Chapter Eleven

**Interest Rate Futures**

## Multiple Choice

1. A trader going long Treasury bond futures expects

a. the yield curve to become more downward sloping.

b. the yield curve to become more upward sloping.

c. long‑term interest rates to rise.

1. long‑term interest rates to decline.

ANSWER: D

2. If interest rates fall, the value of a Treasury bill futures contract will

a. rise.

b. fall.

c. remain unchanged because of contract definition.

1. remained unchanged since T bill rates are fixed at issuance.

ANSWER: A

3. The most important intermediate term interest rate futures contract is on \_\_\_\_\_\_\_\_\_\_\_.

a. Treasury bills

b. Eurodollars

c. Treasury notes

1. Treasury bonds

ANSWER: C

4. A Eurodollar is a dollar‑denominated deposit

a. outside the United States.

b. in Europe.

c. in Europe or North America.

1. in Europe, Asia, or the Pacific Basin.

ANSWER: A

5. A $10,000 6‑month T‑bill sells for $9,800. What is its annualized yield to maturity?

a. 2.04%

b. 4.08%

c. 6.12%

1. 6.66 %

ANSWER: B

6. A T‑bill futures contract calls for the delivery of

a. $100,000 of 60 day T‑bills.

b. $100,000 of 90 day T‑bills.

c. $1 million of 60 day T‑bills.

1. $1 million of 90 day T‑bills.

ANSWER: D

7. If someone had a need to lock in a short‑term investment rate, they would be most likely to

a. buy T‑bill futures.

b. sell T‑bill futures.

c. buy T‑note futures.

1. sell T‑note futures.

ANSWER: A

8. Treasury bonds

a. are not callable.

b. may be callable after 10 years.

c. may be callable after 15 years.

1. are always callable after 5 years.

ANSWER: C

9. An adjustment factor is used to convert a T‑bond to a bond yielding \_\_\_\_\_\_\_.

a. 6%

b. 7%

c. 8%

1. 9%

ANSWER: A

10. Which is the correct formula for invoice price?

a. (settlement price/conversion factor) ‑ accrued interest

b. (settlement price \* conversion factor) + accrued interest

c. (settlement price/conversion factor) + accrued interest

1. (settlement price \* conversion factor) ‑ accrued interest

ANSWER: B

11. When long‑term interest rates are above 6%, the cheapest to deliver bond has

a. the highest duration.

b. the lowest duration.

c. duration equal to 15.0.

1. the highest yield to maturity.

ANSWER: A

12. If interest rates are expected to rise, the portfolio manager might logically

a. raise duration.

b. lower duration.

c. lower average yield.

1. lower average bond rating.

ANSWER: B

# **True/False**

* + 1. If short-term interest rates decline, the value of a T-bond futures contract will necessarily increase.

ANSWER: F

* + 1. A trader expecting interest rates to decline would want to sell interest rate futures.

ANSWER: F

### **Short Answer/Problem**

1. A speculator buys 6 T-bill futures contracts at 91.88 and closes them out three weeks later at 91.56. Calculate this person's gain or loss in dollars.

ANSWER: *Each basis point change corresponds to $25 in the value of the contract:*

*8 x $25 x 32 basis points =* ***$6,400 loss***

* 1. A treasury bill matures in 60 days and sells for $9950. What is its bond equivalent yield?

ANSWER: *=* ***3.20%***

* 1. A $1000 par, 7 1/2% Treasury bond paid interest 57 days ago. It sells for 102% of par. Ignoring commissions, but including accrued interest, how much must you pay to buy one of the bonds?

ANSWER: *Interest on a Treasury bond accrues on a 365-day basis. A 7 ½ % coupon bond accrues (.075 x $1000)/365 = $0.2055 per day.*

*Bond cost = $1,020 + (57 x $0.2055) =* ***$1,031.71***