ROBERT A. STRONG

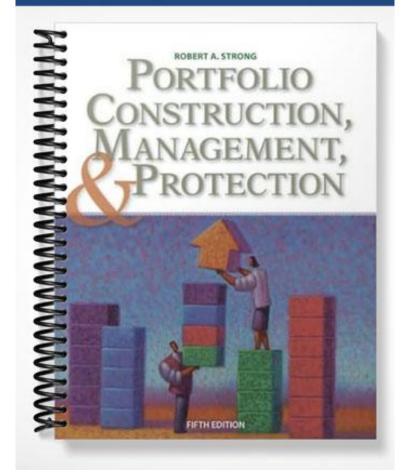# PORTFOLIO CONSTRUCTION, MANAGEMENT, & PROTECTION

FIFTH EDITION

Chapter Two

Valuation, Risk, Return, and Uncertainty

A   1. An ordinary annuity is a _____ series of _____ cash.
         a. finite, constant
         b. finite, growing
         c. infinite, constant
         d. infinite, growing

B   2. The winner of a state lottery usually receives a(n)
         a. ordinary annuity
         b. annuity due
         c. growing annuity
         d. perpetuity

B   3. Using a discount rate of 8% per year, what is the present value of an ordinary annuity of $100 per year for 10 years?
         a. $1,000
         b. $671
         c. $887
         d. $557

A   4. Using a discount rate of 8% per year, what is the present value of an annuity due of $100 per year with 10 payments?
         a. $725
         b. $559
         c. $793
         d. $772

D   5. Using a discount rate of 8% per year (compounded quarterly), what is the present value of an ordinary annuity of $100 per year for 10 years?
         a. $726
         b. $662
         c. $811
         d. $684

C   6.   A perpetual cash flow stream makes its first payment of $500 in one year. Using a 7% annual discount rate and a 3% growth rate in the value of subsequent payments, what is the present value of this growing perpetuity?
          a. $2,000
          b. $20,000
          c. $12,500
          d. $125,000

B   7. A perpetuity makes annual payments of $250. The perpetuity is valued using a 10% discount rate. What is the value of the perpetuity if the first payment is made immediately?
          a. $2,500
          b. $2,750
          c. $25,000
          d. $2,525

A   8. The fact that most investors are risk averse means they will
          a. only take risks for which they are properly rewarded
          b. not take a risk
          c. not voluntarily take a risk
          d. not take a risk unless they know the outcome in advance

B   9. Which of the following statements is true?
          a. Some people are risk averse and others are not
          b. Some people are more risk averse than others
          c. Risk averse people will not take a risk
          d. Risk averse people are willing to settle for less return than risk neutral people

A   10. Risk must involve
          a. a chance of loss
          b. an unknown probability distribution
          c. actual dollars
          d. negative expected returns

C   11. Overall variability of returns is called
          a. systematic risk
          b. unsystematic risk
          c. total risk
          d. undiversifiable risk

B   12. Risk is often measured as
   a. central tendency of returns
   b. dispersion of returns
   c. expected value of returns
   d. possibility of negative returns

A   13. Riskier securities have _____ returns.
   a. higher expected
   b. lower realized
   c. higher instantaneous
   d. lower long-term

B   14. The market rewards investors for bearing _____risk.
   a. diversifiable
   b. undiversifiable
   c. unsystematic
   d. total

B   15. The diminishing marginal utility of money explains why
   a. some stocks sell for more than others
   b. most people will not take a fair bet
   c. people view the stock market as risky
   d. people tend to pay too much

C   16. The text described an example of the diminishing marginal utility of money with a statement made by a _____ player.
   a. hockey
   b. football
   c. tennis
   d. basketball

C   17. Individual investment behavior is more a function of _____ than _____.
   a. risk, expected return
   b. expected return, utility
   c. utility, expected return
   d. expected return, risk

B   18. The St. Petersburg paradox explains why
   a. some stocks sell for more than others
   b. most people will not take a fair bet
   c. people view the stock market as risky
   d. people tend to pay too much

A   19. In economic theory, if money is not saved, it is
   a. consumed
   b. invested
   c. unrealized
   d. deferred

D   20. Wearing a Rolex watch is an example of someone getting
   a. psychic return
   b. utility
   c. satisfaction
   d. all of the above

B   21. Two large classes of risk are
   a. systematic and undiversifiable
   b. price and convenience
   c. realized and psychic
   d. market and intermarket

