Finance 61.1 (2006): 259-299.

Asness, Clifford S., Tobias J. Moskowitz, and Lasse Heje Pedersen, Value and momentum everywhere, The Journal of Finance 68.3 (2013), 929-985.

Barber, Brad M., and Terrance Odean, Trading is hazardous to your wealth: The common stock investment performance of individual investors, The Journal of Finance 55.2 (2000), 773-806.

Barberis, Nicholas, and Ming Huang, Mental accounting, loss aversion, and individual stock returns, The Journal of Finance 56.4 (2001), 1247-1292.

Barberis, Nicholas, and Wei Xiong, Realization utility, Journal of Financial Economics 104.2 (2012), 251-271.

Barberis, Nicholas, and Wei Xiong, What Drives the Disposition Effect? An Analysis of a Long-Standing Preference-Based Explanation, The Journal of Finance 64.2 (2009), 751-784.

Barberis, Nicholas, Andrei Shleifer, and Jeffrey Wurgler, Comovement, Journal of Financial Economics 75.2 (2005), 283-317.

Barberis, Nicholas, Andrei Shleifer, and Robert Vishny, A model of investor sentiment, Journal of Financial Economics 49.3 (1998), 307-343.

Barberis, Nicholas, Robin Greenwood, Lawrence Jin, and Andrei Shleifer, X-CAPM: An extrapolative capital asset pricing model, Journal of Financial Economics 115.1 (2015): 1-24.

Barberis, Nicholas, Robin Greenwood, Lawrence Jin, and Andrei Shleifer, Extrapolation and bubbles, mimeo Yale and Harvard University.

Benartzi, Shlomo, Excessive extrapolation and the allocation of 401 (k) accounts to company stock, The Journal of Finance 56.5 (2001), 1747-1764.

Benartzi, Shlomo, and Richard H. Thaler, Myopic loss aversion and the equity premium puzzle, Quarterly Journal of Economics 110.1 (1995), 73-92.

Berk, Jonathan B., Richard C. Green, and Vasant Naik, Optimal investment, growth options, and security returns, The Journal of Finance 54.5 (1999), 1553-1607.

Bernard, Victor L., and Jacob K. Thomas, Post-earnings-announcement drift: delayed price response or risk premium?, Journal of Accounting Research (1989), 1-36.

Bondt, Werner FM, and Richard Thaler, Does the stock market overreact?, The Journal of Finance 40.3 (1985), 793-805.

Campbell, John Y., and John H. Cochrane, By force of habit: A consumption-based explanation of aggregate stock market behavior, The Journal of Political Economy 107.2 (1999), 205-251

Campbell, John Y., Jens Hilscher, and Jan Szilagyi, In search of distress risk, The Journal of Finance 63.6 (2008), 2899-2939.

Chan, Louis KC, Jason Karceski, and Josef Lakonishok, The level and persistence of growth rates, The Journal of Finance 58.2 (2003), 643-684.

Chen, Joseph, Harrison Hong, and Jeremy C. Stein, Breadth of ownership and stock returns.Journal of Financial Economics 66.2 (2002), 171-205.

Cochrane, John H., A cross-sectional test of a production-based asset pricing model. No. w4025. National bureau of economic research, 1992.

Cooper, Michael J., Roberto C. Gutierrez, and Allaudeen Hameed, Market states and momentum, The Journal of Finance 59.3 (2004), 1345-1365.

Cox, John C., and Chi-fu Huang, Optimal consumption and portfolio policies when asset prices follow a diffusion process, Journal of Economic Theory 49.1 (1989), 33-83.

Curcuru, Stephanie, et al, Heterogeneity and portfolio choice: Theory and evidence, Handbook of Financial Econometrics 1 (2004), 337-382.

Daniel, Kent, David Hirshleifer, and Avanidhar Subrahmanyam, Investor psychology and security market under and overreactions, The Journal of Finance 53.6 (1998), 1839-1885.

Datar, Vinay T., Narayan Y. Naik, and Robert Radcliffe, Liquidity and stock returns: An alternative test, Journal of Financial Markets 1.2 (1998), 203-219.

Dhar, Ravi, and Ning Zhu, Up close and personal: Investor sophistication and the disposition effect, Management Science 52.5 (2006), 726-740.

Diether, Karl B., Christopher J. Malloy, and Anna Scherbina, Differences of opinion and the cross section of stock returns, The Journal of Finance 57.5 (2002), 2113-2141.

Dimson, Elroy, Paul Marsh, and Mike Staunton, Triumph of the optimists: 101 years of global investment returns, Princeton University Press, 2009.

Fama, Eugene F., and James D. MacBeth, Risk, return, and equilibrium: Empirical tests, The Journal of Political Economy (1973), 607-636.

Fama, Eugene F., and Kenneth R. French, Multifactor explanations of asset pricing anomalies, The Journal of Finance 51.1 (1996), 55-84.

Fama, Eugene F., and Kenneth R. French, The cross-section of expected stock returns, The Journal of Finance 47.2 (1992), 427-465.

Frazzini, Andrea, and Lasse Heje Pedersen, Betting against beta, Journal of Financial Economics 111.1 (2014), 1-25.

French, Kenneth R., and James M. Poterba, Investor diversification and international equity markets. No. w3609. National Bureau of Economic Research, 1991.

Froot, Kenneth A., and Emil M. Dabora, How are stock prices affected by the location of trade?, Journal of Financial Economics 53.2 (1999), 189-216.

Gervais, Simon, Ron Kaniel, and Dan H. Mingelgrin, The high-volume return premium, The Journal of Finance 56.3 (2001), 877-919.

Glaeser, Edward L., and Charles G. Nathanson, An extrapolative model of house price dynamics, No. w21037. National Bureau of Economic Research, 2015.

