

Chapter 6—The Tradeoff Between Risk and Return

MULTIPLE CHOICE

1. Which of the following is an example of systematic risk?
- IBM posts lower than expected earnings.
 - Intel announces record earnings.
 - The national trade deficit is higher than expected.
 - None of the above.

ANS: C DIF: E REF: 6.4 The Power of Diversification

2. Which of the following is an example of unsystematic risk?
- IBM posts lower than expected earnings.
 - The Fed raises interest rates unexpectedly.
 - The rate of inflation is higher than expected.
 - None of the above.

ANS: A DIF: E REF: 6.4 The Power of Diversification

3. What do you call the portion of your total return on a stock investment that is caused by an increase in the value of the stock.
- Dividend yield.
 - Risk-free return.
 - Capital gain.
 - None of the above.

ANS: C DIF: E REF: 6.1 Understanding Returns

4. What is one of the most important lessons from capital market history?
- Risk does not matter.
 - There is a positive relationship between risk and return.
 - You are always better off investing in stock.
 - T-bills are the highest yielding investment.

ANS: B DIF: E REF: 6.2 The History of Returns

5. What is the purpose of diversification?
- Maximize possible returns.
 - Increase the risk of your portfolio.
 - Lower the overall risk of your portfolio.
 - None of the above.

ANS: C DIF: E REF: 6.4 The Power of Diversification

NARRBEGIN: Bavarian Sausage

Bavarian Sausage

You bought a share of Bavarian Sausage stock for \$46.50 at the beginning of the year. During the year the stock paid a \$2.75 dividend and at the end of the year it trades at \$52.75.

NARREND

6. Refer to Bavarian Sausage. What is the total return of your stock investment?
- 5.91%
 - 13.44%

- c. 26.69%
- d. 19.35%

ANS: D
 $(52.75 + 2.75 - 46.5)/46.5 = .1935$

DIF: E REF: 6.1 Understanding Returns NAR: Bavarian Sausage

7. Refer to Bavarian Sausage. What is the capital gain/loss on your stock investment?
- a. 5.91%
 - b. 13.44%
 - c. 19.35%
 - d. 28.24%

ANS: B
 $(52.75-46.5)/46.5 = .1344$

DIF: E REF: 6.1 Understanding Returns NAR: Bavarian Sausage

8. Refer to Bavarian Sausage. What is the total dollar return on your investment?
- a. \$9.00
 - b. \$2.75
 - c. \$6.25
 - d. \$52.75

ANS: A
 $52.75 + 2.75 - 46.50 = 9$

DIF: E REF: 6.1 Understanding Returns NAR: Bavarian Sausage

NARRBEGIN: Bavarian Sausage 2

Bavarian Sausage 2

You bought a share of Bavarian Sausage stock for \$46.50 at the beginning of the year. During the year the stock paid a \$2.75 dividend and at the end of the year it trades at \$44.75.

NARREND

9. Refer to Bavarian Sausage 2. What is the total return on your investment?
- a. 2.15%
 - b. -3.76%
 - c. 8.06%
 - d. 5.91%

ANS: A
 $(44.75 + 2.75 - 46.5)/46.5 = .0215$

DIF: E REF: 6.1 Understanding Returns NAR: Bavarian Sausage 2

10. Refer to Bavarian Sausage 2. What is the capital gain's yield of your investment?
- a. 2.15%
 - b. -3.76%
 - c. 8.06%
 - d. 5.91%

ANS: B
 $(44.75-46.5)/44.75 = -.0376$

DIF: E

REF: 6.1 Understanding Returns

NAR: Bavarian Sausage 2

11. If the return on your common stock investment is on average 18% and the return on Treasury bills was 5% over the same period of time, what is the risk premium that you earned.
- 23%
 - 13%
 - 18%
 - 5%

ANS: B

$$18 - 5 = 13$$

DIF: E

REF: 6.2 The History of Returns

NARRBEGIN: Stock Returns

Year	Return		
	Stock A	Stock B	Stock C
1	15%	12%	5%
2	25%	14%	-6%
3	8%	9%	10%
4	16%	25%	1%
5	5%	3%	15%

