CALIFORNIA INSITUTE OF TECHNOLOGY

BEHAVIORAL FINANCE
BUSINESS, ECONOMICS AND MANAGEMENT 117
SPRING 2018

Professor Lawrence J. Jin
Baxter 207
626-395-4558
lawrence.jin@caltech.edu

Mondays/Wednesdays, 1pm-2.25pm
Office Hours: Tuesdays, 4-6pm

Administrative details

Research in the field of behavioral finance tries to improve our understanding of financial markets, investor behavior, and corporate finance using frameworks that are psychologically more realistic than their predecessors – frameworks that, in particular, allow for less than fully rational thinking on the part of some agents in the economy. The emergence of this field is one of the biggest conceptual developments in financial economics over the past 30 years.

The course is aimed at undergraduate and Ph.D. students who would like to learn more about research in the field of behavioral finance. Over the course of the term, we will study dozens of academic papers.

The requirements for the course are: (i) a number of homework assignments, most of which are analytical exercises (30% of the final grade); (ii) a short research proposal describing an idea for future research, due in May 2017 (30% of the final grade); and (iii) a final exam which will test mastery of the material covered in the lectures and in the readings (40% of the final grade).

Note:

- The final exam will be a closed-book take-home exam subject to the Honor Code.
- For copyright protection, please do not redistribute any class notes without instructor permission.

BOOKS

Required:

Shleifer, Andrei (2000), *Inefficient Markets: An Introduction to Behavioral Finance*, Oxford University Press (ISBN 0198292279).

Recommended:

Ilmanen, Antti (2011), *Expected Returns: An Investor's Guide to Harvesting Market Rewards*, Wiley (ISBN 1119990726).

Shiller, Robert (2005), *Irrational Exuberance*, 2nd edition, Crown Publishing Group (ISBN 0767923637).

SURVEY PAPERS

Required:

Barberis, Nicholas, and Richard Thaler (2003), "A Survey of Behavioral Finance," in George Constantinides, Milton Harris, Rene Stulz (eds.), *Handbook of the Economics of Finance*, Volume 1, Elsevier.

Recommended:

Baker, Malcolm, Richard Ruback, and Jeffrey Wurgler (2007), "Behavioral Corporate Finance: A Survey," in Espen Eckbo (ed.), *Handbook of Corporate Finance: Empirical Corporate Finance*, Elsevier.

Hirshleifer, David (2001), "Investor Psychology and Asset Pricing," *Journal of Finance* 56, 1533-1597.

RESEARCH ARTICLES

Starred articles are required reading. The non-starred readings are optional; even though they are optional, you will learn something from all of them, so take a look at as many of them as you can.

References to a *Survey* in the reading list refer to the survey paper of Barberis and Thaler (2003), listed above.

PART I: FACTS

<u>FACTS: ASSET PRICING</u>

**Inefficient Markets,* Chapter 1.

Asness, Cliff, Tobias Moskowitz, and Lasse Pedersen (2012), "Value and Momentum Everywhere," *Journal of Finance* 68, 929-985.

Bernard, Victor, and Jacob Thomas (1989), "Post-earnings-announcement Drift: Delayed Price Response or Risk Premium?" *Journal of Accounting Research* 27, 1-36.

*Campbell, John Y. (1999), "Asset Prices, Consumption, and the Business Cycle," in John Taylor, Michael Woodford (eds.), *Handbook of Macroeconomics*, North Holland.

Campbell, John Y., and Robert J. Shiller (1998), "Valuation Ratios and the Long-Run Stock Market Outlook," *Journal of Portfolio Management*, Winter issue.

*Cochrane, John (1997), "Where is the Market Going? Uncertain Facts and Novel Theories," *Economic Perspectives*, Federal Reserve Bank of Chicago, November issue.

*Cochrane, John (1999), "New Facts in Finance," *Economic Perspectives*, Federal Reserve Bank of Chicago, Third Quarter issue.

