FINAL EXAM

EC26102: MONEY, BANKING AND FINANCIAL MARKETS

MAY 11, 2004

This exam has 50 questions on 14 pages. Before you begin, please check to make sure that your copy has all 50 questions and all 14 pages.

All questions will receive equal weight in determining your exam score.

Please answer all questions on the answer sheet provided.

1. When borrowers borrow in financial markets, they do so by:

   A) Issuing securities.
   B) Buying securities.

2. A short-term debt instrument is best defined as one with:

   A) Maturity of one day or less.
   B) Maturity of less than one month.
   C) Maturity of less than six months.
   D) Maturity of less than one year.
   E) Maturity of less than ten years.

3. Which of the following is true?

   A) As of the end of 2002, the value of all debt instruments outstanding in the US financial system was larger than the value of all equities.
   B) As of the end of 2002, the value of all debt instruments outstanding in the US financial system was approximately the same as the value of all equities.
   C) As of the end of 2002, the value of all equities outstanding in the US financial system was larger than the value of all debt instruments.

4. When Ford Motor Company issues new shares of stock and sells them off to private investors, these transactions are said to take place in an

A) Broker's market.
B) Dealer's market.
C) Secondary market.
D) None of the above.

5. Investment banks play a key role in financial markets by *underwriting* securities. This means that investment banks

A) Help match up buyers and sellers of existing securities.
B) Hold inventories of securities and stand ready to buy from and sell to other market participants.
C) Help firms sell newly-issued securities.
D) Guarantee that firms will pay interest and principal on their debt.

6. Which of the following securities markets is organized as an exchange?

A) The New York Stock Exchange.
B) The NASDAQ market for stocks.
C) The US Government bond market.
D) Both (B) and (C) above.
E) All three, (A), (B), and (C), above.

7. Which of the following is true?

A) Negotiable CD's are short-term debt instruments.
B) Negotiable CD's are issued by banks.
C) Negotiable CD's trade on a secondary market.
D) Both (A) and (B) above.
E) All three, (A), (B), and (C), above.

8. Which of the following is true?

A) Commercial paper is issued by corporations.
B) Maturities on commercial paper rarely exceed 9-months.
C) Commercial paper makes no regular interest payments, but instead sells at a discount.
D) Commercial paper trades on a secondary market.
E) All of the above.

9. Which of the following is true?

   A) Moral hazard refers to the problem that arises *after* a loan is made, because the borrower may use his or her borrower funds irresponsibly.
   B) Banks help solve the problem of moral hazard by expertly monitoring the activities of borrowers.
   C) Both (A) and (B) above.
   D) None of the above.

10. Unlike other mutual funds that invest mainly in corporate stocks and bonds, money market mutual funds often allow their shareholders to write checks against the value of the shareholdings. Money market mutual funds can do this because:

   A) They are a type of depository institution.
   B) They are a type of contractual savings institution.
   C) The money market instruments that they hold tend to have longer maturities than corporate bonds and stocks.
   D) The money market instruments that they hold tend to be more liquid than corporate bonds and stocks.
   E) Their principal assets, including US Treasury bills and Negotiable Bank CDs, are all payable on demand.

11. A simple loan of $100 requires the borrower to repay $100 principal plus $10 interest one year from now. For this loan, the simple interest rate can be calculated as:

   A) $110 - $10 = $100.
   B) $110 - $100 = $10.
   C) $\dfrac{\$100}{\$100+\$10} = \dfrac{\$100}{\$110} = 0.909 = 90.9\%.$
   D) $100 - $90 = $10.
   E) None of the above.

12. If the simple interest rate is i, then the present value of $1 received n years from now is

   A) $\$1 \times i^n$.
   B) $\$1 \times (1+i)^n$.
   C) $\dfrac{\$1}{(1+i)^n}.$
   D) $\dfrac{\$1}{(1+n)^i}.$
   E) None of the above.

13. Consider a simple loan of $100 that gets repaid with $10 interest after one year. For this loan, the yield to maturity i must satisfy:

A) $\$10 = \dfrac{\$100}{1+i}$.

B) $\$110 = \dfrac{\$100}{1+i}$.

