

**Central Banks, Macroeconomic Policy and Financial Markets**  
*FNCE 240/740*  
*Fall 2021*

This course will be co-taught by Professor Zvi Eckstein and Professor Joao F. Gomes. Professor Eckstein will teach most of Quarter 1 and Professor Gomes will teach during Quarter 2.

**Contact Information**

Professor Zvi Eckstein

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Office hours (Q1): Tuesday 1:30 – 3:00 pm and by appointment

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Office hours (Q2): Tuesday 3:00 – 4:30 pm and by appointment

**Teaching Assistants**

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**Course Description**

**Macroeconomic events and policies play a crucial role** in driving financial market performance over time. This is an advanced course in applied macroeconomics that discusses both how macroeconomic policy works today and how it impacts the broad economy and financial markets. 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.

The first half of the class focuses on **understanding and predicting Central Banking (CB) decision making and how on monetary policy is conducted today**. We 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 economic knowledge, legal frameworks and the goals and methods followed by central banks. **We explain the rationale for the policy prescriptions 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 other major countries. We discuss the Covid-19 crisis and the events before and after the 2008 financial crisis. Students will simulate and forecast upcoming policy decisions based on current data and the latest theory.

The second half studies government policy more broadly and how financial markets process macroeconomic events and policy announcements. It 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. Students will estimate the impact key economic developments and assess their implications for bond and equity valuations.

## Meeting Information

### Class Times

Tuesday and Thursday: 8:30-10:00 (Section 1) and 10:15- 11:45 (Section 2)

### Class Structure

Most classes will:

- **Start with a class discussion of the latest news** or data related to the class. Our main sources will be the Financial Times, The Wall Street Journal and The Economist. Readings will usually be shared a day before class.
- **Include a short quiz (often based on questions from past exams)**. The Quiz aims to review the core concepts discussed during that class. Quizzes are on Canvas. They should be done individually using a laptop or mobile device.

Students are expected to attend class regularly and contribute actively to the discussions.

## Requirements and grading

The final course grade will be calculated as follows

- **Assignments** (drop worst score): to be done by teams of 3-4 students (25%)
- **Quizzes** (drop two lower scores) (25%)
- **Active participation:** in class discussions and/or online discussion boards (20%)
- **Midterm examination:** (30% - passing grade is required)

### Deliverables Due Dates

- Sep. 9 - Presentation and discussion of Assignment 1
- Sep 21 - Presentation and discussion of Assignment 2
- Oct 7 - Presentation and discussion of Assignment 3
- Oct 26 - Presentation and discussion of Assignment 4
- Nov 9 - Presentation and discussion of Assignment 5
- Nov 18 – MIDTERM exam
- Dec 9 - Presentation and discussion of Assignment 6

### Course Materials

Because this is an advanced class that discusses real-time events there is no suitable textbook. Most of our references provide supportive information but **are not required** to follow the class material. They include a few useful chapters or sections from some (text)books, as well as reports,

lectures and several recently published articles on each of the topics. We **provide all necessary readings and data for the assignments**. Slides, readings and assignment materials can be found on Canvas.

We strongly recommend a subscription to major financial publication such as the Wall Street Journal or the Financial Times. In addition, Yardeni Research (<https://www.yardeni.com>) provides incredibly detailed content on financial markets and the macroeconomy. It is freely available and updated daily.

### **Main Background References:**

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

## **Schedule**

### **Session 1: (Aug. 31)**

***Introduction: Covid-19, the Great Financial Crisis and Central Banks Intervention***

### **Readings**

#### **Optional background:**

- ABC, pp. 568-574.
- 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”

### **Session 2: (Sep. 2)**

***Inflation and Interest: Foundations***

**Main Question:** What are the optimal long run (target) inflation and nominal interest rates?

### **Readings**

#### **Priority:**

- FOMC, “Statement on Longer-Run Goals and Monetary Policy Strategy”, January 29, 2013.

