Name: ____________________

Final exam
266: Fi. Markets and Institutions
Spring 2010
Jon Faust

Directions:

You have 2 1/2 hours (150 min.) to do the exam unless other arrangements have been made.

You may write on the backs of the exam pages and request additional paper.

If your answer extends outside the space provided, you must label clearly where the additional portion is located.

Regarding Redemption:

Are you applying for redemption?

How many sessions did you appear for?

Did you apply for being excused from any session?

1. Brief definitions

    (a) Commercial paper

    (b) FOMC

    (c) Eurodoallar

(d) Fisher equation

(e) Convergence hedge fund strategy

2. Describe the main (financial) activities of the following institutions:

   (a) Commercial bank

   (b) Investment bank

(c) Pension fund

(d) Hedge fund

(e) Private equity fund

3. Approximate sizes of things. Be sure to state the units.

   (a) U.S. nominal GDP.

   (b) Household mortgage debt in the U.S.

(c) Total assets of largest U.S. commercial bank.

(d) Highest level of short-term nominal interest rates in the U.S. in the post WWII era.

(e) Lowest level of the fed funds rate in the U.S. in the post WWII era.

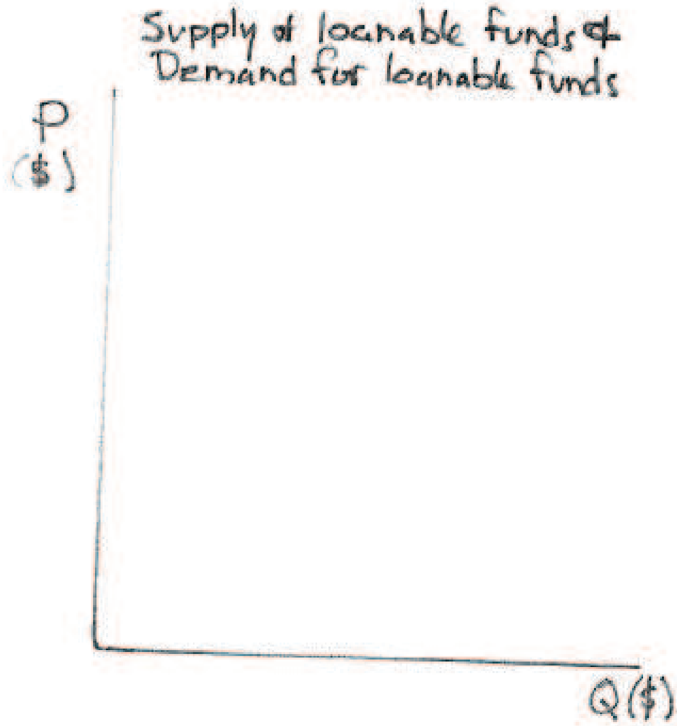
4. Basic finance

(a) What is the payment stream associated with a standard 5-year U.S. government bond? (Note: you may assume annual coupons if you wish)

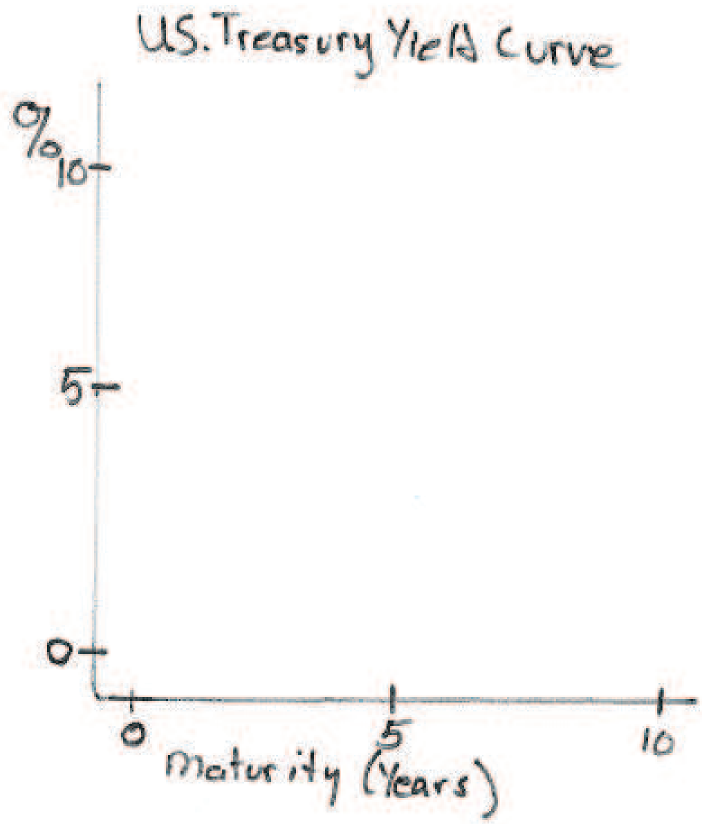
(b) Suppose the bond sells for P_t with coupon payments c and principle value F. Give a formula that can be solved for the yield to maturity of the bond.

