

# Investment Theory (Graduate Level)

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## Course Outline

The class is a rigorous, quantitative, seminar course in investment and asset pricing theory. Each class will familiarize you with the key insights in a current topic of research in investment and asset pricing, and will show you recent work in the area. We have chosen to cover a broad range of active research so as to give you an overview of what people are working on. While you may not like all topics, the hope is that you will like some.

## Prerequisites

This course is for MA and Ph.D. students interested in financial economics. Exceptions are granted on an individual basis. Prior course work in macro-economics, micro-economics, mathematics, and statistics are recommended. Prior exposure to theoretical or empirical asset pricing course is a plus, but not a must.

## Goals

Since this is a seminar class, students will present the papers. Each week there will be 2 papers. Typically, one of these papers will be a *classic* in the literature and the other two will be more recent papers that push these classic ideas in a new and, in our opinion, exciting direction. Each paper will be presented by one student, and a group discussion will follow, in which all are expected to participate. The class will help you develop several critical attributes to a successful thesis, and a successful academic career more generally.

## Assessment

Grades will be based on term paper (30%), in-class presentations (50%), and in-class Participation (20%).

## Class Schedule

### 1 week: Introduction

### 2 week: The Temporal Pricing of Risk

For presentation:

1. Alvarez and Jermann (2005): "Using Asset Prices to Measure the Persistence of the Marginal Utility of Wealth", *Econometrica*, 73(4), 1977-2016.
2. Kojen, R., H. Lustig, and S. Van Nieuwerburgh (2009): "The Cross-Section and Time-Series of Stock and Bond Returns," Working Paper New York University.
3. Hansen, L. P., J. C. Heaton, and N. Li (2008): "Consumption Strikes Back? Measuring Long-Run Risk," *Journal of Political Economy*, 116 (2), 260-302.

Others: Cochrane and Hansen (1992), Alvarez and Jermann (2004), Backus, Chernov, and Martin(2009), Hansen and Scheinkman (2009), Martin (2008), Backus, Routledge, and Zin (2008), Lustig and Van Nieuwerburgh (2008), Lynch (1996), and Lustig, Van Nieuwerburgh, and Verdelhan (2008)

### 3 week: Return predictability and the present-value model

For presentation:

1. Binsbergen, J., and R. Koijen (2009): "Predictive Regressions: A Present-Value Approach," *Journal of Finance*, Forthcoming.
2. Pastor, L., and R. F. Stambaugh (2003): "Liquidity Risk and Expected Stock Returns," *Journal of Political Economy*, 111(3), 642-685.
3. Kirby, C. (1998): "The Restrictions on Predictability Implied by Rational Asset Pricing Models," *Review of Financial Studies*, 11 (2), 343-382.

Others: Campbell and Shiller (1988a), Campbell and Shiller (1988b), Fama and French (1988), Stambaugh (1999), Whitelaw (2000), Lettau and Ludvigson (2001), Boudoukh, Michaely, Richardson, and Roberts (2004), Boudoukh, Richardson, and Whitelaw (2005), Amihud, Hurvich, and Wang (2009), Lettau and Ludvigson (2005), Cochrane (2006), Lettau and Van Nieuwerburgh (2008), Koijen and Van Nieuwerburgh (2007)

### 4 week: The long-run risk model

For presentation:

1. Bansal, R., and A. Yaron (2004): "Risks for the Long Run: A Potential Resolution of Asset Pricing Puzzles," *The Journal of Finance*, 59, 1481-1509.
2. Bansal, R., D. Kiku, and A. Yaron (2007): "Risks for the Long Run: Estimation and Inference," Working Paper Duke University.
3. Beeler, J., and J. Y. Campbell (2009): "The Long-Run Risks Model and Aggregate Asset Prices: An Empirical Assessment," Working Paper Harvard University.

Others: Kreps and Porteus (1978), Epstein and Zin (1989), Epstein and Zin (1991), Du±e and Epstein (1992), Parker and Julliard (2005), Hansen, Heaton, and Li (2008), Bansal, Dittmar, and Lundblad (2005), Benzoni, Collin-Dufresne, and Goldstein (2005), Piazzesi and Schneider(2006), Colacito and Croce (2005), Bansal, Gallant, and Tauchen (2007), Bansal, Dittmar, and Kiku (2007), Bansal and Shaliastovich (2007), Yu (2007), Benzoni, Collin-Dufresne, and Goldstein (2008), Chen, Favilukis, and Ludvigson (2008), Croce, Lettau, and Ludvigson (2008), Malloy, Moskowitz, and Vissing-Jorgensen (2009), Lustig, Van Nieuwerburgh, and Verdelhan (2008)

### 5 week: The habit model

Students are expected to be very familiar with Campbell and Cochrane (1999).