#### **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(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.

### Session 3: (Sep. 7 and 9)

#### ***The Taylor Rule: How do Central Banks Conduct Monetary Policy?***

**Main Question:** How is the short term interest rate determined?

#### **Readings**

##### **Priority:**

- Ben S. Bernanke, “Monetary Policy and the Housing Bubble”, speech at the American Economic Association, 1/2010
- Ben S. Bernanke, “The Non-Monetary Effects of the Financial Crisis in the Propagation of the Great Depression”, *American Economic Review*, Vol. 73(3), 1983, pp. 257-276.
- Ben S. Bernanke, (4/28/2015), “The Taylor Rule: A Benchmark for Monetary Policy?”, Brookings.
- John Taylor, “The Financial Crisis and the Policy Responses: An Empirical Analysis of what Went Wrong”, keynote speech, 2008.
- FOMC “Statement on Longer-Run Goals and Monetary Policy Strategy”, 8/27/2020.

##### **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, pp. 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*, vol 44(6), 2012, pp. 1017-1032.
- Lars E.O. Svensson, “Inflation Targeting”, in Friedman, Benjamin M., and Michael Woodford, eds., *Handbook of Monetary Economics*, Volume 3b.

### **DUE: Sep. 9 - Presentations and discussion of Assignment 1.**

Was the Fed federal fund rate too low before 8/2007 and after 10/2008?

### **Section 4: (Sept 14 and 16)**

#### ***Bond Markets: Yield Curves, Credit Spreads and the Impact of Macro Events.***

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

#### **Readings**

##### **Priority:**

- Luca Benzoni, Olena Chyruk and David Kelley, “Credit Risk, Spreads and Intervention. Why does the Yield-Curve Slope Predict Recessions?”, Federal Reserve Bank of Chicago, 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

- Joao Gomes, Urban Jermann and Lukas Schmid, “Sticky Leverage”, American Economic Review, vol 106(12), 2016, pp. 3800-3828.
- Arvind Krishnamurthy and Annette Vissing-Jorgensen, “Aggregate Demand for Treasury Debt”, Journal of Political Economy, vol 120(2), 2012, pp. 233-267.

**Session 5: (Sep. 21 and 23)**

***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, “At the Stamp Lecture”, London School of Economics, 1/13/2009; also Jackson Hole speech, 8/21/2009.
- Ben S. Bernanke, “How Big a Problem is the Zero Lower Bound on Interest Rates?”, Blog, 4/4/2017.
- Ben S. Bernanke, “The Zero Lower Bound on Interest Rates: How Should the Fed Respond?”, Blog, 4/13/2017.
- 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”, Blog
- “On Secular Stagnation and Fed Policy” - Blogs by Larry Summers, Ben S. Bernanke and Bradford Delong.
- 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, “The Effect of Quantitative Easing Policies on Interest Rates: Channels and Implications for Policy”, Brookings Papers on Economic Activity, 2011.

**DUE: Sep 21: Presentations and discussion of Assignment 2**

Simulation and discussion of the FOMC decision of 9/22. The Fed monetary policy since March 2020 and what is expected for the future?

**Session 6: (Sep. 28 and 30)**

***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*, Vol. 32(3), pp. 87–112.
- Lawrence J. Christiano, Martin S. Eichenbaum, and Mathias Trabandt. “On DSGE models”, *Journal of Economic Perspectives*, Vol 32(3), pp. 113–140.

**Session 7: (Oct. 5 and 7)**

***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.

**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.

**DUE: October 7: Presentations and discussion of Assignment 3.**

Simulation of the next ECB monetary policy decision. ECB policy under Mario Draghi and Christine Lagarde: does it follow a Taylor rule or only the goal of “price stability”? What is the impact of negative deposit rate and ECB QE?

**Session 8: (Oct. 26)**

***Guest Lecture: Small Open Economies: Bank of Israel Monetary Policy Framework***

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

**Guest speaker: Amir Yaron (Governor)**

**Bank of Israel**

**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

**Section 9: (Oct 28, Nov 2 and 4)**

***Fiscal Policy Challenges: Covid Spending, Growing Debt and Inflation.***

**Main question:** What are the current fiscal policy options and long run challenges?

**Readings**

**Priority:**

- Goldman Sachs, “Daunting Debt Dynamics”, Briefing, 5/28/2020.
- Zvi Eckstein, “Notes on Debt Dynamics”, 9/24/18.

