

**True/False**

*Indicate whether the statement is true or false.*

- \_\_\_ 1. The market value of any real or financial asset, including stocks, bonds, CDs, coins, stamps, or art work purchased in hope of selling it at a profit, may be estimated by determining future cash flows and then discounting them back to the present.
- \_\_\_ 2. Warren Buffett tells you that he is going to give you 100 shares of stock, but that it is in one of two companies. The first has an expected return of 12% and a coefficient of variation of 2. The other company stock has an expected return of 12% and a coefficient of variation of 1.5. Based on what you have learned in corporate finance, you will select the latter stock because it has less stand-alone risk.
- \_\_\_ 3. The coefficient of variation, calculated as the standard deviation of expected returns divided by the expected return, is a standardized measure of the risk per unit of expected return.
- \_\_\_ 4. Your grandmother wants to give you 100 shares of stock, but it is in either company A or company B. Company A's coefficient of variation in its expected stock return of 1.5 and a Beta of .8, while company B has a coefficient of variation in its expected stock return of 1.50 and a Beta of 1.75. After careful thought, and upon reviewing your corporate finance text and lecture notes, you will choose company A over company B because it offers the same stand-alone risk, but has less risk relative to the market.
- \_\_\_ 5. In portfolio analysis, we often use ex post (historical) returns and standard deviations, despite the fact that we are interested in ex ante (future) data and sometimes what happened historically does not accurately predict what occurs in the future.
- \_\_\_ 6. The tighter the probability distribution of its expected future returns, the greater the risk of a given investment as measured by its standard deviation, so you would view a company having a low standard deviation of return having much greater risk and consequently higher return, than one with a high standard deviation of return.

**Multiple Choice**

*Identify the choice that best completes the statement or answers the question.*

- \_\_\_ 7. J. Harper Inc.'s stock has a 50% chance of producing a 35% return, a 30% chance of producing a 10% return, and a 20% chance of producing a -28% return. What is Harper's expected return?
- 14.16%
  - 14.53%
  - 14.90%
  - 15.27%
  - 15.65%
- \_\_\_ 8. Rosenberg Inc. is considering a capital budgeting project that has an expected return of 20% and a standard deviation of 25%. What is the project's coefficient of variation?
- 1.25
  - 1.31
  - 1.38
  - 1.45
  - 1.52

- \_\_\_\_\_ 9. Keith Johnson has \$100,000 invested in a 2-stock portfolio. \$30,000 is invested in Potts Manufacturing and the remainder is invested in Stohs Corporation. Potts' beta is 1.60 and Stohs' beta is 0.60. What is the portfolio's beta?
- 0.60
  - 0.66
  - 0.74
  - 0.82
  - 0.90
- \_\_\_\_\_ 10. Yonan Corporation's stock had a required return of 11.50% last year, when the risk-free rate was 5.50% and the market risk premium was 4.75%. Now suppose there is a shift in investor risk aversion, and the market risk premium increases by 2%. The risk-free rate and Yonan's beta remain unchanged. What is Yonan's new required return? (Hint: First calculate the beta, then find the required return.)
- 14.03%
  - 14.38%
  - 14.74%
  - 15.10%
  - 15.48%
- \_\_\_\_\_ 11. Vera Paper's stock has a beta of 1.40, and its required return is 12.00%. Dell Dairy's stock has a beta of 0.80. If the risk-free rate is 4.75%, what is the required rate of return on Dell's stock? (Hint: First find the market risk premium.)
- 8.45%
  - 8.67%
  - 8.89%
  - 9.12%
  - 9.34%
- \_\_\_\_\_ 12. Suppose you hold a diversified portfolio consisting of a \$10,000 investment in each of 12 different common stocks. The portfolio's beta is 1.25. Now suppose you decided to sell one of your stocks that has a beta of 1.00 and to use the proceeds to buy a replacement stock with a beta of 1.34. What would the portfolio's new beta be?
- 1.15
  - 1.21
  - 1.28
  - 1.34
  - 1.41
- \_\_\_\_\_ 13. You have the following data on three stocks:

Stock	Standard Deviation	Beta
A	0.15	0.79
B	0.25	0.61
C	0.20	1.29

As a risk minimizer, you would choose Stock \_\_\_\_\_ if it is to be held in isolation and Stock \_\_\_\_\_ if it is to be held as part of a well-diversified portfolio.

