**Chapter 1 – Introduction - Answers**

1. **Suppose that coupon reset formula for a floating-rate bond is: 6-month LIBOR + 220 basis points.**
2. **What is the reference rate?**

The reference rate is the 6-month LIBOR.

1. **What is the quoted margin?**

The quoted margin is the 220 basis points (or 2.20%).

1. **Suppose that on a coupon reset date that 6-month LIBOR is 2.8%. What will the coupon rate be for the period?**

6-month LIBOR + 220 basis points = 2.80% + 2.20% = 5.00%.

1. **What will be the coupon payment per $100 of face value?**

All rates are in BEY (APR semi-annual) terms:

The coupon payment will be 5.00%/2 x $100 = $2.50

1. **Answer the below questions.**
2. **What is meant by an amortizing security?**

Also called a self-amortizing security, an amortizing security is when principal is repaid over the life of the bond. An amortization schedule describes the times and amounts of principal repayment. Consumer loans are usually amortizing loans. Securities created from these loans often have scheduled principal repayments and are called amortizing securities.

1. **Why is the maturity of an amortizing security not a useful measure?**

The maturity of amortizing securities only identifies the date of the final principal payment. Since the repayment of the principal is not just at the end of its term to maturity, the maturity is not a useful measure in terms of identifying when the principal is repaid.

1. **What does a call provision for a bond entitle the issuer to do?**

A call provision grants the issuer the right to retire (or buy back or repay) the debt, fully or partially, before the scheduled maturity date.

1. **Answer the below questions.**
2. **What is the advantage of a call provision for an issuer?**

A call provision allows the issuer (borrower) to repay a bond prior to maturity. This is advantageous if interest rates have fallen (either for the entire market or just the issuer).

If rates have fallen, the issuer can issue new bonds at the new lower rate and use the proceeds to buy back (or call or repay) the outstanding higher-rate issue.

1. **What are the disadvantages of a call provision for the bondholder?**

Generally an issuer will only call a bond when rates are lower. Therefore the bondholder will get the principal back - and therefore have to relend the money by buying a new bond - only when rates have dropped.

Note that the bondholder receives a ***HIGHER*** coupon rate on a callable issue relative to a non-callable issue to compensate the bondholder for the call option granted to the issuer.

1. **What does the put provision for a bond entitle the bondholder to do?**

An issue with a put provision included in the indenture grants the bondholder the right to sell the issue back to the issuer at par value on designated dates. The advantage to the bondholder is related to the possibility that if interest rates rise after the issue date (thereby reducing a bond’s price) the bondholder can force the issuer to redeem the bond at par value.

Note that put provisions are usually conditional on the issuing borrower company violating a condition of the loan (called a covenant). Lenders (bond holders) usually can’t demand their money back at any time.

1. **What are a convertible bond and an exchangeable bond?**

A ***convertible bond*** is an issue giving the bondholder the right to give up the principal and all future coupons for a specified number of shares of common stock. Such a feature allows the bondholder to take advantage of a favorable price of the issuer’s common stock.

For example, if a $1,000 face value bond can be converted to 50 shares of common stock, the bond holder might exercise the convert option if the stock’s price was above $1,000/50 = $20 (plus the PV of future coupon payments).

Generally convertible bonds are issued by start-ups, which usually do not pay dividends.

An ***exchangeable bond*** allows the bondholder to exchange the bond for a specified number of common stock shares of a corporation different from the issuer of the bond – often a subsidiary of the issuers.

Note that the bondholder receives a ***LOWER*** coupon rate on a convertible or exchangeable bond relative to a straight bond to compensate the issuer for the option granted to the bondholder.

1. **How do market participants gauge the default risk of a bond issue?**

Credit risk is measured by the default rating or credit rating assigned to a bond issue by one of the three rating companies—Standard & Poor’s, Moody’s, and Fitch.

Often market participants will engage in credit analysis. Market participants analyze an issuer to assess future cash flows generated by the borrower available to pay debt. For corporations this is EBITDA. For government and municipal borrowers, this is tax revenue or revenue from activates the bond has financed. Credit analysis is performed “in-house” by most large bond purchasers.

1. **Comment on the following statement: Credit risk is more than the risk that an issuer will default.**

The yield on a bond has made three main components:

1. the “pure time value of money” measured by the yield on a similar maturity Treasury
2. a premium to compensate for the liquidity risk (relatively small)
3. a premium to compensate for the default risk (relatively large)

The difference between the bond’s and yield and the T-bond’s yield is called the risk premium or spread. The portion of the spread attributable to default risk is called the ***credit spread***.

Credit risk refers not only to the risk associated with a bonds default, but also the risk that the credit spread will increase. If the credit spread increases, the YTM increases and the bond price decreases.

1. **Explain whether you agree or disagree with the following statement: “Because my bond is guaranteed by an insurance company, I have eliminated credit risk.”**

Credit risk consists of three types of risk: default risk, credit spread risk, and downgrade risk. These risks are not necessarily eliminated if there is a financial guaranty by a nongovernment third-party entity such as a private insurance company. This is because insurance companies themselves can face financial difficulties.

This occurred at the end of 2007 when specialized insurance companies that provide financial guarantees faced financial difficulties and the downgrading of their own credit rating. Thus, one would disagree with the statement because one’s bond guarantee is only as good as the insurance company guaranteeing it.

1. **What is meant by marking a position to market?**

Marking a position to market means reporting the value of a holding at the current market price, not the book value or purchase price. This is called mark-to-market. It is relatively easy procedure for actively traded, liquid assets such as on-the-run treasuries or large stocks but can be more difficult for illiquid or unique assets.

Sometimes an ***estimated*** price based on formula using the market price of similar securities is used. This is called “mark-to-***model***.”

The term mark-to-market also refers to adjusting the money in a futures or options margin account.

1. **What is meant by a CUSIP number, and why is it important?**

CUSIP stands for Committee on Uniform Security Identification Procedures.

A CUSIP number is a unique identification number assigned to security to identify it.

For securities that have nine characters, the first six characters identify the issuer: the corporation, government agency, or municipality.

The next two characters identify whether the issue is debt or equity and the issuer of the issue.

The last character is simply a check character that allows for accuracy checking and is sometimes truncated or ignored.

The CUSIP International Numbering System (CINS) is used to identify foreign securities and includes 12 characters.

**Additional Questions:**

1. **Briefly Define**
2. **The Treasury Sector**
3. **The Agency Sector**
4. **The Municipal Sector**
5. **The Corporate Sector**
6. **The Asset-Backed Securities Sector**
7. **The Mortgage Sector**
8. **Describe the CFs of**
9. **A coupon bond**
10. **A zero coupon bond**
11. **A floating rate bond**
12. **Briefly Define**
13. **Interest-Rate Risk**
14. **Reinvestment Risk**
15. **Call Risk**
16. **Credit Risk**
17. **Inflation Risk**
18. **Exchange-Rate Risk**
19. **Liquidity Risk**
20. **Volatility Risk**
21. **Risk Risk**
22. **What is LIBOR? How is it set?**

[See this discussion.](https://www.investopedia.com/ask/answers/12/how-is-libor-determined.asp)

“Each morning, just before 11 a.m. Greenwich Mean Time, the ICE Benchmark Administration (IBA) asks a panel of contributor banks (usually 11 to 18 large, international banks located in London) to answer the following question: ‘At what rate could you borrow funds, were you to do so by asking for and then accepting interbank offers in a reasonable market size just prior to 11 a.m. London time?’”