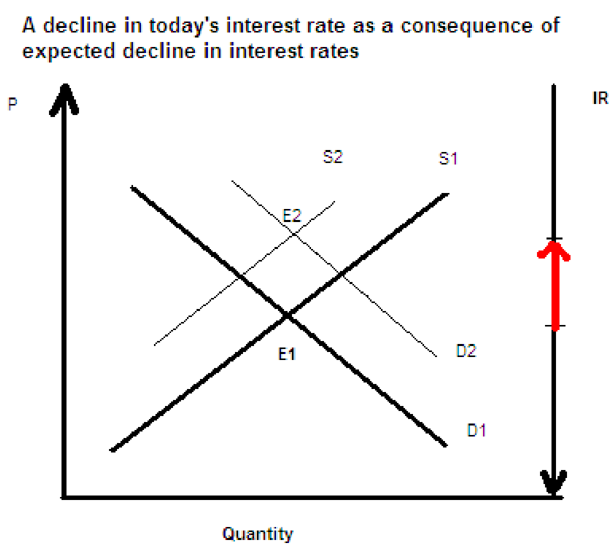
Part 1: Problems (55 pts.)

Problem 1. (20 pts.) Due to a danger of recession, The American Central Bank (the FED) is discussing that they should target lower interest rates in the next 2-3 months.

a) (10 pts.) How will the *expectation* of lower interest rates affect the supply and demand on the bond market at this moment? Why? Describe your reasons as fully as you can.

Answer: Due to the lower interest rates in the future, the price of bonds is expected to rise. When the price of the bonds is expected to rise, the expected return on those bonds will fall. Therefore, those who want to buy bonds will have higher incentives to buy bonds now than in the future. This means that **demand will increase** (shift forward), or, investors in bonds will demand more bonds now because they are giving them more money for every dollar invested than the bonds will yield in the future, when the interest rates will be lower. On the other hand, lowering interest rates in the future means that borrowing will be cheaper a few months from now than it is now, because the interest rates are the cost of borrowing. Therefore, when firms expect the interest rates to fall, they will postpone the decisions to borrow now until interest rates get lower. In effect, this means that **supply of bonds will fall** now (shift backward).

b) (5 pts.) Draw a graph with the initial equilibrium on the market. Then, indicate your predicted changes in demand and supply of bonds. Make sure you draw the interest rate and the price of bonds on the graph.



c) (5 pts.) What will happen to the expected equilibrium interest rate on the bond market, according to your conclusions about the supply and the demand side of the market?

Answer: See your graph and use basic economic reasoning. If your graph is correct, then expectations about lower interest rates in the future should drive the interest rates down in the present day as well.

Problem 2. (5 pts.) On 11 Oct. 2008 The Economist wrote: “One clear sign [of a comprehensive global answer to the credit crisis] was an unprecedented co-ordinated interest-rate cut on October 8th by the world’s main central banks, including the Federal Reserve, the European Central Bank, the Bank of England and (officially a coincidence) the People’s Bank of China.”

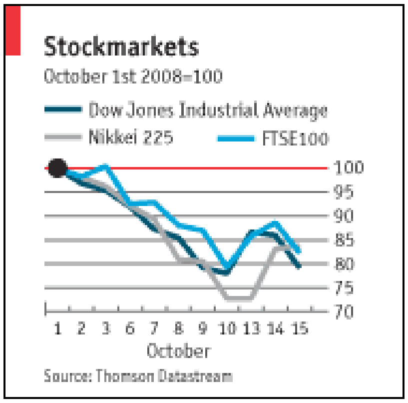
a) (2 pts.) What is the impact of reducing interest rates on the price of borrowing?

Answer: Price of borrowing falls because interest rates are the price of borrowing.

b) (3 pts.) Why are these measures important for the main economies around the world?

Answer: Because when firms borrow more, they invest more, and since investment is a part of the GDP, it is expected that increased investment will boost the GDP or, at least, reduce the chances of recession.

Problem 3. (5 pts.). On October 16, 2008, The Economist wrote:



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"Following one of the worst ever weeks for **stockmarkets**, indices rebounded on news of the government rescue deals. However, investors soon abandoned their optimism for fears of a global recession. On October 15th the Dow Jones Industrial Average fell by 733 points, or 7.9%, its largest percentage decline since 1987."