- A; A.
- A; B.
- B; C.
- C; A.
- C; B.

- \_\_\_\_\_ 14. Stock A's beta is 1.5 and Stock B's beta is 0.5. Which of the following statements must be true about these securities? (Assume market equilibrium.)
- When held in isolation, Stock A has greater risk than Stock B.
  - Stock B must be a more desirable addition to a portfolio than Stock A.
  - Stock A must be a more desirable addition to a portfolio than Stock B.
  - The expected return on Stock A should be greater than that on Stock B.
  - The expected return on Stock B should be greater than that on Stock A.
- \_\_\_\_\_ 15. Consider the following information and then calculate the required rate of return for the Scientific Investment Fund, which holds 4 stocks. The market's required rate of return is 15.0%, the risk-free rate is 7.0%, and the Fund's assets are as follows:

Stock	Investment	Beta
A	\$ 200,000	1.50
B	300,000	-0.50
C	500,000	1.25
D	1,000,000	0.75

- 10.67%
  - 11.23%
  - 11.82%
  - 12.45%
  - 13.10%
- \_\_\_\_\_ 16. A stock has an required rate of return of 12.60%. Its beta is 1.49 and the risk-free rate is 5.00%. What is the market risk premium?
- 5.10%
  - 5.23%
  - 5.36%
  - 5.49%
  - 5.63%
- \_\_\_\_\_ 17. In the last two weeks you've been researching DOW Chemical and find that at a price of \$26.50 the stock is selling at the bottom of its 52 week range for the year. After projecting out future earnings and dividend payments, and looking at the financial leverage ratios you determine that three years from now the stock is likely to sell for \$40 per share. You plan to buy 100 share of DOW at \$26.50 representing a \$2,650 investment. When you sell the stock 3 years from now, you will receive \$40 x 100 shares or \$4,000. Your dividend income for the next three years is as follows:

Year	Dividend on 100 shares
1	\$79.50
2	\$83.48
3	91.82

Assume that dividends are paid at the end of each year. Given these assumptions what will be your overall rate of return on your investment?

- 10.32%
- 12.47%
- 15.03%
- 17.50%

TRUE/FALSE

- |           |        |           |                                     |
|-----------|--------|-----------|-------------------------------------|
| 1. ANS: T | PTS: 1 | DIF: Easy | TOP: (5.3) Discounted cash flows    |
| 2. ANS: T | PTS: 1 | DIF: Easy | TOP: (5.2) Issuing bonds            |
| 3. ANS: T | PTS: 1 | DIF: Easy | TOP: (6.2) Coefficient of variation |
| 4. ANS: T | PTS: 1 | DIF: Easy | TOP: (6.2) Portfolio risk           |
| 5. ANS: T | PTS: 1 | DIF: Easy | TOP: (7.5) Portfolio risk           |
| 6. ANS: F | PTS: 1 | DIF: Easy | TOP: (6.2) Standard deviation       |

MULTIPLE CHOICE

7. ANS: C

Conditions	Probability	Return	Probability × Return	
Good	0.50	35.0%	17.50%	
Average	0.30	10.0%	3.00%	
Poor	<u>0.20</u>	-28.0%	<u>-5.60%</u>	
	<u>1.00</u>		<u>14.90%</u>	Expected return

PTS: 1 DIF: Easy OBJ: TYPE: Problems  
TOP: (6.2) Expected return

8. ANS: A

Expected return 20.0%  
Standard deviation 25.0%  
Coefficient of variation **1.25**

