

Question 1:

Win Hom Production has **book value** balance sheet as shown below:

| | | | |
|---------------------|---------------------------------|---------------------|---------------------------------|
| Current assets | \$30,000,000 | Long-term debt | 30,000,000 |
| Fixed assets | <u>50,000,000</u> | Common stock | <u>50,000,000</u> |
| | | (1 million shares) | |
| Total Assets | <u><u>80,000,000</u></u> | Total Claims | <u><u>80,000,000</u></u> |

Under this capital structure, the long-term debt consists of 30,000 bonds, each with a par value of \$1,000, an annual coupon interest rate of 12%, and a 20-year maturity with 15% yield to maturity (YTM). The company has a dividend yield of 4%, an expected constant growth rate of 8%, and the market price of common stock at \$60 per share. The company's marginal tax rate is 40%.

1.1 Calculate Win Hom's **market value** capital structure.

1.2 Find the component after-tax costs of debt and cost of common stock. Then, calculate weighted average cost of capital (WACC) under the current market capital structure.

1.3 If Win Hom Production plans to raise \$40 million capital for new projects, in order to maintain the present market capital structure, how much of the new investment must be financed by common equity? What could be the reason why Win Hom wants to maintain the current capital structure?

1.4 **Qualitatively speaking**, what will happen to the WACC if:

(1) There is not enough internal cash flow and Win Hom must issue new shares of stock with the flotation cost?

(2) The new projects of Win Hom are more risky?

Question 2:

Minnie Ltd. is trying to determine its optimal capital structure, which now consists of only debt and common equity. In order to get information how much debt would cost at different levels, the company consulted with investment bankers and got the following table:

| Long-term debt fraction (W_D) | Equity fraction (W_E) | Before-tax cost of debt (R_D) |
|---|---|---|
| 0 | 100% | 7% |
| 20% | 80% | 8% |
| 40% | 60% | 10% |
| 60% | 40% | 12% |
| 80% | 20% | 15% |

* The company does not currently use preferred stock in its capital structure, and it does not plan to do so in the future.

Minnie uses the CAPM to estimate its cost of common equity, R_S . The company estimates that the risk-free rate is 5%; the market risk premium is 6%, and the company's tax rate is 40%. Elliott estimates that if it had no debt, its "unlevered" beta, b_U , would be 1.20.

2.1 Without numerical calculation, what would be criteria when the company wants to decide its optimal capital structure?

2.2 Given the above information, what is the weighted average cost of capital (WACC) when company has no debt?

2.3 What would be the weighted average cost of capital (WACC) under different levels of debt (starting from 20%)? Determine at which level debt should be financed? Why?