

# FIN5EQS EQUITY SECURITIES

## Quiz 1 Solutions

1. A stock has just paid a dividend of \$2.40, and the dividend over each of the next four years is expected to be \$2.50, \$2.60, \$2.70 and \$2.80. The expected value of the stock in four years is \$12.50. The cost of equity is estimated to be 12.5%. How much would you be prepared to pay for the stock?

$$V_0 = \frac{2.50}{1.125} + \frac{2.60}{1.125^2} + \frac{2.70}{1.125^3} + \frac{2.80}{1.125^4} + \frac{12.50}{1.125^4} = \$15.72$$

- A. \$14.86
- B. \$15.72**
- C. \$17.26
- D. \$18.12

2. Consider the following equation:

$$E(R_i) = R_f + \beta_i [E(R_m) - R_f]$$

This circled part of this equation will give you the:

- A. Market risk premium**
- B. Required return
- C. Risk premium
- D. Alpha

3. If you are conducting a long-term valuation and inflation is expected to be high or unstable, which of the following would NOT be an appropriate proxy for the real risk-free interest rate?

- A. The expected real growth rate of the economy
- B. The yield on an inflation-indexed Treasury Bond
- C. The nominal yield on Treasury Bonds less the expected inflation rate
- D. The nominal yield on Treasury Bonds multiplied by (1 + expected inflation rate)**

4. The US Treasury Bond rate is 5.5%, the current level of the S&P 500 is 12,400, the expected dividend yield is 2.5% and the sustainable growth rate is 8%. What is the implied market risk premium?

$$r_e = \frac{D_1}{P_0} + g = 0.025 + 0.08 = 0.105$$

$$\text{Market risk premium} = 0.105 - 0.055 = 0.05 = 5\%$$

- A. 2.5%
- B. 3.5%
- C. 5%
- D. 10.5%
5. Which of the following is probably the most appropriate method for estimating the required return for a small, private business?
- A. The “build-up” approach
- B. The Pastor-Stambaugh Model
- C. Bond yield plus risk premium
- D. A Macroeconomic Factor Model

You regress monthly returns on a stock against monthly market returns in an attempt to estimate the beta of the stock. The following is part of the output from the regression analysis.

#### SUMMARY OUTPUT

<i>Regression Statistics</i>		
Multiple R	19.92%	
R Square	9.95%	
Adjusted R Square	9.08%	
Standard Error	0.09	
Observations	106	

  

ANOVA		
	<i>df</i>	<i>SS</i>
Regression	1	0.052710131
Residual	104	0.535914942
Total	105	0.588625073

  

	<i>Coefficients</i>	<i>Standard Error</i>
Intercept	0.53%	0.01
Beta	0.68	0.15

6. Based on this analysis, within which of the following ranges is there a 95% probability that the true beta lies?

A. 0.38 – 0.98  
 B. 0.50 – 0.86  
 C. 0.53 – 0.83  
 D. 0.59 – 0.77

Standard Error (i.e. Std Dev) = 0.15  
 95% range = Est. Beta  $\pm$  2 Std Devs  
 $= 0.68 \pm 2 \times 0.15$   
 $= 0.38 - 0.98$

7. If the monthly risk-free rate is 0.4%, based on this analysis, what is the stock's monthly excess return?

A. 0.19%  
 B. 0.37%  
 C. 0.40%  
 D. 0.53%

$$\alpha - R_f(1 - \beta) = 0.53 - 0.4(1 - 0.68) = 0.40$$

8. Fletcher Building Ltd made an offer for Crane Group Ltd in December of 2011. Based on the information below estimate the unlevered beta of the combined groups should the takeover proceed.

Company	$\beta$	Debt	Equity	Value
Fletcher Building	0.67	\$879m	\$2,529m	\$4,543
Crane	1.27	\$281m	\$783m	\$918m

$$\beta_U = \beta_L / (1 + D/E)$$

$$\beta_{U,F} = 0.67 / \left(1 + \frac{879}{2529}\right) = 0.4972$$

$$\beta_{U,C} = 1.27 / \left(1 + \frac{281}{783}\right) = 0.9346$$

$$\beta_{U,Firm} = 0.4972 \left(\frac{4543}{4543 + 918}\right) + 0.9346 \left(\frac{918}{4543 + 918}\right) = 0.5707$$

$$\beta_{L,Firm} = \beta_U (1 + D/E) = 0.5707 \left(1 + \frac{879 + 281}{2529 + 783}\right) = 0.77$$

- A. 0.57  
 B. 0.69  
 C. 0.77  
 D. 0.97