PTS: 1 DIF: Easy OBJ: TYPE: Problems  
TOP: (6.2) Coefficient of variation

9. ANS: E

Company	Investment	Port. weight	Beta	Weight × beta	
Potts	\$ 30,000	0.30	1.60	0.48	
Stohs	<u>\$ 70,000</u>	<u>0.70</u>	0.60	<u>0.42</u>	
	<u>\$100,000</u>	<u>1.00</u>		<u>0.90</u>	= Portfolio beta

PTS: 1 DIF: Easy OBJ: TYPE: Problems  
TOP: (6.3) Portfolio beta

10. ANS: A

Risk-free rate 5.50%  
Old market risk premium 4.75%  
New market risk premium 6.75%  
Old required return 11.50%  
Beta 1.26 Intermediate step:  $b = (\text{old return} - r_{RF}) / \text{old } RP_M$   
New required return **14.03%**

PTS: 1 DIF: Medium OBJ: TYPE: Problems

TOP: (6.5) CAPM

11. ANS: C

Beta: Vera 1.40

Beta: Dell 0.80

Vera's Required return 12.00%

Risk-free rate 4.75%

Market risk premium 5.18%

Intermediate step:  $RP_M = (Vera's\ return - R_{RF})/beta_{Vera}$

Dell's required return **8.89%**

PTS: 1 DIF: Medium OBJ: TYPE: Problems

TOP: (6.5) CAPM

12. ANS: C

Number of stocks 12

Portfolio beta 1.25

Stock that's sold 1.00

Stock that's bought 1.34

New portfolio beta **1.28**

PTS: 1 DIF: Medium/Hard OBJ: TYPE: Problems

TOP: (6.3) Portfolio beta

13. ANS: B PTS: 1 DIF: Easy OBJ: TYPE: Conceptual

TOP: (7.5) Risk aversion

14. ANS: D PTS: 1 DIF: Easy OBJ: TYPE: Conceptual

TOP: (7.5) Beta coefficient

15. ANS: E

$r_M$ : 15.0%

$r_{RF}$ : 7.0%

Find portfolio beta:	Weight	Beta	Product
\$200,000	0.100	1.50	0.1500
\$300,000	0.150	-0.50	-0.0750
\$500,000	0.250	1.25	0.3125
\$1,000,000	<u>0.500</u>	0.75	<u>0.3750</u>
\$2,000,000	1.000		0.7625

Find  $RP_M = r_M - r_{RF} = 8.00\%$

$r_s = r_{RF} + b(RP_M) = \mathbf{13.10\%}$

PTS: 1 DIF: Medium OBJ: TYPE: Problems

TOP: (7.5) Required rate of return

16. ANS: A

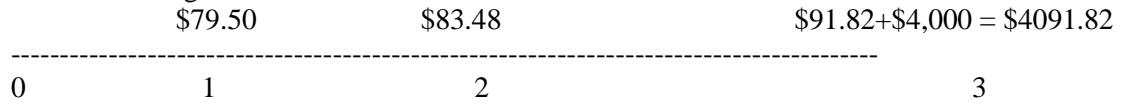
Use CAPM to determine the market risk premium with data given

$$\begin{aligned}
 r_s &= r_{RF} + RP_M \times b_{Stock} \\
 12.60\% &= 5.00\% + RP_M \times 1.49 \\
 7.60\% &= RP_M \times 1.49 \\
 \mathbf{5.10\%} &= RP_M
 \end{aligned}$$

PTS: 1                    DIF: Easy                    OBJ: TYPE: Problems  
TOP: (6.5) Market risk premium

17. ANS: D

Time Line Diagram:



\$2,650

CF(0) = -2,650  
CF(1) = 79.50  
CF(2) = 83.48  
CF(3) = 4,091.82

IRR/Yr = 17.50

PTS: 1