

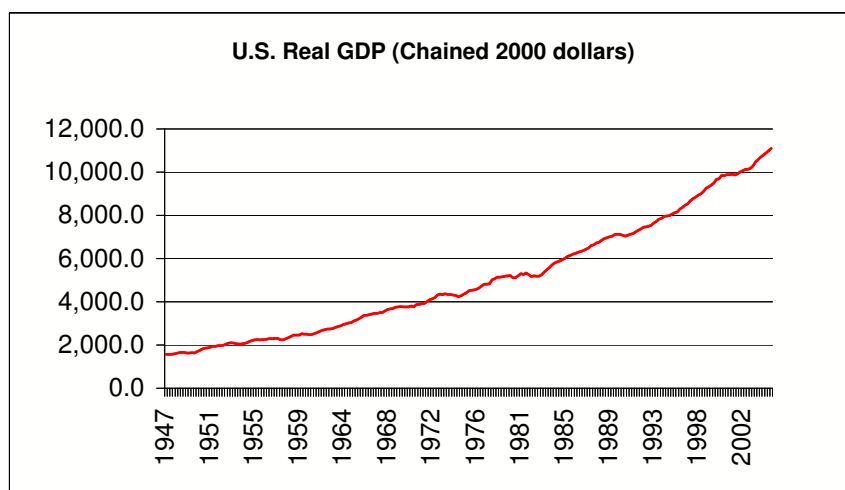
Lecture 1: Introduction to Economic Growth and Fluctuations

I. INTRODUCTION

- Economics 202 is the intermediate course in macroeconomic theory. The course is designed to be a rigorous, model based study of macroeconomic theory. While some of the basic concepts may be familiar to you from Economics 102, this course will explore issues in greater depth and in a more rigorous manner.
- The topics discussed in this class fall into two categories: issues related to the growth of the economy and issues related to periodic fluctuations in the size of the economy.
- Macroeconomics is the study of the big picture, the overall economy. We ask big questions here and as a result may not always agree on what the answer should be. Over the next 13 weeks we will study growth, business cycles, inflation, unemployment, fiscal policy, monetary policy, exchange rates, investment, consumption, trade, budget deficits etc.
- In deciding to take this class, therefore, you should be aware of the following:
 - This is a 200 level course: the material covered will be much more difficult than in 100 level Economics courses such as Econ 102.
 - The material covered in this course conceptually is very similar to what you studied in Econ 102. We will, however, be using mathematical economic models here, to analyze these concepts in more depth. If you have not taken Econ 201 or Math 115 recently, you may want to do a quick brush-up on your basic calculus.
 - You will find this course to involve a lot of work. Essentially, you will have to do a lot of homework to understand the core concepts and also learn how to apply these concepts in a VERY short time. At the end of the semester, my goal is that you will walk away from this class confident in your ability to understand mathematical models AND with a good intuitive feel for macroeconomics.
 - I also want you to use this semester to think about the interplay between mathematics and economics. Economic intuition and mathematics are not mutually exclusive: math often provides an easy way to gain economic intuition.

II. COURSE OUTLINE

- Look at a graph of real GDP for the United States plotted over time. What can we see?
 - a. Real GDP grows over time: economic growth
 - b. Along the path there are periods of fluctuations, seemingly in a cyclical pattern: economic fluctuations.



- This provides a roadmap for where we are headed: first we develop a model to study the causes of economic growth: the Solow growth model. We use this growth model to study how to make the long run trend in output as steep as possible.
- Second we develop a model to study economic fluctuations: the IS-LM/Aggregate Demand-Aggregate Supply model. We use the IS-LM model to study how to minimize the size of the fluctuations in output around the trend.
- In the final section of the course, we try to expand beyond the IS-LM model in two important dimensions: First, we will examine the important role that expectations play in determining macroeconomic fluctuations. Second, we will look at open economy issues that deal with interactions between countries.