NARREND

12. What is the variance of returns for stock A?
- .00607
 - .00653
 - .00655
 - .00506

ANS: A

$$\text{avg} = (.15 + .25 + .08 + .16 + .05)/5 = .138$$

$$\text{Var} = .00607$$

DIF: E

REF: 6.3 Volatility and Risk

NAR: Stock Returns

13. What is the standard deviation of returns for stock A?
- 8.09%
 - 8.08%
 - 7.79%
 - 6.53%

ANS: C

$$.00607^{(1/2)} = .0779$$

DIF: E

REF: 6.3 Volatility and Risk

NAR: Stock Returns

14. What is the variance of returns for stock B?
- .00653
 - .00607
 - .00528

d. .00721

ANS: A
avg = .126
Var = .00653

DIF: E

REF: 6.3 Volatility and Risk

NAR: Stock Returns

15. What is the standard deviation of returns for stock C?

- a. 7.79%
- b. 8.52%
- c. 8.09%
- d. 6.38%

ANS: C
avg = .05
Var = .0065
Stdv = .0809

DIF: E

REF: 6.3 Volatility and Risk

NAR: Stock Returns

16. What is the average return for stock A?

- a. 12.6%
- b. 13.8%
- c. 5.00%
- d. 8.26%

ANS: B
avg = $(.15 + .25 + .08 + .16 + .05)/5 = .138$

DIF: E

REF: 6.3 Volatility and Risk

NAR: Stock Returns

17. What is the average return of stock B?

- a. 13.8%
- b. 12.6%
- c. 5.00%
- d. 8.52%

ANS: B
 $(.12 + .14 + .09 + .25 + .03)/5 = .126$

DIF: E

REF: 6.3 Volatility and Risk

NAR: Stock Returns

18. What is the average return of stock C?

- a. 13.8%
- b. 12.6%
- c. 5.00%
- d. 8.52%

ANS: C
 $(.05 - .06 + .10 + .01 + .15)/5 = .05$

DIF: E

REF: 6.3 Volatility and Risk

NAR: Stock Returns

19. What is the average return of a portfolio that has 30% invested in stock A, 30% invested in stock B and 40% invested in stock C?
- 9.92%
 - 12.6%
 - 7.59%
 - 13.8%

ANS: A

$$.3(.126) + .3(.138) + .4(.05) = .0992$$

DIF: E

REF: 6.4 The Power of Diversification

NAR: Stock Returns

20. What is the average return of a portfolio that has 10% invested in stock A, 40% invested in stock B and 50% invested in stock C?
- 9.92%
 - 15.32%
 - 13.80%
 - 8.92%

ANS: D

$$.1(.138) + .4(.126) + .5(.05) = .0892$$

DIF: E

REF: 6.4 Volatility and Risk

NAR: Stock Returns

21. What is the average return of a portfolio that has 45% invested in stock A, 35% invested in stock B and the rest invested in stock C?
- 9.92%
 - 11.62%
 - 10.62%
 - 12.48%

ANS: B

$$.45(.138) + .35(.126) + .25(.05) = .1162$$

DIF: E

REF: 6.4 Volatility and Risk

NAR: Stock Returns

22. Bavarian Sausage stock has an average historical return of 16.3% and a standard deviation of 5.3%. In which range do you expect the returns of Bavarian Sausage 95% of the time.
- 5.7%:26.9%
 - 5.3%:16.3%
 - 11.00%:21.6%
 - 6.2%:18.5%

ANS: A

$$16.3 \pm 2(5.3) = 5.7: 26.9$$

DIF: M

REF: 6.3 Volatility and Risk

23. Bavarian Sausage stock has an average historical return of 16.3% and a standard deviation of 5.3%. In which range do you expect the returns of Bavarian Sausage 68% of the time.
- 5.7%:26.9%
 - 5.3%:16.3%
 - 11.0%:21.6%
 - 6.2%:18.5%

ANS: C

$$16.3 \pm 5.3 = 11.0; 21.6$$

DIF: M

REF: 6.3 Volatility and Risk

24. Bavarian Sausage stock has an average historical return of 16.3% and a standard deviation of 5.3%. What is the probability that the return on Bavarian Sausage will be less than 11%?
- 84%
 - 50%
 - 16%
 - 32%

