**Question 1: (Cost of Capital)**

You are provided the following information on a company. The total market value is $38 million. The company’s capital structure, shown here, is considered to be optimal.

Market Value

Bonds, $1000 par, 6% coupon, 5% YTM $10,000,000

Preferred Stock, 4%, $100 par, 100,000 shares @ $60 per share $6,000,000

Common Stock, 100,000 shares @ $220 per share $22,000,000

a. What is the after-tax cost of debt? (assume the company’s effective tax rate = 40%)

b. Assuming a $4 dividend paid annually, what is the required return for preferred shareholders (i.e. component cost of preferred stock)? (assume floatation costs = $0.00)

c. Assuming the risk-free rate is 1%, the expected return on the stock market is 7%, and the company's beta is 1.0, what is the required return for common stockholders (i.e., component cost of common stock)?

d. What is the company's weighted average cost of capital (WACC)?

**Question 2: (Capital Budgeting)**

It's time to decide how to use the money your firm is expected to make this year. Two investment opportunities are available, with net cash flows as follows:

Year Project X Project Y

0 (Now) ($20,000) ($20,000)

1 8,500 4,200

2 7,000 5,700

3 5,500 7,200

4 4,000 8,700

a. Calculate each project's Net Present Value (NPV), assuming your firm's weighted average cost of capital (WACC) is 7%

b. Calculate each project’s Internal rate of Return (IRR).

c. Plot NPV profiles for both projects on a graph).

d. Assuming that your firm's WACC is 7%:

(1) If the projects are independent which one(s) should be accepted?

(2) If the projects are mutually exclusive which one(s) should be accepted?

**Question 3: (Capital Structure)**

Aaron Athletics is trying to determine its optimal capital structure. The company’s capital structure consists of debt and common stock. In order to estimate the cost of debt, the company has produced the following table:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Percent financed with debt (Wd) | Percent financed with equity (Ws) | Debt to Equity (D/S) | Bond Rating | Before-tax cost of debt (BT Rd) |
| 10% | 90% | .11 | AA | 4.0% |
| 20% | 80% | .25 | A | 5.0% |
| 40% | 60% | .67 | BB | 6.0% |
| 50% | 50% | 1.0 | B | 7.0% |

The company’s tax rate, T, is 40 percent. The company uses the CAPM to estimate its cost of common equity, Rs. The risk-free rate is 1 percent and the market risk premium is 6 percent. Aaron estimates that if it had no debt its beta would be 1.0. (i.e., its “unlevered beta,” bU, equals 1.0.)

On the basis of this information, what is the company’s optimal capital structure, and what is the firm’s cost of capital at this optimal capital structure?

**Question 4: (Forecasting)**

A firm has the following balance sheet:

Cash $ 200 Accounts payable $ 200

Accounts receivable 200 Notes payable 400

Inventory 200 Long-term debt 800

Fixed assets 1,800 Common stock 800

Retained earnings 200

Total assets $2,400 Total liabilities & Equity $2,400

Sales for the year just ended were $6,000, and fixed assets were used at 80 percent of capacity. Current assets and accounts payable vary directly with sales. Sales are expected to grow by 20 percent next year, the expected net profit margin is 5 percent, and the dividend payout ratio is 80 percent.

How much additional funds (AFN) will be needed next year, if any?

**Question 5: Working Capital Management**

The Chickman Corporation has an inventory conversion period of 60 days, a receivables collection period of 30 days, and a payables deferral period of 30 days. Its annual credit sales are $6,000,000, and its annual cost of goods sold (COGS) is 60% of sales.

a. What is the length of the firm's cash conversion cycle?

b. What is the firm's investment in accounts receivable?

c. What is the company's inventory turnover ratio?

d. Identify three ways in which the company could reduce its cash conversion cycle?

e. What are the possible risks of reducing the cash conversion cycle per your recommendations in part d?