Course Objectives

This course is an in-depth study of existing empirical work in asset pricing, including econometric and statistical methods. The focus is on the fundamental economic questions in asset pricing, how to answer them empirically, what we’ve learned about these answers in existing research, and what we still don’t know. The course should prepare you to understand and produce cutting-edge empirical asset pricing research.

Course Outline

The course will have 14 lectures:

8/24/2016 Overview of empirical asset pricing
8/31/2016 Preference-based asset pricing
9/7/2016 Consumption-based asset pricing
9/14/2016 Time-series predictability 1 (techniques)
9/21/2016 Time-series predictability 2 (evidence)
9/28/2016 Term structure of interest rates
10/5/2016 Cross-section 1 (testing CAPM)
10/12/2016 Cross-section 2 (other factors)
10/19/2016 Volatility
10/26/2016 Options
11/2/2016 Imperfections and liquidity
11/9/2016 Investor behavior and heterogeneity
11/16/2016 Mutual funds and hedge funds
11/30/2016 Frontiers of research

Course Requirements and Grading

Your grade in the course will be determined by a weighted average of your scores on the final exam, homework, and participation. The weights I will use are:

<table>
<thead>
<tr>
<th>Component</th>
<th>Weight</th>
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<tr>
<td>Final exam</td>
<td>40%</td>
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<tr>
<td>Homework</td>
<td>40%</td>
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<tr>
<td>Presentation</td>
<td>10%</td>
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<tr>
<td>Participation</td>
<td>10%</td>
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Since this is a PhD course, conditional on passing your actual grade is not very important. Your goal should be to maximize the amount you learn. With that in mind, my hope is that the comments and grades I provide will be a good indication of how much you are learning.
Exam Schedule

There will be a 12-hour take-home final sometime during finals week. I will coordinate with you to find a day that works well.

Materials

Lecture Notes

I will provide a handout each class day with copies of the slides I use. I will also put electronic copies on the course website, but this does not mean attendance is optional. The lecture notes will not be nearly as valuable without my accompanying explanation.

Textbooks

I will regularly assign readings from three different textbooks. If you decide not to buy them you will need to check them out from the library, borrow them from another student, or find some other way to do the reading.

- *Asset Pricing* by John Cochrane, ISBN 0691121370. This will be a secondary reference, but you should already have a copy from Theoretical Asset Pricing.

Data access

You will need access to the data available via Wharton Research Data Services (WRDS). If you do not already have a WRDS account, you should register as soon as possible.

Prerequisites

Graduate standing and Asset Pricing Theory course (Finance 395 3).

Description of Requirements

Final Exam

There will be a take-home final exam that tests your ability to solve problems in empirical asset pricing. Some of the problems will be comps-style written problems, others will require you to analyze data I provide. You will have 12 hours to complete the exam and return it to me.

Homework

I will give 4 homework assignments during the course of the semester, each due two weeks after they are assigned. The assignments will also be a mix of problem solving, data analysis, and some replication of existing research. Your solutions should be written up clearly in MS Word or, ideally, LaTeX. Like papers, they should explain your answers in words and provide tables and figures when called for. Hand-written homework assignments will not be accepted.

The homework and final will require coding and estimation using a language of your choice. I use Matlab, but R and Python are also good choices. Purely statistical packages like SAS and STATA are useful for basic stuff but are nearly impossible to use for some of the applications in this course, particularly when writing your own likelihood functions.
Presentation

Each of you to with give a 30-minute presentation of a recent paper at the end of a lecture. Your job will be to summarize the results and techniques, offer your opinion on its strengths and weaknesses, and answer audience questions about the paper.

Participation

Part of your grade will be based on the quality (not quantity) of your contributions to class discussions. Show up to class on time, ask questions, and participate in discussions.

Continuous Feedback

If you have any feedback about the course or my teaching at any time during the semester, please send it to travis.johnson@mccombs.utexas.edu. I am eager to hear about any ways I can make it the best possible experience for my students.

In case you are not comfortable sending me negative feedback directly, I have created an anonymous gmail account (username: johnson.teaching.feedback, password: HookEmHorns) for you to send me feedback. However, you should also feel free to send non-anonymous feedback; your grading for the course will be mechanical and I will certainly not hold any feedback against you.

Students with Disabilities

Students with disabilities may request appropriate academic accommodations from the Division of Diversity and Community Engagement, Services for Students with Disabilities, 512-471-6259, http://diversity.utexas.edu/disability/.

Religious Holidays

By UT Austin policy, you must notify me of your pending absence at least fourteen days prior to the date of observance of a religious holy day. If you must miss a class, an examination, a work assignment, or a project in order to observe a religious holy day, you will be given an opportunity to complete the missed work within a reasonable time after the absence.

Policy on Scholastic Dishonesty

The McCombs School of Business has no tolerance for acts of scholastic dishonesty. The responsibilities of both students and faculty with regard to scholastic dishonesty are described in detail in the BBA Programs Statement on Scholastic Dishonesty at http://my.mccombs.utexas.edu/BBA/Code-of-Ethics. By teaching this course, I have agreed to observe all faculty responsibilities described there. By enrolling in this class, you have agreed to observe all student responsibilities described there. If the application of the Statement on Scholastic Dishonesty to this class or its assignments is unclear in any way, it is your responsibility to ask me for clarification. Students who violate University rules on scholastic dishonesty are subject to disciplinary penalties, including the possibility of failure in the course and/or dismissal from the University. Since dishonesty harms the individual, all students, the integrity of the University, and the value of our academic brand, policies on scholastic dishonesty will be strictly enforced. You should refer to the Student Judicial Services website at http://deanofstudents.utexas.edu/sjs/ to access the official University policies and procedures on scholastic dishonesty as well as further elaboration on what constitutes scholastic dishonesty.