ANS: C

$$1 - .5 - .34 = .16$$

DIF: H

REF: 6.3 Volatility and Risk

25. Bavarian Sausage stock has an average historical return of 16.3% and a standard deviation of 5.3%. What is the probability that the return on Bavarian Sausage will be higher than 26.9%?
- 5%
 - 2.5%
 - 16%
 - 95%

ANS: B

$$26.9 = 16.3 + 2(5.3)$$

$$\text{prob} = 1 - .5 - .475 = .025$$

DIF: H

REF: 6.3 Volatility and Risk

26. Which of the following is not part of the procedure for valuing a risky asset?
- determining the asset's expected cash flows
 - choosing a discount rate that reflects the asset's risk
 - calculating the present value
 - determining whether the project is mutually exclusive or not

ANS: D

DIF: M

REF: Learning Objectives

27. The total return of an asset captures
- income paid by an asset over time.
 - the capital gain or loss on the asset over time.
 - the book value of the asset over time.
 - a and b are both correct.

ANS: D

DIF: M

REF: 6.1 Understanding Returns

28. If you were to purchase an asset for \$100 today and receive a dividend of \$5 at the end of the year in addition to selling the asset for \$110, then what would the capital gain on the asset be?
- 15%
 - 10%
 - 5%
 - none of the above

ANS: B

$$(110 - 100)/100$$

DIF: E REF: 6.1 Understanding Returns

29. You purchased a 10 year, 6% coupon bond (the bond makes semi-annual payments) last year based upon a discount rate of 6%. One year later the discount rate has fallen to 5.5%. What is your total return on the bond?
- a. 6.000%
 - b. 3.512%
 - c. 9.512%
 - d.** none of the above

ANS: C

Price at purchase: 1,000

Price on year later: $30PVIFA(19, 5.5\%) + 1,000PVIF(19, 5.5\%) = 1,035.12$

Cash received during the year: $2 \times 30 = 60$

Total return: $(35.12 + 60) / 1,000 = .09512$

DIF: M REF: 6.1 Understanding Returns

30. You purchased WPC common shares for \$50 one year ago. You have received total dividends equal to \$8 during the year. If your total return during the period is 12%, then what was the price of WPC when you sold the stock today?
- a. \$52.00
 - b. \$48.00
 - c. \$98.00
 - d.** none of the above

ANS: B

$.12 = (8/50) + ((P - 50)/50) \implies P = 48$

DIF: H REF: 6.1 Understanding Returns

31. You purchased stock of Blue McBrushes Corp one year ago for \$85 and generated a total return of 20% during that time. If you just sold the stock for \$89.50, then what were the total dividends that you received during the year?
- a. \$12.50
 - b. \$12.73
 - c. \$13.18
 - d.** none of the above

ANS: A

$.2 = (d/85) + ((89.5 - 85)/85) \implies d = 12.5$

DIF: H REF: 6.1 Understanding Returns

32. From 1900 through 2003, which asset class had the greatest average annual return?
- a. equities
 - b. corporate bonds
 - c. U.S. Government bonds
 - d. U.S. Government bills

ANS: A

DIF: E

REF: 6.2 The History of Returns

33. The additional return offered by a more risky investment relative to a safer one is called
- the risk-free rate.
 - the risky return.
 - the risk premium.
 - the insurance premium.

ANS: C

DIF: E

REF: 6.2 The History of Returns

34. You are analyzing the performance of different asset classes for a foreign economy. You find that over the last 60 years the average annual return for equities was 12% while that of corporate bonds was 10% and the rate of inflation was about 3%. If inflation was projected to be around 1% for the foreseeable future, then what would you project the return of equities to be during that same foreseeable period?
- 12%
 - 11%
 - 10%
 - 9%

ANS: C

$$1\% + (12\% - 3\%) = 10\%$$

DIF: M

REF: 6.2 The History of Returns, Applying the Model

35. The statistical term, variance is defined as
- the expected value of deviations from the mean.
 - the expected value of squared deviations from the mean.
 - the sum of squared deviations from the mean.
 - the sum of squared deviations from the mean divided by the number of observations available.

