Homework 9

1. Caddy manufacturing has a target debt equity ratio of .45. Its cost of equity is 10.3%, and its pretax cost of debt is 6.4%. If the tax rate is 21%, what is the company's WACC ?

   debt / equity = .45/1 or 45/100 market value of debt =

   45 market value of equity = 100 total value of

   financing = debt + equity = 45+100= 145 cost of

   equity = 10.3% cost of debt = 6.4% tax rate = 21%

   (100/145) x(10.3/100) + (45/145)x(6.4/100) x (1- 0.21)

   = 0.086721034 or 8.6721034 %

2. Hankins Corp has 5.4 million shares of common stock outstanding; 290,000 shares of 5.2% preferred stock outstanding, with a par value of $100; and 125,000, 5.7 semiannual bonds outstanding with a par value 1000 each. The common stock currently sells for $72 per share and has a beta of 1.13, The preferred stock currently sells for $103 per share, and the bonds have a 20 year to maturity and self worth. 103 percent of par. The market risk premium is 6.8%, T-bills are yielding 4.3%, and the firm's tax rate is 23%. A. What is the firm's market capital structure? B. If the firm is evaluating a new investment project that has the same risk, as the firm's typical project, what rate should the firm used to discount the project's cash flow?

   MV of Equity= 72X5,400,000= 388,800,000

   MV of Bond= 1,000X1,250,000X1.03=128,750,000

MV Preferred of equity= 103X290,000= 29,870,000

MV of Firm= 388,800,00+128,750,000+29,870,000=547,420,000

Weight of Equity=388,800,000/547,420,000=0.710241

Weight of Debt=128,750,000/547,420,000=0.2352

Weight of Preferred Equity=29,870,000/547,420,000=0.0546

B

Cost of equity

Cost of equity = risk-free rate + beta * (Market risk premium)

Cost of equity% = 4.3 + 1.13X 6.8 = 11.98

Cost of debt

K = Nx2

Bond Price =∑ [(Semi Annual Coupon)/(1 + YTM/2)^k] + Par value/(1 + YTM/2)^Nx2

k=1

K =20x2

1,030 = [(5.7X1,000/200)/(1 + YTM/200)^k] + 1,000/(1 + YTM/200)^20x2

k=1

YTM = 5.4518008284

After tax cost of debt = cost of debt*(1-tax rate)

After tax cost of debt = 5.4518008284(1-0.23)= 4.1978867

Cost of Preferred Equity = Preferred dividend/price*100

Cost of Preferred Equity = 5.2/103x100=5.05

WACC=after tax cost of debt*W(D)+cost of equity*W(E)+Cost of preferred equity*W(PE)

WACC=4.2*0.2352+11.98*0.7102+5.05*0.0546=9.7716

3. The T bill rate is 4%, and the expected return on the market is 12%.

A. Which projects have the higher expected return than the firm's 12% cost of capital?

Project Y and Z have a bigger than the firms 12% cost of capital. B.

Which projects should be accepted?

Project Y and Z should be accepted.

C. Which projects will be incorrectly accepted or rejected if the firm's overall cost of capital were used as a hurdle rate?

- In case of overall cost of capital

  Accept Project Y and Z

- In case of correct hurdle rate

  Accept Project X and Z

Incorrectly accepted with overall cost of capital as hurdle rate is Project Y.

Incorrectly rejected with overall cost of capital as hurdle rate is Project X.