

Econ 407  
Monetary Theory and Policy  
Whitman College  
Fall 2013

Denise Hazlett  
Office: Maxey 224  
Phone: 527-5155  
email: hazlett@whitman.edu  
Cleo email address for our course: ECON\_407\_A\_F13@cleo.whitman.edu

Office hours are the following, or by appointment:

Monday and Wednesday 2:00-3:00 pm  
Tuesday and Thursday 10:30-11:30 am  
Friday 2:30-3:00 pm

This course explores the economic roles of money and credit, financial intermediaries and central bank controls. The course text is Money, Banking and Financial Markets, 9th Edition by Frederic Mishkin. Because we will discuss current monetary policy in class, you are also required to read the *Wall Street Journal* (WSJ) every day. A description of the WSJ reading assignment is attached. That assignment is worth 40 points.

We will devote several class meetings to discussions of economic literature. Participation in these discussions counts for 40 points. Four problem sets, attached, count for a total of 20 points. Problem sets are due on the dates marked on the attached reading list. You may work together on the problem sets, but must write up your answers individually. There are two mid-term exams (Friday, Oct. 18 and Friday, Nov. 22) worth 100 points each, and a comprehensive final exam (9am Thursday, Dec. 19) worth 200 points. All cell phones must be turned off and packed away during exams. Please arrange your schedule now so that you do not have conflicts with exam dates. I will not offer exams at times other than those scheduled. If you have a registered disability that requires special accommodation for exams, see me at least a week before each exam so that we can make arrangements.

As a courtesy to others, please do not leave class except in emergencies. During class, put your computer away except when accessing WSJ articles or discussion papers.

The grading scale for the course is as follows. Note that there is no disadvantage to studying with others, as your grade does not depend on anyone else's performance. To help you study, previous exams are available at <http://people.whitman.edu/%7Ehazlett/econ407/econ407.html>.

Total Points	(% of 500)	Grade	Total Points	(% of 500)	Grade
490	0.98	A+	385	0.77	C+
465	0.93	A	365	0.73	C
450	0.90	A-	350	0.70	C-
435	0.87	B+	335	0.67	D+
415	0.83	B	315	0.63	D
400	0.80	B-	300	0.60	D-

## Wall Street Journal Assignment

Monetary theory is the study of the relationship between credit conditions, the quantity of money, interest rates, the average price level, and economic activity. Monetary policy covers how central banks and other government organizations influence this relationship. So that we can discuss current monetary policy in class, you are required to read the articles that appear in the *Wall Street Journal* on topics in monetary economics. Each day you will follow the WSJ's tracking of the performance of the United States macroeconomy, U.S. government actions that affect credit conditions, and macroeconomic issues related to money, credit and financial intermediation. The information to look for on the macroeconomy includes the reports that the Federal Reserve tracks, such as data on U. S. real Gross Domestic Product, unemployment, inflation and interest rates, productivity and consumer confidence. You will also read articles that report on and analyze the Fed's behavior and that of other policy-makers who affect U.S. credit conditions. Finally, you will follow developments that relate to macroeconomic issues involving money and financial intermediaries such as banks. However, you do not need to read articles describing the microeconomic performance of an individual bank.

Because the WSJ does not check its op-ed pieces for accuracy, we will not be discussing opinion, editorial or commentary articles.

In preparation for each class meeting, one member of the class will be responsible for alerting the rest of the class to the relevant articles. That person will email the class Cleo address about the relevant articles published in that day's WSJ. The responsible person will write a summary of each article and a question focusing on the main point of the article, with particular attention to what makes the article relevant for monetary theory and policy. The question must be answerable using the information in the article, and there must be only one question per article. Each article summary starts with the title, author, and page number of the article. Each email is due by 8 pm the day that WSJ issue is published. The rest of the class will read those articles and come to the next class meeting prepared to discuss the contents and to answer the questions. The WSJ assignment is worth 40 points, based on (1) the appropriateness of the articles you select, (2) the quality of your summaries and questions, and (3) your answers to other people's questions. When it is your job to do the alerts, please show consideration for the rest of the class by being selective in the articles you alert them to. In particular, do not include the articles describing how the stock market and dollar performed over the past 24 hours.