As specific guidance for this course, you should consider the homework assignments and final exam to be an individual effort. You are allowed to use textbooks, data sources, your computer, your notes, and any other resources that do not involve assistance from anyone but me.
Campus Safety

Please note the following recommendations regarding emergency evacuation, provided by the Office of Campus Safety and Security, 512-471-5767, http://www.utexas.edu/safety:

- Occupants of buildings on The University of Texas at Austin campus are required to evacuate buildings when a fire alarm is activated. Alarm activation or announcement requires exiting and assembling outside.

- Familiarize yourself with all exit doors of each classroom and building you may occupy. Remember that the nearest exit door may not be the one you used when entering the building.

- Students requiring assistance in evacuation should inform the instructor in writing during the first week of class.

- In the event of an evacuation, follow the instruction of faculty or class instructors.

- Do not re-enter a building unless given instructions by the following: Austin Fire Department, The University of Texas at Austin Police Department, or Fire Prevention Services office.


- Further information regarding emergency evacuation routes and emergency procedures can be found at: http://www.utexas.edu/emergency.
Reading List

The bullets indicate the importance of the readings:

- A solid bullet means that you should read this material thoroughly and make sure that you understand exactly what is being done.

- An empty bullet means that I will cover the paper in class but you do not need to read in advance. You should, however, use them as a reference for topics you are interested in or having trouble understanding. Student presentations will be on one of these papers.

Session 1: Overview of empirical asset pricing

*Overview of the course and review of key concepts: stochastic discount factor, preference-based restrictions, no-arbitrage restrictions*

- Cochrane, Chapter 1
- Singleton, Chapter 1

*Serial correlation in asset returns*

- Singleton, Chapter 9
- Campbell, Lo, MacKinlay (CLM), Chapters 2 and 3


Session 2: Preference-based asset pricing

**Empirical bounds on the pricing kernel**

- Cochrane, Section 5.6

**Conditioning information**

- Cochrane, Chapter 8

**Tests of preference-based models**

- Singleton, Chapter 10
Session 3: Consumption-based asset pricing

Equity premium puzzle

- Cochrane, Chapter 21

Habit formation


Long-run risk


Other potential resolutions

Session 4: Time-series predictability 1 (techniques)

**OLS**


**VAR estimates**

- CLM, Chapter 7
  - Cochrane, Section 20.1
Session 5: Time-series predictability 2 (evidence)

**Equity returns**


**Bond returns**

- CLM, Chapter 10


**Exchange rates**


Session 6: Term structure of interest rates

Term structure models

- Singleton, Chapter 12
- CLM, Section 11.1

Estimating term structure models

- Singleton, Chapter 13
- CLM, Section 11.2
Session 7: Cross-section 1 (testing CAPM)

Methods and evidence

- Cochrane, Chapters 12 and 13
- Singleton, Chapter 11

Modifying CAPM

Session 8: Cross-section 2 (other factors)

Basic facts


Factor-model explanations

- Lettau, Martin and Sydney Ludvigson, 2001b, Resurrecting the (c) capm: A cross-sectional test when risk premia are time-varying, *Journal of Political Economy* 109, 1238–1287

Behavioral explanations

Session 9: Volatility

ARCH/GARCH

- CLM, Section 12.1
- Singleton, Chapter 7

Realized volatility


Risk-return tradeoff


Causes of volatility

Session 10: Options

Model estimation

• Singleton, Chapter 15

Risk premia in options


Information in options markets

• Zhang, Xiaoyan, Rui Zhao, and Yuhang Xing, 2010, What does the individual option volatility smirk tell us about future equity returns?, *Journal of Financial and Quantitative Analysis* 45, 641–662
• Cremers, Martijn and David Weinbaum, 2010, Deviations from put-call parity and stock return predictability, *Journal of Financial and Quantitative Analysis* 45, 335–367
Session 11: Imperfections and liquidity

Liquidity and expected returns


Liquidity risk and expected returns


Price impact of asset supply


Market segmentation, slow movement of capital, and limits to arbitrage

Session 12: Investor behavior and heterogeneity

Limited stock market participation and consumption risk


Household asset allocation


Individual investor trading behavior and performance

- Barber, Brad M and Terrance Odean, 2001, Boys will be boys: Gender, overconfidence, and common stock investment, *Quarterly Journal of Economics* 261–292
Session 13: Mutual funds and hedge funds

Mutual fund performance


Mutual fund agency conflicts


Mutual funds as data-rich laboratories


Hedge funds

- Griffin, John M and Jin Xu, 2009, How smart are the smart guys? a unique view from hedge fund stock holdings, Review of Financial Studies 22, 2531–2570
Session 14: Frontiers of research

Zoo of factors


Microstructure matters


Economics of β


Intermediary-based asset pricing