## PROBLEMS

PROBLEM 9‑1

Earnings Before Interest, Tax

Minority Share of Earnings, Equity

Degree of Financial Leverage = Income, and Nonrecurring Items

Earnings Before Tax, Minority Share

of Earnings, Equity Income, and

Nonrecurring Items



PROBLEM 9‑2

Earnings Before Interest, Tax

Minority Share of Earnings, Equity

a. Degree of Financial Leverage = Income, and Nonrecurring Items

Earnings Before Tax, Minority Share

of Earnings, Equity Income, and

Nonrecurring Items

= 

= 1.25

b. Prior earnings before interest and tax $ 1,000,000

10% increase 100,000

Adjusted income before interest and tax $ 1,100,000

Interest 200,000

Income before tax $ 900,000

Tax (50% rate) 450,000

Net income $ 450,000

Earnings will increase by 12.5% to $450,000

($400,000 x 112.5% = $450,000)

c. $ 800,000

200,000

$ 600,000

300,000

$ 300,000

This is a decline in profit of 25%, with a decline in earnings before interest and tax of 20%.

PROBLEM 9‑3

a. 1. Percentage of Earnings Retained = 

|  |  |  |  |
| --- | --- | --- | --- |
|  | 2005 | 2004 | 2003 |

|  |  |  |  |
| --- | --- | --- | --- |
| Net income (A)  Less:  Common dividends  Preferred dividends  (B)  (A) – (B) = (C)  (C) ÷ (A) | $31,200,000  21,700,000  910,000  $22,610,000  8,590,000  27.53% | $30,600,000  19,500,000  910,000  $20,410,000  10,190,000  33.30% | $29,800,000  18,360,000  910,000  $19,270,000  10,530,000  35.34% |

2. Price/Earnings Ratio = Market Price per Share

Fully Diluted Earnings per Share

2005 2004 2003

$12.80 $14.00 $16.30

$1.12 $1.20 $1.27

= 11.43 = 11.67 = 12.83

3. Dividend Payout = Dividends per Common Share

Fully Diluted Earnings per Share

2005 2004 2003

$0.90 $0.85 $0.82

$1.12 $1.20 $1.27

= 80.36% = 70.83% = 64.57%

4. Dividend Yield = Dividends per Common Share

Market Price per Common Share

2005 2004 2003

$0.90 $0.85 $0.82

$12.80 $14.00 $16.30

= 7.03% = 6.07% = 5.03%

Total Stockholders’ Equity −

5. Book Value per Share = Preferred Stock Equity

Number of Common Shares Outstanding

|  |  |  |  |
| --- | --- | --- | --- |
|  | 2005 | 2004 | 2003 |

|  |  |  |  |
| --- | --- | --- | --- |
| Total assets  Less:  Liabilities  Stockholders’ equity  Less:  Nonredeemable preferred  stock  (A) Common stock equity  (B) Shares outstanding  end of year  (A) ÷ (B) | $1,280,100,000  (800,400,000)  479,700,000  (15,300,000)  $ 464,400,000  24,280,000  $19.13 | $1,267,200,000  (808,500,000)  458,700,000  (15,300,000)  $ 443,400,000  23,100,000  $19.19 | $1,260,400,000  (799,200,000)  461,200,000  (15,300,000)  $ 445,900,000  22,500,000  $19.82 |

b. The percentage of earnings retained is decreasing. The related ratio, dividend payout, is therefore increasing.

The price/earnings ratio has been relatively stable. The dividend yield has increased and is relatively high. The market price per share is substantially below the book value. It appears that this stock is being purchased for the relatively high dividend and not for growth potential.

PROBLEM 9‑4

a. 1. Percentage of Earnings Retained = Net Income – All Dividends

Net Income

2005 2004 2003

Net income (B) $ 9,100,000 $ 13,300,000 $ 16,500,000

Less:

Cash dividends (A) (6,080,000) (5,900,000) (6,050,000)

$ 3,020,000 $ 7,400,000 $ 10,450,000

(A) ÷ (B) 33.19% 55.64% 63.33%

2. Price/Earnings Ratio = Market Price per Share

Fully Diluted Earnings per Share

2005 2004 2003

$41.25 $35.00 $29.00

$2.30 $3.40 $4.54

= 17.93 = 10.29 = 6.39

3. Dividend Payout = Dividends per Common Share

### Fully Diluted Earnings per Share

2005 2004 2003

$1.90 $1.90 $1.90

$2.30 $3.40 $4.54

= 82.61% = 55.88% = 41.85%

4. Dividend Yield = Dividends per Common Share

Market Price per Common Share

2005 2004 2003

$1.90 $1.90 $1.90

$41.25 $35.00 $29.00

= 4.61% = 5.43% = 6.55%

5. Book Value per Share = 

2005 2004 2003

$41.25 $35.00 $29.00

120.5% 108.0% 105.0%

= $34.23 = $32.41 = $27.62

b. The percentage of earnings retained materially declined. The related ratio, dividend payout, materially increased.

The price earnings ratio materially increased, which is difficult to explain, considering the decline in earnings and the other ratios computed.

The dividend yield has declined each year, while the book value per share increased each year.

The increase in market price and the increase in price earnings ratio appears to be explained by the increase in order backlog at year‑end and the increase in net contracts awarded.

PROBLEM 9‑5

Simple Earnings per Share = Net Income – Preferred Dividends

### Weighted Average Number of

Common Shares Outstanding

Year 1 Year 2

$40,000 − $22,500 $42,000 − $27,500

38,000 38,500

$0.46 $0.38

The decline in earnings per share is caused mainly by the issuance of preferred stock and partially by a rise in the common shares.