Central Banks, Macroeconomic Policy and Financial Markets

FNCE 893
Fall 2020

PART I: Professor Zvi Eckstein
September 1, 2020 to October 17, 2020
Office hours: Tuesday 1:30 – 3:00 pm, by appointment
Email: zvie@wharton.upenn.edu

PART II: Professor Joao F. Gomes
October 20, 2020 to December 8, 2020
Office hours: Tuesday 1:30 – 3:00 pm, by appointment
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Class Time: Tuesday and Thursday 9:00-10:20 Section 1; 10:30-11:50 Section 2.

Teaching Assistants

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Office hours: Monday 9-10am and Tuesday 4-5pm and by appointment

Background

This course discusses how macroeconomic policy works today and how it impacts the broad economy and financial markets. It is broadly divided into two parts. The first focuses on monetary policy as it is conducted today by central banks. The second half studies government policy more broadly and how financial markets process macroeconomic events and policy announcements. This is an advanced course in applied macroeconomics. It is assumed that students have a good knowledge of *intermediate* undergraduate macroeconomic analysis and at least a *basic* understanding of the key financial markets indicators.

Class Structure

In accordance with the University of Pennsylvania's policies for the Fall of 2020, the course will only be offered remotely. Most classes will be structured as follows:

- **Students are expected to login on time for each class.**
- **Video settings must be on (as in class),** and muted unless they wish to ask a question or make a comment.

- **Class will generally start with a discussion of news** items related to a class topic. Our main sources will be the Financial Times, Economist and Wall Street Journal. Items may be sent a day before class and we shall work to answer one related question.
- **Each class we shall work on questions from quizzes or past exams** that you will answer using the online application usually after discussion in **breakout rooms** of teams of 3-4 students. These teams will be the same as those formed to work on the assignments.

Requirements and grading

The final course grade will be calculated as follows

- **Midterm examination** (30% - passing grade is required)
- **Active participation** in class discussions and/or online discussion boards (25%)
- **Quizzes (20%)**
- **Five out of seven assignments** (cases) done by teams of 3-4 students (20%)
- **One team presentation or an extra assignment (5%)**

References

Because this is an advanced class that discusses real-time events there is no suitable textbook. Our references are chosen to provide supportive information but ***are not strictly required*** to follow the class material. They include a few useful chapters or sections from some (text)books and papers, reports, lectures and several recently published news articles on each of the topics. **For the assignments, we provide necessary readings**.

A (online) subscription to major financial publication such as the Wall Street Journal or the Financial Times is strongly recommended.

Yardeni Research (https://www.yardeni.com) provides a rich, well organized, and incredibly insightful content financial markets and the macroeconomy. It is freely available and is updated daily.

Main Background References:

- Andy A. Abel, Ben S. Bernanke and Dean Croushore, Macroeconomics (10th edition) Pearson. (**ABC**)
- Frederic S. Mishkin, The Economics of Money, Banking and Financial Markets, Business School Edition (5th edition), Pearson. (**Mishkin**)

Part I
Understanding central banks and monetary policy

Understanding and predicting Central Banking (CB) decision making is crucial for all market participants from asset managers and traders to private consumers. This part of the course aims to provide the methods and knowledge on how central banks think and implement policies to reach the goals of price and financial stability as well as support of growth and employment. The core of this section connects between the economic knowledge, the legal framework and actual goals and methods that central banks follow. The focus is on the economic analysis on which these goals and policies are set. **We explain**

the economic rationale for the policy prescriptions to reach the goals and how these policies are actually implemented today mainly by the Federal Reserve Bank (Fed) in the US as well as by the European Central Bank (ECB), Bank of Israel (BOI) and some remarks on other countries. We use data related to current events due to Covid-19 crisis as well as the events before and after the 2008 financial crisis. All these are aimed understanding how and why the Fed, the ECB and the BOI and other leading Central Banks set their policies. We shall simulate in class current decisions based on assignments related to past policies and the theory presented in class.

