Whitman College
Econ 407
Exam 2
November 16, 2012

Write all answers in your blue book. Show all of your work. The exam ends at 12:30.

1. (10pts) Consider the following information on Treasury yield curve rates.

Treasury Yield Curve Rates

Date	1 Mo	1 Yr	2 Yr	3 Yr	5 Yr	7 Yr	10 Yr	20 Yr	30 Yr
11/14/12	0.15%	0.18%	0.25%	0.33%	0.63%	1.03%	1.59%	2.31%	2.73%

Suppose that the assumptions of the Liquidity Premium theory of the term structure of interest rates hold. Suppose savers require the liquidity premium schedule given in the table below. Forecast the interest rate on a three-year Treasury security offered for sale two years from now.

Term to maturity	Liquidity premium (in percent per year)
1 month	0%
1 year	0.05%
2 years	0.15%
3 years	0.20%
5 years	0.25%
10 years	0.60%
20 years	1.00%
30 years	1.50%

2. (5pts) Define the moral hazard problem of deposit insurance.

3. (5pts) Consider "A Case for Reforming Federal Deposit Insurance" by John Boyd and Arthur Rolnick in Federal Reserve Bank of Minneapolis *Annual Report* 1988. According to Boyd and Rolnick, how was the moral hazard problem of deposit insurance kept in check from 1934 to the 1970's?

4. (4pts) Define bank capital.

5. (6pts) Consider the following banking regulatory reforms instituted in response to excessive risk taking by Savings and Loan (S&L) banks in the 1980's. Some of these reforms fall into the categories A-D below. Which reforms fall into which categories?

Legislation in 1989

(1) Required the closure of insolvent banks, including S&L's.
(2) Restricted the risky assets S&L's could hold.
(3) Increased the bank capital requirement to 8% of assets.
(4) Made the bank capital requirement for S&L's risk-based, in line with the 1988 internationally-agreed-upon Basel requirements for commercial banks.
(5) Replaced the S&L regulator (in effect, Congress scapegoated the regulator).
(6) Gave regulators some power over bank management. Regulators could remove poor managers and impose civil penalties.
(7) Gave the Justice Department funding to pursue fraud cases.

Legislation in 1991

(8) Required regulators to close banks (including S&L's) before they became insolvent, using the following plan. If bank capital falls below 2% of assets, banks must issue new shares of stock, suspend dividend payments, and change management. If the capital-to-assets ratio does not improve in 90 days, then regulators must close the bank.
(9) Limited one person's total deposit insurance coverage in one bank to $100,000.
(10) Limited the authority of the Federal Deposit Insurance Corporation (FDIC) to reimburse uninsured depositors or other bank creditors, by requiring the FDIC to close a failed bank in the cheapest way possible. That cheapest way might be by arranging a sale of the bank, or by dissolving the bank and selling off its assets. So, no more favorable treatment of large banks on the grounds that runs at these banks would lead to widespread financial panics.
(11) Made deposit insurance premia risk-based. Banks with the riskiest assets had to pay a higher premium per dollar of insured deposits.
(12) Put back in place limits on loan-to-value ratios. For example, for land development projects, a bank could lend at most 75% of the assessed value of the project. For land itself, a bank could lend at most 65% of the value of the land. For home mortgages, the bank could lend at most 85% of the home value, unless the buyer purchases mortgage insurance.

A. Making risky activities more expensive for banks.
B. Imposing stricter regulation prohibiting banks from undertaking particularly risky activities.
C. Requiring banks to hold bigger capital cushions.
D. Imposing market discipline by limiting deposit insurance coverage.

6. Consider the conclusions of the 2011 Financial Crisis Inquiry Commission Report.

(5pts) What is the implication of the 2007 40-to-1 leverage ratios of the five major investment banks?

(5pts) What factors made this leverage even worse?

7. (30pts) Consider the article "Liquidity Crises: Understanding sources and limiting consequences: A theoretical framework" by Robert Lucas and Nancy Stokey, Federal Reserve Bank of Minneapolis *The Region*, June 2011, pp. 6-15. Consider also the following excerpt from the Wall Street Journal.

