

LO.a: Explain the Modigliani–Miller propositions regarding capital structure, including the effects of leverage, taxes, financial distress, agency costs, and asymmetric information on a company’s cost of equity, cost of capital, and optimal capital structure.

1. According to Modigliani and Miller’s Proposition I with taxes ignoring costs of financial distress and bankruptcy, the value of a company with debt is:
 - A. equal to value of a company without any debt.
 - B. greater than the all-equity company by an amount equal to the debt tax shield.
 - C. less than the unlevered company by an amount equal to the debt tax shield.
2. According to MM Proposition II with taxes, ignoring financial distress and bankruptcy costs, the cost of equity for a levered firm:
 - A. rises as debt increases but not as fast as it does in the no-tax case.
 - B. falls as debt increases by an amount equal to the slope coefficient.
 - C. falls as debt increases reducing the weighted average cost of capital of the levered company.

The following financial information of DD Company is relevant for questions 3 - 4.

Yield to maturity on debt	8.0%
Debt-to-total capital ratio	25%
Cost of capital if all equity-financed	10.0%
Earnings before interest and taxes	\$100,000
Marginal tax rate	30%

3. Based on the above information, the current cost of equity capital is *closest* to:
 - A. 9.5%.
 - B. 10.5%.
 - C. 10.0%.
4. Given the above information the current weighted average cost of capital and value of the firm are *closest* to:
 - A. 10.5%; \$670,000.
 - B. 10.0%; \$700,000.
 - C. 9.30%; \$753,000.
5. The expected financial distress cost is composed of:
 - A. costs of financial distress and bankruptcy, given that it happens and probability of financial distress /bankruptcy.
 - B. direct and indirect costs.
 - C. agency costs and impaired ability to manage business.
6. Companies with fewer marketable tangible assets when faced with financial distress *most likely* incur:
 - A. higher costs from financial distress.
 - B. lower costs from financial distress.

- C. no financial distress costs.
7. The three components of agency costs are:
- A. monitoring costs, residual costs, forgone investment opportunities.
 - B. impaired ability to do business, legal costs, bonding costs.
 - C. monitoring costs, bonding costs, residual loss.
8. The pecking order theory suggests that when choosing financing methods, managers' first preference is:
- A. public equity offerings.
 - B. internal financing.
 - C. debt issuance.

LO.b: Describe target capital structure and explain why a company's actual capital structure may fluctuate around its target.

9. Which of the following statements is *least* accurate? Optimal capital structure is:
- A. that capital structure which maximizes the firm value.
 - B. that point where the earnings per share of a firm are maximized.
 - C. a point beyond which further increases in firm value due to increasing leverage are counterbalanced by its value-reducing effects.
10. The static trade-off theory balances the present value of costs of financial distress against:
- A. present value of interest tax shield.
 - B. value of an unlevered firm.
 - C. value of agency costs.

11. Consider the following information regarding estimates of before tax costs of debt and equity for GTS company. Marginal tax rate is 30%:

Debt-to-Total Capital Ratio (%)	Cost of Debt (%)	Cost of Equity (%)
10	6.0	11.5
20	6.5	12.0
30	7.0	12.6
40	9.5	13.5

Based on the above estimates, what debt-to-total capital ratio would minimize GTS's WACC?

- A. 30%
- B. 40%
- C. 20%.

LO.c: Describe the role of debt ratings in capital structure policy.

12. A credit rating agency has just lowered the credit rating of GN Motors' 10-year 7% bond maturing in 2017, from BBB to BB, the *most likely* outcome of this rating downgrade for GN will be:

- A. cost of equity will decline.
- B. weighted average cost of capital will remain unaffected.
- C. cost of debt will rise.

13. Higher credit ratings of a company's debt represent:

- A. higher risk for equity and debt investors.
- B. lower risk for equity and debt investors.
- C. higher returns demanded by equity and debt investors.

LO.d: Explain factors an analyst should consider in evaluating the effect of capital structure policy on valuation.

14. To evaluate the capital structure of a company, a financial analyst should consider the:

- A. company's capital structure over time, competitor's capital structure, and company-specific factors.
- B. competitors' business risk, market risk and tradition.
- C. industry capital structure, systemic risk and capital flows.

15. Company X is currently not at its optimal capital structure and has a high weight of equity relative to similar firms in the industry. Which of the following is *least likely* to move the company towards its optimal capital structure?

- A. Increase in the debt ratio.
- B. Decrease in the cost of capital.
- C. Change in regulations which impact the company.

LO.e: Describe international differences in the use of financial leverage, factors that explain these differences, and implications of these differences for investment analysis.

16. SBL is a U.S. based steel manufacturing company and MNX is a Japanese steel manufacturer. Financial leverage between the two companies can be compared by taking into account:

- A. company-specific factors.
- B. country-specific factors.
- C. growth opportunities.

17. Comparing the capital structure of companies in developed countries with those in the emerging market, developed countries generally have:

- A. higher short-term debt to total capital ratios.
- B. shorter debt maturity structure.
- C. higher long-term debt to total debt ratios.

18. The factors that *most likely* explain the cross-country capital structure differences are:

- A. institutional and legal environment, banking sector and financial markets, macroeconomic factors.
- B. macroeconomic environment, trade policy and capital flows.
- C. exchange control mechanisms, debt maturity structures, political risk.

