Money, Banking, and Financial Markets (Econ 353): Section 5
Midterm Examination I
September 24, 2002

Name_______________________________________ Univ. Id #______________________

Note: Each multiple-choice question is worth 3 points. Problems 26, 27, and 28 carry 10, 10, and 8 points, respectively.

1) People hold money even during inflationary episodes when other assets prove to be better stores of value. This can be explained by the fact that money is
   A) extremely liquid.
   B) a unique good for which there are no substitutes.
   C) the only thing accepted in economic exchange.
   D) all of the above.

2) Which of the following are true statements?
   A) Wealth is the total collection of pieces of property that are a store of value.
   B) Money is frequently confused with income.
   C) Income is a flow of earnings per unit of time.
   D) All of the above are true.
   E) Only (a) and (b) of the above are true.

3) If there are five goods in a barter economy, one needs to know ten prices in order to exchange one good for another. If, however, there are ten goods in a barter economy, then one needs to know _____ prices in order to exchange one good for another.
   A) 20 B) 25 C) 30 D) 45

4) The Fed revises its estimates of the monetary aggregates, sometimes by large amounts, because
   A) small depository institutions need only report their deposits infrequently.
   B) seasonal adjustments become more precise only as more data become available.
   C) monthly monetary data need to be adjusted for the "payday effect."
   D) of all of the above.
   E) of only (a) and (b) of the above.

5) Which of the following statements accurately describes the three different measures of the money supply--M1, M2, and M3?
   A) M1 is the narrowest measure.
   B) Initial estimates of the money supply are not a reliable guide to what is happening to the money supply in the short run.
   C) The three measures do not move together, so they cannot be used interchangeably by policymakers.
   D) All of the above.
   E) Only (a) and (b) of the above.
6) The yield on a discount basis of a 30-day, $1,000 Treasury bill selling for $950 is
A) 5 percent.
B) 10 percent.
C) 20 percent.
D) 50 percent.
E) none of the above.

7) What is the return on a 5 percent coupon bond that initially sells for $1,000 and sells for $1,200 next year?
A) 5 percent
B) 10 percent
C) -5 percent
D) 25 percent
E) None of the above

8) If the interest rates on all bonds rise from 5 to 6 percent over the course of the year, which bond would you prefer to have been holding?
A) A bond with one year to maturity
B) A bond with five years to maturity
C) A bond with ten years to maturity
D) A bond with twenty years to maturity

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

10) Prices and returns for _____ bonds are more volatile than those for _____ bonds.
A) long-term; long-term
B) long-term; short-term
C) short-term; long-term
D) short-term; short-term

11) The process of calculating what dollars received in the future are worth today is called
A) calculating the yield to maturity.
B) discounting the future.
C) deflating the future.
D) none of the above.

12) The interest rate that equates the present value of payments received from a debt instrument with its value today is the
A) simple interest rate.
B) discount rate.
C) yield to maturity.
D) real interest rate.

13) Which of the following are true concerning the distinction between interest rates and return?
A) The rate of return on a bond will not necessarily equal the interest rate on that bond.
B) The return can be expressed as the sum of the current yield and the rate of capital gains.
C) The rate of return will be greater than the interest rate when the price of the bond rises between time t and time t+1.
D) All of the above are true.
E) Only (a) and (b) of the above are true.

14) Which of the following statements about the characteristics of debt and equity is untrue?
A) They can both be long-term financial instruments.
B) They can both be short-term financial instruments.
C) They both involve a claim on the issuer's income.
D) They both enable a corporation to raise funds.
E) None of the above.
15) Federal funds are
   A) funds raised by the federal government in the bond market.
   B) loans made by the Federal Reserve System to banks.
   C) loans made by banks to the Federal Reserve System.
   D) loans made by banks to each other.
   E) none of the above.

16) Which of the following statements about financial markets and securities are true?
   A) A bond is a debt security that promises to make payments for a specified period of time.
   B) Equities usually make periodic payments called dividends and are considered to be long
term securities because they have no maturity date.
   C) A debt instrument is short term if its maturity is less than ten years.
   D) All of the above are true.
   E) Only (a) and (b) of the above are true.

17) A corporation acquires new funds only when its securities are sold
   A) in the primary market by an investment bank.
   B) in the primary market by a stock exchange broker.
   C) in the secondary market by a securities dealer.
   D) in the secondary market by a commercial bank.

18) Bonus Question: A recent news report highlights that firms are increasingly finding it hard to
raise funds in the commercial paper market. Which of the below explains this problem?
   A) Investors have been demanding more of equity issues since returns on equities have been
relatively higher.
   B) Many investment banks have stopped intermediating between institutional investors and
borrowing firms as their role has been clouded by recent corporate scandals.
   C) The Securities and Exchange Commission prohibits firms from issuing new commercial
paper pending investigations of alleged accounting irregularities.
   D) In the aftermath of recent accounting scandals, many firms’ credit ratings have been
recently downgraded, which has led risk-averse institutional to withdraw from this
market.