C   22. Individual consumption decisions are a major factor in determining
   a. credit ratings of corporations
   b. dividend rates
   c. market interest rates
   d. levels of perceived risk

B   23. If a stock has a higher than average expected return, you would logically expect it is
   a. widely held by investors
   b. riskier than average
   c. in an industry with good prospects
   d. a well-managed company

D   24. What is the present value of a growing perpetuity with an initial cash flow of 1000 (C_0), a growth rate of 3% per year (g), and a required rate of return of 8% (R)?
   a. $7777.64
   b. $12,500
   c. $20,000
   d. $20,600

C   25. Most investors would not be interested in a fair bet because
      a. they would be concerned whether it is really fair
      b. investors do not willingly take a risk when it is possible to lose money
      c. losing a given amount of money would reduce utility more than winning the same amount would increase utility
      d. they accept only bets with a sure outcome

B   26. The holding period return is calculated as
      a. $\dfrac{P_1 - P_0}{P_0}$

      b. $\dfrac{P_1 - P_0 + income}{P_0}$

      c. $\dfrac{P_0 - P_1 + income}{P_0}$

      d. $\dfrac{P_1 - P_0 - income}{P_0}$

C   27. You bought 100 shares of stock at $35, received $3 per share in dividends, and sold the shares for $50. Your holding period return is
      a. 36%
      b. $1,503
      c. 51.4%
      d. $5,300

B   28. Which of the following is true of the holding period return?
      a. It considers the time value of money
      b. It is independent of the passage of time
      c. It explicitly considers risk
      d. It only considers capital gains or losses

C   29. A holding period return should only be compared with returns calculated
      a. over shorter periods
      b. over longer periods
      c. over periods of the same length
      d. over periods of the same length or less

D   30. A stock's return is 15.5%. The return relative is
      a. 0.845
      b. -0.845
      c. 0.155
      d. 1.155

D   31. Return relatives are calculated primarily to deal with the potential problem of
        a. changing returns
        b. large returns
        c. zero returns
        d. negative returns

A   32. A stock has monthly returns of 4%, 5%, 2%, and -3%. Its arithmetic average return is
        a. 2%
        b. 3%
        c. 4%
        d. 5%

A   33. A stock has monthly returns of 4%, 5%, 2%, and -3%. Its geometric average return is
        a. 1.9%
        b. 2.1%
        c. 3.3%
        d. cannot be determined

B   34. You buy a stock for $50 per share. Over the next four months, it has monthly returns of 4%, 5%, 2%, and -3%. The value of a share at the end of the fourth month is
        a. $51.20
        b. $54.02
        c. $54.12
        d. $56.45

A   35. Suppose a stock pays no dividends. Another method of calculating the return relative is
        a. $\dfrac{P_1}{P_0}$

        b. $\dfrac{P_0}{P_1}$

        c. $\dfrac{P_1 - P_0}{P_0}$

        d. $\dfrac{P_0 - P_1}{P_1}$

A   36. The arithmetic mean is always _____ the geometric mean.
        a. greater than or equal to
        b. greater than
        c. less than or equal to
        d. less than

A   37. The _____ the dispersion in a series of numbers, the ____ the gap between the arithmetic and geometric mean.
        a. greater, greater
        b. greater, smaller
        c. smaller, greater
        d. more predictable, less predictable

A   38. Technically, _____ refers to the past; _____ refers to the future.
        a. return, expected return
        b. realized return, return
        c. return relative, return
        d. return, return relative

C   39. According to the book, which of the following terms can mean different things to different people?
        a. Return on assets
        b. Return on equity
        c. Return on investment
        d. Return of principal

B   40. The use of _____ can dramatically affect an investor's return.
        a. historical data
        b. leverage
        c. arithmetic averages
        d. variance calculations

D   41. Total risk can be measured by all of the following EXCEPT
        a. variance
        b. standard deviation
        c. semi-variance
        d. arithmetic mean

D   42. The variance of x is 25. What is the variance of $2x$?
        a. 25
        b. 50
        c. 75
        d. 100

B   43. Semi-variance only considers
   a. extreme variation
   b. adverse variation
   c. unexpected variation
   d. anticipated variation

C   44. Discrete random variables are _____; continuous random variables are _____.
   a. quantifiable, unquantifiable
   b. objective, subjective
   c. counted, measured
   d. dependent, independent

B   45. A variable whose value is based on the value of other variables is a(n)
   a. independent variable
   b. dependent variable
   c. stochastic variable
   d. estimated variable

A   46. Random variables reside in a
 population
   a. sample
   b. continuous set
   c. discrete set