Glaeser, Edward L., Joseph Gyourko, and Albert Saiz, Housing supply and housing bubbles, Journal of Urban Economics 64.2 (2008), 198-217.

Greenwood, Robin, and Andrei Shleifer, Expectations of returns and expected returns, Review of Financial Studies 27.3 (2014), 714-746.

Gul, Faruk, A theory of disappointment aversion, Econometrica (1991), 667-686.

Harrison, J. Michael, and David M. Kreps, Speculative investor behavior in a stock market with heterogeneous expectations, The Quarterly Journal of Economics (1978), 323-336.

Hong, Harrison, and David A. Sraer, Speculative betas, The Journal of Finance 71.5 (2016): 2095-2144.

Hong, Harrison, and Jeremy C. Stein, A unified theory of underreaction, momentum trading, and overreaction in asset markets, The Journal of Finance 54.6 (1999), 2143-2184.

Hong, Harrison, Jose Scheinkman, and Wei Xiong, Asset float and speculative bubbles, The Journal of Finance 61.3 (2006), 1073-1117.

Hong, Harrison, Terence Lim, and Jeremy C. Stein, Bad news travels slowly: Size, analyst coverage, and the profitability of momentum strategies, The Journal of Finance 55.1 (2000), 265-295.

Jegadeesh, Narasimhan, and Sheridan Titman, Returns to buying winners and selling losers: Implications for stock market efficiency, The Journal of Finance 48.1 (1993), 65-91.

Kahneman, Daniel, and Amos Tversky, On the psychology of prediction, Psychological Review 80.4 (1973), 237.

Kahneman, Daniel, and Amos Tversky, Subjective probability: A judgment of representativeness, Cognitive Psychology 3.3 (1972), 430-454.

Koijen, Ralph, Mark Schmeling, and Evert B. Vrugt (2014), Survey Expectations of Returns and Asset Pricing Puzzles, Working Paper NYU Stern, Cass Business School, and University of Amsterdam.

Laibson, David, Golden eggs and hyperbolic discounting, The Quarterly Journal of Economics (1997), 443-477.

Lakonishok, Josef, Andrei Shleifer, and Robert W. Vishny, Contrarian investment, extrapolation, and risk, Journal of Finance 49.5 (1994), 1541-1578.

Lamont, Owen A., and Richard H. Thaler, Anomalies: The law of one price in financial markets, Journal of Economic Perspectives 17.4 (2003), 191-202.

Lee, Charles, and Bhaskaran Swaminathan, Price momentum and trading volume, Journal of Finance 55(5) (2000), 2017-2069.

LeRoy, Stephen F., and Charles J. LaCivita, Risk aversion and the dispersion of asset prices, Journal of Business (1981), 535-547.

Mankiw, N. Gregory, and Stephen P. Zeldes, The consumption of stockholders and non-stockholders, Journal of Financial Economics 29.1 (1991), 97-112.

Mehra, Rajnish, and Edward C. Prescott, The equity premium: A puzzle, Journal of monetary Economics 15.2 (1985), 145-161.

Mei, Jianping, Jose Scheinkman, and Wei Xiong, Speculative trading and stock prices: Evidence from Chinese AB share premia. No. w11362. National Bureau of Economic Research, 2005.

Miller, Edward M. Risk, uncertainty, and divergence of opinion, The Journal of Finance 32.4 (1977)k 1151-1168.

Odean, Terrance, Are investors reluctant to realize their losses?, The Journal of Finance 53.5 (1998), 1775-1798.

Pindyck, Robert S., and Julio J. Rotemberg, The comovement of stock prices, The Quarterly Journal of Economics (1993), 1073-1104.

Pindyck, Robert S., and Julio J. Rotemberg, The excess co-movement of commodity prices, The Economic Journal, Vol. 100, No. 403. (Dec., 1990), pp. 1173-1189.

Scheinkman, Jose A., and Wei Xiong, Overconfidence and speculative bubbles, Journal of Political Economy 111.6 (2003), 1183-1220.

Segal, Uzi, and Avia Spivak, First order versus second order risk aversion, Journal of Economic Theory 51.1 (1990), 111-125.

Shiller, Robert J, Do Stock Prices Move Too Much to be Justified by Subsequent Changes in Dividends?, American Economic Review 71.3 (1981): 421–436

Thaler, Richard H., and Eric J. Johnson, Gambling with the house money and trying to break even: The effects of prior outcomes on risky choice, Management Science 36.6 (1990), 643-660.

Thaler, Richard, Toward a positive theory of consumer choice, Journal of Economic Behavior & Organization 1.1 (1980), 39-60.

The Econometrics of Financial Markets, Campbell, John Y., Andrew W. Lo and A. Craig MacKinlay. Princeton, NJ: Princeton University Press, 1996.

Tversky, Amos, and Daniel Kahneman, Advances in prospect theory: Cumulative representation of uncertainty, Journal of Risk and Uncertainty 5.4 (1992), 297-323.

Tversky, Amos, and Daniel Kahneman, Judgment under uncertainty: Heuristics and biases.Utility, probability, and human decision making, Springer Netherlands, (1975), 141-162.

Weil, Philippe, The equity premium puzzle and the risk-free rate puzzle, Journal of Monetary Economics 24.3 (1989), 401-421.

Zhang, Lu, The value premium, The Journal of Finance 60.1 (2005), 67-103.

10. Macro Finace

Acemoglu, Daron, Asuman Ozdaglar, and Alireza Tahbaz-Salehi, Systemic risk and stability in financial networks, The American Economic Review 105.2 (2015): 564-608.

