



**FINANCIAL  
MANAGEMENT**

THEORY AND PRACTICE

SEVENTH EDITION

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this is its business risk, which is defined as the uncertainty inherent in projections of future ROE, assuming the firm is financed solely with common stock. If a firm uses debt and preferred stock (financial leverage), this concentrates its business risk on the common stockholders. To illustrate, suppose ten people decide to form a corporation to manufacture steel roof trusses. There is a certain amount of business risk in the operation. If the firm is capitalized only with common equity, and if each person buys 10 percent of the stock, then each investor shares equally in the business risk. However, suppose the firm is capitalized with 50 percent debt and 50 percent equity, with five of the investors putting up their capital as debt and the other five putting up their money as equity. In this case, the five investors who put up the equity will have to bear all of the business risk, so the common stock will be twice as risky as it would have been had the firm been financed only with equity. Thus, the use of debt, or *financial leverage*, concentrates the firm's business risk on its stockholders.

To illustrate the concentration of business risk, again consider Strasburg Electronics. Strasburg has \$175,000 in assets and is all-equity financed.<sup>5</sup> If the firm were using Plan A from Figure 12-2, then its expected ROE would be 12.0 percent with a standard deviation of 8.0 percent. Now suppose the firm decides to change its capital structure by issuing \$87,500 of debt at  $k_d = 10\%$  and using these funds to replace \$87,500 of equity. Its expected return on equity (which would now be only \$87,500) would rise from 12 to 18 percent:

	New (Leveraged) Situation	Old (Unleveraged) Situation (See Table 12-2)
Expected EBIT (unchanged)	\$35,000	\$35,000
Interest (10% on \$87,500 of debt)	8,750	0
Earnings before taxes	\$26,250	\$35,000
Taxes (40%)	10,500	14,000
Net income	\$15,750	\$21,000
Expected ROE = $\$15,750/\$87,500 =$	18%	$\$21,000/\$175,000 = 12\%$

Thus, the use of debt would "leverage up" the expected ROE from 12 percent to 18 percent.

However, financial leverage also increases risk to the equity investors. For example, suppose EBIT actually turned out to be \$5,000 rather than the expected \$35,000. If the firm used no debt, then ROE would decline from 12.0 percent to

<sup>5</sup>A firm in business for at least ten years would likely have far more than \$175,000 in assets. We are purposely keeping Strasburg Electronics small so that we may focus on the concepts without being overwhelmed by the numbers. Also note that, to be consistent with capital structure theory, we should be working with market values of securities rather than book values of assets. We are using book values at this point to simplify the illustration, but we will discuss market value relationships later in the chapter. In this regard, see Haim Levy and Robert Brooks, "Financial Break-Even Analysis and the Value of the Firm," *Financial Management*, Autumn 1986, 22-26.