This semester the student discount for a WSJ subscription makes its price \$1 per week. To get your subscription, go to [wsj.com/2013fall](http://wsj.com/2013fall).

## Reading List and Problem Set Due Dates

Wed, Sept 4 Introduction

Fri, Sept 6 *Discussion:* “Why Didn’t Canada Have a Banking Crisis in 2008 (or in 1930, or in 1907, or...)?” by Michael D. Bordo, Angela Redish and Hugh Rockoff, National Bureau of Economic Research working paper, 2011

(Article and questions handed out in class Sept 4 and posted on Cleo Resources under Bordo: Why Didn’t Canada Have a Banking Crisis...? Bring the article and your answers to these questions to class. You may use your computer in class, but only for accessing assignments.)

Mon, Sept 9 Continue discussing Bordo et al  
Mishkin chps 1 and 2, an overview of the current U.S. financial system

Wed, Sept 11 Read handout “Dynamics of Financial Crises in Advanced Economies”  
(Handed out in class Sept 4)

Fri, Sept 13 *Discussion:* Nicholas Le Pan’s February 11, 2011 speech at Duke University  
“Lessons from the Financial Crisis: Canada in Comparative Perspective”

(Transcript with questions posted on Cleo Resources under LePan: Lessons from the Financial Crisis, and handed out in class Sept 4. Bring the article and your answers to class.)

Mon, Sept 16 Continue discussing LePan

Wed, Sept 18 Discussion: History of thought on money  
Adam Smith 1776 "Of the Origin and Use of Money,"  
W. S. Jevons 1893 "Money and the Mechanism of Exchange,"  
Karl Menger 1892 "On the Origin of Money"

(Articles and questions handed out in class Sept 4. Bring the articles and your answers to class. The questions –but not the articles- are posted on Cleo Resources under Smith, Jevons, Menger: Questions.)

Fri, Sept 20 History of money in the United States, measuring money Mishkin chp 3  
FRB of Chicago’s “Money Matters: The American Experience with Money” pp. 1-18  
[http://www.mindserpent.com/American\\_History/federal/fed\\_res/publications/chicago/moneymatters.pdf](http://www.mindserpent.com/American_History/federal/fed_res/publications/chicago/moneymatters.pdf)

Mon, Sept 23 Continue history of money

Wed, Sept 25 *Discussion:* A prisoner of war camp as a monetary economy  
R. A. Radford “The Economic Organization of a POW Camp”  
*Economica*, New Series, Vol. 12, No. 48 (Nov., 1945), pp. 189-201.

(Article and questions on Cleo Resources under Radford: POW Camp as a Monetary Economy. Bring the article and your answers to class.)

Fri, Sept 27 Continue discussing Radford

Mon, Sept 30 Inflation  
Mishkin pp. 8-11, 21-23, 84-87, 104 Figure 5  
Michelle R. Garfinkel "What Is An "Acceptable" Rate of Inflation?" in Federal Reserve Bank of St. Louis *Review*, July/August 1989, pp. 3-15. (Handed out Sept 4)  
[http://research.stlouisfed.org/publications/review/89/07/Inflation\\_Jul\\_Aug1989.pdf](http://research.stlouisfed.org/publications/review/89/07/Inflation_Jul_Aug1989.pdf)

*Discussion:* The case for and against zero inflation

The three articles for this discussion are in the Federal Reserve Bank of Minneapolis *Quarterly Review* Vol. 14, No. 3, Summer 1990, pp. 2- 24.

