***Financial Markets and Institutions, 7e* (Saunders)**

**Chapter 2 Determinants of Interest Rates**

1) The real risk-free rate is the increment to purchasing power that the lender earns in order to induce him or her to forego current consumption.

2) If you earn 0.5 percent a month in your bank account, this would be the same as earning a 6 percent annual interest rate with annual compounding.

3) Simple interest calculations assume that interest earned is never reinvested.

4) An investor earned a 5 percent nominal risk-free rate over the year. However, over the year, prices increased by 2 percent. The investor's real risk-free rate was less than his nominal rate of return.

5) Earning a 5 percent interest rate with annual compounding is better than earning a 4.95 percent interest rate with semiannual compounding.

6) For any positive interest rate the present value of a given annuity will be less than the sum of the cash flows, and the future value of the same annuity will be greater than the sum of the cash flows.

7) With a zero interest rate both the present value and the future value of an *N* payment annuity would equal *N* × payment.

8) Households generally supply more funds to the markets as their income and wealth increase, *ceteris paribus*.

9) An increase in the perceived riskiness of investments would cause a movement up along the supply curve.

10) An increase in the marginal tax rates for all U.S. taxpayers would probably result in reduced supply of funds by households.

11) When the quantity of a financial security supplied or demanded changes at every given interest rate in response to a change in a factor, this causes a shift in the supply or demand curve.

12) An improvement in economic conditions would likely shift the supply curve down and to the right and shift the demand curve for funds up and to the right.

13) The risk that a security cannot be sold at a predictable price with low transaction costs at short notice is called liquidity risk.

14) Convertible bonds will normally have lower promised yields than straight bonds of similar terms and quality.

15) We expect liquidity premiums to move inversely with interest rate volatility.

16) Everything else equal, the interest rate required on a callable bond will be less than the interest rate on a convertible bond.

17) The term structure of interest rates is the relationship between interest rates on bonds similar in terms except for maturity.

18) The unbiased expectations hypothesis of the term structure posits that long-term interest rates are unrelated to expected future short-term rates.

19) The traditional liquidity premium theory states that long-term interest rates are greater than the average of current and expected future short-term interest rates.

20) According to the market segmentation theory, short-term investors will not normally switch to intermediate- or long-term investments.

21) According to the liquidity premium theory, investors preferring long-term bonds over short-term bonds would require lower liquidity premium.

22) As the liquidity of corporate bonds decrease, the risk premium required on those bonds decrease as well.

23) An increase in interest rates increases the demand loanable funds.

24) A higher level of wealth causes the demand for loanable funds to increase and interest rates to fall.

25) An investment pays $400 in one year, *X* amount of dollars in two years, and $500 in three years. The total present value of all the cash flows (including *X*) is equal to $1,500. If i is 6 percent, what is *X*?

A) $702.83

B) $822.41

C) $789.70

D) $749.67

E) $600.00

26) An insurance company is trying to sell you a retirement annuity. The annuity will give you 20 payments with the first payment in 12 years when you retire. The insurance firm is asking you to pay $50,000 today. If this is a fair deal, what must the payment amount be (to the dollar) if the interest rate is 8 percent?

A) $5,093

B) $12,824

C) $9,472

D) $11,874

E) $10,422

27) Suppose you can save $2,000 per year for the next ten years in an account earning 7 percent per year. How much will you have at the end of the tenth year if you make the first deposit today?

A) $34,187.75

B) $29,567.20

C) $31,217.36

D) $27,364.15

E) $18,364.25

28) An annuity and an annuity due with the same number of payments have the same future value if r = 10%. Which one has the higher payment?

A) They both must have the same payment since the future values are the same.

B) There is no way to tell which has the higher payment.

C) An annuity and an annuity due cannot have the same future value.

D) The annuity has the higher payment.

E) The annuity due has the higher payment.

29) You go to the *Wall Street Journal* and notice that yields on almost all corporate and Treasury bonds have decreased. The yield decreases may be explained by which one of the following?

A) A decrease in U.S. inflationary expectations

B) Newly expected decline in the value of the dollar

C) An increase in current and expected future returns of real corporate investments

D) Decreased Japanese purchases of U.S. Treasury bills/bonds

E) Increases in the U.S. government budget deficit

30) YIELD CURVE FOR ZERO COUPON BONDS RATED AA

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Maturity | |  | YTM | |  | Maturity | |  | YTM | |  | Maturity | |  | YTM | | |
| 1 | year |  | 8.00 | % |  | 7 | year |  | 9.15 | % |  | 13 | year |  | 10.45 | % |  | |
| 2 | year |  | 8.11 | % |  | 8 | year |  | 9.25 | % |  | 14 | year |  | 10.65 | % |  | |
| 3 | year |  | 8.20 | % |  | 9 | year |  | 9.35 | % |  | 15 | year |  | 10.75 | % |  | |
| 4 | year |  | 8.50 | % |  | 10 | year |  | 9.47 | % |  | 16 | year |  | 10.95 | % |  | |
| 5 | year |  | 8.75 | % |  | 11 | year |  | 9.52 | % |  | 17 | year |  | 11.00 | % |  | |
| 6 | year |  | 8.85 | % |  | 12 | year |  | 9.77 | % |  | 18 | year |  | 11.25 | % |  | |

Assume that there are no liquidity premiums.