Fama, Eugene F., and Kenneth R. French (1988), "Dividend Yields and Expected Stock Returns," *Journal of Financial Economics* 22, 3-25.

Fama, Eugene F., and Kenneth R. French (1992), "The Cross-Section of Expected Stock Returns," *Journal of Finance* 47, 427-465.

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

Ikenberry, David, Josef Lakonishok, and Theo Vermaelen (1995), "Market Underreaction to Open Market Share Repurchases," *Journal of Financial Economics* 39, 181-208.

*Jegadeesh, Narasimhan, and Sheridan Titman (1993), "Returns to Buying Winners and Selling Losers: Implications for Stock Market Efficiency," *Journal of Finance* 48, 65-91.

*Loughran, Tim, and Jay Ritter (1995), "The New Issues Puzzle," *Journal of Finance* 50, 23-50.

Mehra, Rajnish (2008), “The Equity Premium Puzzle: A Review,” *Foundations and Trends in Finance* 2, 1-81.

Shiller, Robert (1981), “Do Stock Prices Move too Much to be Justified by Subsequent Changes in Dividends?” *American Economic Review* 71, 421-436.

Sloan, Richard (1996), “Do Stock Prices Reflect Information in Accruals and Cash Flows about Future Earnings?” *Accounting Review* 71, 289-315.

<u>FACTS: INVESTOR BEHAVIOR</u>

*Barber, Brad, and Terrance Odean (2000), “Trading is Hazardous to Your Wealth: The Common Stock Investment Performance of Individual Investors,” *Journal of Finance* 55, 773-806.

*Barber, Brad, and Terrance Odean (2013), “The Behavior of Individual Investors,” in *Handbook of the Economics of Finance*, Volume 2, George Constantinides, Milton Harris, and Rene Stulz (eds.), Elsevier.

Calvet, Laurent, John Y. Campbell, and Paolo Sodini (2008), “Down or Out: Assessing the Welfare Costs of Household Investment Mistakes,” *Journal of Political Economy* 115, 707-747.

Campbell, John Y. (2006), “Household Finance,” *Journal of Finance* 61, 1553-1604.

*Del Guercio, Diane, and Jonathan Reuter (2013), “Mutual Fund Performance and the Incentive to Generate Alpha,” *Journal of Finance* 69, 1673-1704.

Guiso, Luigi, and Paolo Sodini (2013), “Household Finance: An Emerging Field,” in *Handbook of the Economics of Finance*, Volume 2, George Constantinides, Milton Harris, and Rene Stulz (eds.), Elsevier.

*Odean, Terrance (1998), “Are Investors Reluctant to Realize Their Losses?” *Journal of Finance* 53, 1775-1798.

Viceira, Luis (2001), “Optimal Portfolio Choice for Long-Horizon Investors with Nontradable Labor Income,” *Journal of Finance* 56, 433-470.

<u>FACTS: CORPORATE FINANCE</u>

Allen, Franklin, and Roni Michaely (2003), “Payout Policy,” in George Constantinides, Milton Harris, Rene Stulz (eds.), *Handbook of the Economics of Finance*, Volume 1, Elsevier.

*Andrade, Gregor, Mark Mitchell, and Erik Stafford (2001), “New Evidence and Perspectives on Mergers,” *Journal of Economic Perspectives* 15, 103-120.

Fama, Eugene, and Kenneth French (2001), “Disappearing Dividends: Changing Firm Characteristics or Lower Propensity to Pay?” *Journal of Financial Economics* 60, 3-43.

*Stein, Jeremy (2003), “Agency, Information, and Corporate Investment,” in George Constantinides, Milton Harris, Rene Stulz (eds.), *Handbook of the Economics of Finance*, Volume 1, Elsevier.