(c) The interest rate on 10-year U.S. government bonds rose from 3.45 percent to 3.57 percent on Monday. The rise was attributed, in part, to the fact that European governments seem to have averted a new financial crisis in Europe. (The crisis, of course, would have involved Greece, but the source of the crisis is not essential to answering this question.)

Using an analysis of the supply of and demand for government bonds in the U.S. government bond market, explain how preventing (or at least forestalling) a financial crisis in Europe should affect the *price* of U.S. government bonds. Illustrate the point on the following figure.



(d) Draw what the U.S. Treasury yield curve looks like (approximately) in the U.S. right now on the following figure.



5. Basic finance, cont.

   (a) Define diversifiable risk using the concept of correlation.

   (b) If a bond has only diversifiable risk, then its yield to maturity will equal the risk free rate of interest. Explain why this is **false**.

(c) In our standard portfolio theory the expected return on assets that have purely diversifiable risk equals the risk free rate of return. Explain the intuition behind this result.

(d) Consult the following table of payoffs for one-period assets sold at time t.

Payoff of assets A and B at $t+1$ (in dollars)

Event	pr	A	B
1	1/4	5	3
2	1/4	7	1
3	1/2	10	-2

The price of A at time t is \$7.69.

What is the expected return on A?

(e) What is the variance of the payoff to asset B?

(f) Is the correlation of the payoffs to A and B positive or negative? (Note: You shouldn't need to calculate this.)

(g) The risk free rate of interest between t and $t+1$ is 2.5 percent. What is the price of asset B?

(h) You have two investment advisers, Gunnar and Ivar. You earn a 4 percent real rate of return on average over 10-years on your funds placed with Ivar, and a 1 percent real rate of return on average over the same period on you funds managed by Gunnar. How do you decide who is doing a better job? What additional information do you need from Gunnar and Ivar?

(i) Describe some tax treatment issues affecting equities, residential mortgages, and municipal securities in the U.S.

6. On last Thursday, between about 2:40pm and 3:10pm Eastern time, the Dow (Dow Jones 30 Industrials Index) fell by about 5 percent and then bounced back to about where it started. (Note: over a longer time window the drop was bigger and not fully erased.)

   (a) Explain why this phenomenon is difficult to account for under the efficient markets theory.

(b) Suppose you are own some equity shares in a firm. In order to protect yourself against declines in value, you could either place a stop-loss order or a limit order to sell the stock in the face of a market decline. Explain the different risks you face with these two types of order when events like last Thursday transpire.

(c) What are the major responsibilities of a specialist on the New York Stock Exchange?

(d) Suppose you are a specialist on the New York stock exchange. Think about a standard 30 minute period in the trading day versus with a 30 minute period in which the market falls 5 percent then regains that 5 percent. What will determine whether you, as market maker, make more money or less money during the tumultuous 30 minutes than you would in a more normal 30 minutes?

