



1. Negative convexity is most likely to be observed in:
 - (A) callable bonds.
 - (B) government bonds.
 - (C) zero coupon bonds.

2. Donald McKay, CFA, is analyzing a client's fixed income portfolio. As of the end of the last quarter, the portfolio had a market value of \$7,545,000 and a portfolio duration of 6.24. McKay is predicting that the yield for all of the securities in the portfolio will decline by 25 basis points next quarter. If McKay's prediction is accurate, the market value of the portfolio:
 - (A) at the end of the next quarter will be approximately \$7,427,300.
 - (B) will increase by approximately \$117,700.
 - (C) will increase by approximately 6.24%.

3. If interest rates decrease by 50 basis points, a 10-year, 6% coupon, option-free bond will increase in price by \$36. If instead interest rates increase by 50 basis points, this bond's price will decrease by:
 - (A) \$36.
 - (B) less than \$36.
 - (C) more than \$36.

4. Which of the following is least likely an advantage of estimating the duration of a bond portfolio as a weighted average of the durations of the bonds in the portfolio?
 - (A) It is easier to calculate than the alternative.
 - (B) It is theoretically more sound than the alternative.
 - (C) It can be used when the portfolio contains bonds with embedded options.

5. Price change estimates based on duration alone are improved by positive convexity adjustments for:
 - (A) yield decreases, and negative convexity adjustments for yield increases.
 - (B) yield increases, and negative convexity adjustments for yield decreases.
 - (C) both increases and decreases in yield.

6. An annual-pay bond is priced at 101.50. If its yield to maturity decreases 100 basis points, its price will increase to 105.90. If its yield to maturity increases 100 basis points, its price will decrease to 97.30. The bond's approximate modified convexity is closest to:
- (A) 0.2.
 - (B) 19.7.
 - (C) 4.2.
7. Rather than using the annual modified duration and convexity numbers, a financial analyst plans to use money duration and money convexity to estimate the new price of a bond after a change in yield. Relative to the estimated price using the annual numbers, the "money" duration and convexity will produce an estimated bond price that is:
- (A) higher.
 - (B) lower.
 - (C) equivalent.
8. Negative effective convexity will most likely be exhibited by a:
- (A) callable bond at high yields.
 - (B) callable bond at low yields.
 - (C) puttable bond at high yields.
9. A bond is priced at 95.80. Using a pricing model, an analyst estimates that a 25 bp parallel upward shift in the yield curve would decrease the bond's price to 94.75, while a 25 bp parallel downward shift in the yield curve would increase its price to 96.75. The bond's effective convexity is closest to:
- (A) 3,340.
 - (B) 4.
 - (C) -167.
10. The annual convexity of a bond is calculated as 12.35. If the full price of the bond position is \$1.5 million and the bond matures in three years, the money convexity is closest to:
- (A) \$55,575,000.
 - (B) \$6,175,000.
 - (C) \$18,525,000.
11. A bond currently trading at 102.5 percent of par value has an approximate modified duration of 6.5 and an approximate convexity of 28.0. If the bond's yield increases by 200 basis points, its estimated price will be closest to:
- (A) 89.75.
 - (B) 89.18.
 - (C) 90.32.

12. Adjusting for convexity improves an estimated price change for a bond compared to using duration alone because:
- (A) it measures the volatility of non-callable bonds.
 - (B) the slope of the callable bond price/yield curve is backward bending at high interest rates.
 - (C) the slope of the price/yield curve is not constant
13. Which of the following is most accurate about a bond with positive convexity?
- (A) Positive changes in yield lead to positive changes in price.
 - (B) Price increases and decreases at a faster rate than the change in yield.
 - (C) Price increases when yields drop are greater than price decreases when yields rise by the same amount.
14. A \$1,000 face, 10-year, 8.00% semi-annual coupon, option-free bond is issued at par (market rates are thus 8.00%). Given that the bond price decreased 10.03% when market rates increased 150 basis points (bp), if market yields decrease by 150 bp, the bond's price will:
- (A) decrease by more than 10.03%.
 - (B) increase by more than 10.03%.
 - (C) increase by 10.03%.
15. A bond is currently priced at 92.35. If the calculated modified duration is 3.27 and the convexity is 15.74, the expected price change due to a 25 basis point decrease in yields is closest to:
- (A) 0.8126%.
 - (B) 0.8028%.
 - (C) 0.8224%.
16. A bond is currently priced at 92.35. If the calculated modified duration is 3.27 and the convexity is 15.74, the expected new price of the bond due to a 50 basis point increase in yields is closest to:
- (A) 91.591.
 - (B) 90.859.
 - (C) 93.878.
17. A fixed-income portfolio manager is estimating portfolio duration based on the weighted average of the durations of each bond in the portfolio. The manager should calculate duration using:
- (A) equal-sized increases and decreases in a benchmark bond's yield.
 - (B) parallel shifts of the benchmark yield curve.
 - (C) equal-sized increases and decreases in the portfolio's cash flow yield.

18. Which of the following is a limitation of the portfolio duration measure? Portfolio duration only considers:
- (A) a linear approximation of the actual price-yield function for the portfolio.
 - (B) a nonparallel shift in the yield curve.
 - (C) the market values of the bonds.
19. Which of the following statements best describes the concept of negative convexity in bond prices? As interest rates:
- (A) fall, the bond's price increases at a decreasing rate.
 - (B) fall, the bond's price increases at an increasing rate.
 - (C) rise, the bond's price decreases at a decreasing rate.
20. How does the price-yield relationship for a callable bond compare to the same relationship for an option-free bond? The price-yield relationship is best described as exhibiting:
- (A) negative convexity at low yields for the callable bond and positive convexity for the option-free bond.
 - (B) negative convexity for the callable bond and positive convexity for an option-free bond.
 - (C) the same convexity for both bond types.
21. For a given change in yields, the difference between the actual change in a bond's price and that predicted using duration alone will be greater for:
- (A) a bond with greater convexity.
 - (B) a bond with less convexity.
 - (C) a short-term bond.
22. The price value of a basis point (PVBP) for a bond is most accurately described as:
- (A) an estimate of the curvature of the price-yield relationship for a small change in yield.
 - (B) the change in the price of the bond when its yield changes by 0.01%.
 - (C) the product of a bond's value and its duration.
23. A bond portfolio consists of a AAA bond, a AA bond, and an A bond. The prices of the bonds are \$1,050, \$1,000, and \$950 respectively. The durations are 8, 6, and 4 respectively. What is the duration of the portfolio?
- (A) 6.00.
 - (B) 6.07.
 - (C) 6.67