Question: According to the graph above, if you had 10,000 USD in shares and stocks on 1st October 2008, approximately *how much did you lose* until 15th October?

Answer: Approximately 1500-2000 USD. On 15th Oct. indices are about 80% of what they were on 1st Oct. Then, you can apply the simple rule: $100/80 = 10000/x$, and the difference between 10000 and x is what you are after: $x = 8000$; and then what you lose is L=10000-8000=2000. Answers between 1500 and 2000 will be considered correct. Answer based only on the decline on Oct 15 alone are not given full credit.

Problem 4. (5 pts.) The price of oil was roughly USD 140 in the summer, and now it is roughly USD 70. *How* will that affect the shares on the Moscow Stock Exchange and *why*? (Hint: Some of the largest firms traded on the Moscow Stock Exchange are gas and oil corporations.)
Answer: The price of oil is the price of the product of these companies. When the price of your product falls, your profits fall too. When your profits fall, this means your stocks are going down too.

Problem 5. (5 pts.) On October 9th, *The Economist* wrote: "**General Motors** decided to stop production for a short time at several European plants, as part of its effort to reduce capacity. Other carmakers are also cutting back in Europe as they adapt to a sharp drop in demand." Assume now that General Motors decided to close down its plant in Bratislava.
a) (2 pts). What will be the impact of their decision on consumer spending in Slovakia?

Answer: It will fall because unemployed consumers spend less than employed ones. Further, through the various production lines that GM has established in Slovakia, it will be not only GM to stop its work, but many of its subcontractors too. It means that the subcontractor's workers will have to be laid off, or at least have to spend less because of a temporary cut in salaries, or, forced temporary leave-offs.

b) (3 pts) If the Slovak government and the Slovak Central Bank want to help its citizen in this situation, what should they do, and why?

Answer: They should increase government spending and increase the money supply of Slovak Crowns. Various activist measures are also considered correct.

Problem 6. (5 pts.) Assume inflation is 0%. If a \$10,000 face-value discount bond maturing in one year is selling for \$5,000 now, then what is its yield to maturity (internal rate of return)?

Answer: 100%

Problem 7. (10 pts.) The bank you own has the following balance sheet:

Assets		Liabilities	
Reserves	\$ 75 million	Deposits	\$500 million
Loans	\$525 million	Bank capital	\$100 million

a) (5 pts.) Suppose \$250mln. of the loans are rate-sensitive, and \$200mln. of the deposits are rate-sensitive. Suppose interest rates fall by 1% point. What would be the impact on the net worth of the bank? Apply GAP analysis.

Answer: The gap is the difference in the value of rate-sensitive Assets and rate-sensitive Liabilities. In this case, it is 50mln. The impact on the net worth will be that for every percent fall in interest rates, the bank will make 2.5 mln. less from its loans but will pay 2mln. less to its depositors. So, its revenues will decrease by 2.5 mln. while its costs will decrease by 2 mln. Therefore, the overall impact on the net worth (NW = Assets - Liabilities) will be ΔNW = GAP(ΔInterest rate) = 50mln.(-0.01) = -0.5mln.

b) (5 pts.) Suppose the duration of your total loans is 5 years, and the duration of your total deposits is 3 years. Now suppose the interest rates on your deposits increase by 0.5% points while the interest rate on your loans increased by 1% points. What is the impact on your bank's net worth (capital)?

Answer: Apply duration analysis.

Δ (Assets) = Assets[-Δ(Interest rate)(Duration)] = 525[-(0.01)(5)] = -26.25mln.

Δ (Liabilities) = Liabilities[-Δ(Interest rate)(Duration)] = 500[-(0.005)(3)] = -7.5mln.

Δ (Net Worth)= Δ (Assets) -Δ (Liabilities) = -26.25 + 7.5mln. = - 18.75mln.

Part 2: Multiple Choice (45 + 6 bonus pts):

Instructions: Just circle one of the answers. Only one answer is true for each question. Each correct answer is worth 3 pts. There is no penalty for incorrect answers. Good luck!

1) Evidence from business cycle fluctuations in the United States indicates that changes in money might be a driving force behind these fluctuations. Specifically, the evidence suggests that

A) recessions have been preceded by a decline in the growth rate of money.
B) recessions have been preceded by a increase in the growth rate of money.
C) a negative relationship between money growth and general economic activity exists.
D) recessions have been preceded by an increase in the growth rate of money and followed by a substantial decrease in money growth.

