Econ 353 Money, Banking and Financial Markets
Summer 2008
Exam 2

Name ____________________________       ID # ___________________________

Note:

Questions 1-18 worth 4 points each;
Questions 19-21 worth 8, 10, 10 points each;

Write your answers on the exam paper. You are encouraged to write comments and/or
derivation and calculations on the exam paper as well.

If you have any questions, please ask the instructor and/or comment at the margin of the
exam paper.

Work on your own and **good luck**!

Some useful **formulas** that you might need when you answer some of the questions:

\[ i_{nt} = \frac{i_i + i_{t+1} + i_{t+2} + \ldots + i_{t+(n-1)}}{n} + l_{nt} \]

where \( l_{nt} \) is the liquidity premium for the \( n \)-period bond at time \( t \)

\( l_{nt} \) is always positive

Rises with the term to maturity

\[
E(R) = \sum_{N} \pi_N R_N = \pi_1 R_1 + \pi_2 R_2 + \ldots + \pi_N R_N
\]

\[
Var(R) = \sum_{N} \pi_N (R_N - E(R))^2
\]

\[
= \pi_1 (R_1 - E(R))^2 + \pi_2 (R_2 - E(R))^2 + \ldots + \pi_N (R_N - E(R))^2
\]

\[
\sigma(R) = \sqrt{Var(R)}
\]

\[
P_0 = \sum_{t=1}^{\infty} \frac{D_t}{(1+k_e)'}
\]

\[
P_0 = \frac{D_0 \times (1+g)}{(k_e - g)} = \frac{D_1}{(k_e - g)}
\]
Questions 1-18: Choose the correct answer

1. You would be less willing to purchase U.S. Treasury bonds, other things equal, if
   a. your wealth increase.
   b. you expect interest rates to fall in the future.
   c. **stocks becomes more liquid.**
   d. corporate bonds becomes more risky

2. If fluctuations in interest rates become smaller, then, other things equal, the
demand for stocks ________ and the demand for long-term bonds ________.
   a. increases; increases
   b. increases; decreases
   c. decreases; decreases
   d. **decreases; increases**

3. When the interest rate on a bond is ________ the equilibrium interest rate, in the
   bond market there is excess ________ and the interest rate will ________.
   a. above; demand; rise
   b. **above; demand; fall**
   c. below; supply; fall
   d. above; supply; rise

4. When the price of a bond decreases, all else equal, the bond demand curve
   ________.
   a. shifts right
   b. shifts left
   c. **does not shift**
   d. inverts
5. In the figure above, a factor that could cause the supply of bonds to increase (shift to the right) is:
   a. a decrease in government budget deficits.
   b. a decrease in expected inflation.
   c. **expectations of more profitable investment opportunities.**
   d. a business cycle recession.

6. In Keynes's liquidity preference framework, individuals are assumed to hold their wealth in two forms:
   a. real assets and financial assets.
   b. stocks and bonds.
   c. **money and bonds.**
   d. money and gold.

7. In the Keynesian liquidity preference framework, a rise in the price level causes the demand for money to ________ and the demand curve to shift to the ________, everything else held constant.
   a. increase; left
   b. **increase; right**
   c. decrease; left
   d. decrease; right

8. A bond with default risk will always have a ________ risk premium and an increase in its default risk will ________ the risk premium.
   a. positive; raise
   b. positive; lower
   c. negative; raise
   d. negative; lower
9. During a "flight to quality"
   a. the spread between Aaa and Baa bonds increases.
   b. the spread between Aaa and Baa bonds decreases.
   c. the spread between Aaa and Baa bonds is not affected.
   d. the change in the spread between Aaa and Baa bonds cannot be predicted.

10. According to the liquidity premium theory of the term structure, which of the following statements is true?
   a. because buyers of bonds may prefer bonds of one maturity over another, interest rates on bonds of different maturities do not move together over time.
   b. the interest rate on long-term bonds will equal an average of short-term interest rates that people expect to occur over the life of the long-term bonds plus a liquidity premium.
   c. because of the positive liquidity premium, the yield curve will not be observed to be downward sloping.
   d. bonds with different maturity are perfect substitutes.

11. According to the liquidity premium theory of the term structure, a downward sloping yield curve indicates that short-term interest rates are expected to
   a. rise in the future.
   b. remain unchanged in the future.
   c. decline moderately in the future.
   d. decline sharply in the future.