Rao Aiyagari "Deflating the Case for Zero Inflation"

<http://minneapolisfed.org/research/QR/QR1431.pdf>

Lee Hoskins "Defending Zero Inflation: All for Naught"

<http://www.minneapolisfed.org/research/qr/qr1522.pdf>

Rao Aiyagari "Response to a Defense of Zero Inflation"

<http://www.minneapolisfed.org/research/qr/qr1523.pdf>

(Discussion questions – but not the articles- are posted on Cleo Resources under Aiyagari-Hoskins: Questions. Bring the articles and your answers to class.)

Wed, Oct 2 Interest rates and bond price volatility Mishkin chp 4 and p. 106 Figure 7

Fri, Oct 4 Term structure of interest rates Mishkin pp. 123-132

Mon, Oct 7 Pure Expectations Theory of the term structure of interest rates  
Mishkin pp. 132-135  
Problem Set 1 Due at beginning of class: TERM AND PRICE VOLATILITY

Wed, Oct 9 Liquidity Premium Theory of the term structure of interest rates  
Mishkin pp. 135-144

Problem Set 2: PURE EXPECTATIONS THEORY due by 4pm Thrs, Oct 10

Fri, Oct 11 More on Liquidity Premium Theory

Problem Set 3 Due by 9am Wed Oct 16 : LIQUIDITY PREMIUM THEORY

Wed, Oct 16 Fractional reserve banks: liquidity and capital management  
Mishkin chapter 10

Fri, Oct 18 EXAM 1

- Mon, Oct 21 The Great Depression origin and the moral hazard problem of deposit insurance  
Mishkin chp 8, and pp. 255-259 of chp 11,  
John Boyd & Arthur Rolnick “A Case for Reforming Federal Deposit Insurance”  
Federal Reserve Bank of Minneapolis *Annual Report* 1988. Read pp. 1-6.  
[http://www.minneapolisfed.org/publications\\_papers/pub\\_display.cfm?id=678](http://www.minneapolisfed.org/publications_papers/pub_display.cfm?id=678)
- Wed, Oct 23 Lessons from the Savings and Loan Crisis of the 1980’s  
See the paragraph spanning pages 23-24 of Bordo et al “Why Didn’t Canada Have a Banking Crisis...”  
James B Thomson "The Cost of Buying Time: Lessons from the Thrift Debacle"  
Federal Reserve Bank of Cleveland *Economic Commentary*, Jan 1, 1993.  
[http://www.clevelandfed.org/research/research\\_publication.cfm?id=25&y=1993&DCS.nav=Local](http://www.clevelandfed.org/research/research_publication.cfm?id=25&y=1993&DCS.nav=Local)  
Boyd & Rolnick “A Case for Reforming FDI” pp. 7-13.
- Fri Oct 25 *Discussion:* Robert Lucas and Nancy Stokey  
“Liquidity Crises: Understanding sources and limiting consequences: A theoretical framework”  
Federal Reserve Bank of Minneapolis *The Region*, June 2011, pp. 6-15.  
[http://www.minneapolisfed.org/publications\\_papers/pub\\_display.cfm?id=4670](http://www.minneapolisfed.org/publications_papers/pub_display.cfm?id=4670)
- Mon, Oct 28 Continue discussing Lucas and Stokey
- Wed, Oct 30 Mishkin chapter 12, on banking industry structure  
Problem Set 4 Due at beginning of class: BANKING CRISES
- Fri, Nov 1 *Discussion:* Brad DeLong’s March 29, 2010 blog posts:  
“Mankiw vs Bagehot” and “Maturity Transformation” (will be handed out in class)  
Time inconsistency, asset bubbles, lender of last resort
- Mon, Nov 4 Mishkin chapter 13 on the Fed and chapter 14 on money supply process
- Wed, Nov 6 FRB of St Louis *Monetary Trends* articles by David Wheelock  
Sept 2010 “The Monetary Base and Bank Lending: You Can Lead a Horse...”  
<http://research.stlouisfed.org/publications/mt/20100901/cover.pdf>  
Sept 2009 “How *Not* to Reduce Excess Reserves”  
<http://research.stlouisfed.org/publications/mt/20090901/cover.pdf>
- Fri, Nov 8 Mishkin chapter 15 on Fed’s tools for conducting monetary policy  
Handout: “Central Banking and the Conduct of Monetary Policy” pp. 348-375
- Mon, Nov 11 Early Fed policy history: 1913-1951 Mishkin ch 16 on Fed strategy
- Wed, Nov 13 Fed policy history: 1950s-1970’s Mishkin chapter 16  
Phillip’s Curve in the short run and long run  
Michelle R. Garfinkel “What Is An "Acceptable" Rate of Inflation?” in Federal Reserve  
Bank of St. Louis *Review*, July/August 1989 , pp. 10-13.
- Fri, Nov 15 Fed policy history: Volcker’s Recession 1980-1983 Mishkin ch 16