Schedule

Section 1: (Sept. 1)
Introduction: Covid-19 crisis, the financial crisis and Central Banks actions

Readings

Optional background:
- ABC, Macroeconomics, pp. 568-574 – on financial crisis.
- Ben S. Bernanke, "Financial panic and credit disruptions in the 2007-09 crisis" Blog, 9/2018.
- Eichenbaum, Martin, Sergio Rebelo, and Mathias Trabandt, "The macroeconomics of testing and quarantines" presentation is based on this paper https://faculty.wcas.northwestern.edu/~yona/research/Testing.pdf

Session 2: (Sept. 3)
Inflation and interest: foundations

Main Question: What is the optimal long run (target) inflation rate and nominal interest rate?

Readings

Priority:
- FOMC, "Statement on longer-run goals and monetary policy strategy", January 29, 2013.
- Ben S. Bernanke, "How big a problem is the lower zero bound on interest rates?", Blog, April 4, 2017;
- Ben S. Bernanke, "The zero lower bound on interest rate: how should the Fed respond?", Blog, April 13, 2017.

Optional background:
- **ABC,** pp. 63-248; 248-252; 263-270; 276-278; 474-481

Optional additional:
- The Economist "The covid-19 pandemic is forcing a rethink in macroeconomics", Briefing, 7/25/2020
- Robert, E. Lucas Jr, "Inflation and welfare", *Econometrica*, Vol. 68, No. 2. 2000, pp. 247-274.

- Thomas, S. Sargent, “The end of the four big inflations”, in *Inflation: causes and effects*, Robert E. Hall (editor), University of Chicago Press, 1982.

Assignment 1: Due September 10
Was the Fed federal fund rate too low before 8/2007 and after 10/2008? Did the QE policy of 2008-2015 worked well? (Readings are in the Assignment).

Session 3: (Sept. 8 and 10)
***The Taylor Rule:* How do Central Banks conduct monetary policy?**

Main Question: How is the interest rate determined?

Readings (also for Assignment 1)

Priority:

- Ben S. Bernanke, “Monetary Policy and the Housing Bubble”, Speech at the annual meeting of the American Economic Association, 2010, available at: http://www.federalreserve.gov/newsevents/speech/bernanke20100103a.htm?source=myrealestatemoney.com/RENEWS**.**
- John Taylor, “The financial crisis and the policy responses: An empirical analysis of What Went Wrong” Keynote Speech, 2008.
- Ben S. Bernanke, (April 28, 2015), “The Taylor rule: A benchmark for monetary policy?”, Brookings, available at:
- http://www.brookings.edu/blogs/ben-bernanke/posts/2015/04/28-taylor-rule-monetary-policy
- Monetary Policy Report, “Statement on longer-run goals and monetary policy strategy”, pp. 1, Board of Governors of the Federal Reserve, June 2020.

Optional background:

- **ABC**, pp. 542-582

Optional additional:

- John Taylor, “Discretion versus policy rules in practice”, in *Carnegie-Rochester Conference Series on Public Policy*, 39 (1993): 195-341.
- John, B. Taylor, “Monetary policy rules work and discretion doesn’t: a tale of two eras”, *The Journal of Money, Credit and Banking Lecture,* 2012.
- Lars E.O. Svensson, “Inflation targeting”, in Friedman, Benjamin M., and Michael Woodford, eds., *Handbook of Monetary Economics*, Volume 3a and 3b.

Assignment 2:
The Covid-19 crisis: The Fed monetary policy since March 2020 and what is expected for the future? **Due Sept. 15.**

Sept. 10:
Presentations and discussion of Assignment 1.

Session 3 (continued): (Sept. 15 and 17)
Policy at the zero lower bound for interest rates

Main question: Is monetary policy effective at the zero lower bound or with negative interest rates?

Readings

Priority:

- Ben S. Bernanke, "The non-monetary effects of the financial crisis in the propagation of the Great Depression", *American Economic Review*, Vol. 73, No. 3, 1983, pp. 257-276.
- Ben S. Bernanke, "At the stamp lecture", London School of Economics, 1/13/2009; also Jackson Hole speech, 8/21 2009.
- Kenneth Rogoff, "The case for a deeply negative interest rate", Project syndicate, 5/4/2020

Optional background:
- **ABC,** pp. 569-573, 620.

Optional additional:
- Ben S. Bernanke, "Shrinking the Fed's balance sheet" B. B. Blog.
- "On secular stagnation and Fed policy" - Blogs by Larry Summers, Ben S. Bernanke and Bradford Delong.