<table>
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<tr>
<th>Maturity</th>
<th>Coupon</th>
<th>Bid</th>
<th>Asked</th>
<th>Chg</th>
<th>Asked yield</th>
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</table>

12. In Handout 3, we read T-bond quotes as in the table above. Which of the statements below is wrong?
   a. The first column (Maturity) identifies the month and year that a bond matures.
   b. The second column (Coupon) identifies a bond's annual coupon rate.
   c. The third and fourth columns (Bid, Asked) provide information about a bond's bid and asked prices, the bid price is the price that a prospective buyer might use to buy the bond from the market-maker at. Bid price is usually higher than the asked price.
   d. The fifth column (Chg) indicates the change in the bid price from the previous trading day's quotation.
13. Which of the following statements is wrong?
   a. Shareholders have voting rights.
   b. Shareholders have ownership interest in the company proportional to shares owned.
   c. Shareholders are residual claimants.
   d. Companies should pay dividends to its shareholders every year by law.

14. In the generalized dividend model, the current stock price is the sum of
   a. the actual value of the future dividend stream.
   b. the present value of the future dividend stream.
   c. the present value of the future dividend stream plus the actual future sales price.
   d. the present value of the future sales price.

15. Using the Gordon growth model, a stock’s price will increase if
   a. the dividend growth rate increases.
   b. the growth rate of dividends falls.
   c. the required rate of return rises.
   d. the expected sales price rises.

16. In rational expectations theory, the term "optimal forecast" means
   a. the absolutely correct forecast.
   b. a wild guess.
   c. the actual outcome.
   d. the best guess based on all available information.

17. Which of the following evidence is not against efficient market hypothesis
   a. market overreaction
   b. the small-firm effect.
   c. the January effect.
   d. Investment analysts does not persistently beat the market

18. Which of the following statements about futures market is wrong?
   a. If spot market price of a commodity is going up in the future, the long position of a futures contract on this commodity is better off.
   b. People can hedge their risk by trading in futures market because spot price and futures price on the same commodity tend to move together and because they can lock in price in advance.
   c. Speculators like to speculate in futures market rather than spot market mainly because there is much less risk in futures market.
   d. A farmer who is going to sell soybean in the future and is afraid of price decline could hedge by take a short position in futures market (sell futures contract) now.
19. You believe that a corporation's dividends will grow 5% on average into the foreseeable future. If the company's recent dividend payment was $5 and assume a 12% required return.
   a. Use Gordon Growth Model, what should the current price of the stock be?
   b. Under what conditions can you apply the Gordon Growth Model to predict stock price? (Hint: are you adopting a Fundamental Finance View or a Behavioral Finance View?)

**Answer:**
Use the Gordon Growth Model.
$5(1 + .05)/(.12-.05) = $75
Fundamental Finance View

20. Suppose one-year interest rate over the next four years are 9%, 7%, 5%, 3%; liquidity premiums for one to four-year bonds are 0%, 0.25%, 0.5%, 0.75%.
   a. Use liquidity premium theory to calculate 2-year, 3-year, 4-year interest rates
   b. Based on your results and information in the question, draw a yield curve
   c. Based on your knowledge about liquidity premium theory, do you think the yield curve is useful in predicting future short-term interest rates? why?

**Answer:**
i2 = (9+7)/2+.25 = 8.25%
i3 = (9+7+5)/3+.5 = 7.5%
i4 = (9+7+5+3)/4 + .75 = 6.75%
The yield curve is downward sloping curve connecting points for the interest rates above.
Useful. See lecture notes for relating slope of yield curve and the trend of future interest rates.

21. Consider stocks issued by BP and GM. You are looking one year ahead and thinking about only two possible outcomes, high oil price and low oil price. There is a 0.5 possibility that oil price will be high and 0.5 possibility that oil price will be low. Analyst calculated that in rate of return for BP in high oil price scenario is 15%, low oil price scenario is -5%. And rate of return for GM in high oil price scenario is -5%, low oil price scenario is 15%.
   Based on the above information, please answer the following questions:
   a. What are expected rate of returns for BP and GM respectively
   b. What are risks measured by standard deviations for BP and GM respectively
   c. What’s risk-return tradeoff? Which one of the two stocks is more attractive or are they equally attractive?

**Answer:**
$E(R_{BP}) = 0.5 \times 15 + 0.5 \times (-5) = 5,$
$E(R_{GM}) = 0.5 \times (-5) + 0.5 \times 15 = 5.$
Expected rate of returns

\[ E(BP) = E(GE) = 5\% = 0.05 \]

\[ \sigma^2_{BP} = 0.5 (15 - 5)^2 + 0.5 (-5 - 5)^2 = 100 \]
\[ \sigma^2_{GE} = 0.5 (-5 - 5)^2 + 0.5 (15 - 5)^2 = 100 \]

risks:
Standard deviation(BP) = Standard deviation(GE) = 10\% = 0.1

risk-return tradeoff basically says in an efficient market, if you want to earn higher rate of return, you need to bear more risks; if you want to avoid risk, then you could only earn lower rate of return.

They have same return and risk so they are equally attractive.