DEPARTMENT OF MANAGEMENT
UNIVERSITY OF TORONTO MISSISSAUGA

MGT339H5S LEC6001 - Business Finance II
Summer 2012

Instructor: ADAM KADAR

QUIZ I – July 24, 2012

Duration: 30 minutes

Aid Allowed: Non-programmable calculator

Instructions:

a) Answer all questions and write the answers in the space provided below.
b) Please show your work, where applicable, in the spaces provided.

LAST NAME: ______________________________ FIRST NAME: _____________________________

STUDENT NUMBER: _____________________________

SOLUTIONS

Question	Score
1 (8 marks)	
2 (3 marks)	
3 (8 marks)	
4 (1 mark)	
Total (out of 20):	

QUESTION 1 (8 marks):

A firm has the following capital structure based on market values: Debt-to-Equity of 35/65.

The current yield on government T-Bills is 2%, the expected return on the market portfolio is 10%, and the firm's beta is approximately 2.1. The firm's common shares are trading at $25, the current dividend (Div0) is $3 per share is expected to grow at an annual rate of 4%. The firm can issue debt at a 4% premium over the current risk free rate. The firm's tax rate is 40%, and the firm is considering a project to be funded out of internally generated funds that will not alter the firm's overall risk. The project requires an initial investment of $15.5 million and promises to generate net annual after-tax cash flows of $2 million perpetually. Should the project be undertaken? [6 marks]

Debt	35%		CFo	-15.5		
Equity	65%		Ann. CF	2		
Tc	40%					
Kd	6%					
			WACC	**NPV**		
CAPM:						
RF	2%					
Rm	10%					
Beta	2.1					
Ke	18.80%		13.48%	-0.66	reject	
DDM:						
Po	25					
Div0	3					
g	4%					
Ke	16.48%		11.97%	1.21	accept	
Avg. Ke	17.64%		12.73%	0.22	accept	

Is your answer dependant on which method you use to calculate K_E? If yes, explain. [2 marks]

QUESTION 2 (3 marks):

The market value of GenNext Corporation's common stock is $400 million and the market value of the risk-free debt is $600 million. The beta of the company's common stock is 0.8, and the expected market risk premium is 10%. If the Treasury Bill rate is 6%, what is the firm's cost of capital? (Assume no taxes.)

Equity	400	Ratios	
Debt	600	40%	E / VL
	1000	60%	D / VL
BetaE	80%		
RM-RF	10%		
RF	6%		
Ke	14%		
Kd (RF)	6%		
WACC	9.20%		

QUESTION 3 (8 marks):

Each part of this question is separate except where indicated otherwise

a) Suppose a firm uses a constant WACC to calculate the NPV of all of its capital budgeting projects, rather than adjusting for the riskiness of the individual projects. What types of errors will the firm make in its capital budgeting decisions? [2 marks]

   The firm may accept high risk projects that it should have rejected, and it may reject attractive low risk projects that it should have accepted.

b) Calculate the cost of equity using the constant growth dividend discount model given the following: the annual dividend that was just paid was for $2.50 (i.e. Div0); the Payout Ratio = 0.7; the ROE = 15%; and the current market price of the stock = $14.50. Is the current management adding to or reducing the stock price by growing the firm? Hint: (1) compare ROE to Ke and (2) calculate Po assuming Payout Ratio = 1 [4 marks]

   g = ret. ratio x ROE = (1-payout)x ROE = (1-.7)x .15 = .045. So ke = Div1/P + g = 2.50(1.045)/14.50 + .045 = .2252 = 22.52%. Since the required return is greater than the expected return of 15%, the current management team is destroying value by reinvesting in the growth of the firm. In this case, whatever is earned will be paid out, ke = Div1/P = EPS/P, and since the current Div = 2.50 = .7EPS => EPS = $3.57 and ke = 3.57/P becomes .2252 = 3.57/P => P = $15.85. So the share price should jump from $14.50 to $15.85 if the management team stops trying to grow the firm.

c) Estimate the cost of internal equity and the cost of newly issued equity for a firm using the capital asset pricing model (CAPM) and methods discussed in class and/or in the text, given the following data: The shares are trading at $50. The risk free rate is 8% and the expected market return is 15%. The firm has a beta of 1.1, and the issuing costs for new shares will amount to $3/share (or 6%). [2 marks]

Using CAPM, we find for internal equity that ke = .08 + 1.1(.15-.08) = .157. The net proceeds from newly issued equity is $50 -$3 = $47 and so the cost to the firm of newly issued equity can be estimated as (50/47) x .157 = .167.

<u>QUESTION 4 (1 mark):</u>

The beta for ABC utility is 0.4, while the beta for the utility industry is X. The risk-free rate of interest is 4% and the market return is 14%. The expected return on ABC stock minus the expected return for the industry is 1.5%.

Calculate X.

BetaA	0.4
BetaUtil	0.25
RF	4.00%
Rm	14.00%
Ra-Rutil	1.50%
RetA	8.00%
RetU	6.50%
A - Util	1.50%

MGT339 - quiz 1 - formula sheet

$$P_{bond} \;=\; \frac{C}{r}[1-(1+r)^{-n}] + \frac{F}{(1+r)^n}$$

Growth rate $\;g \;=\; ROE * RetentionRatio$

$$k_i \;=\; k_f + \beta_i(k_m - k_f)$$

$\beta_e = \beta_a(1 + D/E)$
by starting from $\beta_a = \frac{D}{D+E}\beta_d + \frac{E}{D+E}\beta_e$ and setting $\beta_d = 0$

$$P \;=\; EPS/K_e \;=\; \frac{ROE*BVPS}{K_e}$$

$$WACC \;=\; K_a = K_e(S/V) + K_d(1-T)(D/V)$$

$$V \;=\; \frac{PAR(1+R)P \;+\; RECOVER(1-P)}{1+K}$$