Acharya, Viral V., Lars A. Lochstoer, and Tarun Ramadorai, Limits to arbitrage and hedging: Evidence from commodity markets, Journal of Financial Economics 109.2 (2013), 441-465.

Adrian, Tobias and Hyun Song Shin, Liquidity and Leverage, Journal of Financial Intermediation 19.3 (2010), 418-437.

Adrian, Tobias and Nina Boyarchenko, Intermediary Leverage Cycles and Financial Stability, FRBNY Staff Report No. 567 (2015).

Adrian, Tobias, Emanuel Moench, and Hyun Song Shin, Dynamic leverage asset pricing, New York Staff Reports 625 (2013).

Adrian, Tobias, Emmanuel Moench, and Hyun Song Shin, Financial Intermediation, Asset Prices, and Macroeconomic Dynamics, Federal Reserve Bank of New York Staff Report 422 (2010).

Adrian, Tobias, Erkko Etula, and Tyler Muir, Financial Intermediaries and the Cross-Section of Asset Returns, The Journal of Finance 69.6 (2014), 2557-2596.

Aiyagari, S. Rao., Uninsured idiosyncratic risk and aggregate saving, The Quarterly Journal of Economics 109.3 (1994): 659-684.

Allen, Franklin and Douglas Gale, Optimal Financial Crises, Journal of Finance 53 (1998), 1245-1284.

Allen, Franklin and Douglas Gale, Financial Contagion, Journal of Political Economy 108 (2000), 1-33.

Allen, Franklin, and Douglas Gale, Financial intermediaries and markets, Econometrica 72.4 (2004), 1023-1061.

Alvarez, Fernando, and Urban J. Jermann, Quantitative asset pricing implications of endogenous solvency constraints, Review of Financial Studies 14.4 (2001), 1117-1151.

Babus, Ana. The formation of financial networks, The RAND Journal of Economics 47.2 (2016), 239-272.

Baker, Scott R., Nicholas Bloom, and Steven J. Davis. Measuring economic policy uncertainty. No. w21633. National Bureau of Economic Research, 2015.

Beaudry, Paul, and Franck Portier, Stock prices, news, and economic fluctuations, The American Economic Review 96.4 (2006), 1293-1307.

Bengt Holmström and Jean Tirole, Private and public supply of liquidity, Journal of Political Economy 106.1 (1998), 1–40.

Bernanke, Ben S., Mark Gertler, and Simon Gilchrist, The financial accelerator in a quantitative business cycle framework, Handbook of Macroeconomics 1 (1999), 1341-1393.

Bernanke, Ben, and Mark Gertler, Agency costs, net worth, and business fluctuations, The American Economic Review (1989), 14-31.

Bewley, Truman. 1986, Stationary Monetary Equilibrium with a Continuum of Independently Fluctuating Consumers, In Contributions to Mathematical Economics in Honor of Gerard Debreu, ed. Werner Hildenbrand and Andreu Mas-Collel. Amsterdam, North Holland.

Blanchard, Olivier J, Debt, deficits and finite horizons, Journal of Political Economy 93.2 (1984), 223-247.

Bloom, Nicholas, The impact of uncertainty shocks, Econometrica 77.3 (2009), 623-685.

Boyarchenko, Nina, Information Acquisition and Financial Intermediation, FRBNY Staff Report No. 571 (2014).

Brunnermeier, Markus K., and Yuliy Sannikov, A macroeconomic model with a financial sector, The American Economic Review 104.2 (2014): 379-421.

Brunnermeier, Markus, Thomas Eisenbach, and Yuliy Sannikov, Macroeconomics with Financial Frictions: A Survey, Advances in Economics and Econometrics, Tenth World Congress of the Econometric Society, New York. 2013.

Buffa, Andrea M., Dimitri Vayanos, and Paul Woolley, Asset management contracts and equilibrium prices, No. w20480, National Bureau of Economic Research, 2014.

Caballero, R. and A. Simsek, Fire Sales in a Model of Complexity, Journal of Finance 68.6 (2013), 2549-2587

Cao, Dan, Speculation and Financial Wealth Distribution under Belief Heterogeneity, mimeo Georgetown University.

Carlstrom, Charles T., and Timothy S. Fuerst, Agency costs, net worth, and business fluctuations: A computable general equilibrium analysis, The American Economic Review (1997): 893-910.

Cheng, Haw, Andrei Kirilenko, and Wei Xiong, Convective risk flows in commodity futures markets, Review of Finance 19.5 (2015): 1733-1781.

Croce, M. Max, Howard Kung, Thien T. Nguyen, and Lukas Schmid, Fiscal policies and asset prices, Review of Financial Studies 25.9 (2012): 2635-2672.

Croce, Maximiliano M., Howard Kung, Thien T. Nguyen, and Lukas Scmid (2012), Fiscal Policies and Asset Prices, Review of Financial Studies, 25, 2635-2672.

Croce, Maximiliano M., Thien T. Nguyen, and Lukas Scmid , The Market Price of Fiscal Uncertainty, Journal of Monetary Economics 59 (2012), 401-416.

De Meza, David, and David C. Webb, Too much investment: a problem of asymmetric information, The Quarterly Journal of Economics (1987), 281-292.

Detemple, Jerome, and Shashidhar Murthy, Intertemporal asset pricing with heterogeneous beliefs, Journal of Economic Theory 62.2 (1994), 294-320.

Diamond, Douglas W., and Philip H. Dybvig, Bank runs, deposit insurance, and liquidity, The Journal of Political Economy (1983), 401-419.

Drechsler, Itamar, Alexi Savov, and Philipp Schnabl, A model of monetary policy and risk premia, mimeo NYU Stern.

Dumas, Bernard, Two-Person Dynamic Equilibrium in the Capital Market, The Review of Financial Studies 2.2 (1989), 157–188.