September 15:
Presentations and discussion of Assignment 2;
Simulation and discussion of the FOMC decision of 9/16

Session 4: (Sept. 22 and 24)
Flexible inflation targeting policy: theory and practice

Main question: What is the theory and practice of modern monetary policy analysis?

Readings:
Priority:
- Class notes on DSGE model

Optional background:
- ABC, 160-167; 170-175; 339-342; 441-443; 490-497; 518-527

Optional additional:
- Jordi Gali, "The State of New Keynesian Economics: A Partial Assessment", *Journal of Economic Perspectives,* Volume 32, Number 3, Pages 87–112.
- Lawrence J. Christiano, Martin S. Eichenbaum, and Mathias Trabandt. "On DSGE models", *Journal of Economic Perspectives,* Volume 32, Number 3, Pages 113–140.

Assignment 3 (Due October 1)
The ECB monetary policy under Mario Draghi and Christine Lagarde: does it follow a Taylor rule or only one goal of "price stability"? What is the impact of negative deposit rate and the ECB QE?

Session 5 (Sept. 29 and Oct. 1)
The European debt crisis, ECB monetary policy and the Covid-19 crisis

Main Question: How does fiscal and monetary policy affect financial stability? Do we need "helicopter money"?

Readings

Priority:
- Mario Draghi, "Whatever it takes", speech on 7/26/2012.
- Mario Draghi, "Unemployment in the Euro area", speech at Jackson Hall, 8/2014.
- Zvi Eckstein, "Notes on debt dynamics", 9/24/18

Optional background:
- **ABC,** 604-627

Optional additional:
- Carlo Altavilla, Refet S. Gürkaynak, Roberto Motto and Giuseppe Ragusa, "How do financial markets react to monetary policy signals?" ECB Research bulletin, 7/22/2020
- Carlo Altavilla, Giacomo Carboni, and Roberto Motto, "Asset purchase programs and financial markets: lessons from the euro area", ECB, 11/2015.

October 1:
Presentations and discussion of Assignment 3; Simulation of the next ECB monetary policy decision.

Session 6: (Oct. 6 and 8)
Small open economies: Bank of Israel monetary policy framework and negative rates of the Swiss and Sweden central banks

Main question: Should monetary policy include exchange rate intervention and how different is the BOI response to the Covid-19 crisis?

Reading

Priority:
- Amir Yaron "Are we again taking financial stability for granted? (Or: Do we need central banks?)", Speech at the Israel Economic Association Conference, Hebrew University of Jerusalem, 6/6/2020

Optional Assignment 4 (Due October 16)
Monetary policy of a small open economy – The Bank of Israel.
Main question: why does the Bank of Israel intervene in the forex market and does it different from other main CB's?

Session 7: (Oct. 13).
Guest lecture on global monetary policies
Dr. David Woo (Bank of America-Merrill Lynch)
Managing Director, Head of Global Interest Rates & Currencies Research,

Session 8: (Oct. 15)
Review of the Fed, The ECB and BOI monetary policy during the Covid-19 crisis and predictions to the near future.

MIDTERM Examination:

The midterm will take place on Oct 16
Students will be able to choose any during a two-hour window between 10AM to 10PM EST

Part II
Macroeconomics and Financial Markets

Macroeconomic events and policies play a crucial role in driving financial market performance over time. This part of the course discusses the key macroeconomic drivers of bond and stock market valuations and how they respond to economic news and policy actions by central banks and governments. We will discuss the impact of recent developments and in particular the consequences of the aggressive policy interventions to the financial crisis and the Covid-19 induced recession. We will estimate the impact of some key economic indicators and simulate the market response to real time news.

Schedule

Section 9: (Oct 20 and 22)
Bond markets and the macroeconomy: yield curves and credit spreads

Main question: How do bond markets respond to the macroeconomy and monetary policy actions?

Readings

Priority:
- Luca Benzoni, Olena Chyruk and David Kelley, "Credit risk, spreads and intervention. Why does the yield-curve slope predict recessions?", Federal Reserve 2020
- Narayana Kocherlakota, "Fed's lax corporate lending terms invite trouble", Bloomberg 3/2020.

