FIN 7335: Topics in Empirical Asset Pricing

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Wednesday, 1:00-3:45pm, JSOM 1.517

Course Description

This course is a survey of empirical asset pricing, emphasizing a discount-factor and GMM approach, the consumption-based asset pricing, and the investment-based asset pricing. We will cover empirical methods, including how to evaluate asset pricing models and how to evaluate forecasting techniques. We will cover a range of topics, including: 1) how stock returns can be predicted over time and in the cross section; 2) understanding the volatility of stock returns; 3) multi-factor models for understanding the cross-sectional pattern of average returns; 4) traditional tests of asset pricing models; 5) conditioning information and testing of conditional asset pricing models and; 6) consumption-based asset pricing models, including habit-formation and long-run risk models; 7) investment-based asset pricing models; 8) other optional topics such as bond returns depending on time. We will discuss several papers in class and replicate some of these papers in the assignments. This course involves a lot of work, including reading, working pen and pencil problems, and extensive computer problems.

Course Requirement

Attendance: Class attendance is important. Show up, read the textbook and the papers, and participate in class discussion. You must do the readings since we will discuss them in class.

Problem sets: There will be several problem sets (every one or two weeks). You are welcome to work in a group of up to two students on the problem sets and turn in one problem set for the group. I also encourage you to work with a study group even if you do your own problem sets. Get together with a group to discuss the basic ideas of each question, and solutions to programming problems. Then do the work on your own. I think this is the most time-efficient and productive way to do the homework and learn from this course. Problem sets must be handed in by the end of class on the due dates. Since I post solutions, I never accept late problem sets. If you haven't been able to complete it, hand in what you have. If you can't make it to class, you may email the problem set (in pdf format). Please type your problem sets. Equations by hand are ok. Please format regression output – don't hand in reams of printout and expect me to find what's important. You do not have to hand in code or data unless specifically asked to do so.

In-class presentation: You need to do two presentations with 30 minutes each during the semester. I will provide a list of papers that you can choose from. You can also discuss with me on other papers you are interested in but not on the list. We will finalize each student's first presentation by the start of the second meetings.

A project: You have to replicate (the major part of) the results of a paper and write a short version of the paper (about 10 pages, not including tables or figures). I will provide a list of papers that you can choose from. Pick one you are most interested in and start working on it early. You must turn your project by the date of final exam.

A referee report: At the second half of the semester, you need to pick a working paper on

empirical asset pricing and evaluate it as if you are the referee. Write a referee report including a cover letter. In the referee report, summarize the main findings of the paper, how it fits in the existing literature, and discuss what you like and what do you not like the paper and detailed comments on how the author(s) can improve. In the cover letter, also provide a recommendation (revise & resubmit or rejection) with concrete reasons. You can choose a paper from AFA, WFA, or EFA programs in recent two years. The topics should be related to what we discuss in the class.

Final Exam: There will be a final exam at the end of the semester.

Final grade: The grade will be based on about 20% problem sets, 10% presentation, 10% paper replication, 10% referee report, and 50% the final exam.

Prerequisites

The course is designed for the second-year Ph.D. students in finance at UTD. You should have a good background in finance theory (understand what a stochastic discount factor is and what the condition $p_t = E_t[m_{t+1}x_{t+1}]$ represents). Knowledge of economics is also required, so I will assume you have seen a utility function and a budget constraint and can do simple utility maximization problems (max u(apples,oranges) st. $p_a\times$ apples+ $p_o\times$ oranges=income). I will also assume that you know what the consumption based model is. In addition, you should have the following background:

Statistics: You must understand random variables and distributions, statistics (i.e. what standard errors, confidence intervals and hypothesis tests are), you must be able to run a regression and interpret the output. You must have seen a simple time series model such as the AR(1), $x_t = \rho x_{t-1} + \epsilon_t$ and MA(1) $x_t = \epsilon_t + \theta\epsilon_{t-1}$; you must be familiar with concepts like conditional expectation $E_t(X_{t+j})$ and conditional variance $\sigma_t(X_{t+j})$.

Math: You need basic calculus (taking simple derivatives and integrals and looking at more complex ones) and basic matrix algebra.