To the nearest basis point, what is the expected interest rate on a four-year maturity AA zero coupon bond purchased six years from today?

A) 10.41 percent

B) 10.05 percent

C) 9.16 percent

D) 10.56 percent

E) 9.96 percent

31) YIELD CURVE FOR ZERO COUPON BONDS RATED AA

|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Maturity | |  | YTM | |  | Maturity | |  | YTM | |  | Maturity | |  | YTM | | |
| 1 | year |  | 8.00 | % |  | 7 | year |  | 9.15 | % |  | 13 | year |  | 10.45 | % |  | |
| 2 | year |  | 8.11 | % |  | 8 | year |  | 9.25 | % |  | 14 | year |  | 10.65 | % |  | |
| 3 | year |  | 8.20 | % |  | 9 | year |  | 9.35 | % |  | 15 | year |  | 10.75 | % |  | |
| 4 | year |  | 8.50 | % |  | 10 | year |  | 9.47 | % |  | 16 | year |  | 10.95 | % |  | |
| 5 | year |  | 8.75 | % |  | 11 | year |  | 9.52 | % |  | 17 | year |  | 11.00 | % |  | |
| 6 | year |  | 8.85 | % |  | 12 | year |  | 9.77 | % |  | 18 | year |  | 11.25 | % |  | |

Assume that there are no liquidity premiums.

You just bought a 15-year maturity Xerox corporate bond rated AA with a 0 percent coupon. You expect to sell the bond in eight years. Find the expected interest rate at the time of sale (watch out for rounding error).

A) 13.92 percent

B) 11.00 percent

C) 8.85 percent

D) 12.49 percent

E) 12.80 percent

32) According to the liquidity premium theory of interest rates,

A) long-term spot rates are higher than the average of current and expected future short-term rates.

B) investors prefer certain maturities and will not normally switch out of those maturities.

C) investors are indifferent between different maturities if the long-term spot rates are equal to the average of current and expected future short-term rates.

D) the term structure must always be upward sloping.

E) long-term spot rates are totally unrelated to expectations of future short-term rates.

33) Of the following, the most likely effect of an increase in income tax rates would be to

A) decrease the savings rate.

B) decrease the supply of loanable funds.

C) increase interest rates.

D) all of these choices are correct.

34) Upon graduating from college this year, you expect to earn $25,000 per year. If you get your MBA, in one year you can expect to start at $35,000 per year. Over the year, inflation is expected to be 5 percent. In today's dollars, how much additional (less) money will you make from getting your MBA (to the nearest dollar) in your first year?

A) −$2,462

B) $8,333

C) $8,750

D) $9,524

E) $10,000

35) Investment A pays 8 percent simple interest for 10 years. Investment B pays 7.75 percent compound interest for 10 years. Both require an initial $10,000 investment. The future value of A minus the future value of B is equal to \_\_\_\_\_\_\_\_ (to the nearest penny).

A) $2,500.00

B) −$2,500.00

C) $1,643.32

D) $3,094.67

E) −$3,094.67

36) You buy a car for $38,000. You agree to a 60-month loan with a monthly interest rate of 0.55 percent. What is your required monthly payment?

A) $634.24

B) $745.29

C) $605.54

D) $764.07

E) None of these choices are correct.

37) You want to have $5 million when you retire in 40 years. You believe you can earn 9 percent per year on your investment. How much must you invest each year to achieve your goal when you retire? (Ignore all taxes.)

A) $10,412

B) $11,619

C) $14,798

D) $15,295

E) None of these choices are correct.

38) An investor wants to be able to buy 4 percent more goods and services in the future in order to induce her to invest today. During the investment period prices are expected to rise by 2 percent. Which statement(s) below is/are true?

I. 4 percent is the desired real risk-free interest rate.

II. 6 percent is the approximate nominal rate of interest required.

III. 2 percent is the expected inflation rate over the period.

A) I only

B) II only

C) III only

D) I and II only

E) I, II, and III are true.

39) Classify each of the following in terms of their effect on interest rates (increase or decrease):

I. Perceived risk of financial securities increases.

II. Near term spending needs decrease.

III. Future profitability of real investments increases.

A) I increases: II increases: III increases

B) I increases: II decreases: III decreases

C) I decreases: II increases: III increases

D) I decreases; II decreases; III decreases

E) None of these choices are correct.

40) Classify each of the following in terms of their effect on interest rates (increase or decrease):

I. Covenants on borrowing become more restrictive.

II. The Federal Reserve increases the money supply.

III. Total household wealth increases.

A) I increases; II increases; III increases

B) I increases; II decreases; III decreases

C) I decreases; II increases; III increases

D) I decreases; II decreases; III decreases

E) None of these choices are correct.

41) Inflation causes the demand curve for loanable funds to shift to the \_\_\_\_\_\_\_\_ and causes the supply curve to shift to the \_\_\_\_\_\_\_\_.

A) right; right

B) right; left

C) left; left

D) left; right

42) An individual actually earned a 4 percent nominal return last year. Prices went up by 3 percent over the year. Given that the investment income was subject to a federal tax rate of 28 percent and a state and local tax rate of 6 percent, what was the investor's actual real after-tax rate of return?

A) −0.36 percent

B) 0.66 percent

C) 0.72 percent

D) 1.45 percent

E) 2.64 percent

43) A 15-payment annual annuity has its first payment in nine years. If the payment amount is $1,400 and the interest rate is 7 percent, what is the most you should be willing to pay today for this investment?

A) $5,825.11

B) $12,751.08

C) $6,416.67

D) $7,421.24

E) $6,935.74

44) Which of the following would normally be expected to result in an increase in the supply of funds, all else equal?

I. The perceived riskiness of all investments decreases.

II. Expected inflation increases.

III. Current income and wealth levels increase.

IV. Near term spending needs of households increase as energy costs rise.

A) I and III only

B) II and III only

C) II, III, and IV only

D) I and IV only

E) I, II, III, and IV

45) An investor requires a 3 percent increase in purchasing power in order to induce her to lend. She expects inflation to be 2 percent next year. The nominal rate she must charge is about

A) 3 percent.

B) 2 percent.

C) 1 percent.

D) 5 percent.

E) 7 percent.

46) The term structure of interest rates is upward sloping for all bond types. A certain AAA-rated non-callable 10-year corporate bond has been issued at a 6.15 percent promised yield. Which one of the following bonds probably has a higher promised yield?

A) A similar quality municipal bond

B) A non-callable AAA-rated corporate bond with a five-year maturity

C) A callable AAA-rated corporate bond with a 15-year maturity

D) A non-callable AAA-rated convertible corporate bond with a 10-year maturity

E) All of these choices are correct.

47) Which of the following bond types pays interest that is exempt from federal taxation?

A) Municipal bonds

B) Corporate bonds

C) Treasury bonds

D) Convertible bonds

E) Municipal bonds and Treasury bonds

48) The relationship between maturity and yield to maturity is called the \_\_\_\_\_\_\_\_.

A) loan covenant

B) term structure

C) bond indenture

D) Fisher effect

E) DRP structure

49) According to the unbiased expectations theory,

A) markets are segmented and buyers stay in their own segment.

B) liquidity premiums are negative and time varying.

C) the term structure will most often be upward sloping.

D) the long-term spot rate is an average of the current and expected future short-term interest rates.

E) forward rates are less than the expected future spot rates.

50) Suppose that the current one-year Treasury-bill rate is 3.15 percent and the expected one-year rate 12 months from now is 4.25 percent. According to the unbiased expectations theory, what should be the current rate for a two-year Treasury security?

A) 3.70 percent

B) 4.15 percent

C) 2.36 percent

D) 4.74 percent

E) 5.50 percent

51) Suppose you borrow $15,000 and then repay the loan by making 12 monthly payments of $1,297.92 each. What rate will you be quoted on the loan?

52) What is the loanable funds theory of interest rates?

53) What is the difference between the expected real interest rate and the real risk-free interest rate actually earned?

54) Can the actual real rate of interest be negative? When? Can the expected real rate be negative?

55) In October 1987 stock prices fell 22 percent in one day and bond rates fell also. Use the loanable funds theory to explain what happened.

56) A foreign investor placing money in dollar-denominated assets desires a 4 percent real rate of return. Global inflation is running about 3 percent, and the dollar is expected to decline against her home currency by 1.5 percent over the investment period. What is her minimum required rate of return? Explain.

57) Would you expect the demand curve for businesses to be steeper than the demand curve for funds by the federal government? Explain.

58) Who are the major suppliers and demanders of funds in the United States and what is their typical position?

59) According to current projections, Social Security and other entitlement programs will soon be severely underfunded. If the government decides to cut social security benefits to future retirees and raise Social Security taxes on all workers, what will probably happen to the supply of funds available to the capital markets? What will be the effect on interest rates?

60) The one-year spot rate is currently 4 percent; the one-year spot rate one year from now will be 3 percent; and the one-year spot rate two years from now will be 6 percent. Under the unbiased expectations theory, what must today's three-year spot rate be? Suppose the three-year spot rate is actually 3.75 percent, how could you take advantage of this? Explain.

61) Explain the logic of the liquidity premium theory of the term structure.

62) Explain the market segmentation theory of the term structure.