A   47. A jar contains a mixture of coins; you need a quarter. From your perspective, the distribution of coins in the jar is
univariate
   a. bivariate
   b. trivariate
   c. multivariate

D   48. If a distribution shows more possible outcomes on one side of the mean than the other, the distribution shows
   a. uniformity
   b. normal characteristics
   c. random characteristics
   d. skewness

D   49. A coin-flipping experiment in which you measure heads or tails takes observations from a _____ distribution.
         a. chi-square
         b. exponential
         c. Poisson
         d. binomial

D   50. Which of the following is a measure of central tendency?
         a. Skewness
         b. Variance
         c. Kurtosis
         d. Mean

D   51. The expected value of a random variable is also called the
         a. skewness
         b. variance
         c. kurtosis
         d. mean

D   52. A jar contains 100 quarters, 50 dimes, and 50 nickels. What is the expected value of a single observation from this coin population?
         a. $0.375
         b. $0.200
         c. $0.133
         d. $0.163

D   53. Which of the following can help reduce the effect of outliers?
         a. Rounding
         b. Regression
         c. Interpolation
         d. Logarithms

C   54. The expected value of x is 5%. What is $E(6x)$?
         a. 0.833%
         b. 5%
         c. 30%
         d. Cannot be determined

A   55. The correlation coefficient is equal to

a. $\dfrac{\text{cov}(\tilde{a},\tilde{b})}{\sigma_a\sigma_b}$

b. $\text{cov}(\tilde{a},\tilde{b})\sigma_a\sigma_b$

c. $\dfrac{\text{cov}(\tilde{a},\tilde{b})\sigma_a}{\sigma_b}$

d. $1-[\dfrac{\text{cov}(\tilde{a},\tilde{b})}{\sigma_a\sigma_b}]$

A   56. The minimum value of the correlation coefficient is
   a. -1
   b. 0
   c. +1
   d. there is no minimum value

D   57. The minimum value of covariance is
   a. -1
   b. 0
   c. +1
   d. there is no minimum value

A   58. R squared is a measure of
   a. goodness of fit
   b. partial dispersion
   c. central tendency
   d. skewness

B   59. A sample of 100 observations has a standard deviation of 25. What is the standard error?
   a. 5
   b. 2.5
   c. .25
   d. Cannot be determined

C   60. A sample of 100 observations has a standard deviation of 25 and a mean of 75. What is the 95% confidence interval?
   a. $50 \le \bar{x} \le 75$
   b. $73 \le \bar{x} \le 77$
   c. $70 \le \bar{x} \le 80$
   d. $74.5 \le \bar{x} \le 75.5$

B   61. The expected return on *A* is 12%; the expected return on *B* is 15%. What is the expected return of a portfolio that contains one-third *A* and the remainder *B*?
        a. 12%
        b. 14%
        c. 15%
        d. 13.5%

A   62. A tilde (~) over a symbol indicates it is a
        a. random variable
        b. constant
        c. continuous random variable
        d. discrete random variable

B   63. If two securities are negatively correlated, their covariance is
        a. positive
        b. negative
        c. zero
        d. cannot be determined

C   64. The covariance between a random variable and a constant is
        a. negative
        b. positive
        c. zero
        d. non-negative

A   65. Return is the
        a. benefit associated with an investment
        b. realized gain from an investment
        c. realized and unrealized gain from an investment
        d. measurable gain from an investment

C   66. Assume the risk-free rate is constant over time. The correlation between the return on security x and the return on the risk-free asset is
        a. negative
        b. positive
        c. zero
        d. cannot be determined without further information

A   67. The correct method for measuring the average return over several periods in the past is with a(n)
        a. geometric mean
        b. arithmetic mean
        c. statistical mean
        d. multiple variation mean

B   68. Using semivariance to measure risk is appropriate if the return distribution is
        a. symmetrical
        b. not symmetrical
        c. normally distributed
        d. uniformly distributed

C   69. The median of a distribution is the
        a. arithmetic average
        b. geometric average
        c. point where half of the observations lie on either side
        d. value that occurs most frequently

D   70. If the variance of x is 0.10, what is the variance of 2x?
        a. 0.05
        b. 0.10
        c. 0.20
        d. 0.40

B   71. If the standard deviations of Stock A and B are 0.20 and 0.30 respectively and the COV(A,B) equals 0.012, what is the correlation coefficient?
        a. 0.00072
        b. 0.20
        c. 0.30
        d. 2