Computers: There will be extensive computer problems in this course. You need to be able to do them. See below for program suggestions.

Workload: This class will take a lot of work. The student must be motivated to take this class. Students who can't devote 10 to 15 hours per week to the class will not enjoy it.

Course materials

Book: There is one required textbook, "Asset Pricing" by John H. Cochrane, Princeton University Press. Get the second edition which is typo-free. In addition, "The Econometrics of Financial Markets" by John Y Campbell, Andrew W. Lo, and A. Craig MacKinlay is another classical textbook on empirical asset pricing.

Readings: There will be additional readings. These will be available at the end of the syllabus.

Programming: There will be a lot of computational problems. I strongly recommend Matlab. I use Matlab so I can give advice for doing the problems in Matlab, and answers to the problems will be provided in Matlab code. Matlab is a very nice matrix-based programming language. You cannot get through this class in excel. You need some serious programming language that can

handle matrices. Besides matlab, I also recommend SAS, which allows you to handle large data easily. If you don't already have a favorite, it's time to learn.

Communications

There is a class webpage in eLearning. All materials are posted there. I use the class email lists to notify you of new materials on the webpage, typos or other glitches, to answer questions of general interest, and to make announcements. Check your email!

Contact info: Jun Li: (972)883-4422; Office: JSOM 14-510; Email: jun.li3@utdallas.edu. I do not restrict students to specific office hours, but the best way to approach me is by email.

Topics covered

1. Time series predictability
2. Cross sectional predictability
3. Conditioning information and GMM
4. Regression-based tests of linear factor models
5. Consumption-based asset pricing with CRRA utilities
6. Habit Formation
7. Long-run consumption risk models
8. Investment-based asset pricing models
9. (Maybe) Bond returns
10. (Maybe) Behavioral finance

Reading List for Empirical Asset Pricing

1 Review

Cochrane (2005), Cochrane (2011).

2 Time series predictability

Shiller (1981), Fama and French (1988a), Fama and French (1988b), Campbell and Shiller (1988), Cochrane (1992), Hodrick (1992), Stambaugh (1999), Ang and Bekaert (2007), Lettau and Ludvigson (2001a), Welch and Goyal (2008), Cochrane (2008), Lamont (1998).

3 Cross sectional predictability

Fama and French (1992), Fama and French (1993), Fama and French (1996), Fama and French (2008), Fama and French (2015), Hou, Xue, and Zhang (2014), Hou, Xue, and Zhang (2015), Lettau and Ludvigson (2001b), Cochrane (1992), Jagannathan and Wang (1996), Jegadeesh and Titman (1993), Carhart (1997), Davis, Fama, and French (2000), Asness, Moskowitz, and Pedersen (2013), Chen, Roll, and Ross (1986), Liu and Zhang (2008), Ferson and Harvey (1999), Lakonishok, Shleifer, and Vishny (1994), Daniel and Titman (1997), Novy-Marx (2013).

4 Consumption CAPM

Mehra and Prescott (1985), Campbell (2003), Hansen and Singleton (1982), Hansen and Singleton (1983), Campbell and Cochrane (1999), Campbell and Cochrane (2000), Barro (2006), Savov (2011), Ludvigson (2013), Lettau and Wachter (2007), Santos and Veronesi (2010), Savov (2011).

5 Long-Run Consumption Risk Models

Bansal and Yaron (2004), Parker and Julliard (2005), Bansal, Kiku, and Yaron (2012a), Bansal, Kiku, and Yaron (2012b), Bansal, Dittmar, and Lundblad (2005), Malloy, Moskowitz, and Vissing-Jorgensen (2009), Li and Zhang (2017).

6 Investment-based Asset Pricing

Cochrane (1988), Cochrane (1991), Cochrane (1996), Belo (2010), Jermann (2010), Hou, Xue, and Zhang (2014), Li, Livdan, and Zhang (2009), Liu and Zhang (2014), Zhang (2005), Kogan and Papanikolaou (2013), Kogan and Papanikolaou (2014), Li (2016), Belo, Lin, and Bazdresch (2014), Zhang (2015).

References

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