Egan, Mark, Ali Hortaçsu, and Gregor Matvos, Deposit competition and financial fragility: Evidence from the us banking sector, The American Economic Review 107.1 (2017): 169-216.

Egan, Mark, Stefan Lewellen, and Adi Sunderam, The Cross Section of Bank Value, mimeo University of Minnesota, LBS, and HBS.

Eggertsson, Gauti B., and Paul Krugman, Debt, deleveraging, and the liquidity trap: A Fisher-Minsky-Koo approach, The Quarterly Journal of Economics 127.3 (2012): 1469-1513.

Etula, Erkko, Broker-dealer risk appetite and commodity returns, Journal of Financial Econometrics 11.3 (2013), 486-521.

Farboodi, Maryam, Intermediation and voluntary exposure to counterparty risk, Available at SSRN 2535900 (2014).

Favilukis, Jack, Sydney C. Ludvigson, and Stijn Van Nieuwerburgh, Foreign ownership of US safe assets: good or bad?. No. w19917. National Bureau of Economic Research, 2014.

Fisher, Irving, The debt-deflation theory of great depressions, Econometrica: Journal of the Econometric Society (1933): 337-357.

Fostel, Ana, and John Geanakoplos, Collateral restrictions and liquidity under-supply: a simple model, Economic Theory 35.3 (2008), 441-467.

Geanakoplos, John, The Leverage Cycle.In D. Acemoglu, K. Rogoff and M. Woodford, eds., NBER Macroeconomic Annual 2009, vol. 24, 1-65, University of Chicago Press, 2010.

Gennaioli, Nicola, Andrei Shleifer, and Robert W. Vishny, A model of shadow banking, The Journal of Finance 68.4 (2013), 1331-1363.

Gertler, Mark and Nobuhiro Kiyotaki, Financial Intermediation and Credit Policy in Business Cycle Analysis, Handbook of Monetary Economics Volume 3 3-1520, I1-I77 (2010), Edited by Benjamin M. Friedman and Michael Woodford.

Gertler, Mark, Nobuhiro Kiyotaki, and Andrea Prestipino, Wholesale Banking and Bank Runs in Macroeconomic Modeling of Financial Crises, Handbook of Macroeconomics 2 (2016): 1345-1425.

Gilchrist, Simon, and Egon Zakrajšek, Credit spreads and business cycle fluctuations, The American Economic Review 102.4 (2012), 1692-1720.

Gilchrist, Simon, Jae W. Sim, and Egon Zakrajšek, Uncertainty, financial frictions, and investment dynamics. No. w20038. National Bureau of Economic Research, 2014.

Gilchrist, Simon, Vladimir Yankov, and Egon Zakrajsek, Credit market shocks and economic fluctuations: Evidence from corporate bond and stock markets, Journal of Monetary Economics 56.4 (2009), 471-493.

Gorton, Gary, and Guillermo Ordoñez, Collateral crises, The American Economic Review 104.2 (2014), 343-378.

He, Zhiguo and Arvind Krishnamurthy, A Macroeconomic Framework for Quantifying Systemic Risk, mimeo Chicago Booth and Stanford University.

He, Zhiguo and Wei Xiong, Dynamic Debt Runs, Review of Financial Studies 25 (2012), 1799-1843.

He, Zhiguo, and Arvind Krishnamurthy, Intermediary asset pricing, The American Economic Review 103.2 (2013), 732-770.

He, Zhiguo, Arvind Krishnamurthy, and Konstantin Milbradt, A Model of the Reserve Asset (2015), No. 3279.

Hermes, Niels, and Robert Lensink, Capital flight and the uncertainty of government policies, Economics letters 71.3 (2001), 377-381.

Holmstrom, Bengt, and Jean Tirole, Financial Intermediation, Loanable Funds, and the Real Sector, Quarterly Journal of Economics (1997), 663-691.

Holmstrom, Bengt, and Jean Tirole, Private and Public Supply of Liquidity, Journal of Political Economy 106 (1998), 1-40.

Holmstrom, Bengt, and Jean Tirole, LAPM: A Liquidity-Based Asset Pricing Model, Journal of Finance 56 (2001), 1837-1867.

Huggett, Mark, The risk-free rate in heterogeneous-agent incomplete-insurance economies, Journal of Economic Dynamics and Control 17.5 (1993): 953-969.

Jesus Fernandez-Villaverde, Pablo Guerron-Quintana, Keith Kuester, and Juan Rubio-Ramirez, Fiscal Volatility Shocks and Economic Activity, American Economic Review 105.11 (2015), 3352–3384.

Jorda, Oscar, Moritz Schularick, and Alan M. Taylor, Leveraged bubbles, Journal of Monetary Economics 76 (2015), S1-S20.

Jurado, Kyle, Sydney C. Ludvigson, and Serena Ng, Measuring uncertainty, The American Economic Review 105.3 (2015), 1177-1216.

Kehoe, Timothy J. and David K. Levine, Debt-Constrained Asset Markets, Review of Economic Studies 60 (1993), 865-888.

Kelly, Bryan, Lubos Pastor, and Pietro Veronesi, The price of political uncertainty: Theory and evidence from the option market, The Journal of Finance (2016), 2417–2480.

Keynes, John Maynard, General theory of employment, interest and money, Atlantic Publishers and Dist, 2016.

Kiyotaki, N., and John Moore, Liquidity, Monetary Policy and Business Cycles, mimeo Princeton University and LSE.

Kiyotaki, Nobuhiro, and John Moore, Credit Cycles, Journal of Political Economy 105.21 (1997), 211-248.

Koijen, Ralph SJ, and Motohiro Yogo, An equilibrium model of institutional demand and asset prices, No. w21749. National Bureau of Economic Research, 2015.

