

Syllabus
Intermediate Macroeconomic Theory
Dr. Eric Young
ECO 302
Spring 2011

1. Course Objective

The recipients of the Nobel Prize for Economic Science in 2004 – Finn Kydland and Ed Prescott – were instrumental in engineering a transformation of macroeconomics, both in terms of theory and practice. One of their cited theoretical contributions was to show the profession that macroeconomics could be done using the language of microeconomics – that is, we could understand the economy as a big system of people and firms interacting in markets for goods and services. By specifying the preferences of people (what they would choose given unlimited resources), the technologies of firms (what they can produce and how they can produce it), and the resources of the economy (how much there is of everything that people or firms use), economists can use theory to predict the answers to important economic questions. The key step is to build a model, a simplified version of reality, and examine how people behave within the context of this model. If the model mimics reality well, it can be used to study policies that would be prohibitively expensive to study in actual economies.

This step – building a model – can be thought of as constructing a measuring instrument that measures the effects of changes in the economic environment. To use this analogy further, consider how you determine whether a thermometer works – you put it in a bucket of ice water and a bucket of boiling water. If the readings are 0° Celsius and 100° Celsius, respectively, you have reason to believe that your thermometer will accurately measure the temperature outside. Our model will be calibrated to accurately answer questions whose answers we know, which is basically the question “What happened in the past 500 years?” By matching the observed data, we can be confident in using the model to evaluate the consequences of different policies in the past and potential ones for the future. An important aspect of building a model is to know what to leave out – after all, a map of Charlottesville with all the detail would be the same size as Charlottesville and thus not very useful. Testing the model then involves checking whether we left something important out; that is, do the answers change if we add in more detail?

This class will start with the most important question in macroeconomics today – why aren’t all

countries rich? We begin by building a model of long-run growth that matches two important facts: (1) standards of living were stagnant until 1750 in the US and (2) since 1750 standards of living have grown at a rapid but nearly-constant exponential rate (the Industrial Revolution). Clearly, the transition from an agrarian economy to an industrial economy is critical for such a transformation, so we will try to explore whether the Industrial Revolution was inevitable or the result of well-designed policy and institutional design. Having built a model that roughly captures the facts, we will use it to explore why some countries – Latin America, Africa – have remained relatively poor while others – Southeast Asia, China – have been catching up to the industrial leaders. We will also have something to say about why some countries experienced industrial revolutions earlier than others. Since our model matches the long-run growth of the world economy, there is reason to believe it will give accurate answers to these unknown questions.

Having understood the basic mechanism of long-run growth, we next take aim at short-run fluctuations around the long-run growth path, often called the business cycle. In the US, measures of production experience swings up and down that amount to almost 2 percent, and these swings last for about 3 years from peak to peak. At the same time, real consumption, investment, and total hours worked tend to move with production, so that the business cycle is characterized by the tendency of many aggregates to go up and down together. Using the model that matched the long-run growth facts and feeding in the observed movements in certain variables believed to be outside the control of the households and firms in the economy, we check to see what kind of impulses (often called "shocks") produce the right sort of movements in these aggregates, both in terms of qualitative issues (do they move in the right directions) and quantitative ones (do they move the right amount). Again, by carefully calibrating the model to produce the observed data over the long-run, we can confidently answer questions about the short-run.

Armed with a model that captures both long-run and short-run growth facts, we will use it to explore the effects of government policy. Broadly defined, policy falls into three categories – fiscal (taxes, spending, and debt), monetary (money growth, banking regulation), and institutional (other regulations). Using our model, we measure the effects of these policies in an attempt to answer two questions: (1) what has been the effects of policies in the past? and (2) what are the effects of policies that are being contemplated for the future? Since our model matches the historical data well, we can isolate the effects of government behavior and determine what would have happened if the government did (or did not) change something. Similarly, since our model matches the data, we can be confident in the answers it gives us about the effects of policies that

are being considered.

2. Texts

The required texts for the class are

- Miller, Merton H. and Charles W. Upton (1974), *Macroeconomics: A Neoclassical Introduction*, University of Chicago Press.
- Champ, Bruce and Scott Freeman (2001), *Modeling Monetary Economies*, Cambridge University Press.

Additional readings, such as articles and notes, will be made available at the course website on Collab. In particular, there are two articles from the Minneapolis Federal Reserve Economic Quarterly that you will be responsible for, one by Kydland and Prescott and the other by James Schmitz. The Schmitz article will not be discussed in class, but you will be responsible for understanding the author's message in the Introduction (the first four pages); the Kydland and Prescott article will be extensively presented in lecture. Finally, you are also responsible for reading 1995 Nobel Laureate Robert Lucas's 1988 Commencement Address at the University of Chicago. Questions from these readings may (will) appear on exams.

