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NEW YORK INSTITUTE OF TECHNOLOGY
SCHOOL OF MANAGEMENT
(Department of Accounting & Finance)

Corporate Finance (FINC 201) QUIZ 04 March 2012 Prof. Raja Nag

Name: _____ Maximum time: 15 minutes

PROBLEM 1) Due to numerous law suits, a major chemical manufacturer has recently experienced a market reevaluation. The firm has 15-year, 8% semi-annual coupon bonds. The required nominal rate on this debt has now risen to 16%. The face value of the bond is \$1,000. What is the current market value of this bond?

$N=15$
coupon rate = 8%
 $FV = \$1,000$
 $INT = \$80.00$

semiannual inputs

$N=30$
 $FV = \$1,000$

$INT = \$40.00$

$I = 16\%$ $\rightarrow 8\%$

$PV \rightarrow ? - \$258.74$

$\Rightarrow \$549.69$

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PROBLEM 2) You just purchased a \$1,000 par value, 9-year, 7% semi-annual coupon bond. This corporate bond sells for \$920. What is the yield to maturity (YTM)?

$FV = \$1,000$ ✓

$N = 9$

coupon rate = 7%

$INT = \$70$ ✓

$PV = \$920$

$YTM = 4.14\%$

$YTM = I \times 2 = 4.14 \times 2$
 $= 8.28\%$

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inputs

$FV = \$1,000$ ✓

$N = 18$ ✓

$INT = \$35$ ✓

$PV = \$920$ ✓

$I/YR ? \rightarrow 4.14\%$ ✓

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- 1) The last dividend on Spirex Corporation's common stock was \$4.00, and the expected growth rate is 10 percent. If you require a rate of return of 20 percent, what is the highest price you should be willing to pay for this stock?

$$D_0 = \$4.00$$

$$g = 10\%$$

$$\frac{D_0}{P - g} = .2$$

$$\frac{4}{P - .10} = .2$$

$$\frac{4}{.2} = P - .10$$

$$20 = P - .10$$

$$\$20.10 = P$$

X

$$P = \frac{D_0}{r - g} \quad \text{X} \quad P = \frac{D_1}{r - g}$$

$$= \frac{4.40}{.20 - .10}$$

$$= \frac{4.4}{.1} = \$44$$

-3

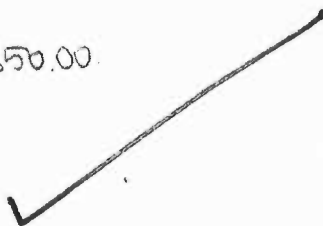
- 2) A share of perpetual preferred stock pays an annual dividend of \$6 per share. If investors require a 12 percent rate of return, what should be the price of this preferred stock?

$$D = \$6.00$$

$$r = 12\%$$

$$\frac{\$6.00}{P} = .12$$

$$P = \$50.00$$



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Corporate Finance (FINC 201) QUIZ 09 April 2012 Prof. Raja Nag

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Given the following information, calculate the NPV of a proposed project:

Cost = \$4,000; estimated life = 3 years; initial *increase* in accounts receivable (i.e. Net Working Capital) = \$1,000; estimated salvage value = \$1,000; net income *before* taxes and depreciation = \$2,100 per year; method of depreciation = straight-line; tax rate = 40 percent; required rate of return = 17 percent.

	0	1	2	3	
cost - 4000		2100	2100	2100	NI EBIT
Acct REC. - 1000				1000	Salvage
				1000	acct. rec.
-DEP	4000	-693	-693	-693	Dep.
	-5000	1407	1407	1407	1 .33
					2 .33
					3 .33
	4000	-562.80	-562.80	3,407	
	1000	844.20	844.20	81362.40	
+DEP	-5,000	693	693	2044.2	
		1537.2	1537.2	2,737.2	

NPV
- 854.18
X Reject

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Corporate Finance (FINC 201) QUIZ 10 April 2012 Prof. Raja Nag

Name: _____ Maximum time: 15 minutes

Manning Corporation has established a target capital structure of 40 percent debt and 60 percent common equity. The current market price of the firm's stock is $P_0 = \$28$; its last dividend was $D_0 = \$2.00$, and its expected dividend growth rate is 5 percent constant. The YTM (Yield to Maturity) of Manning's outstanding bonds is 10%, and its marginal tax rate is 40%. Manning can finance its equity portion with retained earnings. Find the weighted average cost of capital (WACC) of Manning Corporation.

✓ $w_d = 0.4$

✓ $w_e = 0.6$

✓ $P_0 = 28 \text{ USD}$

✓ $D_0 = 2.00$ ✓ $g = 5\%$

✓ $YTM = 10\% = r_d$

✓ $T = 40\%$

$$r_{wacc} = w_d \cdot r_d(1-T) + w_e \cdot r_{es}$$

$$r_{es} = \frac{D_1}{P_0} + g = \frac{D_0(1+g)}{P_0} + g = \frac{2 \cdot (1+0.05)}{28} + 0.05 = 0.125$$

$$r_{wacc} = 0.4 \cdot 0.1(1-0.4) + 0.6 \cdot 0.125 = 0.024 + 0.075 = 0.099 \Rightarrow$$

✓

$$\underline{r_{wacc} = 9.90\%}$$

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Manning Corporation has established a target capital structure of 30^{30%} percent debt and 70^{70%} percent common equity. The current market price of the firm's stock is $P_0 = \$28$; its last dividend was $D_0 = \$2.00$, and its expected dividend growth rate is 5 percent constant. The YTM (Yield to Maturity) of Manning's outstanding bonds is 10%, and its marginal tax rate is 40%. Manning can finance its equity portion with retained earnings. Find the weighted average cost of capital (WACC) of Manning Corporation.

$$W_{WACC} = W_d r_d (1 - T) + W_{CS} r_{CS}$$

$$r = \frac{P_1}{P_0} + g \quad \text{Tax rate}$$

$$\begin{aligned} D_0 &= \$2(1 + 5\%) \\ &= \$2 \times 1.05 \\ &= 2.1 \end{aligned}$$

$$\begin{aligned} r &= \frac{2.1}{28} + 5\% \\ &= 0.075 + 0.05 \\ &= 0.125 \\ &= 12.5\% \end{aligned}$$

$$r_{CS} = 12.5\% \quad \text{tax rate} = 40\% \quad W_d = 30\%$$

$$\begin{aligned} W_{WACC} &= 30\% \times 10\% (1 - 40\%) + 70\% \times 12.5\% \\ &= 1.8\% + 8.75\% \end{aligned}$$

$$\begin{aligned} &= 0.1055 \\ &= 10.55\% \end{aligned}$$