ECON-UB 233 Dave Backus @ NYU

Syllabus: Macroeconomic Foundations for Asset Prices

Revised: August 14, 2014

Overview

This course is about links between asset prices (particularly the prices of equity indexes and government bonds) and the economy as a whole (particularly business cycles, inflation, and monetary policy). It's also about the tools used to study these links: mathematical tools, software tools, and economic tools. The same tools are used in investment management and research, consulting, and the business world more generally. I expect it to be a demanding course, but a useful one, whether your plans call for Wall Street, Main Street, graduate school, or something else entirely.

We will touch on some or all of these topics: the relation between economic growth and asset returns, "arbitrage-free" asset pricing, the implied volatility smile on equity index options, bond prices and yields, and maybe inflation and monetary policy. If there are other topics of burning interest, let me know and I'll see if I can work them in. Each topic is preceded by a class or two on the "math tools" needed to do justice to it. A complete set of topics and materials is posted on the course web site:

https://sites.google.com/site/nyusternmacrofoundations/home

The course is part of our evolving "frontiers of economics" sequence. Some knowledge of calculus — and maybe a little probability theory — is recommended, but more important are your willingness to engage in quantitative thinking and courage to work on things that take some effort to understand.

Important dates

Due dates for Lab Reports and dates of Quizzes are posted on the course website. Please mark them on your calendar.

Materials

There is no textbook. Everything you need will be handed out in class and posted on the course website. The notes are likely to be terse and dense (what can I say, that's what passes for my style), but I expect us to breathe life into them in class. If you find mistakes, please tell me, I'll correct them immediately.

We will use software extensively. The default is Matlab, a popular user-friendly high-level language that's described in Lab Report #0. A second option is Python: Whenever you see Matlab, you are free to substitute Python. It's less user-friendly for novices, so I suggest you stick with Matlab unless you have prior programming experience.

Requirements

The course is a mixture of economic ideas and the mathematical and software tools needed to put those ideas to practical use. The best way to learn how these tools work is to use them. We do that with lots of "Lab Reports" (assignments, roughly one a week). Three in-class quizzes provide opportunities to consolidate your knowledge and show what you have learned. The logic behind this plan is to do a little work all the time rather than lots of work once in a while. I don't believe the latter will work.

Your grade will be computed from

Quiz #1	25%
Quiz #2	25%
Quiz #3	25%
Lab Reports	25% (best 6 of 8)

I will drop the two lowest grades on lab reports, but doing them all will be a useful learning experience and a sign of your dedication. Final grades are not subject to any fixed distribution. The number of A grades, for example, will depend only on your performance in the course. If you make a good-faith effort, I expect it to be hard to get less than a B.

A note about quizzes: You can bring one page of notes, standard letter paper, both sides, with anything on it you like. This will save you from having to memorize things. It's also a good study tool: when you decide what to include, you'll be organizing your thoughts about what you've learned.

Policies

Ethics, disabilities, and many other things are governed by NYU and Stern policies. If you have any questions about them, please ask me.

On graded work: You may discuss Lab Reports with anyone (in fact, I encourage it), but anything you submit, including your code, should be your own. Quizzes should be entirely your own work.

On disabilities: If you have a qualified disability that requires academic accommodation, please contact the Moses Center for Students with Disabilities (CSD, 212-998-4980) and ask them to send me a letter verifying your registration and outlining the accommodation they recommend. If you need to take an exam at the CSD, you must submit a completed Exam Accommodations Form to them at least one week prior to the scheduled exam time to be guaranteed accommodation.