

B9327-001 Empirical Asset Pricing II
Spring B 2024
Course Outline and Syllabus

This draft: October 12, 2023 (subject to future revisions)

Contact Information:

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Office Hours: Before or after class. Otherwise, please email me for an appointment.

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Teaching Assistant:

Schedule

The class takes place on Xdays from xx-yy. The first class is on X. There is no class on X. The last class is on X. The classroom is **Kravis X**.

Description

The course provides a robust discussion of recent research in empirical asset pricing. The course format will be lectures with student Q&A. The goal is to connect empirical methods to theoretical concepts, and ultimately to create ideas for independent research in asset pricing.

Prerequisites

The course is designed for PhD and advanced MS students in finance. The pre- or co-requisite is Empirical Asset Pricing I.

Requirements

There are two requirements for this course. The first is that you participate in class. You are expected to read through the class material and required papers before class. The goal is to spend a fair amount of time discussing the research in interactive format. This requires investing the time to read the material and come with a list of Q&A. Attendance is not participation. Participation accounts for 25% of your grade.

The second requirement is that you write a term paper. The minimum requirement for the paper is that you survey one of the areas covered in this class in more depth, assess what the contributions of the papers are, discuss their strengths and weaknesses, and propose how they could be extended or improved. A better paper would replicate and extend one of the papers we read, which is a great way to start a research project. The best papers would explore de novo research ideas in empirical asset pricing, possibly drawing new connections between the topics we covered. The **due date** for the paper is **one week after the last class, no exceptions**. The term paper accounts for 75% of your grade.

Materials

Articles and lecture notes that we will be covering will be available on Canvas. If you want to work in this area, you will need to develop a working knowledge of Matlab and/or Python.

Excellent reference books are the following:

Cochrane, John, 2005, *Asset Pricing: Revised Edition* Princeton, NJ: Princeton University Press

Campbell, John Y., 2018, *Financial Decisions and Markets: A Course in Asset Pricing*, Princeton, NJ: Princeton University Press

Campbell, John Y., Andrew W. Lo, and A. Craig MacKinlay, 1997, *The Econometrics of Financial Markets*, Princeton, NJ: Princeton University Press

Duffie, Darrell, 2001, *Dynamic Asset Pricing Theory*, 3rd Edition, Princeton, NJ: Princeton University Press

Singleton, Kenneth J., 2006, *Empirical Dynamic Asset Pricing*, Princeton, NJ: Princeton University Press

Hamilton, James D., 1994, *Time Series Analysis*, Princeton, NJ: Princeton University Press

John Campbell also provides an interesting review of research ideas in his survey of the 2013 Nobel Prize winners research: Campbell, John Y., 2014, Empirical asset pricing: Eugene Fama, Lars Peter Hansen, and Robert Shiller, *Scandinavian Journal of Economics* 116, pp.593-634.

The reading list below cites the papers we will discuss, some in more detail than others, and a few are there for your own reference only. The key papers which I would like you to **read before class** are indicated with a **star**.

Detailed Course Overview

Week 1 **The Term Structure of Risk Premia in Equity, Bond, and Volatility Markets**

Belo, Frederico, Pierre Collin-Dufresne, and Robert S. Goldstein, 2015, Dividend dynamics and the term structure of dividend strips, *Journal of Finance* 70, 1115-1160.

Backus, David, Nina Boyarchenko, and Mikhail Chernov, 2018, Term structures of asset prices and returns, *Journal of Financial Economics* 129, 1-23.

*van Binsbergen, Jules H., Michael W. Brandt, and Ralph S.J. Koijen, 2012, On the timing and pricing of dividends, *American Economic Review* 102, 1596–1618.

van Binsbergen, Jules H., Wouter Hueskes, Ralph S.J. Koijen, and Evert Vrugt, 2012, Equity Yields, *Journal of Financial Economics* 110, 503-519.

*van Binsbergen, Jules H. and Ralph S.J. Koijen, 2017, The term structure of returns: Facts and theory, *Journal of Financial Economics* 124, 1-21.

Croce, Massimiliano, Martin Lettau, and Sydney Ludvigson, 2015, Investor information, long-run risk, and the term structure of equity, *Review of Financial Studies* 28, 706-742.

Gormsen, Nils and Ralph S.J. Koijen, 2020, Coronavirus: Impact on Stock Prices and Growth Expectations, *Review of Asset Pricing Studies* 10, 574-597.

Gupta, Arpit and Stijn Van Nieuwerburgh, 2021, Valuing Private Equity Strip by Strip, *Journal of Finance* 76, 3255-3307.

Weber, Michael, 2018, Cash Flow Duration and the Term Structure of Equity Returns, *Journal of Financial Economics* 128, 486-503.

Week 2 Intermediary-based Asset Pricing

*Adrian, Tobias, Erkki Etula, and Tyler Muir, 2014, Financial intermediaries and the cross section of asset returns, *Journal of Finance* 69, 2557-2596.