2) Economists group commercial banks, savings and loan associations, credit unions, mutual funds, mutual savings banks, insurance companies, pension funds, and finance companies together under the heading financial intermediaries. Financial intermediaries

A) act as middlemen, borrowing funds from those who have saved and lending these funds to others.
B) produce nothing of value and are therefore a drain on society's resources.
C) help promote a more efficient and dynamic economy.
D) do each of the above.
E) do only (a) and (c) of the above.

3) The bond markets are important because

A) they are the markets where foreign exchange rates are determined.
B) they are easily the most widely followed financial markets in the United States.
C) they are the markets where interest rates are determined.
D) each of the above.
E) only (a) and (b) of the above.

4) One likely explanation for the relatively high rates of inflation experienced in many Latin American countries is the

A) relatively slow growth in the money supply in these countries.
B) relatively rapid growth in the money supply in these countries.
C) decline in the prices of basic commodities in these countries.
D) none of the above.

5) A rising stock market index due to higher share prices

A) increases people's wealth and as a result may increase their willingness to spend.
B) increases the amount of funds that business firms can raise by selling newly-issued stock.
C) decreases the amount of funds that business firms can raise by selling newly-issued stock.
D) both (a) and (b) of the above.

6) In 1980 a Shetland sweater would have cost $120. With a stronger dollar, the same Shetland sweater would have cost

A) more than $120.
B) less than $120.
C) $120, since the demand for Shetland sweaters will decrease to prevent an increase in price due to the stronger dollar.
D) $120, since the exchange rate does not affect the prices that American consumers pay for foreign goods.

7) The primary liabilities of a commercial bank are

A) commercial paper. B) bonds.
C) deposits. D) mortgages.

8) Which of the following statements about financial markets and securities are true?

A) Most common stocks are traded over-the-counter, although the largest corporations usually have their shares traded at organized stock exchanges such as the New York Stock Exchange.
B) Money market securities are usually more widely traded than longer-term securities and so tend to be more liquid.
C) A corporation acquires new funds only when its securities are first sold in the primary market.
D) All of the above are true.

E) Only (a) and (b) of the above are true.

9) U.S. Treasury bills
A) are the most liquid of the money market securities.
B) sell at a discount because they have no interest payments.
C) are the safest of all money market instruments.
D) are all of the above.
E) are only (b) and (c) of the above.

10) A potential borrower usually has better information about the potential returns and risk of the investment projects he plans to undertake than does the lender. This inequality of information is called
A) moral hazard. **B) asymmetric information.**
C) adverse selection. D) reverse causation.

11) The conversion of a barter economy to one that uses money
A) does not increase economic efficiency.
B) increases efficiency by reducing the need to exchange goods and services.
C) increases efficiency by reducing transactions costs.
D) increases efficiency by reducing the need to specialize.

12) The problem created by asymmetric information before the transaction occurs is called _____, while the problem created after the transaction occurs is called _____.
A) adverse selection; moral hazard B) costly state verification; free-riding
C) moral hazard; adverse selection D) free-riding; costly state verification

13) A $16,000 coupon bond with an $800 coupon payment every year has a coupon rate of
A) 40 percent.
B) 10 percent.
C) 8 percent.
D) 4 percent.
E) None of the above.

14) In which of the following situations would you prefer to be borrowing?
A) The interest rate is 13 percent and the expected inflation rate is 15 percent.
B) The interest rate is 9 percent and the expected inflation rate is 7 percent.
C) The interest rate is 4 percent and the expected inflation rate is 1 percent.
D) The interest rate is 25 percent and the expected inflation rate is 50 percent.

15) The concept of _____ is based on the common-sense notion that a dollar paid to you in the future is less valuable to you than a dollar today.
A) present value B) future value C) deflation D) interest

16) When real income _____, the demand curve for money shifts to the _____ and the interest rate _____.
A) falls; left; rises
B) falls; right; rises
C) falls; right; falls
D) rises; left; rises
E) rises; right; rises

17) When $1 million is deposited at a bank, the required reserve ratio is 20 percent, and the bank chooses not to hold any excess reserves but makes loans instead, then, in the bank's final balance sheet,

A) the liabilities of the bank increase by $1,000,000.
B) reserves increase by $200,000.
C) the assets at the bank increase by $1,000,000.
D) each of the above occurs.