**Optional background:**

- ABC, section 15.3

**Optional additional**

- Robert Barro, “On the Determinants of Public Debt”, *Journal of Political Economy*, Vol. 87(5), 1979, pp. 940-971.
- Olivier Blanchard, “Public Debt and Low Interest Rates”, *American Economic Review*, Vol. 109(4), 2019, pp.1197–1229.
- John Cochrane: *The Fiscal Roots of Inflation*, Hoover Institution, 2020.

**DUE: Oct 28: Presentations and discussion of Assignment 4.**

How has Fed intervention distorted U.S. credit markets during and after COVID-19?

**Section 10: (Nov 9)**

*Guest lecture: Interest Rate Strategies*

*Dr. Praveen Korapaty (Goldman Sachs) – OO: TRY LORETA ON OCT 26 instead*

*Chief Interest Rates Strategist*

**Section 11: (Nov 11 and 16)**

*Stock Markets Indicators and Historical Performance*

**Main Questions:** What is the risk premia on stocks? What are the key macro drivers of the aggregate stock market?

**Readings**

**Priority:**

- Jeremy Siegel, “The Equity Premium: Stock and Bond Returns since 1802”, *Financial Analysts Journal*, 1992.

**Optional background:**

- Mishkin, Ch. 7

**Optional additional**

- Duff & Phelps, “Recommended U.S. Equity Risk Premium Increased”, briefing 3/25/2020
- Thomas Mertens, Patrick Shultz, and Michael Tubbs, “Valuation Ratios for Households and Businesses”, *San Francisco Fed Letter*, 2018.

**DUE: Nov 11: Presentations and discussion of Assignment 5.**

How and when will the projected rise in Federal debt damage the U.S economy?

**DUE: Nov 18: MIDTERM Examination**

**Section 12: (Nov 30)**

### ***Long Run Equity Valuation: Corporate Profits and Economic Growth Projections***

**Main question:** What are drivers of long run economic 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 University, 2020

### **Section 13: (Dec 2)**

#### ***Understanding Equity Valuations***

**Main question:** Is the stock market overvalued?

#### **Readings**

##### **Priority:**

- Robert Shiller, “Price–Earnings Ratios as Forecasters of Returns: The Stock Market Outlook in 1996”, blog 7/21/96

##### **Optional background:**

- 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

### **Section 14: (Dec 7)**

#### ***Guest Lecture: Global Investment Strategies***

***Dr. Edward Yardeni (Yardeni Research)***

***President Yardeni Research***

### **Section 15: (Dec 9)**

#### ***Final Discussion: Equity Valuations***

#### **DUE: Dec 9 Presentation and discussion of Assignment 6.**

Is the stock market overvalued?

## **Ethics Matrix**



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	Materials							People				
FNCE 240/740 Central Banks, Macroeconomic Policy and Financial Markets	Calculator	Laptop / other electronics	Summary sheet	Textbooks / Class Notes	Past notes / summaries	Past exams / problems	Internet content / other outside materials	Group of 3-4	Other student(s) in same section	Student(s) in other sections (same term)	Wharton student not taking the class this term	Person outside of Wharton
Quizzes	A	A		A								
Assignments	A	A		A			A	W	D	D	D	D
Midterm Preparation	A	A	A	A	A	A	A	W	W	W	D	D
Midterm	A	A	A									
	A = Allowed material Shaded Cell = Not allowed							W = Allowed to work together D = Discussion of general concepts and procedures is allowed but no sharing of specific answers. Shaded Cell = Not allowed				
<p>The information above covers many common situations but will not cover every circumstance. Remember: The Wharton Code of Ethics that you accepted requires, among other things, that you represent yourself and your work honestly, don't try to gain unfair advantage over other students, follow the instructor's guidelines and respect confidentiality of your work and the work of others. Should you have questions, please contact your professor.</p>												