

Study Plan

Chapter 12

Learning Objectives

After studying this chapter you should be able to:

- Explain how financial leverage increases both a firm's risk and its returns;
- Understand how the Modigliani-Miller model proves that capital structure is irrelevant in a world without taxes and other market frictions, but the use of debt is favored when companies are subject to corporate income taxes;
- Discuss how corporate and personal taxes affect capital structure;
- Explain how the costs of bankruptcy and financial distress affect capital structure decisions and explore the questions raised by the agency cost/tax shield trade-off model of corporate leverage; and
- Describe the most important capital structure patterns observed around the world and explain what factors may be driving leverage choices.

Summary and Conclusions

- Financial leverage means using fixed-cost debt financing to increase expected earnings per share. Unfortunately, financial leverage also increases the dispersion of expected earnings per share.
- Franco Modigliani and Merton Miller showed that capital structure is irrelevant in a world of frictionless capital markets. This means that the leverage choice cannot affect firm valuation.
- In a world with only company-level taxation of operating profits and tax-deductible interest payments, the optimal corporate strategy is to use the maximum possible leverage. This minimizes the government's claim on profits, in the form of taxes, and maximizes the amount of income flowing to private investors.
- When corporate profits are taxed at both the corporate and personal levels (with taxes on interest and dividends received), the benefits to high levels of corporate leverage are much reduced and may be completely negated. In this more "realistic" world of multiple taxes and other market imperfections, such as transactions costs to issuing securities, it is unclear whether an "optimal" debt level exists for the average firm in any given nation.
- In addition to corporate and personal taxation of income, several characteristics of a firm's asset structure, operating environment, investment opportunities, and ownership structure significantly influence the level of debt that the firm will choose to have.
- Firms with large amounts of tangible assets, such as buildings, transportation equipment, and general-purpose machine tools, tend to use a large amount of debt in their capital structures. These assets can pass fairly easily through bankruptcy, with their values intact. In contrast, firms that

rely more on intangible assets, such as brand names and research-and-development spending, tend to use very little financial leverage.

- Creditors know that corporate managers, who operate their firms in the interests of shareholders, have incentives to try to expropriate creditor wealth, by playing a series of “games” with their firms’ investment policies. Asset substitution is one such game. It involves promising to purchase a safe investment asset to obtain an interest rate that reflects this risk, and then substituting a higher risk asset that promises a higher expected return. Creditors protect themselves from these games through a variety of techniques, especially by inserting covenants into loan agreements.
- There are several important agency costs inherent in the relationship between corporate managers and outside investors and creditors. In some cases, using financial leverage can help overcome these agency problems; in others, use of leverage exacerbates the problems. The modern trade-off theory of corporate leverage predicts that a firm’s optimal debt level will be set by trading off the tax benefits of increasing leverage against the increasingly severe agency costs of heavy debt usage.
- Corporate debt ratios can be measured in various ways, but “capital structure” ratios measure the ratio of a firm’s long-term or permanent debt to its equity capital. More problematic is the need to express leverage ratios in terms of both book value and market value, because each type of measure is appropriate for some purposes, but not for others. We usually focus on market-value capital structure ratios.
- Several regularities are observed in capital structure patterns around the world. In general, industries rich in fixed assets and those with assets that retain their value in bankruptcy, tend to have high leverage, whereas industries rich in intangible assets tend to have low levels of indebtedness. This is particularly true for industries in which research-and-development spending is important.
- Though firms in the same industries tend to exhibit similar debt levels in all countries, there are also significant differences in average leverage levels between countries. In those countries where bankruptcy laws favor creditors, especially Britain and Germany, market-value leverage levels tend to be lower than in nations where debtors enjoy greater bankruptcy protection.