Risk and Return Practice Problems

From the book: Self Test Problem 12.1-12.2 and 13.1-13.4. Question and Problems: Chap 12: 1-3, 7, 9, 14-16 Chap 13: 1-16, 20 (same for both editions)

1. You just sold 600 shares of Wesley, Inc. stock at a price of $32.04 a share. Last year, you paid $30.92 a share to buy this stock. Over the course of the year, you received dividends totaling $1.20 per share.
   (a) What is your total capital gain on this investment (dollar and percent)?
   (b) What is your dividend gain($) and dividend yield on this investment?
   (c) What is the total return on this investment (dollar and percent)
2. You find a certain stock that had returns of 4 percent, -5 percent, -15 percent, and 16 percent for four of the last five years. The average return of the stock for the 5-year period was 13 percent. What is the standard deviation of the stock's returns for the five-year period?
3. A stock had returns of 12 percent, 16 percent, 10 percent, 19 percent, 15 percent, and -6 percent over the last six years.
   (a) What is the arithmetic mean?
   (b) What is the geometric average?
   (c) What is the variance?
   (d) What is the standard deviation?
4. Consider the following information:

		Return if State Occurs			
State of Economy	Probability	OSTK	AMZN	ETSY	BBY
Boom	0.32	0.15	0.25	0.35	0.17
Normal	0.48	0.05	0.2	0.2	0.1
Bust	0.2	-0.04	0.18	-0.5	-0.14
Beta		2.43	1.94	0.15	1.04

   (a) What is the expected return of each stock?
   (b) What is the standard deviation of each stock?
   (c) If you have $100,000 to invest and you put $20,000 in Overtstock, Etsy, and Best Buy respectively, the remainder is invested in Amazon, what are the portfolio weights?
   (d) Given the investment from part c), what is the portfolio expected return? portfolio standard deviation?
   (e) What is the portfolio beta? Which stock has the most systematic risk? Total risk?
   (f) If the risk free rate is 3.7% and the market risk premium is 7%, what is the expected return for each stock.
   (g) Given the expected return calculated in part a) and the beta's given. What is the implied market return if the risk free rate is 2%? (need to calculate for each stock)

Answers to Textbook

Chapter 12:

11th Edition

1) 13.23% 2) 1.84%; 11.39% 3) -8.29%; 1.84%; -10.13% 7) $\bar{X} = 9.20\%$; $\sigma_X^2 = 0.02042$; $\sigma_X = 14.29\%$ $\bar{Y} = 11.80\%$; $\sigma_Y^2 = 0.05277$; $\sigma_Y = 22.97\%$ 9 a) 12.80% b) 0.03052; 17.47% 14) 20.5%; 15.47% 15) 9.83%; 8.10% 16) 9.52%; 9.08%

12th Edition

1) 11.46% 2) 2.23%; 9.23% 3) -8.54%; 2.23%; -10.77% 7) $\bar{X} = 10.40\%$; $\sigma_X^2 = 0.01543$; $\sigma_X = 12.42\%$ $\bar{Y} = 11.80\%$; $\sigma_Y^2 = 0.05447$; $\sigma_Y = 23.34\%$ 9 a) 12.80% b) 0.03082; 17.56% 14) 26.5%; 16.04% 15) 10.17%; 8.92% 16) 10.89%; 10.62%

Chapter 13

11th Ediiton
1) A: .5752 B: .4248 2) 9.88% 3) 10.95% 4) X: $6,904.76 Y: $3,095.24 5) 10.80% 6) 12.60% 7) 10.65%; 12.15%; 4.50%; 13.92% 8) 13.30% 9) a) 11.42% b) .009577 10) a) 8.69% b) 12.15% 11) 1.10 12) 1.68 13) 11.28% 14) .85 15) 10.19% 16) 3.91% 20) a) 6.45% b) .1930 c) .929 d) The portfolio is invested 200% in the stock and –100% in the risk-free asset. This represents borrowing at the risk-free rate to buy more of the stock.

12th Edition
1) A: .5912 B: .4088 2) 10.04% 3) 11.55% 4) X: $4,565.22 Y: $5,434.78 5) 10.40% 6) 10.80% 7) 10.90%; 13.60%; 4.25%; 12.21% 8) 10.70% 9) a) 12.08% b) .009919 10) a) 10.51% b) 11.74% 11) 1.13 12) 1.83 13) 11.38% 14) .88 15) 10.97% 16) 3.32% 20) a) 6.75% b) .1786 c) .871 d) The portfolio is invested 200% in the stock and –100% in the risk-free asset. This represents borrowing at the risk-free rate to buy more of the stock.

Answer to above problems

1) a) 672; 3.62% b) 720; 3.88% c) 1392; 7.50%
2) 31.23%
3) a) 11% b) 10.68% c) 0.00792 d) 8.90%
4) a) 6.40%; 21.20%; 10.80%; 7.440%
b) 6.80%; 2.71%; 31.10%; 11.15%
c) 20%; 40%; 20%; 20%
d) 13.41%; 10.57%
e) 1.50; Overstock; Etsy
f) 20.71%; 17.28%; 4.75%; 10.98%
g) 3.81%; 11.90%; 60.67%; 7.23%