- Mon, Nov 18 Fed policy history: Taylor Rule, credit-driven bubbles vs irrational exuberance  
Mishkin chapter 16
- Wed, Nov 20 Handout: “Lessons for Monetary Policy From the Global Financial Crisis” pp. 393-400
- Fri, Nov 22 EXAM 2
- Mon, Dec 2 Credibility, inflation fighting, and fiscal policies  
FRB of Cleveland *Economic Commentary* articles  
Christiano and Fitzgerald “Price Stability: Is a Tough Central Bank Enough?”  
<http://www.clevelandfed.org/Research/commentary/2000/0801.pdf>  
Carlstrom and Fuerst “Money Growth and Inflation: Does Fiscal Policy Matter?”  
<http://www.clevelandfed.org/research/commentary/1999/0415.pdf>
- Wed, Dec 4 Evidence on the effects of monetary policy, Mishkin chp 23
- Fri, Dec 6 *Discussion:* Mortiz Schularick and Alan M. Taylor “Credit Booms Gone Bust:  
Monetary Policy, Leverage Cycles, and Financial Crises, 1870-2008”  
*American Economic Review* 2012, 102(2) pp. 1029-1061
- Mon, Dec 9 Continue discussion of “Credit Booms Gone Bust”  
Fed policy towards popping asset bubbles, Mishkin pp. 416-418
- Wed Dec 11 Continue discussing credit booms and monetary policy
- Fri Dec 13 Conclusions

The final exam is 9am Thursday, December 19.

## PROBLEM SET 1: RELATIONSHIP BETWEEN TERM AND PRICE VOLATILITY

For all of the questions below, show your work.

1. (1pt) What is the annual yield to maturity on a 30 year Treasury bond with a face value of \$10,000 and a purchase price of \$1741?
  
2. (0.5pt) What is the annual yield to maturity on a 10 year Treasury note with a face value of \$10,000 and a purchase price of \$5584?
  
3. (0.5pt) What is the annual yield to maturity on a 2 year Treasury bill with a face value of \$10,000 and a purchase price of \$8900?
  
4. Suppose that, on the same day, you purchased one of each of the securities in Questions 1-3. It is now exactly one year later, and each of the securities you hold has a price on the secondary market that implies an annual yield to maturity of 7%.
  - (a) (1pt) What would be the price of each of these securities if you were to sell them on the secondary market now? (Note that the securities now have 29, 9 and 1 year to maturity, respectively.)
  - (b) (0.5pt) What would have been the price of each of your securities one year after you bought them if they had each had the same annual yield as they had when you bought them?
  
5. (1pt) Suppose the price volatility of a security is defined as the percentage change in price resulting from a one-percent change in the annual yield to maturity. Use the information from Question 4 to determine the price volatility of each of the above securities.
  
6. (0.5pt) Use the information from Question 5 to state the relationship between the price volatility of a security and its term to maturity.

