

58**INTEREST RATE RISK &
RETURN**

1. An investor purchases a fixed coupon bond with a Macaulay duration of 5.3. The bond's yield to maturity decreases before the first coupon payment. If the YTM then remains constant and the investor sells the bond after three years, the realized yield will be:
 - (A) equal to the YTM at the date of purchase.
 - (B) higher than the YTM at the date of purchase.
 - (C) lower than the YTM at the date of purchase.
2. An investor buys a bond that has a Macaulay duration of 3.0 and a yield to maturity of 4.5%. The investor plans to sell the bond after three years. If the yield curve has a parallel downward shift of 100 basis points immediately after the investor buys the bond, her annualized horizon return is most likely to be:
 - (A) approximately 4.5%.
 - (B) greater than 4.5%.
 - (C) less than 4.5%.
3. All else being equal, which of the following bond characteristics most likely results in less reinvestment risk?
 - (A) A shorter maturity.
 - (B) A higher coupon.
 - (C) A lower Macaulay duration.
4. Tony Horn, CFA, is evaluating two bonds. The first bond, issued by Kano Corp., pays a 7.5% annual coupon and is priced to yield 7.0%. The second bond, issued by Samuel Corp., pays a 7.0% annual coupon and is priced to yield 8.0%. Both bonds mature in ten years. If Horn can reinvest the annual coupon payments from either bond at 7.5%, and holds both bonds to maturity, his return will be:
 - (A) greater than 7.0% on the Kano bonds and greater than 8.0% on the Samuel bonds.
 - (B) greater than 7.0% on the Kano bonds and less than 8.0% on the Samuel bonds.
 - (C) less than 7.0% on the Kano bonds and less than 8.0% on the Samuel bonds.

5. An investor purchases a 4-year, 6%, semiannual-pay Treasury note for \$9,485. The security has a par value of \$10,000. To realize a total return equal to 7.515% (its yield to maturity), all payments must be reinvested at a return of:
- (A) more than 7.515%.
 - (B) 7.515%.
 - (C) less than 7.515%.
6. If the coupon payments are reinvested at the coupon rate during the life of a bond, then the yield to maturity:
- (A) is greater than the realized yield.
 - (B) is less than the realized yield.
 - (C) may be greater or less than the realized yield.
7. Assuming the issuer does not default, can capital gains or losses be a component of the holding period return on a zero-coupon bond that is sold prior to maturity?
- (A) No, because amortization of the discount is interest income.
 - (B) Yes, because the bond's yield to maturity may have changed.
 - (C) Yes, because the purchase price is less than the bond's value at maturity.
8. Which measure of duration should be matched to the bondholder's investment horizon so that reinvestment risk and market price risk offset each other?
- (A) Effective duration.
 - (B) Macaulay duration.
 - (C) Modified duration.
9. If the yield to maturity on a bond decreases after purchase but before the first coupon date and the bond is held to maturity, reinvestment risk is:
- (A) less than price risk and the realized yield will be lower than the YTM at purchase.
 - (B) greater than price risk and the realized yield will be lower than the YTM at purchase.
 - (C) less than price risk and the realized yield will be higher than the YTM at purchase.

10. An international bond investor has gathered the following information on a 10-year, annual pay U.S. corporate bond:
- Currently trading at par value
 - Annual coupon of 10%
 - Estimated price if rates increase 50 basis points is 96.99%
 - Estimated price if rates decrease 50 basis points is 103.14%
- The bond's modified duration is closest to:
- (A) 3.14.
 - (B) 6.15.
 - (C) 6.58.
11. Sarah Metz buys a 10-year bond at a price below par. Three years later, she sells the bond. Her capital gain or loss is measured by comparing the price she received for the bond to its:
- (A) carrying value.
 - (B) original price less amortized discount.
 - (C) original purchase price.
12. Annual Macaulay duration is least accurately interpreted as the:
- (A) approximate percentage change in a bond's value for a 1% change in its yield to maturity.
 - (B) investment horizon at which a bond's market price risk and reinvestment risk exactly offset.
 - (C) weighted average number of years until a bond's cash flows are scheduled to be paid.
13. An investor is concerned about rising interest rates and associated price risks. If her investment horizon is 5.25 years, the Macaulay duration on her bond investment is likely closest to:
- (A) 5.25 years.
 - (B) 4.75 years.
 - (C) 5.75 years.
14. Price risk will dominate reinvestment risk when the investor's:
- (A) duration gap is negative.
 - (B) duration gap is positive.
 - (C) investment horizon is less than the bond's tenor.

15. Jane Walker has set a 7% yield as the goal for the bond portion of her portfolio. To achieve this goal, she has purchased a 7%, 15-year corporate bond at a discount price of 93.50. What amount of reinvestment income will she need to earn over this 15-year period to achieve a compound return of 7% on a semiannual basis?
- (A) \$ 459.
(B) \$ 624.
(C) \$ 574.
16. An investor has an investment horizon of 4 years, and a Macaulay duration for one of her million-dollar bond investments of 3.5 years. The investor's exposure to interest rates is best reflected as:
- (A) price risk due to increasing interest rates.
(B) minimal, due to the relatively close duration and horizon.
(C) reinvestment risk due to decreasing interest rates.
17. The Macaulay duration in years of a 4-year annual pay, 6% coupon bond with a par value of \$100 and yielding 7% is closest to:
- (A) 3.67 years.
(B) 3.99 years.
(C) 3.35 years.
18. In a Macaulay duration calculation, the weights calculated for each future cash flow are:
- (A) assigned greater value for later cash flows.
(B) valued equally.
(C) assigned greater value for earlier cash flows.
19. An investor who buys bonds that have a Macaulay duration less than his investment horizon:
- (A) has a negative duration gap.
(B) is minimizing reinvestment risk.
(C) will benefit from decreasing interest rates.

20. An investment advisor states, "An investor's annualized holding period return from investing in a bond consists of three parts: the coupon interest payments, the return of principal, and any capital gain or loss that the investor realizes on the bond." The advisor is:
- (A) correct.
 - (B) incorrect, because these are not the only sources of return from investing in a bond.
 - (C) incorrect, because an investor who holds a bond to maturity will not realize a capital gain or loss.
21. An analyst has calculated a Macaulay duration of 2.12 for a three-year corporate bond. For this bond, 2.12 represents:
- (A) the sensitivity of the bond's price to changes in interest rates.
 - (B) the average time until the receipt of the bond's cash flows.
 - (C) when the investor recovers his principal

