

BM Ch9 weighted average cost of capital exhibit practice exam questions

A firm has the following capital structure:

Long-term debt: par value	953,000
Long-term debt: market value	926,414
Coupon rate	7.00%
Yield to maturity	7.29%
Shares of common stock	14,100
Par value per share	65
Market value per share	64
Expected return on common stock	10.10%
Tax rate	30%

Interest on corporate debt is deductible from taxable income.

Question 8.1: market value

What is the firm's market value?

Answer 8.1: the market value of long-term debt is 926,414, and 14,100 shares of common stock trade at 64 per share, so the firm's market value is $926,414 + 14,100 \times 64 = 1,828,814$.

Question 8.2: Debt to value ratio

What is the firm's debt to value ratio?

Answer 8.2: The firm's debt to value ratio is $926,414 / 1,828,814 = 50.66\%$

Question 8.3: Equity to value ratio

What is the firm's equity to value ratio?

Answer 8.3: The firm's equity to value ratio is $14,100 \times 64 / 1,828,814 = 49.34\%$

Question 8.4: Cost of debt capital

What is the firm's cost of debt capital?

Answer 8.4: The firm's cost of debt capital is the yield to maturity of 7.29%.

Question 8.5: Cost of equity capital

What is the firm's cost of equity capital?

Answer 8.5: The firm's cost of equity capital is the expected return on common stock of 10.10%.

Question 8.6: Weighted average cost of capital (WACC)

What is the firm's after-tax weighted average cost of capital (WACC)?

Answer 8.6: The firm's after-tax weighted average cost of capital is

$$50.66\% \times 7.29\% \times (1 - 30\%) + 49.34\% \times 10.10\% = 7.57\%$$