This course is a class in economic theory – it is not a class in macroeconomics for practitioners. The purpose is to give you a framework useful for posing big questions in macroeconomics, not to tell you what the stock market will do tomorrow. As such, it is a bit more abstract than you may be expecting, and certainly more abstract than 2020 was. Keep in mind that the data – the reflection of the real world – is always used to discipline our theories, and you'll benefit most from the class. The textbooks reflect this abstractness and are relatively difficult to read on your own; I suggest doing the readings after the class lecture on the topic, rather than before.

3. Outline

The outline below is tentative. Discussion sections will be used to work example problems and go over new material, so attendance will be important. We may fall behind or get ahead, depending on the rate at which material is covered; if that is the case, it is your responsibility to be aware of it. The date of exams will not change nor will the posting date of homeworks; for unusual circumstances the due date for homeworks may be pushed back (but never forward).

- January 19 – Introduction (Lucas article to be read)
- January 24 – Malthusian Growth Model (Chapter 1, MU)
- January 26 – National Income Accounts (Chapter 2, MU)

Homework 1 Posted

- January 31 – Solow Growth Model (Chapter 2, MU)
- February 2 – Solow Growth Model Cont. (Chapter 2, MU)

Homework 1 Due

- February 7 – More on Solow (Chapter 3, MU)
- February 9 – Industrial Revolutions (Schmitz article to be read)

Homework 2 Posted

- February 14 – Consumption/Savings Decisions (Chapter 4, MU)
- February 16 – More on Consumption/Savings (Chapter 4, MU)

Homework 2 Due

- February 21 – Life Cycle Savings (Chapter 5, MU)
- February 23 – **Midterm 1**
- February 28 – More on Life Cycle Savings, Permanent Income (Chapter 5, MU, Including Appendix)
- March 2 – Long-Run Growth Revisited (Chapter 6, MU)

Homework 3 Posted

- March 7-11 – Spring Break
- March 14 – Labor Supply
- March 18 – Investment

Homework 3 Due

- March 21 – Business Cycles I (Kydland and Prescott article to be read)

- March 23 – **Midterm 2**
- March 28 – Business Cycles II
- March 30 – Fiscal Policy: Government Spending and Taxes (Chapter 7, MU)
- April 4 – Fiscal Policy: Government Debt (Chapter 8, MU)

Homework 4 Posted

- April 6 – Money and Savings (Chapter 1, CF)
- April 11 – Money and Inflation (Chapter 3, CF, Chapter 12 MU)

Homework 4 Due

- April 13 – Money and Inflation Again (Chapter 3, CF, Chapter 12, MU)
- April 18 – Money and Banking (Chapter 13, MU, Chapter 6, CF)

Homework 5 Posted

- April 20 – Money Multipliers (Chapter 9, CF)
- April 25 – Phillips Curve (Chapter 5, CF)

Homework 5 Due

- April 27 – Temptation of Inflation (Chapter 16, CF)
- May 2 – Review
- May 7, 9 AM – **Final Exam**

4. Grading

Your course grade will be computed as follows:

- 5 Homeworks (**5%** each);
- 2 Midterms (**20%** each);
- Final Exam (**35%**).

Makeup exams are not permitted; with a valid excuse, the weight of one midterm exam can be transferred to the final. This excuse must be presented in the week following the exam in question. You may work together on homework assignments, but everyone must turn in a separate assignment. Assignments which are illegible will be considered incorrect, so please take some time to make your answers presentable. Homework assignments are due at the beginning of the class lecture indicated on the syllabus; any late homework will not be counted. The homework assignments are not generally intended to be practice for exams, but rather to pose questions that would be inappropriate for an exam environment (particularly those with quantitative answers) – you will receive the occasional example questions in discussion that are intended to give you practice for the exams.

I do not take attendance, but attendance will be related to performance, as the textbooks are challenging and the lectures contain information not available in the books. Consider yourselves warned. Discussion sections will be used to cover new material, go over exams, and work sample problems. Your attendance in these sessions is also strongly encouraged.

5. Contact Info

- Office: 242 Monroe Hall
- Phone: 434-924-3811
- Email: ey2d@virginia.edu

My official office hours will be from 1 – 3 on Monday afternoon; I ask that you respect this time and try to visit during it. I will accommodate those who cannot make these office hours due to classes. The TAs for this class are

1. Andriy Blokhin (ab3dj@virginia.edu)
2. Sherry Forbes (slf9s@virginia.edu)
3. Jiao Hu (jh4ag@virginia.edu)
4. Kulli Tamm (kt9r@virginia.edu)

Each of you will be in a discussion section led by one of the TAs. I ask you not to switch sections unless you clear it with the affected TAs first, as I don't want some sections to become

overcrowded and others to end up nearly empty. Each TA will also hold office hours at times they will specify during the first discussion section. There will be discussion sections the first week of classes.

6. Honor Code

Academic dishonesty in this course will not be tolerated in any form. You all understand the importance that the Honor Code has here at Virginia, and I expect you will hold up your end of the bargain. An explicit statement of the Honor Policy for the class can be found on Collab. You may work together on homework assignments, as noted above.