PART II: BUILDING BLOCKS (LIMITS TO ARBITRAGE and PSYCHOLOGY)

<u>LIMITS TO ARBITRAGE</u>

**Survey*, Sections 1 and 2.

**Inefficient Markets,* Chapters 2 and 4 [these are updated versions of DeLong et al. (1990) and Shleifer and Vishny (1997)]

Abreu, Dilip, and Markus Brunnermeier (2002), “Synchronization Risk and Delayed Arbitrage,” *Journal of Financial Economics* 66, 341-360.

*Brunnermeier, Markus, and Stefan Nagel (2004), “Hedge Funds and the Technology Bubble,” *Journal of Finance* 59, 2013-2040.

DeLong, J. Bradford, Andrei Shleifer, Lawrence H. Summers, and Robert Waldmann (1990), “Noise Trader Risk in Financial Markets,” *Journal of Political Economy* 98, 703-738 [also covered, in slightly revised form, in *Inefficient Markets*, Chapter 2].

Gromb, Denis, and Dimitri Vayanos (2010), “Limits to Arbitrage: The State of the Theory,” *Annual Review of Financial Economics* 2, 251-275.

Lamont, Owen, and Richard Thaler (2003), “Anomalies: the Law of One Price in Financial Markets,” *Journal of Economic Perspectives*, Fall issue.

Lamont, Owen, and Richard Thaler (2003), “Can the Market Add and Subtract? Mispricing in Tech Stock Carve-Outs,” *Journal of Political Economy* 111, 227-268.

*Mitchell, Mark, Todd Pulvino, and Erik Stafford (2002), “Limited Arbitrage in Equity Markets,” *Journal of Finance* 57, 551-584.

Shleifer, Andrei (1986), “Do Demand Curves for Stocks Slope Down?” *Journal of Finance* 41, 579-90.

Shleifer, Andrei, and Robert Vishny (1997), “The Limits of Arbitrage,” *Journal of Finance* 52, 35-55 [also covered, in shortened form, in *Inefficient Markets*, Chapter 4].

Wurgler, Jeffrey, and Katya Zhuravskaya (2002), “Does Arbitrage Flatten Demand Curves for Stocks?” *Journal of Business* 75, 583-608.

Yan, Hongjun (2008), “Natural Selection in Financial Markets: Does it Work?” *Management Science* 54, 1935-1950.

PSYCHOLOGY

(Books)

Aronson, Elliot, Timothy Wilson, and Robin Akert (2007), *Social Psychology*, New York: Prentice Hall [a good introduction to social psychology]

Gilovich, Tom, David Griffin, and Daniel Kahneman (eds.), (2002), *Heuristics and Biases: The Psychology of Intuitive Judgment*, Cambridge: Cambridge University Press [a collection of more recent articles on “beliefs”]

Kahneman, Daniel (2011), *Thinking, Fast and Slow*, Farrah, Straus, and Giroux [a wonderful tour of his work with Tversky]

Kahneman, Daniel, Paul Slovic, and Amos Tversky (eds.), (1982), *Judgment Under Uncertainty: Heuristics and Biases*, Cambridge: Cambridge University Press [a collection of older articles on “beliefs”]

Kahneman, Daniel, and Amos Tversky (eds.), (2000), *Choices, Values, and Frames*, Cambridge: Cambridge University Press [a collection of more recent articles on “preferences”]

(Survey articles)

**Survey*, Section 3.

Camerer, Colin (1995), “Individual Decision Making,” in John Kagel and Alvin Roth (eds.), *Handbook of Experimental Economics*, Princeton University Press.

Kahneman, Daniel, and Mark Riepe (1998), “Aspects of Investor Psychology,” *Journal of Portfolio Management* 24, 52-65.

*Rabin, Matthew (1998), “Psychology and Economics,” *Journal of Economic Literature* 36, 11-46.

Thaler, Richard (1999), “Mental Accounting Matters,” *Journal of Behavioral Decision Making* 12, 183-206.