C) $\$100 = \dfrac{\$10}{1+i}$.

D) $\$100 = \dfrac{\$110}{1+i}$.

E) None of the above.

14. Consider a coupon bond with $1000 face value, $100 annual coupon payment, and one year to maturity that sells for the price of $900 today. For this bond, the yield to maturity i must satisfy:

A) $i = \dfrac{\$100}{\$1000}$.

B) $i = \dfrac{\$100}{\$900}$.

C) $\$900 = \dfrac{\$100}{1+i}$.

D) $\$900 = \dfrac{\$1000}{1+i}$.

E) None of the above.

15. When a coupon bond sells for a price that is above its face value, the yield to maturity:

A) Is always equal to the coupon rate.
B) Is always greater than the coupon rate.
C) Is always less than the coupon rate.
D) None of above.

16. Consider a discount bond with face value F and n years to maturity that sells for price P today. For this bond, the yield to maturity i must satisfy:

A) $P = \dfrac{F}{(1+i)^n}$.

B) $F = \dfrac{P}{(1+i)^n}$.

C) $P = \dfrac{F-P}{(1+i)^n}$.

D) $F = \dfrac{P-F}{(1+i)^n}$.

E) None of the above.

17. For a coupon bond, the current yield provides a better approximation to the yield to maturity when:

A) The bond price is closer to face value.
B) The bond's maturity is shorter.
C) Both (A) and (B) above.
D) None of the above.

18. For a discount bond, the yield on a discount basis:
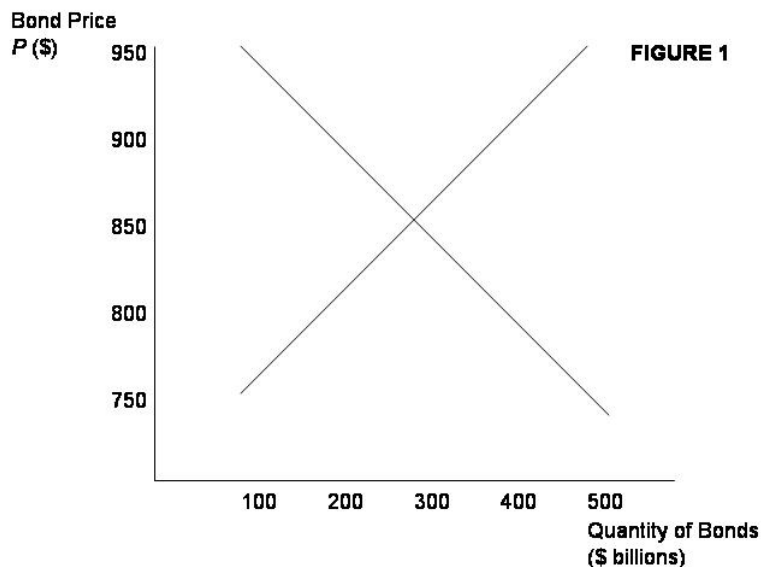
A) Is always equal to the yield to maturity.
B) Is always greater than the yield to maturity.
C) Is always less than the yield to maturity.
D) May be greater than, equal to, or less than the yield to maturity, depending on whether the bond is selling for a price that is above or below face value.
E) None of the above.

Questions 19 – 21 refer to Figure 1, below:

Bond Price
P ($)

In this figure, the y-axis (vertical axis) keeps track of the price P of a one-year discount bond with $1000 face value. Note that the bond price rises as we move up the y-axis. The x-axis (horizontal axis) keeps track of the quantity of bonds demanded and supplied, with the quantity of bonds increasing as we move to the right along the x-axis.

19. In figure 1, the upward-sloping line represents the:

   A) Demand curve for bonds.
   B) Supply curve for bonds.

20. In figure 1, when $P = \$950$:

   A) The demand for bonds exceeds the supply of bonds, hence the bond price P must fall.
   B) The demand for bonds exceeds the supply of bonds, hence the bond price P must rise.
   C) The supply of bonds exceeds the demand for bonds, hence the bond price P must fall.
   D) The supply of bonds exceeds the demand for bonds, hence the bond price P must rise.
   E) None of the above.