Kurlat, Pablo, Lemons markets and the transmission of aggregate shocks, The American Economic Review 103.4 (2013), 1463-1489.

Lorenzoni, Guido, and Veronica Guerrieri. Credit Crises, Precautionary Savings and the Liquidity Trap, mimeo University of Chicago, Northwestern, and NBER.

Lustig, Hanno N., and Stijn G. Van Nieuwerburgh, Housing collateral, consumption insurance, and risk premia: An empirical perspective, Journal of Finance 60.3 (2005), 1167-1219.

Maggiori, Matteo, and Xavier Gabaix, International liquidity and exchange rate dynamics, Quarterly Journal of Economics 130(3) (2015).

Maggiori, Matteo, Financial Intermediation, International Risk Sharing, and Reserve Currencies, mimeo Harvard University.

Minsky, H. P., Central Banking and Money Market Changes, Quarterly Journal of Economics 71.2 (1957), 171–187.

Modigliani, Franco, and Merton H. Miller, The cost of capital, corporation finance and the theory of investment, The American Economic Review 48.3 (1958): 261-297.

Moreira, Alan, and Alexi Savov, The macroeconomics of shadow banking, mimeo Yale and NYU Stern.

Muir, Tyler, Financial Crises and Risk Premia, mimeo UCLA.

Pastor, Lubos, and Pietro Veronesi, Political uncertainty and risk premia, Journal of Financial Economics 110.3 (2013): 520-545.

Pastor, Lubos, and Pietro Veronesi, Uncertainty about government policy and stock prices, The Journal of Finance 67.4 (2012): 1219-1264.

Pozsar, Zoltan, Tobias Adrian, Adam B. Ashcraft, and Haley Boesky, Shadow banking, mimeo Federal Reserve Bank of New York, International Monetary Fund, and Bank of America Merrill Lynch .

Scheinkman, J. A., and L. Weiss, Borrowing Constraints and Aggregate Economic Activity, Econometrica 54(1) (1986), 23–45.

Sialm, Clemens, Stochastic Taxation and Asset Pricing in Dynamic General Equilibrium, Journal of Economic Dynamics and Control 30 (2006), 511-540.

Stiglitz, J. E., and A. Weiss, Credit Rationing in Markets with Imperfect Information, American Economic Review, 71(3) (1981), 393–410.

Ulrich, Maxim, How Does the Bond Market Perceive Government Interventions?, mimeo Columbia University.

Woodford, M., Public Debt as Private Liquidity, American Economic Review 80.2 (1990), 382–388.

Xiong, Wei, and Hongjun Yan, Heterogeneous Expectations and Bond Markets, Review of Financial Studies 23.4 (2010): 1433-1466.

11. Asymmetric Information

Abreu, Dilip, and Markus K. Brunnermeier, Bubbles and crashes, Econometrica 71.1 (2003): 173-204.

Abreu, Dilip, and Markus K. Brunnermeier, Synchronization risk and delayed arbitrage, Journal of Financial Economics 66.2 (2002): 341-360.

Admati, Anat R, A Noisy Rational Expectations Equilibrium for Multi-asset Securities Markets, Econometrica 53 (1985), 629-57.

Albagli, Elias, Christian Hellwig, and Aleh Tsyvinski, Dynamic dispersed information and the credit spread puzzle (2013), mimeo Central Bank of Chile, Toulouse, and Yale University.

Albagi, Elias, Christian Hellwig, and Aleh Tsyvinski, A Theory of Asset Prices Based on Heterogeneous Information (2015), revise and resubmit to Review of Economic Studies.

Albagli, Elias, Amplification of uncertainty in illiquid markets, mimeo Central Bank of Chile.

Allen, Franklin, Stephen Morris, and Hyun Song Shin, Beauty contests and iterated expectations in asset markets, Review of Financial Studies 19.3 (2006): 719-752.

Angeletos, George-Marios, Guido Lorenzoni, and Alessandro Pavan, Wall street and silicon valley: A delicate interaction. mimeo MIT and Northwestern University.

Aumann, Robert J, Agreeing to disagree, The Annals of Statistics (1976): 1236-1239.

Bacchetta, Philippe, and Eric Van Wincoop, Can information heterogeneity explain the exchange rate determination puzzle?, The American Economic Review 96.3 (2006): 552-576.

Bacchetta, Philippe, and Eric Van Wincoop, Higher order expectations in asset pricing, Journal of Money, Credit and Banking 40.5 (2008): 837-866.

Banerjee, Snehal, Learning from Prices and the Dispersion in Beliefs, Review of Financial Studies 24.9 (2011): 3025-3068.

Banerjee, Snehal, and Ilan Kremer, Disagreement and learning: Dynamic patterns of trade, The Journal of Finance 65.4 (2010): 1269-1302.

Biais, Bruno, Peter Bossaerts, and Chester Spatt, Equilibrium asset pricing and portfolio choice under asymmetric information, Review of Financial Studies 23.4 (2010): 1503-1543.

Black, Fischer, Noise, The Journal of Finance 41.3 (1986): 528-543.

Bond, Philip, Alex Edmans, and Itay Goldstein, The real effects of financial markets, Annu. Rev. Financ. Econ. 4.1 (2012): 339-360.

Breon-Drish, Bradyn, On existence and uniqueness of equilibrium in a class of noisy rational expectations models, The Review of Economic Studies (2015): rdv012.

Dasgupta, Amil, Coordination and delay in global games, Journal of Economic Theory 134.1 (2007): 195-225.

David, Alexander (1977), Fluctuating Confidence in Stock Markets: Implications for Returns and Volatilities, Journal of Financial and Quantitative Analysis 32.04 (1997): 427-462.