(Research articles)

Bordalo, Pedro, Nicola Gennaioli, and Andrei Shleifer (2012), “A Salience Theory of Choice Under Risk,” *Quarterly Journal of Economics* 127, 1243-1285.

Chen, Daniel, Tobias Moskowitz, and Kelly Shue (2014), “Decision-making and the Gambler’s Fallacy: Evidence from Asylum Judges, Loan Officers, and Baseball Umpires,” Working paper, University of Chicago.

*Kahneman, Daniel, and Amos Tversky (1974), “Judgment Under Uncertainty: Heuristics and Biases,” *Science* 185, 1124-1131.

*Kahneman, Daniel, and Amos Tversky (1979), “Prospect Theory: An Analysis of Decision Under Risk,” *Econometrica* 47, 263-291.

Rabin, Matthew (2000), "Risk Aversion and Expected Utility," *Econometrica* 68, 1281-1292.

Rabin, Matthew, and Richard Thaler (2001), "Risk Aversion," *Journal of Economic Perspectives* 15, 219-232.

PART III: MODELS AND PREDICTIONS

PART IIIA: MODELS OF INVESTORS

<u>PROSPECT THEORY</u>

Barberis, Nicholas (2012), "A Model of Casino Gambling," *Management Science* 58, 35-51.

Barberis, Nicholas (2013), "Thirty Years of Prospect Theory in Economics: A Review and Assessment," *Journal of Economic Perspectives* 27, 173-195.

Barberis, Nicholas (2013), "The Psychology of Tail Events: Progress and Challenges," *American Economic Review Papers and Proceedings* 103, 611-616.

Barberis, Nicholas, and Ming Huang (2008), "The Loss Aversion / Narrow Framing Approach to the Equity Premium Puzzle," in Rajnish Mehra (ed.), *Handbook of the Equity Risk Premium*, North Holland.

*Barberis, Nicholas, and Ming Huang (2008), "Stocks as Lotteries: The Implications of Probability Weighting for Security Prices," *American Economic Review* 98, 2066-2100.

*Barberis, Nicholas, Ming Huang, and Tano Santos (2001), "Prospect Theory and Asset Prices," *Quarterly Journal of Economics* 116, 1-53.

Barberis, Nicholas, and Wei Xiong (2009), "What Drives the Disposition Effect? An Analysis of a Long-standing Preference-based Explanation," *Journal of Finance* 64, 751-784.

*Barberis, Nicholas, and Wei Xiong (2012), "Realization Utility," *Journal of Financial Economics* 104, 251-271.

Ingersoll, Jonathan E., and Lawrence J. Jin (2013), "Realization Utility with Reference-Dependent Preferences," *Review of Financial Studies* 26, 723-767.

*Benartzi, Shlomo, and Richard Thaler (1995), "Myopic Loss Aversion and the Equity Premium Puzzle," *Quarterly Journal of Economics* 110, 75-92.

Frazzini, Andrea (2006), "The Disposition Effect and Underreaction to News," *Journal of Finance* 61, 2017-2046.

Frydman, Cary, Nicholas Barberis, Colin Camerer, Peter Bossaerts, and Antonio Rangel (2014), "Using Neural Data to Test a Theory of Investor Behavior: An Application to Realization Utility," *Journal of Finance* 69, 907-946.

Genesove, David, and Christopher Mayer (2001), “Loss Aversion and Seller Behavior: Evidence from the Housing Market,” *Quarterly Journal of Economics* 116, 1233-1260.

Grinblatt, Mark, and Bin Han (2005), “Prospect Theory, Mental Accounting, and Momentum,” *Journal of Financial Economics* 78, 311-339.

Thaler, Richard, and Eric Johnson (1990), “Gambling with the House Money and Trying to Break Even: The Effects of Prior Outcomes on Risky Choice,” *Management Science* 36, 643-660.

