Chapter 6: Valuing levered projects

Self test questions

1. What is business risk?

   (a) The risk of the cash flows generated by the firm's assets

   (b) The risk that the firm's business partners don't pay their bills

   (c) The additional risk that investors accept by giving other investors a claim with a higher priority than their own

2. What is financial risk?

   (a) The risk of the cash flows generated by the firm's assets

   (b) The risk that the firm's business partners don't pay their bills

   (c) The additional risk that investors accept by giving other investors a claim with a higher priority than their own

3. What is the market price of business risk?

   (a) The weighted average return on shares of companies in the same business

   (b) The expected return of all equity financed assets with the same risk

   (c) The weighted average cost of capital (WACC)

   (d) None of the above

4. What is the opportunity cost of capital (OCC)?

(a)	The market price of business risk	☐ True	☐ False
(b)	The weighted average cost of capital (WACC)	☐ True	☐ False
(c)	The expected return of all equity financed assets with the same risk	☐ True	☐ False
(d)	The weighted average return on shares of companies in the same business	☐ True	☐ False

5. Why does the interest rate on debt increase with the debt-equity ratio (D/E) in the presence of default risk / limited liability?

   (a) Because financial risk increases

   (b) Because the business risk of the project increases

   (c) Because business risk is transferred from the equity holders to the debt holders

   (d) None of the above

6. The after tax WACC is the appropriate discount rate for a project's:

   (a) 'Unlevered' after tax cash flows ('as if' all equity financed)
   (b) 'Levered' after tax cash flows ('as if' financed with debt and equity)
   (c) Earnings after interest and taxes (EAIT)
   (d) None of the above

7. The proper discount rate for the tax advantage of debt is:

   (a) The OCC
   (b) The WACC
   (c) The cost of debt (r_d)
   (d) Cannot say without more information

8. Under which financing rule is the tax advantage of debt more risky?

   (a) Predetermined debt
   (b) Rebalanced debt
   (c) Does not depend on financing rule

9. The advantage of adjusted present value (APV) over risk adjusted discount rates is that:

   (a) Various different discount rates can be used
   (b) Various different side effects can be included
   (c) It does not depend on the financing rule

10. Under the financing rule of predetermined debt, the proper discount rate for the tax advantage of debt is:

    (a) The OCC
    (b) The WACC
    (c) The cost of debt, r_d

11. Under the financing rule of rebalanced debt, the proper discount rate for the tax advantage of debt is:

    (a) The OCC
    (b) The WACC
    (c) The cost of debt, r_d

12. If debt is rebalanced after 1 year and then kept fixed during the second year, the tax advantage over the second year has to be discounted with:

    (a) $(1 + r_a)^2$
    (b) $(1 + r_a)(1 + r_d)$
    (c) $(1 + r_d)^2$

13. If the debt/equity ratio increases from $\frac{0.1}{0.9}$ to $\frac{0.2}{0.8}$ but the interest rate on debt remains the same, then:

    (a) The after tax WACC remains the same
    (b) The return on equity remains the same
    (c) The OCC remains the same
    (d) None of the above

14. If a project has the same business risk as the rest of the company, but it has a different debt/equity ratio, the discount rate for the project's cash flows can be found with:

    (a) The Miles-Ezzell formula
    (b) The Modigliani-Miller formula
    (c) The unlever-relever procedure
    (d) Cannot say without more information

15. The Modigliani-Miller formula assumes a financial policy of:

    (a) Continuously rebalanced debt
    (b) Periodically rebalanced debt
    (c) Predetermined debt
    (d) Does not depend on financial policy

16. The Miles-Ezzell formula assumes a financial policy of:

    (a) Continuously rebalanced debt
    (b) Periodically rebalanced debt
    (c) Predetermined debt
    (d) Does not depend on financial policy

17. Which of the following are appropriate ways to calculate project values if debt is predetermined?

    (a) The unlever-relever procedure ☐ True ☐ False
    (b) The Modigliani-Miller formula ☐ True ☐ False
    (c) The Miles-Ezzell formula ☐ True ☐ False
    (d) Adjusted present value ☐ True ☐ False

18. Which of the following are appropriate ways to calculate project values if debt is periodically rebalanced?

    (a) The unlever-relever procedure ☐ True ☐ False
    (b) The Modigliani-Miller formula ☐ True ☐ False
    (c) The Miles-Ezzell formula ☐ True ☐ False
    (d) Adjusted present value ☐ True ☐ False

19. Which of the following are appropriate ways to calculate project values if debt is continuously rebalanced?

    (a) The unlever-relever procedure ☐ True ☐ False
    (b) The Modigliani-Miller formula ☐ True ☐ False
    (c) The Miles-Ezzell formula ☐ True ☐ False
    (d) Adjusted present value ☐ True ☐ False

20. For projects with different business risk, the OCC can be calculated:

    (a) By running the Modigliani-Miller formula 'in reverse'
    (b) By running the Miles-Ezzell formula 'in reverse'
    (c) With the 'pure play' method
    (d) None of the above

21. Under the Modigliani-Miller assumptions and given that debt is risky, what is the proper formula to unlever β coefficients?

    (a) $\beta_a = \beta_e \frac{E}{V}$
    (b) $\beta_a = \beta_d \frac{D}{V} + \beta_e \frac{E}{V}$
    (c) $\beta_a = \beta_d (1 - \tau) \frac{D}{V} + \beta_e \frac{E}{V}$
    (d) None of the above

22. The proper way to apply the 'flow to equity' method is to discount the:

    (a) After tax cash flow to equity with the required return on equity
    (b) After tax cash flow to equity with the opportunity cost of capital
    (c) Before tax cash flow to equity with the required return on equity
    (d) Before tax cash flow to equity with the opportunity cost of capital