For presentation:

1. Menzly, L., T. Santos, and P. Veronesi (2004): "Understanding Predictability," *Journal of Political Economy*, 112(1), 1-47.
2. Lynch, A. W., and O. Randall (2009): "Why Habit May Be Less Persistent Than You Think," Working Paper, NYU Stern School of Business.
3. Bansal, Kiku, and Yaron (2009): "An Empirical Evaluation of the Long-Run Risks Model for Asset Prices," Working Paper Duke University and the Wharton School.

Others: Abel (1990), Constantinides (1990), Ferson and Constantinides (1991), Abel (1999), Chapman (1998), Chan and Kogan (2002), Wachter (2005), Polkovnichenko (2006), Wachter (2006), Chen, Collin-Dufresne, and Goldstein (2008), Chen and Ludvigson (2007), Verdelhan(2009), Lustig, Van Nieuwerburgh, and Verdelhan (2008), Garleanu and Panageas

(2008)

### 6 week: Production-Based Asset Pricing

For presentation:

1. Zhang, L. (2005): "The Value Premium," *Journal of Finance*, 60 (1), 67-103.
2. Kogan, L., and D. Papanikolaou (2009): "Growth Opportunities and Investment-Specific Technology Shocks and the cross-section of expected returns," Working Paper, MIT Stern School of Management and Kellogg School of Management.
3. Bazdresch, S., F. Belo, and X. Lin (2009): "Labor Hiring, Investment, and Stock Return Predictability in the Cross-Section," Working Paper University of Minnesota.

Others: Gomes and Schmid (2008), Hennessy and Whited (2007a), Hennessy and Whited (2007b), Panageas and Yu (2006), Garleanu, Panageas, and Kogan (2009), Berk, Green, and Naik(1999), Gomes, Yaron, and Zhang (2006)

### 7 week: Asset pricing in General Equilibrium Models

For presentation:

1. Gomes, J., L. Kogan, and L. Zhang (2003): "Equilibrium Cross-Section of Returns," *Journal of Political Economy*, 111, 693-732.
2. Kaltenbrunner, G., and L. Lochstoer (2008): "Long-Run Risk through Consumption Smoothing," Working Paper Columbia University.
3. Favilukis, J., S. Ludvigson, and S. Van Nieuwerburgh (2010): "The Macroeconomic Effects of Housing Finance, and Limited Risk-Sharing in General Equilibrium," Working Paper New York University.

Other: Boldrin, Christiano, and Fisher (2001), Campbell (1999), Lettau and Uhlig (2000), Fisher (2006), Croce (2007), Krusell and Smith (1997), Gomes and Michaelides (2008), Favilukis (2007), Campanale, Castro, and Clementi (2009), Jermann (1998), Gomes, Kogan, and Yogo (2009), Kogan (2001), Kogan (2004), Papanikolaou (2007)

### 8 week: Disaster Risk

For presentation:

1. Gabaix, X. (2009): "Variable Rare Disasters: An Exactly Solved Framework for Ten Puzzles in Macro Finance," Working Paper NYU Stern.
2. Gourio, F. (2009): "Disasters Risk and Business Cycles," Working Paper Boston University
3. Gosh, A., and C. Julliard (2008): "Can Rare Events Explain the Equity Premium Puzzle?," Working Paper London School of Economics.

Others: Barro (2006), Wachter (2009), Farhi and Gabaix (2009), Farhi, Gabaix, Ranciere, and Verdelhan (2009), Backus, Chernov, and Martin (2009)

### 9 week: Incomplete Markets and Un-diversifiable Labor Income Risk

Students are expected to be very familiar with Mankiw (1986).

For presentation:

1. Constantinides, G. M., and D. Duffie (1996): "Asset Pricing with Heterogeneous Consumers," *Journal of Political Economy*, 104, 219-240.
2. Krueger, D., and H. Lustig (2009): "When is Market Incompleteness Irrelevant for the Price of Aggregate Risk?," *Journal of Economic Theory*, Forthcoming, Working Paper UCLA.
3. Storesletten, K., C. Telmer, and A. Yaron (2004b): "Cyclical Dynamics of Idiosyncratic Labor Market Risk," *The Journal of Political Economy*.