21. In figure 1, the equilibrium price of bonds is:

   A) $950.
   B) $900.
   C) $850.
   D) $800.
   E) $750.

Questions 22 and 23 refer to figure 2, below:
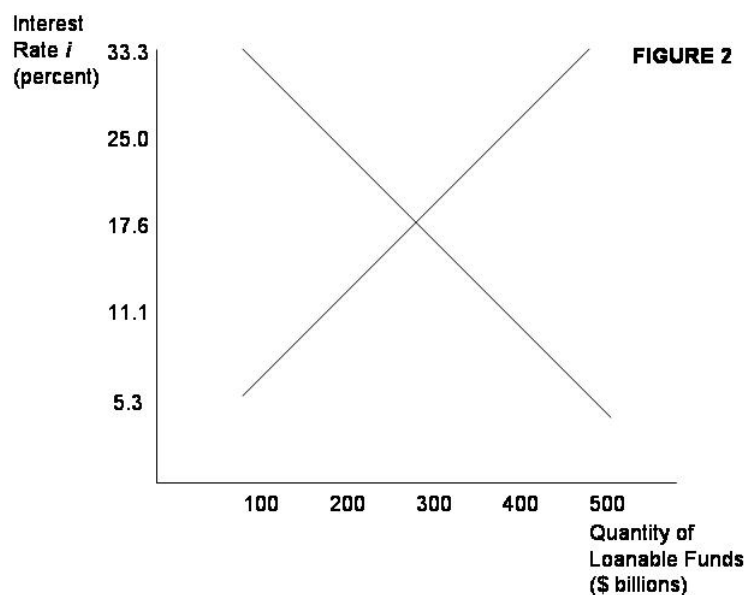
In this figure, the y-axis (vertical axis) keeps track of the yield to maturity i on a one-year discount bond with $1000 face value. Note that the interest rate rises as we move up the y-axis. The x-axis (horizontal axis) keeps track of the quantity of loanable funds demanded and supplied, with the quantity of loanable funds increasing as we move to the right along the x-axis.

22. In figure 2, the downward-sloping line represents the:

    A) Demand curve for loanable funds.
    B) Supply curve for loanable funds.

23. In figure 2, when $i = 5.3\%$:

    A) The demand for loanable funds exceeds the supply of loanable funds, hence the interest rate i must fall.
    B) The demand for loanable funds exceeds the supply of loanable funds, hence the interest rate i must rise.
    C) The supply of loanable funds exceeds the demand for loanable funds, hence the interest rate i must fall.
    D) The supply of loanable funds exceeds the demand for loanable funds, hence the interest rate i must rise.

24. Which of the following factors work to shift the demand curve for loanable funds?

    A) Changes in the liquidity of bonds.
    B) Changes in the expected profitability of investment opportunities.
    C) Changes in the relative riskiness of bonds.
    D) Changes in wealth.
    E) All three factors, (A), (B), and (C), listed above.
    F) All three factors, (A), (C), and (D), listed above.

25. According to the loanable funds framework, when bonds become more liquid, the interest rate:

    A) Rises.
    B) Falls.
    C) May either rise or fall, depending on the relative magnitude of the shifts in the supply of and demand for loanable funds.

26. According to the loanable funds framework, when investment opportunities become more profitable, the interest rate:

    A) Rises.
    B) Falls.
    C) May either rise or fall, depending on the relative magnitude of the shifts in the supply of and demand for loanable funds.

27. In the actual US economy before 1940, the interest rate on municipal bonds was above the interest rate on US government bonds. This fact can be explained by

    A) Default risk.
    B) Liquidity considerations.
    C) Income tax considerations.
    D) Both (A) and (B) above.

28. Consider two corporate bonds with the same term to maturity: one is rated Aaa by Moody's and the other is rated Baa by Moody's. Based on considerations of default risk, which one should have the smaller risk premium, relative to a US Treasury bond with the same term to maturity?

    A) The Aaa corporate bond.
    B) The Baa corporate bond.

29. The expectations hypothesis assumes that:

    A) Investors regard bonds of different maturities as perfect substitutes.
    B) Investors regard bonds of different maturities as not substitutes at all.
    C) Investors regard bonds of different maturities as substitutes, but not perfect substitutes.

