PROBLEMS

PROBLEM 7‑1

Recurring Earnings, Excluding Interest

Expense, Tax Expense, Equity Earnings,

Times Interest Earned = and Minority Earnings

Interest Expense, Including

Capitalized Interest

Earnings before interest and tax:

Net sales $ 1,079,143

Cost of sales (792,755)

Selling and administration (264,566)

$ 21,822

a. 

b. Cash basis times interest earned:



PROBLEM 7‑2

Recurring Earnings, Excluding Interest

Expense, Tax Expense, Equity Earnings,

a. Times Interest Earned = and Minority Earnings

Interest Expense, Including

Capitalized Interest

Income before income taxes $ 675

Plus interest 60

Adjusted income $ 735

Interest expense $ 60

Times Interest Earned = $735 = 12.25 times per year

$60

b. Recurring Earnings, Excluding Interest

Expense, Equity Earnings, and Minority

Fixed Charge Coverage = Earnings + Interest Portion of Rentals

Interest Expense, Including Capitalized

Interest + Interest Portion of Rentals

Adjusted income from part (a) $ 735

1/3 of operating lease payments

(1/3 x $150) 50

Adjusted income, including rentals $ 785

Interest expense $ 60

1/3 of operating lease payments 50

$ 110

Fixed Charge Coverage = $785 = 7.14 times per year

$110

PROBLEM 7‑3

Recurring Earnings, Excluding Interest

Expense, Tax Expense, Equity Earning,

a. Times Interest Earned = and Minority Earnings

Interest Expense, Including

Capitalized Interest

Income before income taxes and

extraordinary charges $ 36

Plus interest 16

(1) Adjusted income $ 52

(2) Interest expense $ 16

Times Interest Earned: (1) divided by (2) = 3.25 times per year

Recurring Earnings, Excluding Interest

Expense, Tax Expense, Equity Earnings,

and Minority Earnings + Interest Portion

b. Fixed Charge Coverage = of Rentals

Interest Expense, Including Capitalized

Interest + Interest Portion of Rentals

Adjusted income from part (a) $ 52

1/3 of operating lease payments

(1/3 x $150) 50

(1) Adjusted income, including rentals $102

Interest expense $ 16

1/3 of operating lease payments 50

(2) Adjusted interest expense $ 66

Fixed charge coverage: (1) ÷ (2) = 1.55 times per year

PROBLEM 7‑4

a. Debt Ratio = 

b. Debt/Equity Ratio = 

c. Ratio of Total Debt to Tangible Net Worth =

Total Liabilities = $174,979 = $174,979 = 70.9%

Tangible Net Worth $249,222 − $2,324 $246,898

d. Kaufman Company has financed over 41% of its assets by the use of funds from outside creditors. The Debt/Equity Ratio and the Debt to Tangible Net Worth Ratio are over 70%. Whether these ratios are reasonable depends upon the stability of earnings.

PROBLEM 7-5

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  |  |  |  |

a. Times Interest Earned:

Times interest earned relates earnings before interest expense, tax, minority earnings, and equity income to interest expense. The higher this ratio, the better the interest coverage. The times interest earned has improved materially in strengthening the long‑term debt position. Considering that the debt ratio and the debt to tangible net worth have remained fairly constant, the probable reason for the improvement is an increase in profits.

The times interest earned only indicates the interest coverage. It is limited in that it does not consider other possible fixed charges, and it does not indicate the proportion of the firm’s resources that have come from debt.

Debt Ratio:

The debt ratio relates the total liabilities to the total assets.

The lower this ratio, the lower the proportion of assets that have been financed by creditors.

For Arodex Company, this ratio has been steady for the past three years. This ratio indicates that about 40% of the total assets have been financed by creditors. For most firms, a 40% debt ratio would be considered to be reasonable.

The debt ratio is limited in that it relates liabilities to the book value of total assets. Many assets would have a value greater than book value. This tends to overstate the debt ratio and, therefore, usually results in a conservative ratio. The debt ratio does not consider immediate profitability and, therefore, can be misleading as to the firm’s ability to handle long‑term debt.

Debt to Tangible Net Worth:

The debt to tangible net worth relates total liabilities to shareholders’ equity less intangible assets. The lower this ratio, the lower the proportion of tangible assets that has been financed by creditors.

Arodex Company has had a stable ratio of approximately 81% for the past three years. This indicates that creditors have financed 81% as much as the shareholders after eliminating intangibles from the shareholders contribution—for most firms, this would be considered to be reasonable. The debt to tangible net worth ratio is more conservative than the debt ratio because of the elimination of intangible items. It is also conservative for the same reason that the debt ratio was conservative, in that book value is used for the assets and many assets have a value greater than book value. The debt to tangible net worth ratio also does not consider immediate profitability and, therefore, can be misleading as to the firm’s ability to handle long‑term debt.

Collective inferences one may draw from the ratios of Arodex Company:

Overall it appears that Arodex Company has a reasonable and improving long‑term debt position. The debt ratio and the debt to tangible net worth ratio indicates that the proportion of debt appears to be reasonable. The times interest earned appears to be reasonable and improving.

The stability of earnings and comparison with industry ratios will be important in reaching a conclusion on the long‑term debt position of Arodex Company.

b. Ratios are based on past data. The future is what is important, and uncertainties of the future cannot be accurately determined by ratios based upon past data.

Ratios provide only one aspect of a firm’s long-term, debt-paying ability. Other information, such as information about management and products, is also important.

A comparison of this firm’s ratios with ratios of other firms in the same industry would be helpful in order to decide if the ratios are reasonable.

.

Problem 7- 6

Recurring Earnings, Excluding Interest

Expense, Tax Expense, Equity Earnings,

a. 1. Times Interest Earned = and Minority Earnings

Interest Expense, Including Capitalized Interest

 

2. Debt Ratio = 

3. Debt/Equity Ratio =  

4. Debt to Tangible Net Worth =





b. No. Barker Company has a times interest earned of 5.3 times while the industry average is 7.2 times. This indicates that Barker Company has less than average coverage of its interest. Also, Barker Company has a much higher than average debt/equity ratio, and debt to tangible net worth ratio.

c. Allen Company has a better times interest earned, debt ratio, debt/equity ratio, and debt to tangible net worth.