

FA Module 7 DuPont analysis practice exam questions

covering interest coverage ratio, earnings before interest and taxes, financial leverage, tax burden, interest burden, interest coverage ratio, net profit margin, return on assets, asset turnover ratio, return on equity, return on assets, financial leverage

(The attached PDF file has better formatting.)

A firm has

- ! an effective tax rate of 10%
- ! an interest coverage ratio of 6.2
- ! an EBIT (earnings before interest and taxes) margin of 42%
- ! total asset turnover of 0.43
- ! financial leverage of 1.9

Question 7.1: Tax burden

What is the firm's tax burden?

Answer 7.1: $1 - 10\% = 90\%$

(tax burden = net income / pre-tax income =
pre-tax income \times (1 - tax rate) / pre-tax income = (1 - tax rate)
 \Rightarrow tax burden = complement of tax rate)

Question 7.2: Interest burden

What is the firm's interest burden?

Answer 7.2: $1 - 1 / 6.2 = 83.87\%$

EBT = earnings before taxes, or pre-tax income

EBIT = earnings before interest and taxes, or pre-tax income \Rightarrow EBT = EBIT - interest expense

interest coverage ratio = EBIT / interest expense

interest burden = $\frac{EBT}{EBIT} = \frac{(EBIT - \text{interest expense})}{EBIT} =$
 $1 - \frac{\text{interest expense}}{EBIT}$
 $1 - 1 / \text{interest coverage ratio}$

Question 7.3: Net profit margin

What is the firm's net income margin (net profit margin)?

Answer 7.3: $42\% \times 90\% \times 83.87\% = 31.70\%$

net income margin = net income / net revenue

EBIT margin = EBIT / net revenue

net income = EBIT \times the interest burden \times the tax burden

\Rightarrow net income margin = the EBIT margin \times the interest burden \times the tax burden

Question 7.4: Return on assets

What is the firm's return on assets?

Answer 7.4: $31.70\% \times 0.43 = 13.63\%$

return on assets = net income / average assets

asset turnover ratio = average assets / net revenue

⇒ return on assets = (net income / net revenue) / (average assets / net income)

⇒ return on assets = net income margin x asset turnover ratio

Question 7.5: Return on equity

What is the firm's return on equity?

Answer 7.5: $13.63\% \times 1.9 = 25.90\%$

return on equity = net income / average equity

return on assets = net income / average assets

financial leverage = average assets / average equity

⇒ return on equity = return on assets x financial leverage

(Note: the textbook formula also shows financial leverage as *total assets / total equity* meaning *total average assets / total average equity* .)