LECTURE: Tuesday-Thursday 12.30-1.45pm Monroe Hall 113.
OFFICE HOURS: Wednesday 12.30-2.30 by appointment only.

COURSE DESCRIPTION

This is an advance macro/finance graduate course devoted to study topics in finance with particular emphasis in financial markets and problems in their functioning. The first part of the course will cover standard theories of finance in general equilibrium models. We will first cover the case of complete markets and then move on to consider general finance properties in the context of incomplete markets.

The second part of the course will cover in detail models of general equilibrium with incomplete markets and collateral developed during the last decade. We will study how leverage can be endogenously determined in equilibrium. We will also study the effect of collateral on asset prices and real allocations. We will cover the theory of the leverage cycle and we will show how when multiple leverage cycles are considered, we can explain cross-market properties such as flight to collateral and contagion. Finally, we will also show how these models can be used to study other financial innovations, beyond leverage, such as securitization, tranching and credit default swaps.

LEARNING OUTCOMES

As a result of completing this course, students will be able to:

1. Understand canonical models of general equilibrium with complete markets, with incomplete markets and their applications to finance.

2. They should be able to critically read a paper in the frontier of the field, after getting exposed to general equilibrium models with collateral in the second part of
the course. This means not only to understand the paper but also be able to think about problems and possible extensions.

3. Students should be able to come up with interesting and relevant unsolved problems that could potentially serve as dissertation topics.

COURSE REQUIREMENTS AND GRADING:

1. Class Participation: 20%  
Regular attendance and active class participation are mandatory. Furthermore, students are expected to read the required material in advance for each class so as to be able to participate in classroom discussions. Class notes will always be emailed in advance. Class participation will also take into account attendance to our Macro seminar.

2. Midterm: 30%  
The midterm will be a written, closed book examination and will cover topics I, II and III. It will be on Wednesday November 18th, from 10-30-11.45 in room 114.

3. Research Project Presentation 50%  
Students will be required to present during our last class on December 8th a research project proposal. This should be a short presentation no longer than 15 minutes. The presentations should have a clear motivation, a clear and precisely defined question, as well as road map of how to solve it. You are more than welcome to use office hours to discuss this in advance with me. This may not end up being your final PhD dissertation project. But going through this process will help you a long way into that. I still have some of my questions and projects that I wrote down when I took a similar course with John Geanakoplos back in 2002 at Yale University. Some of those never saw the light of the day, but others became journal articles, some of which you will study during these weeks. So don’t be afraid!!

COURSE TOPICS:

I. General Equilibrium Theory and Finance with Complete Markets.  

II. General Equilibrium Theory with Incomplete Markets.  

III. GEI and Finance.


III.2. CAPM.

III.3. Personal Discounting.

IV. Endogenous Leverage and Asset Prices in a Static Model of Collateral.


V. Leverage Cycles.


VI. Collateral and Financial Innovation.

Tranching, Securitization and Credit Default Swaps in models with Collateral. Effects of financial innovation on asset prices and investment.

VII. Binomial Economies

The Binomial Non-Default Theorem. A Complete characterization of leverage.

VIII. General Collateral Model


OUTLINE:

The following outline gives a guide to the material that will be covered in the course. Lectures are indicative: I may well find that some topics require more or less time to cover.

October

20: I.1.


27: II.1.
29: II.2.

November
3: III.1.
5: III.2.
10: III.3.
12: IV.
17: V.
18: Make up for 23. Midterm.
19: VI.
23: No Class.
25: Thanksgiving

December
2: VII.
3: VIII.
8: Students presentations.

CLASS POLICIES

1. There will be no make-up midterm. You should have prior approval (for example for participation in a University sponsored event) or valid documentation (in case of an illness) for missing the midterm. In the case of a missed midterm, I will determine, based on each particular situation, any extra-work the student should do. Without prior approval or documentation, a score of zero will be assigned to the midterm.

2. The deadline for the Project Presentations is absolutely firm. No exceptions. All presentations must be done on December 8th during class. A score of zero will be assigned to the student in the failure to deliver the report on that day.

REFERENCES:

This reference list is by no means exhaustive. This is specially true for the second part of the course after topic IV.

I. General Equilibrium Theory and Finance with Complete Markets.
II. General Equilibrium Theory with Incomplete Markets.


III. GEI and Finance.


IV. Endogenous Leverage and Asset Prices in a Static Model of Collateral.

Other related:

IV. Leverage Cycles.

Other related:

Adrian T, Boyarchenko N. 2012. “Intermediary Leverage Cycles and Financial Stability” Federal Reserve Bank of New York Staff Reports, Number 567.


Poledna, S, Thurner, S. Farmer D. Geanakoplos J. 2013. “Leverage-Induced Systemic Risk under Basle II and other Credit Risk Proposals”, University of Vienna working paper.


VI. Collateral and Financial Innovation.


VII. Binomial Economies


VIII. General Collateral Model


Other related:

