Name: _____ Class:___ Date: _____

(First Page)

Name: _____ Class:___ Date: _____

(Subsequent Pages)

1

answer: bond
Treasury
risk
source:
objective:

Bonds and Their Valuation: Introduction

A(n) _____ is a long-term contract under which a borrower agrees to make payments of interest and principal on specific dates. There are four main types reflecting who the issuers are: _____ , corporate, municipal, and foreign. Each type differs with respect to _____ and expected return. All have some common characteristics even though they may have different contractual features.

2

answer: par
call
sinking fund
safer
lower
fixed
floating
Zero coupon
discount below
below its
Convertible
Putable
Income
fixed assets
Investment-grade
source:
objective:

Key Characteristics

The _____ value of a bond is its stated face value or maturity value, and its coupon interest rate is the stated annual interest rate on the bond. The maturity date is the date on which the par value must be repaid. A _____ provision gives the issuer the right to redeem the bonds under specified terms prior to their normal maturity date, although not all bonds have this provision. Some bonds have _____ provisions which require the issuer to systematically retire a portion of the bond issue each year. Because sinking fund provisions facilitate their orderly retirement, bonds with these provisions are regarded as being _____ so they will have _____ coupon rates than similar bonds without these provisions.

Bonds can be _____ -rate bonds with a constant coupon rate over the life of the bond, or they can be _____ -rate bonds with a coupon rate that varies over time depending on the level of interest rates. _____ bonds pay no annual interest but are sold at a _____ par, thus compensating investors in the form of capital appreciation. An original issue discount (OID) bond is any bond originally offered at a price _____ par value.

_____ bonds are exchangeable at the option of the holder for the issuing firm's common stock. Bonds can be issued with warrants giving the holder the option to purchase the firm's stock for a stated price, thereby providing a capital gain if the stock's price rises. _____ bonds contain a provision that allows holders to sell them back to the company prior to maturity at a prearranged price. _____ bonds pay interest only if the firm has earnings, while an indexed (purchasing power) bond bases interest payments on an inflation index to protect the holder from inflation.

Mortgage bonds are backed by _____ . First mortgage bonds are senior in priority to claims of second mortgage bonds. Debentures are long-term bonds that are not secured by a mortgage. Subordinated debentures are bonds having claims on assets only after senior debt has been paid in full in the event of liquidation. _____ bonds are rated triple B or higher, and many banks and other institutional investors are legally limited to only holding these bonds. In contrast, junk bonds are high-risk, high-yield bonds.

3
answer: cost
high
low
high
difficult
upper
save
higher
higher
False
True
True
False
will increase.
will decline.
source:
objective:

Cost of Money

Four fundamental factors affect the supply of, and demand for, investment capital, hence the _____ of money. These factors are: **production opportunities**, **time preferences for consumption**, **risk**, and **inflation**. If the entire population was living at the subsistence level, time preferences for current consumption would be _____ , savings would be _____ , interest rates would be _____ , and capital formation would be _____ . Producers' expected returns on their business investments set a(n) _____ limit on how much they can pay for savings, while consumers' time preferences for consumption establish how much consumption they are willing to delay, and, consequently, how much they will _____ at different interest rates. In addition, _____ risk and _____ inflation lead to higher interest rates.

Determine whether each of the statements below is true or false:

Government policy doesn't influence the allocation of capital and the level of interest rates. _____

The supply curve in each market is upward sloping, which indicates that investors are willing to supply more capital the higher the interest rate they receive on their capital. _____

The interest rate in each market is the point where the supply and demand curves for capital intersect. _____

There is a price for each type of capital; however, the price remains constant due to foreign investment. _____

Complete the following statements:

If the Federal Reserve tightens credit, which decreases the supply of funds, interest rates _____

If the demand for funds decline, which typically happens during a recession, interest rates _____

4
answer: Price
Reinvestment
investment horizon
price
reinvestment
reinvestment
price
duration
10-year, zero coupon
bonds
source:
objective:

Assessing a Bond's Risk

_____ risk is the risk of a decline in a bond's value due to an increase in interest rates. This risk is higher on bonds that have long maturities than on bonds that will mature in the near future. _____ risk is the risk that a decline in interest rates will lead to a decline in income from a bond portfolio. This risk is obviously high on callable bonds. It is also high on short-term bonds because the shorter the bond's maturity, the fewer the years before the relatively high old-coupon bonds will be replaced with new low-coupon issues. Which type of risk is more relevant to an investor depends on the investor's _____ , which is the period of time an investor plans to hold a particular investment.

Longer maturity bonds have high _____ risk but low _____ risk, while higher coupon bonds have a higher level of _____ risk and a lower level of _____ risk. To account for the effects related to both a bond's maturity and coupon, many analysts focus on a measure called _____ , which is the weighted average of the time it takes to receive each of the bond's cash flows.

Conceptual Question:

Which of the following bonds would have the largest duration?

_____

5
answer: increases
larger
tightens
deficit
increases
increases
increased
increase
deficit
higher
deficit
surpluses
deficit
constrains
recession
increase
recessions
recessions
more
source:
objective:

Macroeconomic Factors that Influence Interest Rate Levels

Macroeconomic factors have an important effect on both the general level of interest rates and the shape of the yield curve. These primary factors are: Federal Reserve policy, the federal budget deficit or surplus, international factors like the foreign trade balance and interest rates abroad, and the level of business activity.

The Federal Reserve Board controls the money supply. To stimulate the economy, the Fed _____ the money supply. The initial effect would be to cause short-term rates to decline; however, a _____ money supply might lead to an increase in expected future inflation, which would cause long-term rates to rise even as short-term rates fell. The reverse is true when the Fed _____ the money supply.

If the government spends more than it takes in as taxes, it runs a _____ , which must be covered by additional borrowing or by printing money. If the government borrows money, this _____ the demand for funds and _____ interest rates. If the government prints money, the result will be _____ inflation, which will _____ interest rates. So, the larger the federal _____ , other things held constant, the _____ the level of interest rates.

If U.S. businesses and individuals buy more goods from abroad than they sell (more imports than exports), the U.S. is running a foreign trade _____ , which must be financed. This generally means that the U.S. borrows from nations with export _____ . The larger the trade _____ , the higher the tendency to borrow, so U.S. interest rates become highly dependent on interest rate levels abroad. Consequently, this interdependency _____ the Fed's ability to use monetary policy to control U.S. economic activity.

Business conditions influence interest rates. During a _____ , the demand for money and the inflation rate tend to fall and the Fed tends to _____ the money supply to stimulate the economy. As a result, there is a tendency for interest rates to decline during _____ . During _____ , short-term rates decline more sharply than long-term rates because (1) the Fed operates mainly in the short-term sector, so the Fed's intervention has the strongest effect there; (2) Long-term rates reflect the average expected inflation rate over the next 20 to 30 years and this expectation doesn't change much due to the level of current inflation. So, short-term rates are _____ volatile than long-term rates.

6
answer: short
short
long
source:
objective:

Interest Rates and Business Decisions

If we could accurately forecast interest rates, financing decisions would be easy. Although it's difficult to predict future interest rate levels, it is easy to predict that interest rates will fluctuate. Therefore, sound financial policy calls for using a mix of long- and short-term debt as well as equity to position the firm so that it can survive in any interest rate environment. The firm's optimal financial policy depends on the nature of the firm's assets—the easier its assets can be sold, the more feasible it is for the firm to use _____ -term debt. Consequently, it is logical for a firm to finance current assets with _____ -term debt and to finance fixed assets with _____ -term debt.

7
answer: **0.60**
source:
objective:

REAL RISK-FREE RATE

You read in *The Wall Street Journal* that 30-day T-bills are currently yielding 4.1%. Your brother-in-law, a broker at Safe and Sound Securities, has given you the following estimates of current interest rate premiums:

- Inflation premium = 3.5%
- Liquidity premium = 0.2%
- Maturity risk premium = 1.4%
- Default risk premium = 2.45%

On the basis of these data, what is the real risk-free rate of return? Round your answer to two decimal places.

_____ %

8
answer: **6.13**; **6.12**; **6.14**
6.58; **6.57**; **6.59**
source:
objective:

EXPECTED INTEREST RATE

The real risk-free rate is 2.75%. Inflation is expected to be 2% this year and 4.75% during the next 2 years. Assume that the maturity risk premium is zero.

a. What is the yield on 2-year Treasury securities? Do not round intermediate calculations. Round your answer to two decimal places.

_____ %

b. What is the yield on 3-year Treasury securities? Do not round intermediate calculations. Round your answer to two decimal places.

_____ %

9
answer: **1.15**; **1.14**; **1.16**
source:
objective:

DEFAULT RISK PREMIUM

A Treasury bond that matures in 10 years has a yield of 5.75%. A 10-year corporate bond has a yield of 7.5%. Assume that the liquidity premium on the corporate bond is 0.6%. What is the default risk premium on the corporate bond? Round your answer to two decimal places.

_____ %

10
answer: **1.75**; **1.74**; **1.76**
source:
objective:

MATURITY RISK PREMIUM

The real risk-free rate is 2.5%, and inflation is expected to be 3.5% for the next 2 years. A 2-year Treasury security yields 7.75%. What is the maturity risk premium for the 2-year security? Round your answer to two decimal places.

_____ %

11
answer: **1.70**; **1.69**; **1.71**
source:
objective:

DEFAULT RISK PREMIUM

A company's 5-year bonds are yielding 8.3% per year. Treasury bonds with the same maturity are yielding 5.2% per year, and the real risk-free rate (r*) is 2.15%. The average inflation premium is 2.65%, and the maturity risk premium is estimated to be 0.1 x (t - 1)%, where t = number of years to maturity. If the liquidity premium is 1.4%, what is the default risk premium on the corporate bonds? Round your answer to two decimal places.

_____ %

12
answer: **1.63**; **1.62**; **1.64**
source:
objective:

MATURITY RISK PREMIUM

An investor in Treasury securities expects inflation to be 1.65% in Year 1, 3.35% in Year 2, and 3.9% each year thereafter. Assume that the real risk-free rate is 1.7% and that this rate will remain constant. Three-year Treasury securities yield 6.35%, while 5-year Treasury securities yield 8.35%. What is the difference in the maturity risk premiums (MRPs) on the two securities; that is, what is MRP_5 - MRP_3? Do not round intermediate calculations. Round your answer to two decimal places.

_____ %

13
answer: **7.35**; **7.34**; **7.36**
source:
objective:

INTEREST RATE PREMIUMS

A 5-year Treasury bond has a 4.1% yield. A 10-year Treasury bond yields 6.35%, and a 10-year corporate bond yields 9.6%. The market expects that inflation will average 3.3% over the next 10 years (IP_{10} = 3.3%). Assume that there is no maturity risk premium (MRP = 0) and that the annual real risk-free rate, r*, will remain constant over the next 10 years. (Hint: Remember that the default risk premium and the liquidity premium are zero for Treasury securities: DRP = LP = 0.) A 5-year corporate bond has the same default risk premium and liquidity premium as the 10-year corporate bond described. What is the yield on this 5-year corporate bond? Round your answer to two decimal places.

_____ %

14
answer: **885.91**; **885.90**; **885.92**
source:
objective:

Problem Walk-Through Problem Walk-Through Problem Walk-Through Problem Walk-Through Problem Walk-Through Problem Walk-Through Problem Walk-Through Problem Walk-Through Problem Walk-Through Problem Walk-Through Problem Walk-Through Problem Walk-Through Problem Walk-Through Problem Walk-Through Problem Walk-Through Problem Walk-Through Problem Walk-Through Problem Walk-Through

BOND VALUATION

Madsen Motors's bonds have 7 years remaining to maturity. Interest is paid annually; they have a $1000 par value; the coupon interest rate is 9.5%; and the yield to maturity is 12%. What is the bond's current market price? Round your answer to the nearest cent.

$ _____

15
answer: **7.18**; **7.17**; **7.19**
969.12; **969.11**; **969.13**;
969.13; **969.12**; **969.14**
source:
objective:

Problem Walk-Through Problem Walk-Through Problem Walk-Through Problem Walk-Through Problem Walk-Through Problem Walk-Through Problem Walk-Through Problem Walk-Through Problem Walk-Through Problem Walk-Through Problem Walk-Through Problem Walk-Through Problem Walk-Through Problem Walk-Through Problem Walk-Through Problem Walk-Through Problem Walk-Through Problem Walk-Through Problem Walk-Through

YIELD TO MATURITY AND FUTURE PRICE

A bond has a $1000 par value, 8 years to maturity, and a 6% annual coupon and sells for $930.

a. What is its yield to maturity (YTM)? Round your answer to two decimal places.

_____ %

b. Assume that the yield to maturity remains constant for the next 5 years. What will the price be 5 years from today? Do not round intermediate calculations. Round your answer to the nearest cent.

$ _____

16
answer: **1216.48**; **1216.47**; **1216.49**
source:
objective:

Problem Walk-Through Problem Walk-Through Problem Walk-Through Problem Walk-Through Problem Walk-Through Problem Walk-Through Problem Walk-Through Problem Walk-Through Problem Walk-Through Problem Walk-Through Problem Walk-Through Problem Walk-Through Problem Walk-Through Problem Walk-Through Problem Walk-Through Problem Walk-Through Problem Walk-Through Problem Walk-Through

BOND VALUATION

Nesmith Corporation's outstanding bonds have a $1000 par value, a 11% semiannual coupon, 16 years to maturity, and an 8.5% YTM. What is the bond's price? Round your answer to the nearest cent.

$ _____

17
answer: **1041.93**
703.25
1032.79
767.95
1022.81
838.60
1011.90
915.75
1000
1000
A
source:
objective:

BOND VALUATION

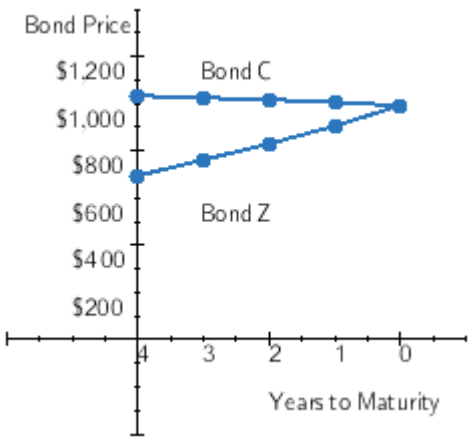
An investor has two bonds in her portfolio, Bond C and Bond Z. Each bond matures in 4 years, has a face value of $1000, and has a yield to maturity of 9.2%. Bond C pays a 10.5% annual coupon, while Bond Z is a zero coupon bond.

a. Assuming that the yield to maturity of each bond remains at 9.2% over the next 4 years, calculate the price of the bonds at each of the following years to maturity. Round your answer to the nearest cent.

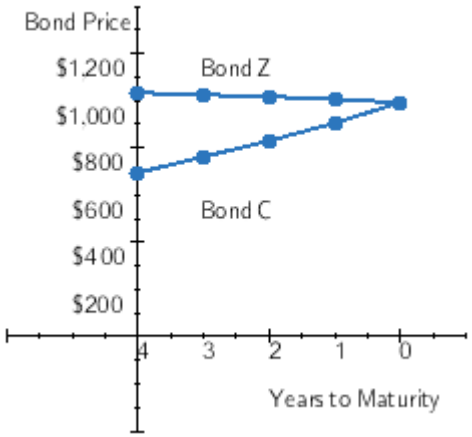
Years to Maturity	Price of Bond C	Price of Bond Z
4	$ _____	$ _____
3	_____	_____
2	_____	_____
1	_____	_____
0	_____	_____

b. Select the correct graph based on the time path of prices for each bond.

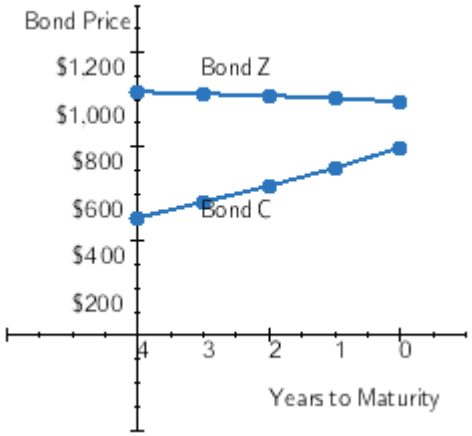
A



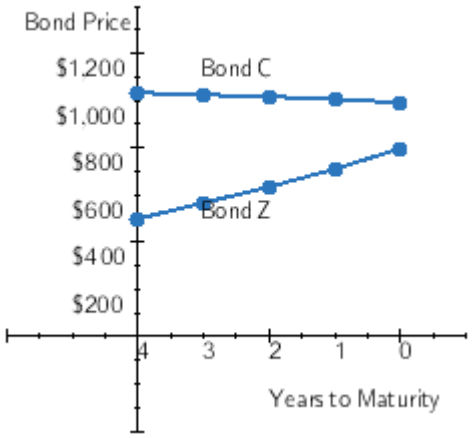
B


Bond Price
$1,200
$1,000
$800
$600
$400
$200
Bond Z
Bond C
4
3
2
1
0
Years to Maturity

C


Bond Price
$1,200
$1,000
$800
$600
$400
$200
Bond Z
Bond C
4
3
2
1
0
Years to Maturity

D



The correct sketch is _____ .

18
answer: **14.89**; **14.88**; **14.90**
5.17; **5.16**; **5.18**
III
source:
objective:

YIELD TO MATURITY

Harrimon Industries bonds have 5 years left to maturity. Interest is paid annually, and the bonds have a $1000 par value and a coupon rate of 9%.

a. What is the yield to maturity at a current market price of

1. $802? Round your answer to two decimal places.
_____ %

2. $1165? Round your answer to two decimal places.
_____ %

b. Would you pay $802 for each bond if you thought that a "fair" market interest rate for such bonds was 14%-that is, if r_d = 14%?

I. You would not buy the bond as long as the yield to maturity at this price is greater than your required rate of return.
II. You would not buy the bond as long as the yield to maturity at this price is less than the coupon rate on the bond.
III. You would buy the bond as long as the yield to maturity at this price is greater than your required rate of return.
IV. You would buy the bond as long as the yield to maturity at this price is less than your required rate of return.
V. You would buy the bond as long as the yield to maturity at this price equals your required rate of return.

_____

19
answer: **13.10**; **13.09**; **13.11**
13.03; **13.02**; **13.04**
0.06; **0.05**; **0.07**
IV
source:
objective:

CURRENT YIELD, CAPITAL GAINS YIELD, AND YIELD TO MATURITY

Pelzer Printing Inc. has bonds outstanding with 24 years left to maturity. The bonds have a 12% annual coupon rate and were issued 1 year ago at their par value of $1000. However, due to changes in interest rates, the bond's market price has fallen to $920.70. The capital gains yield last year was -7.93%.

a. What is the yield to maturity? Do not round intermediate calculations. Round your answer to two decimal places.

_____ %

b. For the coming year, what is the expected current yield? (Hint: Refer to footnote 7 for the definition of the current yield and to Table 7.1.) Do not round intermediate calculations. Round your answer to two decimal places.

_____ %

For the coming year, what is the expected capital gains yield? (Hint: Refer to footnote 7 for the definition of the current yield and to Table 7.1.) Do not round intermediate calculations. Round your answer to two decimal places.

_____ %

c. Will the actual realized yields be equal to the expected yields if interest rates change? If not, how will they differ?

I. As long as promised coupon payments are made, the current yield will not change as a result of changing interest rates. However, changing rates will cause the price to change and as a result, the realized return to investors should equal the YTM.

II. As long as promised coupon payments are made, the current yield will change as a result of changing interest rates. However, changing rates will cause the price to change and as a result, the realized return to investors should equal the YTM.

III. As long as promised coupon payments are made, the current yield will change as a result of changing interest rates. However, changing rates will not cause the price to change and as a result, the realized return to investors should equal the YTM.

IV. As rates change they will cause the end-of-year price to change and thus the realized capital gains yield to change. As a result, the realized return to investors will differ from the YTM.

V. As long as promised coupon payments are made, the current yield will change as a result of changing interest rates. However, changing rates will cause the price to change and as a result, the realized return to investors will differ from the YTM.

_____

20
answer: **937.74**
8.34; **8.33**; **8.35**
source:
objective:

Problem Walk-Through Problem Walk-Through Problem Walk-Through Problem Walk-Through Problem Walk-Through Problem Walk-Through Problem Walk-Through Problem Walk-Through Problem Walk-Through Problem Walk-Through Problem Walk-Through Problem Walk-Through Problem Walk-Through Problem Walk-Through Problem Walk-Through Problem Walk-Through Problem Walk-Through Problem Walk-Through

PRICE AND YIELD

A 7% semiannual coupon bond matures in 6 years. The bond has a face value of $1000 and a current yield of 7.4648%.

What is the bond's price? Do not round intermediate calculations. Round your answer to the nearest cent.

$ _____

What is the bond's YTM? (*Hint:* Refer to for the definition of the current yield and to) Do not round intermediate calculations. Round your answers to two decimal places.

_____ %

21
answer: **848.70**
source:
objective:

Problem Walk-Through Problem Walk-Through Problem Walk-Through Problem Walk-Through Problem Walk-Through Problem Walk-Through Problem Walk-Through Problem Walk-Through Problem Walk-Through Problem Walk-Through Problem Walk-Through Problem Walk-Through Problem Walk-Through Problem Walk-Through Problem Walk-Through Problem Walk-Through Problem Walk-Through Problem Walk-Through

BOND VALUATION

Bond X is noncallable and has 20 years to maturity, a 9% annual coupon, and a $1000 par value. Your required return on Bond X is 12%; if you buy it, you plan to hold it for 5 years. You (and the market) have expectations that in 5 years, the yield to maturity on a 15-year bond with similar risk will be 10%. How much should you be willing to pay for Bond X today? (Hint: You will need to know how much the bond will be worth at the end of 5 years.) Do not round intermediate calculations. Round your answer to the nearest cent.

$ _____

22
answer: **66.44**; **66.43**; **66.45**
source:
objective:

BOND RETURNS

Last year Janet purchased a $1000 face value corporate bond with an 7% annual coupon rate and a 25-year maturity. At the time of the purchase, it had an expected yield to maturity of 9.97%. If Janet sold the bond today for $1144.69, what rate of return would she have earned for the past year? Do not round intermediate calculations. Round your answer to two decimal places.

_____ %

PAGE 1 (First Page)

PAGE 1 (Subsequent Pages)

ANSWER KEY

Copy of Copy of Copy (2) of Module 3 Homework

---

1 bond
Treasury
risk
2 par
call
sinking fund
safer
lower
fixed
floating
Zero coupon
discount below
below its
Convertible
Putable
Income
fixed assets
Investment-grade
3 cost
high
low
high
difficult

upper
save
higher
higher
False
True
True
False
will increase.
will decline.
4 Price
Reinvestment
investment horizon
price
reinvestment
reinvestment
price
duration
10-year, zero coupon bonds
5 increases
larger
tightens
deficit
increases
increases
increased
increase
deficit
higher
deficit
surpluses
deficit
constrains
recession
increase
recessions
recessions
more
6 short
short
long
7 0.60
8 6.13; **6.12**; **6.14**
6.58; **6.57**; **6.59**
9 1.15; **1.14**; **1.16**
10 1.75; **1.74**; **1.76**
11 1.70; **1.69**; **1.71**
12 1.63; **1.62**; **1.64**
13 7.35; **7.34**; **7.36**

14 **885.91**; **885.90**; **885.92**

15 **7.18**; **7.17**; **7.19**

969.12; **969.11**; **969.13**; **969.13**; **969.12**; **969.14**

16 **1216.48**; **1216.47**; **1216.49**

17 **1041.93**

703.25
1032.79
767.95
1022.81
838.60
1011.90
915.75
1000
1000

A

18 **14.89**; **14.88**; **14.90**

5.17; **5.16**; **5.18**

III

19 **13.10**; **13.09**; **13.11**

13.03; **13.02**; **13.04**

0.06; **0.05**; **0.07**

IV

20 **937.74**

8.34; **8.33**; **8.35**

21 **848.70**

22 **66.44**; **66.43**; **66.45**
