## **CHAPTER 13**

**Does Debt Policy Matter?**

## **Quiz Questions**

2. (**NO SOLUTION ONLINE**) Spam Corp. is financed entirely by common stock and has a beta of 1.0. The firm is expected to generate a level, perpetual stream of earnings and dividends. The stock has a price-earnings ratio of 8 and a cost of equity of 12.5%. The company’s stock is selling for $50. Now the firm decides to repurchase half of its shares and substitute an equal value of debt. The debt is risk-free, with a 5% interest rate. The company is exempt from corporate income taxes. Assuming MM are correct, calculate the following items after the refinancing:

1. The cost of equity.
2. The overall cost of capital (WACC).
3. The price-earnings ratio.
4. The stock price.
5. The stock’s beta.

5. (**NO SOLUTION ONLINE**) True or false?

1. MM’s propositions assume perfect financial markets, with no distorting taxes or other imperfections.
2. MM’s proposition 1 says that corporate borrowing increases earnings per share but reduces the price-earnings ratio.
3. MM’s proposition 2 says that the cost of equity increases with borrowing and that the increase is proportional to *D/V*, the ratio of debt to firm value.
4. MM’s proposition 2 assumes that increased borrowing does not affect the interest rate on the firm’s debt.
5. Borrowing does not increase financial risk and the cost of equity if there is no risk of bankruptcy.
6. Borrowing increases firm value if there is a clientele of investors with a reason to prefer debt.

## **Practice Questions**

9. Companies A and B differ only in their capital structure. A is financed 30% debt and 70% equity; B is financed 10% debt and 90% equity. The debt of both companies is risk-free.

1. Rosencrantz owns 1% of the common stock of A. What other investment package would produce identical cash flows for Rosencrantz?
2. Guildenstern owns 2% of the common stock of B. What other investment package would produce identical cash flows for Guildenstern?
3. Show that neither Rosencrantz nor Guildenstern would invest in the common stock of B if the *total* value of company A were less than that of B.

10. Here is a limerick:

 *There once was a man named Carruthers,*

*Who kept cows with miraculous udders.*

*He said, “Isn’t this neat?*

*They give cream from one teat,*

*And skim milk from each of the others!”*

What is the analogy between Mr. Carruthers’s cows and firms’ financing decisions? What would MM’s proposition 1, suitable adapted, say about the value of Mr. Carruthers’s cows? Explain.

11. Executive Chalk is financed solely by common stock and has outstanding 25 million shares with a market price of $10 a share. It now announces that it intends to issue $160 million of debt and to use the proceeds to buy back common stock.

1. How is the market price of the stock affected by the announcement?
2. How many shares can the company buy back with the $160 million of new debt that it issues?
3. What is the market value of the firm (equity plus debt) after the change in capital structure?
4. What is the debt ratio after the change in structure?
5. Who (if anyone) gains or loses?

Now try the next question.

12. Executive Cheese has issued debt with a market value of $100 million and has outstanding 15 million shares with a market price of $10 a share. It now announces that it intends to issue a further $60 million of debt and to use the proceeds to buy back common stock. Debtholders, seeing the extra risk, mark the value of the existing debt down to $70 million.

1. How is the market price of the stock affected by the announcement?
2. How many shares can the company buy back with the $60 million of new debt that it issues?
3. What is the market value of the firm (equity plus debt) after the change in capital structure?
4. What is the debt ratio after the change in structure?
5. Who (if anyone) gains or loses?

15. Indicate what’s wrong with the following arguments:

1. “As the firm borrows more and debt becomes risky, both stockholders and bondholders demand higher rates of return. Thus by *reducing* the debt ratio we can reduce *both* the cost of debt and the cost of equity, making everybody better off.”
2. “Moderate borrowing doesn’t significantly affect the probability of financial distress or bankruptcy. Consequently moderate borrowing won’t increase the expected rate of return demanded by stockholders.”

19. Archimedes Levers is financed by a mixture of debt and equity. You have the following information about its cost of capital:

|  |  |  |
| --- | --- | --- |
| rE = \_\_\_ | rD = 12% | rA = \_\_\_ |
| βE = 1.5 | βD = \_\_\_ | βA = \_\_\_ |
| rf = 10% | rm = 18% | D/V = .5 |

 Can you fill in the blanks?