ANS: B

DIF: M

REF: 6.3 Volatility and Risk

36. You are introduced to an investment that has an expected return of 20% equal to the standard deviation of the distribution of returns. What is the probability that the investment will lose some of your initial investment in the first year?
- 50%
 - 34%
 - 16%
 - unable to determine from the information given

ANS: C

$$\text{expected return} = \text{std} = .2$$

$$P(\text{of investment loss}) = P(\text{return} < 0)$$

$$\text{One standard deviation to the left of the expected return is } 20\% - 20\% = 0$$

$$\implies P(\text{return} < 0) = 16\% \text{ (or } 50\% - 34\%)$$

DIF: H

REF: 6.3 Volatility and Risk

37. You are introduced to an investment that has an expected return of 20% equal to the standard deviation of the distribution of returns. What is the probability that the investment will have a return less than 20% in the first year? Assume a normal distribution.

- a. 0%
- b. 50%
- c. 68%
- d. not enough information to determine

ANS: B DIF: E REF: 6.3 Volatility and Risk

38. Your family has invested in a security over the last 100 years. The expected return during that period has been .15 and the variance of the returns has been .048. Your investment advisor told you that the security had a 95th percentile performance (with respect to its historical performance) this period. What was the actual return during the period?
- a. 15.0%
 - b. 19.8%
 - c. 37.0%
 - d. 58.8%

ANS: D
 $E(X) = .15, \text{Var}(X) = .048 \implies \text{Std}(X) .219$

$$\text{Return} = .15 + 2(.219) = .15 + .438 = .588$$

DIF: H REF: 6.3 Volatility and Risk

39. Over the last 3 years you have earned 5%, 7%, and 9% on your portfolio. What is the standard deviation of the returns of that portfolio?
- a. .07
 - b. .02
 - c. .0004
 - d. none of the above

ANS: B
 $E(X) = (.05 + .07 + .09)/3 = .07$

$$\text{Var}(X) = ((.05 - .07)^2 + (.07 - .07)^2 + (.09 - .07)^2) / (3 - 1) = .0004$$

$$\text{Std}(X) = (.0004)^{1/2} = .02$$

DIF: H REF: 6.3 Volatility and Risk

40. You have it on good account that the probability of good returns on energy investments is equal to that of poor returns. If we define good returns as 100% while that of poor returns is 50%, then what is the probability of getting an exact return of 75% in the next year?
- a. 50%
 - b. 25%
 - c. 0%
 - d. there is not enough information to solve the problem.

ANS: C
 2 possibilities on any given draw: 100% or 50% $\implies P(50\% \text{ return}) = 0$

DIF: M REF: 6.3 Volatility and Risk

41. If you were to plot the return of asset classes on a graph with the standard deviation of returns on the horizontal axis and expected returns on the vertical axis, then which security class is most likely to be in the farthest upper right hand corner of the graph?

- a. Treasury Bills
- b. Treasury Bonds
- c. Corporate Bonds
- d. Stocks

ANS: D DIF: M REF: 6.3 Volatility and Risk

42. Which of the following asset classes would give you the greatest probability of achieving a return that is closest to its expected return?
- a. Treasury Bills
 - b. Treasury Bonds
 - c. Corporate Bonds
 - d. Stocks

ANS: A DIF: M REF: 6.3 Volatility and Risk

43. You are presented with 4 distinct investment opportunities involving a Treasury Bill, a Treasury Bond, a Corporate Bond, and a Stock. You are told that each of these investments are expected to produce (after the cash is paid out then no other cash flows are anticipated) \$100 one year from now. Which asset should be the least expensive today, in terms of dollars that you will have to pay for the asset?
- a. Treasury Bills
 - b. Treasury Bonds
 - c. Corporate Bonds
 - d. Stocks

ANS: D

Greatest risk ===== greatest discount rate =====? cheapest price today

Stocks

DIF: H REF: 6.3 Volatility and Risk

44. If the standard deviation of a diversified portfolio is 20% and if the stocks in that portfolio are positively correlated, then what would we expect the average standard deviation of stocks in that portfolio to be?
- a. less than 20%
 - b. 20%
 - c. greater than 20%
 - d. you would need to know the percentage of each stock invested in that portfolio to determine the answer