Adrian, Tobias and Hyun Song Shin, 2013, Procyclical Leverage and Value-at-Risk, *Review of Financial Studies* 27, 373-403.

Brunnermeier, Marcus and Lasse H. Pedersen, 2009, Market liquidity and funding liquidity, *The Review of Financial Studies* 22, 2201-2238.

Brunnermeier, Marcus and Yuliy Sannikov, 2014, A Macroeconomic Model with a Financial Sector, *American Economic Review* 104, 379-421.

Elenev, Vadim, Tim Landvoigt, and Stijn Van Nieuwerburgh, 2016, Phasing Out the GSEs, *Journal of Monetary Economics* 81, 111-132.

*Elenev, Vadim, Tim Landvoigt, and Stijn Van Nieuwerburgh, 2021, A Macroeconomic Model of Financially Constrained Intermediaries and Producers, *Econometrica* 89, 1361-1418.

Greenwald, Landvoigt, and Van Nieuwerburgh, 2021, Financial Fragility with SAM?, *Journal of Finance* 76, 651-706

*He, Zhiguo, Brian Kelly, and Asaf Manela, 2017, Intermediary asset pricing: New evidence from many asset classes, *Journal of Financial Economics* 126, 1-35.

He, Zhiguo and Arvind Krishnamurty, 2013, Intermediary Asset Pricing, *American Economic Review* 103, 732-770.

Malloy, Christopher, Tobias Moskowitz, and Annette Vissing-Jorgensen, 2009, Long-run Stockholder Consumption Risk and Asset Returns, *Journal of Finance* 64, 2427-2479.

Santos, Tano and Pietro Veronesi, 2022, Leverage, *Journal of Financial Economics*, 145, 362-386

Week 3 Production-based Asset Pricing Models

Bazdresch, Santiago, Frederico Belo, and Xiaoji Lin, 2014, Labor Hiring, Investment and Stock Return Predictability in the Cross Section, *Journal of Political Economy* 122, 129-177.

Cochrane, 1991, Production-Based Asset Pricing and the Link Between Stock Returns and Economic Fluctuations, *Journal of Finance* 46, 209-237.

Delikouras, Stefanos and Robert Dittmar, 2021, Does the Investment-based Model Explain Equity Returns? Evidence from Euler Equations. Working Paper University of Miami.

Gonçalves, Andrei S., Chen Xue, and Lu Zhang, 2020, Aggregation, Capital Heterogeneity, and the Investment CAPM, *The Review of Financial Studies* 33, 2728–2771.

*Hou, Kewei, Chen Xue, and Lu Zhang, 2015, Digesting anomalies: An investment approach, *Review of Financial Studies* 28, 650-705.

Kaltenbrunner, Georg and Lars Lochstoer, 2010, Long-Run Risk through Consumption Smoothing, *Review of Financial Studies* 23, 3141 – 3189.

Kogan, Leonid, Dimitris Papanikolaou, Amit Seru, and Noah Stoffman, 2017, Technological Innovation, Resource Allocation and Growth, *Quarterly Journal of Economics* 132 665-712.

Kogan, Leonid, Dimitris Papanikolaou, and Noah Stoffman, 2020, Left Behind: Creative Destruction, Inequality, and the Stock Market, *Journal of Political Economy*, 128, 855-906

*Liu, Laura, Toni Whited, and Lu Zhang, 2009, Investment-based Expected Stock Returns, *Journal of Political Economy*, 117, 1105-1139.

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

*Zhang, Lu, 2005, The value premium, *Journal of Finance* 60, 67-103.

Week 4 Asset Pricing via Demand Systems

Chang, Yen-Cheng, Harrison Hong, and Inessa Liskovich, 2014, Regression Discontinuity and the Price Effects of Stock Market Indexing, *Review of Financial Studies*, 28, 212-246.

Joshua Coval and Erik Stafford, 2007, Asset Fire Sales in Equity Markets, *Journal of Financial Economics*, 86, 479-512.

Koijen, Ralph and Xavier Gabaix, Granular Instrumental Variables, 2020, Working Paper.

Koijen, Ralph and Xavier Gabaix, In Search of the Origins of Financial Fluctuations: The Inelastic Markets Hypothesis, 2021, Working Paper.

Koijen, Ralph, Francois Koulischer, Benoit Nguyen, and Motohiro Yogo, 2021, Inspecting the Mechanism of Quantitative Easing in the Euro Area, *Journal of Financial Economics* 140, 1-20.

*Koijen, Ralph, Robert Richmond, and Motohiro Yogo, 2021, Which Investors Matter for Equity Valuations and Expected Returns? Working Paper

*Koijen, Ralph and Motohiro Yogo, 2019, A Demand System Approach to Asset Pricing, *Journal of Political Economy*, 127, 1475-1515

*Koijen, Ralph and Motohiro Yogo, 2020, Exchange Rates and Asset Prices in a Global Demand System, Working Paper.

Week 5 Corporate Bonds and CDS

Capponi, Agostino, Allen Cheng, Stefano Giglio, and Richard Haynes, 2017, The Collateral Rule: An Empirical Analysis of the CDS Market, Working Paper.

