much lower (16.7 percent versus the
tes that the company's lower effective
rates charged in non-U.S. jurisdictions
arnings reduced HP's tax rate but did

nimize its tax liabilities as early as pos-
estment proposal, it should consider
ignificant tax breaks. By reducing its
the firm will raise its return on equity.

HE STRUCTURE OF A

affect a firm's return on equity: (1) the
the capital or net asset turnover
t ratio (EBT/EBIT), (4) the financial
5) the tax effect ratio (EAT/EBT). The
's return on equity is straightforward.
ratios:

(5.10)

$$\frac{\text{T}}{\text{IT}} \times \frac{\text{Invested capital}}{\text{Owners' equit}} \times \frac{\text{EAT}}{\text{EBT}}$$

side of equation 5.10 is equal to EAT
nis by simply canceling EBIT, sales,
ır in both a numerator and a denomi-
umerator and owners' equity in the

ıe firm's investing and operating deci-
equal to the firm's operating profitabil-
efore tax ($ROIC_{BT}$ in equation 5.4). The
e firm's financial policy on its overall
ncial leverage multiplier:

ultiplier =
ial structure ratio (5.11)

ate taxation on return on equity and,
ıte). Thus, equation 5.10 can be writ-

ier × (1 – Effective tax rate) (5.12)

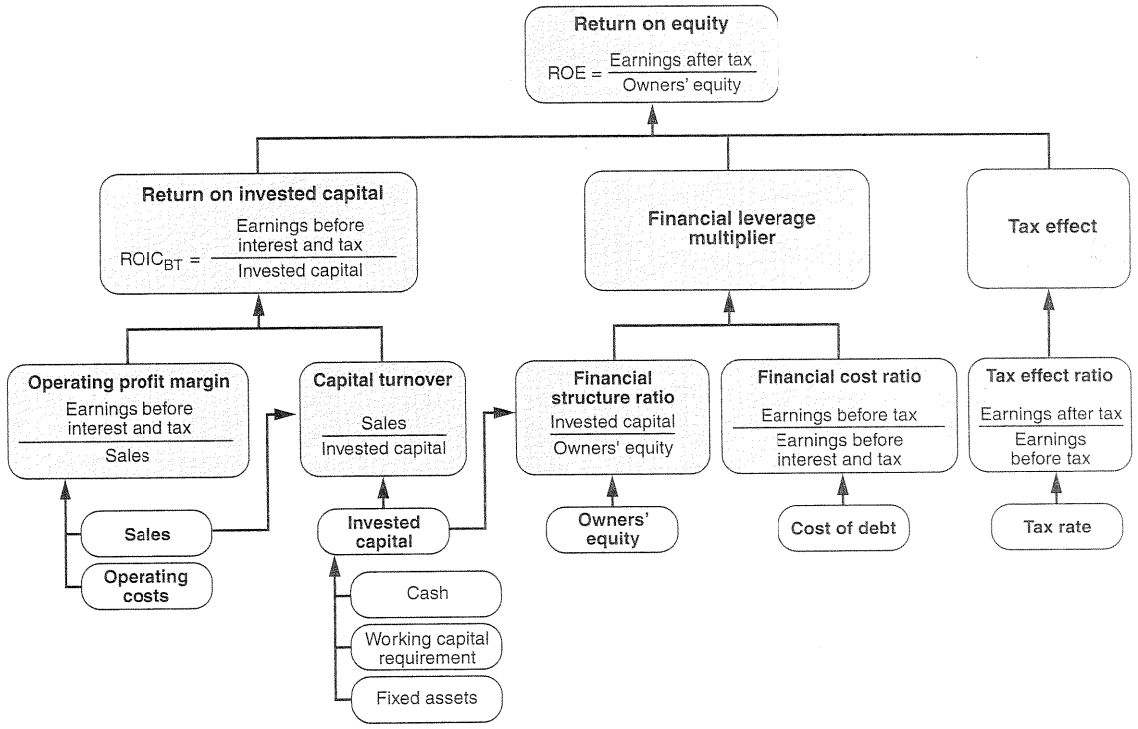
equation 5.12 can be written as

$$\text{Pretax ROE} = \text{ROIC}_{\text{BT}} \times \text{Financial leverage multiplier}$$

Obviously, if the financial leverage multiplier is greater than one, pretax ROE exceeds $ROIC_{BT}$. If it is less than one, pretax ROE is lower than $ROIC_{BT}$. Exhibit 5.7 provides a pictorial representation of the five ratios behind ROE and the way they are related.

We can now examine the structure of OS Distributors' profitability, shown in Exhibit 5.5. Compare ROE in 2003 to ROE in 2005: It increased from 10.9 percent in 2003 to 13.2 percent in 2005. Is this small improvement the outcome of improved operating performance, a higher financial leverage multiplier, or a reduction in OS Distributors' effective tax rate? The exhibit indicates that the improvement in ROE is caused by a better operating margin coupled with a higher capital turnover.[4]

EXHIBIT 5.7 The Drivers of Return on Equity.



[4]A firm's capital turnover can increase as a result of the depreciation of fixed assets, which reduces net fixed assets. When this is the case, the improvement in turnover cannot be attributed to better management of the firm's invested capital.

Note that IBM's effective tax rate is close to the statutory rate (30.2 percent versus 35 percent), whereas that of HP is much lower (16.7 percent versus the same 35 percent). HP's annual report indicates that the company's lower effective tax rate of 16.9 percent was caused by lower rates charged in non-U.S. jurisdictions where the firm operates. Taxes on foreign earnings reduced HP's tax rate but did not affect IBM's rate significantly in 2004.

Our point is that a firm should plan to minimize its tax liabilities as early as possible. For example, when evaluating an investment proposal, it should consider locating in countries or regions that offer significant tax breaks. By reducing its effective tax rate to its lowest possible level, the firm will raise its return on equity.

PUTTING IT ALL TOGETHER: THE STRUCTURE OF A FIRM'S PROFITABILITY

The previous sections identify five ratios that affect a firm's return on equity: (1) the operating profit margin (EBIT/Sales), (2) the capital or net asset turnover (Sales/Invested capital), (3) the financial cost ratio (EBT/EBIT), (4) the financial structure ratio (Invested capital/Equity), and (5) the tax effect ratio (EAT/EBT). The relationship that ties these ratios to the firm's return on equity is straightforward. *ROE is simply equal to the product of these five ratios*:

$$\text{ROE} = \frac{\text{EAT}}{\text{Owners' equity}} \tag{5.10}$$

$$= \frac{\text{EBIT}}{\text{Sales}} \times \frac{\text{Sales}}{\text{Invested capital}} \times \frac{\text{EBT}}{\text{EBIT}} \times \frac{\text{Invested capital}}{\text{Owners' equit}} \times \frac{\text{EAT}}{\text{EBT}}$$

The product of the five ratios on the right side of equation 5.10 is equal to EAT divided by owners' equity. You can check this by simply canceling EBIT, sales, invested capital, and EBT because they appear in both a numerator and a denominator. The only items left are EAT in the numerator and owners' equity in the denominator.

The first two ratios capture the effect of the firm's investing and operating decisions on its overall profitability. Their product is equal to the firm's operating profitability measured by the return on invested capital before tax (ROIC_{BT} in equation 5.4). The third and fourth ratios capture the effect of the firm's financial policy on its overall profitability. We call their product the firm's **financial leverage multiplier**:

$$\textbf{Financial leverage multiplier} =$$