ANS: C DIF: M REF: 6.4 The Power of Diversification

45. If we are able to eliminate all of the unsystematic risk in a portfolio then, what is the result?
- a. a risk-free portfolio
 - b. a portfolio that contains only systematic risk
 - c. a portfolio that has an expected return of zero
 - d. such a portfolio cannot be constructed since there will always be unsystematic risk in any portfolio

ANS: B DIF: E REF: 6.4 The Power of Diversification

46. Stock X has 3 units of systematic risk and 2 units of unsystematic risk while Stock Y has 3 units of systematic risk and 4 units of unsystematic risk. If Stock X is priced to generate an 8% return for investors then what do we know about the return that Stock Y should be priced to return?

- a. Stock Y should be priced to return greater than 8%
- b. Stock Y should be priced to return 8%
- c. Stock Y should be priced to return less than 8%
- d. there is not enough information to solve this problem

ANS: B DIF: M REF: 6.4 The Power of Diversification

47. Based upon the following levels of risk, which stock should have the highest price if each stock is expected to produce the same level of cash over the future life of each asset?

	Systematic risk units	Unsystematic risk units
Stock A	10	3
Stock B	12	5
Stock C	5	300

- a. Stock A
- b. Stock B
- c. Stock C
- d.** there is not enough information to decide

ANS: C

Least systematic risk =====> lowest discount rate =====> highest price

Stock C

DIF: M REF: 6.4 The Power of Diversification

48. You have the choice of introducing either Stock X or Stock Y into your fully diversified portfolio. Both stocks have 5 units of systematic risk while Stock X has 6 units of unsystematic risk and Stock Y has 8 units of unsystematic risk. Which stock offers the greatest opportunity from diversification?
- a. Stock X
 - b. Stock Y
 - c. both stock offer the same opportunity
 - d. there is not enough information to determine the answer

ANS: B DIF: E REF: 6.4 The Power of Diversification

NARRBEGIN: Hillary

Hillary Investments

Between 1999 and 2003, Hillary Investments has produced returns as follows:

1999	8%
2000	3%
2001	-1%
2002	-5%
2003	-3%

NARREND

49. Calculate the expected return for Hillary Investments.
- a. .003
 - b. .004
 - c. .005
 - d. .006

ANS: B
 $(.08 + .03 + -.01 + -.05 + -.03)/5 = .004$

DIF: E REF: 6.3 Volatility and Risk NAR: Hillary

50. What is the variance of the return of Hillary Investments?
- a. .01072
 - b. .00268
 - c. .00214
 - d.** none of the above

ANS: B
 $((.08 - .004)^2 + (.03 - .004)^2 + (-.01 - .004)^2 + (-.05 - .004)^2 + (-.03 - .004)^2) / (5 - 1) = .00268$

DIF: H REF: 6.3 Volatility and Risk NAR: Hillary

NARRBEGIN: Exhibit 6-1

Exhibit 6-1

Suppose that an investor bought a bond last year for \$980. The bond pays a 7% annual coupon and has a face value of \$1,000. Today, the same bond is selling for \$960.

NARREND

51. Refer to Exhibit 6-1. If the investor sells the bond this morning, what is the total dollar return of the investment?
- a. -\$40
 - b. \$30
 - c. \$50
 - d. \$70

ANS: C
 $= \$70 + (-\$20) = \$50$

DIF: E REF: 6.1 Understanding Returns NAR: Exhibit 6-1

52. Refer to Exhibit 6-1. If the investor sells the bond this morning, what is the total percentage return of the investment?
- a. 5.10%
 - b. 5.21%
 - c. 7.00%
 - d. 9.18%

ANS: A
 $r = (\$70 + (\$960 - \$980)) / \$980 = 5.10\%$

DIF: M REF: 6.1 Understanding Returns NAR: Exhibit 6-1

NARRBEGIN: Terry Corporation

Terry Corporation

One year ago, Jason purchased 50 shares of Terry Corporation stock at \$20 per share. Today, one year later, the stock pays a \$2 per share dividend and the price is now \$22 per share.