19. Company A- a levered company, in a country with, an efficient legal system developed on common law, an active capital market and a large institutional investor base, has debt maturities that are *most likely*:
- A. shorter.
 - B. longer.
 - C. cannot be ascertained.
20. Company P – a levered company, based in a country with high inflation, and high GDP growth will *least likely* have debt-to-equity ratio that is:
- A. higher than D/E ratios of companies in low inflation and low GDP environment.
 - B. lower than D/E ratios of companies in low inflation and low GDP growth countries.
 - C. below D/E ratios of companies in low inflation countries.

Solutions

1. B is correct. Under MM Proposition I: Value of a levered company $V_L = V_U + tD$. V_U = value of the unlevered (all-equity) company, t = marginal tax rate; and tD = debt tax shield. Section 2.3.
2. A is correct. According to MM Prop. II, in the presence of corporate taxes, the cost of equity rises as a linear function of D/E but not as fast as it does in the no-tax case.
 $cost\ of\ equity = r_e = r_0 + (r_0 - r_d)(1 - t) \frac{D}{E}$. The slope coefficient $(r_0 - r_d)(1 - t)$ is smaller than the slope coefficient $(r_0 - r_d)$ in the no-tax case. Section 2.3.
3. B is correct. Using equation 9, the cost of equity capital for DD company = $r_e = 0.10 + (0.10 - 0.08)(1 - 0.30) \frac{0.25}{0.75} = 0.1047 = 10.47\% \cong 10.50\%$. Section 2.3.
4. C is correct. DD's current weighted average cost of capital and value is calculated as:
 $r_{WACC} = 0.25(0.08)(1 - 0.30) + 0.75(0.105) = 9.275\% \cong 9.30\%$.
 $V_L = \frac{EBIT(1-t)}{WACC} = \frac{100,000(1-0.30)}{0.093} = \$752,688 \cong \$753,000$. Section 2.3.
5. A is correct. Expected financial distress cost is composed of two components: costs of financial distress and bankruptcy, in case they happen, and the probability that financial distress and bankruptcy happen. Section 2.4.
6. A is correct. Firms such as high-growth companies, pharmaceutical companies, information technology companies and others in the service industry with few tangible assets which are not readily marketable have higher costs associated with financial distress. Section 2.4.
7. C is correct. Agency costs are: monitoring costs, bonding costs and residual loss. Section 2.5.
8. B is correct. The pecking order theory, suggests that managers choose methods of financing according to a hierarchy that gives first preference to methods with the least potential information content (internally generated funds) and lowest preference to the form with the greatest potential information content (public equity offerings). Internal financing is first chosen, and if insufficient, managers next prefer debt, and finally equity. Section 2.6.
9. B is correct. Statements A and C are true. Optimal capital structure is that capital structure at which the value of the firm is maximized. Using the MM Proposition with taxes, and in the presence of financial distress costs, agency costs, and asymmetric information, increasing financial leverage increases the value of the firm but only up to a certain debt ratio, beyond that point further increases are offset by value-reducing effects. Statement B is false. Section 2.7.
10. A is correct. The static trade-off theory of capital structure balances the expected financial distress costs against the tax benefits of debt service payments. Unlike the MM Model, the

trade-off theory puts forward an optimal capital structure with an optimal debt/equity ratio. Section 2.7.

11. A is correct. The r_{WACC} for different debt-to-total capital ratio are calculated as follows:

At $D/V = 10\%$, $r_{WACC} =$

$$r_a = \left(\frac{D}{V}\right)r_d(1 - t) + \left(\frac{E}{V}\right)r_e = (0.1)(0.06)(1 - 0.30) + (0.9)(0.115) = 10.77\%$$

Similarly, at $D/V = 20\%$, $r_a = 10.51\%$, at $D/V = 30\%$ $r_a = 10.29\%$, at $D/V = 40\%$ $r_a = 10.76\%$. Section 2.7.

12. C is correct. As the bond's credit rating falls from investment grade to speculative grade, cost of debt will increase, and bond's price will decline. Section 3.1.
13. B is correct. Higher credit ratings signify lower risk for the company's investors. Section 3.1.
14. A is correct. In evaluating capital structure, a financial analyst must look at the capital structure of a company over time, the capital structure of competitors with similar business risk, and company-specific factors, such as the quality of corporate governance, that may affect agency costs among other factors. Section 3.2.
15. C is correct. Changes in regulation are not likely to impact the debt ratio of a company. Since this company has a very high equity weight, an increase in the debt ratio is likely to reduce the cost of capital and increase the value of the firm. Section 3.2.
16. B is correct. While comparing the financial leverage indicators in the international setting, country-specific factors have explanatory power equal to or greater than that of the company's industry factors. Section 3.3.
17. C is correct. Companies in developed markets usually have long debt maturity structure and higher long-term debt to total debt ratios compared to emerging market countries. Section 3.3.
18. A is correct. The factors helpful in explaining differences in capital structure across countries are: institutional and legal environment, financial markets and banking sector, and macroeconomic environment. Section 3.3.
19. B is correct. Company A will have longer debt maturity given its country-specific factors of an efficient legal system based on common law, active financial market and large institutional investor base. Exhibit 6.
20. A is correct. The D/E ratios of companies in high inflation and high GDP growth countries will be lower than companies in lower inflationary and low GDP growth environment. Exhibit 6.