Thaler, Richard, Amos Tversky, Daniel Kahneman, and Alan Schwartz (1997), “The Effect of Myopia and Loss Aversion on Risk-Taking: An Experimental Test,” *Quarterly Journal of Economics* 112, 647-661.

AMBIGUITY AVERSION

Collard, Fabrice, Sujoy Mukerji, Kevin Sheppard, Jean-Marc Tallon (2011), “Ambiguity and the Historical Equity Premium,” Working paper.

Huberman, Gur (2001), “Familiarity Breeds Investment,” *Review of Financial Studies* 14, 659-680.

Maenhout, Pascal (2004), “Robust Portfolio Rules and Asset Pricing,” *Review of Financial Studies* 17, 951-983.

OTHER UTILITY SPECIFICATIONS

Bordalo, Pedro, Nicola Gennaioli, and Andrei Shleifer (2013), “Salience and Asset Prices,” *American Economic Review Papers and Proceedings* 103, 623-628.

Brunnermeier, Markus, and Jonathan Parker (2005), “Optimal Expectations,” *American Economic Review* 95, 1092-1118.

Chapman, David, and Valery Polkovnichenko (2009), “Heterogeneity in Preferences and Asset Market Outcomes,” *Journal of Finance* 64, 1863-1888.

Gennaioli, Nicola, Andrei Shleifer, and Robert Vishny (2014), “Money Doctors,” *Journal of Finance*, forthcoming.

Polkovnichenko, Valery (2005), “Household Portfolio Diversification: A Case for Rank-dependent Preferences,” *Review of Financial Studies* 18, 1467-1502.

HETEROGENEOUS BELIEFS

Chen, Joseph, Harrison Hong, and Jeremy Stein (2002), “Breadth of Ownership and Stock Returns,” *Journal of Financial Economics* 66, 171-205.

D'Avolio, Gene (2002), "The Market for Borrowing Stock," *Journal of Financial Economics* 66, 271-306.

*Diether, Karl, Christopher Malloy, and Anna Scherbina (2002), "Stock Prices and Differences of Opinion: Empirical Evidence that Stock Prices Reflect Optimism," *Journal of Finance* 57, 2113-2141.

Harrison, Michael, and David Kreps (1978), "Speculative Investor Behavior in a Stock Market with Heterogeneous Expectations," *Quarterly Journal of Economics* 92, 323-336.

Miller, Edward (1977), "Risk, Uncertainty, and Divergence of Opinion," *Journal of Finance* 32, 1151-1168.

Ofek, Eli, and Matthew Richardson, "Dot-com Mania: Market Inefficiency in the Internet Sector," *Journal of Finance* 58, 1113-1138.

*Scheinkman, Jose, and Wei Xiong (2003), "Overconfidence and Speculative Bubbles," *Journal of Political Economy* 111, 1183-1219.

<u>OVERCONFIDENCE</u>

*Daniel, Kent, David Hirshleifer, and Avanidhar Subrahmanyam (1998), "Investor Psychology and Security Market Under- and Overreactions," *Journal of Finance* 53, 1839-1885.

Daniel, Kent, David Hirshleifer, and Avanidhar Subrahmanyam (2001), "Covariance Risk, Mispricing, and the Cross-section of Security Returns," *Journal of Finance* 56, 921-965.

Eyster, Erik, Matthew Rabin, and Dimitri Vayanos (2013), "Financial Markets where Traders Neglect the Informational Content of Prices," Working paper.

Odean, Terrance (1998), "Volume, Volatility, Price, and Profit when All Traders are Above Average," *Journal of Finance* 53, 1887-1934.

<u>OVER-EXTRAPOLATION</u> (and related biases)

**Inefficient Markets*, Chapter 6 [updated version of DeLong et al. (1990) below]

Barberis, Nicholas (2012), "Psychology and the Financial Crisis of 2007-2008," in *Financial Innovation: Too Much or Too Little?*, Michael Haliassos ed., MIT Press.