NARREND

53. Refer to Terry Corporation. What is the total dollar return on the investment for the one year?
- a. \$4

- b. \$50
- c. \$75
- d. \$200

ANS: D

Last year = $50 * \$20 = \$1,000$

This year = $50 * (\$22 + \$2) = \$1,200$

Dollar gain = $\$1,200 - \$1,000 = \$200$

DIF: E

REF: 6.1 Understanding Returns

NAR: Terry Corporation

54. Refer to Terry Corporation. What is the total percentage return on the investment for the one year?
- a. 9.09%
 - b. 10.00%
 - c. 18.18%
 - d. 20.00%

ANS: D

$r = (\$2 + (\$22 - \$20)) / \$20 = \$4 / \$20 = .20$

DIF: E

REF: 6.1 Understanding Returns

NAR: Terry Corporation

55. Refer to Terry Corporation. What is the capital gains yield on the investment for the one year?
- a. 9.09%
 - b. 10.00%
 - c. 18.18%
 - d. 20.00%

ANS: B

Capital gain = $(\$22 - \$20) / \$20 = .10$

DIF: E

REF: 6.1 Understanding Returns

NAR: Terry Corporation

56. What is the risk premium?
- a. It is the risk associated with investing in Treasury bonds.
 - b. It is the difference in annual returns between common stocks and Treasury bills.
 - c. It is the annual return associated with investing in Treasury bonds.
 - d. It is the variance in stock market returns over the last fifty years.

ANS: B

DIF: M

REF: 6.2 The History of Returns

NARRBEGIN: Big Diesel Incorporated

Big Diesel Incorporated

Consider the following historical returns for Big Diesel Incorporated:

YEAR	Return
1999	5%
2000	9%
2001	-8%
2002	5%
2003	20%

NARREND

57. Refer to Big Diesel Incorporated. What is the average return over the five year time period?
- 6.00%
 - 6.20%
 - 6.40%
 - 6.60%

ANS: B

$$\text{avg. return} = (.05 + .09 - .08 + .05 + .20)/5 = .31/5 = .062$$

DIF: E

REF: 6.3 Volatility and Risk

NAR: Big Diesel Incorporated

58. Refer to Big Diesel Incorporated. What is the standard deviation of the returns over the five year time period?
- 8.97%
 - 9.25%
 - 9.74%
 - 10.03%

ANS: D

$$\text{avg. return} = (.05 + .09 - .08 + .05 + .20)/5 = .31/5 = .062$$

$$\text{sum of squared deviations} = (.05 - .062)^2 + (.09 - .062)^2 + (-.08 - .062)^2 + (.05 - .062)^2 + (.2 - .062)^2 = .04028$$

$$\text{standard deviation} = (1/4 * 0.04028)^{.5} = .1003$$

DIF: H

REF: 6.3 Volatility and Risk

NAR: Big Diesel Incorporated

59. Refer to Big Diesel Incorporated. If we assume that these returns represent the full sample of Big Diesel returns, what is the 95% confidence interval for Big Diesel returns next year?
- Between -13.86% and 26.26%
 - Between -11.74% and 42.08%
 - Between 6.20% and 20.06%
 - Between -3.83% and 17.94%

ANS: A

$$\text{avg. return} = (.05 + .09 - .08 + .05 + .20)/5 = .31/5 = .062$$

$$\text{sum of squared deviations} = (.05 - .062)^2 + (.09 - .062)^2 + (-.08 - .062)^2 + (.05 - .062)^2 + (.2 - .062)^2 = .04028$$

$$\text{standard deviation} = (1/4 * 0.04028)^{.5} = .1003$$

$$.062 \pm 2 * .1003 = -.1386, .2686$$

DIF: H

REF: 6.3 Volatility and Risk

NAR: Big Diesel Incorporated

60. Consider the following historical returns for Big Diesel Incorporated and inflation for the United States economy:

YEAR	Big Diesel Return	Inflation
1999	5%	2.00%
2000	9%	2.00%
2001	-8%	2.20%

2002	5%	2.20%
2003	20%	2.20%

What is the average real return for Big Diesel over the five year time period?