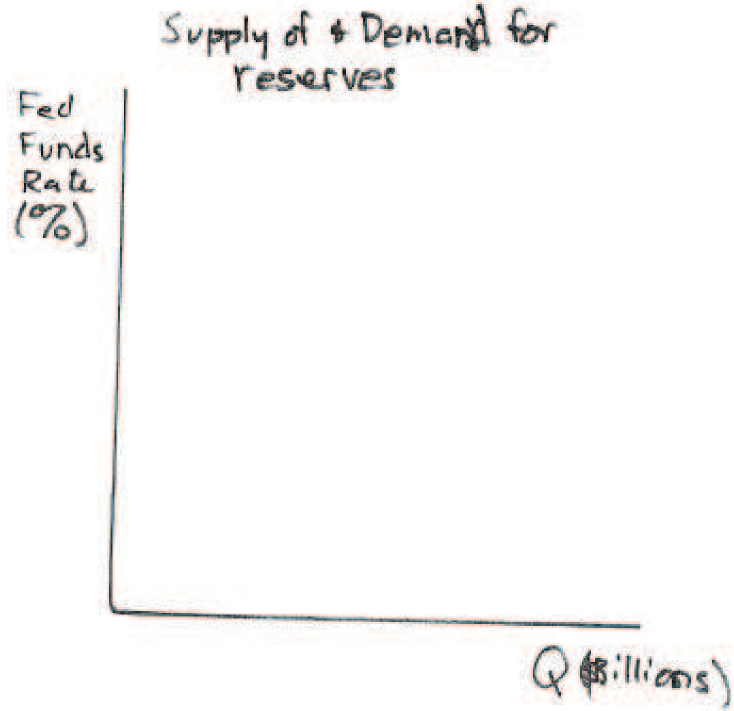
7. Monetary policy in normal times.

   (a) Explain what we mean when we say that the open market desk at the Federal Reserve Bank of New York 'does a repo.' What transactions are involved? Does this increase or decrease bank reserves in the short run?

   (b) What is the federal funds rate the interest rate on?

(c) All else equal, does the repo described above tend to increase or decrease the federal funds rate?

(d) Using a figure for the supply of and demand for bank reserves, explain graphically how the Federal Reserve Bank of New York decides what quantity of reserves to provide for the banking system. (Note: You may assume that the interest rate on reserves is fixed and unchanging at some level below the funds rate.)



(e) The Fed lends reserves directly to banks through the discount window. Explain some reasons why the Fed (and almost all central banks) have a means for lending reserves directly to banks.

8. Liquidity.

   (a) Former leaders of both Bear Stearns and Lehman brothers have testified that they believed that their firms were facing a liquidity crisis, but not an immediate solvency crisis when the government stepped in. What is the difference between a liquidity crisis and a solvency crisis? Why might it be difficult to tell which a firm is facing?

(b) Explain how the appropriate policy response might differ depending on which type of crisis (liquidity or solvency) an institution is facing. How might the government sensibly respond to a liquidity crisis? A solvency crisis?

9. Leverage

The following is a balance sheet for Anquetil Bank.

Balance Sheet: Aquetil Bank, Oct. 31, 2008

A		L	
Reserves	1	Deposits	20
Securities	65	Borrowings	
		< 1 year	65
		≥ 1 year	10
Physical capital	5	Net worth	

Note: Amounts in \$millions. Net worth is left blank.

(a) Define and give the value of some measure of leverage for this bank.

(b) Suppose that over the year ended Oct. 31, 2008, Anquetil earned 8 percent interest on its interest-earning assets (reserves and securities). Anquetil paid 3.75 percent on average on interest on its liabilities (all are interest bearing). What was was net interest income?

(c) Interest rates of all maturities rise by an approximately equal amount. Does the net worth of Anquetil bank probably rise or fall? Why?

10. Information problems

    (a) Consider a healthy firm with a good reputation. The information and monitoring requirements required for an investor to sensibly invest in the debt (say, bonds) of the firm are lower than those required for the investor to invest in the equity. Explain.

    (b) Explain the role of investment bank reputation in underwriting.

(c) Multiple choice. You are a senior investment banker involved in underwriting. You hire a young hotshot (like you used to be) who seems a bit immature (like you used to be). He is making you a lot of money. You should,

a) Promote him.

b) Monitor him to be sure he is not cashing in on your hard-earned reputation.

c) Remind him that corporate emails are potentially public information

d) a and c

e) b and c

f) maybe a, definitely b, and definitely c

(d) Suppose you are a fund regulated to only hold Aaa rated securities. Explain why you might be in favor of the ratings agencies giving Aaa ratings to securities that are too risky to deserve this rating.

(e) Suppose you are a firm wanting to sell bonds. Explain why you might want a Aaa rating even if you are too risky to deserve this rating.