Chen, Long, Pierre Collin-Dufresne, and Robert Goldstein, 2009, On the Relation Between the Credit Spread Puzzle and the Equity Premium Puzzle, *The Review of Financial Studies* 22, 3367–3409.

Chordia, Tarun, Amit Goyal, Yoshio Nozawa, Avanidhar Subrahmanyam, Qing Tong, 2017, Are Capital Market Anomalies Common to Equity and Corporate Bond Markets? *Journal of Financial and Quantitative Analysis* 52, 1301-1342.

Culp, Christopher, Yoshio Nozawa, and Pietro Veronesi, 2018, Option-Based Credit Spreads, *American Economic Review* 108, 454-488.

*Gilchrist, Simon and Egon Zakrajšek, 2012, Credit Spreads and Business Cycle Fluctuations, *American Economic Review* 102, 1692-1720.

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

Nozawa, Yoshio, 2017, What Drives the Cross-Section of Credit Spreads? A Variance Decomposition Approach, *Journal of Finance* 72, 2045-2072.

Week 6 **Commodities**

Acharya, Viral, Lars Lochstoer and Tarun Ramadorai, 2013, Limits to Arbitrage and Hedging: Evidence from Commodity Markets, *Journal of Financial Economics* 109, 441-465.

Cheng, Ing-haw and Wei Xiong, 2014, The Financialization of Commodity Markets, *Annual Review of Financial Economics* 6, 419-441.

Erb, Claude and Campbell Harvey, 2006, The Strategic and Tactical Value of Commodity Futures, *Financial Analyst Journal* 62, 69-97

*Gorton, Gary, Fumio Hayashi and Geert Rouwenhorst, 2012, The Fundamentals of Commodity Futures Returns, *Review of Finance* 17, 35-105

Harrison Hong and Motohiro Yogo, 2012, What does futures market interest tell us about the macroeconomy and asset prices? *Journal of Financial Economics* 105, 473-490

Killian, Lutz, 2009, Not All Oil Price Shocks Are Alike: Disentangling Demand and Supply Shocks in the Crude Oil Market, *American Economic Review* 99, 1053-1069

*Kojen, Ralph S.J., Tobias J. Moskowitz, Lasse Heje Pedersen, and Evert B. Vrugt, 2018, Carry, *Journal of Financial Economics* 127, 197-225.

Ready, Robert, Nick Roussanov, and Colin Ward, 2017, Commodity Trade and the Carry Trade: A Tale of Two Countries, *Journal of Finance* 72, 2629-2684

Yang, Fan, 2013, Investment shocks and the commodity basis spread, *Journal of Financial Economics* 110, 164-184

Week 7 **Real Estate and MBS**

*Boyarchenko Nina, Andreas Fuster, and David Lucca, 2019, Understanding Mortgage Spreads, *Review of Financial Studies* 32, 3799-3850.

Chernov, Mikhail, Brett Dunn, and Francis Longstaff, 2018, Macroeconomic-Driven Prepayment Risk and the Valuation of Mortgage-Backed Securities, *Review of Financial Studies* 31, 1132–1183.

Diep, Peter, Andrea Eisfeldt, and Scott Richardson, 2021, The Cross-Section of MBS Returns, *Journal of Finance* 76, 2093-2151.

Gabaix, Xavier, Arvind Krishnamurty and Olivier Vigneron, 2007, Limits of Arbitrage: Theory and Evidence from the Mortgage-Backed Securities Market, *Journal of Finance* 62, 557-596.

Giaconelli, Marco, 2021, Idiosyncratic Risk in Housing Markets, *Review of Financial Studies* 34, 3695-3741.

*Giglio, Stefano, Matteo Maggiori, and Johannes Stroebe, 2015, Very Long-Run Discount Rates, *Quarterly Journal of Economics* 130, 1-53.

Giglio, Stefano, Matteo Maggiori, and Johannes Stroebe, 2021, Climate Change and Long-Run Discount Rates: Evidence from Real Estate, *Review of Financial Studies* 34, 3527-3571

Favilukis, Jack and Stijn Van Nieuwerburgh, 2021, Out-of-town Home Buyers and City Welfare, *Journal of Finance* 76, 2577-2638.

Favilukis, Jack, Pierre Mabille and Stijn Van Nieuwerburgh, 2022, Affordable Housing and City Welfare, *Review of Economic Studies* forthc.

Malkhozov, Aytel, Philippe Mueller, Andrea Vedolin, and Gyuri Venter, 2016, Mortgage risk and the yield curve. *Review of Financial Studies* 29, 1220–1253.

Sagi, Jacob, 2021, Asset-Level Risk and Return in Real Estate Investments, *Review of Financial Studies* 34, 3647-3694.

*Goetzmann, William, Christopher Spaenjers and Stijn Van Nieuwerburgh, 2021, Real and Private Value Assets, *Review of Financial Studies* 34, 3497-3526.