Optional background:
- Mishkin, chapter 6

Optional additional
- Nina Boyarchenko, Richard Crump, Anna Kovner, Or Shachar, and Peter Van Tassel, "The Primary and Secondary Market Corporate Credit Facilities", NY Fed 2020
- J. Alfred Broaddus, Jr., and Marvin Goodfriend, "What assets should the Federal Reserve buy?", Federal Reserve Bank of Richmond Economic, Winter 2001

- Arvind Krishnamurthy and Annette Vissing-Jorgensen, "Aggregate demand for treasury debt", Journal of Political Economy, 2012.

Assignment 5: **(Due Oct 29)**
How has Fed intervention distorted the various segments of the credit markets?

Section 10: (Oct 27 and 29)
Fiscal policy challenges: debt, taxes and entitlements

Main question: What are the current fiscal policy options and challenges for the largest economies?

Readings

Priority:
- Goldman Sachs, "Daunting debt dynamics", Briefing, 5/28/2020.

Optional background:
- **ABC**, section 15.3

Optional additional
- John Cochrane**:** The fiscal roots of inflation, Hoover institution, working paper 2020.
- John Cochrane**:** The "Deficit Myth" review, Wall Street Journal, 6/5/2020.
- Olivier Blanchard, "Public debt and low interest rates", American Economic Review, 2019
- The Economist, "Europe's €750bn rescue package sets a welcome precedent", 7/25/2020

October 29:
Presentations and discussion of Assignment 5; The outlook for long term interest rates.

Section 11: (Nov 3 and 5)
Stock markets and the macroeconomy: theory and evidence

Main Question: What are the key macro drivers of aggregate stock market?

Readings

Priority:
- **Mishkin**, Ch. 7

Optional background:
- Thomas Mertens, Patrick Shultz, and Michael Tubbs, "Valuation Ratios for Households and Businesses", San Francisco Fed Letter, 1/8/2018.

Section 12: (Nov 10 and 12)
Equity risk premia and the macroeconomy

Main Question: What is the risk premia on stocks? How does it change over time?

Readings

Priority:

- Jeremy Siegel, "The equity premium: stock and bond returns since 1802", Financial Analysts Journal, 1992.
- Robert Shiller, "Price–Earnings Ratios as Forecasters of Returns: The Stock Market Outlook in 1996", blog 7/21/96

Optional background:

- Duff & Phelps, "Recommended U.S. equity risk premium increased", briefing 3/25/2020
- Andrew Ang and Geert Bekaert, "Stock return predictability: is it there?", Review of Financial Studies, 2007.

Optional additional:

- Aswath Damodaran, "Equity risk premiums: determinants, estimation and implications, 3/2020, Stern School of Business

Assignment 6 (Due November 19)
Is the US stock market overvalued?

Section 13: (Nov 17 and 19)

Long run equity valuation: corporate profits and economic growth projections

Main question: What are drivers of long run growth? What is the impact on fundamental equity values?

Readings

Priority:

- Yardeni Research, "Corporate finance report: NIPA versus S&P 500 profits", available at https://www.yardeni.com/pub/ppphb.pdf
- John Fernald, "What is the new normal for U.S. growth?", San Francisco Fed, 10/11/2016.

Optional background:

- **ABC**: Sec 6.1

Optional additional:

- Mehrdad Esfahani, John G. Fernald and Bart Hobijn, "World Productivity: 1996 – 2014", Arizona State, working paper 3/ 2020

November 19:
Presentation and discussion of Assignment 6. What is the long term expected rate of return for stocks?

Assignment 7 (Due December 3)
Predicting the US jobs report.

Section 14: (Nov 24 and Dec 1)
The economic calendar and the key economic indicators.
Readings

Optional additional:
- Yardeni research, "US economic calendar", available at https://www.yardeni.com/pub/currentmonthlycalendar.pdf

Main questions: *How do markets respond to economic news? What are the most significant economic indicators?*

December 1:
Presentation and discussion of Assignment 7 and the expected response of financial markets.

Section 15: (Dec 3)
Guest lecture on global investment strategies
Dr. Edward Yardeni (Yardeni Research)
President

Section 16: (Dec 8)
Guest lecture on interest rate strategies
Dr. Praveen Korapaty (Goldman Sachs)
Chief Interest Rates Strategist