Du Pont Analysis:

1. for non-banks:

ROE = NI/Equity = (NI/Asset) × (Asset/Equity)

= (NI/TOI) × (TOI/Assets) × (Assets/Equity)

= operating efficiency × asset use efficiency × financial leverage

2. for banks:

ROE = NI/Equity = (NI/Asset) × (Asset/Equity)

= (NI/TOI) × (TOI/Assets) × (Assets/Equity)

① NI/TOI = (TOI – IE – LLP – NIE – Tax)/TOI

② (TOI/Assets) = (IR + NIR)/Assets

3. Does increased financial leverage lift up ROE for certain?

$$ROE = \frac{(EBIT - D \times i)(1-t)}{E}$$

$$= (1-t)(\frac{EBIT}{E} - \frac{D}{E}i) = (1-t)(\frac{EBIT}{A}\frac{A}{E} - \frac{D}{E}i) = (1-t)(\frac{EBIT}{A}\frac{D+E}{E} - \frac{D}{E}i)$$

$$= (1-t)[ROA(1+\frac{D}{E}) - \frac{D}{E}i] = (1-t)[ROA + \frac{D}{E}(ROA - i)]$$

This equation has the following implications. First, if a firm's ROA exceeds the interest rate that it pays to its creditors, then its ROE will exceed $(1–t)ROA$ by an amount, $_{(1-t)}\frac{D}{E}(ROA-i)$, which will be greater the higher the debt/equity ratio.

Second, increased financial leverage magnifies the variability that firms experience in their ROE over the business cycle and increases the likelihood of bankruptcy.

Third, from the perspective of a creditor, an increase in the firm's debt ratio is generally a negative sign. Bond-rating agencies, such as Mood's and Standard and Poor's Corporation, will often downgrade a firm's securities if its debt ratio goes up. But from the shareholder's perspective, it might be positive for the firm to increase its debt ratio.