DeMarzo, Peter, and Costis Skiadas, Aggregation, determinacy, and informational efficiency for a class of economies with asymmetric information, Journal of Economic Theory 80.1 (1998): 123-152.

DeMarzo, Peter, and Darrell Duffie, A liquidity-based model of security design, Econometrica 67.1 (1999): 65-99.

Diamond, Douglas W., and Robert E. Verrecchia, Information aggregation in a noisy rational expectations economy, Journal of Financial Economics 9.3 (1981): 221-235.

Diamond, Douglas W, and Robert E. Verrecchia, Optimal managerial contracts and equilibrium security prices, The Journal of Finance 37.2 (1982): 275-287.

Duffie, Darrell, and Chi-fu Huang, Multiperiod security markets with differential information: martingales and resolution times, Journal of Mathematical Economics 15.3 (1986): 283-303.

Easley, David and Maureen O'Hara, Price, Trade Size, and Information in Securities Markets, Journal of Financial Economics 19.1 (1987): 69-90..

Easley, David, and Maureen O'Hara, Adverse selection and large trade volume: The implications for market efficiency, Journal of Financial and Quantitative Analysis 27.02 (1992): 185-208.

Easley, David, and Maureen O'Hara. Information and the cost of capital.The Journal of Finance 59.4 (2004): 1553-1583.

Fama, Eugene F, The behavior of stock-market prices, The Journal of Business 38.1 (1965): 34-105.

Foster, F. Douglas, and S. Viswanathan, Strategic trading when agents forecast the forecasts of others, The Journal of Finance 51.4 (1996): 1437-1478.

Friedman, Milton, The methodology of positive economics (1953): 3-43.

Froot, Kenneth A., David S. Scharfstein, and Jeremy C. Stein, Herd on the street: Informational inefficiencies in a market with short-term speculation, The Journal of Finance 47.4 (1992): 1461-1484.

Ganguli, Jayant Vivek and Liyan Yang, Complementarities, Multiplicity, and Supply Information, Journal of the European Economic Association 7 (2009), 90–115.

Garcia, Diego, and Joel M. Vanden, Information acquisition and mutual funds, Journal of Economic Theory 144.5 (2009): 1965-1995.

Gârleanu, Nicolae, and Lasse Heje Pedersen, Dynamic portfolio choice with frictions, Journal of Economic Theory 165 (2016): 487-516.

Gennotte, Gerard, and Hayne Leland, Market liquidity, hedging, and crashes, The American Economic Review 80 (1990): 999-1021.

Gennotte, Gerard, Optimal portfolio choice under incomplete information, The Journal of Finance 41.3 (1986): 733-746.

Glosten, Lawrence R, Insider trading, liquidity, and the role of the monopolist specialist, Journal of Business (1989): 211-235.

Glosten, Lawrence R, Is the electronic open limit order book inevitable?, The Journal of Finance 49.4 (1994): 1127-1161.

Glosten, Lawrence R., and Paul R. Milgrom, Bid, ask and transaction prices in a specialist market with heterogeneously informed traders, Journal of Financial Economics 14.1 (1985): 71-100.

Goldstein, Itay, Emre Ozdenoren, and Kathy Yuan, Trading frenzies and their impact on real investment, Journal of Financial Economics 109.2 (2013): 566-582.

Goldstein, Itay and Liyan Yang, Information Diversity and Complementarities in Trading and Information Acquisition, Journal of Finance (2014), forthcoming.

Gorton, Gary, and George Pennacchi, Financial intermediaries and liquidity creation, The Journal of Finance 45.1 (1990): 49-71.

Grossman, Sanford J., and Joseph E. Stiglitz, On the impossibility of informationally efficient markets, The American Economic Review 70.3 (1980): 393-408.

Grossman, Sanford, On the efficiency of competitive stock markets where trades have diverse information, The Journal of Finance 31.2 (1976): 573-585.

Grundy, Bruce D., and Maureen McNichols, Trade and the revelation of information through prices and direct disclosure, Review of Financial Studies 2(4) (1989), 495-526.

He, Hua, and Jiang Wang, Differential information and dynamic behavior of stock trading volume, Review of Financial Studies 8.4 (1995): 919-972.

Hellwig, Martin F, On the Aggregation of Information in Competitive Markets, Journal of Economic Theory 22(3) (1980), 477-498.

Holmström, Bengt, and Roger B. Myerson, Efficient and durable decision rules with incomplete information, Econometrica: Journal of the Econometric Society (1983), 1799-1819.

Jordan, J. S., The generic existence of Rational Expectations Equilibrium in the Higher Dimensional Case, Journal of Economic Theory 26 (1982), 224-243.

Kreps, David M, A note on fulfilled expectations equilibria, Journal of Economic Theory 14.1 (1977): 32-43.

Kurlat, Pablo, and Laura Veldkamp, Should we regulate financial information?, Journal of Economic Theory 158 (2015): 697-720.

Kyle, Albert S, Continuous Auctions and Insider Trading, Econometrica (1985), 1315-1335.

Marmora, Paul and Oleg Rytchkov. Learning about Noise, SSRN 2583978 (2015).

Milgrom, Paul, and Nancy Stokey, Information, trade and common knowledge, Journal of Economic Theory 26.1 (1982): 17-27.

Morris, Stephen, The common prior assumption in economic theory, Economics and Philosophy 11.02 (1995): 227-253.

Morris, Stephen, Trade with heterogeneous prior beliefs and asymmetric information, Econometrica: Journal of the Econometric Society (1994): 1327-1347.

Myers, Stewart C., and Nicholas S. Majluf, Corporate financing and investment decisions when firms have information that investors do not have, Journal of Financial Economics 13.2 (1984): 187-221.