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

20) 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) moral hazard; adverse selection
    C) costly state verification; free-riding    D) free-riding; costly state verification
21) That only large, well-established corporations have access to securities markets
   A) explains why indirect finance is such an important source of external funds for businesses.
   B) can be explained by the problem of adverse selection.
   C) can be explained by government regulations that prohibit small firms from acquiring funds in securities markets.
   D) can be explained by all of the above.
   E) can be explained by only (a) and (b) of the above.

22) Checkable deposits are money because
   A) federal regulations mandate that they be so considered.
   B) they serve the functions of money.
   C) only banks, and not savings and loan associations, can issue checkable deposits.
   D) of both (a) and (b) of the above.
   E) of both (a) and (c) of the above.

23) If the price level doubles, the value of money
   A) doubles.
   B) more than doubles, due to scale economies.
   C) rises but does not double, due to diminishing returns.
   D) falls by 50 percent.

24) Which of the following statements best explains how the use of money in an economy increases economic efficiency?
   A) Money increases economic efficiency because it is costless to produce.
   B) Money increases economic efficiency because it encourages specialization.
   C) Money increases economic efficiency because it increases transactions costs.
   D) Money cannot have an effect on economic efficiency.

25) Money is
   A) anything that is generally accepted in payment for goods and services or in the repayment of debt.
   B) frequently--but incorrectly--used synonymously with wealth.
   C) currency, demand deposits, and other items used to make purchases.
   D) all of the above.
   E) only (a) and (c) of the above.

Answers:
26. You want to invest your savings of $5000 for next two years.
   (a) Your bank is offering you a certificate of deposit with an annual interest rate of 10%.
       There is another option you want to consider: a 2-year 10% coupon bond at a price of
       $5050. How will you choose between the two options without using a financial
       calculator? Show your work. (5 points)
   (b) Suppose your bank was offering you only 9.5% annual interest rate. What will you do
       now? (5 points)
27. Suppose you buy a 10-year zero-coupon (discount) bond with a Face Value of $1000, at a promised yield to maturity of 5%.
   (a) What is its selling price? (3 points)
   (b) Exactly 2 years later, the interest rates rise to 10%. If your holding period is 2 years i.e., you have to sell this bond after two years, what price will you end up selling at? (4 points)
   (c) What is your effective rate of return in part (b)? (3 points)
28. A 6-month treasury note with a face value of $1000 is selling at $980 on a discount basis.
   (a) If the annual rate of inflation is expected to be 1%, what is the expected real rate of
       return? (6 points)
   (b) Will the investor be better off, if the actual inflation turns out to be 2% instead? (2 points)
26. Part (a). A 10% coupon bond with a price above its Face Value will have its yield to maturity less than 10%. The other alternative, which offers 10%, will be preferable.

Part (b). Now with 9.5% deposit rate, let’s first obtain the present value of the bond’s cash flow

\[ PV(\text{at 9.5\%}) = \frac{500}{1.095} + \frac{500}{1.095^2} + \frac{5000}{1.095^2} = 5043.7 \]

Since the bond is priced at 5050, which is greater than 5043.7 (the present value at 9.5%), its yield to maturity must be less than 9.5%. The bank’s offer is still preferable.

27. Part (a). Given that its yield to maturity is 5%, the current price (at time \( t \)) will be

\[ P_t = PV \text{ (at YTM)} = \frac{1000}{1.05^{10}} = 613.91 \]

Part (b). Two years later, at 10% interest rate the price will fall. Since the remaining cash flow is still $1000 face value payment, but now after three years, the price after two years (say, at \( t + 2 \)) will be

\[ P_{t+2} = PV \text{ (at 10\%)} = \frac{1000}{1.10^8} = 466.51 \]

Part (c). The rate of return will be given by

\[ P_{t+2} = P_t (1 + i)^2 \]

which implies that

\[ i = \left( \frac{P_{t+2}}{P_t} \right)^{\frac{1}{2}} - 1 = \left( \frac{466.51}{613.91} \right)^{\frac{1}{2}} - 1 = -0.1283 \approx -12.83\% \]

28. Part (a). If the annual return is \( i \), then the nominal return is obtained from

\[ 980 = \frac{1000}{(1+i)^\frac{1}{2}} \]

(Note: You can also use \( 980 = \frac{1000}{(1+i)^\frac{1}{2}} \). The results will be approximately similar)

or

\[ i = \left( \frac{1000}{980} \right)^2 - 1 = 0.412 \approx 4.12\% \]

Hence, the expected real rate of return (annual) is

\[ i_r = i - \pi_e = 4.12 - 1 = 3.12\% \]

Part (b) If the actual inflation rate turns out to be 2% the actual real rate of return will be

\[ i_r = i - \pi_a = 4.12 - 2 = 2.12\% \]

The investors will be worse off.