Others: Brav, Constantinides, and Geczy (2002), Heaton and Lucas (1996), Grossman and Shiller (1982), Cogley (2002), Storesletten, Telmer, and Yaron (2004a), Jacobs and Wang

(2004)

### 10 week: Limited Participation and Limited Commitment

1. Guvenen, M. F. (2009): "A Parsimonious Macroeconomic Model for Asset Pricing: Habit Formation or Cross-sectional Heterogeneity?," *Econometrica*, Forthcoming, Rochester Center for Economic Research Working Paper No. 499.
  2. Chien, Y., H. Cole, and H. Lustig (2009): "Macro Implications of Household Finance," Working Paper UCLA.
  3. Lustig, H., and S. Van Nieuwerburgh (2005): "Housing Collateral, Consumption Insurance and Risk Premia: An Empirical Perspective," *Journal of Finance*, 60(3), 1167-1219.
- Others Limited Participation: Basak and Cuoco (1998), Vissing-Jorgensen (2002), Allen and Gale (1994), Cuoco and Kaniel (2006), Shapiro (2002)
- Others Limited Commitment: Kehoe and Levine (1993), Alvarez and Jermann (2000), Lustig and Van Nieuwerburgh (2007), Krueger (1999), Kocherlakota (1996), Alvarez and Jermann (2001), Kehoe and Perri (2002), Lustig and Chien (2009), Lustig and Van Nieuwerburgh (2009)

### 11 week: Dynamic portfolio choice

For presentation:

1. Campbell, J., and L. Viceira (1999): "Consumption and Portfolio Decisions when Expected Returns are Time-Varying," *Quarterly Journal of Economics*, 114, 433-495.
  2. Lynch and Tan (2009b): "Labor Income Dynamics at Business-cycle Frequencies: Implications for Portfolio Choice," *Journal of Financial Economics*, Forthcoming, Working Paper NYU Stern School of Business.
  3. Xia, Y. (2001): "Learning about Predictability: The Effects of Parameter Uncertainty on Dynamic Asset Allocation," *Journal of Finance*, 56, 205-246.
- Others: Kandel and Stambaugh (1996), Kim and Omberg (1996), Balduzzi and Lynch (1999), Brandt (1999), Lynch (2001), Campbell and Viceira (2001), Brandt and Santa-Clara (2006), Cocco, Gomes, and Maenhout (2005), Barberis (2000), Koijen, Nijman, and Werker (2007), Garleanu and Pedersen (2009a)

### 12 week: Transaction costs and liquidity risk

1. Vayanos, D. (1998): "Transaction Costs and Asset Prices: A Dynamic Equilibrium Model," *Review of Financial Studies*, 11, 1-58.
  2. Brunnermeier, M., and L. Pedersen (2009): "Market Liquidity and Fund Liquidity," *Review of Financial Studies*, 22, 2201-2238.
  3. Lynch, A. W., and S. Tan (2009a): "Explaining the Magnitude of Liquidity Premia: The Roles of Return Predictability, Wealth Shocks and State-dependent Transaction Costs," *Journal of Finance*, Forthcoming, Working Paper NYU Stern School of Business.
- Others: Amihud (2002), Amihud and Medelson (1986), Chordia, Roll, and Subrahmanyam (2000), Constantinides (1986), Hasbrouck and Seppi (2001), He and Modest (1995), Pastor and Stambaugh (2003), Acharya and Pedersen (2005)

### 13 week: Limits to arbitrage

1. Shleifer, A., and R. Vishny (1997): "The Limits of Arbitrage," *Journal of Finance*, 52, 35-55.
2. He, Z., and A. Krishnamurthy (2008): "Intermediary Asset Pricing," Working Paper Northwestern University
3. Garleanu and Pedersen (2009b): "Margin-Based Asset Pricing and Deviations from the Law of One Price," Working Paper, U.C Berkeley and New York University

Others: Long, Shleifer, Summers, and Waldman (1990), Long, Shleifer, Summers, and Waldman (1991), Gromb and Vayanos (2002), Kogan, Ross, Wang, and Westerfeld (2006), Mitchell, Pulvino, and Stafford (2002), Coen-Pirani (2005), Coval and Stafford (2005), Gabaix, Krishnamurthy, and Vigneron (2006), Coval, Jurek, and Stafford (2009), Vayanos and Vila (2007) and Garleanu and Pedersen (2007)

## Textbooks

There are no textbooks for this class, but the following are good general background textbooks for this class and for any asset pricing library:

*"Recursive Macroeconomic Theory" by L. Ljungqvist and T. Sargent, 2nd edition.*

*"Asset Pricing" by J. Cochrane, 2nd edition.*

*"Dynamic Asset Pricing Theory" by D. Duffie, 3rd edition.*

*"Empirical Dynamic Asset Pricing" by K. Singleton, 1st edition.*

*"The Econometrics of Financial Markets" by J. Campbell, A. Lo, and C. MacKinlay.*

*"Numerical Methods in Economics" by K. Judd.*