- a. 2.92%
- b. 3.40%
- c. 4.00%
- d. 4.12%

ANS: C

$$\text{avg. nominal return} = (.05 + .09 - .08 + .05 + .20) / 5 = .31 / 5 = .062$$

$$\text{avg. inflation} = (.02 + .02 + .022 + .022 + .022) / 5 = .106 / 5 = .0212$$

$$1 + \text{avg. real return} = (1 + \text{nom}) / (1 + \text{infl}) = (1.062) / (1.0212) = 1.04$$

$$\text{Avg. real return} = 4.00\%$$

DIF: M REF: 6.3 Volatility and Risk

61. Inflation, recession, and higher interest rates are economic events that are characterized as:
- a. Company-specific risk that can be diversified away.
 - b. Market risk.
 - c. Systematic risk that can be diversified away.
 - d. Diversifiable risk

ANS: B DIF: M REF: 6.4 The Power of Diversification

62. A financial publication states that Stone Cold stock had a return of 15% last year. If the price of Stone Cold went from \$20 to \$20.75 over the last year, what dividend was paid?
- a. \$2.00
 - b. \$2.15
 - c. \$2.25
 - d. \$2.36

ANS: C

$$.15 = (X + (\$20.75 - \$20)) / \$20$$

$$\$3 = X + \$.75$$

$$X = \$2.25$$

DIF: E REF: 6.1 Understanding Returns

63. A financial publication states that Stone Cold stock had a return of 15% last year. If the price of Stone Cold went from \$20 to \$20.75 over the last year, what was the dividend yield over the last year?
- a. 10.25%
 - b. 11.25%
 - c. 13.25%
 - d. 14.25%

ANS: B

$$.15 = (X + (\$20.75 - \$20)) / \$20$$

$$\$3 = X + \$.75$$

$$X = \$2.25$$

$$\text{Dividend yield} = \$2.25/\$20 = .1125$$

DIF: E REF: 6.1 Understanding Returns

NARRBEGIN: Exhibit 6-2

Exhibit 6-2

You purchased a bond last year that pays an 8% annual coupon with a face value of \$1,000. At the time of purchase, the bond had a yield to maturity of 10% and had 10 years until maturity. Today, the bond trades at a yield to maturity of 9%.

NARREND

64. Refer to Exhibit 6-2. What was the dollar return of this investment over the last year?
- \$80
 - \$93
 - \$143
 - \$160

ANS: C

Bond price last year:

$$N = 10, I = 10\%, PV = ?, PMT = \$80, FV = \$1,000$$

$$PV = \$877.11$$

Bond price today:

$$N = 9, I = 9\%, PV = ?, PMT = \$80, FV = \$1,000$$

$$PV = \$940.05$$

$$\text{Dollar return} = \$80 + \$940.05 - \$877.11 = \$142.94$$

DIF: M REF: 6.1 Understanding Returns NAR: Exhibit 6-2

65. Refer to Exhibit 6-2. What was the percentage return of this investment over the last year?
- 8.00%
 - 9.00%
 - 15.21%
 - 16.30%

ANS: D

Bond price last year:

$$N = 10, I = 10\%, PV = ?, PMT = \$80, FV = \$1,000$$

$$PV = \$877.11$$

Bond price today:

$$N = 9, I = 9\%, PV = ?, PMT = \$80, FV = \$1,000$$

$$PV = \$940.05$$

$$\text{Percentage return} = (\$80 + \$940.05 - \$877.11)/\$877.11 = 0.1630$$

DIF: M REF: 6.1 Understanding Returns NAR: Exhibit 6-2

66. An investor seeks a 4% real return on his investment in a stock fund. If there is 3% inflation in the economy, what nominal return must this stock fund provide to meet his objective?
- 1%
 - 4%
 - 7.12%

d. 9.71%

ANS: C

$$1 + \text{real} = (1 + \text{nominal}) / (1 + \text{inflation})$$

$$1.04 = (1 + X) / (1.03)$$

DIF: E

REF: 6.2 The History of Returns

67. Which statement is FALSE regarding risk and return?
- For broad asset classes, the relationship between risk and return is nearly linear.
 - Adding multiple stocks to a portfolio can reduce non-systematic risk.
 - There is a nearly linear relationship between risk and return for individual stocks.
 - Because investors can easily eliminate risk through diversification, investors should only be rewarded for non-diversifiable risk.

