

ADVANCED TOPICS IN MACROECONOMICS AND REAL BUSINESS CYCLES

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Course Objective

For analysts and decision makers in a variety of positions, such as business managers and government policy makers, a thorough understanding of the economy as a whole helps to make well-informed decisions. Examples of important knowledge about the economy are its sources of growth, the main impulses that cause the economy to fluctuate over time and enter into booms and recessions, the way in which these impulses propagate over time, and the state of the economy in general. The main objective of this course is to lay the foundation for such an understanding and present a framework within which we can (and will) evaluate a variety of aggregate phenomena.

Framework

Since the 1960s, the neoclassical growth model has served as the workhorse for aggregate economic analysis. Early on, it was used to address long-run questions, and it still is. Recent examples are the impact of the aging of the baby boomers (who are now mostly in their 60s) and changes in immigration policy on future savings, interest rates, and taxes. In the 1980s and 1990s, this framework has been expanded in detail and scope also to make it the dominant one for addressing questions of shorter-run nature, such as those related to aggregate fluctuations – the business cycle.

A central element of any macroeconomic model is the aggregate production function – a description of how production of goods depends on the inputs of capital and labor and is influenced by technological change. To be internally consistent, a model of the aggregate economy needs to include also the household sector. People make savings decisions (consumption now vs consumption in the future), which help to determine the quantity of capital and hence the economy's capacity to produce in the future. They make decisions about the allocation of time to market work and to non-market activities (home production and leisure). Households are motivated by their preferences for current and future consumption and leisure, but their choices must remain within their time and budget constraints. Other sectors (the government; foreign sector) may be included in a model if the issue addressed dictates it.

The model economies we use are inhabited by large numbers of people who make rational economic decisions over time. It is important to emphasize the inherently intertemporal (dynamic) nature of macroeconomics. In particular, expectations about the

future play a crucial role for current decisions. For example, expectations of future incomes (net of taxes) from physical and human capital influence the willingness to invest in such capital today.

Frequently, the goal of the analysis is to draw *quantitative* conclusions and not merely qualitative (direction of change). Then economists use a tool that has become prominent over the years – the computational experiment. This tool enables the analyst to use dynamic model economies inhabited by people, businesses, and government to study the quantitative properties of the time paths that result from their aggregate decisions in the environments in which they are placed. The model time series can be contrasted with those for actual economies and thereby enhance one's understanding of macroeconomic phenomena. Moreover, changes in government policy can be evaluated quantitatively.

Course Materials

1. **Text.** Merton H. Miller and Charles W. Upton, *Macroeconomics: A Neoclassical Introduction*, University of Chicago Press, 1986, Ch. 1-6.
2. **Notes to Accompany the Text.** They add important topic material, especially relevant for business cycles, to complement Miller and Upton.
3. **Additional Readings** (e.g., additional notes, updates, articles). Made available as the course progresses.
4. **U.S. Data.** Any recent year of the annual Economic Report of the President (for the U.S.). Several data sources are available for downloading on the Internet, for example FRED operated by the Federal Reserve Bank of St. Louis.