*Barberis, Nicholas, Robin Greenwood, Lawrence Jin, and Andrei Shleifer (2015), "X-CAPM: An Extrapolative Capital Asset Pricing Model," *Journal of Financial Economics* 115, 1-24.

Jin, Lawrence, and Pengfei Sui (2016), "Asset Pricing with Return Extrapolation," Working paper, California Institute of Technology.

*Barberis, Nicholas, and Andrei Shleifer (2003), "Style Investing," *Journal of Financial Economics* 68, 161-199.

*Barberis, Nicholas, Andrei Shleifer, and Robert Vishny (1998), "A Model of Investor Sentiment," *Journal of Financial Economics* 49, 307-345 [covered in slightly edited form in *Inefficient Markets*, Chapter 5].

Cheng, Ing-Haw, Sahil Raina, and Wei Xiong (2014), "Wall Street and the Housing Bubble," *American Economic Review* 104, 2797-2829.

De Bondt, Werner, and Richard Thaler (1985), "Does the Stock Market Overreact?" *Journal of Finance* 40, 793-808.

DeLong, Brad, Andrei Shleifer, Lawrence Summers, Michael Waldmann (1990), "Positive Feedback Investment Strategies and Destabilizing Rational Speculation," *Journal of Finance* 45, 375-395 [revised version in *Inefficient Markets*, Chapter 6].

Gennaioli, Nicola, Andrei Shleifer, and Robert Vishny, "Neglected Risks, Financial Innovation, and Financial Fragility," *Journal of Financial Economics* 104, 452-468.

*Greenwood, Robin, and Andrei Shleifer (2014), "Expectations of Returns and Expected Returns," *Review of Financial Studies* 27, 714-746.

*Barberis, Nicholas, Robin Greenwood, Lawrence Jin, and Andrei Shleifer (2016), "Extrapolation and Bubbles," Working paper, California Institute of Technology, Harvard University, and Yale University.

*Cassella, Stefano, and Huseyin Gulen (2015), "Extrapolation Bias and the Predictability of Stock Returns by Price-Scaled Variables," Working paper, Purdue University.

Jin, Lawrence (2015), "A Speculative Asset Pricing Model of Financial Instability," Working paper, California Institute of Technology.

La Porta, Rafael, Josef Lakonishok, Andrei Shleifer, and Robert W. Vishny (1994), "Good News for Value Stocks: Further Evidence on Market Efficiency," *Journal of Finance* 49, 1541-1578.

Lakonishok, Josef, Andrei Shleifer, and Robert W. Vishny (1994), "Contrarian Investment, Extrapolation, and Risk," *Journal of Finance* 49, 1541-1578.

*Malmendier, Ulrike, and Stefan Nagel (2011), "Depression Babies: Do Macroeconomic Experiences Affect Risk-taking?" *Quarterly Journal of Economics* 126, 373-416.

Rabin, Matthew (2002), "Inference by Believers in the Law of Small Numbers," *Quarterly Journal of Economics* 117, 775-816.

Rabin, Matthew, and Dimitri Vayanos (2010), "The Gambler's and Hot Hand Fallacies: Theory and Applications," *Review of Economic Studies* 77, 730-778.

<u>MODELS WITH GENERAL SENTIMENT</u>

**Inefficient Markets*, Chapter 3 [updated version of Lee, Shleifer, and Thaler (1991) below]

Asquith, Paul, Parag Pathak, and Jay Ritter (2005), "Short interest, Institutional Ownership, and Stock Returns," *Journal of Financial Economics* 78, 243-276.

Baker, Malcolm, and Jeffrey Wurgler (2006), "Investor Sentiment and the Cross-section of Stock Returns," *Journal of Finance* 1645-1680.

*Baker, Malcolm, and Jeffrey Wurgler (2007), "Investor Sentiment in the Stock Market," *Journal of Economic Perspectives* 21, 129-151.