Global Finance: Money Funds' Plan Falls Flat --- Regulators Say a Proposal to Safeguard the Industry in a Crisis Is Insufficient by Scott Patterson and Andrew Ackerman 09 Nov 2012: C.3

A proposal by money [market mutual] funds to safeguard their industry during times of financial stress—and head off substantial new regulations—is receiving a chilly reception from federal regulators. Several fund firms in the $2.6 trillion industry have backed a plan to impose fees on customers who try to pull cash out of the funds during a crisis. The proposal was made at a recent meeting with Securities and Exchange Commission officials.

People close to the SEC say the proposal doesn't go far enough and that it could trigger the type of destabilizing runs on money markets seen most recently during the collapse of Lehman Brothers Holdings Inc. Federal regulators are looking to prevent a repeat of 2008, when a fund that held Lehman Brothers debt "broke the buck" as its price per share fell below money funds' $1 threshold. That caused investors to pull out $300 billion from "prime money funds," which invest in corporate and other debt, and led the federal government to step in to backstop the entire industry.

Money funds are seeking to avoid action by the Financial Stability Oversight Council, a board of top regulators established by the Dodd-Frank financial overhaul, that could force the industry to abide by rules it doesn't want. The council is scheduled to propose its own money-fund rule changes on Tuesday, officials said. Meanwhile, the fund industry is seeking a deal with the SEC, which is seen by many in the industry as a friendlier regulator.

The industry's latest proposal centers on a two-part "circuit breaker" that would temporarily halt investors' fund redemptions during times of stress. After this lull, funds would have the option of imposing fees on investors who pull out cash, say people familiar with talks at the SEC. The "circuit breaker" would kick in when a fund can convert just 7.5% of its holdings into cash within one week, the people say. Currently, 30% of a fund's assets must be convertible to cash within one week, but the SEC doesn't impose redemption fees if they drop below that figure.

SEC staffers are concerned this approach could lead to "pre-emptory runs" in which investors pull out in anticipation of redemption limits or fees.

Use Lucas and Stokey's analysis to explain why imposing a "'circuit breaker" that would temporarily halt investors' fund redemptions during times of stress [and giving mutual funds] the option of imposing fees on investors who pull out cash…could lead to "pre-emptory runs"" instead of preventing runs.
Your explanation should include (although not be limited to) the following:

(a) Describe how the Lucas and Stokey model creates a role for deposit-taking banks, or for money market funds that provide a similar service.
(b) Explain how much in reserve each one of these banks or mutual funds needs to hold.
(c) Explain the advantage of having the bank or mutual fund economize on its cash reserves.
(d) Describe the conditions under which a bank or mutual fund can fulfill its promise that everyone can withdraw their cash on demand.
(e) Describe the advantage the repo (repurchase agreement) market gives to the money market mutual funds that lend in this market.
(f) Describe what it means to have a run in the repo market.
(g) Explain a sunspot equilibrium.

8. Consider the interview with Darrell Duffie on post-crisis financial reforms in Federal Reserve Bank of Minneapolis *The Region* June 2012, pp. 12-27.

(a) (6pts) Duffie notes that the Securities and Exchange Commission is considering reforms to make money market funds not so prone to liquidity runs. If these reforms make money market funds unattractive, what does Duffie worry would happen?

(b) (2pts) Duffie observes that the "the capital requirements for large banks, going into the last financial crisis, were generally not enough." He also notes that higher bank capital requirements would hurt bank shareholders. Why are bank shareholders hurt by higher capital requirements?

(c) (2pts) According to Duffie, why should bank capital requirements be set via international coordination, such as through Basel III?

9. Consider the 2010 and 2009 Federal Reserve Bank of St Louis's *Monetary Trends* articles by David C. Wheelock entitled "Monetary Base and Bank Lending" and "How *Not* to Reduce Excess Reserves". Wheelock writes that "in its response to the worsening financial crisis during the fall of 2008, the Federal Reserve took actions that dramatically increased the size of the monetary base…The base more than doubled in size between September 2008 and May 2010. Yet measures of the money stock… increased far less. For example, M1 increased about 17% over these months."

(a) (10pts) Describe what happened to the components of the money multiplier between September 2008 and May 2010 to make M1 increase by only 17% when the monetary base was more than doubling. Refer to a formula for the money multiplier in your answer.

(b) (10pts) Wheelock writes that many economists now worry that "money growth will eventually surge and, ultimately, cause higher inflation." He notes the Federal Reserve had similar concerns back in 1936. In what ways was the situation in 1936 similar to the situation the Federal Reserve now faces? What did the Federal Reserve do in 1936 to prevent money growth from surging, and what was the result of that action?