30. Preferred habitat theory assumes that:

    A) Investors regard bonds of different maturities as perfect substitutes.
    B) Investors regard bonds of different maturities as not substitutes at all.
    C) Investors regard bonds of different maturities as substitutes, but not perfect substitutes.

31. The expectations hypothesis can explain:

    A) Why interest rates on bonds of different maturities tend to move together over time.
    B) Why the yield curve sometimes slopes up and sometimes slopes down.
    C) Why most of the time the yield curve slopes up.
    D) Both (A) and (B) above.
    E) Both (A) and (C) above.
    F) Both (B) and (C) above.

32. Preferred habitat theory can explain:

    A) Why interest rates on bonds of different maturities tend to move together over time.
    B) Why the yield curve sometimes slopes up and sometimes slopes down.
    C) Why most of the time the yield curve slopes up.
    D) Both (A) and (B) above.
    E) Both (A) and (C) above.
    F) Both (B) and (C) above.
    G) All three, (A), (B), and (C), above.

33. Segmented markets theory implies that:

    A) The interest rate on a long-term bond equals the average of the short-term interest rates that are expected to prevail over the lifetime of that long-term bond.
    B) The interest rate on a long-term bond equals the average of the short-term interest rates that are expected to prevail over the lifetime of that long-term bond, plus an additional liquidity or term premium.
    C) The interest rate on a long-term bond is determined in the market for long-term bonds, with no effects from changes in interest rates on short-term bonds.

34. Preferred habitat theory implies that:

   A) The interest rate on a long-term bond equals the average of the short-term interest rates that are expected to prevail over the lifetime of that long-term bond.

   B) The interest rate on a long-term bond equals the average of the short-term interest rates that are expected to prevail over the lifetime of that long-term bond, plus an additional liquidity or term premium.

   C) The interest rate on a long-term bond is determined in the market for long-term bonds, with no effects from changes in interest rates on short-term bonds.

35. Consider the following two investment strategies. Strategy 1: buy a share of stock today (at time t) that pays a stream of dividends D_{t+1}, D_{t+2}, D_{t+3},... in future years $t+1$, $t+2$, $t+3$,... out into the possibly infinite future. Strategy 2: buy a portfolio of discount bonds today (at time t) that includes a one-year discount bond with face value D_{t+1}, a two-year discount bond with face value D_{t+2}, a three-year discount bond with face value D_{t+3}, and so on out into the possibly infinite future. Let P_t denote today's price of the share of stock. In addition, let Q_{1t} denote today's price of the one-year discount bond, let Q_{2t} denote today's price of the two-year discount bond, let Q_{3t} denote today's price of the three-year discount bond, and so on out into the possibly infinite future. Finally, let i_{1t} denote the yield to maturity on the one-year bond, let i_{2t} denote the yield to maturity on the two-year bond, let i_{3t} denote the yield to maturity on the three-year bond, and so on out into the possibly infinite future. Then, if the stock and the bonds are equally risky, their prices must be related according to:

   A) $P_t = Q_{1t} + Q_{2t} + Q_{3t} + ...$

   B) $P_t = i_{1t} + i_{2t} + i_{3t} + ...$

   C) $P_t = D_{t+1} + D_{t+2} + D_{t+3} + ...$

   D) $P_t = \dfrac{Q_{1t}}{1+i_{1t}} + \dfrac{Q_{2t}}{(1+i_{2t})^2} + \dfrac{Q_{3t}}{(1+i_{3t})^3} + ...$

   E) None of the above.

36. Using the same notation as in question 35 above, which of the following equations best summarizes the dividend valuation model?

   A) $P_t = i_{1t} + i_{2t} + i_{3t} + ...$

   B) $P_t = D_{t+1} + D_{t+2} + D_{t+3} + ...$

   C) $P_t = \dfrac{Q_{1t}}{1+i_{1t}} + \dfrac{Q_{2t}}{(1+i_{2t})^2} + \dfrac{Q_{3t}}{(1+i_{3t})^3} + ...$

   D) $P_t = D_{t+1}(1+i_{1t}) + D_{t+2}(1+i_{2t}) + D_{t+3}(1+i_{3t}) + ...$

   E) None of the above.