Nimark, Kristoffer, Dynamic Higher Order Expectation, mimeo Cornell University.

Palvölgyi, Dömötör and Gyuri Venter, Multiple Equilibria in Noisy Rational Expectations Economies, mimeo University of Cambridge and Copenhagen Business School (2015).

Radner, Roy, Rational expectations equilibrium: Generic existence and the information revealed by prices, Econometrica: Journal of the Econometric Society (1979): 655-678.

Roell, Ailsa, Liquidity in limit order book markets and single price auctions with imperfect competition, mimeo Princeton University.

Singleton, Kenneth, Asset Prices in a Time Series Model with Disparately Informed, Competitive Traders, In New Approaches to Monetary Economics, Proceedings of the Second International Symposium in Economic Theory and Econometrics, eds. W. Barnet and K. Singleton, Chapter 12, Cambridge: Cambridge University Press (1987).

Straub, Ludwig, and Robert Ulbricht, Endogenous Uncertainty and Credit Crunches, mimeo MIT and Toulouse University.

Subrahmanyam, Avanidhar, and Sheridan Titman, Feedback from stock prices to cash flows, The Journal of Finance 56.6 (2001): 2389-2413.

Tirole, Jean, On the possibility of speculation under rational expectations, Econometrica: Journal of the Econometric Society (1982): 1163-1181.

Townsend, Robert, Forecasting the Forecasts of Others, Journal of Political Economy 91(4) (1983), 546-588.

Varian, Hal R, Differences of opinion in financial markets, financial Risk: Theory, Evidence and implications, Springer Netherlands, 1989. 3-37.

Veldkamp, Laura L., Information Markets and the Comovement of Asset Prices, Review of Economic Studies, 73 (2006), 823-845.

Veronesi, Pietro, Stock market overreactions to bad news in good times: a rational expectations equilibrium model, Review of Financial Studies 12.5 (1999): 975-1007.

Verrecchia, Robert E, Information acquisition in a noisy rational expectations economy, Econometrica: Journal of the Econometric Society (1982): 1415-1430.

Wang, Jiang, A model of intertemporal asset prices under asymmetric information, Review of Economic Studies 60.2 (1993): 249-282.

Wang, Jiang, A model of competitive stock trading volume, Journal of political Economy 102.1 (1994): 127-168.

Yuan, Kathy, Asymmetric price movements and borrowing constraints: A rational expectations equilibrium model of crises, contagion, and confusion, The Journal of Finance 60.1 (2005): 379-411.

12. Limits to Arbitrage

Abreu, Dilip and Markus Brunnermeier, Bubbles and Crashes, Econometrica 71 (2003), 173-204.

Andrade, Gregor, Charles Chang, and Mark Seasholes, Predictable Reversals, Cross-stock Effects, and the Limits of Arbitrage, Working paper (2005), Haas School of Business, University of California.

Ashcraft, Adam, and Darrell Duffie, Systemic Dynamics in the Federal Funds Market, American Economic Review, Papers and Proceedings 97 (2007), 221–225.

Biais, Bruno, Pierre Hillion, and Chester Spatt, An Empirical Analysis of the Limit Order Book and the Order Flow in the Paris Bourse, Journal of Finance 50 (1995), 1655–1689.

Born, Patricia, and Kip Viscusi, The Catastrophic Effects of Natural Disasters on Insurance Markets, Journal of Risk and Uncertainty 33 (2006), 55–72.

Brunnermeier, Markus, Thomas Eisenbach, and Yuliy Sannikov, Macroeconomics with Financial Frictions: A Survey, Advances in Economics and Econometrics, Tenth World Congress of the Econometric Society, New York. 2013.

Brunnermeier, Markus, and Stefan Nagel, Do Wealth Fluctuations Generate Time-varying Risk Aversion? Micro-evidence on Individuals' Asset Allocation, American Economic Review 98 (2008), 713–736.

Brunnermeier, Markus K. and Lasse Pedersen, Market Liquidity and Funding Liquidity, Review of Financial Studies 22 (2009), 2201-2238.

Chan,Wesley S., Stock Price Reaction to News and No-news: Drift and Reversal after Headlines, Journal of Financial Economics 70 (2003), 223–260.

Chen, Honghui, Gregory Noronha, and Vijay Singhal, The Price Response to S&P 500 Index Additions and Deletions: Evidence of Asymmetry and a New Explanation, Journal of Finance 59 (2004), 1901–1929.

Coval, Joshua, and Erik Stafford, Asset Fire Sales (and Purchases) in Equity Markets, Journal of Financial Economics 86 (2007), 479–512.

De Long, J. Bradford, Andrei Shleifer, Lawrence H. Summers, and Robert J. Waldmann, Noise Trader Risk in Financial Markets, Journal of Political Economy 98.4 (1990): 703-738.

Duffie, Darrell, Presidential Address: Asset Price Dynamics with Slow-Moving Capital, Journal of Finance 65 (2010), 1237-1267.

Engelberg, Joseph E., Adam V. Reed, and Matthew C. Ringgenberg, How are Shorts Informed? Short Sellers, News, and Information Processing,Working paper (2010), University of North Carolina.

Enz, Rudolph, The Insurance Cycle as an Entrepreneurial Challenge, Swiss Re Technical Publishing (2001).

Etula, Erkko, Broker-dealer risk appetite and commodity returns, Journal of Financial Econometrics 11.3 (2013), 486-521.

Fleming, Michael J., and Joshua V. Rosenberg, How do Treasury Dealers Manage Their Positions?, Federal Reserve Bank of New York (2007).

Froot, Ken, and Paul O'Connell, The Pricing of U.S. Catastrophe Reinsurance, in K. Froot, ed., The Financing of Catastrophe Risk (University of Chicago Press, Chicago, IL) (1999), 195–232.