Frazzini, Andrea, and Owen Lamont (2008), "Dumb Money: Mutual Fund Flows and the Cross-section of Stock Returns," *Journal of Financial Economics* 88, 299-322.

Jones, Charles, and Owen Lamont (2001), "Short Sale Constraints and Stock Returns," *Journal of Financial Economics* 66, 207-239.\

Lee, Charles, Andrei Shleifer, and Richard Thaler (1991), "Investor Sentiment and the Closed-end Fund Puzzle," *Journal of Finance* 46, 75-109.

BOUNDED RATIONALITY

*Barber, Brad, and Terrance Odean (2008), "All that Glitters: the Effect of Attention on the Buying Behavior of Individual and Institutional Investors," *Review of Financial Studies* 21, 785-818.

*Barberis, Nicholas, Andrei Shleifer, and Jeffrey Wurgler (2005), "Comovement," *Journal of Financial Economics* 75, 283-317.

Benartzi, Shlomo, and Richard Thaler (2001), "Naïve Diversification Strategies in Defined Contribution Savings Plans," *American Economic Review* 91, 79-98.

*Cohen, Lauren, and Andrea Frazzini (2006), "Economic Links and Predictable Returns," *Journal of Finance* 63, 1977-2011.

Gabaix, Xavier (2012), "A Sparsity-based Model of Bounded Rationality," *Quarterly Journal of Economics*, forthcoming.

*Hong, Harrison, Terence Lim, and Jeremy Stein (2000), "Bad News Travels Slowly: Size, Analyst Coverage, and the Profitability of Momentum Strategies," *Journal of Finance* 55, 265-295.

*Hong, Harrison, and Jeremy Stein (1999), "A Unified Theory of Underreaction, Momentum Trading, and Overreaction in Asset Markets," *Journal of Finance* 54, 2143-2184.

Huberman, Gur, and Wei Jiang (2006), "Offering vs. Choice by 401(k) Plan Participants: Equity Exposure and Number of Funds," *Journal of Finance* 61, 763-801.

Modigliani, Franco, and Richard Cohn (1974), "Inflation and the Stock Market," *Financial Analysts Journal* 35, 24-44.

PART IIIB: MODELS OF FIRMS

IRRATIONAL INVESTORS AND RATIONAL MANAGERS

*Baker, Malcolm, Jeremy Stein, and Jeffrey Wurgler (2003), “When Does the Market Matter? Stock Prices and the Investment of Equity-Dependent Firms,” *Quarterly Journal of Economics* 118, 969-1006.

Baker, Malcolm, and Jeffrey Wurgler (2000), “The Equity Share in New Issues and Aggregate Stock Returns,” *Journal of Finance* 55, 2219-2257.

*Baker, Malcolm, and Jeffrey Wurgler (2002), “Market Timing and Capital Structure,” *Journal of Finance* 57, 1-32.

Baker, Malcolm, Robin Greenwood, and Jeffrey Wurgler (2003), “The Maturity of Debt Issues and Predictable Variation in Bond Returns,” *Journal of Financial Economics* 64, 91-116.

Baker, Malcolm, and Jeffrey Wurgler (2004), “A Catering Theory of Dividends,” *Journal of Finance* 59, 1125-1165.

Baker, Malcolm, Xin Pan, and Jeffrey Wurgler (2012), “The Effect of Reference Point Prices on Mergers and Acquisitions,” *Journal of Financial Economics* 106, 49-71.

Blanchard, Olivier, Changyong Rhee, and Lawrence Summers (1993), “The Stock Market, Profit, and Investment,” *Quarterly Journal of Economics* 108, 115-36.

Greenwood, Robin, and Samuel Hanson (2013), “Issuer Quality and Corporate Bond Returns,” *Review of Financial Studies* 26, 1483-1525.

*Greenwood, Robin, Sam Hanson, and Lawrence Jin (2016), “A Model of Credit Market Sentiment,” Working paper, California Institute of Technology and Harvard University.