37. The dividend valuation model implies that all else equal, a stock that is expected to pay smaller dividends in the future ought to have a:

   A) Higher price today.
   B) Lower price today.

38. In the Gordon growth model, the future dividends paid by a share of stock are assumed to grow at the constant rate g. If D_t denotes the dividend paid by the share of stock this year, and if D_{t+1} denotes the dividend paid by the share of shock j years from now, this assumption implies that

   A) $D_t = (1+g)^j D_{t+j}$.

   B) $D_{t+j} = (1+g)^j D_t$.

   C) $D_t = (1+g)^j (1+D_{t+j})$.

   D) $D_{t+j} = (1+g)^j (1+D_t)$.

39. According to the Gordon growth model, a share of stock with future dividends that are expected to grow at a faster rate ought to have:

   A) A higher price today.
   B) A lower price today.

40. According to the Gordon growth model, when the required return on equity k is larger, the stock should:

   A) Sell for a higher price today.
   B) Sell for a lower price today.

41. Let P_t denote the price of the stock today (at time t), let D_t denote the dividend paid by the stock this past year, let g denote the assumed constant growth rate of future dividends, and let k denote the assumed constant required return on equity. Then which of the following equations summarizes the Gordon growth model?

A) $P_t = \left(\dfrac{1+g}{k-g} \right) D_t.$

B) $D_t = \left(\dfrac{1+g}{k-g} \right) P_t.$

C) $P_t = \left(\dfrac{1+g}{k+g} \right) D_t.$

D) $P_t = \left(\dfrac{1+g}{1+k} \right) D_t.$

E) None of the above.

42. The Gordon growth model assumes that:

A) The future dividends paid by a stock will grow at a constant rate.
B) The interest rates used to discount the future dividends are constant.
C) The growth rate of dividends must be larger than the required return on equity.
D) Both (A) and (B) above.
E) All three, (A), (B), and (C), above.

43. A bank's checkable deposits that do not pay interest are called its:

A) Demand deposits.
B) NOW (Negotiable Order of Withdrawal) accounts.
C) MMDA's (Money Market Deposit Accounts).
D) Savings accounts.
E) Both (A) and (B) above.
F) All three, (A), (B), and (C), above.
G) All four, (A), (B), (C), and (D), above.

44. A bank's nontransactions deposits include its:

A) Savings accounts.
B) Small (under $100,000) time deposits (CD's).
C) Large (over $100,000) time deposits (CD's).
D) MMDA's (Money Market Deposit Accounts).
E) Both (A) and (B) above.
F) All three, (A), (B), and (C), above.
G) All four, (A), (B), (C), and (D), above.

45. Discount loans are included on the:

A) Liability side of a bank's balance sheet.
B) Asset side of a bank's balance sheet.

46. Suppose that Fleet Bank borrows $100 million from Citibank in the Federal Funds market. Then this interbank loan is:

A) A liability for Fleet and a liability for Citibank.
B) A liability for Fleet and an asset for Citibank.
C) An asset for Fleet and a liability for Citibank.
D) An asset for Fleet and an asset for Citibank.

47. Banks earn profits when:

A) The interest rate on their assets exceeds the interest rate on their liabilities.
B) The interest rate on their liabilities exceeds the interest rate on their assets.

48. The securities listed on a bank's balance sheet can include:

A) US Treasury bills, notes, and bonds.
B) US Government Agency bonds.
C) State and Local Government bonds.
D) Both (A) and (B) above.
E) All three, (A), (B), and (C), above.

49. Whenever a bank gains an additional $100 in deposits it:

A) Loses an additional $100 in reserves.
B) Gains an additional $100 in reserves.

50. Consider an example in which Fleet Bank initially holds no excess reserves and experiences a deposit outflow. To cope with this deposit outflow, Fleet's options include:

    A) Borrowing funds from another bank.
    B) Selling securities.
    C) Reducing its loans.
    D) Both (A) and (B) above.
    E) All three, (A), (B), and (C), above.