Goldstein, Michael, Edie Hotchkiss, and Erik Sirri, Transparency and Liquidity: A Controlled Experiment on Corporate Bonds, Review of Financial Studies 86 (2007), 643–682.

Gromb, Denis, and Dimitri Vayanos, Equilibrium and Welfare in Markets with Financially Constrained Arbitrageurs, Journal of Financial Economics 66 (2002), 361–407.

Hendershott, Terrence, and Albert Menkveld, Price pressures, Working paper (2009), Haas School of Business.

Lamont, Owen A. and Richard Thaler, Anomalies: The Law of One Price in Financial Markets, Journal of Economics Perspectives 17 (2003), 191-202.

Lusardi, Annamaria, Information, Expectations, and Savings, in H. Aaron, ed., Behavioral Dimensions of Retirement Economics (Brookings Institution Press/Russell Sage Foundation) (1999), 81–115.

Lusardi, Annamaria, Planning and Savings for Retirement, Working paper (2003), Dartmouth College.

Mitchell, Mark, and Todd Pulvino, Arbitrage crashes and the speed of capital, Working paper (2009), AQR Capital Management.

Morris, Stephen, and Hyun Song Shin, Unique Equilibrium in a Model of Self-fulfilling Currency Attacks, American Economic Review (1998), 587–597.

Patterson,Michael, and Eric Martin,Wall Street Takes Break for TigerWoods' Apology: Chart of Day (2010), Bloomberg.

Shleifer, Andrei, Do Demand Curves for Stocks Slope Down? Journal of Finance 41 (1986), 579–590.

Shleifer, Andrei and Robert Vishny, The Limits of Arbitrage, Journal of Finance 52 (1997), 35-55.

Zanjani,George, Pricing and Capital Allocation in Catastrophe Insurance, Journal of Financial Economics 65 (2002), 283–305.

13. Institutional Investing

Admati, Anat R., and Paul Pfleiderer, Does it all add up? Benchmarks and the compensation of active portfolio managers*, The Journal of Business 70.3 (1997): 323-350.

Basak, Suleyman and Anna Pavlova, Asset Prices and Institutional Investors, American Economic Review, 103 (2013), 1728-1758.

Biais, Bruno, Peter Bossaerts, and Chester Spatt, Equilibrium Asset Pricing and Portfolio Choice Under Asymmetric Information, Review of Financial Studies 23 (2010), 1503-1543.

Bond, Philip, The Equilibrium Consequences of Indexing, Working Paper (2016), University of Washington.

Brennan, Michael, Agency and Asset Pricing, UCLA, Anderson Graduate School of Management, Anderson Graduate School of Management (1993), UCLA.

Buffa, Andrea M., Dimitri Vayanos, and Paul Woolley, Asset Management Contracts and Equilibrium Prices, NBER Working Papers 20480 (2014), National Bureau of Economic Research, Inc.

Cuoco, Domenico and Ron Kaniel, Equilibrium Prices in the Presence of Delegated Portfolio Management, Journal of Financial Economics 101 (2011), 264-296.

Stambaugh, Robert, Investment Noise and Trends, Working Paper (2014), UPenn.

14. Modern Microstructure and FinTech

Ait-Sahalia, Yacine and Mehmet Salgam, High Frequency Market Making: Implications for Liquidity, Working Paper (2017), Princeton University and University of Cincinnati.

Abadi, Joseph and Markus Brunnermeier, Blockchain Economics, Working Paper (2018), Princeton University.

Antill, Samuel and Darrell Duffie, Augmenting Markets with Mechanisms, Working Paper (2018), Stanford GSB.

Baron, Matt, Jonathan Brogaard, Björn Hagströmer, and Andrei Kirilenko, Risk and Return in High Frequency Trading, Journal of Financial and Quantitative Analysis (forthcoming).

Biais, Bruno, Christophe Bisiere, Matthieu Bouvard, and Catherine Casamatta, The Blockchain Fold Theorem, Working Paper (2017), Toulouse School of Economics and McGill School of Management.

Chiu, Jonathan and Thorsten V. Koeppl, The Economics of Cryptocurrencies - Bitcoin and Beyond, Working Paper (2017), Victoria and Queen's University.

Cong, Lin William and Zhiguo He, Blockchain Disruption and Smart Contracts, Working Paper (2017), University of Chicago Booth School of Business.

Duffie, Darrell and Haoxiang Zhu, Size Discovery, Review of Financial Studies, 30 (2017), 1095-1150.

Easley, David, Maurenn O'Hara, and Soumya Basu, From Mining to Markets: The Evolution of Bitcoin Transaction Fees, Working Paper (2017), Cornell University.

Li, Jiasun and William Mann, Initial Coin Offering and Platform Building, Working Paper (2018), George Mason University and UCLA Anderson School of Management.

O'Hara, Maureen, High Frequency Market Microstructure, Journal of Financial Economics, 116 (2015), 257-270.

Pagnotta, Emiliano S. and Andrea Buraschi, An Equilibrium Valuation of Bitcoin and Decentralized Network Assets, Working Paper (2018), Imperial College London.

Schilling, Linda and Harald Uhlig, Some Simple Bitcoin Economics, Working Paper (2018), University of Utrecht and University of Chicago.

Sockin, Michael and Wei Xiong, A Model of Cryptocurrencies, Working Paper (2018), UT Austin and Princeton University.

Uslu, Semih, Pricing and Liquidity in Decentralized Asset Markets, Working Paper (2018), John Hopkins University.

Zhu, Haoxiang, Do Dark Pools Harm Price Discovery?, Review ofFinancial Studies, 27 (2014), 747-789.