III. OUTLINE OF ECONOMIC GROWTH

- Most, if not all, of you studied the basics of economics growth in Economics 102. Basically, you should have learned that improved economic growth comes from an improvement in a country's level of labor, capital and technology: the factors that enable it to produce more output over time.
- The concepts you learned in Economics 102 still apply here. What we do in Economics 202 is to provide more rigorous backing for the claims you learned in Economics 102. Using one of the most famous economic models - the Solow growth model - we will seek to answer some fundamental questions such as
 1. Why are some countries rich and others poor?
 2. Why do some countries grow faster than others?
 3. Why do some countries exhibit sustained economic growth?
- We will also use the analytical power of the model to answer more subtle and intuitively more complex questions such as
 1. How does a change in the growth rate of the population affect economic growth?

2. Is there an optimal level of saving/investment that is conducive for economic growth?
 3. What is the relationship between the growth rate of technology and economic growth?
 4. What is the relationship between the growth rate of a country and its initial level of wealth?
- After exploiting the analytical power of the Solow model, we will seek to test its empirical validity and also discuss possible weaknesses and logical extensions of the Solow model.

IV. OUTLINE OF ECONOMIC FLUCTUATIONS

- We will then switch from our discussion of economic growth to studying economic fluctuations. Once again from your Econ 102 courses you should have the ability to provide answers to some basic questions such as
 1. What causes the size of the economy fluctuate around its long run growth path (i.e. what causes recessions and booms)
 2. How can the government help boost the economy during an economic slowdown?
 3. How can the central bank help boost the economy during an economic slowdown?
- However, as with the growth section, we will use a famous economic model - the IS-LM-AD model - and its extensions to answer more subtle and intuitively more complex questions such as
 1. What determines the economy's ability to self-regulate and minimize the size of economic fluctuations.
 2. What are the constraints on the government's ability to use expansionary fiscal policy to bring about economic recovery.
 3. What type of tradeoff, if any, does the central bank face between controlling output fluctuations in the short run, and controlling inflation fluctuations in the long run?

V. OUTLINE OF THE OPEN ECONOMY SECTION

- Finally, we will discuss how our study of macroeconomics has to be modified in an open economy setting. Since international economic developments are gradually becoming more and more important for the macroeconomic stability of a country, it is very important for you to understand international macroeconomics.
- My goal here is to provide you with enough knowledge to know how the basic models have to be modified in an open economy setting and also provide you with a foundation for taking upper-level electives that delve deeper into international macroeconomic issues.
- We will address issues such as China's recent revaluation of their currency, Argentina's adoption of a currency board in the 1990s and the subsequent decision to abandon the dollar peg, the decision of 12 European countries to join together and form a currency union.

VI. ECONOMIC MODELS

- Given that we will spend a considerable amount of time over the semester building and using **economic models**, it is worthwhile to talk a little about economic models at the outset.
- The best analogy I have heard compares economic models to maps. Models, like maps, come in all shapes and sizes: they can be complex or simple, highlight many different features of the area being covered or focus on a single feature. Essentially, they are both abstractions of a more complex reality.
- Every model (map) is useful in its own right, but for any given task one model (map) may be extremely useful and another useless. The usefulness of the model (map) does not necessarily depend on its complexity. For example, a cross-country trip renders a detailed map of Boston useless relative to a crude map of the U.S. highway system.
- Since models are abstractions of reality, it follows that simplifying assumptions must be made in every model. Good economic models have assumptions that abstract away from issues other than the issue that the model is best suited for studying. Furthermore, all the assumptions of the model are stated upfront: if someone disagrees with the assumptions being made, then he or she can modify the assumptions and use the model themselves.
- Mathematics is the “language” in which the model is written. Mathematical equations describe the interrelationships between different variables that the model presents as an abstract representation of part or whole of the economy. These variables are classified into two categories: endogenous variables and exogenous variables. Endogenous variables are variables whose values are determined by the model while exogenous variables are variable determined outside the model.
- We use the models to conduct “comparative statics exercises”: varying exogenous variables and examining the resulting behavior of endogenous variables in response to that change.