Greenwood, Robin, Samuel Hanson, and Jeremy Stein (2010), “A Gap-Filling Theory of Corporate Debt Maturity Choice,” *Journal of Finance* 65, 993-1028.

Greenwood, Robin, and Dimitri Vayanos (2014), “Bond Supply and Excess Bond Returns,” *Review of Financial Studies* 27, 663-713.

Morck, Randall, Andrei Shleifer, and Robert Vishny (1993), “The Stock Market and Investment: Is the Market a Sideshow?,” *Brookings Papers on Economic Activity*.

Polk, Christopher, and Paola Sapienza (2009), “The Stock Market and Corporate Investment: A Test of Catering Theory,” *Review of Financial Studies* 22, 187-217.

Shefrin, Hersh, and Meir Statman (1984), “Explaining Investor Preference for Cash Dividends,” *Journal of Financial Economics* 13, 253-282.

Shleifer, Andrei, and Robert Vishny (2003), “Stock Market Driven Acquisitions,” *Journal of Financial* Economics 70, 295-311.

*Stein, Jeremy (1996), “Rational Capital Budgeting in an Irrational World,” *Journal of Business* 69, 429-55.

IRRATIONAL MANAGERS

Bergman, Nittai, and Dirk Jenter (2007), “Employee Sentiment and Stock Option Compensation,” *Journal of Financial Economics* 84, 667-712.

Dittman, Ingolf, Ernst Maug, and Oliver Spalt (2010), “Sticks or Carrots? Optimal CEO Compensation when Managers are Loss Averse,” *Journal of Finance* 65, 2010-2050.

Heaton, J.B. (2002), “Managerial Optimism and Corporate Finance,” *Financial Management* (Summer), 33-45.

Kruger, Philipp, Augustin Landier, and David Thesmar (2015), “The WACC Fallacy: The Real Effects of Using a Single Discount Rate,” *Journal of Finance*, forthcoming.

Landier, Augustin, and David Thesmar (2009), “Financial Contracting with Optimistic Entrepreneurs,” *Review of Financial Studies* 22, 117-150.

*Malmendier, Ulrike, and Geoffrey Tate (2005), “CEO Overconfidence and Corporate Investment,” *Journal of Finance* 60, 2661-2700.

*Malmendier, Ulrike, and Geoffrey Tate (2008), “Who Makes Acquisitions? CEO Overconfidence and the Market’s Reaction,” *Journal of Financial Economics* 89, 20-43.

Malmendier, Ulrike, Geoffrey Tate, and Jon Yan (2011), “Overconfidence and Early-life Experiences: The Effect of Managerial Traits on Corporate Financial Policies,” *Journal of Finance* 66, 1687-1733.

Roll, Richard (1986), “The Hubris Hypothesis of Corporate Takeovers,” *Journal of Business* 59, 197-216.

Spalt, Oliver (2012), “Probability Weighting and Employee Stock Options,” *Journal of Financial and Quantitative Analysis* 48.

PART IV: THE FACTS, REVISITED

ASSET PRICING

*_Survey_, Sections 4, 5, 6.

INVESTOR BEHAVIOR

*_Survey_, Section 7.

CORPORATE FINANCE

**Survey*, Section 8.

PART V: PRESCRIPTIVE BEHAVIORAL FINANCE

Thaler, Richard, and Cass Sunstein (2008), *Nudge: Improving Decisions about Health, Wealth, and Happiness*, Yale University Press.

PART VI: CONCLUSION

**Inefficient Markets*, Chapter 7.

*Fama, Eugene F. (1998), "Market Efficiency, Long-Term Returns, and Behavioral Finance," *Journal of Financial Economics* 49, 283-307.

*Rubinstein, Mark (2001), "Rational Markets: Yes or No? The Affirmative Case," *Financial Analysts Journal* (May-June), 15-29.