ANS: C

DIF: M

REF: 6.4 The Power of Diversification

68. Which statements are TRUE regarding risk and return?

Statement I: Diversification is the process of removing systematic risk from a portfolio.

Statement II: In general, the greater the risk, the greater the return required by an investor.

Statement III: Investors should focus on real returns if they are concerned about the purchasing power of their wealth.

- Statement I only
- Statements I and III only
- Statements II and III only
- Statements I and II only

ANS: C

DIF: M

REF: 6.4 The Power of Diversification

NARRBEGIN: Exhibit 6-3

Exhibit 6-3

Consider the following information concerning stock returns and bond returns over the last 75 years:

Average Return	1934-2004
Stocks	11.7%
Treasury Bills	4.1%

NARREND

69. Refer to Exhibit 6-3. Currently, Treasury bills yield 2.50% on the secondary market. What is a good estimate for the return on the stock market in the next year given this information?
- 6.60%
 - 7.60%
 - 10.10%
 - 11.70%

ANS: C

$$\text{risk premium} = 11.7\% - 4.1\% = 7.6\%$$

$$\text{return} = \text{T-bill} + \text{risk premium} = 2.50\% + 7.60\%$$

DIF: M

REF: 6.2 The History of Returns

NAR: Exhibit 6-3

70. Refer to Exhibit 6-3. Currently, investors want a 12% return on stocks as a whole. Based on this information, what is a good estimate for the current return on Treasury Bills?
- 4.10%
 - 4.40%
 - 7.20%
 - 7.60%

ANS: B

$$\text{Risk premium} = 11.7\% - 4.1\% = 7.6\%$$

$$\text{Return} = \text{T-bill} + \text{risk premium} = X + 7.60\% = 12\%$$

$$X = 4.40\%$$

DIF: M

REF: 6.2 The History of Returns

NAR: Exhibit 6-3

71. A bond was purchased last year for \$900. The bond pays a 10% annual coupon and has a face value of \$1,000. Today, the bond has a coupon yield of 8%. What is the total return for this bond over the last year?
- 8%
 - 10%
 - 39%
 - 50%

ANS: D

Price Today:

$$\text{Coupon yield} = 8\% = \$100/\text{Today's price}$$

$$\text{Today's price} = \$1,250$$

$$\text{Total return} = (\$100 + \$1250 - \$900) / \$900 = .50$$

DIF: M

REF: 6.1 Understanding Returns

72. Which statement is TRUE regarding diversification?
- The greater the systematic risk, the greater the return required by the investor.
 - The greater the diversifiable risk, the greater the return required by the investor.
 - We are able to remove all systematic risk if enough stocks are added to a portfolio.
 - Systematic risk is diversifiable.

ANS: A

DIF: M

REF: 6.4 The Power of Diversification

73. A brochure for an investment company reports average nominal returns of 9% per year. If the economy has averaged 3% inflation over these years, what is the average real return for this investment company?
- 3.00%
 - 5.83%
 - 6.00%
 - 9.00%

ANS: B

$$1 + \text{real} = (1 + \text{nominal}) / (1 + \text{inflation})$$

$$\text{real} = (1.09) / (1.03) - 1 = .0583$$

DIF: E

REF: 6.1 Understanding Returns

74. Suppose you are interested in the following two stocks:

Stock	Expected Return
Alpha	10%
Beta	6%

What is your expected portfolio return if you put 40% of your investment in Alpha, and 60% of your investment in Beta?

- a. 7.20%
- b. 7.60%
- c. 8.00%
- d. 8.40%

ANS: B

$$= .4 * 10\% + .6 * 6\% = 7.60\%$$

DIF: M

REF: 6.4 The Power of Diversification

75. A stock was purchased two years ago for \$20. The stock does not pay dividends and sells today for \$26.00. If sold today, what was the annual realized return on your investment?

- a. 9%
- b. 12%
- c. 14%
- d. 15%

ANS: C

$$N = 2, I = ?, PV = -\$20, PMT = \$0, FV = \$26$$

$$I = 14\%$$

DIF: H

REF: 6.1 Understanding Returns