ECON-508: Monetary Theory

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Office hours: Monday-Wednesday (9:00-12:00)
Class time: Tuesday-Thursday (12:30-13:45)

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Course Objectives

This course offers a solid review of key monetary theories with emphasis on time series applications to monetary economics. Here, we analyze key fundamental models in monetary theory. At last, we finish the course by examining the monetary transmission mechanisms (for example, the link between monetary policy, prices and output) in an empirical fashion.

Required Textbook and Materials

- This course does not impose a textbook: we will rely on lecture notes and journal articles. Instructions to install RStudio for time series applications will be posted on blackboard.

Course Details

Lectures are held in person and attendance is mandatory. It is important to read the relevant content posted on the blackboard prior to attending class. Exam and homework questions stem directly from the problem sets and lecture content covered in class. I do not allow makeup exams, except for these students whose cases stem from illness or injury. Note that part of the material covered in this class requires a basic and simple understanding of calculus 1 (you may be required to learn optimization techniques). This class incorporates an inclusive and equitable environment, which means that students are expected to treat their peers with a high degree of professionalism, kindness, and respect. Additionally, the university's **Title IX** policy encourages access to information and resources to support anyone who has been affected by, knows of, or wants to help prevent an incident or pattern of behavior. Students may contact the Title IX coordinator (**Mary Martinez**) by phone (989-774-3253) to discuss any questions or concerns. Some students may require additional resources to ensure equal access: these students should

contact the **accessibility resources center** to discuss ways in which their needs can be met. The accessibility resources center is located in **park library 120**.

Grade Distribution

- **Problem set (20%)**: there are two problem sets. All assignments are to be submitted on the blackboard.
- **VAR project (40%)**: students are expected to analyze the monetary transmission mechanisms of monetary policy by using a vector autoregressive (VAR) model based on monetary-policy variables, output and prices, for any country of their choice. The assignment requires you to use RStudio. However, you can use any software of you choice (for example, Matlab, which I am going to use to replicate an empirical study). I will provide a tutorial on time series applications for RStudio; because it is an open-source software.
- **Midterm exam (20%)**: this part of the grade is an in-class exam. The exam content emanates directly from the material covered during class lectures.
- **Final exam (20%)**: this is a non-cumulative take-home exam. The exam content emanates directly from the material covered during class lectures.

Grade	Range (%)
A	94-100
A-	90-93.99
B+	85-89.99
B	80-84.99
B-	77-79.99
C+	73-76.9
C	70-72.99
C-	67-69.99
D+	63-66.99
D	60-62.99
F	0-59.99

Table 1: Grade Distribution (ECON 508)

Course Outline

The following class schedule is tentative and may change if needed. The weekly topics should mainly serve as a reference for the lectures.

- *IS-LM model with monetary policy implications*: we will rely on an IS-LM model to examine the effect of monetary policy when the central bank operates through either interest rate changes (interest rate instrument) or money stock changes (money instrument).
  - The IS-LM Model: Its Rise, Fall, and Strange Persistence. 2004. Edited by Michel De Vroey and Kevin D. Hoover. Durham, NC: Duke University Press.

- *Monetary policy operating procedures*: this section focuses on the implementation of monetary policy. More specifically, we examine the central bank optimal instrument choice in a theoretical fashion. More specifically, we examine the optimal choice of instrument between a monetary aggregate and the nominal interest rate in a stochastic IS-LM model.
  - Poole, W. (1970). Optimal Choice of Monetary Policy Instruments in a Simple Stochastic Macro Model. The Quarterly Journal of Economics, 84(2), 197–216

- *Business cycle, inflation dynamics, and the Phillips curve*: in the early 1960s, the Phillips curve evolved to be central to monetary theory and policy. With respect to monetary policy, the Phillips curve is instrumental, because it illustrates a short-run tradeoff between inflation and unemployment that a central bank can exploit.
  - Furlanetto, Francesco, and Antoine Lepetit (2024). "The Slope of the Phillips Curve,"Finance and Economics Discussion Series 2024-043.

- *Discretionary monetary policy and time inconsistency*: higher than optimal inflation observed in many countries has led to the development of monetary theories attempting to explain the inflation bias problem. Here, we show that the time time-inconsistency problem faced by a central bank can be linked to its discretionary monetary policy and political pressures.
  - Barro, R. J., and D. B. Gordon. (1983a). A positive theory of monetary policy in a natural-rate model. Journal of Political Economy 91:589-610.

- *Inflation targeting and implementation*: we derive an inflation targeting framework in which the central bank's inflation forecast becomes the explicit intermediate target of monetary policy. We show that this approach improves central bank accountability, because it is difficult for the public to openly criticize the inflation forecast, since the latter eliminates accountability that may arise due to the disturbances found within the control lag of monetary policy.
  - Svensson, L.E.O. 1997a. "Inflation Forecast Targeting: Implementing and Monitoring Inflation Targets." European Economic Review 41(6): 1111-1146.

- *Time series applications to monetary economics*: here, we examine the monetary transmission mechanisms of monetary policy by replicating a paper which relies on a vector autoregression (VAR) model to trace the effect of monetary policy on inflation and unemployment.
  - James H. Stock & Mark W. Watson, 2001. "Vector Autoregressions," Journal of Economic Perspectives, American Economic Association, vol. 15(4), pages 101-115, Fall.

Academic Integrity

Refer to the University's **academic policies and guidelines** for information pertaining to academic integrity and honesty policy. Students are responsible to adhere to the honor code in all academic endeavors.