PROBLEM SET 2: PURE EXPECTATIONS THEORY OF TERM STRUCTURE OF INTEREST RATES

Find a copy of the yield curve for government Treasury debt that is not more than one week old. Refer to that yield curve when you answer the questions below. Attach a copy of your yield curve to your problem set answers.

1. (1 pt) List the assumptions of the Pure Expectations Theory of the term structure of interest rates.
  
2. Suppose that the assumptions of the Pure Expectations Theory hold.
  - (a) (2pts) Use the Pure Expectations Theory to forecast the annual nominal interest rate on a one-year government Treasury bill that will be issued three years from today. Show and explain your work.
  
  - (b) (2pts) Suppose that individuals all anticipate a one percent annual rate of inflation over each of the next two years (i.e.  $\pi_{0,1}^e = \pi_{1,2}^e = 1.0\%$ ), and a two-percent annual inflation rate over each of the following four years (i.e.  $\pi_{2,3}^e = \pi_{3,4}^e = \pi_{4,5}^e = \pi_{5,6}^e = 2.0\%$ ). Use the Pure Expectations Theory to forecast the annual real rate of interest on a one-year government Treasury bill that will be issued three years from today. Show and explain your work.

PROBLEM SET 3: LIQUIDITY PREMIUM THEORY OF THE TERM STRUCTURE OF INTEREST RATES

Find a copy of the yield curve for government Treasury debt that is not more than one week old. Refer to that yield curve when you answer the questions below. Attach a copy of your yield curve to your problem set answers.

1. (1 pt) List the assumptions of the Liquidity Premium Theory of the term structure of interest rates.
2. Suppose the assumptions of the Liquidity Premium Theory of the term structure of interests rates hold.
  - (a) (2pts) Suppose that expected future interest rates are the same as current interest rates. That is, people currently believe that interest rates could either rise or fall in the future, but the expected value of any particular forward interest rate is the same as the current spot rate for that security. What annual percent liquidity premium do savers require today for purchasing a ten-year Treasury note? Explain your work and show how you used the current yield curve in your answer.
  - (b) (2pts) Suppose now that, contrary to part (a) above, savers require the liquidity premium schedule given in the table below. Forecast the nominal interest rate on a two-year Treasury bill offered for sale three years from now.

Term to maturity	Liquidity premium (in percent per year)
3 months	0%
1 year	0.05%
2 years	0.25%
3 years	0.45%
5 years	0.75%
10 years	1.00%
30 years	1.50%

## PROBLEM SET 4: BANKING CRISES

1. Suppose a bank has the following assets and liabilities.

### ASSETS

\$100,000 of cash reserves  
\$600,000 of loans maturing in five years,  
\$300,000 of loans maturing in ten years

### LIABILITIES

\$400,000 in checking accounts, all of which depositors may withdraw at will  
\$400,000 in savings accounts, all of which may be withdrawn with 30 day's notice

a. (0.5pt) Is this bank insolvent? How much capital does this bank have?

b. (0.5pt) Is this bank illiquid? Explain.

c. (2pts) Suppose that this bank existed during the early years of the Great Depression, when depositors in the banking industry were not covered by deposit insurance, and banks did not have access to a lender of last resort. Suppose further that this bank's assets are of high quality, and that depositors know this. Describe how a bank run might occur at this bank, given that runs are occurring at many other banks in the country. How is your answer related to the Diamond and Dybvig bank runs that Robert Lucas and Nancy Stokey describe in their article "Liquidity Crises"?

2. Suppose that a Savings and Loan has the following assets and liabilities.

### ASSETS

\$200,000 of cash reserves  
\$800,000 of fixed rate mortgage loans with 30-year maturities

### LIABILITIES

\$400,000 in savings accounts, all of which may be withdrawn with 30 day's notice  
\$400,000 in time deposits with two-year maturities

(2pts) Use the above information on the assets and liabilities of this sample Savings and Loan to illustrate the interest rate risk that S&Ls faced in the late 1970's, when interest rates rose steeply and unexpectedly. Be sure to define interest rate risk.